

### PARTS LIST FOR ASTRON STARLIGHT KIT #K-32

(A)	1	Engine Mounting Tube	-----	BT-20J
(B)	1	Body Tube	-----	BT-50L
(C)	4	Balsa Sheets	-----	BFS-30
(D)	1	Balsa Sheet	-----	BFS-20
(E)	1	Engine Holder	-----	EH-2
(F)	108"	Shroud Line	-----	SLT-1 C
(G)	1	Shock Cord	-----	SC-1
(H)	2	Tail Rings	-----	RT-70

(I)	1	Nose Cone	-----	BNC-50Y
(J)	2	Centering Rings	-----	AR-2050
(K)	1	Parachute	-----	PK-18A
(L)	6	Tape Strips	-----	TD-2F
(M)	1	Screw Eye	-----	SE-2
(N)	1	Snap Swivel	-----	SV-12
(O)	1	Launching Lug	-----	LL-2A
	1	Pattern Sheet	-----	SP-32

In addition to the materials included in your kit you will need the following tools and supplies: Modeling knife or single edge razor blade, scissors, extra strong white glue, ball point pen or pencil, fine and extra fine sandpaper and sanding sealer and paint or dope.

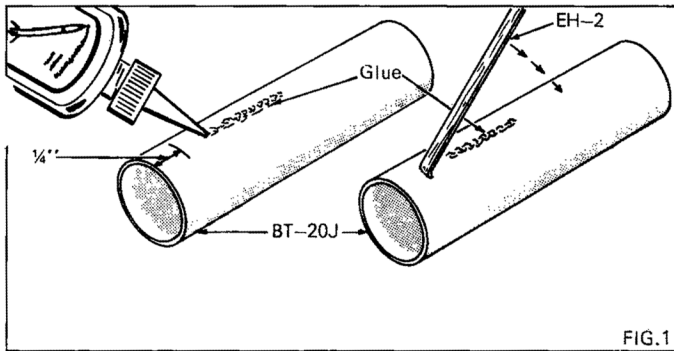
Read the entire assembly instructions carefully before beginning work on your rocket. Then start construction, following each step in order, checking off each step as it is completed.



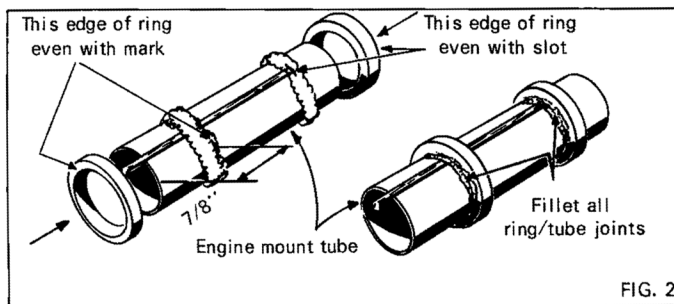
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**ESTES INDUSTRIES**  
 Box 227  
 Penrose, Colorado 81240

## ASSEMBLE ENGINE MOUNT

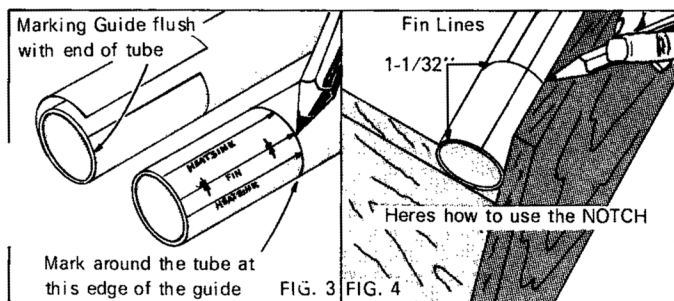


1 Mark the BT-20J engine mounting tube about 1/4" from one end and make a small slit (about 1/8" long) across the tube. Run a small line of glue from the slit towards the rear of the tube for a distance of about one inch. Hook one end of the EH-2 engine holder into the slit and lay the engine holder onto the glue as shown below.



