Television Aerials and Lead-in Cables

Supplied by

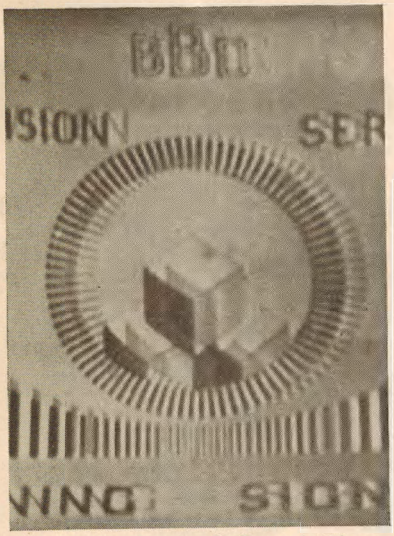
E·M·I SERVICE, LIMITED

SHERATON WORKS - HAYES - MIDDLESEX

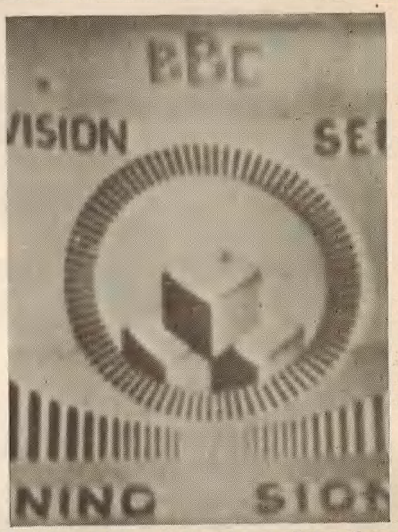
Associated Company of

ELECTRIC & MUSICAL INDUSTRIES LTD.
THE GRAMOPHONE CO. LTD. ("His Master's Voice")
COLUMBIA GRAPHOPHONE CO., LTD.,
THE MARCONIPHONE CO., LTD.,
MARCONI E.M.I. TELEVISION CO., LTD.

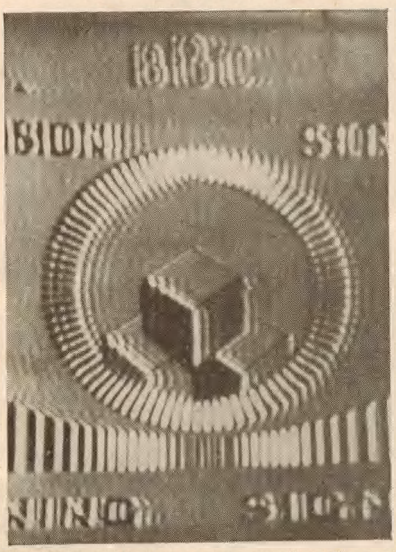
The B.B.C. Vision Tuning Signal as Normally Received.



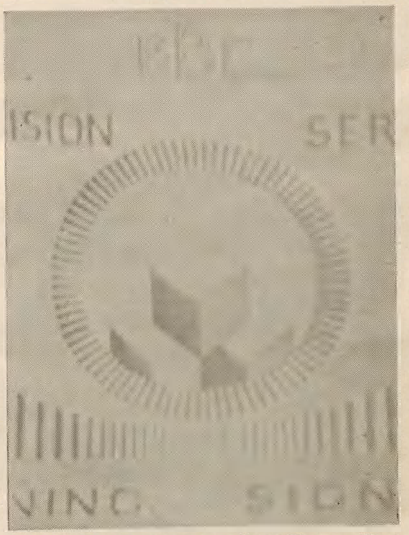
Double Image due to Reflected Wave: a directive aerial system is necessary to correct this.



Lack of Definition Resulting from Severe Sideband Cutting in Aerial; caused in this case by an incorrectly designed aerial.



"Ringing" brought about by Unstable Aerial System or Severe Cable Mismatching.



Lack of Contrast due to Insufficient Signal. A better aerial system is essential, or, in extreme cases, an aerial input amplifier.

In normal broadcast reception a length of wire of no special characteristics and erected with reasonable care will give satisfactory results, provided, of course, that any local interference is of a low level.

