

# Estes Industries Rocket Plan No. 36

## BEAT THE AIR FORCE... Build Your Own

# 260

## SPACE BOOSTER

Among the potential applications for the 260" diameter solid motors under study is a family of solid boosted general purpose space vehicles. Since such a booster could be produced at a comparatively low cost (around \$2.00 per pound), it would lend

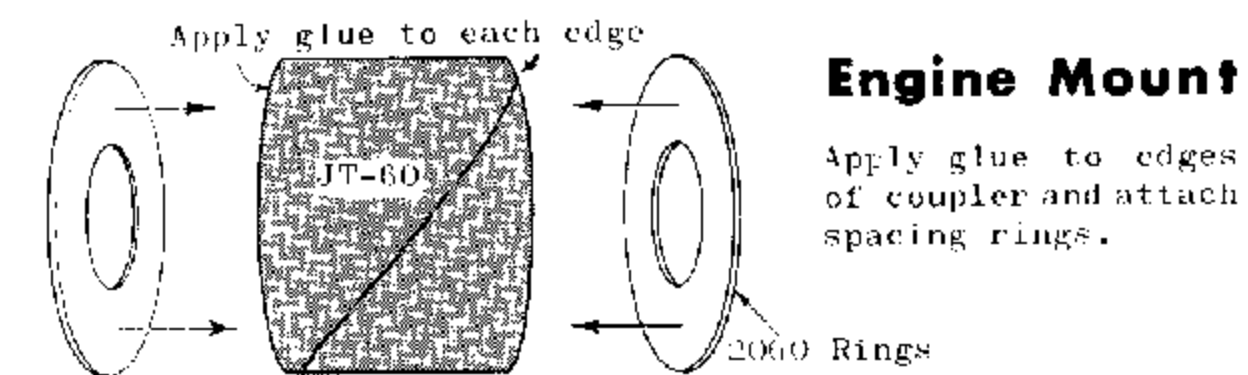
itself quite well to use with a wide range of upper stages. One proposed configuration would employ a single 260" solid as the first stage with a 156" solid second stage.

### PARTS LIST

To build your own 260, you will need the following parts:

- |   |                                |                                       |
|---|--------------------------------|---------------------------------------|
| 1 Body Tube--Part #BT-50H (7.75")       | 1 Stage Coupler--Part #JT-60C  | 1 Shock Cord--Part #SC-1              |
| 1 Body Tube--Part #BT-60K (7")          | 3 Adapter Rings--Part #RA-2060 | 1 Parachute Kit--Part #PK-12          |
| 1 Body Tube--Part #BT-20 (Cut to 4.25") | 1 Engine Block--Part #EB-20A   | 1 Sheet Clear Fin Stock--Part #CFS-20 |
| 1 Balsa Adapter--Part #TA-5060          | 1 Screw Eye--Part #SE-1        | 1 Sheet Clear Fin Stock--Part #CFS-40 |
| 1 Balsa Adapter -- Part # TA-550        |                                | 1 Launching Lug--Part #LL-2B          |

