DECODER TO AMPLIFIER INTERFACE
## FOR DIGITRAX SFX SOUND DECODERS
By Fred Miller, MMR

On several occasions I have had need to feed the sound output from a Digitrax SFX sound decoder into an external amplifier. At a recent Train Show in which I was presenting a clinic on the use of the Digitrax SFX sound decoder, the volume of the typical decoder and associated speakers was not loud enough for the audience to appreciate the sounds. I have also been working on a Museum diorama project, which could benefit from feeding the decoder output through an external amplifier. In both of these examples, the decoder in use was external to any rolling stock. The diorama requirement was integrated into a "background sounds scene" not unlike many layout sounds projects. I developed the *Decoder to Amplifier Interface* to meet these needs.

I centered my circuit design on an audio transformer similar to those that were used in transistor radios of the past. These transformers matched the higher impedance of the amplifier circuit with the lower impedance of the speakers, typically 1000 Ω to 8 Ω. My use of the transformer, however, is in reverse. The 8 Ω side of the transformer was connected directly to the speaker leads coming from the decoder, which typically drive an 8 Ω speaker.

When the transformer input was connected to a SFX decoder, I found that the audio output of the transformer played into an amplifier would be louder than normally desired. To compensate for this and to accommodate different amplifiers, I added an audio-taper potentiometer so I could adjust the volume as needed.

SFX DECODER TO AMPLIFIER INTERFACE
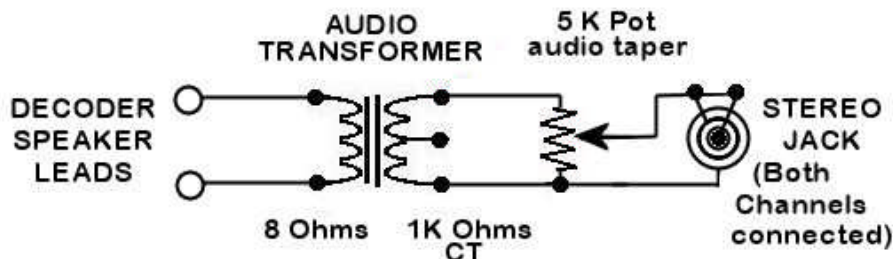
Although I used components from my electronics scrap box I did research equivalent components readily available from Radio Shack. Those part numbers are shown at the end of this article.

I use little plugs and sockets made out of machined IC socket strips on all of my SFX Sound Decoders. (See article "Making your own Miniature Plug Sets".) My assembled *SFX Decoder to Amplifier Interface* circuit provides a set of these miniature sockets to facilitate easy connection. Similarly, most amplifiers make use of 1/8 inch Stereo Plugs and Jacks so I provided such a jack on my project.

Since the SFX decoders are NOT stereo, I jumped both channels together so that any stereo amplifier used would get the mono signal in both channels. To keep things neat, I mounted all the components in a little plastic projects box.

It should be noted that the values of the parts are not that critical. What is important, however, is to use a low impedance to high impedance audio transformer connected in reverse of normal.

Equivalent Radio Shack components

273-1380   8ohm-1000ohmCT Audio Transformer
271-1720   5Kohm Audio Taper Potentiometer
274-0018   Small knob for Potentiomenter
274-0246   1/8" stereo audio jack
270-1801   2" x 3" x 1" project box

The price on the above Radio Shack components is about $13. Much less expensive components can be acquired from Jameco or Digikey.