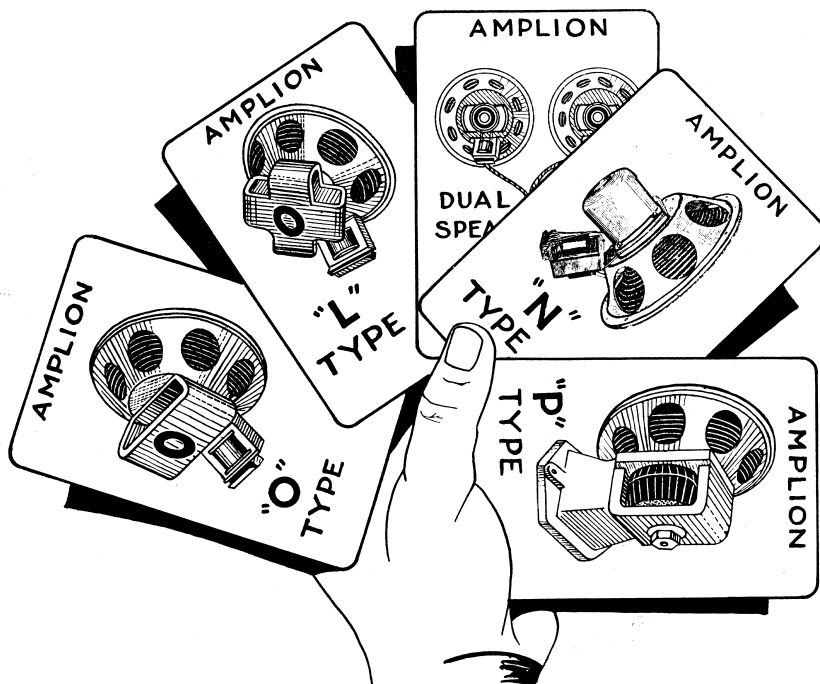


# AMPLION

*Presents a FULL HAND*



"Nearly half a century of research and experimental work in the perfecting of electrical loud speaking apparatus of every description have assured the name of Amplion, standing, as it does to-day, as symbolical of all that is best in the manufacture of loud speaking apparatus."

Amplion Speakers were the first standard equipment in Australia. Amplion Dynamic Speakers were the first speakers manufactured in Australia. Amplion Dynamic Speakers to-day are standard equipment in all leading makes of Radio Receivers throughout Australia, and are entirely trouble-proof.

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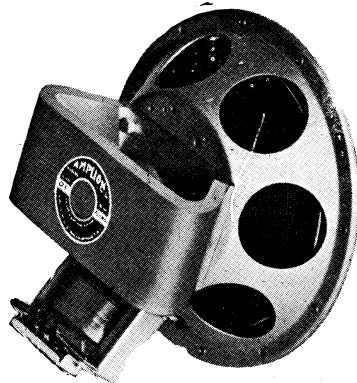
LEADERS SINCE 1885

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Obtainable from:

## THE SIGN OF ENDORRING QUALITY

Type.	Use.	Voltage to Apply.	Resistance.	Current Drain.	Code Word.
N6A	Automobile radio .....	6	4 ohms	1.5 amps	NASON
N6V	Accumulator opr. ....	6	8 "	.75	NALER
N32V	Opr. off home lighting plants .....	32	200 "	.16	NACIZ
N0135	D.C. Receiver .....	—	135 "	—	NAGUB
N125	D.C. Receiver .....	80-125	1250 "	65-100M/A	NADUL
N15	Special purpose .....	—	1500 "	.045 amps	NAFES
N20	Opr. as Choke .....	—	2000 "	—	NAGIM
N25	Opr. as Choke .....	95-155	2500 "	42.0-62M/A	NABOT
N45	Loftin White Receivers .....	140-230	4500 "	31.0 51.0M/A	NAMAR
N75	Direct shunt .....	180-300	7500 "	22.5-37.5M/A	NARIM
O1	Battery opr. receivers .....	—	Per Magnet.	Nil	OBLIG
O2	Battery opr. receivers (in cabinet) .....	—	Per Magnet.	Nil	OBKUS
L1	Battery opr. receivers .....	—	Per Magnet.	Nil	LATIX
L2	Battery opr. receivers (in cabinet) .....	—	Per Magnet.	Nil	LABIN
DK-DN 125	Dual Speaker Operation .....	—	1250-1250	—	DUALA
DK-DN 25-75	Dual Speaker Operation .....	—	2500-7500	—	DUBIL
DK-DN 075	Dual Speaker Operation .....	—	750 750	—	DUCOT
DK-DN 75	Dual Speaker Operation .....	—	7500-7500	—	DUDAK



