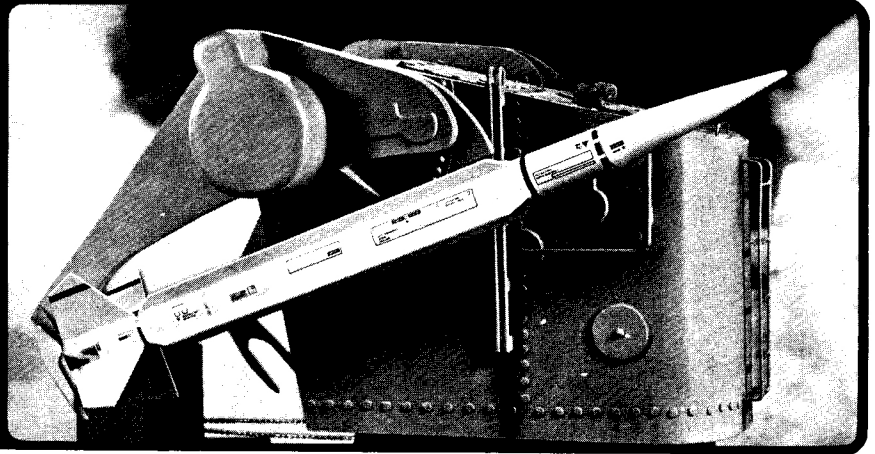# TARTAR

U.S. Navy Surface-to-Air Missile

SKILL LEVEL 2   SEMI-SCALE

HONORABLE MENTION
DESIGN OF THE MONTH

By TOM HULDERMAN
Lakeside, California

ESTES INDUSTRIES ROCKET PLAN NO. 83

BUILD THE TARTAR WITH ESTES HIGH PERFORMANCE PARTS AND ACCESSORIES.
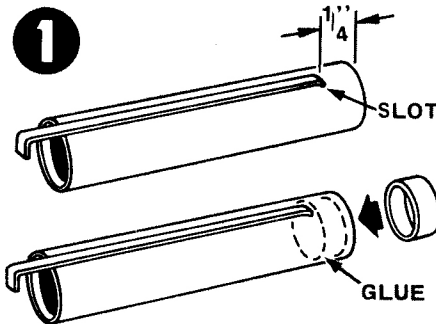
PARTS LIST

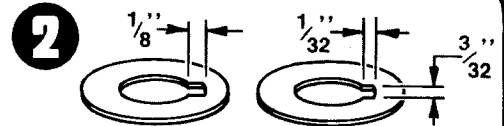|		
1	18" Body Tube	BT-55
1	Nose Cone	BNC-55AC
1	Launch Lug	LL-2A
1	Screw Eye	SE-2
1	Shock Cord	SC-1
1	18" Parachute	PK-18
1	Balsa Fin Stock	BFS-30
1	Balsa Fin Stock	BFS-30W
1	Engine Mount	EH-2055
1	Engine Hook	EH-2

ADDITIONAL MATERIALS

Hobby Knife
White Glue
Ruler
Sanding Material
Sanding Sealer
Enamel Paint (Spray)
Sharp Pencil

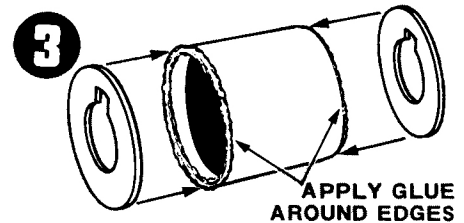### RECOMMENDED ENGINES
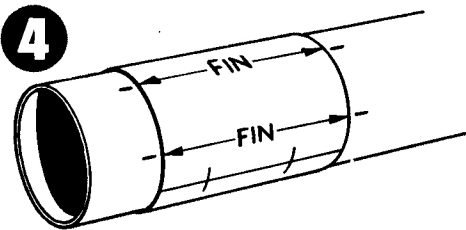
B4-2	B6-4	C6-5

