

# Estes Industries Rocket Plan No. 52

## JAGUAR JGD-2

3-ENGINE CLUSTER  
'CHUTE RECOVERED!

Published as a service to its customers by Estes Industries, Inc., Box 227, Penrose, Colo. 81240

© Estes Industries 1967

1. Cut three 8.55" lengths of BT-20, make a slit 2-1/2" from the end of each tube and glue an EH-2 in each tube. Wrap a 2-1/2" strip of TH-1 around the tube/EH-2 assembly 1-1/4" from the end of each tube.
2. Lay two of the tubes side by side on a flat surface and join with a heavy layer of glue. When the glue has set, glue the third tube into the "V" formed by the first two tubes.
3. Cut out the transition base plate and the transition tubes using the template. Glue the transition plate to the forward end of the three-tube engine assembly. Glue the flat edges of the transition tubes together. Let this assembly dry, then run a glue fillet on the inside of each joint.
4. Glue the tube assembly to the transition plate, center the assembly very carefully and let dry. Run a glue fillet on the inside of the tube-plate joint.
5. Put glue on the end of the long tabs of the second stage body tube and insert into the hole in the top of the transition, making sure that the tabs seat between the holes in the plate. Run a line of glue around the top of the transition and let dry.
6. Cut out the transition shroud and glue together. When the shroud is dry, slide it into place over the transition. Lightly mark the joint made by the shroud and transition -- slide the shroud back and run a thin line of glue round the joint line and slide the shroud into place. Run a thin fillet of glue round the joint at the top end of the shroud and smooth out with a finger. Set the assembly aside to dry thoroughly.
7. Cut a 3.63" length of BT-5 and glue to the TA-520. Make a nose cone as shown in the upper right side of the plans) and glue into the forward end of the BT-5.
8. Cut out the engine shroud and glue together. When it has dried, slide the shroud into place on the rear of the rocket. Fit the rear edge of the shroud flush with the rear edges of the engine tubes.
9. Trace the fin root and tip formers onto heavy cardboard for a template trace directly onto a sheet of BFS-40. Repeat this step with the fin brace pattern, but if traced directly to wood, make the brace pieces of BFS-20. Cut three pieces of BFS-40 2" x .15" for the trailing edges of the fins. Assemble the fins and glue into place on the lower shroud.

10. Assemble the parachute following the instructions in the kit the screw eye in the bottom of the TA-520 in the usual way. Assemble cord mount and install the shock cord at least 5/8" deep into the top of the rocket. Tie the free end of the shock cord and the free ends of the lines to the screw eye and your Jaguar's recovery system is complete.
11. Glue the launching lugs into place at the locations shown on the plans.

### GENERAL INFORMATION

If you have built and flown the Astron Ranger or the Astron Cobra you should have no problem in preparing the Jaguar for flight. If this is your first rocket, it will be to your benefit to prepare the "whip" shown in the Idea Box page of M. R. N. Vol. 1. An alternative method is shown in the Idea Box page of M. R. N. Vol. 2.