### ASSEMBLY

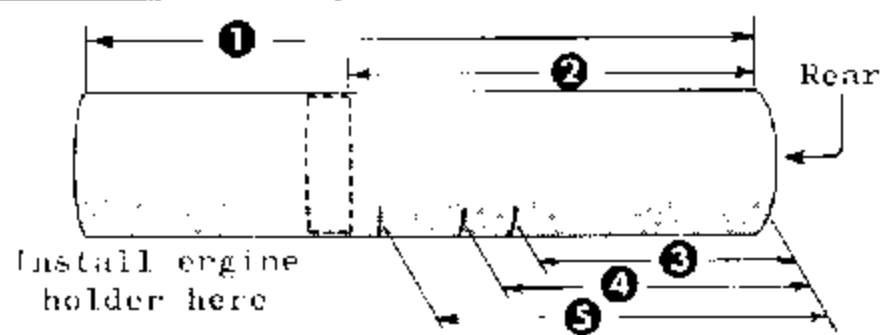


#### Engine Mount

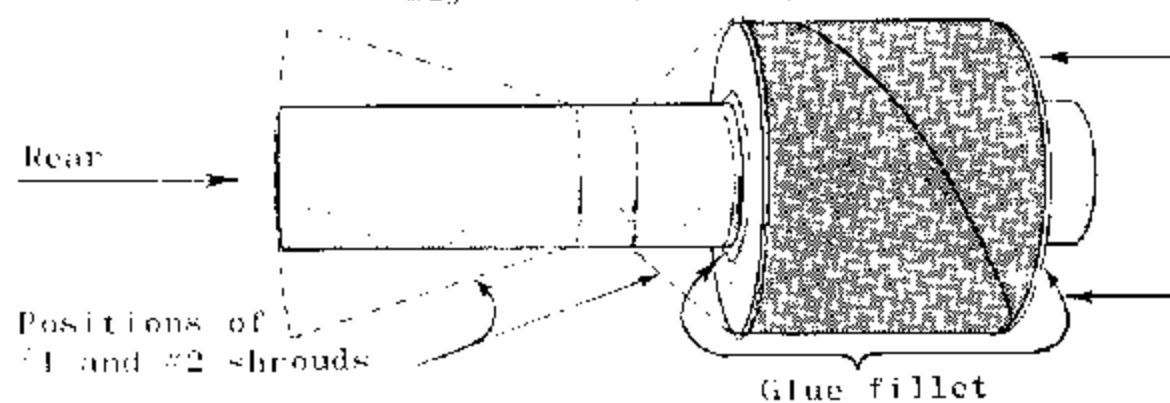
Apply glue to edges of coupler and attach spacing rings.

Dimensions:

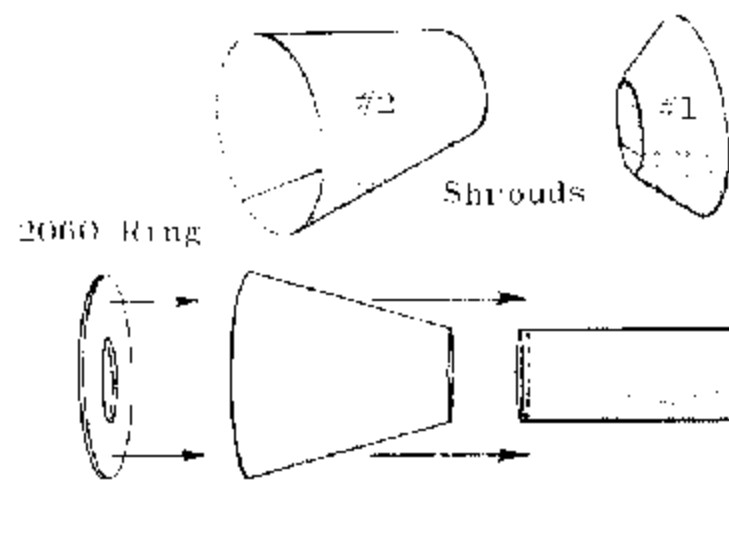
- ① - 4-1/4"
- ② - 2-1/2"
- ③ - 1-1/2"
- ④ - 1-7/8"
- ⑤ - 2-1/4"



Mark the engine holder tube as shown above, making all measurements from the rear end. #3 and #4 are shroud markers and #5 positions the coupler-ring assembly as shown below.

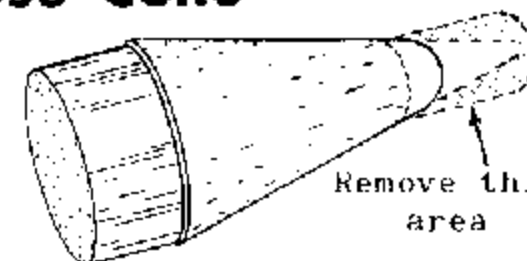


#### Form and Install Nozzle



Trace the shroud templates onto heavy paper, cut out and form the shrouds. Slide shroud #1 into place against the coupler and apply glue around both joints as shown. Slide #2 shroud ahead of its mark and put the last 2060 ring just on the rear of the engine holder tube and glue in place. #2 shroud is slid back and centered on the ring. Apply glue to coupler and shroud-tube joints. Let dry.

