



FLYING MODEL

ROCKET

EX SERIES

ALMOST READY TO FLY

ASTRO SAT LSX™



- RELEASES 2 SATELLITES AT PEAK ALTITUDE!
- EACH SATELLITE IS RECOVERED ON A BRIGHT STREAMER!
- BOOSTER ROCKET RETURNS VIA PARACHUTE RECOVERY!
- EASY TO BUILD, NO PAINTING REQUIRED!

MADE IN U.S.A.

Recommended for ages 10 and up with adult supervision for those under 12.





ESTES INDUSTRIES
1295 H Street
Penrose, CO 81240

EX
SERIES
ALMOST READY TO FLY

(3-97) 82112
EST 2133

AstroSat LSX™

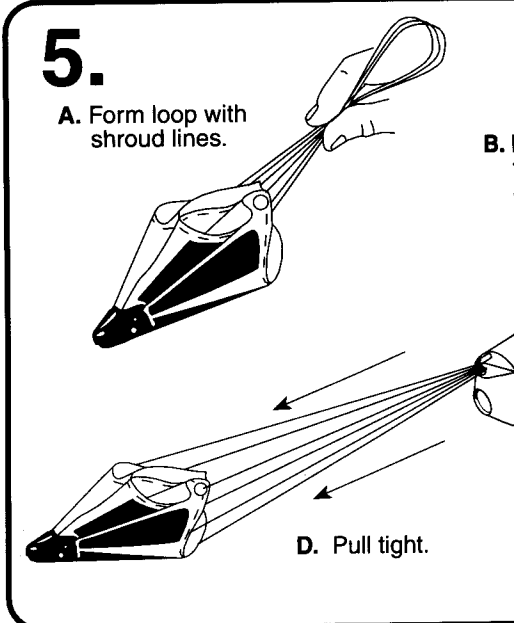
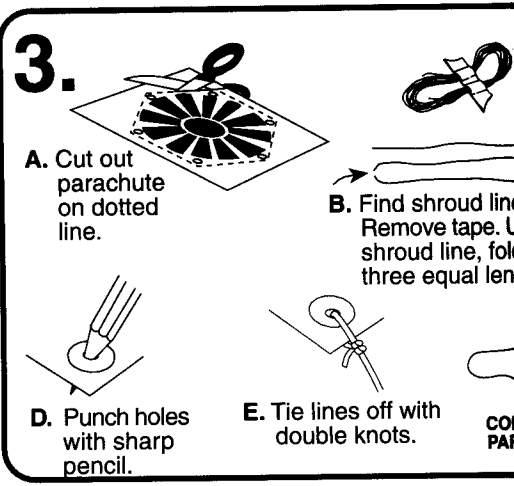
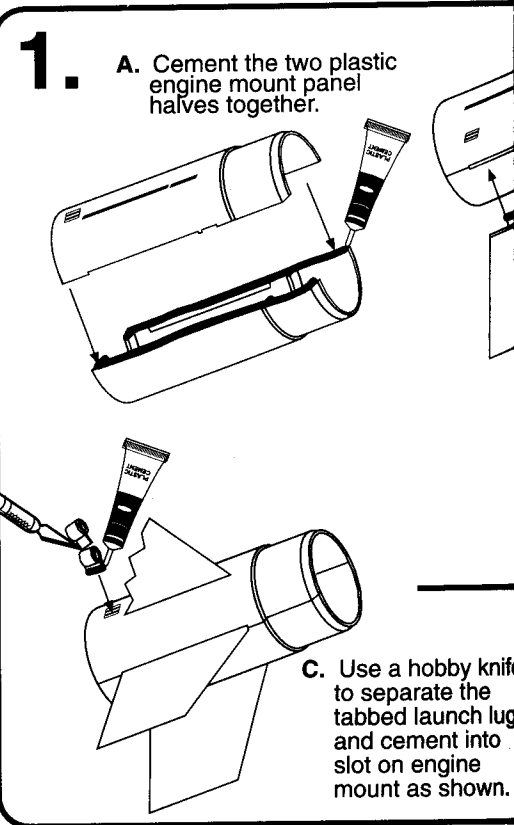
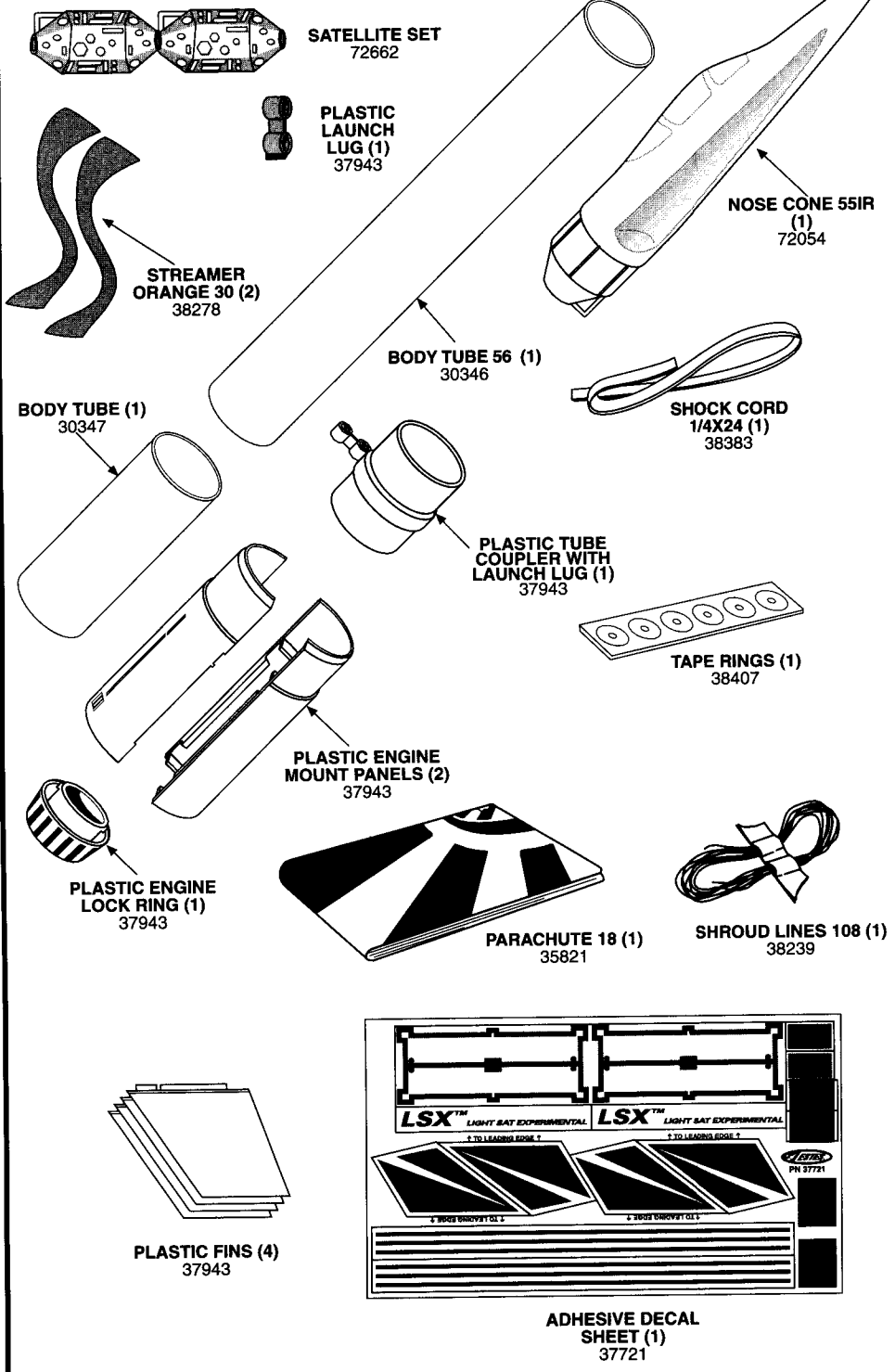
FLYING MODEL ROCKET KIT INSTRUCTIONS