1 Mark the BT-20 engine tube 1/4" from one end. Punch a 1/8" wide slot on this mark and insert EH-2 engine hook. Spread glue 1/4" inside the end of the engine holder tube nearest the slot and insert the engine block. Push it in place until it touches engine hook and is flush with the end of the engine holder tube.
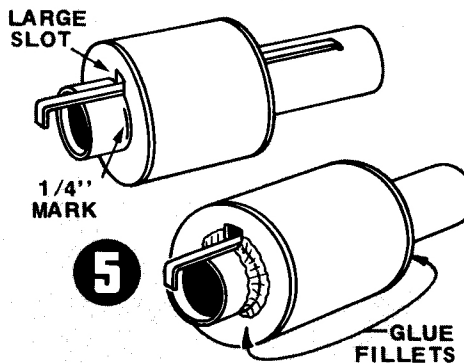
2 Cut a 1/32" deep by 3/32" wide slot on the inside surface of one 2055 spacing ring. Cut a 1/8" deep by 3/32" wide slot on the inside surface of the other 2055 spacing ring.
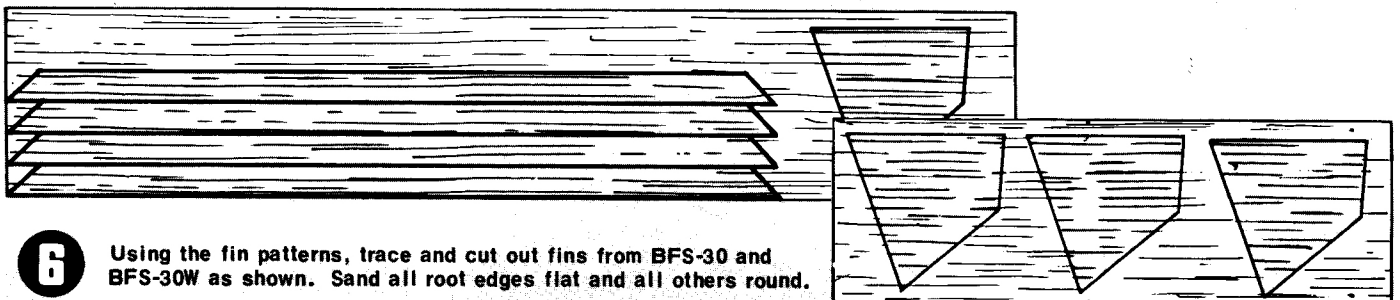
3 Apply a line of glue around each end of the stage coupler. Place a spacing ring on each end as shown and wipe off excess glue. Be sure that slots are in line with each other. Set this and the engine holder assembly aside to dry completely.

Mark the engine holder tube 1/4" from the end (end opposite engine block) as shown. Slide the engine holder assembly into the adapter assembly so the spacing ring with the larger 1/8" X 3/32" slot is on the 1/4" mark. Apply a fillet of glue around each ring-body tube joint, being careful not to get glue in the spacing ring slots. Allow unit to dry completely.

4 Cut out the body tube marking guide. Wrap it around the rear of the body tube and mark the tube at each arrow point. Remove the guide and draw a straight line the entire length of the tube connecting each matching front and rear mark.
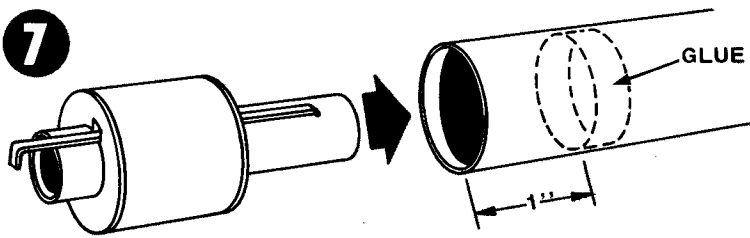
5 LARGE SLOT   1/4" MARK   GLUE FILLETS

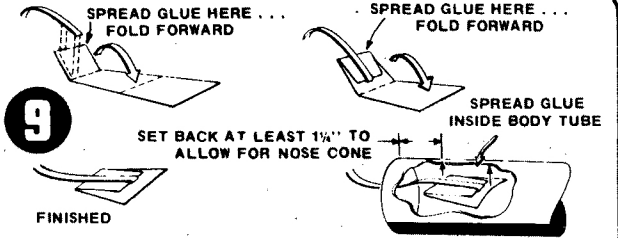**6** Using the fin patterns, trace and cut out fins from BFS-30 and BFS-30W as shown. Sand all root edges flat and all others round.
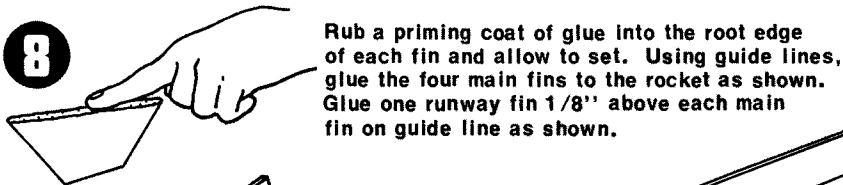
7

