



Space Derby Stuff

The rocket **body** may be no longer than 7 inches, not including the propeller and fins.

Fins may not extend more than 1 inch past the back of the rocket.

Fins should be on top and sides, do not put a fin on the bottom of the rocket.

Only basic materials supplied in the kit may be used.

There are no restrictions on the weight of the rocket. Lighter rockets go faster.

Reduce air friction or "drag" by making all surfaces as smooth as possible. A blunt, rounded nose causes less drag than a sharp nose. A good design has all leading edges rounded and trailing edges tapered to reduce the drag.

Use a sharp knife for cutting the grooves for the hanger fitting and fins. A dull knife will crush and splinter the balsa wood.

When you start to carve, remember that the end with the small hole is the rocket nose.

To help increase the rocket's speed, reduce the wall thickness to a minimum of 1/8 inch. Do not weaken the area around the hanger (carrier) or carve away the nose button circle.

Do not apply too much paint to the outside unless you sand between each coat.

The little plastic straw **MUST** go over the hook (not just the shaft as the drawing in the space derby kit illustrates). This is where the rubber bands will hook on - the wire hook will cut the rubber bands without the plastic straw liner!!!

Lubricate the rubber bands (spray silicon, ethelene glycol, castor oil, ...)! Stretch them numerous times before loading, hand wind the bands numerous times before races (20 winds, then 40 winds, then 60, 80, 100) -- this helps relax the elastic properties of the band and makes it more pliable and durable (this is exactly why the clowns stretch the balloons before blowing them up!).

The plastic dowel at the rear of the space derby to hold the rubber bands **MUST** be kept from rotating (groove out the back so the dowel can sit in it!) - do not glue it!

Prior to race your rocket will be fitted with a winding hook that will stay on the rocket. This will speed up the time it takes to wind rockets.

Do not glue the front nose/propeller assembly into the front of the space derby. It is pulled off to re-load new rubber bands!

The propeller should have the rounded shaft-end pointing into (touching) the space derby (this makes the bending of the wire easier and it reduces friction).

Space Derby Kits can be purchased at the scout shop in Balboa park. You may also check at Michaels and Sport Chalet UTC