# INTREPID

## FLYING MODEL ROCKET


**Skill Level 4**

***49.5" Long***

**Specifications:**
Length—49.5"
Body Dia.—
above transition—2.25"
below transition—1.7"
Takeoff weight without
engine: 9.18 oz. (257 g.)

**Recommended F.S.I. Engines:** E60-4, F100-6
Cluster Pack (3 engines)
F100, (2) D20

**ADULT SUPERVISION RECOMMENDED**

This kit requires assembly. Launch system, engines, glue, and finishing supplies are not included.

**1032**

FLIGHT SYSTEMS Inc.

# Intrepid

## ASSEMBLY INSTRUCTIONS with Detail Sketches

*Skill Level 4*

An excellent flying model that can be flown with a single engine or with the cluster pack of engines shown on this page. Either way it is sure to be a crowd pleaser.

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Body Dia. —
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below transition — 1.7"
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F100, (2) D20
**Catalog Number 1032**
Ship Wt. 14 oz.

*All takeoff weights approximate.

FLIGHT SYSTEMS Inc.

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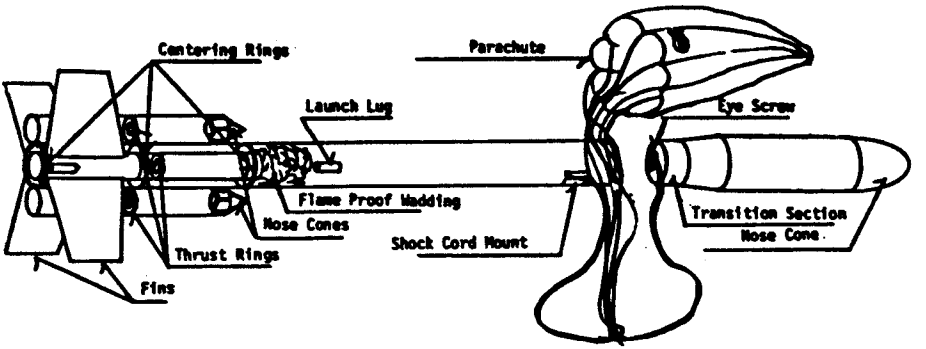
816-566-2011

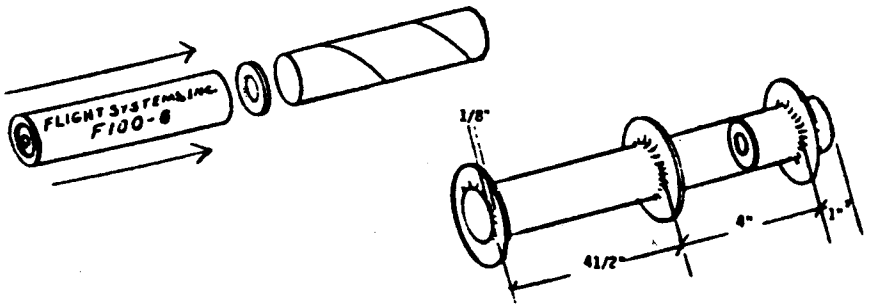



PARTS LIST:

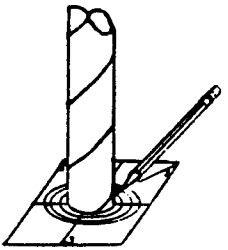
| | |
|---|---|
| 2 1.8 X 18" Body Tubes | 1 Eye Screw |
| 2 .903 X 9" Body Tubes | 1 Snap Swivel |
| 1 Nose Cone (2.25) | 3 Centering Rings (17F) |
| 2 Small Nose Cones | 2 1/8" X 1/8" Balsa Strips |
| 4 Fins | 1 22" Nylon Parachute |
| 1 Engine Holder Tube (1.13 X 9") | 1 2.25 X 9" Body Tube |
| 1 Thrust Ring (TR-2) | 1 Transition Section |
| 2 Thrust Ring (TR-1) | 1 Stage Coupler |
| 1 Shock Cord (32") | 2 1/4" Launch Lug |
| 1 Shock Cord Anchor | 1 Decal |

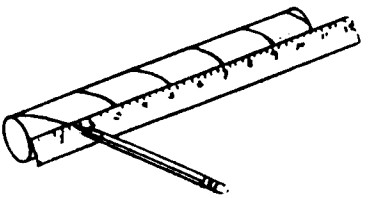
ASSEMBLY INSTRUCTIONS

Important:
Read through entire instructions before starting assembly. Check to be sure all parts are included. Test fit the parts together before applying any glue. If a part doesn't fit properly, sand or build up for precision fit. Please read each step before starting that step. Check off each completed step.