GLUE

Spread a layer of glue 1'' inside one end of the BT-55 body tube. Slide the engine mount assembly into the body tube until the end of the engine tube is flush with the BT-55. Do not pause during this operation or the glue may stick with the mount in the wrong place.

9

SPREAD GLUE HERE...
FOLD FORWARD

SPREAD GLUE HERE...
FOLD FORWARD

SPREAD GLUE
INSIDE BODY TUBE

SET BACK AT LEAST 1¼'' TO
ALLOW FOR NOSE CONE

FINISHED

Cut out the shock cord mount. Assemble as shown. When gluing mount into body tube, press it down until glue sets.

10

Cut launch lug (LL-2A) in half. Glue launch lugs between body tube and one runway fin 1'' from each end of runway fin as shown.
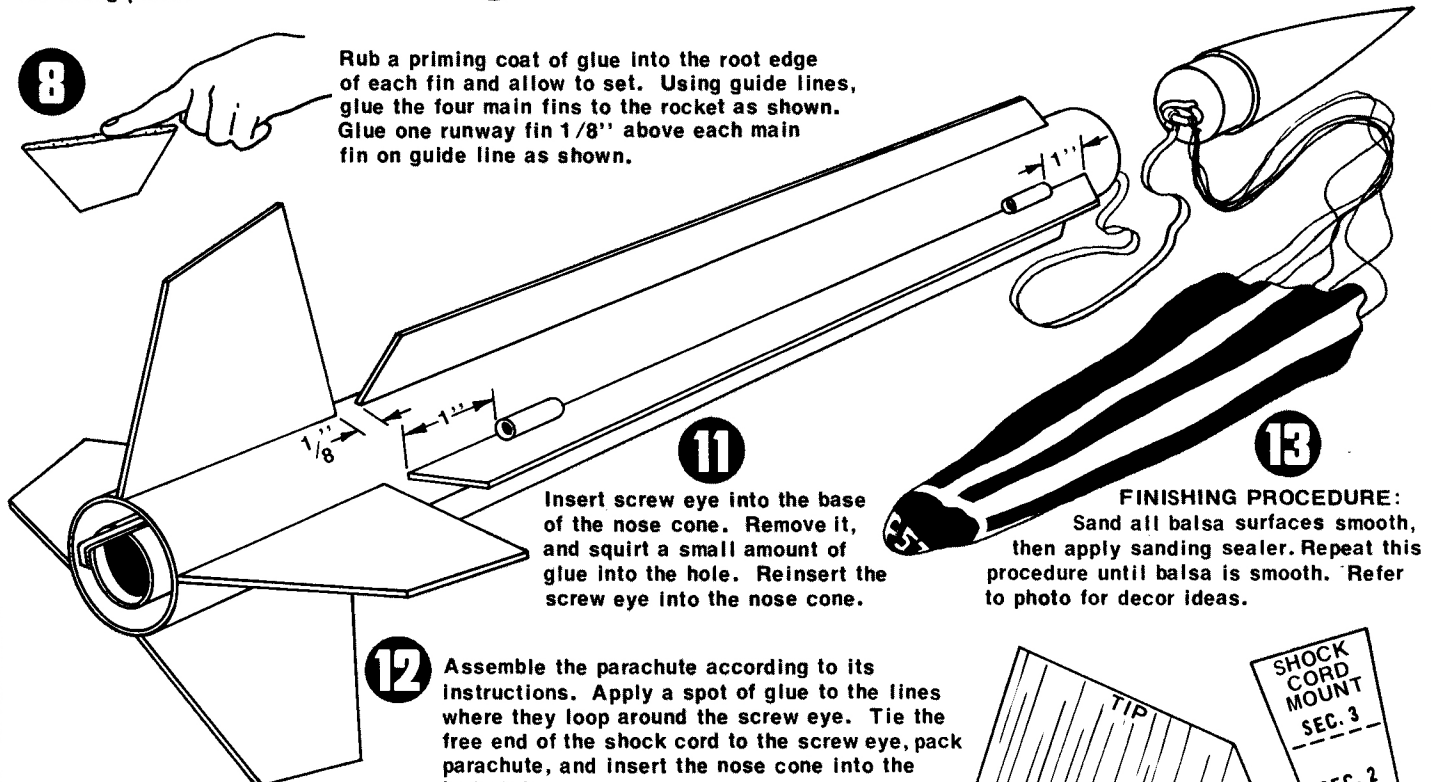
8

