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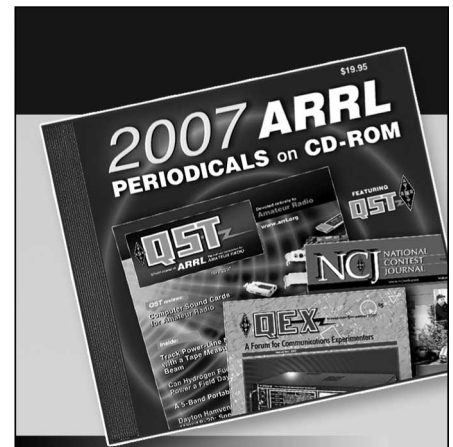
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2-3/8 inches. The 1-1/4 inch part is a firm fit over the end of a standard piece of steel TV mast. — *Paul Pagel, N1FB, ARRL Hq.*

THE CW PARROT

□ One of the net control operators on the Idaho-Montana Net (IMN), Kevin Nathan, K7RX, is blind. Kevin is a very competent net control operator, and also serves as RN7 liaison. He uses a device, developed by several other net members, that allows him to retransmit cw messages without first having to transcribe them into Braille. Kevin tape records the traffic, then uses the CW Parrot to interface the recorder with his transmitter for playback.

Fig. 2 shows the schematic diagram of the basic unit. Additional features, such as peak, notch, high-pass and low-pass filters or a noise blander, could be included to aid the operator. For transmitters with a positive keying voltage (up to about 30 V), the Parrot can be wired in parallel with the transmitter key line. It could serve as a "poor man's memory keyer," or to let others hear what their fists sound like.

All components are mounted on a small etched-circuit board (or perfboard) in a 2-3/4 × 2-1/8 × 1-5/8 in. aluminum box. Rubber grommets in the box protect the two shielded cables from damage. The construction details can vary to suit the needs of each individual.

The cw signals are recorded directly from the receiver. When it is time to retransmit the message, simply plug the Parrot into the recorder earphone jack, and the tape will be reproduced faithfully over the air.

Ferrite beads and C1 are used for rf suppression. D1 and D2 provide full-wave rectification of the audio signal. This pulsating dc causes Q1 to switch on, keying the transmitter. — *Jim Voyles, K7JV, Boise, Idaho*

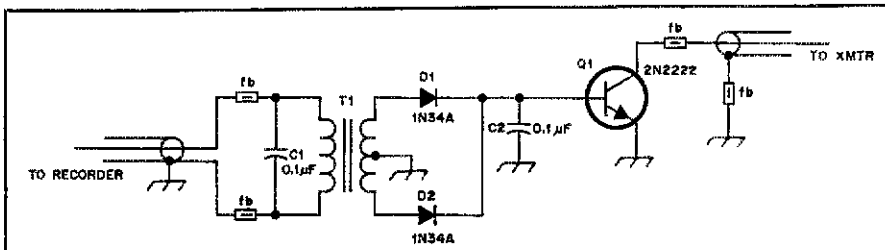


Fig. 2 — Schematic diagram of the CW Parrot, used to transmit a cassette-recorded message.

T1 — Audio transformer, 8-ohm primary, 1000-ohm secondary, ct. Radio Shack no. 273-1380.

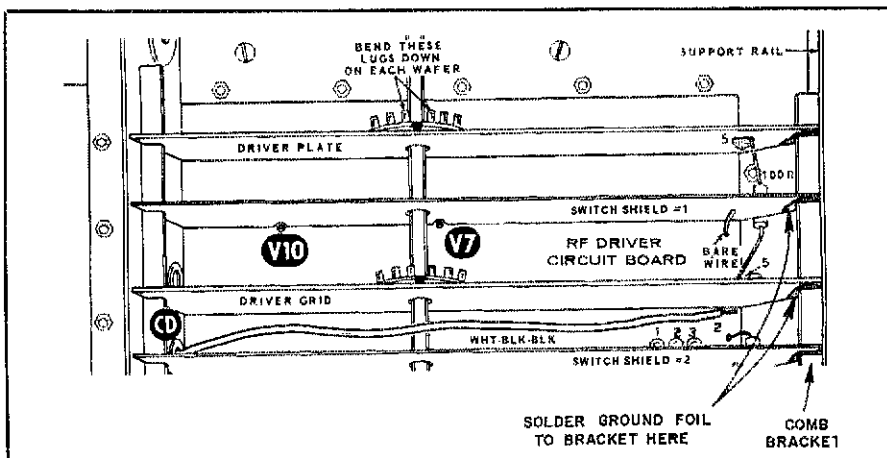


Fig. 3 — Pictorial diagram showing where NØAXK soldered the ground foil of the driver grid-switch board to the supporting comb bracket.

