



## Roadside Haunt

<http://roadsidehaunt.com/howtos/ghost.html>

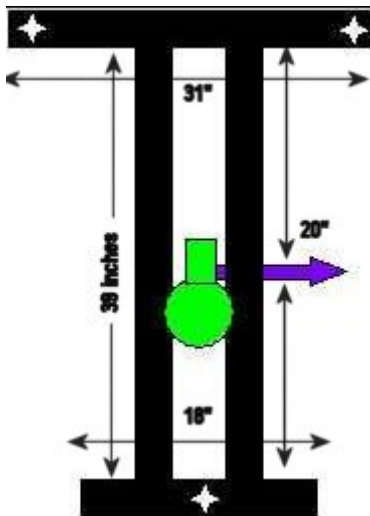
## Flying Crank Ghost



There are numerous sites on the web on how to build a Flying Crank Ghost (FCG), most notably the originator of the prop, Phantasmechanics, the site with the most detailed instructions, Kick the Fog and the site with the cheapest version, Easy FCG. I cannot hope to put up better versions of these three how-tos, but what I can do is show how to take these three most informative sites, and use their knowledge to create your own version. Think outside the box is my motto.

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### Building a Frame



In a quest to build an inexpensive frame, which aluminum is not, I decided to go with wood. I had 1x3 lumber, and cut to length. I started to use the measurement available at Kick the Fog's site, but ended up going with the ones in the frame drawing. I mounted the motor so that the crank arm was dead center of the frame. Measurements were two lengths of 39 inches, the front cross piece was 31 inches, and the back piece was 18 inches. The boards are attached with screws, and it actually is very stable.

I used eyebolts screwed in at the top for hanging, and connected it to the roof of the crypt (which also had eyebolts screwed into it) with a fairly heavy wire (clothesline wire to be exact). Just make sure you level the frame if you do it this way. Using quick connectors wouldn't allow me to have a level platform, which is why I went with the wire.

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To mount the motor, I used regular screws into the wood, and taped the capacitor to the motor itself to hold it in place. The wiring was the hardest part, since using the wire caps would cause it to pull apart. I finally ended up just using electrical tape to put the switch and wires together, and it pretty much stayed in place after that. Also, I used cable ties onto the frame to hold the power cord in place, as that also had a tendency to come apart. This motor unfortunately is no longer available, otherwise I'd recommend it. It's extremely silent and very powerful, and is reversible, so you can run it whichever way you'd like. I chose to run it clockwise, as I really saw no difference in movement.

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For the crank arm, I was fortunate to be working at a factory that uses bolts with handles in their product (snowplows). These are bolts that are welded to a steel strip and used to put bolts into a truck's frame, where the reach is too narrow for a hand. The one I was using had an 18 inch handle, so I cut off three inches, and bent it at a 90 degree angle from three inches down. This left a crank arm of 12 inches. Also, I was fortunate to have access to the metal fab department, so it made those modifications easy for me.

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Once I had the arm to my satisfaction, I made the fender washer as per the EZ FCG site, in other words, rather than drill holes, I used small washers and JBWeld to create the attachment points. It did take a couple of tries to get them equidistant, and far enough apart to prevent fetching up on the nuts. For nuts, I used an assortment of lock washers of different sizes to hold that fender washer in place without wobbling.

To aid it in spinning freely, I used a nylon washer I got from the hardware store. I think it made all the difference.



I then attached the crank arm to the motor shaft using a wire clamp connector I found at the hardware store. The regular u-bolt recommended by the other sites wouldn't work for me. At first I couldn't find them at the hardware store, and when I did, none of the sizes seemed to be appropriate. The one I used did the job, but it did come apart a couple of times. Mainly due to not being tightened

down far enough, so I also added some JBWeld to the pieces and let them set overnight. Next year I am going to try a small hose clamp and JBWeld.



So, after numerous false starts, I was ready to make the ghost. I did the standard draping, using instructions from Phantasmechanics site, but did not go with the LED eyes, due to the location of my crypt. I also didn't use hands, preferring to leave the illusion as ephemeral as possible. And those hands do look cheesy. I did add weight to the hands, using some fairly large fishing sinkers, as I was having some

snagging problems. There was no need to counterweight the ghost, but I do feel the balancing did help in the tangling and breaking.