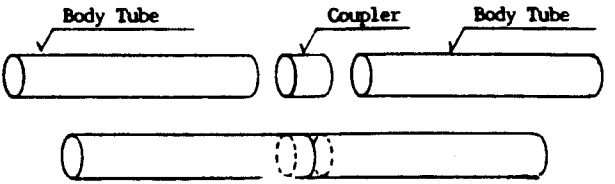



__ 1. First determine which size F.S.I. engine you intend to use in your Intrepid rocket (E60-6 or F100-6 is recommended). Locate the TR-2 thrust ring (1.13 O.D. fiber board ring) and the 9" X 1.13" I.D. engine holder tube. Next put a ring of inside of one end of the engine holder tube. Now using a F.S.I. 27mm engine push the thrust ring into the engine holding tube until the engine projects out of the end of the tube 1/2". Remove the engine. Install rings as pictured and glue in place. Apply a fillet of glue on each side of the rings as shown. Set aside and allow to dry.

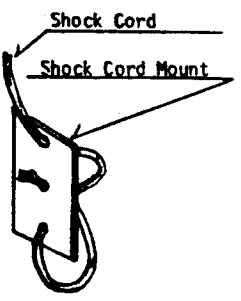


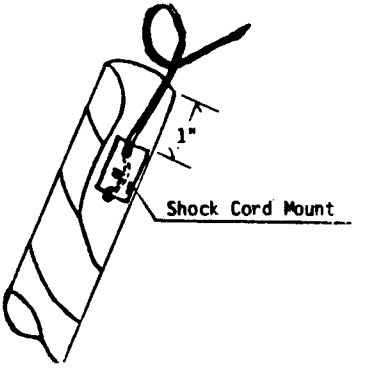


__ 2. Using fin placement guide mark lines on one of the 18" body tubes for 4 fins as shown. Also mark lines for SRB placement and launch lug placement. Using a straight edge extend lines parallel to the body tube about 9".

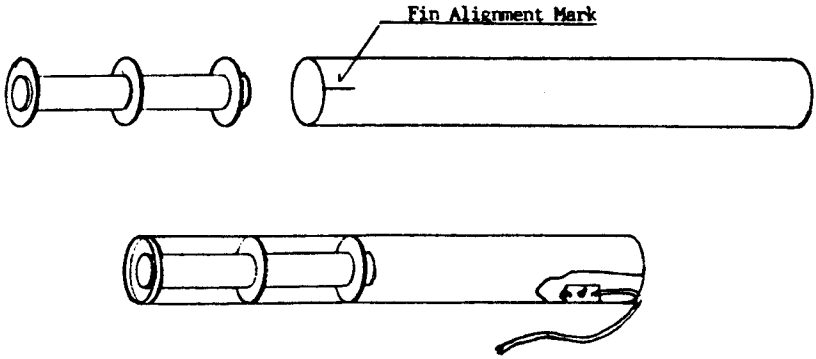



__ 3. Locate the SC-17 coupler. Put a ring of glue inside the end opposite fin placement marks of 18" body tube. Slide coupler in tube until it protrudes 1". Put a ring of glue inside one end of the other 18" body tube and slide over coupler until tubes butt together. Roll the assembly on a table or other flat surface to assure proper alignment. Lay on a flat surface and allow to dry.

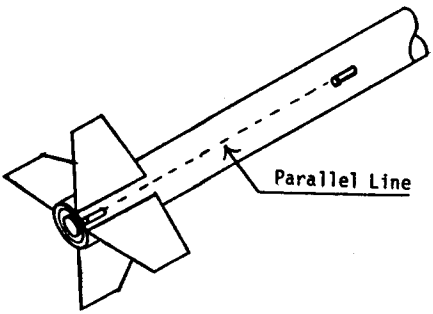


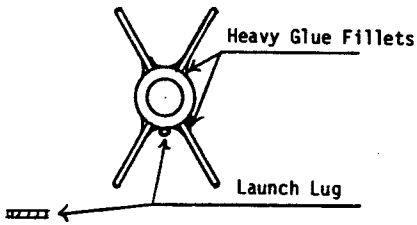




__ 4. Install shock cord in shock cord mount as shown. Spread a heavy layer of glue over the side opposite the shock cord knot. Curve shock cord mount and insert into end opposite fin alignment marks. Drawing shows the proper position in the body tube.

