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Engineering and Intuition Serving the Soul of Music

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CABINET MODELS (AUGUST, 1962)

INTRODUCTION

by G. A. BRIGGS

Since the advent of disc stereo, the tendency has been towards the improvement of the bass performance of small enclosures, because it is more difficult to find house room for two loudspeakers than for one of the same size.

Our own approach to this problem has been in the development of roll surrounds which permit the larger cone excursions — without distortion — and the lower resonances which are necessary as cabinets are reduced in volume.

The outstanding success of the W2, W3 and W4 models all fitted with the WLS/12, and the Aire-dale fitted with the new W15/RS, bear testimony to the sound principles which have been evolved and adopted.

More recently, the Slimline 2 has been introduced and gives remarkable results for its size and cost, due mainly to the special 12" and 4" units with polystyrene diaphragms.

On the other hand, the SFB/3 and the original large corner system with sand filling are being continued and are still recommended where room space is available.

The cabinets PST/8 and AF12 are available without speaker units. Even quite modest tape recorders are improved by adding the PST/8 with a good 8" unit, and the AF12 is as good as ever when fitted with a suitable 12" or even 10" speaker.

STEREO

There can be little doubt that best results are obtained with two separate full range loudspeakers spaced 8 to 12 ft. apart and with similar radiation properties in middle and upper registers.

IMPEDANCE

Large models are normally supplied for 10/15 ohms matching. If required for use with a set or amplifier with 2/5 ohms output the WMT1

matching transformer, described on next page, can be brought into service at a very low price.

POWER HANDLING CAPACITY

The maximum input ratings quoted in the following pages are conservative estimates evaluated on an RMS basis. These figures should be doubled to give peak ratings sometimes used in the U.S.A.

No one need hesitate to connect a 5/10 watt loudspeaker system to a 15 watt amplifier for ordinary domestic use, as the full power will seldom be used with efficient speaker systems.

A word of warning should, however, be written about ELECTRIC GUITARS which can easily push 30 watts or more out of a 15 watt amplifier and do serious damage to domestic speakers. We have developed special units and cabinets for this purpose and these are described in leaflet E.G., which is available post free on request.

VHF RADIOS

Many commercial FM receivers now give good results and justify the use of a separate speaker system, such as the PST/8, Slimline 2, W2 or W3, which will give full domestic volume with 3 watts input.

TRANSISTOR SETS

The better quality transistor sets — size about 13" x 10" — also give quite good results when connected up to an efficient external speaker such as the Super 8/RS/DD mounted in the PST/8 cabinet.

TAPE RECORDERS

Practically all tape recorders benefit by the use of an external speaker; the better the machine the better the extra speaker may be. The PST/8 is recommended for average recorders. More expensive speakers would only be justified with machines in the £50 class and upwards, but could be used with cheaper models if already available and not bought specially.

Wharfedale

(Regd. Trade Mark)

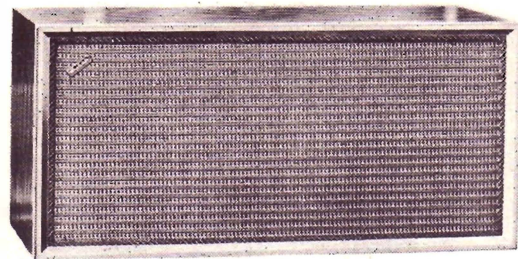
PST/8

This small enclosure is constructed with expanded polystyrene panels giving reduction of cabinet resonance. (Patent No. 890886.)

Fitted with a good 8" unit, the PST/8 provides high quality performance at an economical price. It is suitable for mono or stereo use, and may be stood on a table or on the floor.

Many hundreds have been sold for use with tape recorders and the model is strongly recommended for this purpose.

For optimum results, the new Super 8/RS/DD is recommended, but any type of CS, FS or RS 8" speaker can be used in this cabinet.



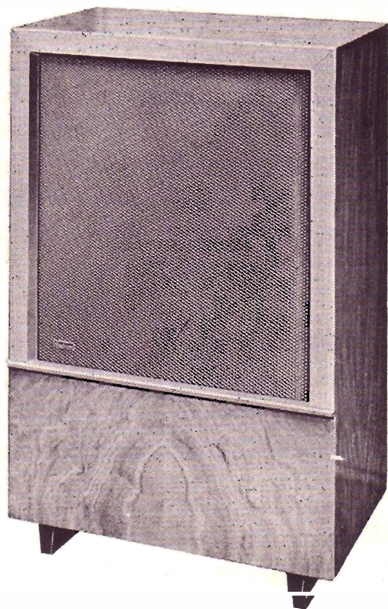
Size: 24" x 12" x 12".

