

*Monitor Large Nesting Boxes  
Using a Video Camera*



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## Introduction

The monitoring of large nesting boxes<sup>1</sup> can be a burdensome chore. For me, it meant hauling an 18 foot folding ladder into the city park where the tree mounted boxes were located, setting the ladder up, inspecting the first box, collapsing the ladder, moving to the next box, and repeating process until all boxes were inspected. The final trek was hauling the ladder home. One box was mounted in a tree that was on a hillside, and the slope of the hill represented an additional challenge.

I was in need of an easier method of monitoring such boxes, and devised the *pole mounted video camera* pictured in use below as the solution.

Basically, a miniature video camera is inserted into the box. The camera's output video is fed via a cable to a camcorder or video monitor where it is viewed.

My choice of a camera was a Black and White Infrared camera. The camera has built-in infrared illuminators, and is therefore not dependant upon ambient light. This allows for viewing the interior of boxes having



smaller openings such as that of a Flicker box. (Inserting the camera into boxes with small openings blocks the ambient light.)

The downside of such a camera is that the video images are in Black and White—not in color.

The backpack being worn in the picture above is used to carry the two serially connected 6 volt lantern batteries which power the camera.

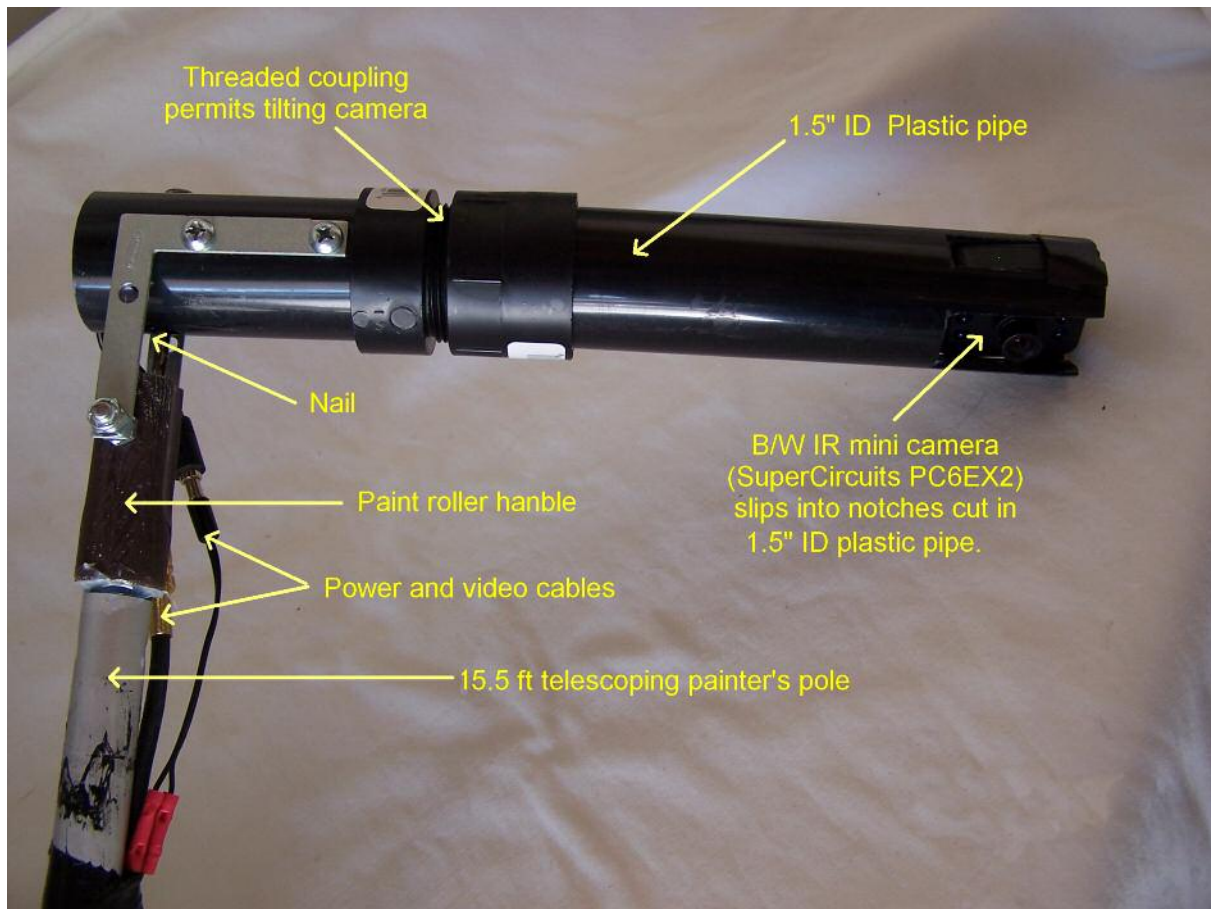
The following pages detail the *pole mounted video camera* assembly, which was done at a cost of less than \$100.