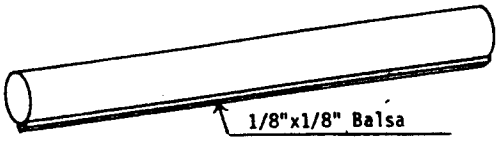



__ 5. Install engine mount assembly. Be sure the engine mount will slide easily into the body tube. If it is too tight sand the ring until a precision fit is obtained. Apply a ring of glue inside the body tube. Insert the engine mount assembly using one smooth motion until it is flush with the back of the body tube. DO NOT STOP pushing engine mount until it is in position or it will stick in the position in which you stopped. Also be sure to insert engine mount in end of tube that you have previously marked for fin alignment.

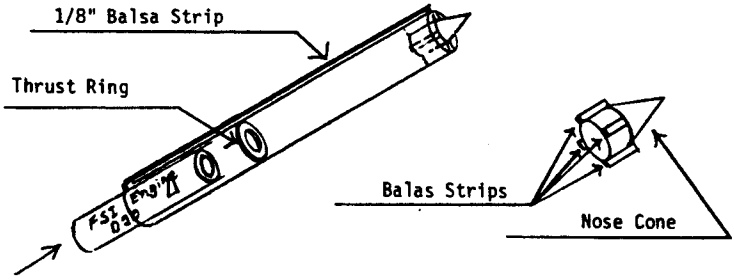


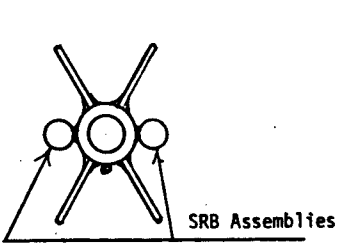

__ 6. Lightly sand and round the edges of all of the fins. DO NOT sand the root (red Colored) edge of the fins. Attach the red edge of the fins to the body tube and carefully align with the lines you marked on the body tube. Be sure the fins stick straight out from the body tube. Stand the assembly on its forward end and allow to dry. When dry, run two or three heavy glue fillets on both sides of the fins for added strength. Next draw a straight line half way between two fins and parallel with the body tube about 12" up the tube. Now glue the launch lugs on this line be sure they align with each other.

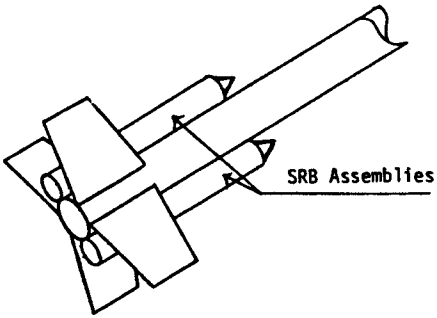



__ 7. Locate two .903 X 9" body tubes. Using a straight edge make a line down the length of each tube. Cut two 9" pieces of the 1/8" X 1/8" balsa and glue them on the lines marked on each tube. Check for proper alignment and set aside to dry.

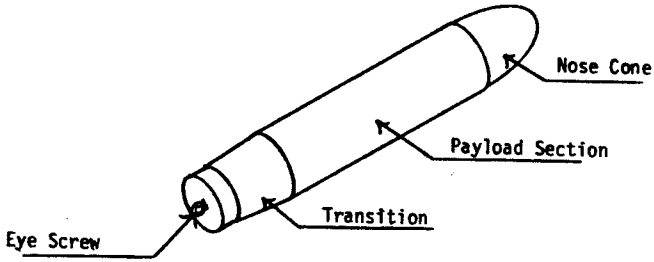



__ 8. Cut eight 1/2" pieces of 1/8" X 1/8" balsa. Locate the two small nose cones. Glue the 1/2" pieces of balsa to nose cones in positions shown. Carefully sand the 1/2" balsa pieces an equal amount so that they fit tightly and are centered in the .903 X 9" body tube. Glue small nose cones into .903 X 9" body tubes as shown. This configuration will allow venting of exhaust gases of SRB motors. Using a F.S.I. 21mm engine install a thrust ring in each .903 X 9" body tube. Put a ring of glue in end opposite nose cone. Push thrust ring into tubes with 21mm engine until engine protrudes 1/4".



