

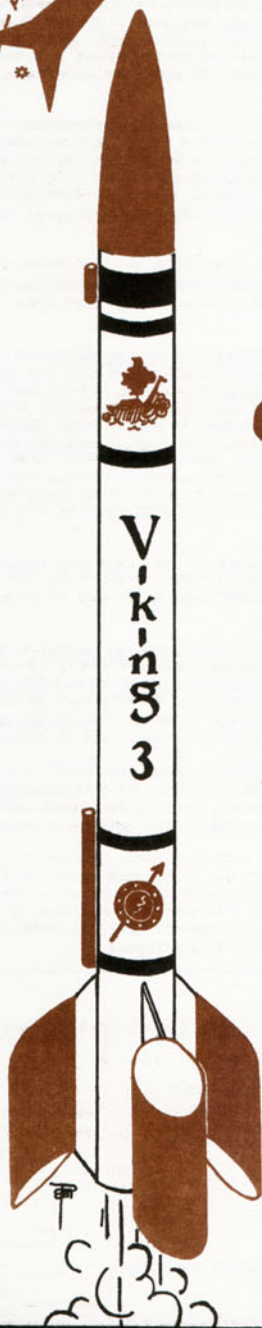


# Viking 3

recommended f.s.i. engines

A4-4 D4-6 E5-6  
B3-4 D6-6  
C4-4 D18-6

EXPLORE the  
sky with f.s.i.



THE VIKING 3 IS ONE OF THE FLAGSHIPS OF THE F.S.I. VIKING FLEET. THIS BEAUTIFUL AND ADVANCED MODEL ROCKET IS ALSO AN EXCEPTIONALLY STABLE AND EFFICIENT MODEL IN FLIGHT. EXTENDED STABILIZERS PERMIT A WIDE APPLICATION OF MODEL ROCKET ENGINES. F.S.I. SUPERIOR NAR APPROVED ENGINE A, B, C, D, OR E MAY BE USED TO POWER THIS FINE MODEL. ALTITUDES TO 3500' CAN BE EASILY REACHED WITH F.S.I. ROCKET ENGINES.

completed flying model  
over 15" long



KIT NO. MRK XI  
FLIGHT SYSTEMS, INC.  
1313 CANNON STREET  
P.O. BOX 145  
LOUISVILLE, COLO. 80027

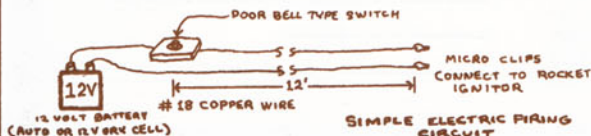
# assembly instructions

USE THIS FOLLOWING ORDER:

- 1 BODY TUBE** — THE BODY TUBE IS MADE UP OF 2 SEPARATE LENGTHS JOINED BY A COUPLER. TAKE THAT 4" BODY TUBE WITH THE 3 BLACK LINES ON 1 END (STABILIZERS GO ON THIS END) AND USING THE OPPOSITE END. SPREAD A  $\frac{3}{4}$ " LONG LAYER OF ELMER'S GLUE INSIDE OF BODY TUBE. NOW QUICKLY INSERT  $\frac{1}{2}$ " OF COUPLER. TAKE THE 8" BODY TUBE AND SPREAD A LAYER OF GLUE INSIDE EITHER END. QUICKLY PRESS ONTO COUPLER UNTIL BODY TUBES ARE TOUCHING. NEXT (QUICKLY) LAY GLUED BODY TUBE ON FLAT SURFACE AND ROLL JOINED TUBES WITH PALM OF YOUR HAND. THIS WILL INSURE THAT BODY TUBES ARE STRAIGHT AND PARALLEL. LET LIE ON FLAT SURFACE UNTIL GLUE DRIES.
- 2 THRUST RING** — PLACE A HEAVY BAND OF ELMER'S GLUE ABOUT 2" INSIDE OF JOINED BODY TUBES ON END WITH 3 FAIRING ALIGNMENT MARKS. INSERT THRUST RING BY USING A F.S.I. A, B, C, OR D ROCKET ENGINE. PUSH THRUST RING FORWARD UNTIL A, B, C, OR D ENGINE PROTECTS  $\frac{1}{4}$ " OUTSIDE BODY TUBE, FOR F.S.I. "E" ENGINE PUSH FORWARD UNTIL  $\frac{3}{8}$ " OF ENGINE PROTECTS OUTSIDE BODY TUBE. THE THRUST RING FORCES THE GLUE FORWARD AND PROVIDES FOR A STRONG BOND OF THRUST RING INTO BODY TUBE. NOW EXTRACT ENGINE AND LET GLUE DRY. WIPE OFF WITH DAMP CLOTH ANY GLUE ADHERING TO INSIDE OR OUTSIDE OF ENGINE. DO NOT USE NOZZLE END OF ENGINE.
- 3 SHOCK CORD MOUNT** — SPREAD A HEAVY LAYER OF ELMER'S GLUE ALL OVER THE SIDE OPPOSITE THE SHOCK CORD KNOT AFTER TAKING UP SLACK IN CORD. CURVE SHOCK CORD MOUNT AND INSERT INTO NOSE CONE END OF BODY TUBE AND FIRMLY PRESS IN PLACE, USING FINGER, UNTIL GLUE HOLDS FIRMLY. ASSEMBLY DETAIL SHEET SHOWS PROPER POSITION IN BODY TUBE. LET IT DRY.
- 4 FAIRINGS & STABILIZERS** — READ DETAIL "E" CAREFULLY BEFORE PROCEEDING. SPREAD A THIN LAYER OF ELMER'S GLUE ALONG RED EDGE OF ONE FAIRING AND PRESS ONTO BODY TUBE (DETAIL "E"). USE FAIRING ALIGNMENT MARK TO POSITION. HOLD SECURELY UNTIL GLUE IS FIRM. BE SURE FAIRING IS STRAIGHT WITH ALIGNMENT MARK AND RADIAL TO CENTER OF BODY TUBE. REPEAT WITH OTHER 2 FAIRINGS. AFTER ALL GLUE HAS DRIED, SPREAD ANOTHER LIBERAL LAYER OF GLUE ALONG FAIRING AND BODY TUBE (BOTH SIDES) TO BUILD UP A STRONG GLUE FILLET. AFTER THIS GLUE FILLET HAS DRIED, IT IS RECOMMENDED THAT A 2ND GLUE FILLET BE APPLIED FOR ADDITIONAL STRENGTH. LET ALL GLUE DRY THOROUGHLY BEFORE PROCEEDING. NOW TAKE ANY ONE OF THE THREE STABILIZERS AND RUN A THIN LINE OF ELMER'S GLUE FROM TIP TO END OF STABILIZER. GLUE STABILIZER TO DRIED FAIRING AS SHOWN ON DETAIL "E." HOLD UNTIL GLUE IS FIRM. REPEAT FOR OTHER 2 STABILIZERS. BUILD UP ADDITIONAL GLUE FILLETS FOR STRENGTH AS DESCRIBED ABOVE FOR FAIRINGS.
- 5 FLAMEPROOF WADDING** — BE SURE THAT FLAMEPROOF WADDING IS USED EACH TIME ROCKET IS FIRED. PUSH WADDING ALL THE WAY DOWN TO THRUST RING AND PACK IN FIRMLY WITH A  $\frac{3}{8}$ " DOWEL OR SIMILAR TOOL. USE ENOUGH WADDING TO MAKE APPROXIMATELY A  $\frac{3}{8}$ " LONG PLUG. SEE ASSEMBLY DETAIL SHEET.
- 6 PARACHUTE** — THE PARACHUTE IS MARKED IN INCHES. CUT WITH SCISSORS ALONG THE INCH LINES THAT GIVE YOU THE SIZE PARACHUTE YOU DESIRE (FOR FIRING 3 ROCKET - 14"). LAY PARACHUTE ON FLAT SURFACE AND ATTACH SHROUD LINES TO PARACHUTE USING STRIPABLE TABS (SEE DETAIL C), CAUTION: LET NO PORTION OF TAB PROTECT BEYOND PARACHUTE AS GLUE ON TAB WILL STICK PARACHUTE TOGETHER AND INTERFERE WITH ITS OPENING. TRY NOT TO TOUCH THE GLUED SIDE OF TABS WITH FINGERS. PRESS TABS DOWN FIRMLY, A KNOT ON TAB END OF SHROUD LINES IS RECOMMENDED.
- 7 SHOCK CORD & PARACHUTE** — COIL SHOCK CORD AROUND YOUR FINGER AND STUFF INTO BODY TUBE. NEXT FOLD PARACHUTE AS SHOWN ON ASSEMBLY DRAWING, GATHER THE PARACHUTE TOGETHER LIGHTLY, THEN WRAP SHROUD LINES GENTLY AROUND FOLDED PARACHUTE AS SHOWN ON ASSEMBLY DETAIL SHEET. BE SURE NOSE CONE IS A GENTLE FIT INTO BODY TUBE. LIGHT SANDING MAY BE NEEDED.
- 8 ROCKET ENGINE** — WRAP A SMALL AMOUNT OF  $\frac{1}{2}$ " WIDE MASKING TAPE AROUND THE ROCKET ENGINE AT THE POSITION SHOWN ON DETAIL SHEET. USE ENOUGH TAPE TO SECURE A SNUG FIT INTO BODY TUBE AS TO REQUIRE A FIRM PUSH ON ENGINE TO PLACE IN CONTACT WITH THRUST RING. IF ENGINE DOES NOT FIT SNUGLY, IT WILL BE EJECTED INSTEAD OF PARACHUTE AND YOUR ROCKET WILL FREE FALL. INCLUDED WITH ALL F.S.I. MODEL ROCKET ENGINES ARE DETAILS FOR LAUNCHING AND FIRING. ASK YOUR DEALER FOR THESE INSTRUCTIONS.