2 Mark the BT-20J engine mount tube 7/8" from rear as shown. Apply a ring of glue at mark and where engine holder EH-2 is in slot. Slide AR-2050 centering rings into place, rear of rear ring should be even with mark and front of front ring should be even with slot. Apply a glue fillet to both ring/tube joints. Let assembly dry.

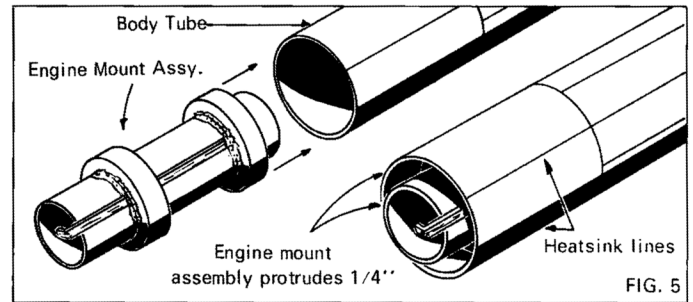
## MARK the BODY TUBE



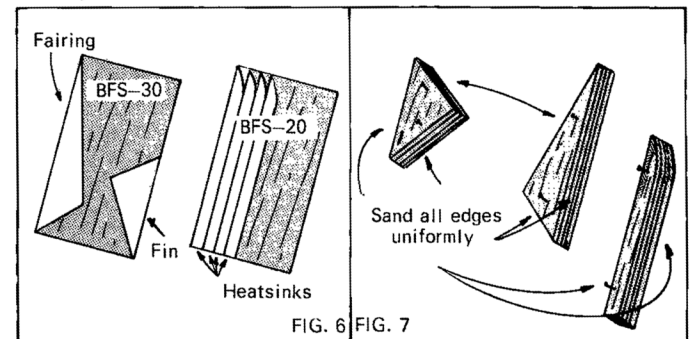
3 Cut out the body tube marking guide and wrap it around one end of the body tube so that the edge of the guide is even with the end of the tube. Draw a line all the way around the tube at the front edge of the marking guide. Make a small mark on the tube at each of the points indicated by arrows on the marking guide.

4 Using the notch in a drawer front extend the marks on the tube the full length of the tube. Number the lines as shown on the marking guide. Lines 1, 3, 5 and 7 are fin lines and stop at the line around the tube. Lines 2, 4, 6 and 8 are heatsink lines and extend to the rear of the tube.

## INSTALL ENGINE MOUNT



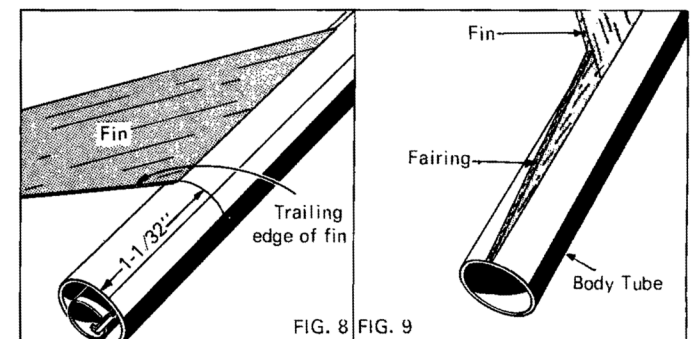
5 Spread a layer of glue inside rear end (the end which you marked) of the body tube. Insert the engine mount assembly's front end first, into the body tube, push it into place without stopping. Engine mount will be in place when 1/4" is protruding from end of body tube.



6 Cut out the patterns for the fins, fairings and "heatsinks". Trace out one fin and one fairing on each of the four sheets of BFS-30 as illustrated in fig. 2. Make sure that the grain runs in the direction indicated on the pattern. Mark out four copies of the heatsink on the sheet of BFS-20.

7 Using a straight edge as a guide, cut out the parts you have drawn on the balsa sheets. After all of the parts are cut out, pin all four of the fins together and sand them until all are the same size. Repeat this step with the fairings and heatsinks.