Television practice, however, demands aerial systems and installations of far higher standards because of the introduction of additional factors in visual reception not present in sound broadcasting. It must be appreciated that the extremely short wavelengths used for Television make the aerial problem of extreme importance, bearing in mind that the band width or frequency range of the picture signal is of the order of ±2,000,000 cycles as against sound broadcast up to only 10,000 cycles.

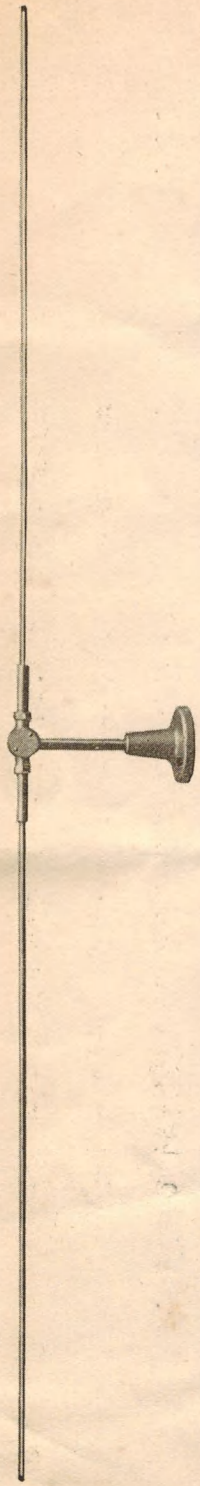
Sideband cutting gives rise to indistinct disappointing pictures and only aerials designed on scientific principles and proved in the field can give unequalled results of *quality* and *clarity*.

The illustrations opposite, from actual photographs taken on the spot, emphasise this, as they show how an inefficient aerial system can ruin a picture. Remember the eye is far more discerning than the ear and will not allow frequency suppression to go unheeded to the extent that the ear often does in broadcast reception.

E·M·I Service Television Aerials are correct down to the smallest detail ; image suppression, cable-borne interference, rejection, etc., are all dealt with in the various types available. Foremost designers, practical engineers, and the longest service experience of any manufacturer combine to present to you a range of aerials which will meet any of your requirements from the simple, trouble-free, installation to the most complex of interference problems.

Of equal importance to the aerial is the type of cable used as a lead-in and the matching of the cable to the aerial and the receiver. No matter how good the aerial, results can be completely spoilt by a cable that cuts sidebands or excessively attenuates the signal. E·M·I Service offer a range of cables from which the correct one may be chosen to give the best results under any particular installation conditions.

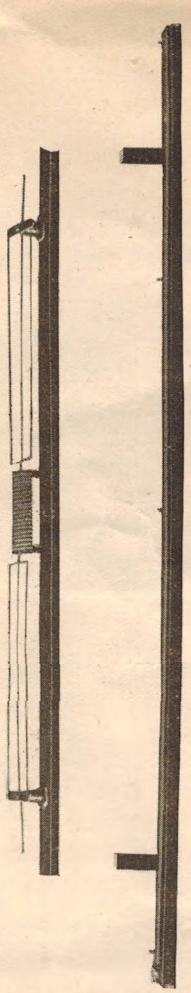
Finally, as a further contribution of labour saving and economy to the installation Dealer, we introduce the E·M·I Service Aerial Erection Kit, details of which are given at the end of this brochure—a Kit which the practical man will appreciate.

