

Use a 1/4" wood or plastic spacer to get the proper gap and knock out the spacer after the glue has hardened. For a mini-Heil, use a 1/8" spacer. The two halves of the magnet structure will want to repel strongly during final assembly, so construction gets rather fun at times.

Structure #3 is easy to build and uses materials available in a good hardware store; cost can be fairly low. The 1/4" strap on the bottom can be cut from a large gate hinge (14"), or can be made from several lengths of square rod stock. The pole pieces close to the diaphragm rests can be cut from strap stock 3/32" x 1/4" or 5/8", or may simply be formed from double layers of 1/8" square rod (as shown in structure 3a).

Structure 3a is ideally suited for a mini-Heil diaphragm. For a 1 1/4" x 4 1/4" diaphragm, structure 3b uses 38 magnets as drawn, or a layer of magnets can be removed from the bottom for a total of 26. The 2" x 1/2" strips of iron must be glued to the magnets one or two at a time with five-minute epoxy as the pieces have a tendency to slide out of position while wet with glue.

Magnet structures 4 and 5 are easy to build and to experiment with, but are not quite as strong and are really best suited for mini-Heils.

FIG. 14

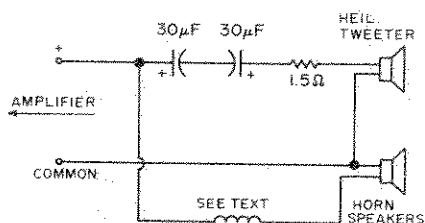


Fig. 14. The author's suggested crossover network for his horn and Heil-type driver. The coil is 115 ft. of #21 magnet wire on a 1"x4" prescription pill container. The resistor raises the impedance of the tweeter and lowers output to match the horn. Slope is 6dB per octave.

#### Final Assembly

Carefully fold the diaphragm into pleats, using tweezers to crease the four-ply support strips before making the folds. Slip the diaphragm between the two poles of the magnet structure. The support strips and the short horizontal parts of the foil pattern will hang over the top and bottom of the magnet structure.

Center the diaphragm with cardboard spacers at the top and glue in place with five-minute epoxy.

Concluded on page 46

FIG. 6 STRUCTURE 4

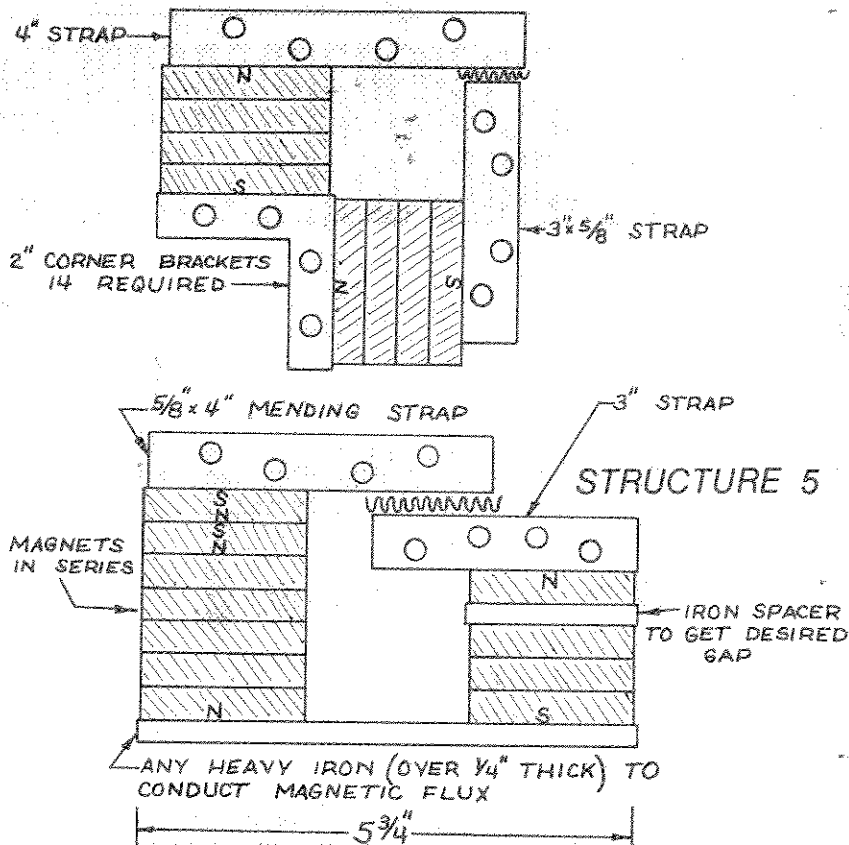


Fig. 6: Structure #4 fits the small diaphragm, structure #5 will accept the mid-size.

