



ESTES INDUSTRIES  
1295 H Street  
Penrose, CO 81240

# SUPER NOVA PAYLOADER™

Flying Model Rocket Kit Instructions

MATERIALS REQUIRED: TUBE-TYPE PLASTIC CEMENT, HOBBY KNIFE, WHITE OR YELLOW GLUE, MASKING TAPE, SANDPAPER, PAPER TOWEL

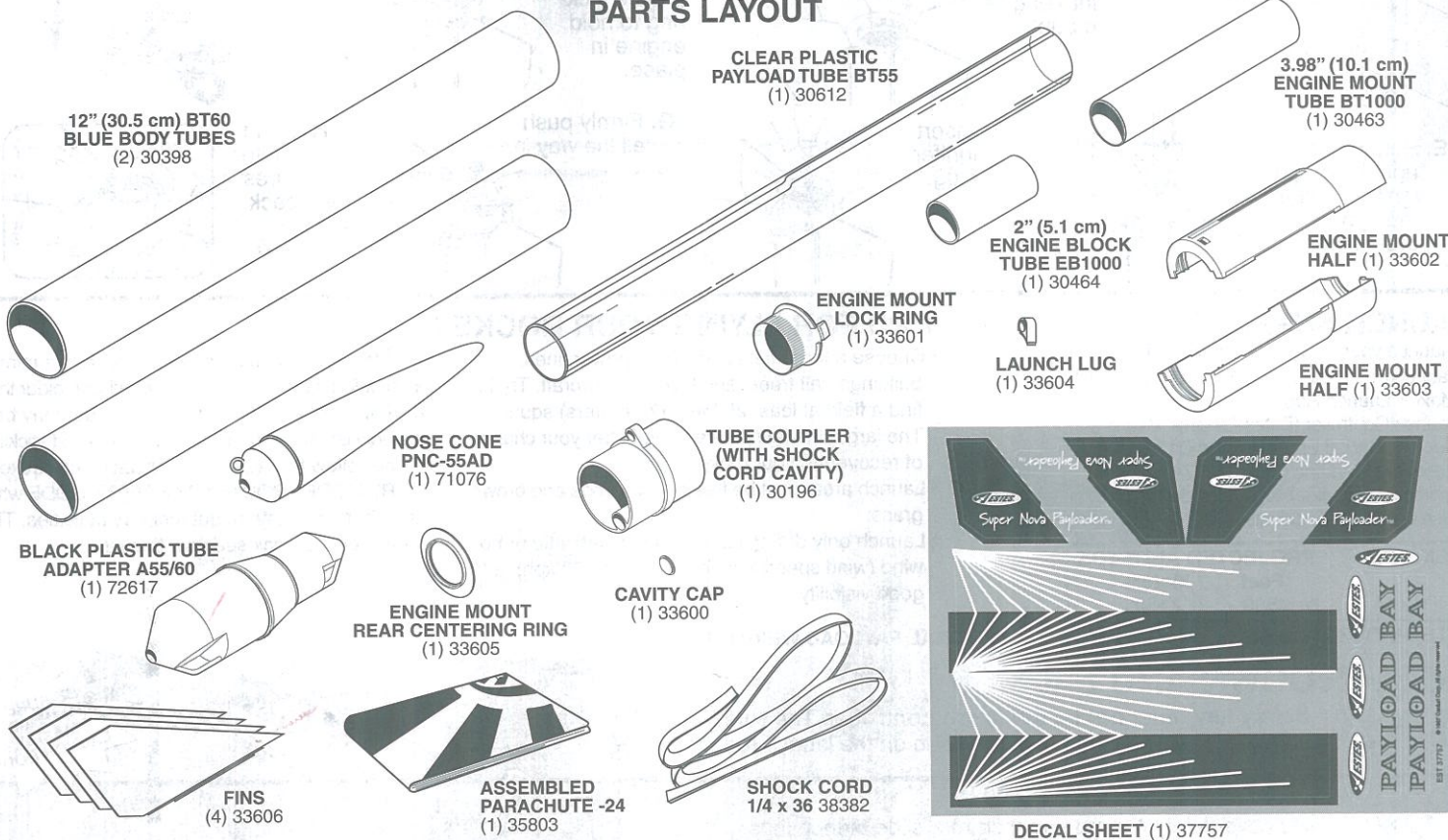
EXPLORER  
SERIES  
Skill Level 2

ALL GLUED AREAS ARE SHADED IN GRAY

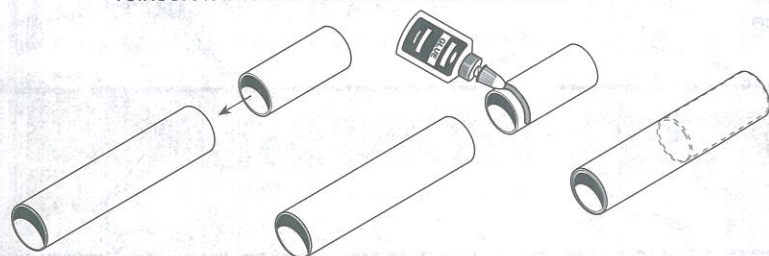
Be sure to read all instructions, test fit all parts, and sand if necessary before gluing.

EST 2155 (4-98) 82219

## PARTS LAYOUT

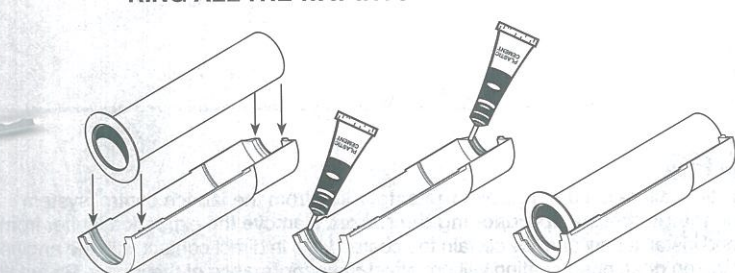