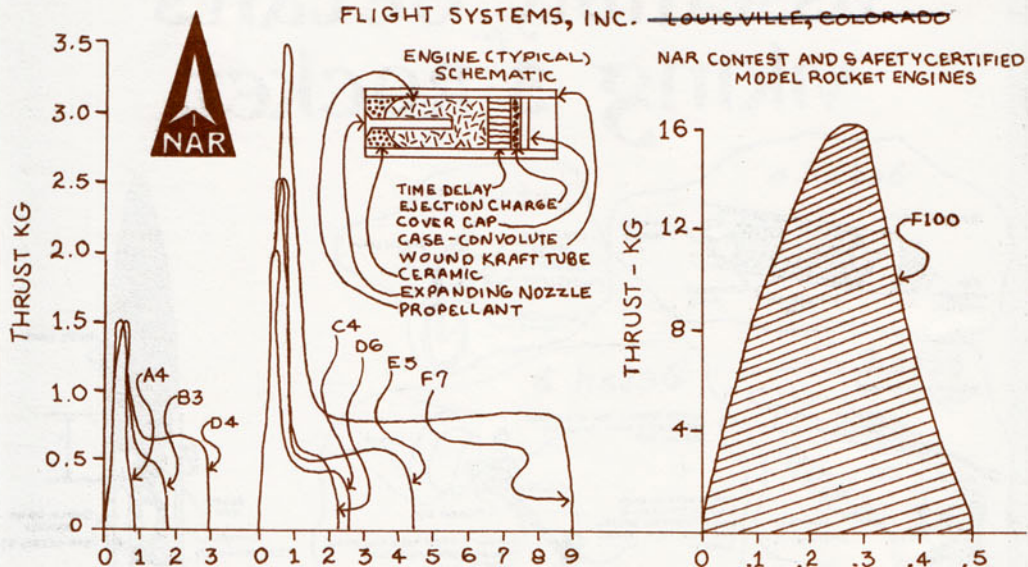
## model rocket firing & launching equipment

TO FLY YOUR F.S.I. MODEL ROCKET PROPERLY YOU WILL NEED TO PROVIDE YOURSELF WITH A 12 VOLT FIRING CIRCUIT AND A SIMPLE ROCKET LAUNCH PAD. YOU CAN EASILY BUILD YOUR OWN OR PURCHASE FROM YOUR DEALER F.S.I. SUPERIOR QUALITY LAUNCHERS AND ELECTRIC IGNITION PANEL. DETAILS FOR BUILDING YOUR OWN LAUNCHERS AND ELECTRIC IGNITION CIRCUIT ARE AS FOLLOWS.