Weight: 17 lb. cabinet only.

Choice of walnut, oak or mahogany veneers.

Also available in whitewood at a lower cost.

AF12 5 cu. ft. D.P. CABINET



Size: 36½" x 23" x 14½". Weight 61 lb.

Available in whitewood or fully finished with a choice of walnut, oak or mahogany veneers. Tropical model also available at extra cost.

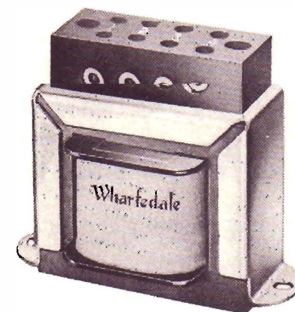
In order to make this cabinet suitable for every type of speaker, including 15" RS and FS units, the Distributed Port (i.e. slotted back) is now used instead of the reflex design with acoustic filter. Results are very good with the Coaxial 12, Super 12/RS/DD and RS12/DD.

Bass units W15/RS or the new W12/RS/PST are recommended with treble unit and a crossover at 1000 c/s.

WMT 1

Auto Transformer for matching 10-16 ohm or 7-9 ohm speakers to sets with 2-5 ohms output or vice versa.

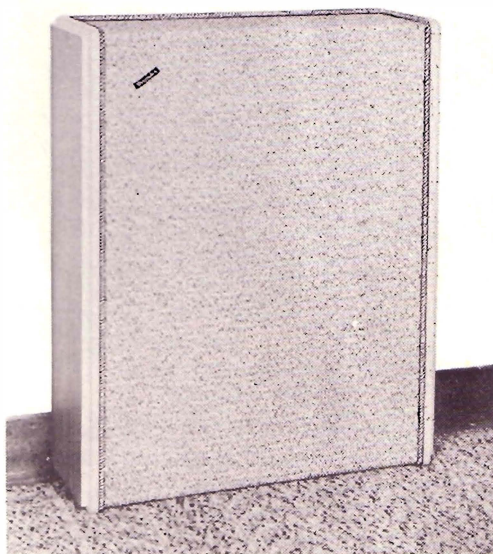
Frequency response within 1 dB from 20 c/s to 15 kc/s. Power handling capacity 15 watts.



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slimline 2



The most recent addition to the Wharfedale range, the Slimline 2, requires a minimum of room space and is suitable for floor, wall or table mounting. It has, in fact, been described as Wharfedale's answer to the housewife's prayer, being attractive to the eye as well as to the ear.

Units: PST12/RS and PST/4, both fitted with polystyrene diaphragms to reduce resonance effects.

Crossover frequency: 1000 c/s.

Size: 25" x 20" x 7". Weight: 32 lb.

Impedance: 10/15 ohms. Max. input 15 watts r.m.s.

Frequency range: 35-15,000 c/s.

Available in walnut, oak or mahogany finish, also unpolished. Tropical models at extra cost.

Four-page leaflet on Slimline 2 post free on request.

W2

This compact two-speaker system gives a remarkably wide-range performance for its size, with pure, full-bodied bass reproduction. It is extremely versatile, being equally suitable as a floor standing model and for shelf or table mounting. The cabinet is fully finished on all four sides, and can therefore be used either horizontally or vertically.

Units: WLS/12 and Super 5. Crossover frequency: 1000 c/s. Details of these special units are given on page 7.

Size: 23½" x 14" x 12". Weight: 37 lb. complete.

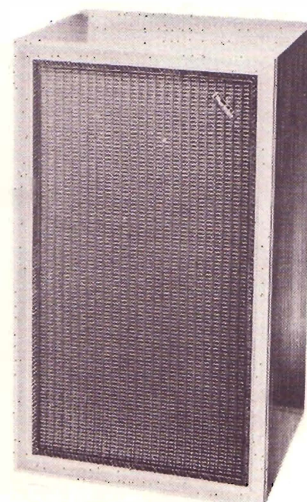
Impedance: 12/15 ohms only. Power handling capacity: 15 watts max.

Frequency range: 30-17,000 c/s.

Fitted with treble control in back panel.

Available in whitewood or fully finished with a choice of walnut, oak or mahogany veneers.

Tropical model also available at extra cost.