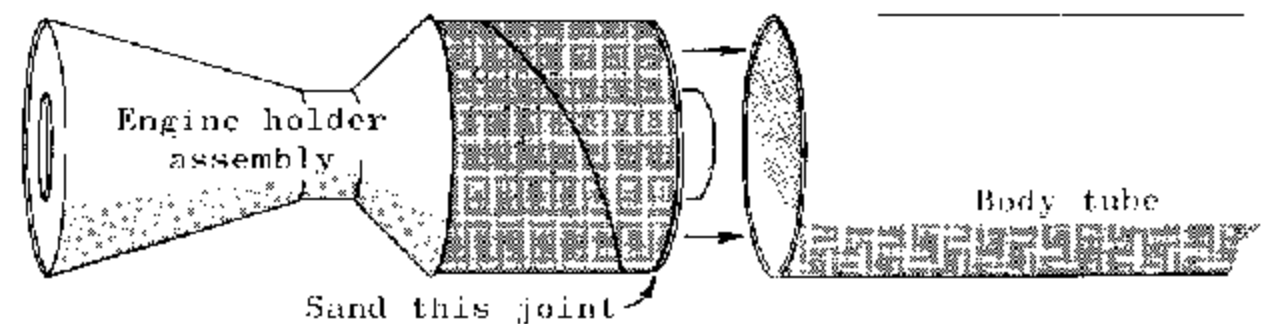
#### Shape the Nose Cone



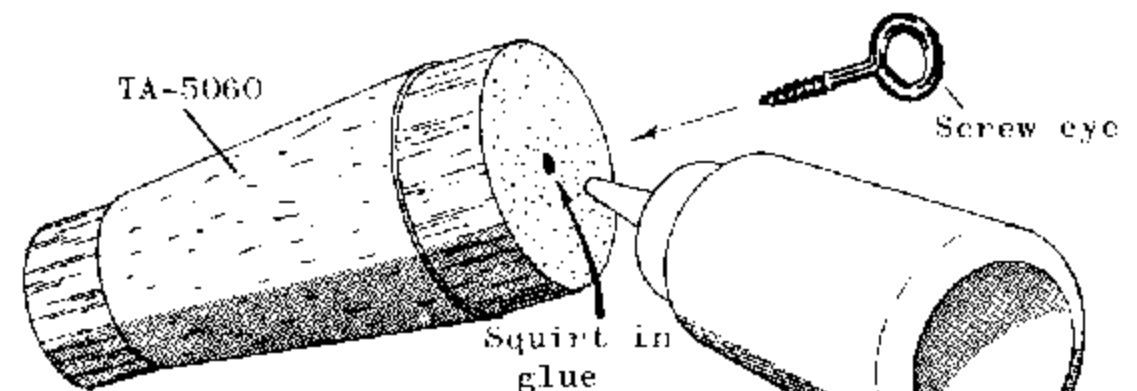
Trace the nose cone template onto cardboard and cut out. Carefully sand or carve away the shaded area of the TA-550 as is shown. Remove the excess length until the rounded shape is attained. Use the template frequently to check your work. Apply

a coat of Astro-Seal or sanding sealer and set aside to dry.