## ATTACH FINS, FAIRINGS and HEATSINKS



8 Spread glue along the root edge of a fin and align it on a fin line on the body tube. The trailing edge of the fin should be exactly on the 1-1/32" ring around the body tube. Line up the fin very carefully and make sure it is vertical when sighting along the top of the tube. Repeat this step with the remaining fins, working slowly and carefully to make sure that all of the fins are in their right places and aligned with the tube and with each other.

9 Spread glue along the root edge of one of the fairings and align it ahead of a fin. The short angle on the fairing joins the fin to form a continuation of the fin, so position it to match the fin as closely as possible. Repeat this step with the remaining fairings.

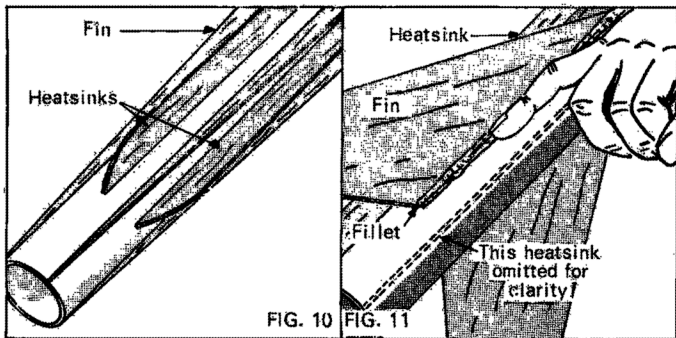


FIG. 10 FIG. 11

□ 10 Spread glue along the root edge of one of the heatsinks. Position this part on a line between the fins with the rear of the heatsink even with the rear of the body tube. Repeat this step with the other heatsinks.

□ 11 Apply a fillet of glue to the root edges of the fins, fairings and heatsinks. This is best accomplished by running a small amount of glue on the joint and then smoothing it out with the tip of your little finger. When the fillets have been applied to all of the joints, set the model aside to dry. (While drying, the model should be held on its side. Do not, however, rest it on its fins.)

### ANCHOR the SHOCK CORD

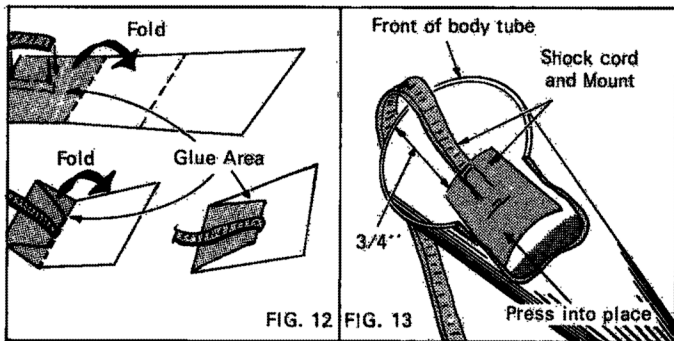


FIG. 12 FIG. 13

□ 12. Cut out the shock cord mount and prefold on the dotted lines. Lay the mount out flat, apply glue to section 1 and lay the shock cord into the glue. Fold this section over as shown in the illustration. Spread glue over the back of the first section and the exposed part of the second section. Lay the shock cord as shown and fold over again.

13 Apply glue to the inside of the front end of the body tube, about 3/4" in from the end. Lay the shock cord mount on the glue and press to the shape of the tube.

□ 16 The original model was painted silver and transparent blue. The steps involved are as follows: After the balsa is sealed and sanded, the entire model is given 2 coats of white and allowed to dry overnight. Then the model is given two coats of silver spray paint. The rings and nose cone remain silver and so are removed before applying two very light coats of transparent blue to the body tube, heatsinks and fins of the bird. After the paint has dried (any transparent paint applied over a metallic base paint dries more slowly than does a standard paint finish, so for best results let the bird dry overnight) scrape away the paint on the edges of the heatsinks where the rings seat. Be careful not to scrape away any of the wood.