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W3

Slightly larger and heavier than the W2, this three-speaker system is equally versatile and has a better extreme top response. A *special feature* is the open mounting of the treble units which are isolated from the main enclosure. This arrangement gives a free, open quality to the reproduction, with good diffusion of middle and top registers. The rear panel is fitted with two ceramic tiles to subdue resonance.

Units: **WLS/12, 5" W3 and Super 3.**

Details of the special 12" and 5" units are given on page 7.

Crossover frequencies: 1000 c/s and 5000 c/s.

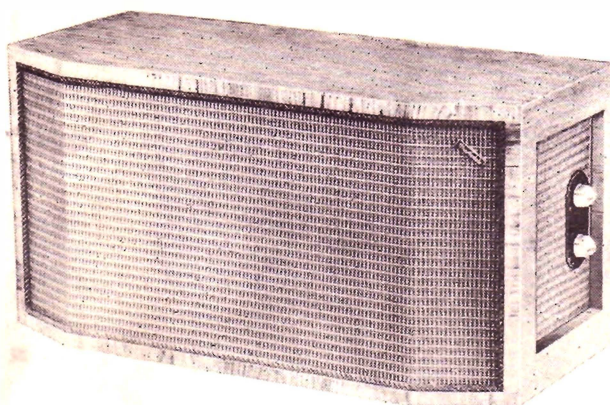
Size: 28" x 14" x 12".

Weight: 48 lb. complete.

Impedance: 12/15 ohms only.

Power handling capacity 15 watts max.

Frequency range: 30-20,000 c/s.

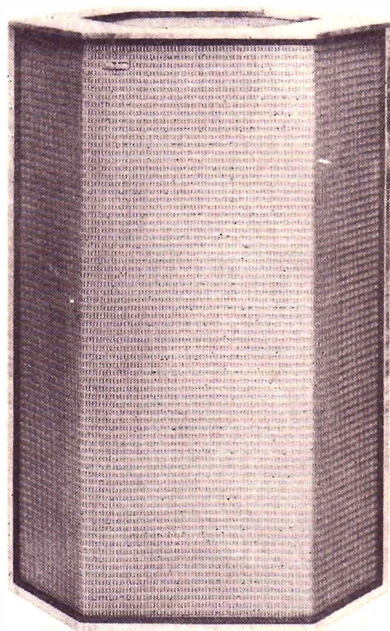


Two controls for middle and treble are provided at one end of the cabinet.

Available in whitewood or fully finished with a choice of walnut, oak or mahogany veneers.

Tropical model also available at extra cost.

W4



The W4 is a four-speaker system designed for use on mono or stereo. The middle and treble units are arranged for omni-directional radiation, giving the effect of a broad sound source for which Wharfedale speakers have long been noted. This model is suitable for use along with our large corner speaker system on stereo.

The bass enclosure is loaded by a slotted acoustic filter in the rear panel. This gives smooth resonance-free bass down to 25 c/s.

Although primarily a corner design, the W4 can be used along a wall if required; it is in fact virtually a stand-anywhere model.

Units: **WLS/12, two Special 5" units and Super 3.**

Details of the special 12" and 5" units are given on page 7.

Fitted with quarter section three-way network, with crossover frequencies at 400 c/s and 5000 c/s.

Size: 35" x 24" x 12". Weight 65 lb. complete.

Impedance: 12/15 ohms. Power handling capacity 18 watts maximum.

Frequency range: 25-20,000 c/s.

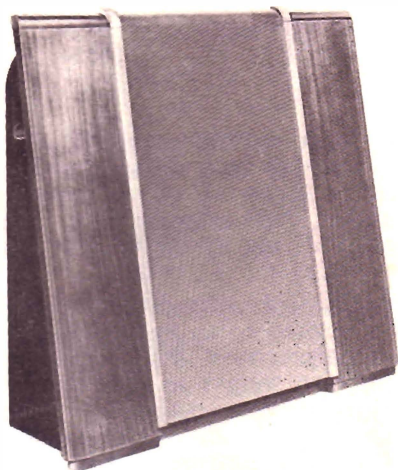
Separate controls for middle and treble are located in the rear panel.

Available in whitewood or fully finished with a choice of walnut, oak or mahogany veneers. Tropical model also available at extra cost.

Wharfedale

(Regd. Trade Mark)

SFB/3 THREE SPEAKER SYSTEM



Units **W12/SFB**, **10" Bronze/SFB** and **Super 3**.