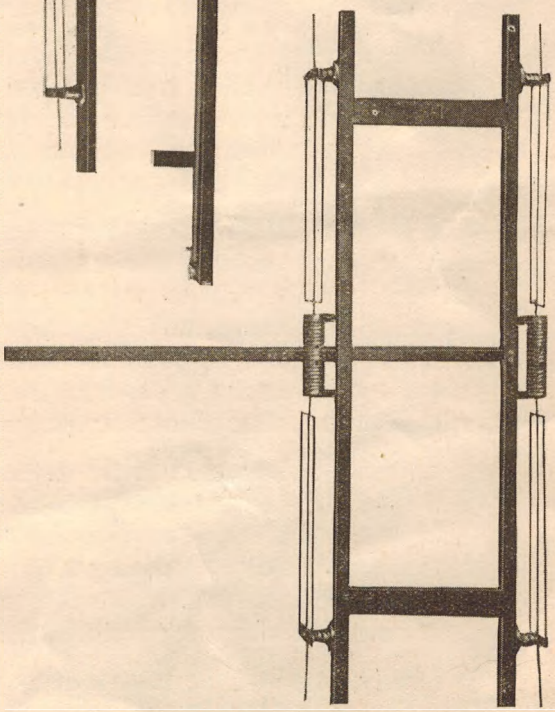


Compressed Dipole

This neat compact aerial designed for use in areas of high signal strength and low noise level has omnidirectional reception properties. It consists of tuned elements made up of a coil and several straight wire lengths. A good band-pass response is thereby obtained, greatly improving picture detail. It is supplied complete with fixing brackets and can be regarded as the general installation for areas where high field strength is obtained from the transmitter.

Stock No. T1001 :
List Price **£1 10s. 0d.**





Compressed Dipole with Reflector.

This aerial is similar to the Compressed Dipole except that a Reflector has been added which increases sensitivity in one direction and greatly decreases it in the opposite direction. It is, therefore, ideal for use where although the signal strength is high there is a certain amount of interference from motor-car ignition, etc., provided the interference is behind the aerial with reference to Alexandra Palace.

Stock No. T1002 :
List Price **£2 15s. 0d.**

Standard Dipole.

This is the standard aerial for the television area; it is a well-tried aerial having an excellent pick-up and can be used well out towards the fringe of the reception area, particularly where there is not much interference.
It is an extremely durable assembly being all metal and self-supporting, a bracket being supplied with the equipment for securing it to a wall or chimney stack.

Stock No. T1003 : *List Price* **£1 13s. 0d.**

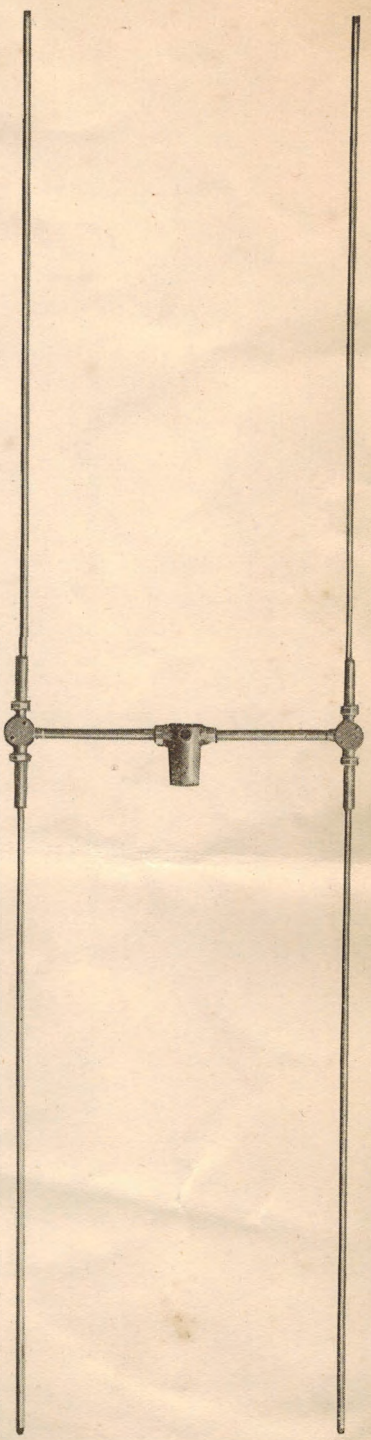
Standard Dipole with Reflector.

Where there is interference in an area of moderate signal strength, or the signals are weak, the standard Dipole with Reflector enables satisfactory results to be obtained due to its directional properties.

The aerial itself may be " pointed " towards the transmitting station so as to obtain maximum signal strength to combat the interference, or the reflector may be directed to the source of interference in order to minimise the pick-up of the interference by the aerial.

