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## ADAPTATION OF THE OPAQUE PROJECTOR TO LIE DETECTOR DEMONSTRATION

Robert L. Zweifel

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In taking the lie detector out of the laboratory or test room for the purpose of instructing a class of students or demonstrating it before an audience, certain problems are presented. Generally speaking, the size of the group must be restricted to the number that can conveniently assemble around the instrument. Even a small group clustered around the instrument while it is in operation may invalidate the test results to the extent that an erroneous impression is left with the audience concerning the value of the instrument.

The problem was how to make it possible for a large number of individuals to view the lie detector in operation and at the same time reduce the interference with testing procedure. A Bausch & Lomb opaque Balopticon Projector was converted so that the machine could be placed under the projector in such a manner that the chart and recording needles would be projected in motion upon a screen. (See figure 1.) Examination revealed that in order to accomplish the desired results, a portion of the permanent base of the Balopticon Projector would have to be removed, and a substitute base constructed as follows.

Six main pieces make up the substitute base. (See figure 2.) The two sides are 12" x 24" rectangles, slightly tapered in the upper front to coincide with the angle of the front of the Balopticon Projector. A circular hole is made in the left side to accommodate the forced air circulation intake in the projector. A rectangular slot is made in the left side 9 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ ", leaving a strip  $\frac{3}{4}$ " wide at the top bridging the slot. Directly opposite this slot, on the right side, is a corresponding slot 9" x 9 $\frac{3}{4}$ ", leaving a 3" strip at the top. A piece of strap iron 13 $\frac{3}{4}$ " long is bolted near the bottom of the slot on the right side for structural strength. Exactly 5 $\frac{1}{2}$ " from the top edges of the sides and flush with the sides of the slots, 3" x 8" pieces are attached. These two pieces serve the dual purpose of strengthening the substitute base and as supports for the original base when the projector is not being used with the lie detector. The front of the base is 6 $\frac{1}{4}$ " x 8", and the front



Figure 1.

of the projector rests on the top edge. The back of the base is 8" x 11 $\frac{5}{8}$ ", and the top edge serves as a rest for the back of the projector. Two strips  $\frac{3}{8}$ " x  $\frac{3}{4}$ " x 15" are attached on the inner surface of each side at a level corresponding to the height of the back of the base;

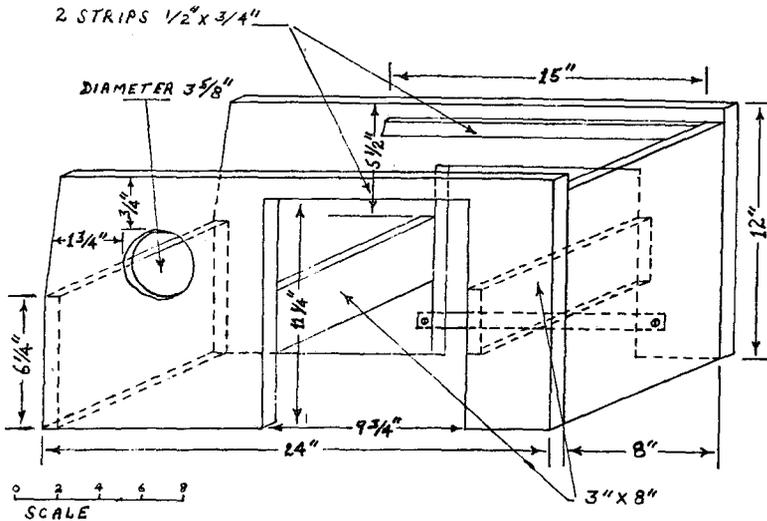


Figure 2.

these serve as supports for the sides of the projector. All joints are put together with glue and strengthened with screws.

All of the material used in the construction of the substitute base can be of  $\frac{3}{4}$ " material. Finished pine is ideal because of ease in working, and it can be nicely finished with stain and varnish or shellac.

In separating the original base from the projector, an angle must be cut that runs between the edge of the trim of the forced air circulation intake, just missing the structural supports at the bottom of the removed base.

Another problem that presented itself was the intense heat of the Balopticon Projector which was directed upon the chart drive unit of the lie detector. To alleviate this condition, a filter consisting of 6 plates of ordinary window glass was placed between the light source of the projector and the machine. These plates, 6" x 9", are slightly larger than the opening in the bottom of the projector and can be laid loosely in the bottom.

The net result is a motion picture on the screen showing the chart drive and recording needles in motion. In actual practice, this graphic portrayal of lie detector technique has proven very effective in group situations. It may also offer possibilities in determining the diagnostic value of visual stimulus on the subject during actual deception tests.