Rub a priming coat of glue into the root edge of each fin and allow to set. Using guide lines, glue the four main fins to the rocket as shown. Glue one runway fin 1/8'' above each main fin on guide line as shown.
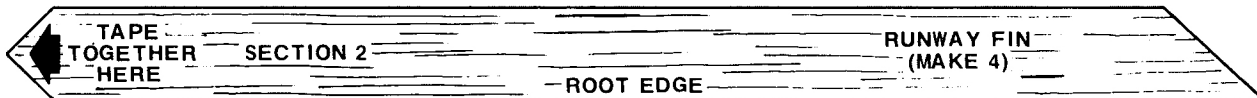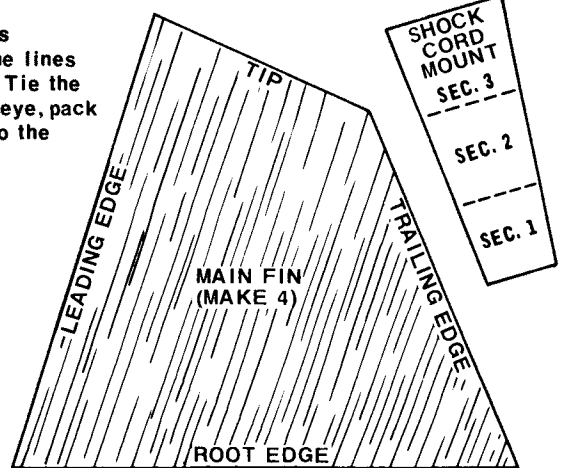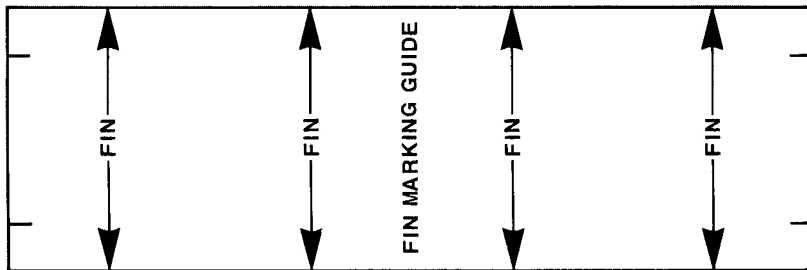
1/8''   1''

11

Insert screw eye into the base of the nose cone. Remove it, and squirt a small amount of glue into the hole. Reinsert the screw eye into the nose cone.

13

FINISHING PROCEDURE: Sand all balsa surfaces smooth, then apply sanding sealer. Repeat this procedure until balsa is smooth. Refer to photo for decor ideas.

12

Assemble the parachute according to its instructions. Apply a spot of glue to the lines where they loop around the screw eye. Tie the free end of the shock cord to the screw eye, pack parachute, and insert the nose cone into the body tube.

FIN   FIN   FIN MARKING GUIDE   FIN   FIN

TIP

LEADING EDGE

MAIN FIN
(MAKE 4)

TRAILING EDGE

ROOT EDGE

SHOCK
CORD
MOUNT
SEC. 3
SEC. 2
SEC. 1

TAPE
TOGETHER
HERE   SECTION 2   RUNWAY FIN
(MAKE 4)

ROOT EDGE

TAPE SECTION 1 AND SECTION 2 TOGETHER TO FORM A ONE PIECE PATTERN

SECTION 1   TAPE
TOGETHER
HERE

ROOT EDGE