# TYPICAL THRUST/TIME CURVES FOR MODEL ROCKET ENGINES

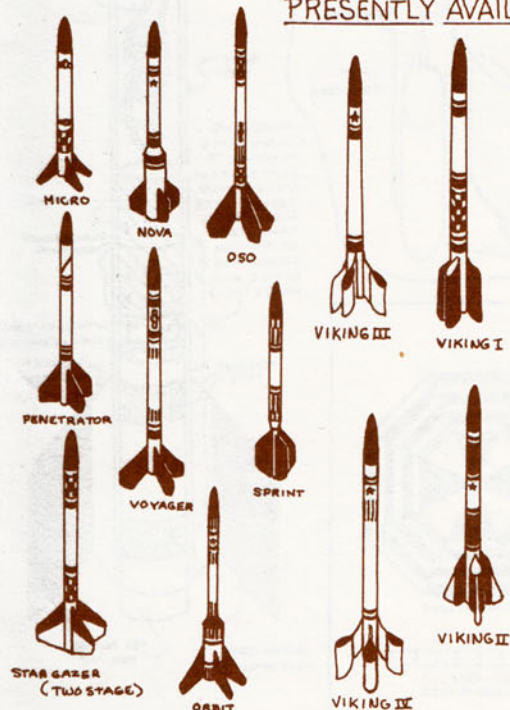
FLIGHT SYSTEMS, INC. — LOUISVILLE, COLORADO



ALL OF THE ABOVE ROCKET ENGINES ARE AVAILABLE AT MOST OF THE BETTER HOBBY SHOPS THROUGHOUT THE UNITED STATES. IF YOUR FAVORITE HOBBY STORE DOES NOT STOCK THE F.S.I. LINE, HAVE HIM WRITE US FOR OUR LATEST CATALOG AND PRICES. IF YOU DESIRE YOUR OWN CATALOG, SEND 25¢ TO FLIGHT SYSTEMS, INC., BOX 145, LOUISVILLE, COLO. 80027.

YOU HAVE JUST PURCHASED ONE OF FSI'S SUPERIOR QUALITY MODEL ROCKETS. OTHER FINE FSI KITS ARE ALSO AVAILABLE. THE FSI ROCKET FLEET IS CONSTANTLY BEING ADDED TO. SEE ALL OF THESE MODELS AT YOUR HOBBY DEALER.

## PRESENTLY AVAILABLE FSI MODEL ROCKET KITS



### RECOMMENDED FSI ENGINES

MICRO: A4-4, B3-4, C4-4, D4-6

PENETRATOR: A4-4, B3-4, C4-4, D4-6, D6-6, E5-6

STAR GAZER 1st stage: B3-0, C4-0, D6-0, E5-0  
2nd stage: B3-6, C4-6, D6-8, D4-8, E5-6

NOVA: B3-4, C4-4, D4-6, D6-6, E5-6, F7-6

VOYAGER: D6-6, F7-6, F100-8

ORBIT: B3-4, C4-4, D4-6, D6-6, E5-6, F7-6

OSO: D6-6, F7-6, F100-8

SPRINT: C4-4, D4-6, D6-6

VIKING I: A4-4, B3-4, C4-4, D4-6, D6-6, E5-6

VIKING II: A4-4, B3-4, C4-4, D4-6, D6-6, E5-6

VIKING III: A4-4, B3-4, C4-4, D4-6, D6-6, E5-6

VIKING IV: F7-6, F100-8

A COMPLETE LINE OF QUALITY FIRING CIRCUITS, LAUNCH GEAR, MODEL ROCKET ACCESSORIES AND INSTRUMENTS ARE ALSO AVAILABLE FROM FSI. SEE YOUR DEALER FOR DETAILS.