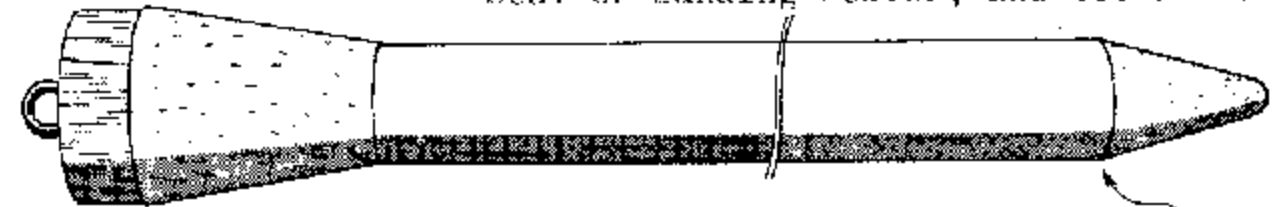
#### Assemble the Remaining Airframe



Sand the ring-coupler joint to get a smooth fit into the body tube. Spread glue inside one end of the BT-60K and slip the engine holder assembly into place. The edge of #1 shroud should be perfectly mated to the surface of the BT-60K.



Insert and remove the screw eye from the large end of the 5060 adapter. Squirt glue into the hole and re-insert the screw eye. Spread glue inside one end of the BT-50H and insert the other end of the 5060 adapter. Coat the tapered part of the adapter (including where it joins the tube) with Astro-Seal or sanding sealer, and set aside

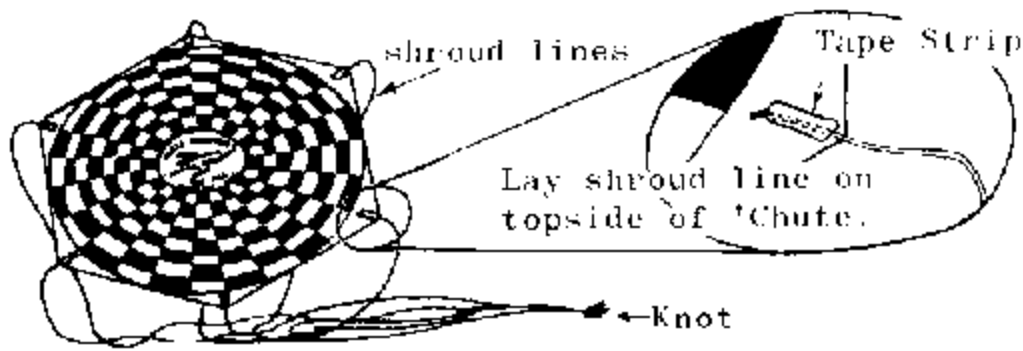


to dry. Check the fit of the nose cone at this time and sand it as necessary to obtain a smooth transition from the cone to the tube.

## Install the Shock Cord

Refer to the Idea Box (Page 5) for the new shock cord mount and use it here. This new mounting is stronger and affords more protection to the shock cord from ejection gases.