- 1. A.** Test fit the engine block tube into the white engine mount tube. Remove and sand as necessary, then apply a small amount of white or yellow glue around the outside of the engine block tube and reinsert it into the tube until ends are even.



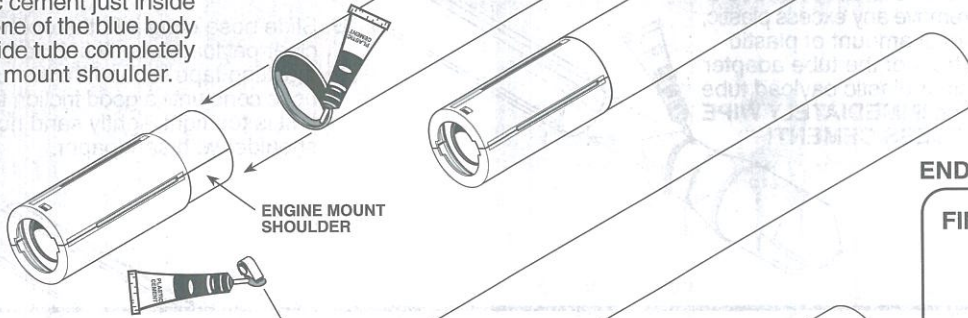
- B.** Test fit the shoulder of the centering ring onto the end of the engine mount tube opposite the engine block. Remove ring, apply a small amount of plastic cement around the outside of the tube, and reapply ring. Let dry.

- 2. A.** Test fit the engine mount tube into one of the engine mount halves. Remove tube, apply plastic cement to the ring and tube bays, and reinsert engine mount tube. **BE SURE TO PRESS RING ALL THE WAY INTO ITS BAY!**