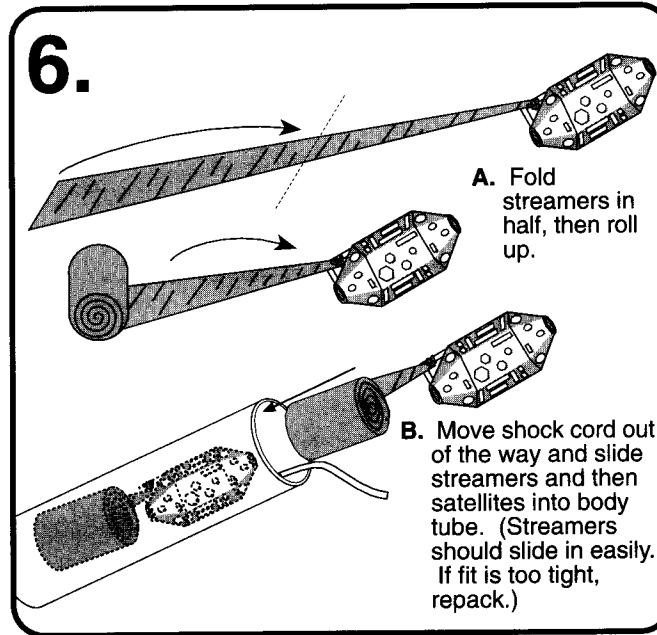
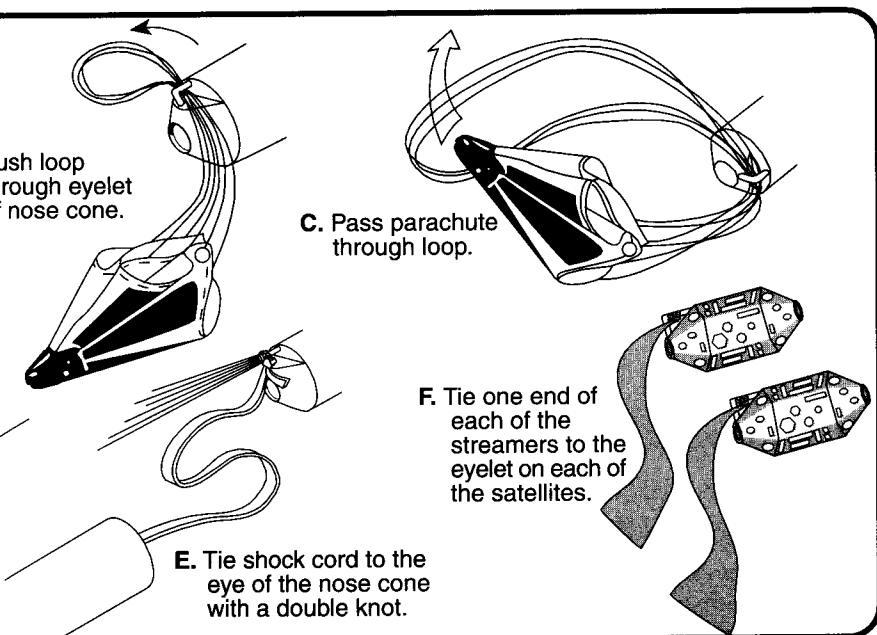
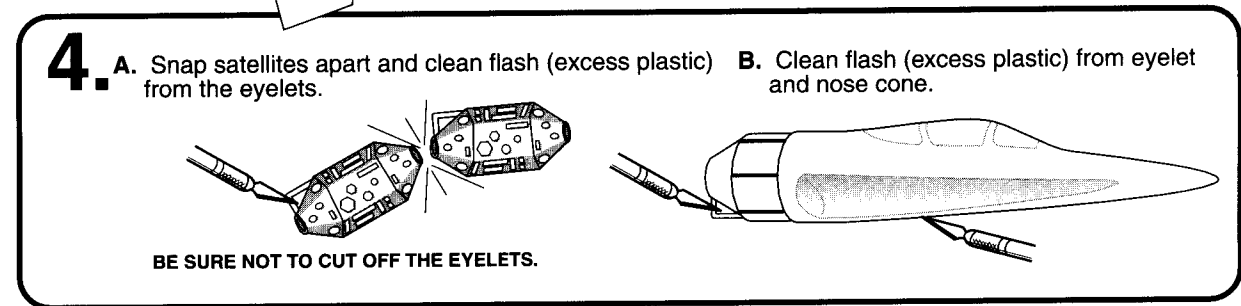