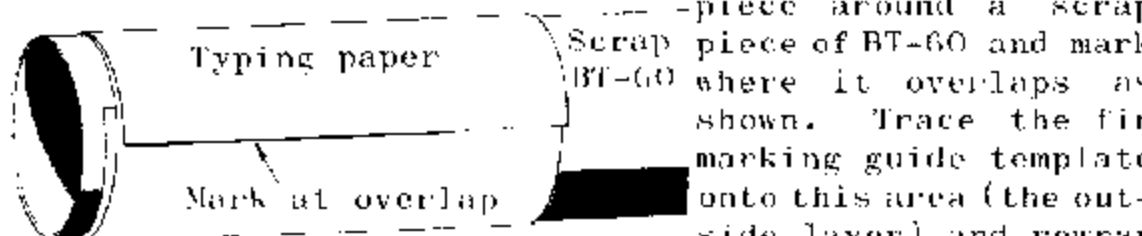
## 'Chute Construction



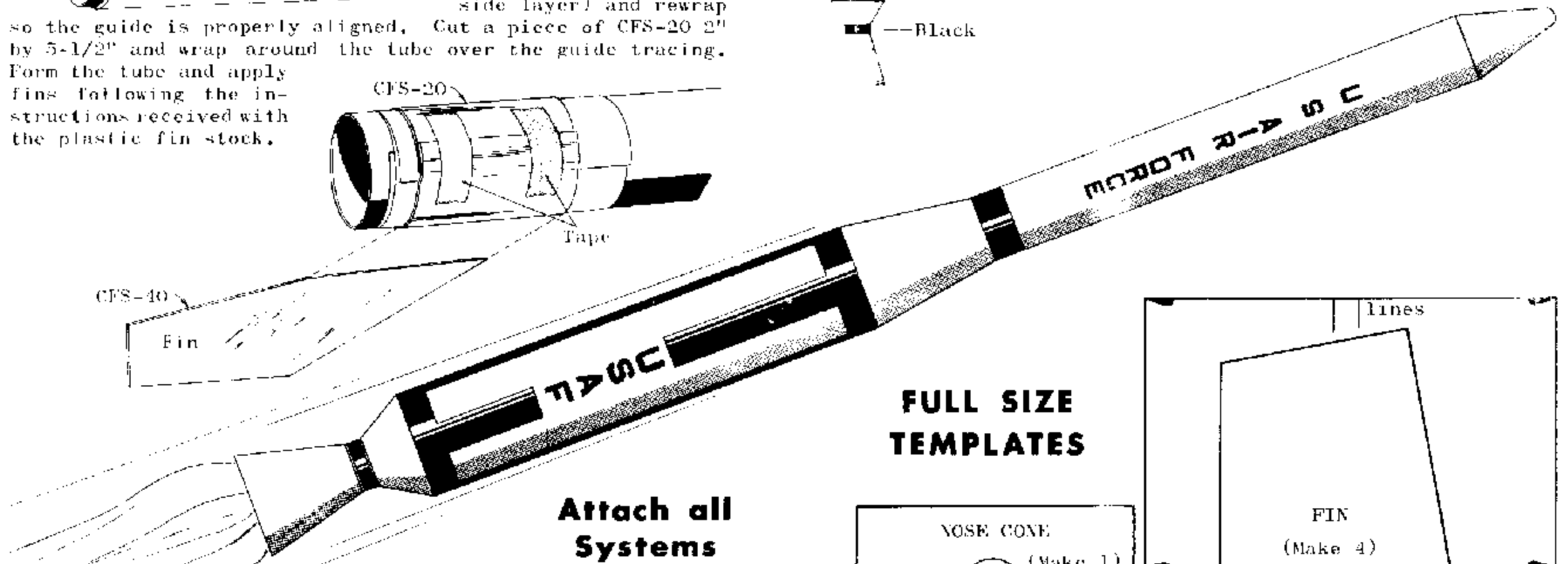
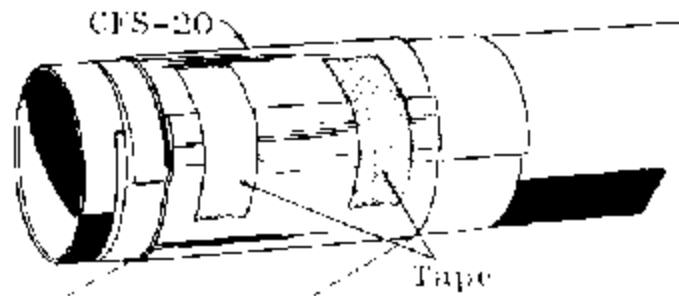
Standard parachute assembly is used as shown. If you have a snap swivel tie it in at the shroud line ends.

