



## LUSTRAPHONE RIBBON VELOCITY MICROPHONE

### General Description

- The design of the **LUSTRAPHONE Ribbon Velocity Microphone** is the result of carefully considered investigation into the many problems associated with Ribbon Velocity instruments and therefore incorporates all the most valuable features of modern technique.
- The **VR/53** is a **Bi-directional** Velocity Microphone of **High Fidelity** performance in the meticulous sense of the term.
- A high level of sensitivity together with extended frequency response is a main feature of the microphone.
- The case is handsomely designed, substantially built and most modern in appearance.
- A stirrup attachment is provided, and this permits positioning the Microphone at any desired angle.
- In summary, this new **LUSTRAPHONE Ribbon Velocity Microphone** which is actually in the Broadcast Studio class, brings within reach of **Public Address** and **Recorder** users, at a reasonable price level, an instrument whose characteristics and performance permit the fullest benefits to be obtained from high quality equipment.



**MODEL No. VR/53**

**LUSTRAPHONE the foremost name in MICROPHONES**

ST. GEORGES WORKS  
REGENTS PARK ROAD,  
LONDON, N.W.1 ENGLAND.

**LUSTRAPHONE LTD.**

Telephone:- PRImrose 0630  
Telegrams:- LUSTRAPHON NORWEST LONDON  
Cables:- LUSTRAPHON LONDON



## **LUSTRAPHONE RIBBON VELOCITY MICROPHONE**

MODEL No. VR/53

*the ideal high fidelity instrument*



### **TECHNICAL DATA**

- **Magnet and Ribbon System.** Engineered with a twin magnet system, a high level of sensitivity is attained without sacrifice of performance at the higher frequencies. The ribbon, corrugated aluminium leaf, is individually tuned in manufacture. The complete assembly is suspended internally by anti-vibration mountings, and adequate blast screens are incorporated.
- **Response.** The frequency response characteristic is arranged to bring the Ribbon resonance below audibility and is substantially maintained up to 14,000 cps. The high sensitivity level allows the VR/53 to be used with most standard commercial equipment without pre-amplification.
- **Impedance.** Available in 20 ohms or 500 ohms.
- **Output level.** 20 ohms Model. 86 db below 1v/dyne/cm<sup>2</sup>  
500 ohms Model. 72 db below 1v/dyne/cm<sup>2</sup>
- **Dimensions.** Height 6" Width 2 $\frac{5}{8}$ " Depth 1 $\frac{5}{8}$ "  
Weight 1 $\frac{1}{2}$  lbs.
- **Finish.** Metal parts richly finished in satin chrome.
- **Connections.** Specially designed 3-pin plug supplied fitted with 6 feet twin screened cable.



**THERE ARE  
LUSTRAPHONE "MASTER" MICROPHONES  
FOR ALL REQUIREMENTS**

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND.

**LUSTRAPHONE LTD.**

Telephone :- PRImrose 0630  
Telegrams :- LUSTRAPHON NORWEST LONDON  
Cables :- LUSTRAPHON LONDON