"O" Type

The above shows a complete range of stock windings. Any special winding, however, may be supplied as required, and at the same price in the case of quantities. For single or small orders, however, add 2/- to list price. "N" Type are also available in cabinet. (See price list on back).

#### TRANSFORMERS:

The Loud Speaker must be matched to the output valve, and this is achieved by means of a Transformer fitted to the Speaker. NOTE CAREFULLY THE MASSIVE NATURE OF THE AMPLION TRANSFORMERS: THEIR SIZE AND WEIGHT PRECLUDES ANY POSSIBILITY OF BREAK-DOWN.

Matched transformers are available as follows:—

Type	Impedance	Current Capacity	Single or Push-pull.	Valves suitable for	Code Name
TA 26	1750 ohms	70 m/a	S.	—	TATOL
TA 71	2000 "	50 m/a	P.P.	Cossor240B, etc.	TAPOG
TA 64	2500 "	40 m/a	S.	2A3, etc.	TAMOS
TA 65	2500 "	40 m/a	P.P.	2A3, etc.	TAMIB
TA 16	4000 "	40 m/a	S.	245,250, etc.	TATAR
TA 15	4000 "	40 m/a	PP.	245,250, etc.	TATES
TA 36	6000 "	40 m/a	S.	247,59, etc.	TEBET
TA 40	6000 "	40 m/a	PP.	247,59, etc.	TEBUL
TA 13	7500 "	40 m/a	S.	2A5,231, etc.	TANIG
TA 14	7500 "	40 m/a	P.P.	2A5,231, etc.	TAKUS
TA 57	10400 "	40 m/a	S.	233, etc.	TAMAT
TA 78	13500 "	40 m/a	S.	238, etc.	TANOZ
TA 79	15000 "	40 m/a	S.	A409, etc.	TAPAR
TA 63	13500 "	40 m/a	P.P.	238, etc.	TAMUK
TA 21	55000 "	6 m/a	S.	Det. and output	TABEZ

#### For use with Dual Speakers.

TA14	For use with UX245 in push-pull output .....	TAKUS
TA31	" " " UX2A5 single output .....	TASIN
TA30	" " " UX2A5 in push-pull output ....	TAPEN
TA47	" " " UX2A5 in parallel output .....	TADOM
TA45	" " " UX247 or 59 single output ....	TADIB
TA59	" " " UX247 or 59 in push-pull output TAMEL	
TA47	" " " UX247 or 59 in parallel output TADOM	

NOTE.—It will be noticed that the Transformers designed for push-pull operation are shown as having the same impedance as those for single output. In the case of the push-pull type, however, these are centre tapped, having the impedances shown above on each side of centre tap.

Transformers of various impedances are available for every type of valve on the Australian market. Full data will be gladly forwarded on request. Specify the type you are using and we will advise what transformer to use.

When ordering Speakers always specify type of transformer required, with each speaker. The type of Transformer is clearly stamped on the Transformer Covering.

When telegraphing, add code name of transformer to that of speaker required, thus: N75 (Code name NARIM) for use with single 59 (Code name, TEBET)—NARIMTEBET.

Unless otherwise specified, all Speakers forwarded are fitted with transformers type TA36, except "L" and "O" types, which are fitted with TA14.