## Prepare the Fin Unit

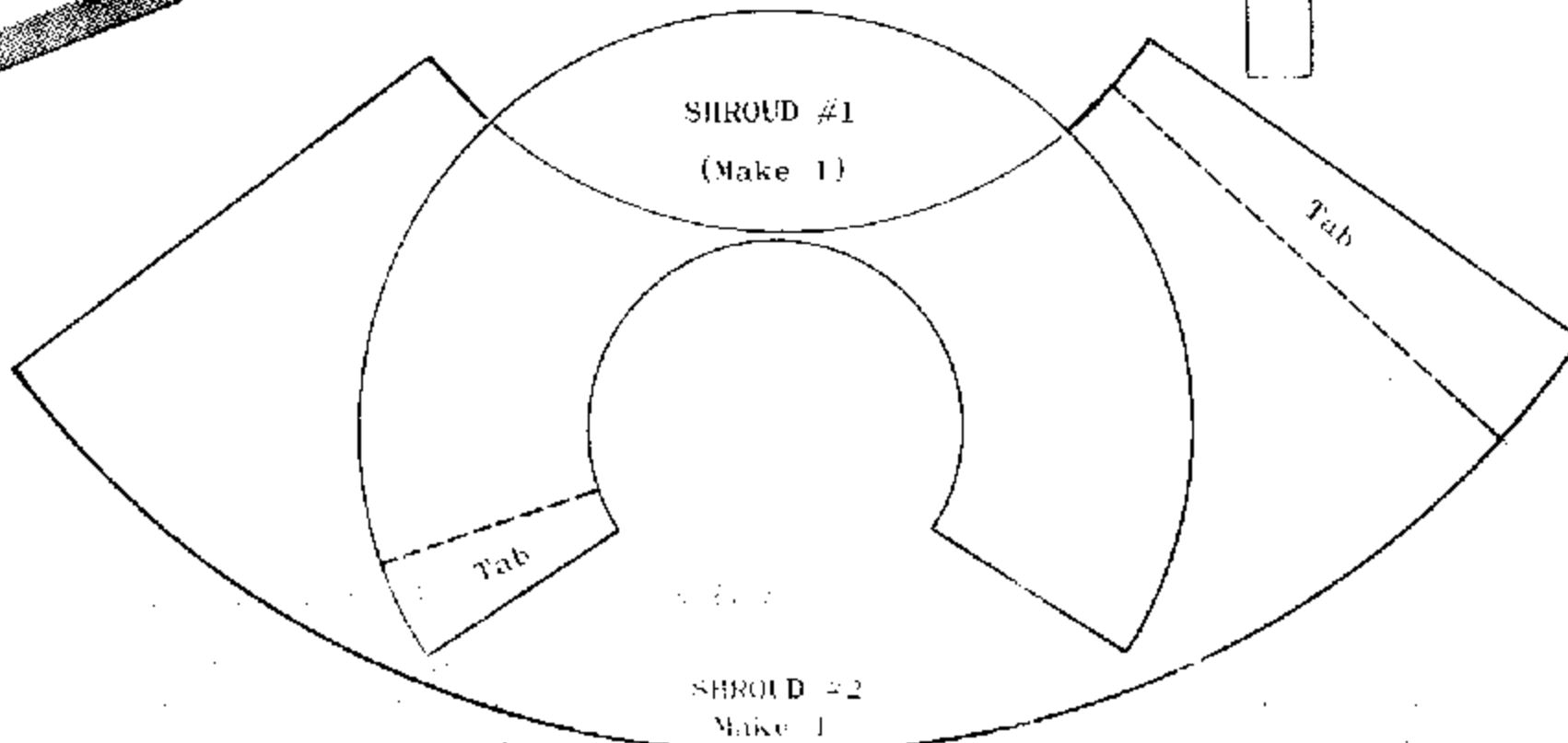
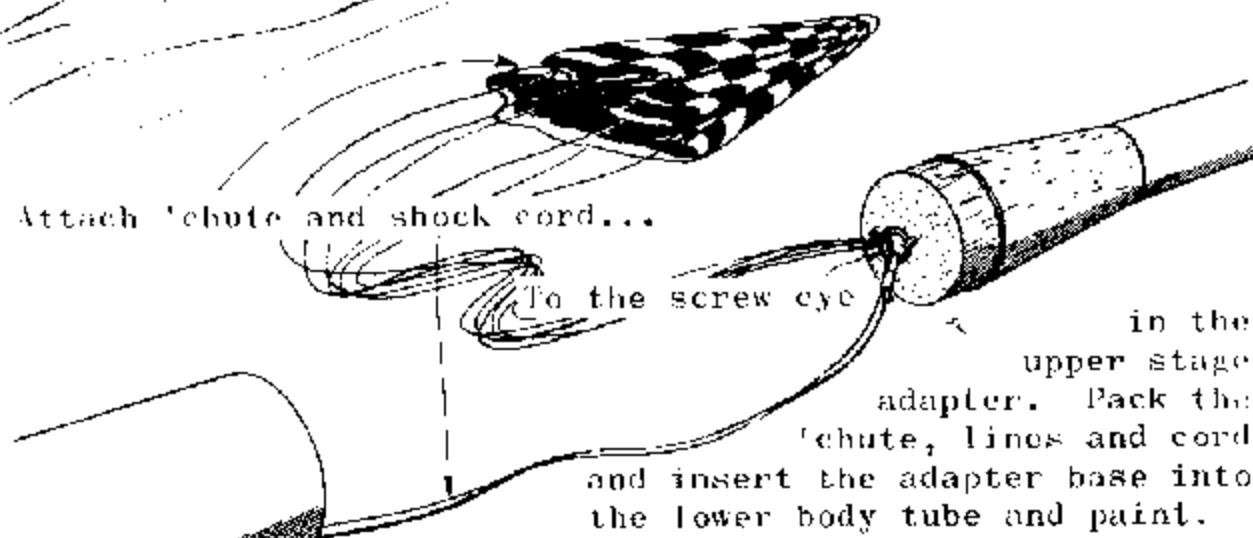
Cut a sheet of typing paper in half the long way. Wrap one piece around a scrap BT-60 and mark where it overlaps as shown. Trace the fin marking guide template onto this area (the outside layer) and rewrap so the guide is properly aligned. Cut a piece of CFS-20 2" by 5-1/2" and wrap around the tube over the guide tracing.