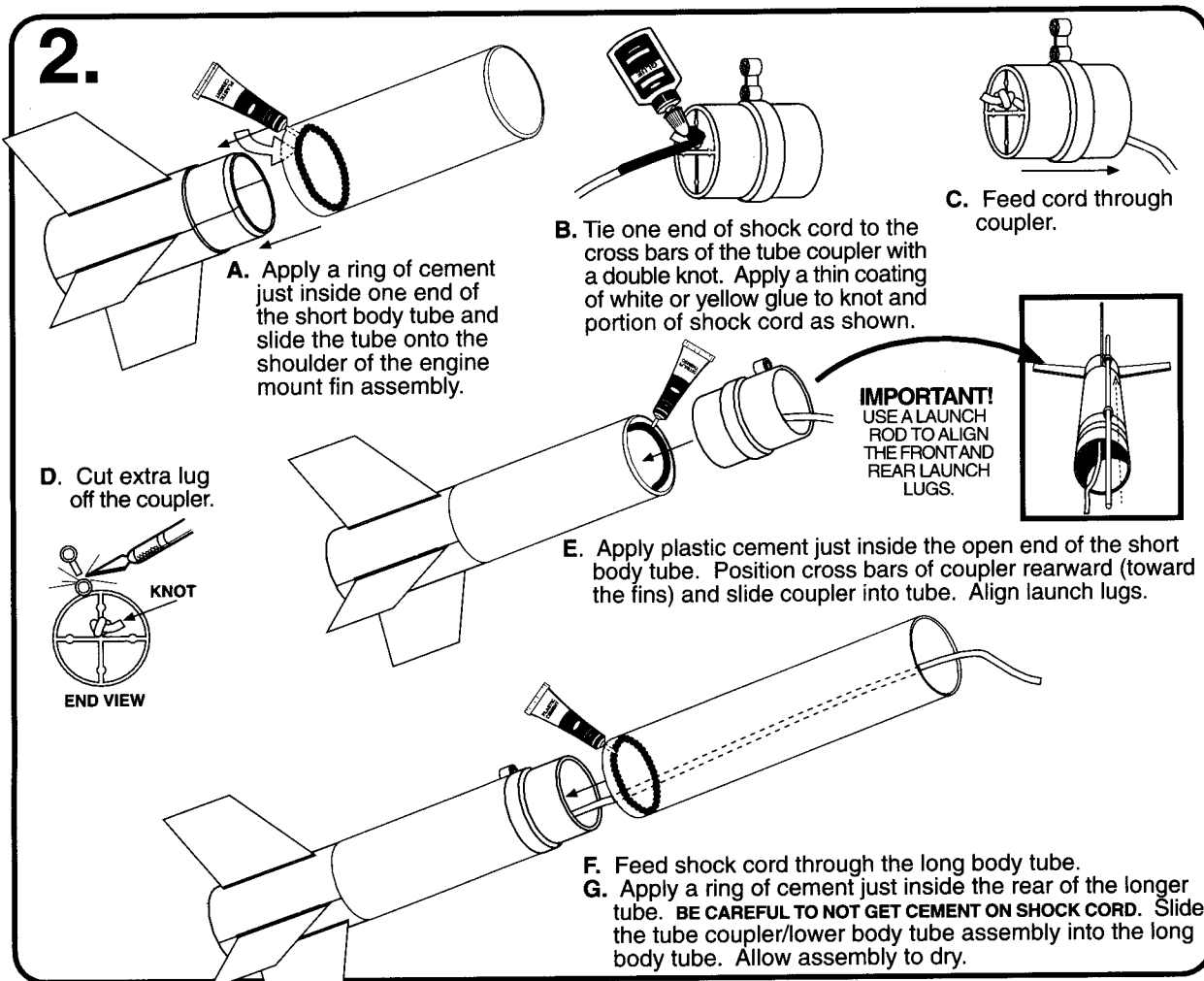
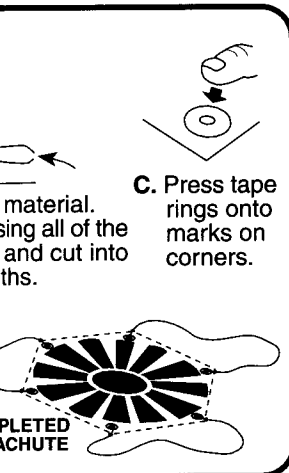
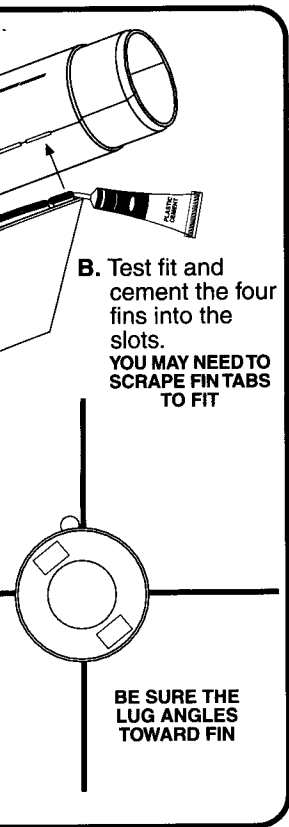
TOOLS REQUIRED:

