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WILLIAMSON HR-15 AMPLIFIER KIT



The famous Williamson HR-15 amplifier circuit... now available with the original Partridge transformers built to Williamson's specifications. Build this kit in 3 hours or less, and enjoy sound of a quality you never heard before. The HR-15 is a 2-Chassis power amplifier for use with tuners or other front ends having own volume and tone controls. All American triodes, 2-6SN7GT, 2-807 or 6BG6G in PP output, 5V4G rectifier. Response $\pm .5$ db, 10-100,000 cycles. Output impedances 1.7 to 109 ohms in 8 steps. Absolute gain 70.8 db. 20 db. of feedback around 4 stages and the output transformers. Kit is Complete with Tubes, Punched Chassis, Pre-wired Resistor Board, Sockets, Genuine Partridge Output Transformer, and All Necessary Parts.....\$76.50

As Above, with CFB Transformer.....\$90.00
PARTRIDGE Output Transformers available separately WWFB, as used in above kit.....\$26.00
CFB Transformer, Hermetically sealed.....\$40.00

HR-15T A Williamson Kit with all TRIAD TRANSFORMERS... including power transformer, chokes and specially designed output transformer which is completely sealed in tar. ± 2 db. 10-100,000 cps. Harmonic Distortion less than .1% - 10 watts output. Output impedances 4-8-16 ohms\$69.50
Both HR-15 and HR-15T Kits available with KT-66 tubes for \$3.00 extra.

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Transformers for all applications - Military and Civilian - High Fidelity Audio Components, "Trijets" - Hermetically Sealed Midgets, Power Transformers, Replacements, Filters, Reactors, etc.... for the laboratory, industrial, servicing, public address and radio amateur fields. Complete stocks of all components are on hand for immediate delivery.

The TRIAD "HS" series of transformers incorporates hum-bucking coils and nickel-alloy multiple shielding for minimum pickup. They are small in size, light in weight, rigidly supported and hermetically sealed. Note actual appearance



of the "HS" case, on left, and the telescopic view on the right which illustrates the construction of this particular type.

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VOLUME CONTROLS

[from page 15]

Fig. 7 and adding compensator R_4C_2 . This is equivalent to combining (B) and (C). Proper choice of values and tap can yield a closer approximation to the theoretical curves of Fig. 5.

Apparent Loudness and Room Noise

The compensated control has the advantage of making listening easier in the presence of room noise, as indicated by Fig. 12. A good deal of the power in music and speech is concentrated in the frequency region below 500 cps. Compensating a 50-db-level program so that it approaches the over-all frequency response of an uncompensated 80 db average level can make the program sound much louder without increase in annoyance factor, because proper balance of bass and treble prevents the shrillness which often characterizes the uncompensated low-level reproduction of voice or music. This makes background music to meals or conversation much more soothing and pleasant.

Both the noise and the signal curves in Fig. 12 have loudness sensation as it appears to the mind as the ordinate. The usual method of presenting room noise over the audio-frequency range in terms of sound pressure or intensity level tends to give a misleading impression of the annoyance effect of the low-frequency noise components. Fortunately, the ear responds so poorly to low frequencies at the usual room-noise intensity levels that noise such as the hum of 60-cps home machinery remains tolerable.

Listening at lower than concert-hall levels also pays another dividend besides

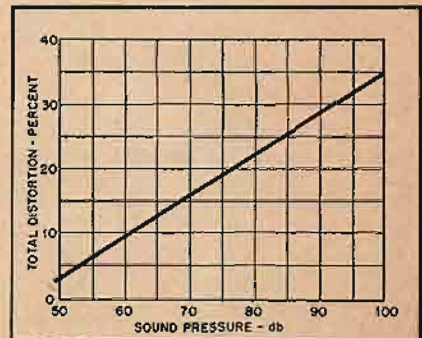


Fig. 13. Harmonic distortion of the human hearing system at 1000 cps. Includes harmonics from second to fifth, inclusive.

toleration by family and neighbors. As Fig. 13 shows, the harmonic distortion of the human hearing system is quite low, less than 3 per cent, at a low sound pressure level such as 50 db.³ At 80 db, however, the harmonic distortion is high, about 22 per cent, and intermodulation distortion components will be present in

³ Derived from data on subjective tone measurements; Moe, *J. Acous. Soc. Am.*, 1942.