

MANY OF THE LOWER-PRICED AMPLIFIERS available today do not provide any overload protection for your speakers. The purpose of the circuit shown in Fig. 1 is to remedy that shortcoming.

Relay RY1 is six-volt DPDT unit rated at 3-5 amps. One set of contacts is wired in series with each speaker so that when the relay is *not* energized, the contacts are closed and the circuits between the speakers and the amp are complete.

The input to the circuit is taken from your amplifier's speaker-output terminals or jacks. If the right-channel signal is sufficiently large to charge C1 to a potential that is greater than the breakdown voltage of Q1's emitter, a voltage pulse will appear across R7. Similarly, if the left-channel signal is sufficiently large to charge C2 to a potential that is greater than the breakdown voltage of

Q2's emitter, a pulse will appear across R7. The pulse across R7 triggers SCR1, a sensitive gate SCR ($I_{GT} < 15$ mA, where I_{GT} is the gate trigger-current), that latches in a conducting state and energizes RY1. The action of the relay will interrupt both speaker circuits, and the resulting silence should alert you to the problem. Cut back the volume on your amplifier, then press and release S1 to reset the circuit and restore normal operation.

The circuit can be adjusted to trip at any level from 15 to 150-watts RMS. To calibrate, deliberately feed an excessive signal to the right input of the speaker protector and adjust R3 until RY1 energizes. Do the same with the left channel, this time adjusting R4. The circuit is now calibrated and ready for use.

—Willie Ward

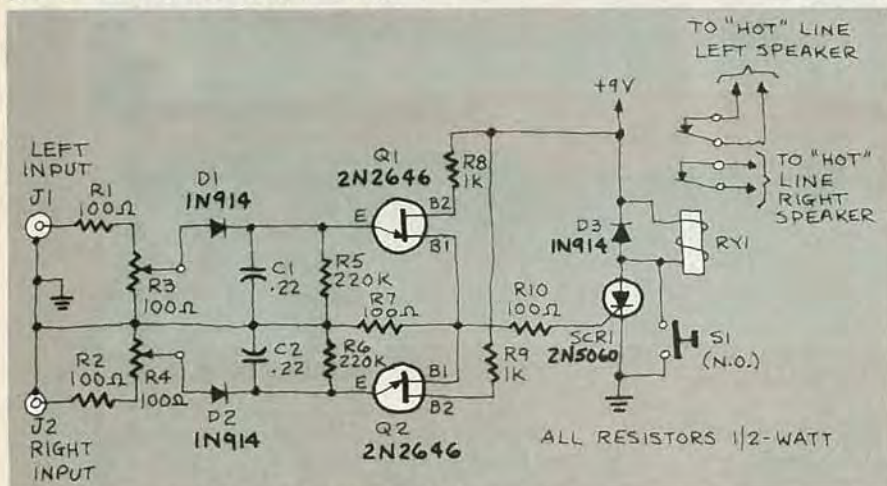


FIG. 1



"Look, Mom—they've got books here, too!"