The 12" and 10" foam surround units are in parallel. This arrangement gives very smooth results over the full range with a 3 dB gain in output at low frequencies. The Super 3 is also fed in parallel through a filter capacitor and is mounted on a small open baffle facing upwards.

This wide-range high quality speaker system can easily be accommodated in the average room; it can be placed in the best position for listening, and be moved against a wall when not in use. Its efficiency is high enough to give full domestic volume from a small amplifier, tape recorder, or any good radio set with more than 3 watts output.

The baffle is sand-filled. There is no cabinet resonance because there is no cabinet.

The SFB/3 has been demonstrated to large audiences on many occasions during lectures given by G. A. Briggs and has provided amazingly faithful reproduction in direct comparison with performances by live artists. Since the introduction of this model in 1956, it has achieved a deservedly high reputation and many thousands have been sold both at home and abroad.

Frequency range: 35-20,000 c/s.

Size: 34" x 31" x 12".

Weight: 64 lb. complete.

Impedance: 8/15 ohms only.

Power handling capacity 15 watts.

Choice of walnut, oak or mahogany veneers.

Tropical model available at extra cost.

The SFB/3 is not available in whitewood.

AIREDALE

For many years the Wharfedale omni-directional 3-speaker Corner system has been recognised as a superbly natural reproducer.

The AIREDALE is the latest version of this famous speaker presented for the first time in a one-piece free-standing assembly suitable for corner or along the wall location, and ideally suited to work with the original corner model on stereo, especially where a second corner is not available, or is too far away.

The smooth, clean bass is characteristic of the high flux 15" unit which is now fitted with roll surround.

The 8" mid-range and 3" treble units face upwards for omni-directional treble, and are arranged in a manner which imparts a natural airiness to the reproduction.

Cabinet resonance is avoided by sand filling the front panel and fitting ceramic tiles to rear side panels.

UNITS:

W15/RS fitted with heavy cone and impregnated cloth roll surround for minimum distortion.

SUPER 8/FS **SUPER 3**

Half section three-way separator unit with cross-over frequencies at 400 c/s and 5,000 c/s.

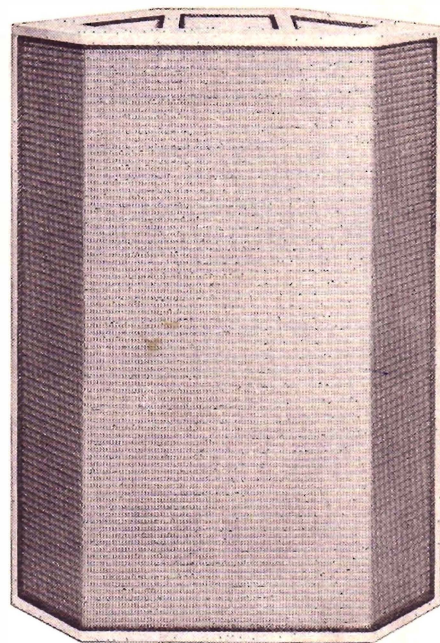
Size: 39" x 28½" x 14".

Weight: 91 lb. complete.

Impedance: 12/15 ohms only.

Max. Input: 20 watts.

Individual controls for middle and treble response are located in the rear panel.



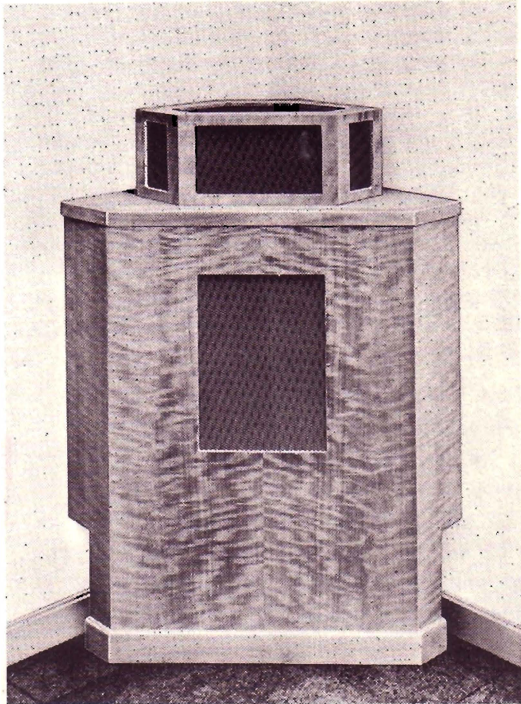
Available in whitewood or fully finished with a choice of walnut, oak or mahogany veneers. Tropical model also available at extra cost.