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<sup>1</sup> Flicker, Kestrel, Owl, etc. boxes.

## Overview

Basically I mounted an infrared B/W camera into notches cut into a piece of 1.5" ID PVC pipe. The pipe is attached to the threaded portion of a paint roller's handle, using brackets in a manner that allows the pipe some movement vertically.



The assembly screws onto a painter's 15.5' telescoping pole. The camera is powered by two serially connected 6 volt lantern batteries. A video cable from the camera is plugged into my camcorder.

The camera is inserted into the box's opening, and I view and record whatever the camera sees on the camcorder. Lastly, the video is transferred to my PC using a video capture adapter where I then make a video file.

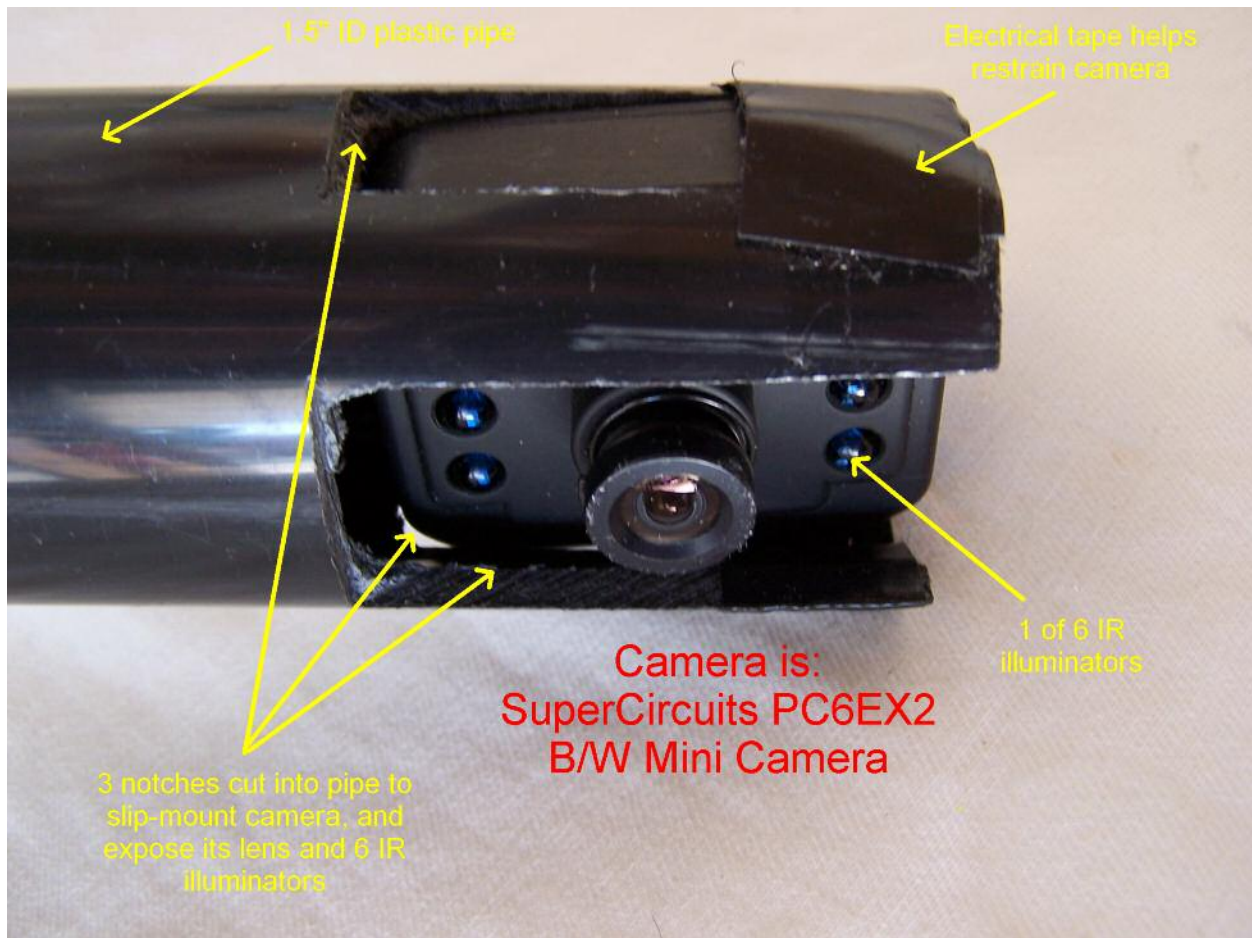
If you plan on peeking into boxes with a large opening during daylight (abundant natural light), a normal B/W or color camera with good low lux capabilities may work. I used a B/W infrared camera since the mounted camera almost fills the Flicker box entrance.