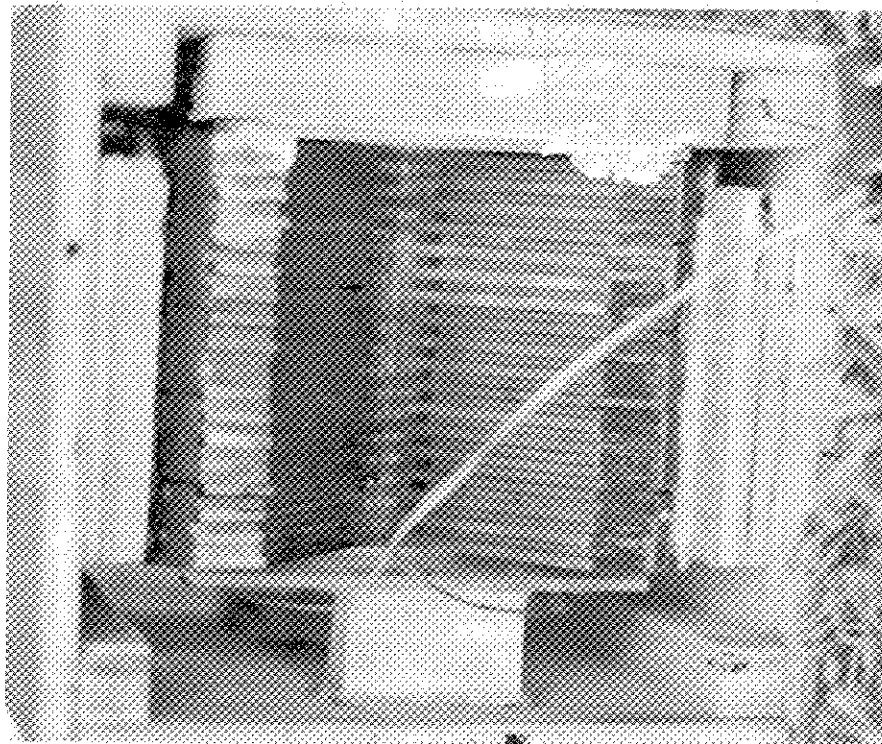


Fig. 12: Close-up of rear of magnet structure #1 and the large diaphragm mounted in a plywood cabinet. Note that the author epoxy-glued the two sides of the magnet structure to sheets of masonite to make a rigid unit which he then glued, with scrapwood blocks, into the cabinet. Wire across unit connects to amplifier.

## HI-FI CABLE SPECIAL

Here is a really good deal. Each cable is 14 feet long minimum, and has an RCA phono connector on one end and stripped and tinned leads on the other. You can't buy shielded cable for this price nowadays, let alone with a connector at one end. Limited quantity... get them while they last.

**10/\$4.40!!**

## We have Readouts...

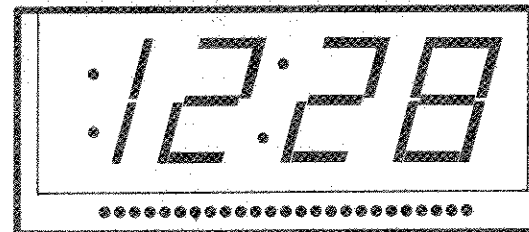
FND359 0.4" 50¢ ea. 10/\$4 100/\$35



FND503 common cathode 0.5" 95¢ ea. 10/\$8.50  
FND510 common anode



3 1/2 DIGIT CLOCK DISPLAY \$4.94  
WITH 0.8" DIGITS!



Buy 3/\$12.50 AND SAVE. Not a half inch type: these digits are BIG! AM/PM indicator, colon, and 3 1/2 digits in a clear red plastic enclosure. Common cathode. LIMITED QUANTITY.

**Send for our free flyer!**  
**Save time and trouble: buy parts by mail, let UPS do the driving.**

**GODBOUT**  
BILL GODBOUT ELECTRONICS  
BOX 2355, OAKLAND AIRPORT, CA 94614

TERMS: Add 50¢ orders under \$10. Allow up to 5% for shipping; excess refunded. We require street address for COD. BankAmericard®/Mastercharge® (\$15 min) call 415-562-0636, 24h. CA res add tax.

IT PAYS TO READ THE FINE PRINT: We have a very limited number of GE Volt Pack, brand new, 50 Amp, 0-140V, 50/60 Hz variac type transformers. We are selling these for \$125, shipped motor freight collect. First come, first served...