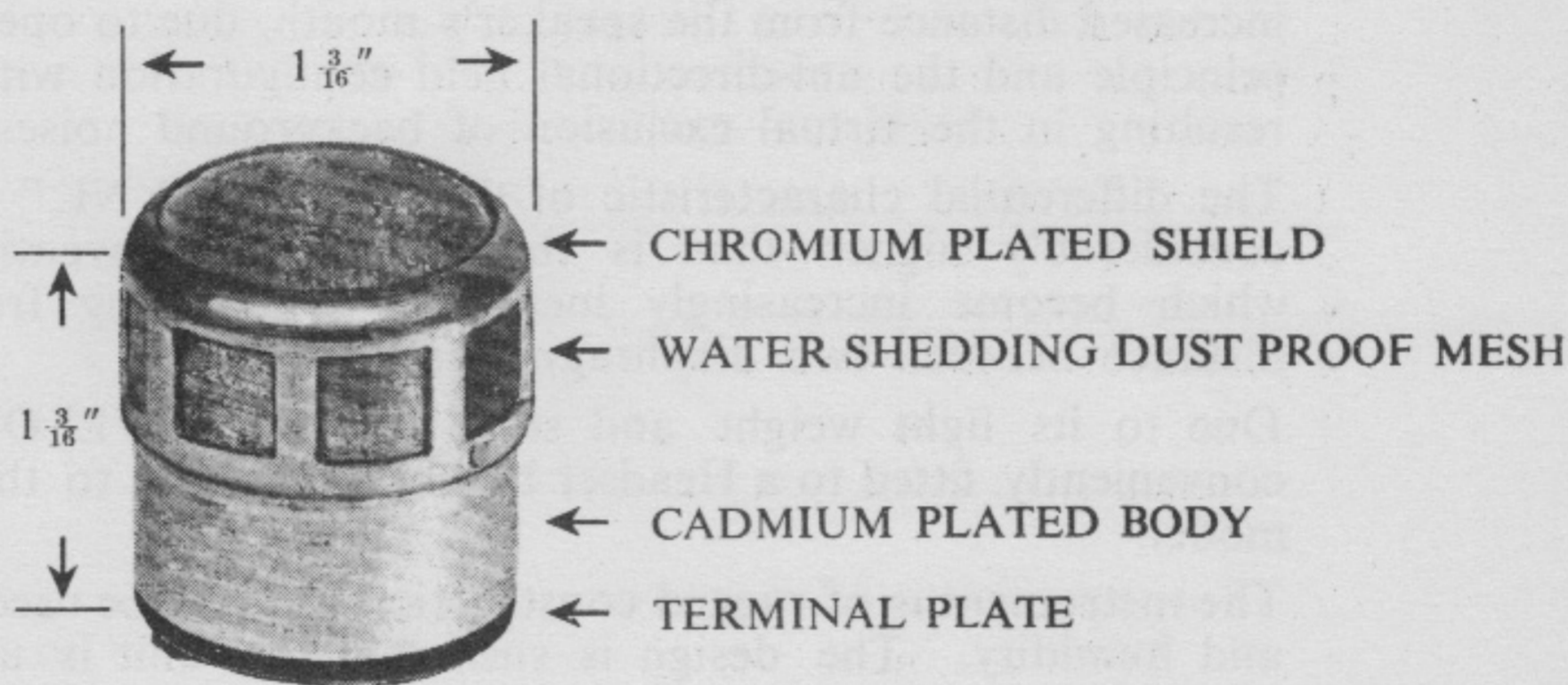


# “VELODYNE” NOISE CANCELLING MICROPHONE

Model VC 52

PATENTS APPLIED FOR - TRADE MARK REGISTERED.

The MICROPHONE



FITTED INTO  
SPECIALLY DESIGNED  
RUBBER SOCKET  
MOUNTED ON A BOOM  
AND  
ATTACHED TO  
HEAD TELEPHONE SET  
WITH MOVABLE CLAMP.



FITTED INTO  
SPECIALLY DESIGNED  
RUBBER SOCKET  
AND MOUNTED ON  
A HANDLE.

*The above illustrations show two suggested methods of fitting.*

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND.

**LUSTRAPHONE LTD.**

Telephone:- PRImrose 0630.  
Telegrams:- Lustraphon, Norwest, London.  
Cables :- Lustraphon. London.



## **“VELODYNE” NOISE CANCELLING MICROPHONE**

MODEL VC52.

### **GENERAL DESCRIPTION**

The Lustraphone Noise Cancelling “VELODYNE” Microphone described below is designed as a close-talking microphone for use under conditions of high ambient noise encountered in aircraft, ships and all other mechanically propelled vehicles, for conference work, in crowded surroundings and under noisy conditions in general.

The “VELODYNE” Microphone is a radical departure from conventional practice in differential microphones and is characterized by a steep decline of output with increased distance from the speaker's mouth, due to operation on the pressure-gradient principle and the uni-directional field configuration with a high front-to-back ratio, resulting in the virtual exclusion of background noises.

