Bass and Treble Controls

Bass and treble controls are incorporated to enable the listener to compensate for room acoustics, studio or recording deficiencies, etc. For average use, a lift and cut of 12 dB at 50 c/s and 10 kc/s is satisfactory. Although switched, frequency conscious R/C networks were once common, the two control systems shown in Figs. 15 and 17 are used in most amplifiers today. Fig. 15 is a passive network, Fig. 17 a feedback circuit known as the Baxandall. The passive tone control has the effect of rotating the frequency response about a central hinge, usually

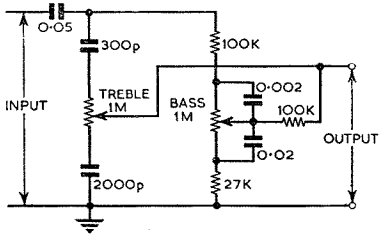


FIG. 15.—PASSIVE TONE CONTROL NETWORK.

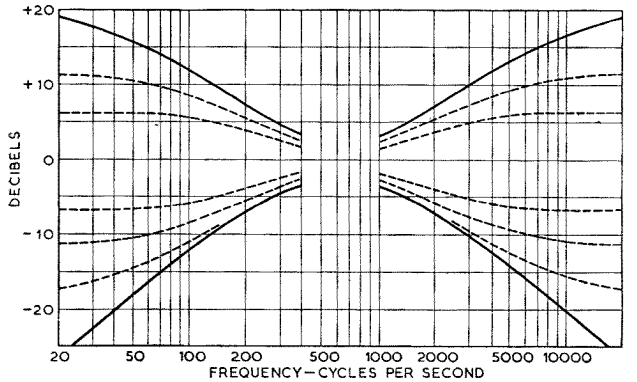


FIG. 16 (*top*).—FREQUENCY RESPONSE CURVES FOR PASSIVE TONE CONTROL.

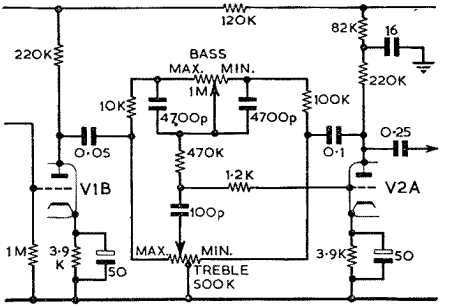
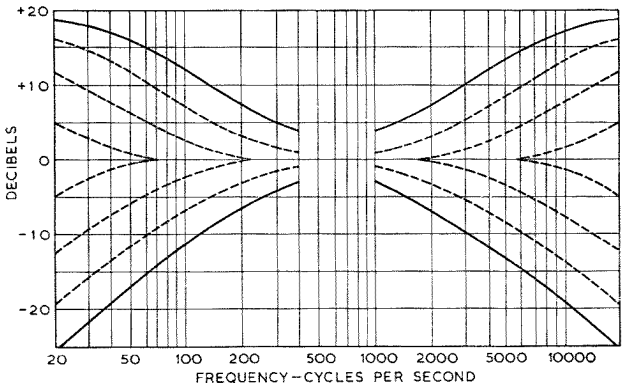


FIG. 17 (*right*).—THE BAXANDALL TONE CONTROL CIRCUIT.

FIG. 18 (*bottom*).—FREQUENCY RESPONSE CURVES FOR BAXANDALL CIRCUIT.



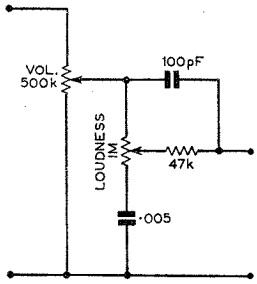


FIG. 19.—SIMPLE LOUDNESS CONTROL.

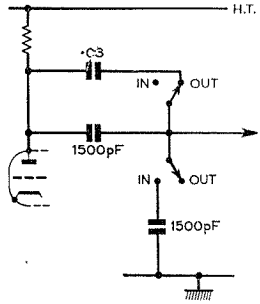


FIG. 20.—SWITCHED RUMBLE FILTER.

1,000 c/s (see Fig. 16), whilst with the Baxandall system the lift and cut is initially confined to each end of the scale (see Fig. 18). This means that with the Baxandall system the extreme low frequencies can be lifted appreciably without affecting the response in the region of 300–500 c/s. A further advantage of the Baxandall system is that, as it employs negative feedback, distortion is kept to the minimum. Nevertheless, many people prefer the shape of the contours of the treble curves in the passive network.