Form the tube and apply fins following the instructions received with the plastic fin stock.



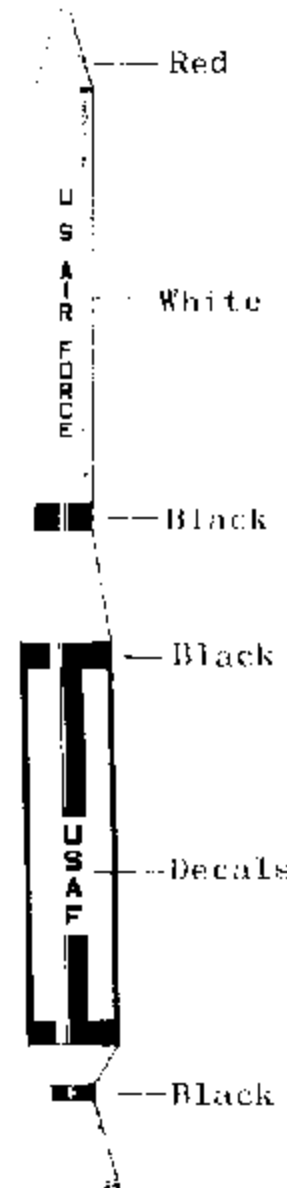
## Attach all Systems



## Paint Details

Seal all balsa surfaces using Astro-Seal or sanding sealer. If desired, apply putty to the cone joints, dry and sand smooth.

Remove the nose cone. Use a JT-50 and scrap BT-30 as a holder and give the entire body (including nozzle) a mist coat of white. When dry, lightly sand all surfaces and repeat. Apply a final coat of white and set aside to dry. Follow the same procedure in painting the nose cone red. (Same holder can be used without the coupler.) The black pattern may be applied with decorating tape (DT-1) or painted on. Decals are cut from the #D-5 sheet and applied. The same pattern is used on the opposite side.



## FULL SIZE TEMPLATES