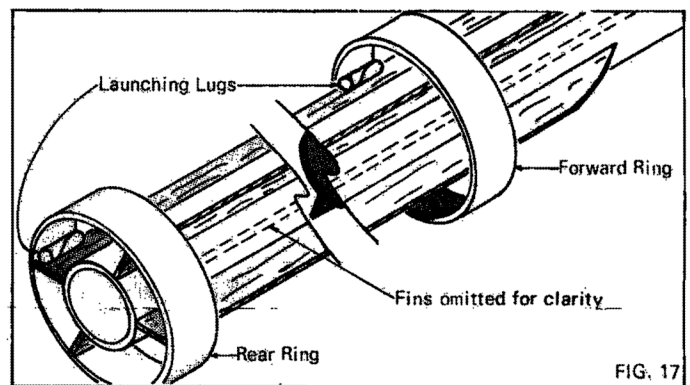


FIG. 17

□ 17 Cut the LL-2A launch lug in half. This will give you two launching lugs 5/8" long. Glue one launching lug to the inside of each of the rings (paralleling one of the heatsink marks left on the inside of the rings from step 18) making sure the lugs are at right angles to the edge of the rings. It will be necessary to scrape away a small area of paint to get a good bond between the ring and the lug. After this has dried, glue the rings in place with the launching lugs against one of the heatsinks. (Make sure the lugs are both against the same side of the same heatsink!)

### RIGGING the CHUTE

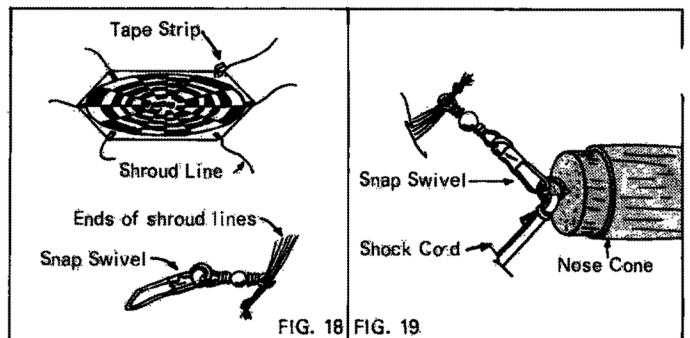


FIG. 18 FIG. 19

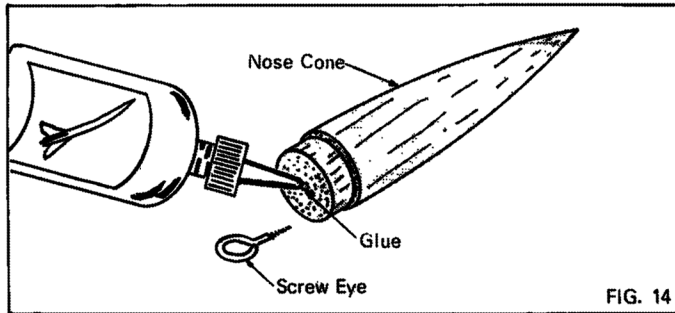


FIG. 14

14. Find the center of the nose cone and turn the screw eye into it. Remove the screw eye and force a small amount of white glue into the hole, then replace the screw eye and wipe away any excess glue around the hole.

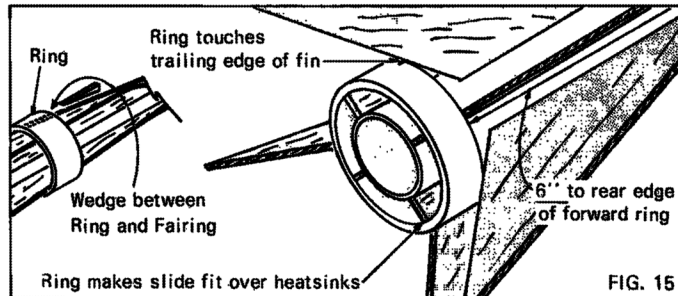


FIG. 15

15. Dry fit one of the RT-70 rings around the heatsinks at the rear of the rocket. Do not force the ring. It may be necessary to sand the edges of the heat sinks to make a slip fit. Repeat this step with the forward ring. This ring should rest lightly against the fairings, leaving a "V" shaped gap between the ring and fairing. Cut four small wedges from scrap BFS-30 and glue them to the fairings under the ring, but do not glue the rings in place at this time.