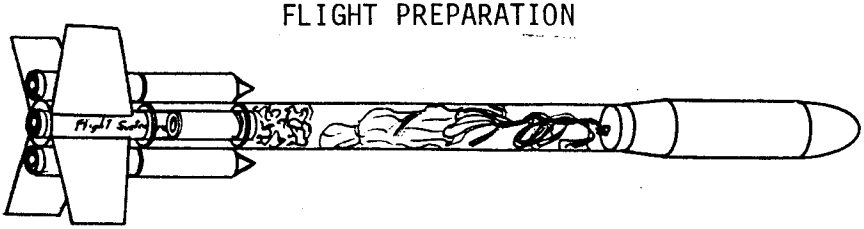

__ 9. Glue SRB assemblies to main body on lines indicated. They should be parallel to body tube. Put 2 or 3 heavy glue fillets on each side of each SRB attachment. Set aside to dry.




__10. Glue transition into 9" X 2.25" payload section. Slide nose cone into other end. Twist eye screw into center rear of transition section. Tie shock cord to eye screw.

__11. The rocket is now ready to paint and add decals. It is recommended that a light coat of paint be sprayed on and let dry. Add a couple more mist coats lightly sanding between them. Then apply a wet coat (gloss just appears) and set aside to dry. After model is completely dry, apply decals. Cut one decal at a time from the sheet and submerge in lukewarm water until decal will slide off of the paper (usually about 20 seconds). Gently slide decal onto rocket and carefully align and smooth out any wrinkles.

## FLIGHT PREPARATION



__ 1. Separate lower body tube from transition section. Tamp a piece of wadding down into the inside of the lower body tube until it comes in contact with the top of the engine holder tube.

__ 2. Bring shroud lines of 22" nylon parachute together and tie into knot about 1" from shroud line ends. Leave 1 shroud line intact and cut the others off 1/4" below the knot. Now put a couple of drops of glue on the knot to insure it does not come loose during ejection. Tie snap swivel to shroud line that you left 1" long. Attach swivel to eye screw. Fold parachute. Insert shock cord first then parachute into upper end of lower body tube. Rejoin payload and lower sections.