The differential characteristic of the “VELODYNE” is maintained at frequencies considerably higher than is the case with conventional differential microphones which become increasingly ineffective with rising frequency, owing to the finite distance between two diaphragms or apertures.

Due to its light weight and small size, the “VELODYNE” microphone may be conveniently fitted to a Headset boom, in addition to the more conventional hand-held model.

The instrument is of rugged construction and can be used at all extremes of temperature and humidity. The design is such that the unit is unaffected by rapid changes of air pressure.

### **SPECIFICATION**

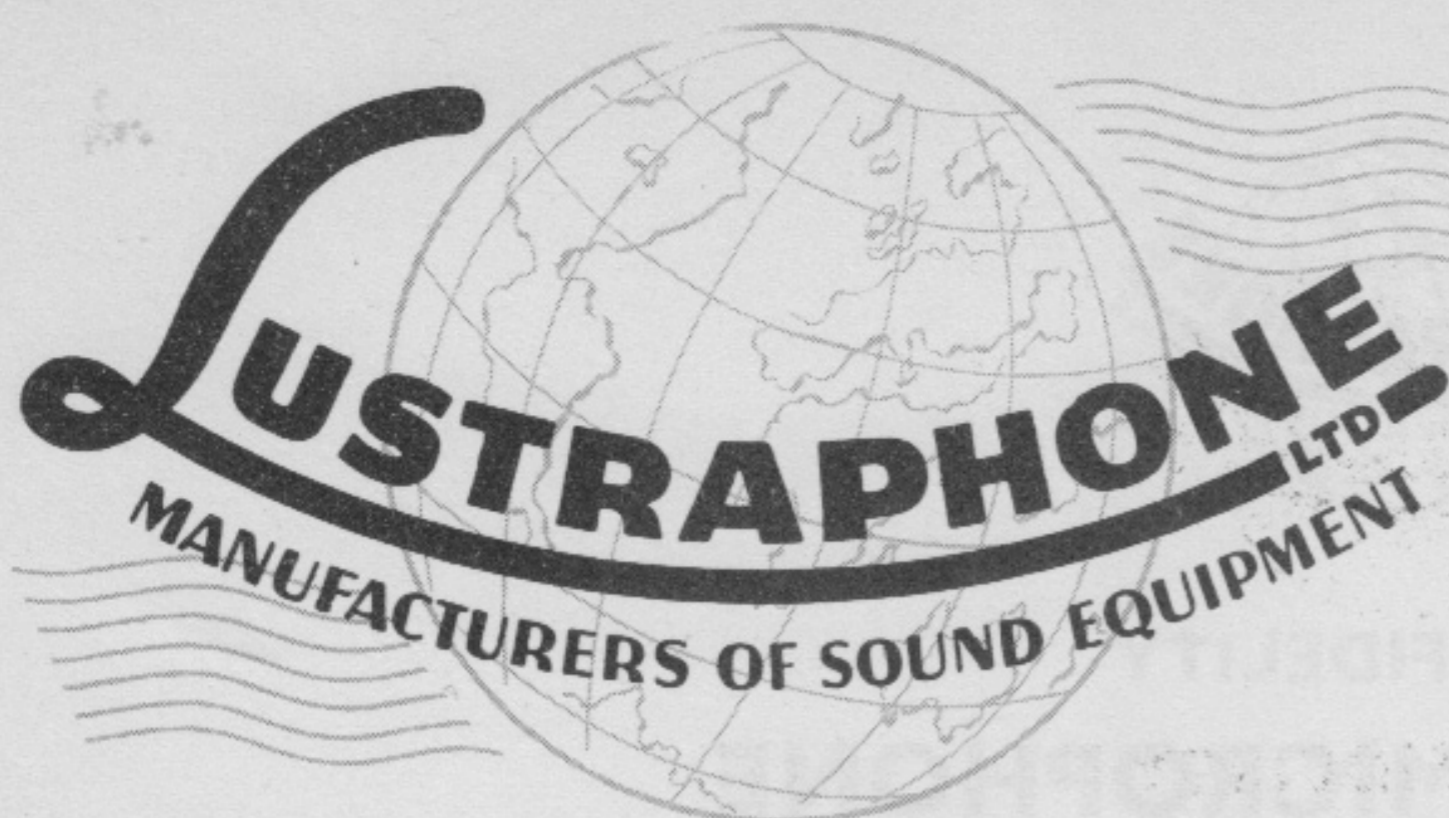
- **Output level :-** 1.5 mV approximately, with microphone correctly positioned close to the lips.
- **Frequency Response :-** Rising to peak at 2.0 k/cs followed by substantially flat response up to 3.5 kc/s. Thereafter sharp decline.
- **Impedance :-** 25 ohms.
- **Magnet System :** High Flux with negligible external field.
- **Finish :-** Fully tropical.
- **Dimensions :-**  $1\frac{3}{16}$ " dia.  $\times$   $1\frac{3}{16}$ " deep.
- **Weight :-**  $2\frac{1}{2}$  ozs.
- **Termination :-** 8 BA screw terminals at rear of microphone.