WHITE OR YELLOW GLUE, SCISSORS, PENCIL, HOBBY KNIFE, LAUNCH ROD, BLACK PERMANENT MARKER AND TUBE TYPE PLASTIC CEMENT.

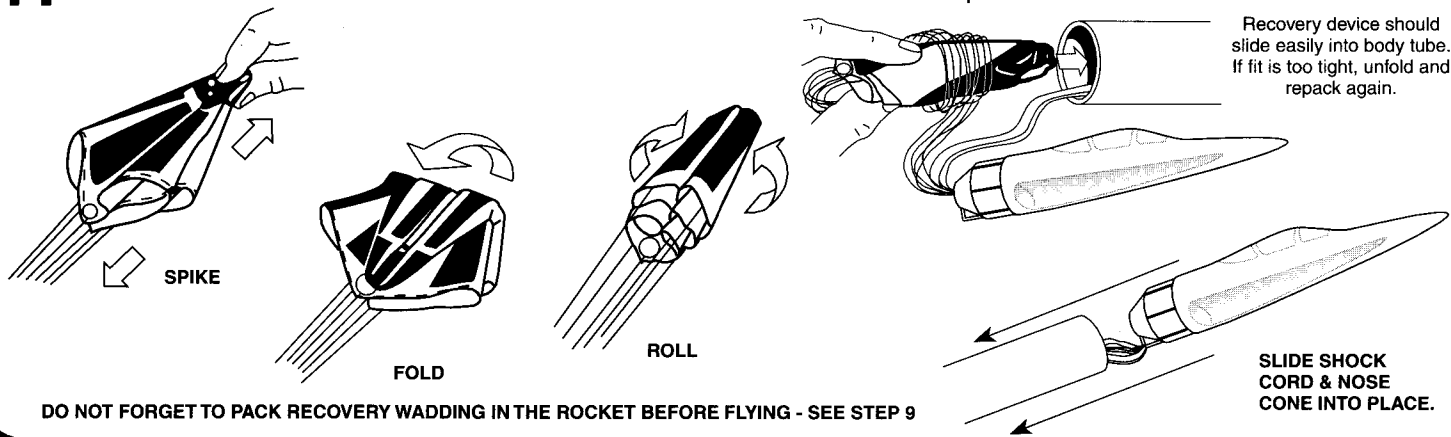
ALL GLUED AREAS ARE SHADED IN GRAY

PARTS LAYOUT

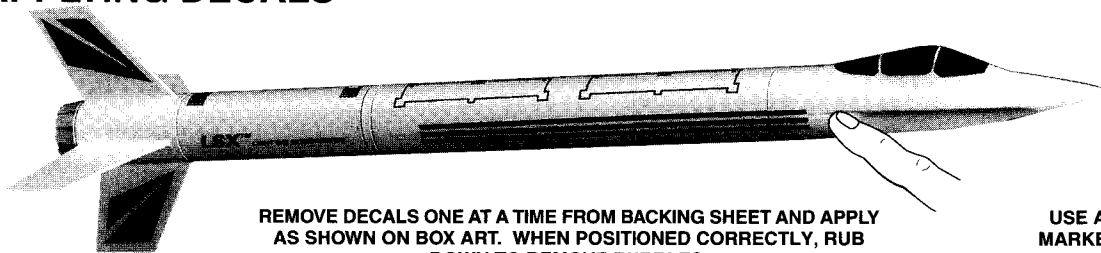




7. PACKING PARACHUTE



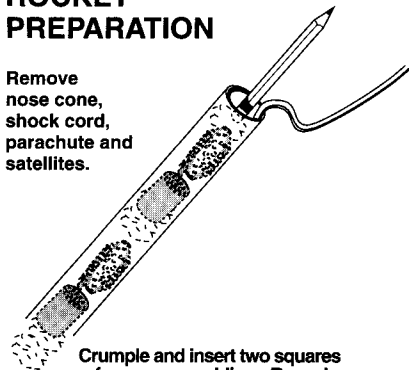
8. APPLYING DECALS



9. FLYING YOUR ROCKET

ROCKET PREPARATION

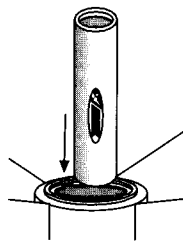
Remove nose cone, shock cord, parachute and satellites.



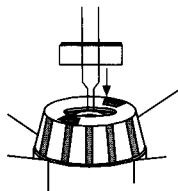
Crumple and insert two squares of recovery wadding. Repack and insert satellites. Insert two more squares of recovery wadding. Repack and insert parachute, shock cord, and nose cone.

ENGINE PREPARATION

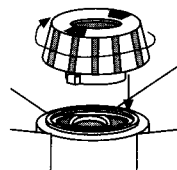
Slide engine into engine mount.



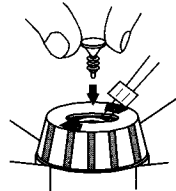
Drop in igniter. Igniter must touch propellant.