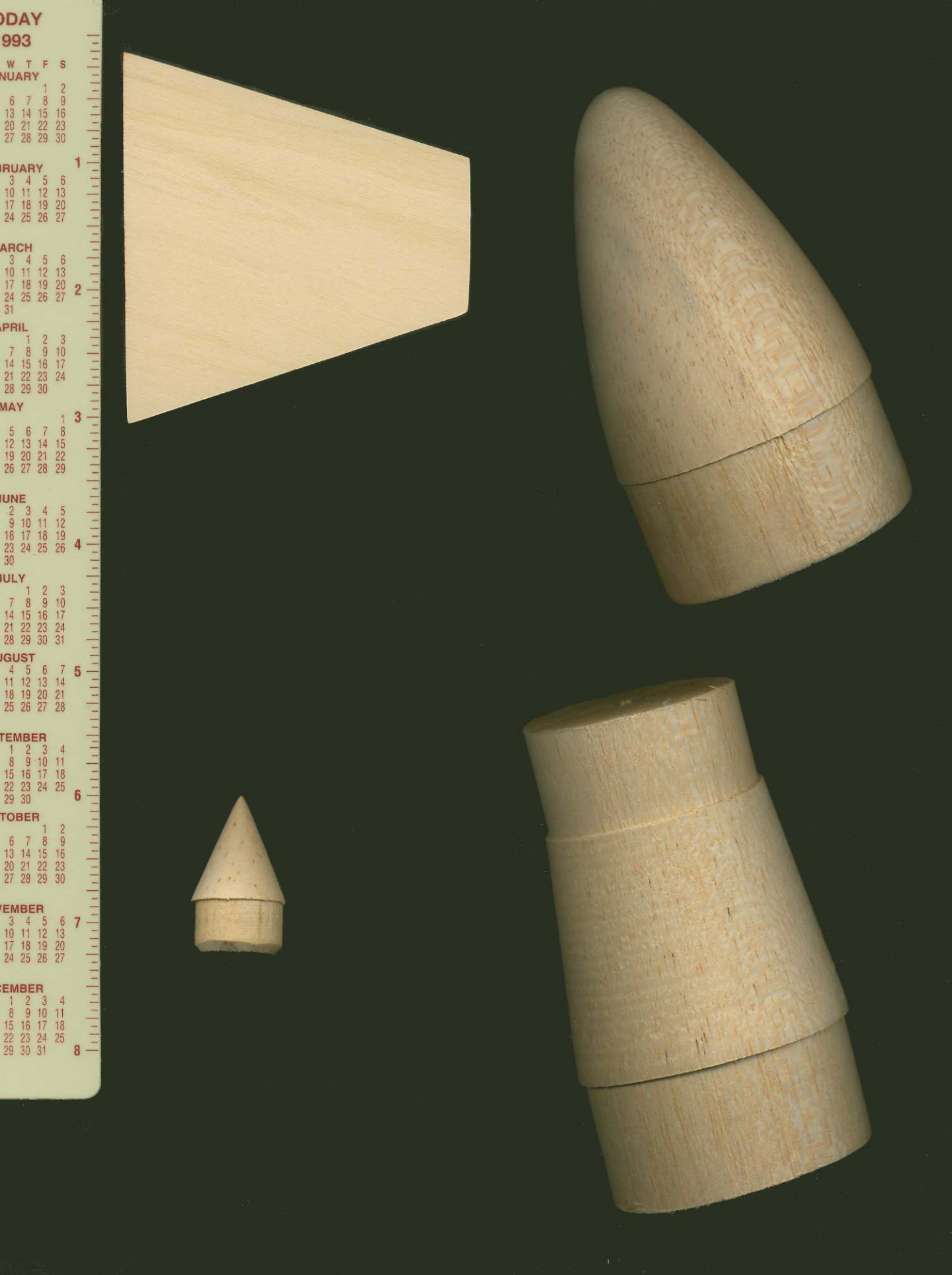
__ 3. Install engines using friction fit. Several wraps of masking tape are placed around the engines as shown to hold the engines in place. Insert F.S.I. engines until contact is made with the thrust rings. Be sure that engine fits tight enough that it will not come out of engine holder tube during ejection phase of flight.

__ 4. Place rocket on the launcher. Insert the F.S.I. ignitor and attach the firing clips as shown in thruster pak instructions.

_ 6. Go back to launch control and clear the area. Arm the launch control by inserting the phone jack attached to the firing line.

_ 7. Give count down 5-4-3-2-1, ignition.

