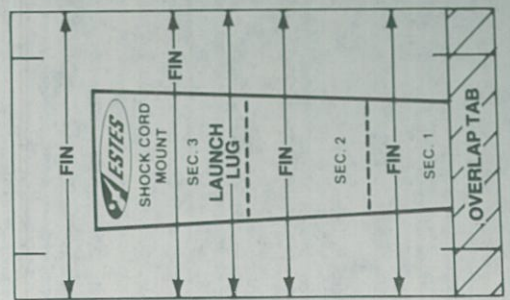
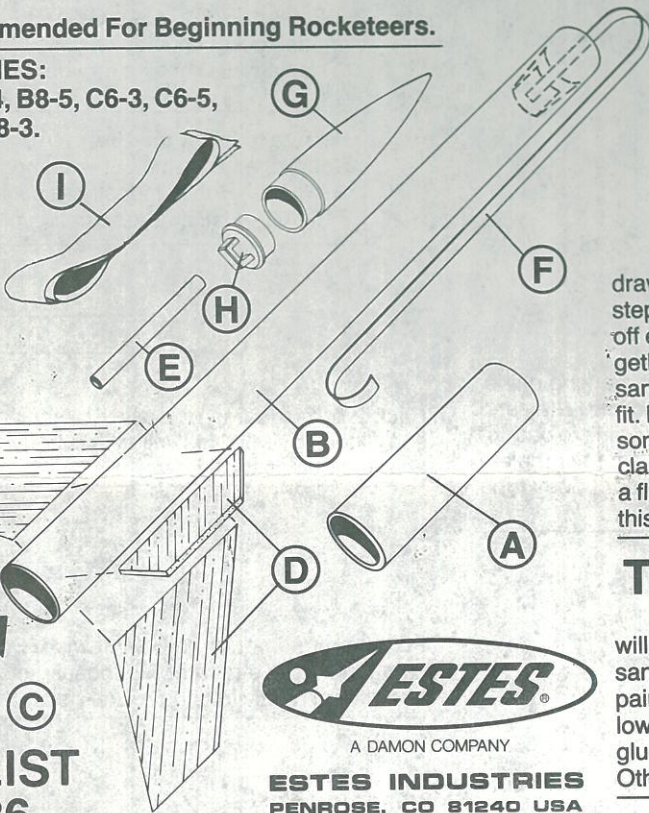
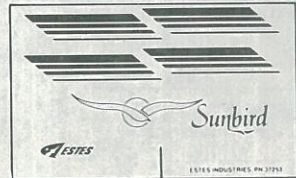


# Sunbird

**SKILL LEVEL 1 - Recommended For Beginning Rocketeers.**

**RECOMMENDED ENGINES:**

1/2A6-2, A8-3, B4-4, B6-4, B8-5, C6-3, C6-5, and C6-7. First Flight A8-3.



FIN MARKING GUIDE

## BEFORE YOU START

Read each step and study the accompanying drawings before doing any of the work called for in that step. Make sure you have all parts and materials. Check off each step as you complete it. Always test-fit parts together before applying glue. It will sometimes be necessary to sand edges of rings, tubes, etc. to obtain proper fit. If you are in doubt about the relative size or location of some parts, refer back to this exploded view drawing for clarification. Adequate glue joints are very important for a flying model rocket. Follow the instructions carefully in this regard.

## TOOLS AND MATERIALS

In addition to the parts included in this kit you will need: Scissors, pencil, ruler, fine or extra-fine grit sandpaper, sanding sealer, a medium-size modeling paint brush, modeling knife with sharp blade, gloss yellow enamel spray paint, household white glue or resin glue (Elmer's, Titebond, or similar), and plastic cement. Other types of glue are not recommended.

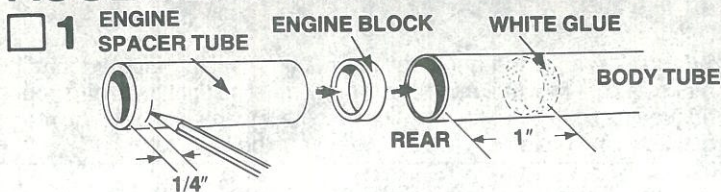
## PARTS LIST KIT #1936

A	1	Engine Spacer Tube (type ET-2)	35003
B	1	Body Tube (type BT-20N) 9 3/4" Long	30336
C	1	Engine Block (type AR-520)	30162
D	1	Die-Cut Balsa Sheet (type BF-0865)	32252
E	1	Launch Lug (type LL-2A)	38175
F	1	Shock Cord (type SC-1B)	85734
G	1	Nose Cone (type PNC-20A)	72602
H	1	Nose Cone Insert (type PIN-20A)	72603
I	1	Streamer (type RS-20) 18" Long	38272
J	1	Decal Sheet (type KD-1936)	37253