Recommended engines: 1 1/2 A, B-2, A, B-3, B-4, B-6

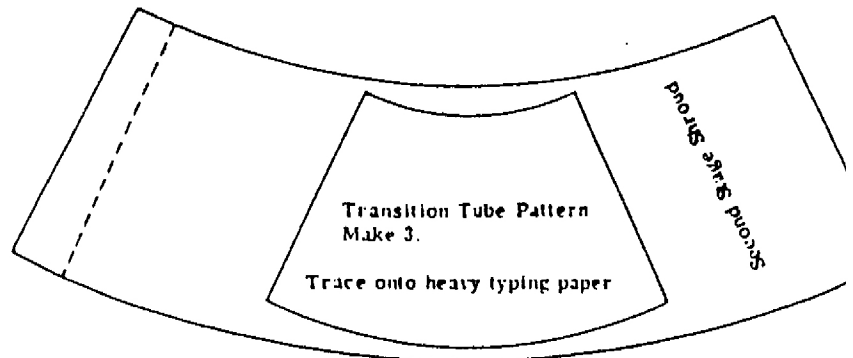
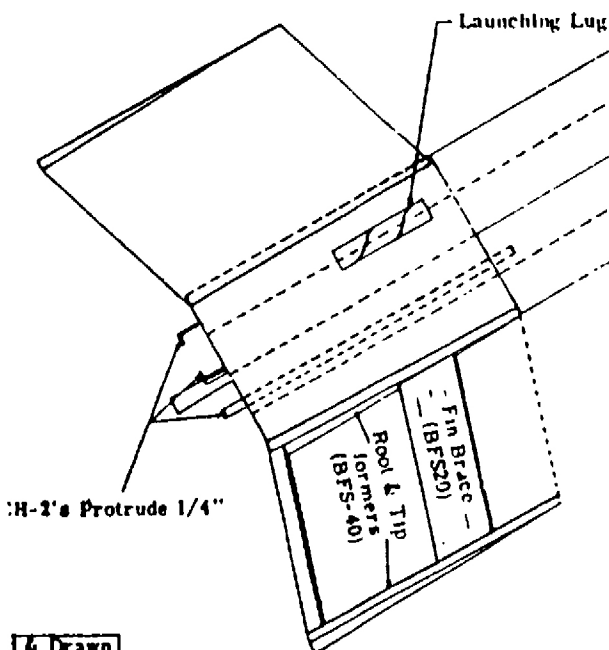


To Outside Wires

To Center

Launching Lug

Transition Tube Assy.



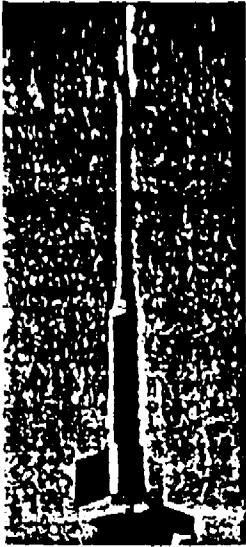
1/4 Drawn  
*[Signature]*

he kit. Install  
semble a shock  
opend of the  
of the shroud  
mplete.

n on the plans.

obra you will  
our first plus-  
in the picture.  
Vol. 6, #1.

B 8-6.



T-MINUS 5...  
and COUNTING!

### Parts List

1	Balancing Weight	NCW-3
3	Engine Holders	EII-2
1	Sheet Fin Stock	BFS-40
1	Launching Lug	LL-2B
1	Tube Adapter	TA-520
4	Body Tubes	BT-20
1	Body Tube	BT-5
1	Screw Eye	SE-1
1	Shock Cord	SC-1
1	Parachute	PK-12
3	Tape Hinges	TH-1

BNC-5V Can be turned down  
to make nose cone.



Nose Cone  
template



Center Wires

9.9"

#### ABOUT THIS BIRD

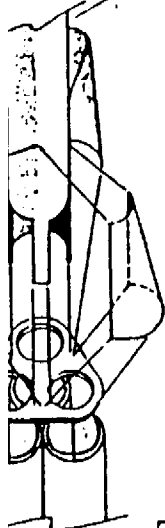
The Jaguar is an air launched rocket designed to gather data on the natural radiation belts surrounding the earth.

A three stage sounding rocket, the Jaguar consists of a cluster of three recruit motors in the first stage a single recruit motor as a second stage, and a fifth scale Sergeant as a third stage.

A U. S. Air Force project, the Jaguar is launched from B-47 aircraft on a pull-up into a near vertical position.

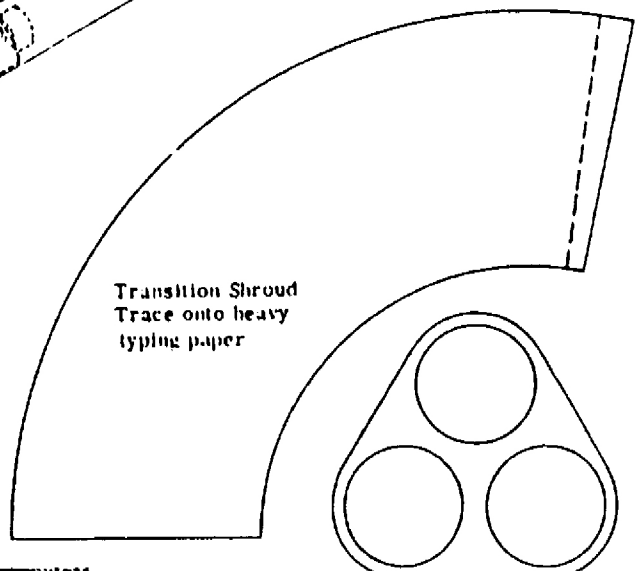
- Length, ft: 29
- Diameter, in: 15
- Weight, lb:
  - Loaded: 1,700
  - Payload: 35
- Altitude, miles: 500-600