For line I used braided nylon ice fishing line, having discovered that monofilament, even 50 lb. test, wasn't going to work very well. I also used silicone spray on the eyebolts for smooth operation. Although I started out with the little swivel pulleys, I eventually removed them as they were more trouble than they were worth. For more tips and tricks, and some troubleshooting

## **Next Page: Tips and Troubleshooting Your FCG**

### **Things No One Ever Mentions**

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Although there is plenty of knowledge and sites for creating the platform, and building a ghost, sometimes the littlest things get left out. I wish there had been a site that answered these questions I had. Since there wasn't, I had to wing it, and learned quite a bit in the process. Here are some of what I consider important.

## **Level it!**

Maybe this seems obvious, but to many of us it isn't. When hanging the platform, use a level. I have a tendency to eyeball things, which is great for hanging pictures, but hanging your lovely ghost is a little more complicated. If hanging in a crypt, which may be on uneven ground, it's even more important.

## **How to Hang**

Another question I had was how do you hang the head and arms for the best movement? Here's what I came up with, and it seemed to work out well. Stop the crank 180 degrees from the head's eyebolt (the one at the rear). With the line attached to the head, pull the head up so it's about 2 inches below the eyebolt, then thread the line through it and to the fender washer and tie it. Start your motor and stop it 180 degrees from the arm eyebolts at the front. Do the same thing with each of the arms as you did with the head.

## **The Washer Wobble**

I can't say this often enough, but a main cause of many problems is that darn fender washer. If it's too tight, it won't spin, and if it's too loose it wobbles, causing tangles, breakage and more. If you make your platform like Phantasmechic's, then you should have no problem. But if you use anything different, you'll just have to adjust and readjust until you get it right. No wobble. Period. I used several nuts of varying sizes to get it so it wouldn't wobble when the crank was going around. Take your crank arm to the hardware store to try out the various nuts if you must.

## **The Right Kind of Motor**

A lot of sites advocate using a rotisserie motor for you FCG. I don't, it just doesn't have enough torque. If you can, get the Dayton motor. The original is no longer being manufactures, but there is a better replacement for it, which has even more torque than the original. The motor I used was a pull out of some machinery, it could run CW or CCW, 5.76 RPM and had a rated torque of 50 lbs. per inch and was extremely. And it was only \$20.00. So look around, you'll be able to find much better than a rotisserie motor.

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## **Troubleshooting Your FCG**

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Obtained from  
Omarshantedtrail.com

Although an FCG is an ideal first animatronic to build, it does not come without problems. I encountered a number of them, so here is a troubleshooting guide for the most common of them.

My FCG keeps tangling up in the mechanism.

This is probably caused by using the little swivel pulleys. If your line is too thin, the tension may not be enough to prevent it from slipping down next to the swivel. Your best bet is to remove them, and just use eyebolts. So they will slide easier, spray the eyebolts with a silicone type lubricant. There is one other cause, and it's an important one. Make sure your fender washer is not wobbling. It must be able to spin freely, but it must not have any wobble to it.

The FCG is moving too jerkily. How can I get smoother movement?

First, make sure your motor has enough torque, and that your FCG isn't too heavy. The main reason for this, though, is that the weight is slightly unbalanced. When you think about it, the head is the heaviest, and the arms weigh virtually nothing. To solve it, add some weight to the arms. What I did was attach some fishing sinkers to the ends. The larger ones work well. It doesn't add appreciable weight to your rig, they won't be seen, but it does balance it out a little more. Watch her fly after doing that.

The line keeps breaking. What should I do?

I had that problem and thought I would never solve it. I tried monofilament fishing line, starting with 15 lb. test and working up to 50 lb. test. I was about ready to use welding wire. Then I asked a buddy at work if he had some of the braided nylon, heavy duty line for ice fishing, and he did. It comes in several brands, and I highly recommend it. The one I used was Polaris, 25 lb. test.

More to come as I get them done.

Obtained from  
Omarshantedtrail.com