**LUSTRAPHONE — the foremost name in MICROPHONES**

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1. ENGLAND.

**LUSTRAPHONE LTD.**

Telephone:- PRImrose 0630  
Telegrams:- Lustraphon, Norwest, London.  
Cables:- Lustraphon, London.



## MOVING COIL MICROPHONE MODEL C 48



**T**HE Lustraphone Model C 48 combines high sensitivity with smooth frequency response. These characteristics are derived from the incorporation of the Lustraphone patented diaphragm suspension (Patent No. 556,137) and the acoustic properties of the instrument which reduce resonances to an absolute minimum and assures faithful reproduction of both speech and music.

Meticulous attention to the design of the cases housing the delicate movements, results in the microphones being unaffected under the most rigorous operating conditions and extremes of climate.

**LUSTRAPHONE** — *the foremost name in* **MICROPHONES**

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND

**LUSTRAPHONE LTD.**

Telephone:- PRImrose 0630.  
Telegrams:- Lustraphon, Norwest. London.  
Cables:- Lustraphon, London.



## HIGH FIDELITY DYNAMIC MICROPHONE

### MODEL C. 48

A High-Fidelity Moving Coil Microphone of compact proportions incorporating the famous Lustraphone patented technique. The standard of performance is exceptionally high, and Model C.48 is specified by many Public Authorities and leading research organisations. Model C.48 is a reasonably priced high fidelity microphone eminently suitable for Telecommunications, Conference, Recorder and all Public Address Systems.

#### TECHNICAL DESCRIPTION

- Impedance :—** 20 Ohms approx. Long unscreened transmission line can be used without noise pick-up or signal loss.
- Sensitivity :—** Average open-circuit voltage 79 db below 1 volt/dyne/sq. cm.
- Frequency response :—** Variations not exceeding +6 decibels between 50 and 8,000 cs.
- Magnet :—** "Centre Pillar" type, resulting in negligible stray magnetic field.
- Dimensions :—** 3" diameter x 2 $\frac{1}{8}$ " deep.
- Weight :—** 1 $\frac{1}{2}$  lbs.
- Mounting :—** Resilient. Bush with  $\frac{1}{2}$ " dia. Standard Brass thread. Special adaptors can be supplied on application.
- Connection :—** A miniature standard 3-pin socket is provided at the rear of the head. Corresponding plug supplied.
- Finish :—** Standard black with plated wire mesh. Other finishes on application.

### MODEL C. 48/S.

Microphone as above, but fitted with ON-OFF switch mounted in diecast housing. A 20-Ohm resistor replaces speech-coil in OFF position, to maintain circuit balance.

---

THERE ARE  
**LUSTRAPHONE "MASTER" MICROPHONES**  
FOR ALL REQUIREMENTS

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND

**LUSTRAPHONE LTD.**

Telephone:- PRImrose 0630.  
Telegrams:- Lustraphon, Norwest, London.  
Cables:- Lustraphon, London.