### PAINTING SUGGESTIONS

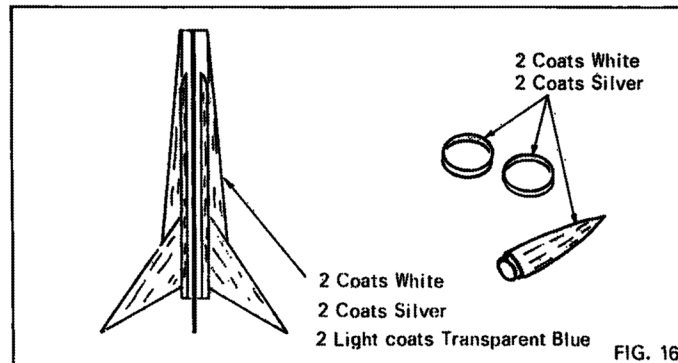


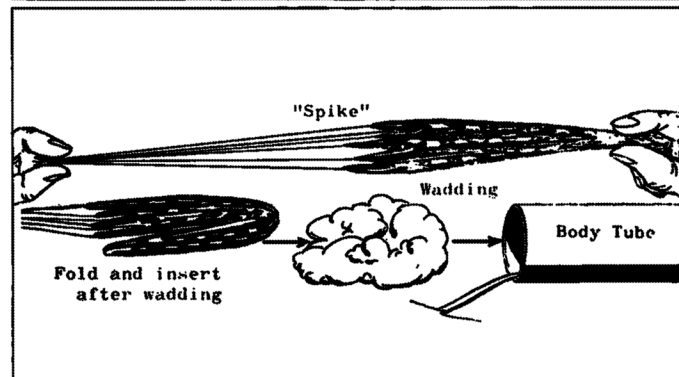
FIG. 16

18. Cut out the parachute on its edge lines as indicated on the plastic sheet. Cut six 18" lengths of shroud line cord and attach one shroud line to each point of the parachute with a tape strip as shown in fig. 20. Pass the ends of the shroud lines through the eye of the snap swivel and tie them in a knot.
19. Tie the free end of the shock cord into the screw eye in the base of the nose cone. Clip the snap swivel into the eye and your bird is finished.

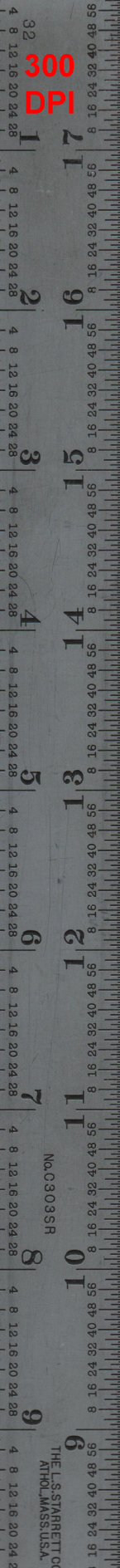
## GENERAL INFORMATION

The engine types recommended for use in this model are the A8-3, B6-4 and C6-5. For the first test flights the A8-3 engines should be used. This rocket should be flown only on calm days, as it will drift a considerable distance in a light breeze. Launch your rocket using a standard electrical launching system with a 1/8" diameter guide rod at least 36" long.

