

Rocket Launch Field Notes

Equipment List

Launch Pad
Bicycle Pump with gauge
Altimeters (2)

Material List

1L graduated cylinder
Pitcher to pour water into rocket (& Storage vessel for additional water)
Data Sheets
Marker
Safety goggles
Level (to shim launch pad)
Weights Bricks/Rocks (to hold pad stationary)
Screwdriver
WD-40 oil for launch tube
Paper towels
Electrical tape (if fasteners need to be tightened or adjusted.)
Measuring wheel or tape measure (measure distance from launcher)
Chalk (mark positions)

Field Tips

Bicycle pump gauge is gauge pressure. The NASA simulator reports absolute pressure.

Use the level with shims to true up the launch tube.

Use a slight amount of oil on the launch tube to reduce friction during launch.

Check the retaining cap for snugness against the bottle for each launch. Adjust the position of the hose clamp with a screwdriver. It is a minor adjustment, but is crucial for successful launches. (If the retaining cap is loose, launch will be premature.) The position of the hose clamp can change slightly after each launch.

Rather than use the pull chord, better results are obtained by grasping the cap with your hand and pulling straight down. Use goggles as there is some splashing. If the pull cord is used, note the arrangement in the center photo. The cord goes under the center tube in order to provide a more uniform downward force when pulled.

The altimeters require some practice. The best results were obtained when the rocket is tracked to its apex. The release trigger pulled and the altimeter held in that position for several seconds and then released. This procedure allowed the indicator to come to rest at its equilibrium value. The distance from the launch pad to the measurement station should be set to give a mid-range reading (30°-60°) on the altimeter.

Special Equipment Sources

Launch

Amazon ~\$16 (2014)



Estes 302232 AltiTrak Altitude Finder

Amazon ~ \$13 (2014)

