

SPRINT

FLYING MODEL ROCKET

*Easy to
Assemble*

15" Long

Durable Aircraft Plywood Fins

Specifications:

Length—15"

Body Dia.—

above transition—1.130"

below transition—0.903"

Takeoff weight without
engine: 1.94 oz. (55 g)*

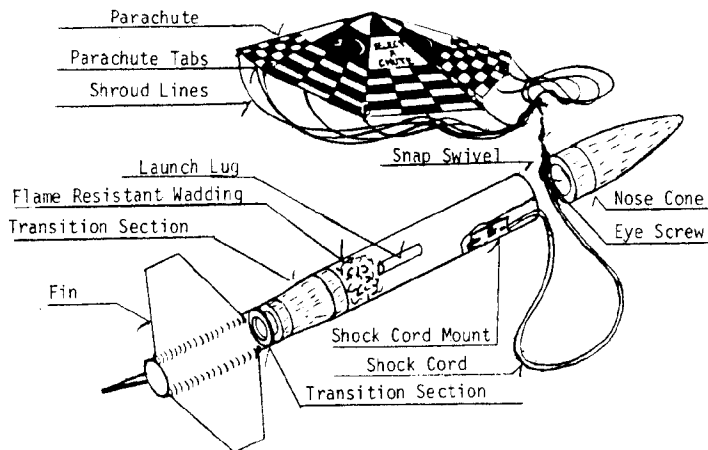
Recommended F.S.I. Engines:

C6-5, D18-6, D20-7



SPRINT

The Sprint is a competition model originally designed for streamer or parachute duration contests. It features a large upper body tube with a reverse transition to a smaller lower body tube. A large parachute or streamer can be packed in the upper body tube.

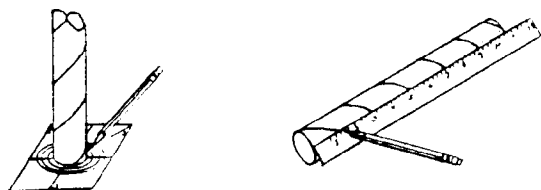


PARTS LIST:

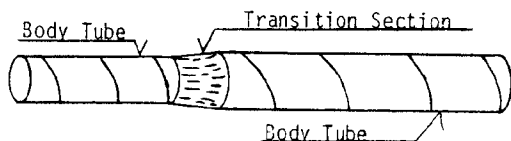
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|----------------------|----------------------|
| 1 Nose Cone | 1 Shock Cord Mount |
| 1 Upper Body Tube | 1 Eyescrew |
| 1 Lower Body Tube | 1 Shroud Line |
| 3 Fins | 1 Snap Swivel |
| 1 Transition Section | 1 Parachute Tabs |
| 2 Launch Lugs | 1 Decal Sheet |
| 1 Thrust Ring | 1 Flameproof Wadding |

ASSEMBLY INSTRUCTIONS:

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

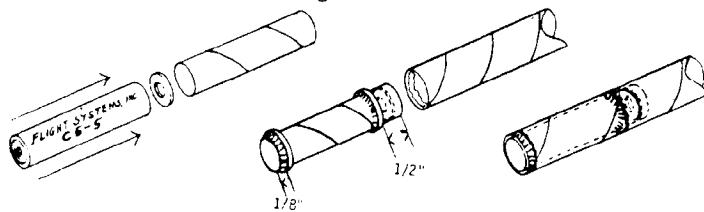


- Using fin alignment guide, mark lines on the small diameter body tube for fin alignment as shown.



- The two body tubes are joined together by a transition section. Check to see that transition section fits into the body tubes as shown. If it is too tight, sand to obtain a precision fit. Spread a layer of glue inside of the small body tube on the end, opposite lines previously marked for fins. Insert the small end of the transition. Align the body tubes and transition so that the body tubes are parallel to each other.

- First determine which size F.S.I. engines you intend to use in your Sprint rocket. 18mm or 21mm engines may be used. If you are going to use 18mm engines, follow instructions in 1-A. To use 21mm engines, follow instructions in 1-B.

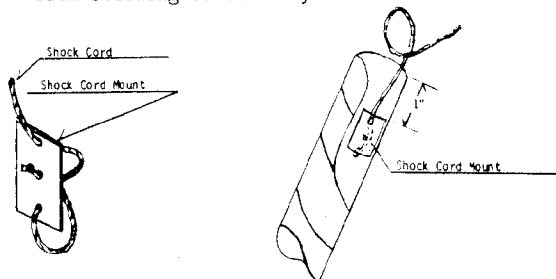


- For using 18mm engines select 3/4" X 3" engine tube, the 2 centering rings that measure 3/4 I.D. and 1 1/8 O.D. and the thrust ring that fits the 3/4" engine tube. Next put a ring of glue inside the engine holding tube. Using a F.S.I. 18mm engine, push the thrust ring into the engine holding tube until the engine projects out the back of the tube 3/8". Remove the engine