# assembly details for viking 3 Rocket

detail a

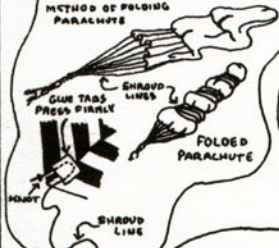


detail B

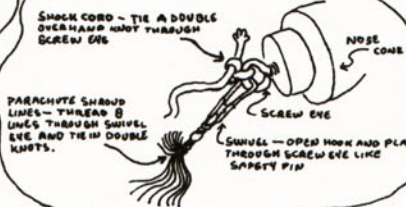


detail c

METHOD OF FOLDING PARACHUTE



detail d

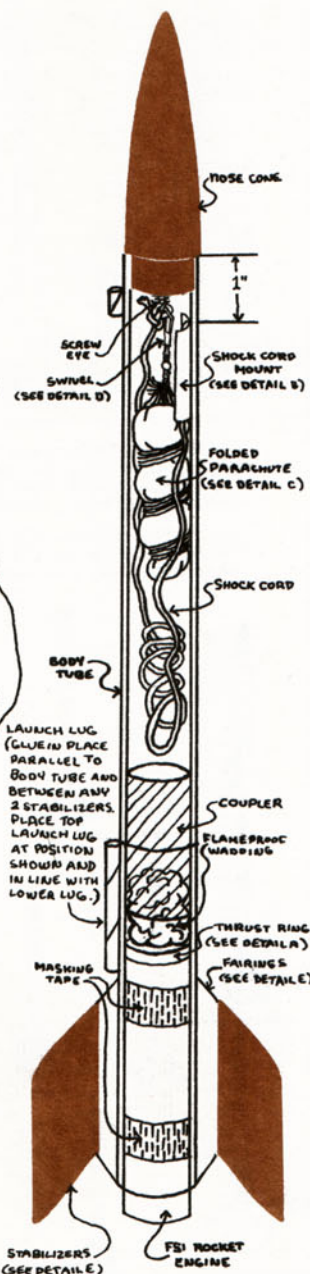
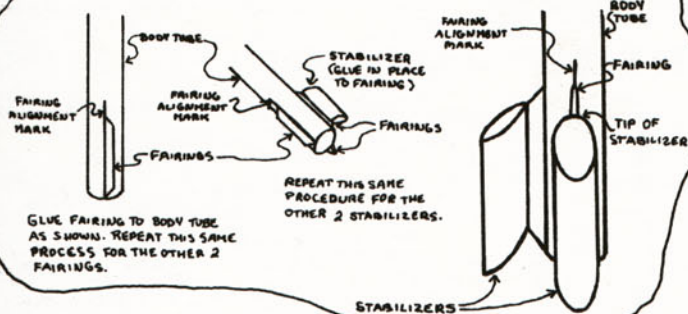


detail e

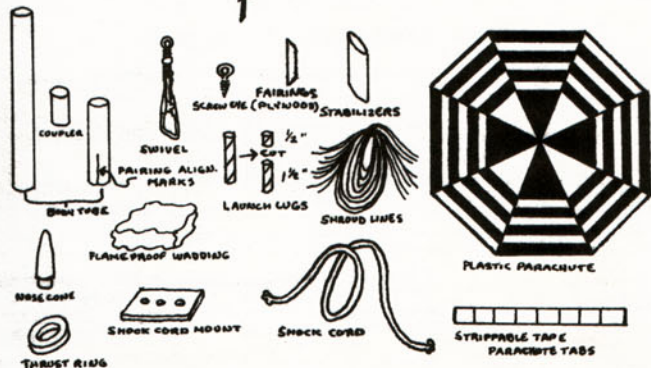
PROPER POSITION FOR FAIRINGS AND STABILIZERS

STEP 1.

STEP 2.



## parts list



FSI Viking III (Kit #MRK-XI)

Parts list and notes:

Main BT	HRT-808	(8")
Lower BT	HRT-804	(4")
Nose Cone	HNC-81	(2.8")
Fin Tubes	(4) HRT-804	(4")
Parachute	P-12 Select-a-Chute*	

Notes:

\*I believe the kit also came supplied with a streamer.

The Viking III was originally meant to fly on 21mm motors. Later kits were supplied with an additional mount for standard 18mm motors.

Unfortunately, that's all the info I have. I can guess that the fin tube stand-offs would be 1/4" X 3" balsa, with the 'fin tube' connection joint angled to 2".