The miniature camera that I used was purchased at:

<http://www.supercircuits.com/>

Unfortunately, the camera that I purchased appears to be unavailable, but they and others have numerous equivalent cameras.

## Camera mounting details



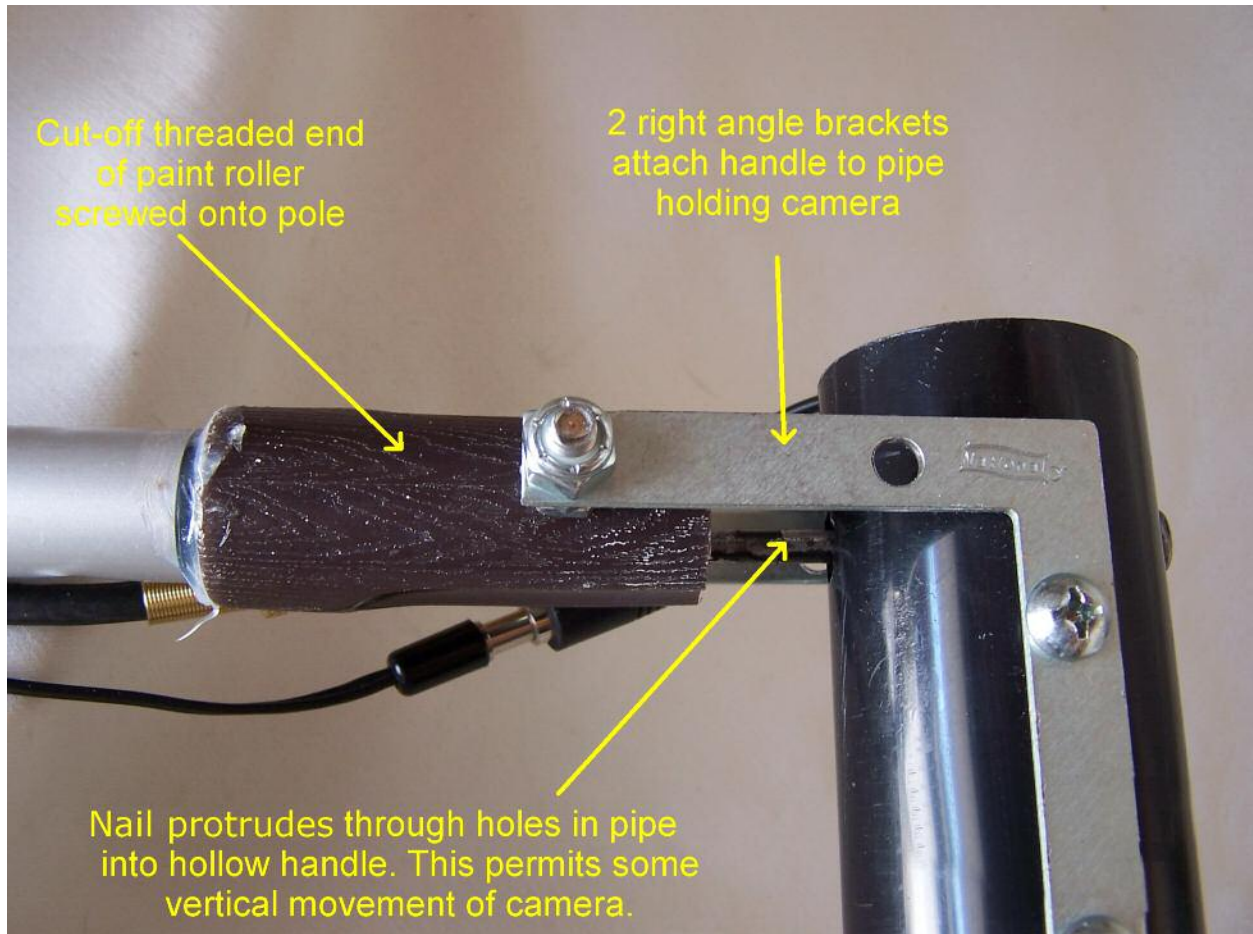
## Detail of the (optional) use of pipe coupling

A threaded pipe coupling is inserted into the pipe to permit more than just downward viewing. This is useful when peeking into an Owl Box—simply rotate the camera left or right before inserting it into the box.