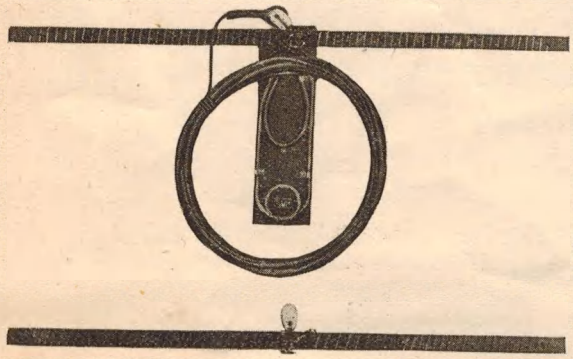
The whole assembly is mounted on a common bracket so that it may be easily fixed directly to the top of a mast and is of all-metal construction.

Stock No. T1004 : List Price **£3 0s. 0d.**

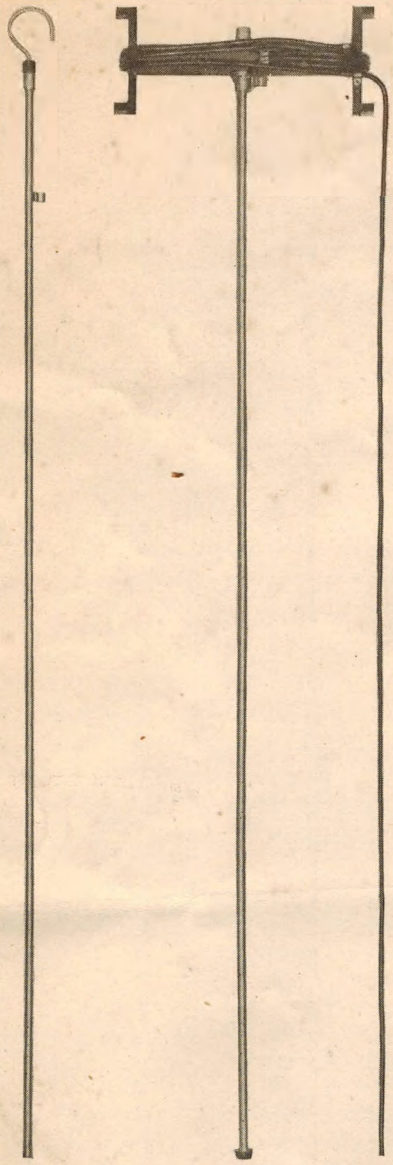


Tilted Wire Aerial.

In the Tilted Wire aerial is embodied the result of much careful scientific research into the question of television reception under adverse conditions. Its directional properties are such that it will only receive over quite a narrow angle in the forward direction and thus practically eliminates interference emanating from any other direction. The aerial is a special capacity loaded wire and must be erected at an angle of between 30 degrees and 40 degrees to horizontal. As the sloping wire of this aerial can be between 40 feet and 70 feet in length, it is obvious that more space is required for its erection than is the case with any of the three previous types. The equipment also includes two special compressed dipoles for earthing purposes, these being positioned at either end of the tilted wire and a suitable transformer for matching the aerial to the lead-in cable.



Stock No. T1005 :
List Price **£3 5s. 0d.**



Portable Home Demonstration Dipole.

The Portable Home Demonstration Dipole is a simple aerial which can quickly be erected in a customer's house and will give good results for a demonstration and an invaluable indication as to the state of reception conditions in the area.

The aerial consists of two tubular metal elements mounted on a wooden bar which also forms the winder for the 100 feet of lead-in cable which is permanently connected to it.

It is arranged so that one of the elements is quickly detachable so that it can be fixed in clips against the other element to occupy a very small space for transit in van or car. A hook is fitted at one end for hanging to any convenient point about the house—such as guttering, etc.

The equipment includes 100 feet of lead-in cable, a connector and a rejector on the dipole assembly.

Stock No. T1008 : *Price* **£2 7s. 6d.** nett.

Portable Mast with Dipole and Reflector.

This consists of a dipole aerial and reflector, all the elements of which are made of aluminium ; they are mounted on a selected ash cross-bar which also forms the winder for the 100 feet of lead-in cable.

The aerial, when assembled, is mounted by means of a single wing nut on the top of a three-sectioned bamboo mast 24 feet high, making an overall height of 30 feet.