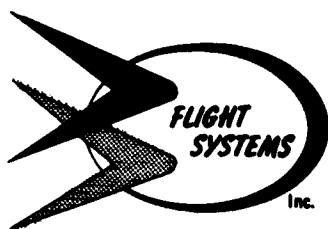
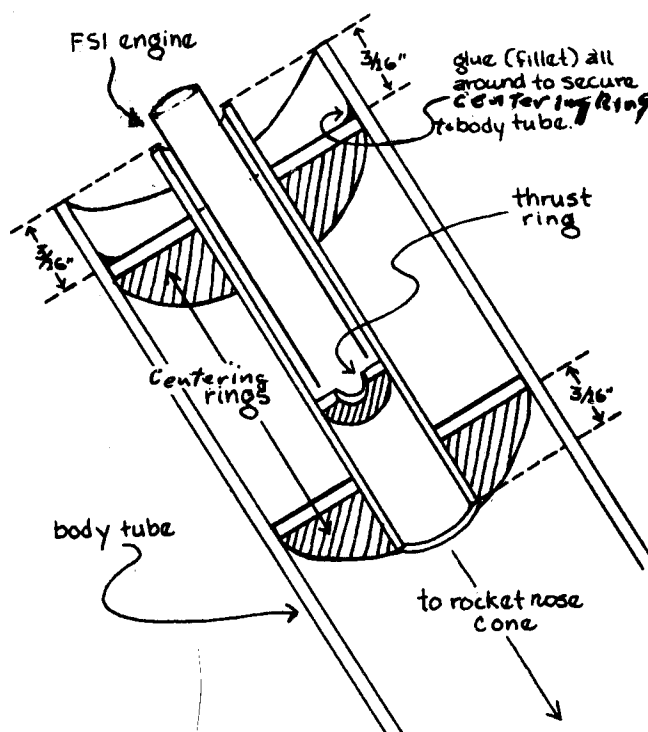
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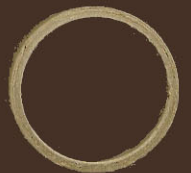
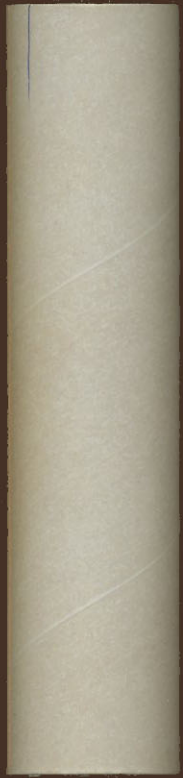
### SUPPLIMENTARY INSTRUCTIONS:

In addition to the engines listed on the front of the package this rocket can be flown with Flight Systems, Inc. NEW 18mm A, B, and C engines. In order to prepare the rocket for the use of these engines you must assemble and install an 18mm engine holder as follows:

1. Glue the two centering rings (one at each end) onto the 3" X 3/4" engine holder tube. The rings should be 3/16" from the ends of the tube as shown below.
2. Install the small thrust ring inside the engine holder tube. It should be located in such a position that when a Flight Systems 18mm engine is installed the engine will protrude approximately 3/8" from the tube. To install the thrust ring place a small amount of glue inside the tube about half way down. Insert the thrust ring in one end of the tube. Using an 18mm engine casing push the thrust ring into position until the engine sticks out of the casing as shown. Remove the engine. Allow the assembled engine holder to dry.
3. Install engine holder assembly into rear of rocket so that it is flush with back of rocket. Be sure that the thrust ring is forward when installing. To install, first put a small ring of glue an inch or two up inside the rocket body tube. Next push the engine holder tube assembly into the rocket until it is flush. Work a small amount of glue into the space at the back of the rocket between the rocket body tube and the engine holder tube so that the glue covers the area between and around the centering ring just inside the rocket body.



9300 EAST 68th STREET  
RAYTOWN, MISSOURI 64133



Flight Systems Inc. Viking III Parts Note

Fairings are made from 1/16" plywood.

Uses 14" parachute recovery.

Supplimental instructions are for installation of 18mm motor mount.

Body tubes and stabilizers are .903" diameter