## COUNTDOWN CHECK LIST



11. Pack flame proof wadding into the body of the rocket. (4 or 5 squares should do.)
10. Form the parachute into a "spike", then fold it over three times and shove it into the body tube on top of the wadding. Roll up the shock cord and shroud lines and stuff them in on top of the parachute. Slide the nose cone into place.
9. Install an electrical igniter in the engine of your choice as per the instructions that came with the engines. Slide the engine into place.
8. Place the rocket on the launching rod. Check to be sure the panel is disarmed. Clean the micro-clips and attach them to the igniter leads.
7. Clear the area. Alert the tracking and recovery crew, check for low flying aircraft.
6. Arm the launch panel and begin your final count...
- 5   -4   -3   -2   -1   LAUNCH!



300  
DPI

No.0303SR

THE L.S. STARETT CO.  
ATHOL, MASS. U.S.A.

1/16"

**HEATSINK**

(Make 4) — BFS-20

GRAIN

**SP-32  
STARLIGHT**

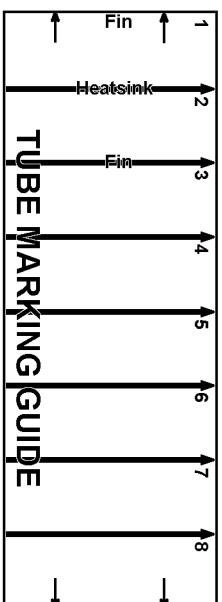
3/32"

**FAIRING**

(Make 4)

BFS-30

GRAIN



**Print on 67 lb.  
Cardstock**

3/32"

**FIN**

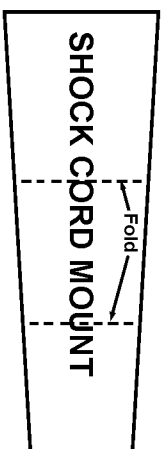
(Make 4)

BFS-30

GRAIN

**SHOCK CHORD MOUNT**

Fold



## PARTS LIST KIT NO. K-32 - Starlight

Quantity	Description	Type	Number	Detail1	Detail2	Detail3	Detail4	Comment
1	PAPER BODY TUBE	BT-20J	30326	2.75" long	0.710" ID	0.736" OD	0.013" wall	Glassine
1	PAPER BODY TUBE	BT-50L	30366	12.7" long	0.950" ID	0.976" OD	0.013" wall	Glassine
4	BALSA FIN STOCK	BFS-30	3168	3" wide	9" long	3/32" thick	0.09375	
1	BALSA FIN STOCK	BFS-20	3164	3" wide	9" long	1/16" thick	0.0625	
1	ENGINE HOLDER	EH-2	3141	2.8" long	.100" wide	.025" thick		Reg. & D
1	Shroud Line	SLT-108	38239	108"	.020" diameter	Twisted cotton		
1	Shock Cord	SC-1	85730	18" long	1/8" wide			Rubber
2	PAPER BODY TUBE	RT-70	40172	.680" long	2.175" ID	2.217" OD	0.021" wall	Glassine
1	BALSA NOSE CONE	BNC-50Y	73001	4.375" long	.976" dia.	0.75" shoulder		
2	CENTERING RING	AR-2050	3101	0.25" long	0.737" ID	0.949" OD	0.106" wall	
1	Parachute	PK-18A	85566	18" dia.	18" x 6 Shrouds	LDPE plastic	Org/Wht	
6	Tape Strip	TD-2F	2297	1/4" wide	3/4" long	Paper	Self-Stick	6x
1	Screw Eye (Small)	SE-2	2283	3/4" long				
1	Snap Swivels	SV-12	2291	1" long				
1	LAUNCH LUG	LL-2A	2321	5/32" ID	1/8" rod	1-1/4" long		
1	Pattern Sheet	SP-32	N/A	4" wide	10" long	67 lb. card		Scan



Handwritten label: "K-32 Starlight Rocket"







Image by Gerry Fortin

**ESTES**

Model Rocketry

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DEMONSTRATION  
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**\$2.75**

**STARLIGHT**  
KIT NO. K-32

SPECIFICATIONS	RECOMMENDED ENGINES
Length 18"	A5-2, A5-3, B5-6
Nose Dia. 0.975"	C5-1
Weight 2 oz.	Use A5-2 for Test Flight

PARACHUTE RECOVERY

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