A MANIPULANDUM FOR USE WITH RATS RESPONDING TO AUDITORY STIMULI

GEORGE GOUREVITCH AND BRETT COLE

NEW YORK UNIVERSITY MEDICAL CENTER

One of the problems in measuring auditory thresholds in rats is the non-uniformity of the sound field in which the rat is tested. Even when pressing the bar the rat will not keep his head in the same location.

We have devised a nose target manipulandum (Fig. 1) that requires only a light touch of the rat's nose to actuate a relay. When the rat touches the target in the funnel his ears are in a plane which is at a fixed distance from the target. Although the rat can rotate his head from response to response little variability has been observed in the approach to the target by rats we have trained.

The target is a circular piece of brass ($\frac{3}{8}$ in. diameter) soldered to a bolt which is placed through the stem of a glass funnel (Fisher Scientific Company's catalog No. 10-320-5) and

attached at both ends with nuts. By adjusting these nuts the target can be moved forward or back.

A glass funnel is adequate when the sound stimuli are of low frequency. When high frequency tones are used a funnel of wire mesh would be more transparent to these tones and probably preferable.

In the circuit designed by R. N. Glackin,¹ R_x represents the rat's body resistance. When this resistance is of the order of 300K ohms a small adjustment of the spring tension of the relay will be made before the relay will be actuated. For higher R_x values, R_1 must be decreased and R_2 increased. However, R_2

¹Department of Otolaryngology, Johns Hopkins University School of Medicine.

Fig. 1. Nose target manipulandum and associated circuit.

values cannot be made too large, otherwise the relay will be continuously actuated by leakage currents.

schedule and obtained rates as high as 60 responses per min for intervals of 10 min without observing any ill effects.

We have trained three rats on a VR (9)