Two Amplifiers

Q. How can I connect two 40-watt amplifiers to drive one 4-ohm speaker system? Both are to be fed from the same preamplifier. Frank A. Cappi, Chicago, Illinois.

A. I do not advise connecting your two amplifiers to one speaker system unless you are sure that the speaker system can handle their combined power. One of your amplifiers has more than enough power output to overload the speaker system. The only value of so connecting your amplifiers would be that of obtaining slightly less distortion. Although the decrease in distortion could be measured by laboratory methods, it is doubtful that it could be detected aurally. Should you still wish to try this, proceed as follows:

1. Connect the output of the preamplifier directly to the input of each of the power amplifiers.
2. Connect together the common, or ground, terminals on the power amplifiers.
3. Join the two four-ohm taps. This will provide the necessary four ohms to operate the speaker.

By so connecting the equipment, more power output is obtained than could be had from a single amplifier. It should be remembered, however, that the internal impedance of the output circuit has been halved, which is the reason that the 4-ohm speaker had to be connected to what had been, for each unit, the 4-ohm takeoff.

Since the output of most preamplifiers is terminated in a cathode follower (having low output impedance), two or more high-impedance circuits may be directly bridged across its output terminals without significantly affecting the performance of the system. When connecting power amplifiers as described, be sure that the amplifiers are identical. Should one have one more stage than the other, the output signals would be 180 deg. out of phase, causing a cancellation rather than a reinforcement of the signal. Even if the amplifiers have the same number of stages, but are of different circuit design, there is likely to be enough phase difference between their output voltages so that at least partial cancellation will result.