

Creepy Nights on Calamo

<http://www.creepynights.org/Projects/2006/HeadTurner/index.html>

Head Turner Prop

Our Head Turner prop got completely reworked for 2007!

My first truly animated prop! After H-2005, I've been itching to do some REAL cool props for NEXT time! In that vein, I've stocked up on goodies (PVC, pneumatics, microcontrollers, servos, relays, LEDs, and lots of other fun tools), as well as done a lot of research and reading on how to get this stuff to work.

Unfortunately, lessons learned and all that; the head turner didn't make it out in '06. Her sound system wasn't satisfactory, and the mounting point for her head on the servo was weak and needs to be reworked. Regardless, she's a cool prop and I hope to have her revamped and ready for action for '07.

As my first exercise in animation, I picked a variation on a prop I'd seen someone else do. A female figure, draped over a tombstone in the distance. As you approach, the head with turn (revealing a hideous face), the eyes light up, and it SCREAMS. :-)



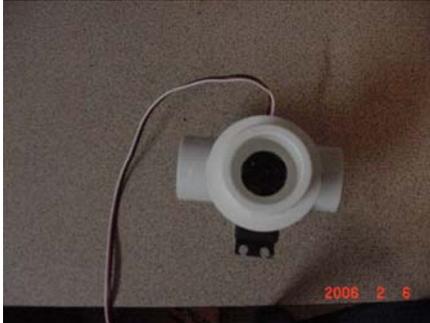
First step was a PVC frame, allowing for a head that would rotate.

Second, figuring out just HOW we would get the head to turn. I decided to mount a servo right in the PVC frame at the neck point. Onto the top of the servo I glued a PVC end cap, allowing me to stick a short piece of PVC in it and up into the (foam) head we would be mounting on it.





And an update; After getting all that together, I discovered that the servo took up too much room inside the PVC; there wasn't enough room to tuck in the shoulder piece on one side so that it would be secure...



So... I pulled the servo out, took another piece of PVC and cut a slot out (using the trusty Dremel) so the servo was aligned front to back, leaving me enough room on each side to slip in the PVC pipes that would be our girl's shoulders.



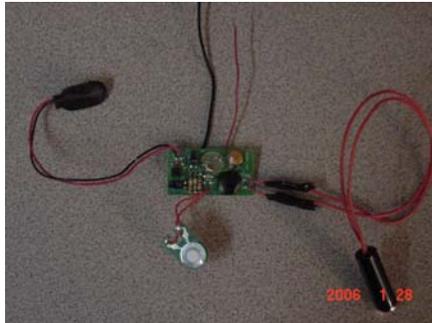
With a servo, and the other linked effects I wanted to trigger, it came time to consider the "brains" of this prop. For this I picked up a PROP1 board from Parallax.



To the PROP1, I've wired a PIR (passive infrared) motion detector, a pair of LEDs to light the eyes, the servo, and a sound board (Radio Shack digital voice kit).



Here are pictures of the [Radio Shack "20-second recording module" \(Part#276-1323 \\$10.49\)](#) before and after hacking it to work with the PROP1 board and external speakers.



Hacking instructions came from

<http://www.employees.org/~joestone/Halloween.old/Html/microcontrollers.htm>



And here's the foam wig-form head used for the figure; an original and one painted with the large LED eyes fitted in it.



Worked out a few bugs in the PROP1/BS1 stamp code and now have that working pretty well. The PIR gets tripped, the PROP1 delays 15 seconds then turns the head around (via servo), lights the eyes up, and triggers the sound module. 20 seconds later the head turns back around and the eyes go out, and the PROP1 pauses for 40 seconds to ensure it can't be re-tripped right away.



The wig I ordered finally arrived. Here's what the head looks like, with hair, sitting on the PVC frame;



Mounted the PROP1 and sound board on a small piece of 1x4 screwed to the PVC body frame facing the back. The PIR is taped temporarily to her shoulder; once we have the body framed out and a costume on her, the PIR will be mounted so that it can "see" over her shoulder.

And couldn't resist taking a picture of her with electronics mounted and the wig in place.



Now she gets a wire torso. We purchased some chicken wire, folded it over the shoulders and gathered it in along the sides, wrapping pieces around each other to get it to stay in place.



Finally we added a strip of duct tape along the bottom and over the shoulders to protect the dress she'll be wearing from sharp protruding wires.



Obtained from Omarshauntedtrail.com