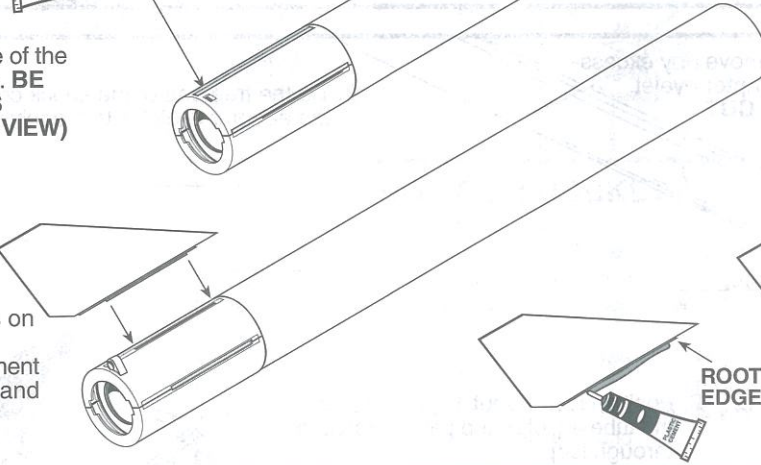


- B.** Test fit the other engine mount half to the assembly. Sand as necessary until halves fit together perfectly, then apply plastic cement to areas shown and press halves together until cement sets.

- 3.** A. Apply plastic cement just inside one end of one of the blue body tubes and slide tube completely over engine mount shoulder.

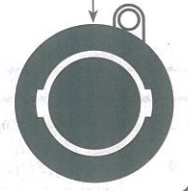


- B. Apply plastic cement to the base of the launch lug and insert as shown. **BE SURE LAUNCH LUG SLANTS TOWARD FIN SLOT! (SEE END VIEW)**

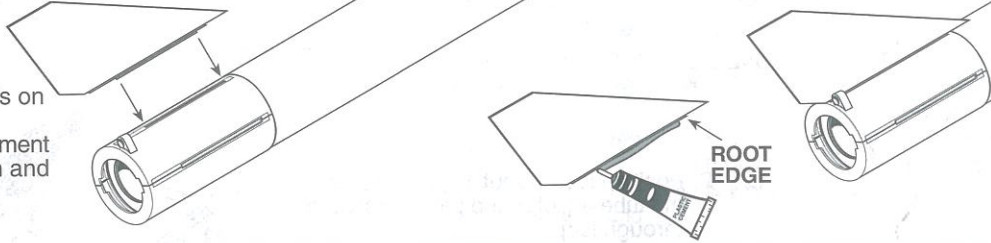


END VIEW

FIN SLOT



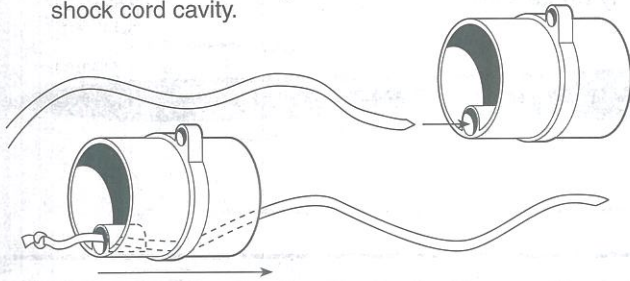
- C. Test fit each fin into the fin slots on the engine mount tube. When satisfied with fit, apply plastic cement along the root edge of each fin and reinsert. **BE SURE FINS ARE STRAIGHT!**



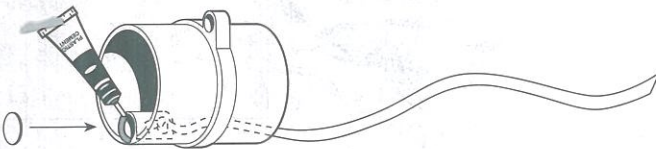
- 4.** A. Tie a double knot in one end of the shock cord and trim the free end to a point as shown.



