Fig 1

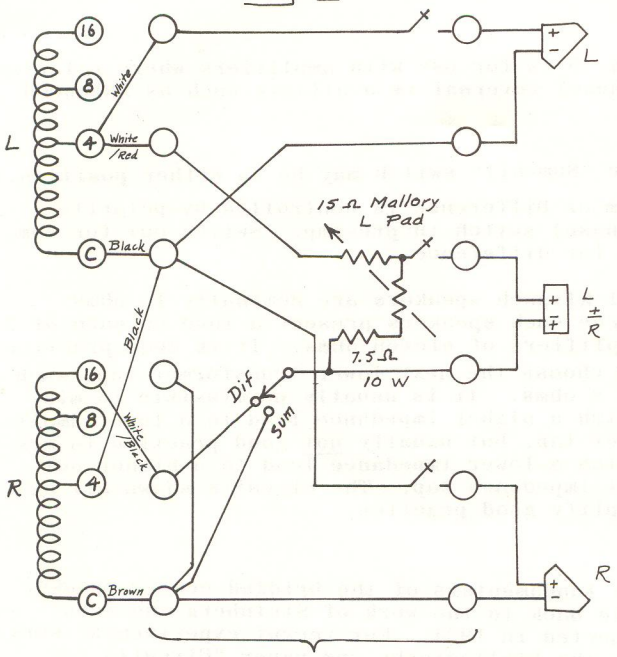


Fig 2

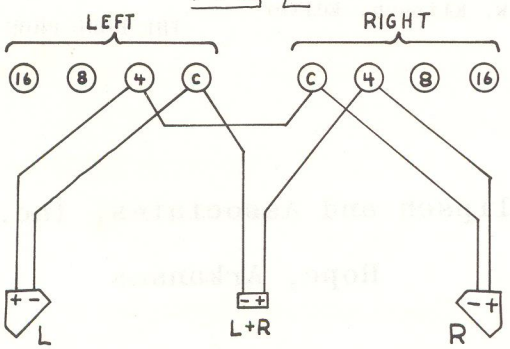
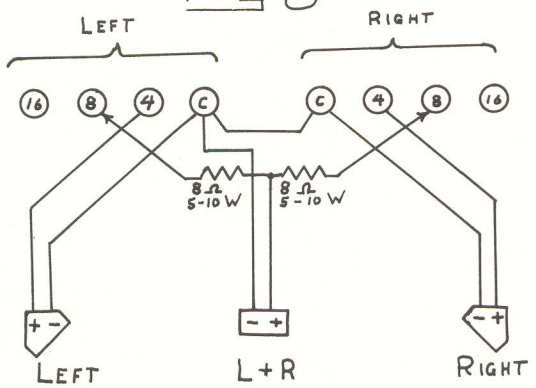


Fig 3



THE DOPE FROM HOPE Vol.2, No.13

CIRCUITS FOR DERIVING SUM SIGNAL TO CENTER SPEAKER USING TWO AMPLIFIERS.

Fig. 1 shows the Klipsch 2-3 stereo control box (in brackets) in circuit with a McIntosh stereo amplifier. This circuit works for all "Mac" amplifiers, stereo, or mono in pairs. The 225 has internal grounding straps that should be cut for use with this circuit. Cutting these grounds does not otherwise effect the performance of the amplifier.

Certain features of the circuit of Fig. 1 are evolved at the expense of switching; to test balance, one may cut off the flanking speakers, switch a monophonic source to "Dif" (difference) and adjust balance for minimum sound. Restoring to "Sum" provides good center output for either mono or stereo. If switches are used they should be "dry circuit" or "aircraft grade". Switches to individual channels may obviously be omitted but retention of "Sum - Dif" switch is suggested. The box may also be obtained from KLIPSCH and ASSOCIATES, Inc. for $44.95.

Fig. 2 is for use without the 2-3 box on McIntosh amplifiers. All leads are shown connected to 4 ohm taps. The ratio of loudness between flanking and center speakers may be varied by moving the outside speakers up to 8 or 16 for louder, or the center speaker in the same manner.

Fig. 3 is for use with amplifiers in which polarity reversal is not available; ie Fisher, Marantz, H.H.Scott. If center speaker is too loud lower the leads marked with an arrow to 4 ohn

the leads marked with an arrow to 4 ohm taps. If not loud enough raise to 16 ohm taps One

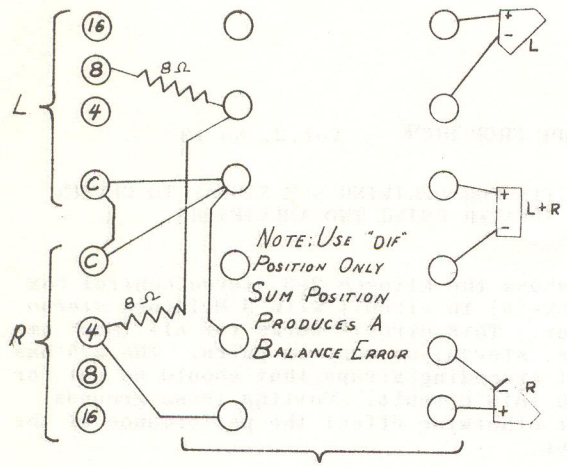
can also change flanking speaker taps to alter ratios.

In Figs. 2 and 3 there is no volume control for

the center speaker. If satisfactory balance can not be reached by the above means a 15 ohm Mallory L pad may be inserted across the leads to the speaker. This is the quietest of the L pads we have tested.

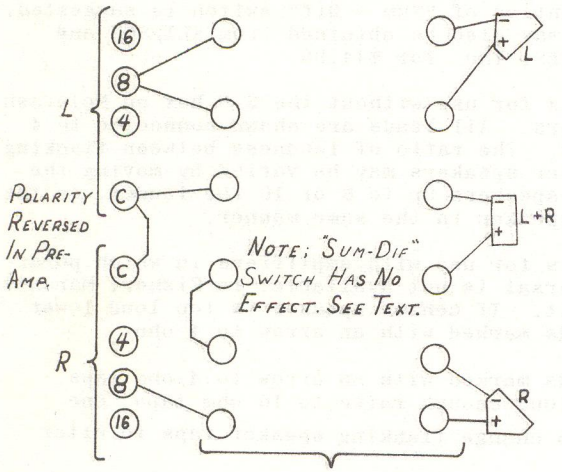
Fig. 4 is for the same 3 amplifiers (FISHER, SCOTT and MARANTZ) as Fig. 3.

Fig 4



KLIPSCH 2-3 STEREO BOX (MODEL X-4)

Fig 5



KLIPSCH 2-3 STEREO BOX (MODEL X-4)

Fig. 5 is for use with amplifiers where polarity (phase) reversal is available such as SHERWOOD.

The "Sum-Dif" switch may be in either position.

Sum or Difference is controlled by polarity (phase) switch in pre-amp. Switch out for sum, in for difference.

All Klipsch speakers are nominally 16 ohms. Three such speakers present a load on each of 2 amplifiers of eleven ohms. It is good practice to choose the next lower transformer tap, such as 8 ohms. It is usually permissible to mismatch a higher impedance load to a lower amplifier tap, but usually <u>not</u> good practice to mismatch a lower impedance load to a higher output impedance tap. The circuits shown all exemplify good practice.

The fundamentals of the bridged center speaker date back to the work of Steinberg and Snow reported in 1934. For recent experimental work see the bibliography and paper "Circuits for Three-Channel Stereophonic Playback Derived from Two Sound Tracks".

Paul W. Klipsch, Editor

THE DOPE FROM HOPE

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