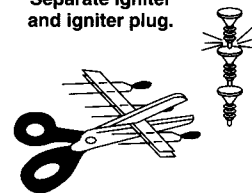
Twist plastic engine lock ring to hold engine in place.



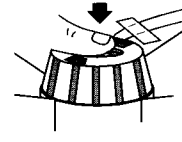
Insert igniter plug.



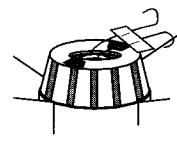
Separate igniter and igniter plug.



Firmly push all the way in.



Bend igniter wires back.



LAUNCH SUPPLIES

To launch your rocket, you will need the following:

- Launch Pad (Estes Porta-Pad® II)
 - Launch Controller (Estes Electron Beam®)
 - Recommended Estes Engines: B4-2, B6-2, B6-4, or a C6-5. Use a B4-2 for your first flight to become familiar with your rocket's flight pattern.
 - Recovery Wadding (EST 302274)
 - Igniters and Igniter Plugs (included with Estes engines.)
- Use only Estes products to launch this rocket.

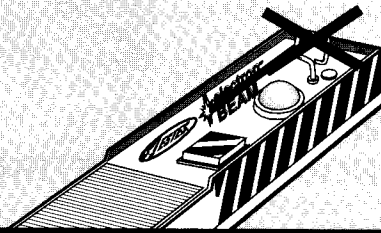
ENGINE	PROJECTED ALTITUDE	
	Feet	Meters
B4-2	176	54
B6-2/B6-4	196	60
C6-5	500	152