## GENERAL PURPOSE DYNAMIC M/C MICROPHONE

**MODEL C.51**

(Brit. Patent 556137)



C.51 shown mounted  
on Heavy Cast S.2 Base.

The LUSTRAPHONE C.51 microphone is a well-designed, yet inexpensive, General Purpose model. It can be employed as:-

1. A STAND MOUNTING INSTRUMENT
2. A TABLE MODEL.
3. A HAND MICROPHONE.

Specially suitable for portable equipment, the C.51 is in every instance A DIRECT REPLACEMENT FOR ANY CURRENT TYPE OF DYNAMIC OR CRYSTAL MICROPHONE. The range of output impedances which can be ordered is between 20 and 200,000 ohms. Similarly to the other members of the LUSTRAPHONE "family," reliable service under the most adverse conditions of humidity and temperature is obtained.

Some applications illustrating the versatility of the instrument are :-

STATICNARY – MOBILE – PORTABLE	{	Public Address Installations Recorders (Disc, Tape, Wire) Telecommunications Equipment
--------------------------------	---	--

The microphone can be securely set to any position from vertical to horizontal and in this latter position becomes fully omni-directional. A low-resistance ON-OFF switch is incorporated as a standard feature at the top of the microphone.

Light moulded plastic table base in similar finish to microphone housing is available upon request.

***LUSTRAPHONE the foremost name in MICROPHONES***

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND.

**LUSTRAPHONE LTD.**

Telephone:- PRImrose 0630  
Telegrams:- LUSTRAPHON NORWEST LONDON  
Cables:- LUSTRAPHON LONDON