Reference;  
International Missile and Spacecraft Guide.

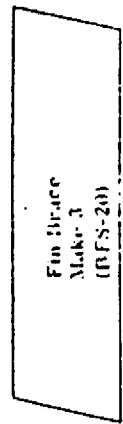


T + .0042 Sec.  
and LIFTING!

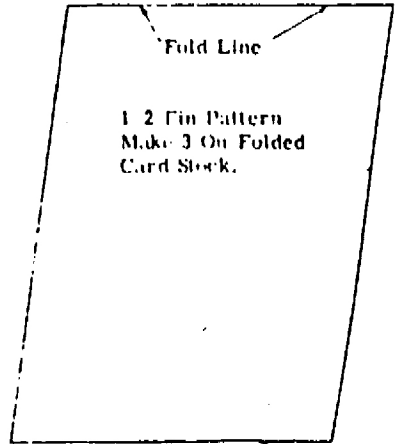
Transition Shroud  
Trace onto heavy  
typing paper



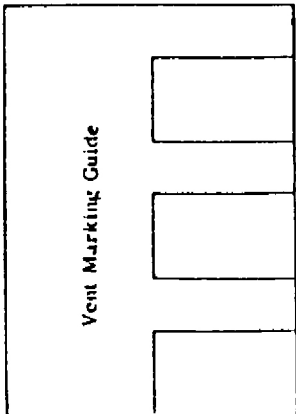
Transition Plate  
(Card stock)



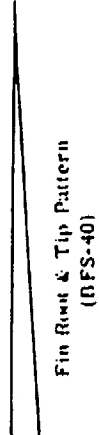
Fin Brace  
Make 3  
(BFS-20)



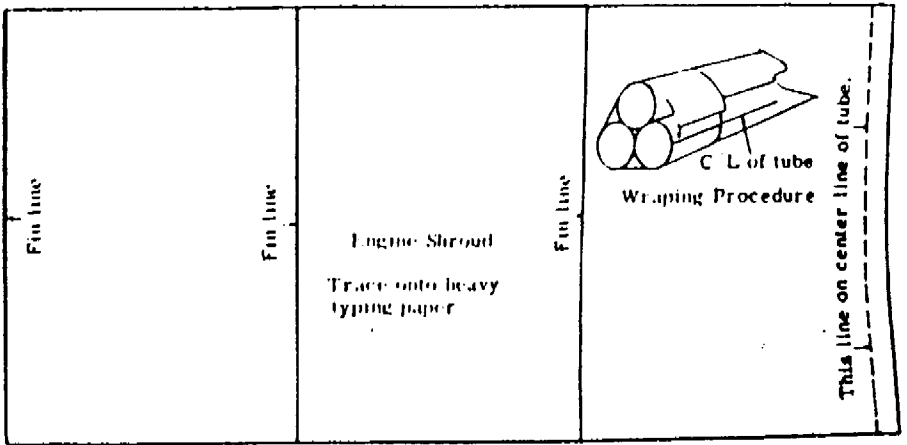
Fold Line  
  
1 2 Fin Pattern  
Make 3 On Folded  
Card Stock.



Vent Marking Guide



Fin Root & Tip Pattern  
(BFS-40)

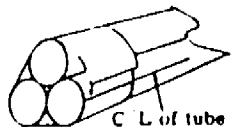


Fin line

Fin line

Engine Shroud  
Trace onto heavy  
typing paper

Fin line



C L of tube  
Wrapping Procedure

This line on center line of tube.