TIPS FOR FLYING YOUR ROCKET

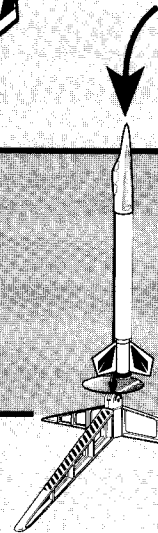
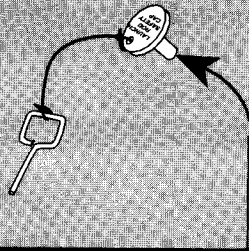
- Choose a large field away from power lines, buildings, tall trees, and low flying aircraft. Try to find a field at least 76 meters (250 feet) square. The larger the launch area, the better your chance of recovering your rocket.
- Launch area must be free of dry weeds and brown grass.
- Launch only during calm weather with little or no wind and good visibility.
- Don't leave parachute packed more than a minute or so before launch during cold weather (colder than 4° Celsius [40° Fahrenheit]). Parachute may be dusted with talcum or baby powder to avoid sticking.
- Always follow the National Association of Rocketry (NAR) MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities. The safety code is enclosed with this kit.

COUNTDOWN AND LAUNCH

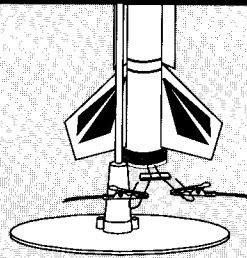
- 10...** Safety key must not be in launch controller. The safety cap with safety key attached should already be on the launch rod.



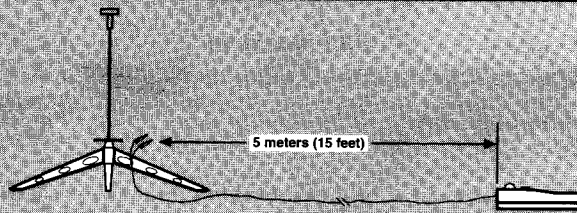
- 9...** Remove safety cap from launch rod, slide launch lugs over rod. Make sure rocket slides freely and micro-clips are clean for good electrical contact.



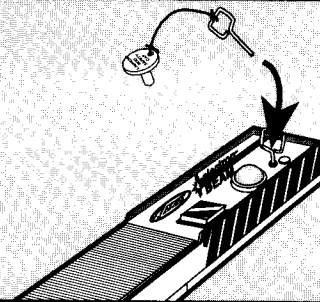
- 8...** Attach micro-clips to the igniter wires. Arrange the micro-clips so they do not touch each other or the metal blast deflector. Attach micro-clips as close to protective tape on igniter as possible.



- 7...** Move everyone back from your rocket as far as launch wire will permit (at least 5 meters - 15 feet).

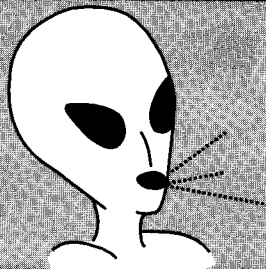


- 6...** Insert safety key to arm the launch controller.



- 5...** Start audible countdown.

4...3...2...1.....



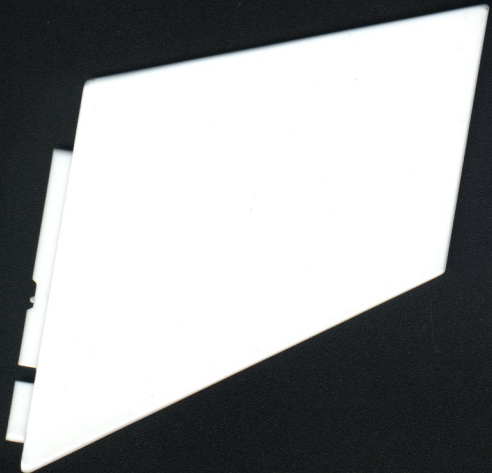
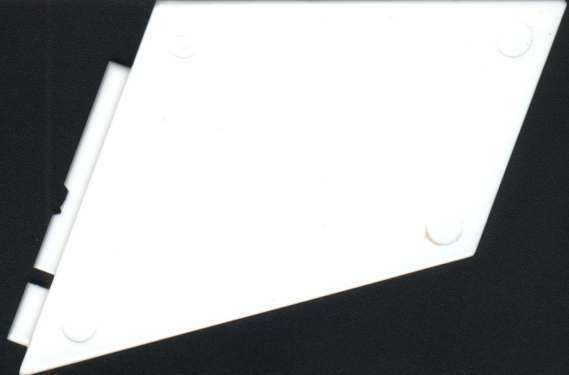
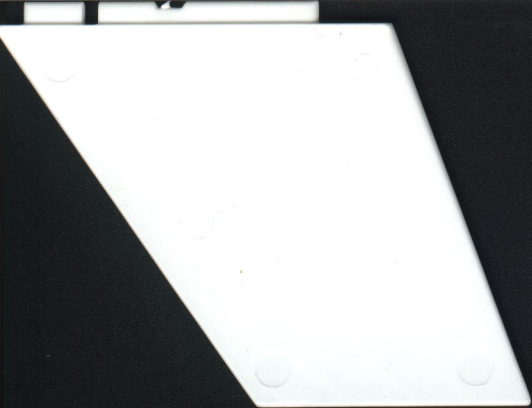
LAUNCH!