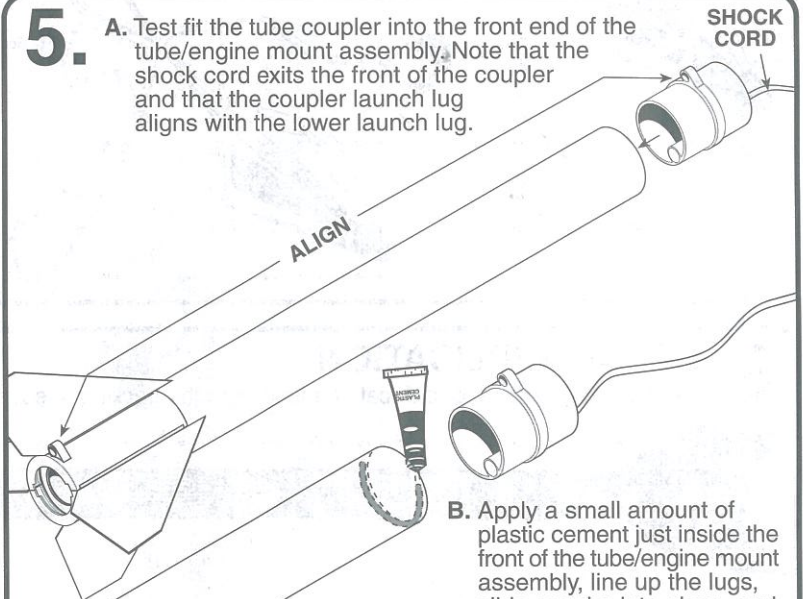
- B. Feed the free end of the shock cord through the rear of the tube coupler ring until the knot sits inside the shock cord cavity.



- C. Carefully apply a small amount of plastic cement around the rear outside edge of the cavity and fit the cavity cap into place. **DO NOT GET PLASTIC CEMENT ON THE SHOCK CORD!** Let dry.

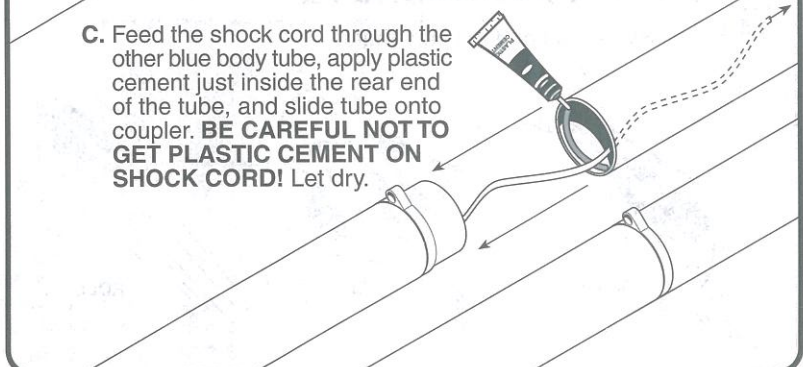


- 5.** A. Test fit the tube coupler into the front end of the tube/engine mount assembly. Note that the shock cord exits the front of the coupler and that the coupler launch lug aligns with the lower launch lug.



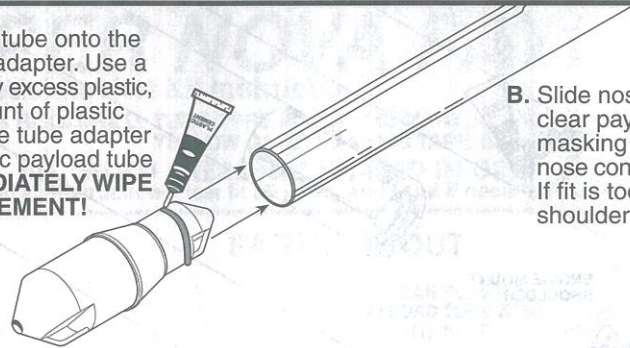
- B. Apply a small amount of plastic cement just inside the front of the tube/engine mount assembly, line up the lugs, slide coupler into place, and **IMMEDIATELY CHECK LUG ALIGNMENT.** Let dry.

- C. Feed the shock cord through the other blue body tube, apply plastic cement just inside the rear end of the tube, and slide tube onto coupler. **BE CAREFUL NOT TO GET PLASTIC CEMENT ON SHOCK CORD!** Let dry.