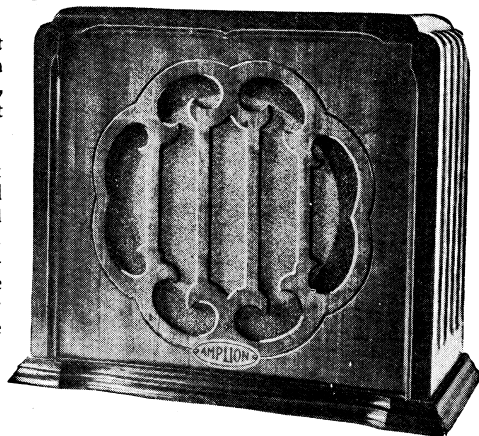
**WARNING.**—Owing to the very powerful magnets employed in the Permanent Magnet Speakers, metal particles are readily attracted and may become lodged in the air gap, which causes bad rattle. It is difficult to dislodge the particles and almost invariably means that the Speaker has to be returned for service, for which a charge, of course, would have to be made. Care should therefore be observed, in exposing Speakers where this trouble is likely to occur.

Special Metallic Dust Cap is fitted at the base of the "L" type to reduce this possibility.

Specifications:	"N" Type	"L" Type	"O" Type
Overall Diameter ...	8.3/16"	8.3/16"	8.3/16"
Diameter of Cone ...	7 1/2"	7 1/2"	7 1/2"
Effective D. of Cone	6 7/8"	6 7/8"	6 7/8"
Diameter Bafflehole	7"	7"	7"
Depth .....	5"	4.1/16"	4.6/10"
Weight .....	5lbs. 6ozs.	7lbs. 1oz.	6lbs.
Carton Size .....	9" x 9" x 6"	9" x 9" x 6"	9" x 9" x 6"
Voice Coil D.C. Resistance .....	0.95 ohms	0.95 ohms	0.95 ohms
Voice Coil Motional Impedance .....	1.25 ohms	1.25 ohms	1.25 ohms
Field Excitation:—			
Minimum .....	4.5 watts	Per. Mag.	Per. Mag.
Normal .....	6 watts	Per. Mag.	Per. Mag.
Maximum .....	10 watts	Per. Mag.	Per. Mag.
Output Capacity (undistorted) .....	5 watts	5 watts	5 watts

Details of Cabinet as follows: Width 14in., height 12in., depth 6 1/2in., weight 6lbs.

L2 & O2 Cabinet Types are supplied fitted with LS cord having 'phone tips. The polarity question does not arise with this speaker since the leads are connected to a transformer (fitted on speaker).



## AMPLION DUAL SPEAKERS

The object of Dual Speakers is to obtain the maximum frequency response possible over the whole musical range and the use of the Amplion types "K" and "N" conjointly gives the most perfect response possible. Amplion Dual Speakers, therefore, comprise 1 "K" and 1 "N" type Electric Dynamic Speaker, suitably wired together and fitted with special transformer.

Amplion Dual Dynamic Speakers are available in a wide variety of field coil windings and fitted with a variety of different type transformers.

When ordering, it is necessary to specify the resistance required and also the impedance of the transformer, or alternatively, the type of tube to which Speaker is to be matched.

Where it is proposed to use Dual Speakers care should be taken to ensure that the power supply is adequate. It must be borne in mind that two Speaker field coils are to be excited instead of one, and unless provision is made for an adequate supply of power from the power pack, the quality of the reproduction will not be improved.

Where it is desired to fit twin speakers to a receiver not designed for such, the combination of the Amplion "N" and "O" should be used. The "O" Type being a permanent magnet dynamic speaker, there is no field coil to excite, and in using this combination therefore it is possible to convert any existing single speaker receiver to a twin speaker receiver; a special transformer, however, must be used (see next page) in lieu of the transformers fitted to the speakers. To obviate mutilating the baffle board a small baffle can be fitted to the speaker, which can then be fitted to the cabinet face-downwards towards the floor.

Another factor that must also be carefully noted is that where it is desired to use Dual Speakers in a Receiver formerly using, say, a 2500 ohm Speaker with the field coil as Choke, it is incorrect in such cases to specify 2500 ohm Speakers for Dual working. For such a purpose and where it is desired to connect the field coils in series, Speakers should be specified having a field coil resistance of 1250 ohms, the two connected in series thus making 2500 ohms.

Various methods are employed in hooking up Dual or twin Speakers, a favourite method being to employ one Speaker with a field coil resistance of 2500 ohms (as formerly), the second Speaker having a resistance of 7500 ohms, the field coil being fed direct from the pack is sufficiently large to energise such field coils. In Again, care should be taken to ensure that the power pack.

such cases the additional current range taken from the power pack in the region runs as high as 40 M/A. Where the power pack cannot adequately carry this load, a separate Rectifier (for details see Amplion publication B5) should be employed.