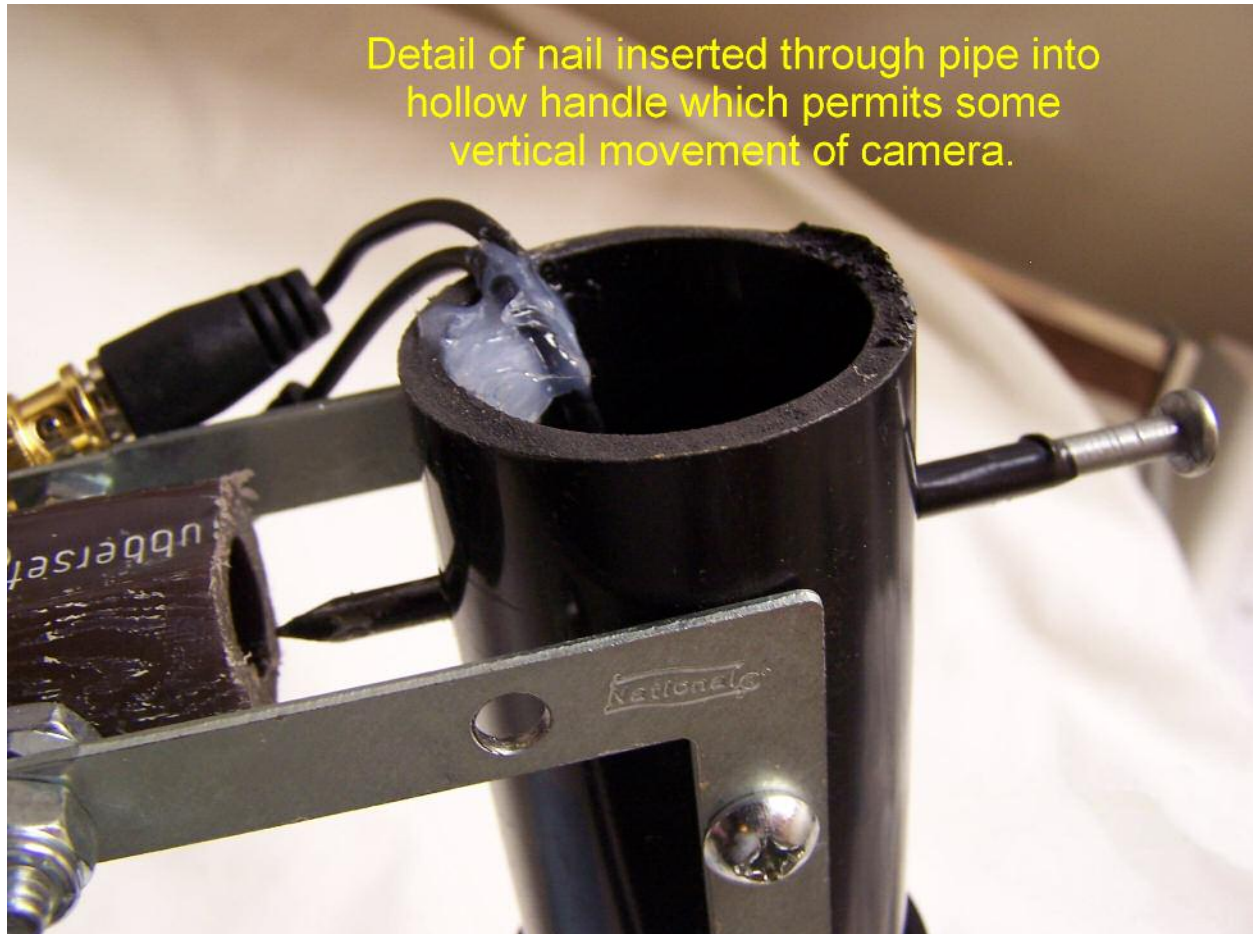
## Detail of handle-to-pipe Connection

The tube holding the camera to the cut-off paint roller handle is provided vertical because only one screw is used to connect the angle brackets to the handle. This permits vertical movement of the camera, but the movement is limited by the insertion of a nail through the tube, and into the roller handles hollow center.



## Detail of nail used to limit vertical movement

The vertical movement of the camera is limited by the insertion of a nail through the tube, and into the roller handles hollow center. Electrical tape wrapped around the nail prevents the nail from easily falling out.



## Summary

The cost for the parts comprising the *pole mounted video camera* was less than \$100 US.

The camera has greatly simplified the inspection of large nest boxes. As the video on the front cover shows, a resident Western Screech Owl appeared unperturbed by its use.