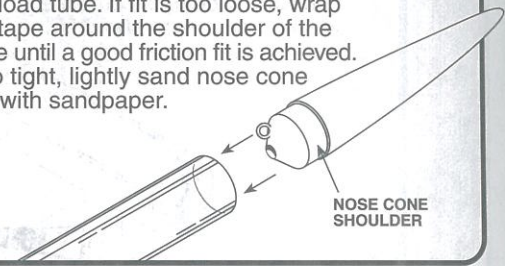


6.

A. Test fit the clear payload tube onto the front of the plastic tube adapter. Use a hobby knife to remove any excess plastic, then apply a small amount of plastic cement to the front of the tube adapter and slide the clear plastic payload tube onto the adapter. **IMMEDIATELY WIPE AWAY ANY EXCESS CEMENT!**

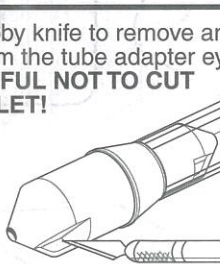


B. Slide nose cone into the open end of the clear payload tube. If fit is too loose, wrap masking tape around the shoulder of the nose cone until a good friction fit is achieved. If fit is too tight, lightly sand nose cone shoulder with sandpaper.

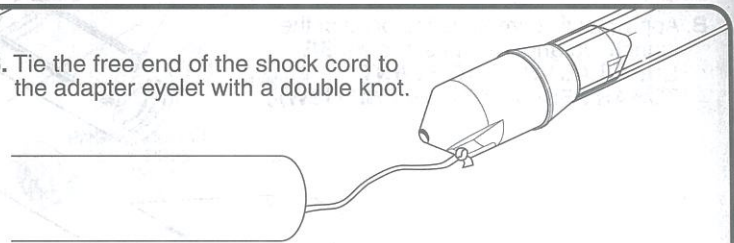


7.

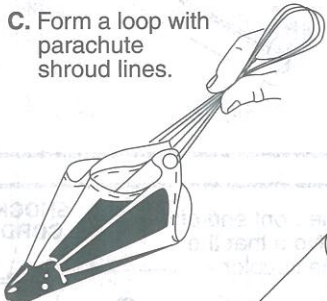
A. Use a hobby knife to remove any excess plastic from the tube adapter eyelet. **BE CAREFUL NOT TO CUT OFF EYELET!**



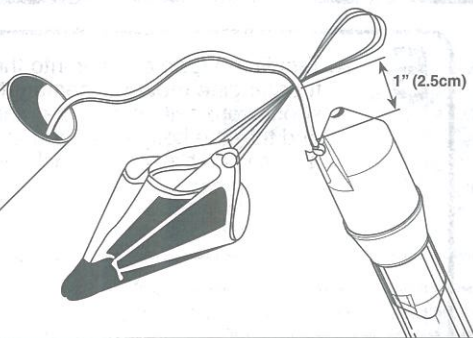
B. Tie the free end of the shock cord to the adapter eyelet with a double knot.



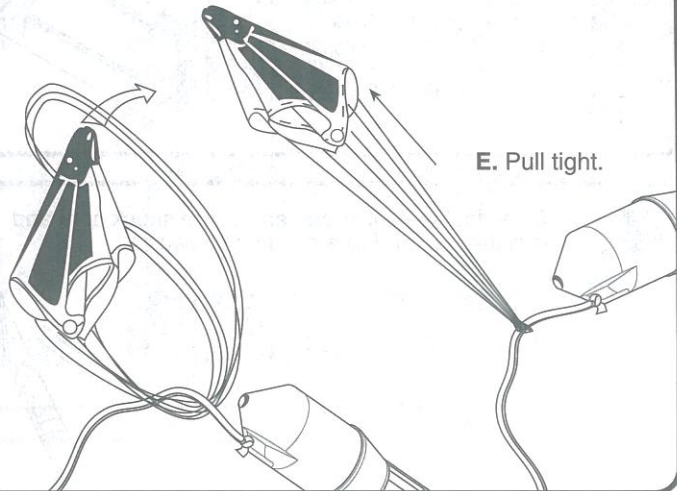
C. Form a loop with parachute shroud lines.