Amplion Dual Dynamic Speakers are supplied in pairs, packed in separate cartons, the two cartons being bound together.

The Speakers are supplied already wired, but where this is not desired, they can be supplied separately. Where it is desired to carry out the wiring independently, the following is submitted for your guidance:—

"The two Voice Coils should be connected in parallel across the secondary of the output transformer, the connections being made symmetrically, i.e., left to left, and right to right. The polarity of the fields is important in order to get correct phasing, and if the right-hand terminal of one is positive the other should be connected in a similar way.

In order to check the phasing:—

- (1) Complete connections to receiver and tune in to any station in order to check connections.
  - (2) Turn volume control down until there is no audible output, but leaving both fields excited.
  - (3) Connect momentarily a 2-volt accumulator across the secondary of the output transformer.
- Both cones now move in the same direction, either inward or outward."

## RECTIFIERS

In the case of the modern all-electric receiver the field coil of the electro-dynamic speaker is excited from the power pack and rectifying valve. In the case of earlier models, however, this is not possible since the power packs were not designed with sufficiently large transformer to permit of the necessary current being passed. To meet this requirement and also that of battery-operated receivers, a special independent rectifier has been designed. All that is necessary is to plug into the power mains on the one hand and connect to the loud speaker on the other. Careful note should be made that only a speaker having a field coil resistance of 7500 ohms should be used in conjunction with the rectifier. Further details are shown lower down.

In some cases it is desired to use a speaker having a field coil resistance of very low ohmage, viz., 6 ohms, and in such cases a different type of rectifier is employed, termed the type "W." This likewise plugs into the power mains, having a suitable low voltage output for use with the N6 speakers. Details as shown hereunder:—

Rectifier, Metal, complete with transformer, Type W1, D.C. output 6 volts 1 amp., A.C. input 240 volts 50 cycles ..... £2 10 0

## BATTERY OPERATED RECEIVERS

For Battery Operated Receivers there is a choice of two types of speakers, viz., Electro-Dynamic Speaker with a low voltage field coil winding which can be fed from an accumulator, or secondly, what is known as a Permanent Magnet Dynamic Speaker. The latter is preferable since there is no field coil to be excited with the result that there is no heavy drain on the accumulator.

In the case of the separately excited types these are N6a. and N6v.

In the case of the latter these are models O1 and O2 and models L1 and L2. Models "O" and "L" are identical with the exception of the magnet, the "L" having a very powerful 4-claw magnet and the "O" a 2-claw magnet. For weight, dimensions, etc., see elsewhere in this publication.

All Amplion Permanent Magnet Dynamic Speakers are exclusively fitted with Darwin Magnets.

## USE OF PERMANENT MAGNET DYNAMIC SPEAKERS IN PLACE OF MAGNETIC SPEAKERS

Where it is desired to modernise a receiver by employing the Amplion "L" or "O" Type Permanent Magnet Dynamic Speaker, careful attention should be paid with regard to the output of the receiver. Many battery operated receivers have transformer output; this is quite in order when connected to magnetic speakers, inasmuch as magnetic speakers have no transformers fitted to them. The same does not apply, however, in the case of Per-Mag Dynamic Speakers, as these have output transformers fitted on the speaker. As it is technically incorrect to feed from an output transformer in a receiver into a transformer fitted on a speaker, the matter should be checked up, and if such be the case the transformer in the set cut out and the output valve fed direct into the transformer fitted on speaker. Your local dealer should be able to advise you regarding this.