Frequency range:
20-20,000 c/s.

Wharfedale

(Regd. Trade Mark)

Omni-directional 3-SPEAKER system



This assembly gives the most natural reproduction so far attained by Wharfedale, and has been demonstrated on many occasions during lectures given by G. A. Briggs in the Royal Festival Hall, London; Philharmonic Hall, Liverpool; St. George's Hall, Bradford, and Carnegie Hall, New York, *et al.*

The front panel is constructed with a double wall and the space between is filled with dry sand so as to obviate panel resonance. The assembly stands against the corner walls and is kept in position by its own weight so that no fixing is required. Where necessary an airtight seal can be ensured, using strips of felt. The Twin Treble Assembly stands on the $\frac{3}{4}$ " thick wooden top which completes the bass enclosure. The middle and treble units, which are mounted facing upwards, are provided with individual controls so that a satisfactory balance is readily achieved.

To meet the requirements of stereo, the main crossover frequency is now at 400 c/s, giving virtually omni-directional radiation at all frequencies.

Units: **W15/FS or W15/RS, Super 8/FS and Super 3.**

Fitted with half-section three-way network with crossover frequencies at 400 c/s and 5000 c/s.

Size: 48" x 34". Distance along wall from corner: 26".

Weight: 160 lb. complete.

Impedance: 12/15 ohms only. Power handling capacity: 20 watts max.

Frequency range: 20-20,000 c/s.

Available fully finished with a choice of walnut, oak or mahogany veneers.

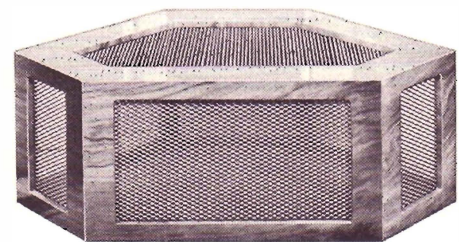
The sand-filled corner panel is available separately with sub-baffle to take 15" or 12" units to order. It is recommended for use with the Coaxial 12 or Super 12/RS/DD units as an alternative to the AF12 Cabinet.

Where there is no suitable corner, a special model is available fitted with sand-filled back panels.

N.B. The W12/RS or W12/RS/PST unit may be used in place of the 15" unit giving slightly reduced bass performance and power handling capacity, with a saving in cost.

TWIN TREBLE CABINET

This cabinet provides omni-directional horizontal mounting for two treble speakers in a three-speaker system. The middle unit may be 8" or 10" and the tweeter should be a Super 3. Where volume controls are not fitted to the crossover unit, provision is made for fixing them to the back of the Twin Treble Cabinet.



Size: 23 $\frac{1}{4}$ " x 12" x 8".

Weight: 6 lb. cabinet only.

Available in whitewood or fully finished in walnut, oak or mahogany veneers.

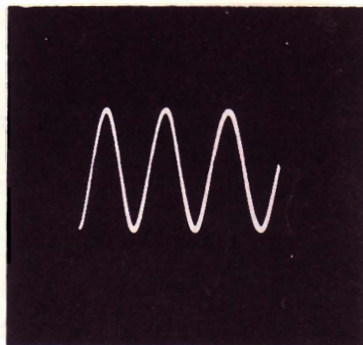
Wharfedale

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W2, W3 and W4 UNITS

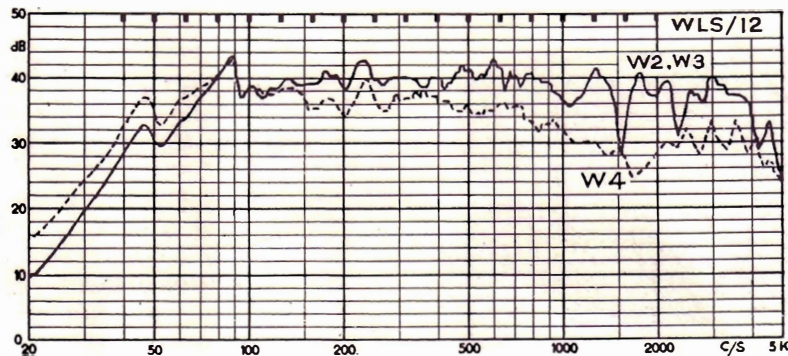
WLS 12

2" dia. centre pole.
Flux density: 12,500 gauss.
Total flux: 140,000 maxwells.
Bass resonance:
20/25 c/s.
Roll surround.



