AN INEXPENSIVE LABORATORY STIMULUS PROGRAMMER

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A commercially available tape recorder (Sony Model 211 TS) has proved to be a useful and inexpensive stimulus programmer. The machine consists of a two-speed ($1\frac{7}{8}$ and $3\frac{3}{4}$ ips) tape recorder with a two track record/playback head. The upper track carries voice while the second tract accepts an inaudible tone which can be used to trip an internal normally-open relay. The recorder was designed to advance a slide projector (*i.e.*, a Carousel) synchronized with the voice commentary on the upper track.

On the side of the recorder is a pushbutton controlled by an on-off switch used to place the tone on the lower track any time the button is depressed. When the tape is played back, the tone is sensed and the relay closed for the duration of the tone.

In our laboratory, the tape recorder has been used in conjunction with a Grass Model 5 C Polygraph by connecting the poles of the relay (which are accessible on the outside) to the terminals of the event marker channel. Verbal statements are recorded on the upper track while a tone synchronized with the duration of the statements is recorded on the lower track. When stimuli are presented to subjects, the closing of the relay automatically puts an event mark on the polygraph chart which permits more precise synchronized evaluation of physiological data. Kintz (1965) reports using a similar recorder to present auditory stimuli and drive relays, after the output pulse has been amplified.

In addition, the signal from the tape recorder has been used to close another circuit which shunts analog data from the polygraph to an Ampex FM tape recorder which is later processed via an analog-digital converter. This tape recorder-programmer has many potential uses in conjunction with behavioral programming equipment.

The Sony Model 211 TS tape recorder comes equipped with tape, microphone, ear-piece, patch cord, and an adapter plug to activate any automatic slide projector. The unit can also be used as a PA system. The device uses only a standard 3-in. reel. A long play tape played at $1\frac{7}{8}$ ips will play and program for 120 min (see Table). The synchro-

Table 1

Scotch Tape Number	Play Duration (one side)	
	at $1\frac{7}{8}$ ips	$3\frac{3}{4}$ ips
111	30"	15"
190	60"	30"
200	120"	60"

nized tone-actuated relay makes this recorder a generally valuable device in any laboratory programming system. The price is approximately \$125.00. The recorder has been in daily use for six months with no breakdown.

REFERENCE

- Kintz, R. T. The tape recorder as a programmer. *J. exp. Anal. Behav.*, 1965, 8 (in press).