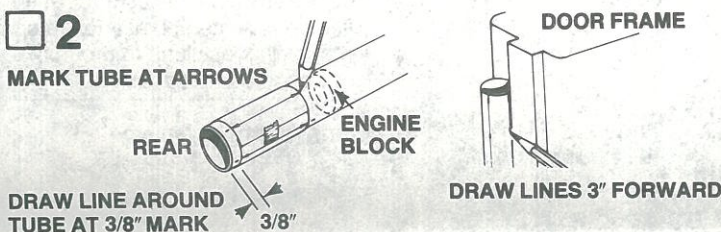


**ESTES INDUSTRIES**  
PENROSE, CO 81240 USA

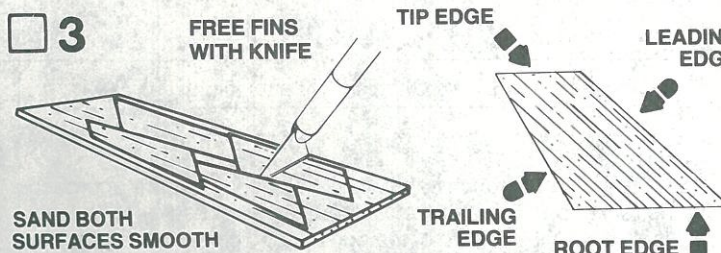
## ASSEMBLY INSTRUCTIONS



Mark the engine spacer tube (part A) 1/4" from one end. Apply a band of white glue around inside of the body tube (part B) about 1" from one end. Insert the engine block (part C) into this end. Push engine block into place with the engine spacer tube until the mark on spacer is even with the end of the body tube. **CAUTION:** Once you have started to push the block forward, do not stop until it is in place, then **IMMEDIATELY REMOVE THE SPACER TUBE.**

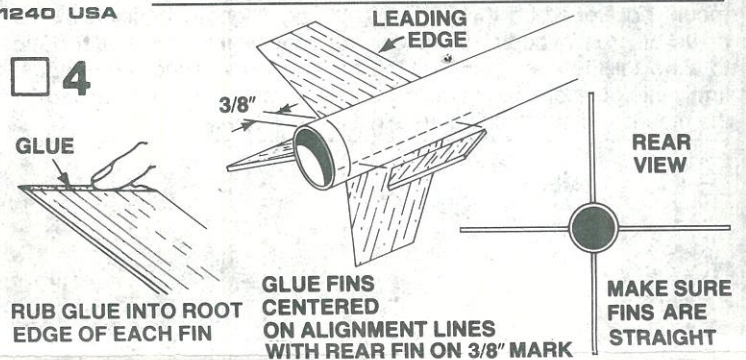


Cut out tube marking guide from front of instructions. Wrap it around rear end of body tube. Mark body tube at each arrow point. Slide the marking guide forward until the edge is 3/8" from rear of the body tube. Draw a line around the tube at the 3/8" mark. Remove guide, and save for use in Step 8. Draw straight lines about 3" forward from rear of body tube, and connect each pair of marks. A door frame inside edge makes a good straight edge to extend lines.

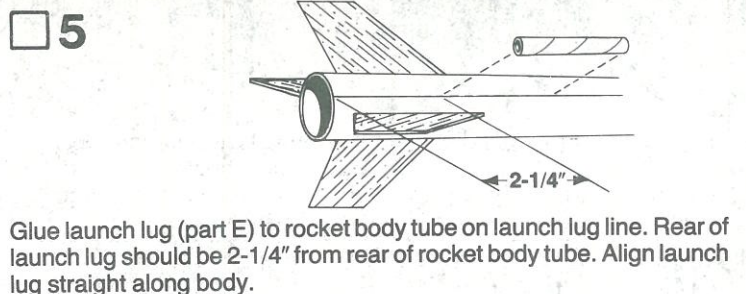


SAND BOTH SURFACES SMOOTH

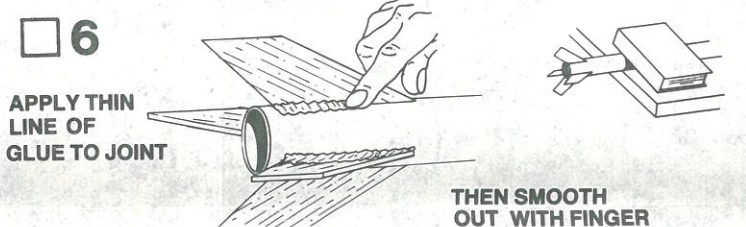
Free fins (part D) with modeling knife. Be careful to make straight, clean cuts. Sand sides of fins so they are flat and smooth. Round leading and trailing edges of each fin with sandpaper. Keep root edges flat and square, if need be, lightly sand to make them square.



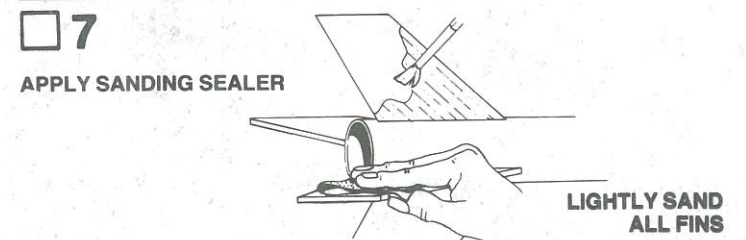
Rub glue into root edge of each fin and allow to dry. Apply glue to fins again and position fins on alignment lines in positions shown. Adjust fins so they project straight away from body tube. **DO NOT** set rocket on fins while glue is wet.



Glue launch lug (part E) to rocket body tube on launch lug line. Rear of launch lug should be 2-1/4" from rear of rocket body tube. Align launch lug straight along body.



When glue on fin joints has dried, apply a glue reinforcement to each fin/body tube joint. Holding model level, apply a line of glue to both sides of each fin joint and on both sides of the launch lug. Smooth out glue with your finger. **IMPORTANT** - Support rocket on table edge as shown until glue dries.



Application of sanding sealer makes a rocket look better and reduces drag so that the rocket will fly higher. However, this step not essential to make a safe, attractive rocket. Apply a coat of sanding sealer to each fin. When sealer is dry, lightly sand all sealed surfaces. Repeat sealing and sanding process until balsa grain is filled and smooth.