Waveform of output from W2 and W3 with 4 watts input at 30 c/s.

BASS



Frequency response of WLS/12

Fitted with heavy cone, special centring device and linear suspension formed from resin-impregnated fabric moulded to a special shape and treated with synthetic rubber to make it air-tight and improve damping. Excursions remain linear up to $\frac{1}{4}$ ".

The magnet pole pieces have been specially shaped to equalise the leakage flux on both sides of the air gap, with negligible loss of flux density at the centre of the gap. The driving force acting on the voice coil therefore remains more uniform for large excursions.

As the waveform shows, the enclosures give distortion-free performance down to 30 c/s at reasonable input levels.

TREBLE

W2

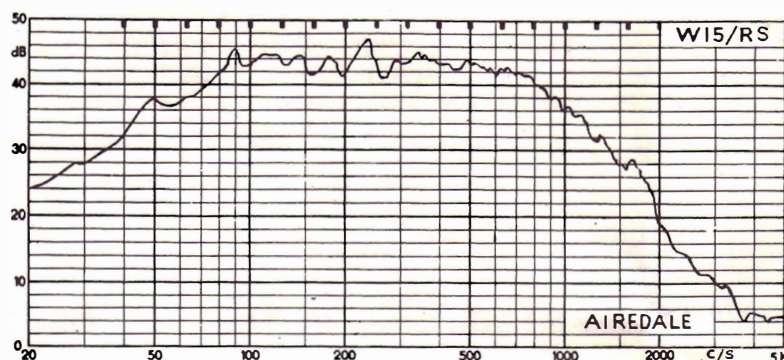
This is fitted with a Super 5 treble unit using the well-known Golden magnet with a flux density of 14,500 gauss. Cloth surround, aluminium voice coil and centre dome are also features of the design.

W3

Both these models have the renowned Super 3 as tweeter, the mid-range units being 5" types with cloth surround and heavy cone which is chemically treated to reduce resonance.

W4

AIREDALE



Bass response of Airedale model with 15" roll surround unit.

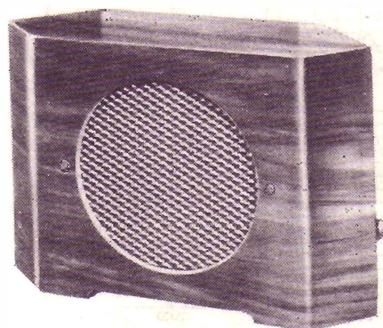
Wharfedale

(Regd. Trade Mark)

EXTENSION SPEAKERS

A good extension speaker is still the best and most economical method of providing sound reproduction in other parts of the house. The two models described will satisfy most needs, and a loudspeaker switch is available for fitting to the main set. This enables the main and extension speakers to be operated separately or together as required. (For details see Section TS.)

Normally supplied in 2/3 ohms impedance, these extension speakers will match the majority of modern sets with outputs in the range $1\frac{1}{2}$ to 5 ohms. Both models can also be supplied in 12/15 ohms impedance at the same price; or the WMT1 matching transformer described in Section TS can be used.



REFLEX BAFFLE

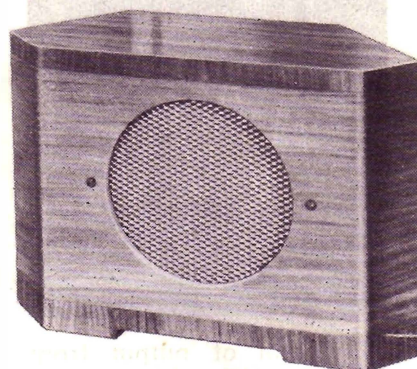
The simple elegance of this design will suit any room in the house. It probably represents the best value in extension speakers on the British market today.

Size: $10\frac{1}{4}$ " x 8" x $3\frac{1}{4}$ ". Weight: 3 lb. complete.
Fitted with 6" unit, volume control and 5 ft. PVC flex.
Walnut veneer only.

BRONZE BAFFLE

This larger model is fitted with a superior 8" Bronze speaker giving very good tonal quality and response.

Size: 15" x $10\frac{1}{2}$ " x 5". Weight: 5 lb. complete.
Fitted with volume control and 5 ft. PVC flex.
Walnut veneer only.



Books by G. A. BRIGGS

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