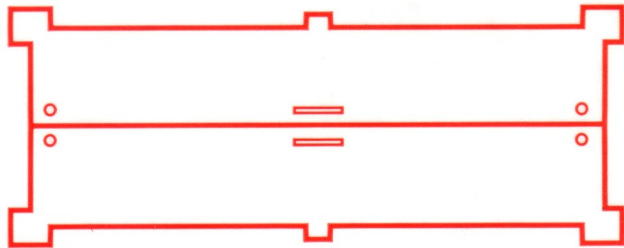
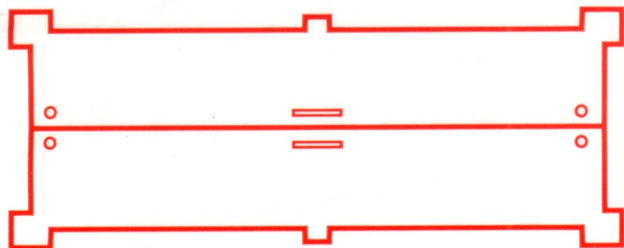
Push and hold button until engine ignites.

For safety, immediately remove safety key from launch controller and replace safety cap on launch rod.

MISFIRES

When an ignition failure occurs, **remove the safety key** from the launch control system and **wait one minute before approaching the rocket**. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant. Broken or chipped coating will not affect the performance of the igniter. Reinstall the igniter plug as illustrated previously. Repeat the countdown and launch procedure.



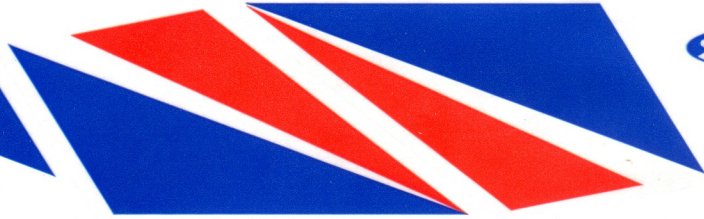
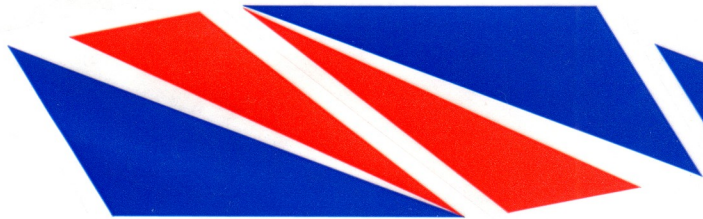


LSX™ LIGHT SAT EXPERIMENTAL

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↑ TO LEADING EDGE ↑

↑ TO LEADING EDGE ↑



↓ TO LEADING EDGE ↓

↓ TO LEADING EDGE ↓



PN 37721



EDX
SERIES
ALMOST READY

INSTRUCTION

HOBBY KNIFE, LAUNCH

RE SHADED IN

LAYOUT



PLUG (1)

ELASTIC TUBE
DOPPLER WITH
LAUNCH LUG (1)

TAPE



PARACHUTE 18 (1)

LSX™



ADHESIVE DECAL
SHEET (1)

27721

