Modeling a Working Hot Air Balloon

By Del Tapparo

One of my customers, Paul Hart in Mahopac, New York, contacted me for some advice on his idea for a project. He wanted to have a hot air balloon for his garden railroad's circus scene. The balloon would be suspended on fishing line and slowly rise and fall about 10 feet via some sort of motor drive. He wanted to know how to control it.

Initial ideas and some testing based on a running a motor for a precise time period were prone to errors, which would make landing the balloon at the same spot/time unreliable. We needed some sort of position feedback.

I advised Paul that my G-Scale Graphics Enhanced Critter Control, which can be used for back 'n forth trolley operations might be the answer. It uses magnets and reed switches to detect the end points of the run. Paul came up with a sketch showing the reed switches mounted to the side of the house and a magnet attached to the fishing line.

Paul then worked out the mechanics of the project using a pipe extending out from the house and pulleys to guide the fishing line down to the motor house. Inside the house is a 24VDC, 45 RPM, gear motor, the Enhanced Critter Control and its speed adjustment, and a Sound Module that will be playing a sound track for a biplane that will be pulling a banner to hide the pipe. Great idea!

Upon testing, Paul says it all works perfectly. Travel from end to end takes several minutes, with the balloon making nice soft landings each time with just a bit of slack in the lines. It rests for awhile, then makes the trip back up.

What a fun project. Thanks to Paul for letting me be a part of it.

Fishing Line & Magnet

Reed Switch
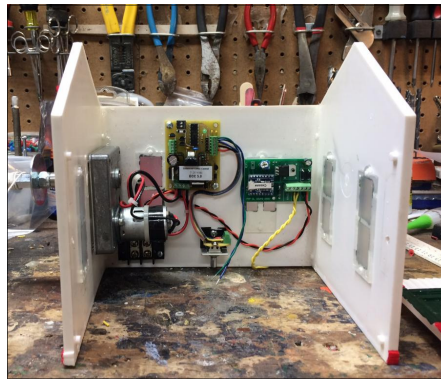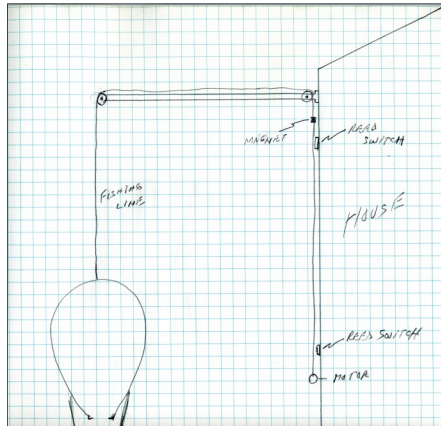
Above left: The motor, Enhanced Critter Control, and Sound Module.

The house protects the motor and electronics from the elements. It is powered from a 12VDC power supply in a nearby shed.

Left: The fishing line and magnet. Magnet must be within 1/4" of the reed switch.

Photos: Paul Hart