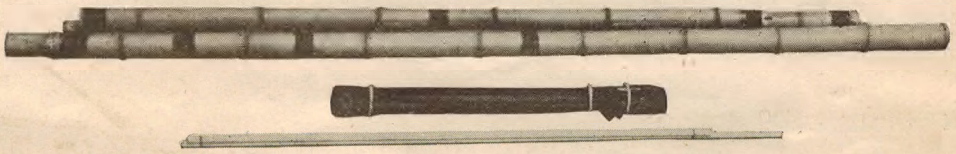
It can easily be erected by one man and its extreme lightness allows it to be tied to any convenient support while carrying out tests or demonstrations.

It has the same electrical properties of the standard dipole with reflector.

The overall length when dismantled is only 8 feet 6 inches, thus making it extremely portable by van or car.

The equipment includes 100 feet of lead-in cable, a connector and a rejector on the dipole assembly.

Stock No. T1007 : *Price* **£6 10s. 0d.** nett.



Phased Rejector Aerial System.

The use of diathermy apparatus and other forms of oscillatory electro-medical appliance unfortunately produces bad interference on television receivers in the vicinity of the apparatus. E·M·I Service have perfected a phasing rejector aerial which is very effective in the elimination of this type of interference. It incorporates two standard dipole aerials and a phasing control unit ; the latter, which is mounted near the television receiver, allows the directivity of the aerial system to be under the control of the user.

Stock No. T1027 : List Price of unit **£7 9s. 0d.**

Aerial Input Amplifier.

This amplifier has been designed to make up for the loss in a very long lead-in cable where the aerial has purposely been moved away from interference. It can also be used to amplify a weak signal where it is reasonably free from interference to supply several television instruments at once as might be required at a demonstration.

Stock No. T1026 : List Price **£12 0s. 0d.**

LEAD-IN CABLES

The choice of a suitable lead-in cable is of considerable importance ; the wrong type of cable can nullify all the advantages of a good aerial. E·M·I Service cables meet all requirements and enable first-class installations to be made under adverse conditions and economical installations where signal strength is very good.

Stock No. TS1895 :

Standard Weatherproof Co-Axial Cable.

A good standard cable to use under normal conditions.

List Price **9d.** *per yard.*

Stock No. TS2282 :

Concentric Lead-Covered Cable.

This cable is suitable for installation in an area of good signal strength and where there is not an exceptionally long run of cable required between the aerial and the receiver.

List Price **4d.** *per yard.*

Stock No. TS2059 :

Special Low Loss Weatherproof Co-Axial Cable.

Under poor conditions where signal strength is low or where there is a considerable distance between the aerial and the receiver, this cable will conserve to the utmost the weak initial voltages derived from the aerial system.

List Price **1s. 3d.** *per yard.*

THE E·M·I SERVICE AERIAL ERECTION KIT.

Television aerial assemblies are in far greater need of efficient trustworthy erection methods than are the installations generally carried out for radio. In television the aerial is nearly always attached either to the house itself or to a mast which must in turn be securely fixed to a suitable part of the building.

The E·M·I Service Aerial Erection Outfit includes not only all the tools and material required to satisfy all practical requirements, but employs a method of plugging holes in brickwork, concrete, etc., which greatly simplifies the work of erection. Briefly the method is to drill or jump a hole at the required position and to fill the hole with a plug composed of a semi-plastic material. This considerably simplifies the carrying of stock as there is no need to retain numbers of various sized plugs, only to find when on the job that the particular size required is not available.

Having compressed the material into the hole by means of a rammer (supplied in the kit) the plug may be pierced with a piercer (which is part of the rammer tool) to exactly locate the position for the screw and to permit easy entry of the screw into the plug. The size of the hole is not important, although best results are obtained if the hole is only slightly larger than the screw, but a clean or accurate hole is not necessary as the plugging material will find its way into all crevices. Also, it is recommended that wherever possible the hole is drilled (an ordinary carpenter's brace will suffice) rather than jumped when carrying out aerial installations, especially where the mast or aerial connections are to be made to a chimney stack, as any excessive blows on the brickwork may dislodge mortar, pieces of brick, etc., which may cause damage.

Stock No. Q2535 : Price **15s.** nett.

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