D. Position loop about 1" (2.5 cm) from the tube adapter and pass parachute through loop.

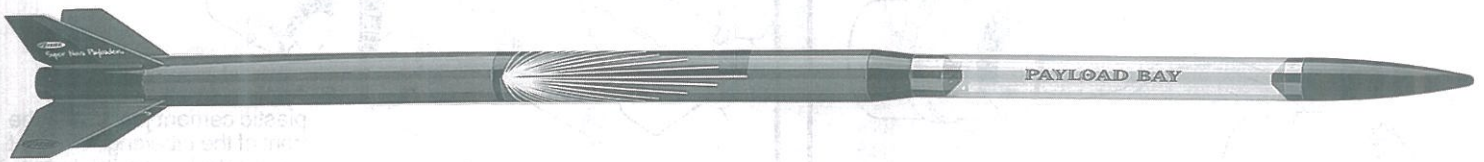


E. Pull tight.



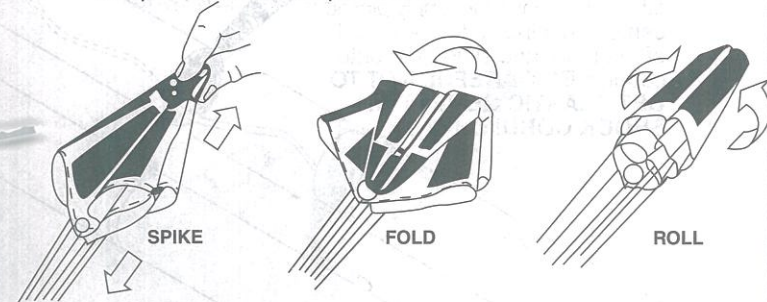
## 8. DECAL APPLICATION

A. Carefully remove one decal at a time from the backing sheet and apply where shown.



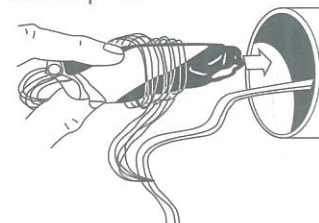
## 9. PACKING PARACHUTE

A. Spike, fold and roll parachute.



B. Wrap lines loosely around chute. Insert parachute into lower tube. Parachute should slide easily into body tube. If fit is too tight, unfold and repack again.

Do not forget to pack recovery wadding in the rocket before flying - see Step 10



# 10.

4-5 SQUARES OF WADDING

B. Slide engine into engine mount.

A. Crumple and insert 4-5 squares of recovery wadding. Repack and insert parachute, shock cord and payload section.

C. Twist plastic engine lock ring to hold engine in place.

D. Separate igniter and igniter plug.

E. Hold rocket upright, drop in igniter. Igniter must touch propellant.

F. Insert igniter plug.

G. Firmly push all the way in.

H. Bend igniter wires back.

## LAUNCH SUPPLIES

To launch your rocket, you will need the following:

- Launch Pad (Estes Porta-Pad® II) with 3/16" (5mm) Maxi™ Launch Rod
  - Launch Controller (Estes Electron Beam®)
  - Recommended Estes Engine: D12-5 ONLY!
  - Recovery Wadding (EST 302274)
  - Igniters and Igniter Plugs (included with Estes engines)
- Use only Estes products to launch this rocket.

## 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 250 feet (76 meters) 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 (wind speed less than 20 mph - 30 kph) and good visibility.
- Don't leave parachute packed more than a minute or so before launch during cold weather (colder than 40° Fahrenheit [4° Celsius]). 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.

ENGINE	PROJECTED ALTITUDE	
	Feet	Meters
D12-5	500	152

NOTE: PROJECTED ALTITUDE IS WITHOUT ADDITIONAL PAYLOAD WEIGHT.

## 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.

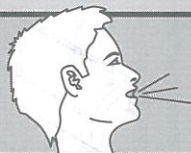
**8...** Attach micro-clips to the igniter wires. Arrange the micro-clips so they do not touch each other or the metal blast deflector. Attach micro-clips as close to protective tape on igniter as possible.