HW-101 OSCILLATION PROBLEM

□ My Heath HW-101 developed a sudden problem that had a simple cure. I noticed that the rig would start to oscillate on every band as I tuned it for maximum-rated output power. My first guess was that the driver or final-amplifier tubes were weak, but they proved to be okay. Further checking turned up a ground foil on the driver grid-switch board that was not making contact with the comb bracket. Fig. 3 shows a portion of detail 8-19A, found on page 99 of the HW-101 manual. My construction manual contains no mention of the need to solder this connection, but after I did, the oscillation was eliminated. Later manuals include this step. I suggest you check your transceiver to see if the connection is soldered. — *Robert St. Amant, NØAXK, Edina, Minnesota*

INEXPENSIVE BURGLAR ALARM

□ Photoconductive cells are less sensitive to light changes than are phototransistors. For burglar-alarm purposes this can be an advantage. A very simple alarm system can be built on a piece of perforated board 2 × 3 inches or smaller. I mounted mine on the lid of a tobacco tin. A 12-V dc supply is fed directly to a 5- or 6-V DIP relay through a CdS cell, which has a dark resistance approaching 0.6 MΩ and a bright-light resistance of about 100 Ω. The complete diagram is shown in Fig. 4. S1 is used

to select whether V+ is fed through the normally open or normally closed relay contacts. This provides for beam-open or beam-closed operation. K2 has two sets of normally open contacts. One set is used to lock the relay closed when the alarm is tripped, and the other supplies voltage to a horn or other warning device. An LED across this line serves as a beam-reception indicator for alignment purposes, or as a remote indicator that the alarm has been set off.

With the CdS cell mounted in a cardboard tube with lenses from a toy telescope, the relay can be held "on" by a pocket-flashlight beam at about 25 feet. The alarm will be triggered by any object crossing the beam, including a person at a brisk run. This simple form of security fence is adequate for many purposes, and can be built for under \$10.

Other warning devices can be used instead of the horn. An LM-3909 IC can be wired as an audio oscillator to drive a small speaker. An amplifier can be added for a louder signal. A 12-V bulb and reflector could be mounted alongside the photocell, and the beam reflected by a mirror.

There are many applications for such a simple device. Mine keeps unauthorized people out of the ham shack! — *Alex Comfort, M.D., KA6UXR, Santa Barbara, California*

ETCH-RESIST IDEA FOR CIRCUIT BOARDS

□ Most hams have struggled with marker pens, stencils, rub-on patterns and other ways of tracing etching patterns onto circuit-board material. Each of these methods has certain

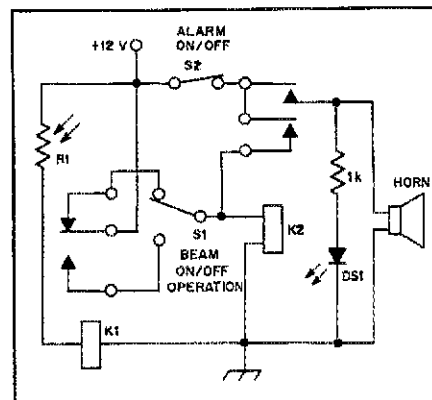


Fig. 4 — Schematic diagram of a simple burglar alarm, using a CdS photoresistor. K1 has a 5-V coil, and K2 has a 12-V coil. R1 is Radio Shack part no. 276-116 or equivalent.

drawbacks. For all but the most complex patterns I find it easier to draw freehand on the board. I use an inexpensive straight pen with replaceable points.

The ink I use is an etch-resist lacquer purchased in an electronics-parts store. Dilute the ink with the solvent listed on the label (toluol, in my case) so it has a consistency that works well with your pen. Nail polish diluted with remover (acetone) also works. Either of these inks will gum up the pen points, so be sure to wipe them clean when you're finished tracing the pattern. After etching, remove the lacquer with fine steel wool. — *John S. Mason, Jr., EA4AXW, Madrid, Spain*

*Parts for this project are available from RADIOKIT, Box 411, Greenville, NH 03048.