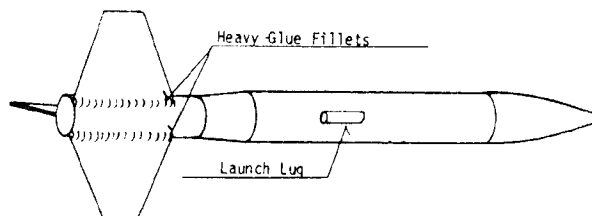
Install the centering rings as shown. Put a heavy glue fillet on each side of each ring and allow to dry. After centering rings have dried place a ring of glue inside rear of lower body tube. Push engine mount into body until it is flush with back of tube.



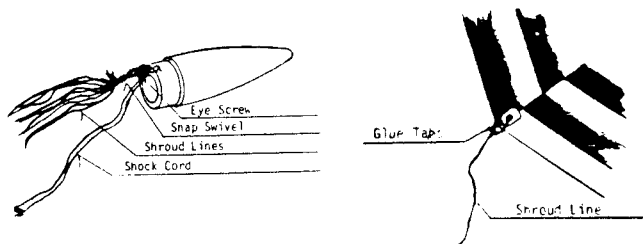
- Install thrust ring. Place a heavy band of white glue inside small diameter body tube. Insert the thrust ring by using an F.S.I. 21mm engine to push the ring forward until the engine projects 1/2" outside the body tube. Extract engine and let dry. It is important that the thrust ring is pushed forward with a rapid motion and that the engine is withdrawn immediately to prevent the engine from sticking to the body tube.



- 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 the nose cone end of the body tube and firmly press in place. Drawing shows the proper position in the body tube.



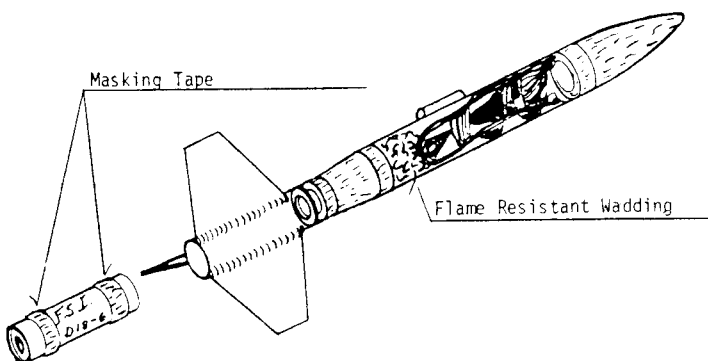
- Lightly sand and round the edges of all fins. **DO NOT** sand the root (red colored edge) of the fins. Attach the red edge of the fins to the body tube. Be sure the fins stick straight out from the body tube and are carefully aligned with the lines marked on the body tube. Apply a line of glue to the launch lug and place it centered between 2 fins and parallel with the body tube as shown. Stand the assembly on its forward end and allow to dry. When dry, run 2 or 3 heavy glue fillets on both sides at the fins for added strength.



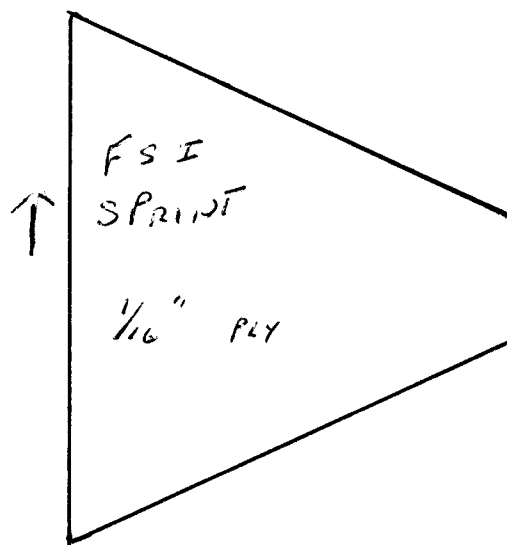
6. Put eyescrew in the edge of the nose cone as shown. Attach the shock cord. The parachute is marked in inches. Cut with scissors to the desired size. For the Sprint, cut 16 inches. Lay the parachute on a flat surface and attach shroud lines as shown. Punch a hole through the glue tab and tie the shroud lines to the parachute. Attach the snap swivel.
7. 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 luke-warm water until decal will slide off of the paper (usually about 20 seconds). Gently slide decal onto rocket and carefully smooth out any wrinkles.