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

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

**5...** Start audible countdown.

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



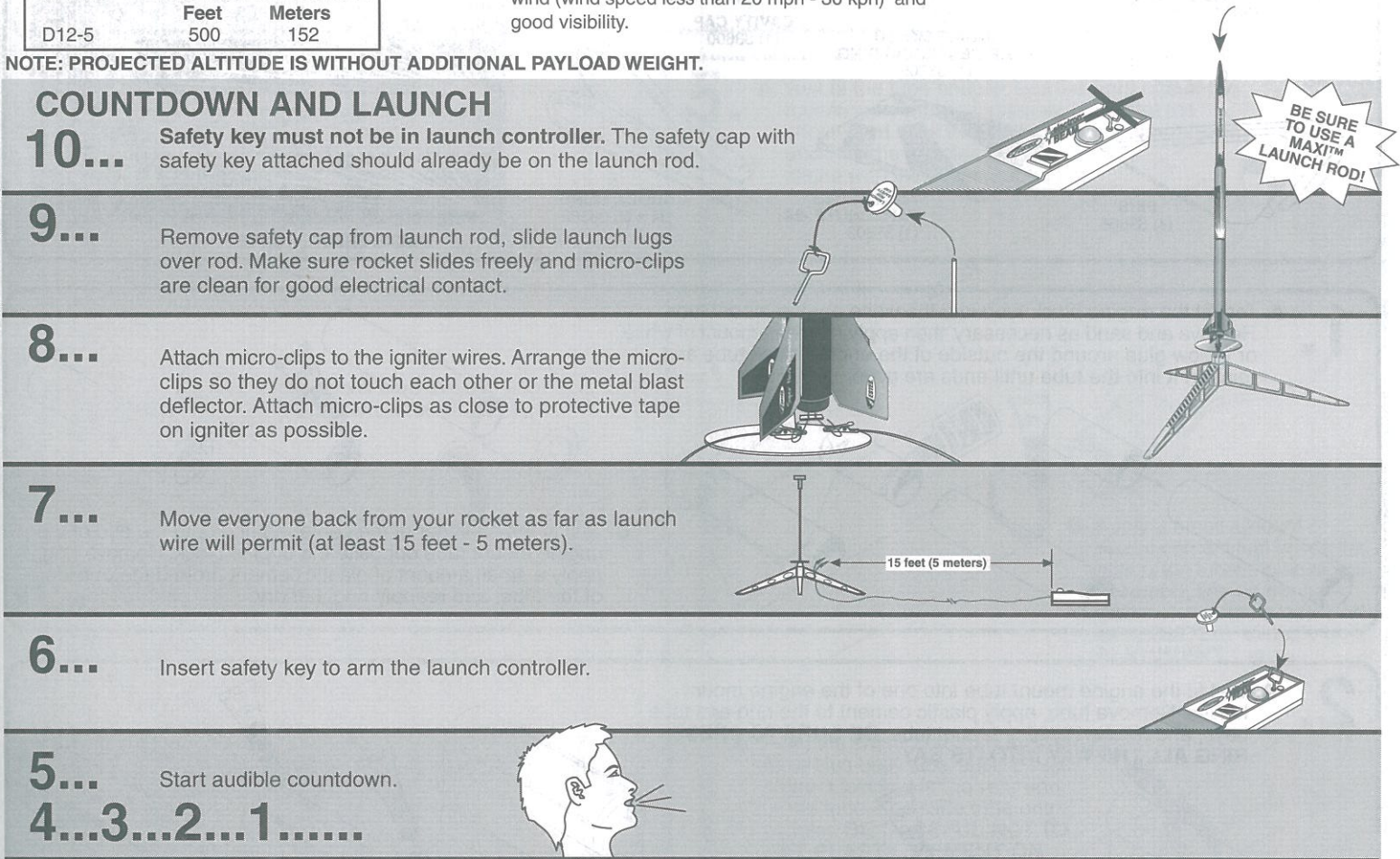
## LAUNCH!

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.



**BE SURE TO USE A MAXI™ LAUNCH ROD!**