Be sure to follow the *HIA-NAR Model Rocketry Safety Code when carrying out your model rocket activities.
*HIA- Hobby Industry of America
NAR- National Association of Rocketry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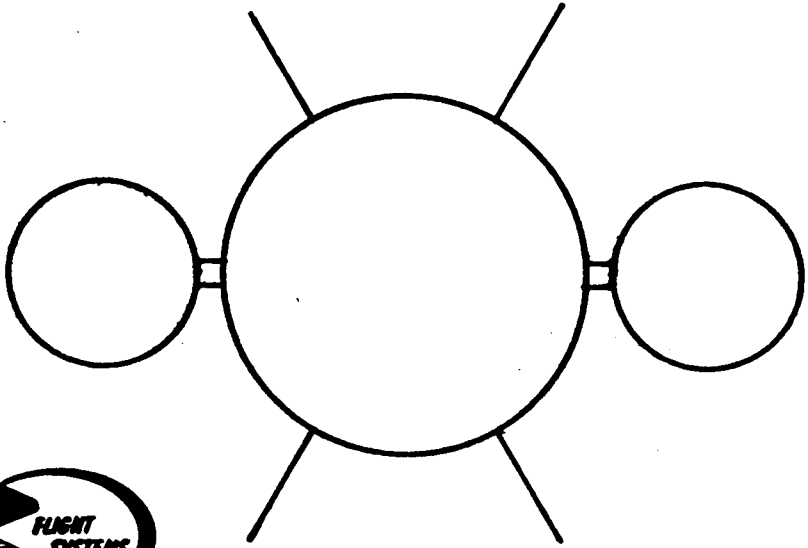
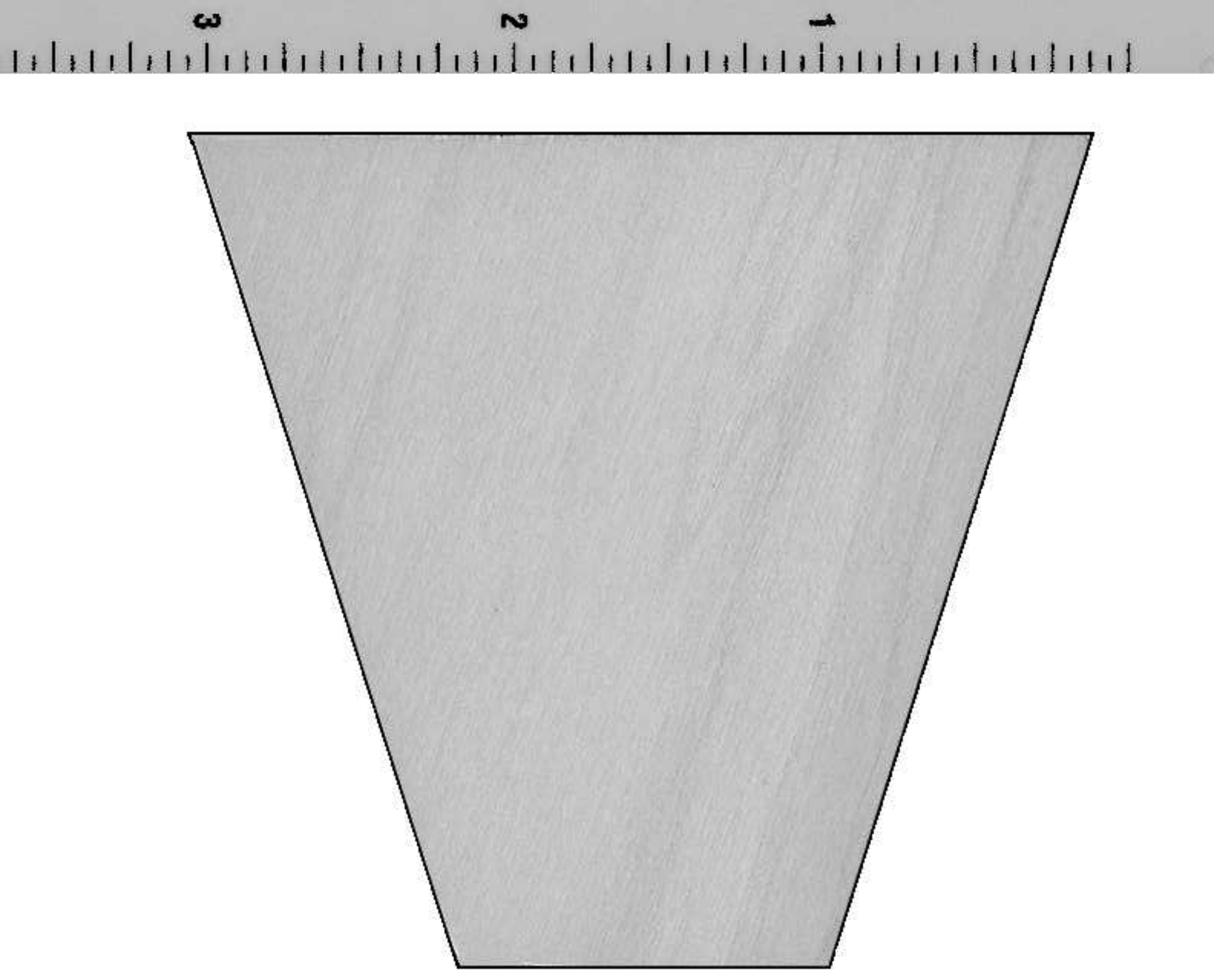
# Intrepid

FIN PLACEMENT GUIDE



FLIGHT SYSTEMS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