

Camera Dolly with Pneumatic Wheels

Back in the 60's, I had a camera dolly with big wheels and we used it a lot, both as a wagon to carry equipment and as a smooth rolling and stable camera platform (See photo on the right). Recently, I was producing a film that had a number of scenes where tracking shots could be used and the locations had smooth floors. Perfect for a dolly with big wheels. Thus, I set out to build one.

The camera dolly that uses skateboard wheels and runs on pipe track has become very popular. I have used these units and they work quite well. They have some caveats.

- For real stability, one needs steel pipe rather than PCV.
- The pipe track needs to be carefully leveled and this takes time to do.
- Rolling over the pipe section joints, no matter how cleverly designed, causes bumps.
- Carrying around a bunch of ten foot lengths of pipe is a hassle.
- You cannot use it as an equipment carrier as rough surfaces cause pitting in the skateboard wheels and then they don't roll smoothly.



Origin of an Idea:
David Barber and Don Wetherwax on
Location for *The Battler* (1965)

A dolly with big pneumatic wheels rolls over any surface and the tires are tough, so it makes a good equipment carrier. It rolls smoothly over all smooth and many not-so-smooth surfaces and there is no track to carry around or set up and level. Thus, shots can be set up faster.



Completed Camera Dolly

The camera tripod mounts solidly on top of a spreader or small wheeled dolly. Hold it in place with bungee cords. A simple camp stool works well for the camera operator. It is not attached to make mounting and dismounting the dolly easier. The grip pushes the dolly with the handle or you can use a pull rope attached to the eyes at each corner.

The platform of the dolly is made of two pieces of $\frac{3}{4}$ " plywood. Size in this case was 17" x 42" and with the two pieces glued and bolted together it is 1 $\frac{1}{2}$ " thick. The platform was stained. Width of the finished dolly is 28".

The push handle is made from galvanized steel pipe fittings. Find these in the plumbing section of the hardware store. This is referred to as $\frac{1}{2}$ " pipe. That is the internal diameter. All the fittings are threaded, so everything just screws together. The handle unscrews for storage.

- 2 End Caps
- 2 5" Nipples
- 1 Tee
- 2 12" Nipples
- 1 6" Nipple
- 2 Couplings
- 1 Flange



Wheel Detail

The wheels and axles were assembled using the following:

- 4 Pneumatic wheels and tires – 10" diameter with 5/8" axle. These are rubber tires on steel wheels with inner tubes, and you pump them up. They have wheel bearings and roll very easily and smoothly. Find in the garden tools section of your hardware store. My rural store did not have four of any one wheel design, so I have pairs of different, but quite similar, wheels front and back. Look at them carefully and insure that the nut can rest firmly against the inner race of the bearings and not foul the outer race. If the nut binds on the outer race then the wheel will not turn freely. Price varies a lot, e.g., from \$8 to \$16.
- 2 Threaded steel rods - 5/8" x 11 in 3' length. Cut to size once everything is fitted. These are in, or near, the nuts & bolts section of your hardware store.
- 8 Nuts, 5/8" x 11.
- 6 Galvanized 1/2" pipe straps. Get these in the plumbing department with all the handle pieces. Drill out the holes to accept a 1/4" bolt.

To hold everything together, get:

- 18 Nuts and Bolts – 1/4" x 20 in 2" length, with lock washers and nuts.
- 6 1/4" fender washers. Put fender washers under the four bolts used with the flange and the two bolts set between the axles. That will help reinforce the handle and keep the nuts from sinking into the wood.
- 1 Tube of thread locker compound. Any brand.
- 1 Bottle wood glue. Weldbond suggested.
- 4 Screw eyes. These are optional and are to be used as attachment points.

