

# IT'S THE CAT'S WHISKERS

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With the Sprengnether Visual Recorders, there is provided a device to set off an alarm bell as soon as an earthquake moves the recording pen. The output of the amplifier which amplifies the electromagnetic current induced in the seismograph by the quake, triggers a CRC-2050 radio tube. The tube output in turn actuates a first relay, which then operates a locking relay, insuring that the alarm bell continues ringing until the pressing of a button breaks the circuit. Unfortunately the electric supply of the city of Baguio has quite unsteady voltage and frequency, disturbing the balance so frequently that the alarm bell rings for almost everything if finely adjusted, even for the putting on of nearby electric lights. If, to avoid this, the device is made less sensitive, it does not trigger for a quake.

Another device was therefore contrived, resting on a very simple principle. To the recording pen an insulated piece of stiff platinum wire was attached, and close to it, on an adjustable arm swinging on a hinge attached to the back of the recorder case, is put an insulated piece of very fine wire, as flexible as can be obtained, so as not to impede pen oscillations striking it. Fine magnet wire of copper will do if nothing else is available, but very fine platinum wire is preferable to avoid possible fouling of contacts. Attached to the ends of the said two platinum wires is a battery operating a delicate relay in the circuit. The more delicate the relay the better, to reduce contact sparking. The one at the Observatory operates on 12 volts, but even less would be better. Three or four pieces of the said fine wire are soldered together at the fixed end leading to the battery, but only one used at a time. The rest are reserves in case the one in use should break.

The device has been dubbed the "Cat's Whiskers" due to the resemblance of the fine wires to the feline appendages, and also because of the slang phrase, now getting obsolete, to express one's satisfaction with a fine job.

The secondary of the delicate relay operates the locking circuit usual with the Sprengnether visual recorder. Note, too, that due to the hinge, the whiskers can be placed near or far from the pen as desired.

As seen, the essence of the device is exceedingly simple, and it has been working very well indeed. In fact, the same device is now used also to increase the intensity of the trace on our Sprengnether photographic recorders by shunting the resistance usually employed in the lighting circuit. By this simple means we get a fine, delicate trace for our ordinary records, showing the microseisms very well, and a much strengthened trace during the rapid light motion of earthquakes.

Figure 1 is the complete circuit now in use, both for the alarm bell and the light intensification. It appears rather complicated, but it is really not so. However, care must be taken in the original wiring to avoid mistakes and cause short circuits in the 110 volt A.C. line. Once the wiring is correctly done, and the joints well soldered, things stay put and do not easily go haywire.

A few words explaining the parts of the circuits may not be amiss:

First Circuit - In this is included the "cat's whiskers", the battery, an optional switch to shut off the battery entirely if so wished, especially during any repair work, the magnet of the first relay, a switch (ordinarily closed) which is opened by the second relay when it is actuated, and finally switches to put either the long period or short period recorders (placed outside the Director's Office) into the circuit or both.

Second Circuit - When the "cat's whiskers" operate, the contact of the first relay is closed. This operates the magnet of the second or locking relay, thus also opening the first relay circuit, but bringing the 110 v. A.C. house current into operation through the locking relay magnet, thus keeping this magnet in continuous operation until the "Bell Stop Switch" is temporarily opened by ourselves. In the 110 v. A.C. circuit is also a step-down transformer to get the low voltage required to ring the different bells. In parallel (with switches to turn them on or off) we have (1) a bell outside the Director's Office; (2) a bell inside the Director's private room just above his office; (3) a bell in the private room of the Seismology Chief; (4) a light in the window of the latter which can light with the bell, and thus give a distant warning if the staff are all in another part of the building. Thus the quake can give its warning day or night.