FLIGHT PREPARATION

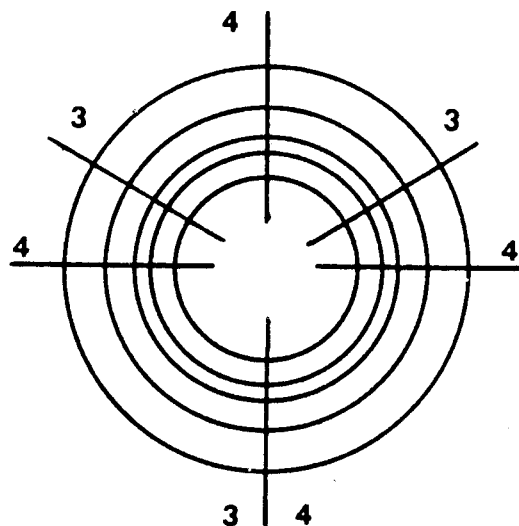
1. Install flameproof wadding as shown in cutaway view of rocket.
2. Fold and install parachute. It is a good idea to dust parachute with ordinary talcum powder before each flight.
3. Install engine using Friction Fit. Several wraps of masking tape are placed around the engine as shown to hold the engine in place.
4. Insert F.S.I. engine until contact is made with the thrust ring. Be sure to use enough masking tape to assure a snug fit in the body tube. It should require a firm push. If the engine doesn't fit firmly it will be ejected instead of the parachute.
5. Place the rocket on the launcher, insert the F.S.I. igniter and attach the firing clips as shown.
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 Rocket Safety Code when carrying out your model rocket activities.
 *HIA- Hobby Industry of America
 NAR- National Association of Rocketry



FIN PLACEMENT GUIDE



1. Center end of tube in the proper circle.
2. Mark (4) lines for four fin models and (3) lines for three fin models.

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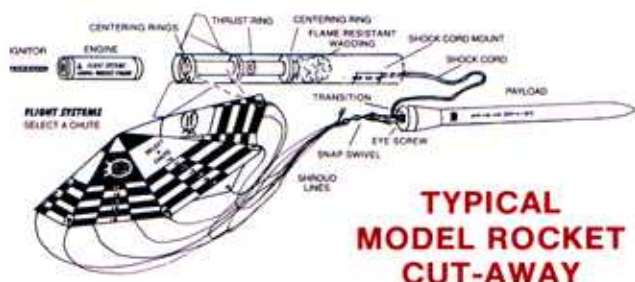


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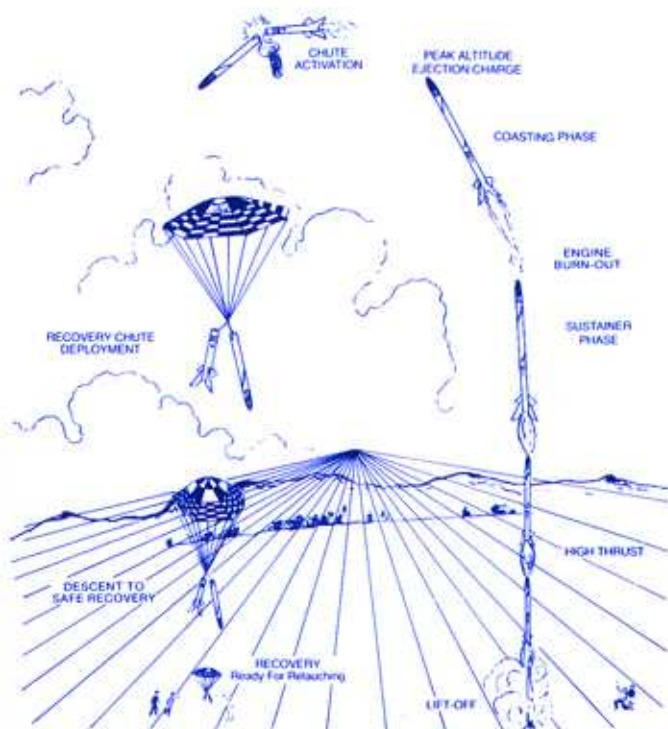
FLIGHT SYSTEMS, INC.

HIGH PERFORMANCE FLYING MODEL ROCKETS

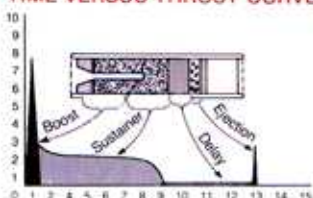


**TYPICAL
MODEL ROCKET
CUT-AWAY**

Flight Sequence – Lift-Off, High Thrust and Recovery



**MODEL ROCKET ENGINE
TIME VERSUS THRUST CURVE**



**MODEL ROCKET KIT
SKILL LEVEL**

The skill level numbers given with each kit description recommend the skills and experience necessary to successfully build the rocket kit.

SKILL LEVEL NO.	DESCRIPTION	
1	Very Simple	Beginner
2	Fairly Easy	
3	Average	Intermediate
4	Challenging	
5	Extremely Challenging	Advanced