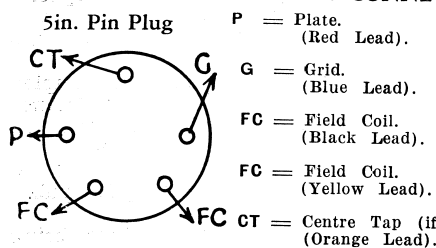
AMPLION N. (Standard Windings) ....	£2 2 0	AMPLION O1 .....	3 17 6
AMPLION N. (Non-Std. Windings) ..	2 6 0	AMPLION O2 (in cabinet) .....	5 17 6
AMPLION N. (in cabinet) .....	4 2 0	AMPLION O3 .....	3 0 0
AMPLION L1 .....	5 0 0	AMPLION DUAL (per pair) .....	4 0 0
AMPLION L2 (in cabinet) .....	7 0 0	AMPLION P. (Duo Dynamic) ....	On Application

(Prices subject to change without notice)

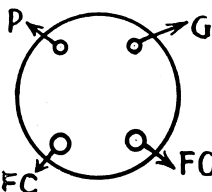
#### FITTING OF PLUG WITH CORD

Amplion Electro-Dynamic Type Speakers are now supplied with 5-core cable and 5-pin Plug. Length of cable from Transformer to Plug (exclusive) is 21in. Diagrams are shown below indicating the methods of connecting to the various pins on the plug; also the colours of the wires so connected. It should be noted that the 5-core cable and plug is standard, but where the 4-core cable and plug is specially called for, connections would be as shown herein. In the case of single output speakers, what would normally be the centre-tap connection is left disconnected at the Transformer end. It is, however, connected to the plug. In the case of the Permanent Magnet Speakers, the wires not used are left disconnected at the Transformer end, on the same lines as the Electro-Magnetic type. It should be specially noted that the plugs and cables so fitted are of the highest quality. The plugs cannot be purchased unwired, being manufactured for exclusive use with Amplion Speakers.

#### ELECTRO MAGNET CONNECTIONS

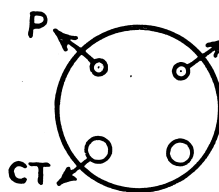


#### 4in. Pin Plug.



#### PERMANENT MAGNET CONNECTIONS

#### 3-Pin Plug.



P = Plate.  
(Red Lead).  
G = Grid.  
(Blue Lead).  
CT = Centre Tap (if any).  
(Orange Lead).

### SERVICE

Amplion Loud Speakers and Radio Products carry a guarantee of ninety days (A108 diaphragms excepted) against failure or breakdown of any kind attributable to material or faulty workmanship. The guarantee does not cover misuse, accident, use on voltage other than that stated on Speaker, or any attempt made at repairing Speaker whilst under the period of guarantee. When Amplion Speakers are forwarded for repair under guarantee they may be forwarded to us directly by the purchaser, in which case the purchase docket should be forwarded as the guarantee period operates from date of

purchase by the individual. Postage or freight must in every instance be paid irrespective as to guarantee. Where Speakers are handed in for repair and ultimate despatch by post, rail or boat, they must be handed in in suitable carton, otherwise packing will be charged for them. If payment is not arranged in advance (Distributors excepted) repairs will be forwarded V.P.P.

A daily Amplion Service operates, that is to say—Speakers received before 10 a.m. are always available by 5 p.m. the same day. It frequently happens where spares are sold for fitting in by other people the operation is not satisfactory, and in some instances the parts have been blamed. On the other hand, the same period of ninety days' guarantee operates on our repairs as on the new Speaker; the receipt in this instance likewise must be kept and submitted where guarantee operates.

The guarantee, however, does not cover misuse, accident, applying heavier wattage than that specified, or any interference with, or attempt made at repairing during period of guarantee. Guarantee does not apply where Amplion Speakers employed in small receivers are operated at unduly high temperatures.

Amplion Cone Speakers—Magnetic Type.  
Amplion Dynamic Speakers—Cone Type.  
Amplion Dynamic Speakers—Giant Exponential Horn Type.  
Amplion Broadcasting Microphones.  
Amplion Broadcasting Microphone Transformers.

#### ADDITIONAL LINES

Amplion Microphone Amplifiers.  
Amplion Loud Speaking Telephones—Marine Type.  
Accurate Electric Frequency Clocks.  
A.D. Carboncel Batteries.  
Westinghouse Metal Rectifiers.

Volta Dry Batteries.  
Lekmek Kits and Parts.  
Lion Products.  
Wates Meters.  
Fuller Plateless Accumulators.

Pamphlets giving full details of the above gladly mailed free on request.

## SPEAKERS [A/sia.] LIMITED

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