## GENERAL PURPOSE DYNAMIC M/C MICROPHONE

MODEL C.51

### TECHNICAL DESCRIPTION

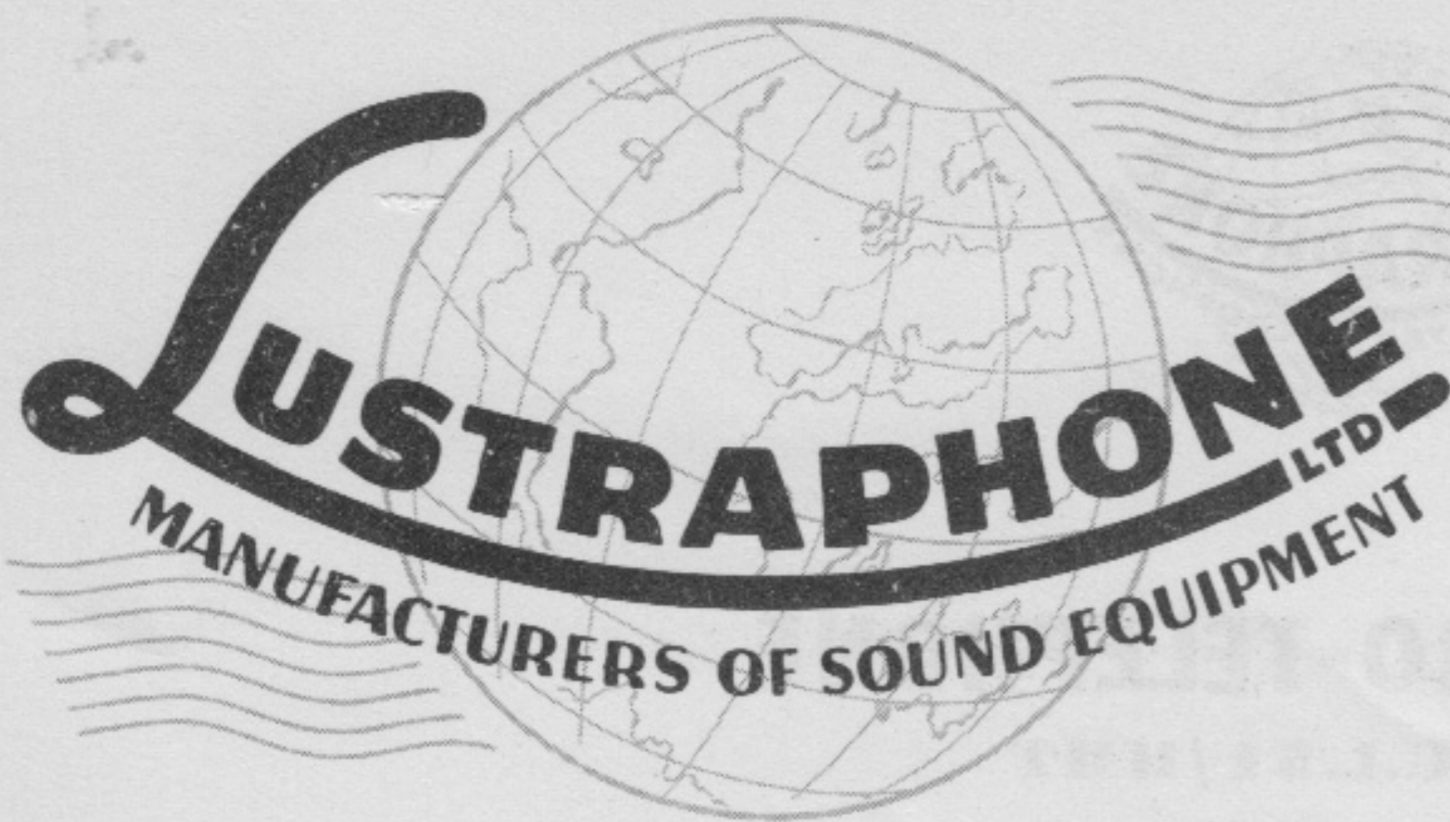
<b>Impedance :—</b>	20 ohms, alternatively 500 ohms or 200,000 ohms. Other values to specification.																				
<b>Sensitivity :—</b>	Reference level 1V/dyne/cm <sup>2</sup> at— <table><tr><td>20 ohms</td><td> </td><td>500 ohms</td><td> </td><td>200,000 ohms</td></tr><tr><td>—83db</td><td> </td><td>—69db</td><td> </td><td>—43db</td></tr></table> Approximate output for speech at close range :— <table><tr><td>20 ohms</td><td> </td><td>500 ohms</td><td> </td><td>200,000 ohms</td></tr><tr><td>1. mV</td><td> </td><td>5. mV</td><td> </td><td>0.1 V</td></tr></table>	20 ohms		500 ohms		200,000 ohms	—83db		—69db		—43db	20 ohms		500 ohms		200,000 ohms	1. mV		5. mV		0.1 V
20 ohms		500 ohms		200,000 ohms																	
—83db		—69db		—43db																	
20 ohms		500 ohms		200,000 ohms																	
1. mV		5. mV		0.1 V																	
<b>Frequency response :—</b>	Slightly rising within Speech Frequency Band; substantially flat up to 8 kc/s.																				
<b>Magnet System :—</b>	High Flux system embodies latest permanent magnet technique, resulting in negligible external field.																				
<b>Switching :—</b>	Low resistance Single pole ON-OFF.																				
<b>Connection :—</b>	Miniature 3-pin socket at the rear. Corresponding moulded plug supplied.																				
<b>Dimensions of Mic. Head :-</b>	Height :—3 $\frac{3}{8}$ " Width :—2 $\frac{1}{2}$ " Depth :—1 $\frac{5}{8}$ "																				
<b>Weight :—</b>	20 ohms Model :—14 ozs. Other Impedances :—16 ozs.																				
<b>Finish :—</b>	Stove enamelled Zinc Alloy Pressure Diecasting with Chromium Plated Fittings.																				

**THERE ARE  
LUSTRAPHONE "MASTER" MICROPHONES  
FOR ALL REQUIREMENTS**

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND.

**LUSTRAPHONE LTD.**

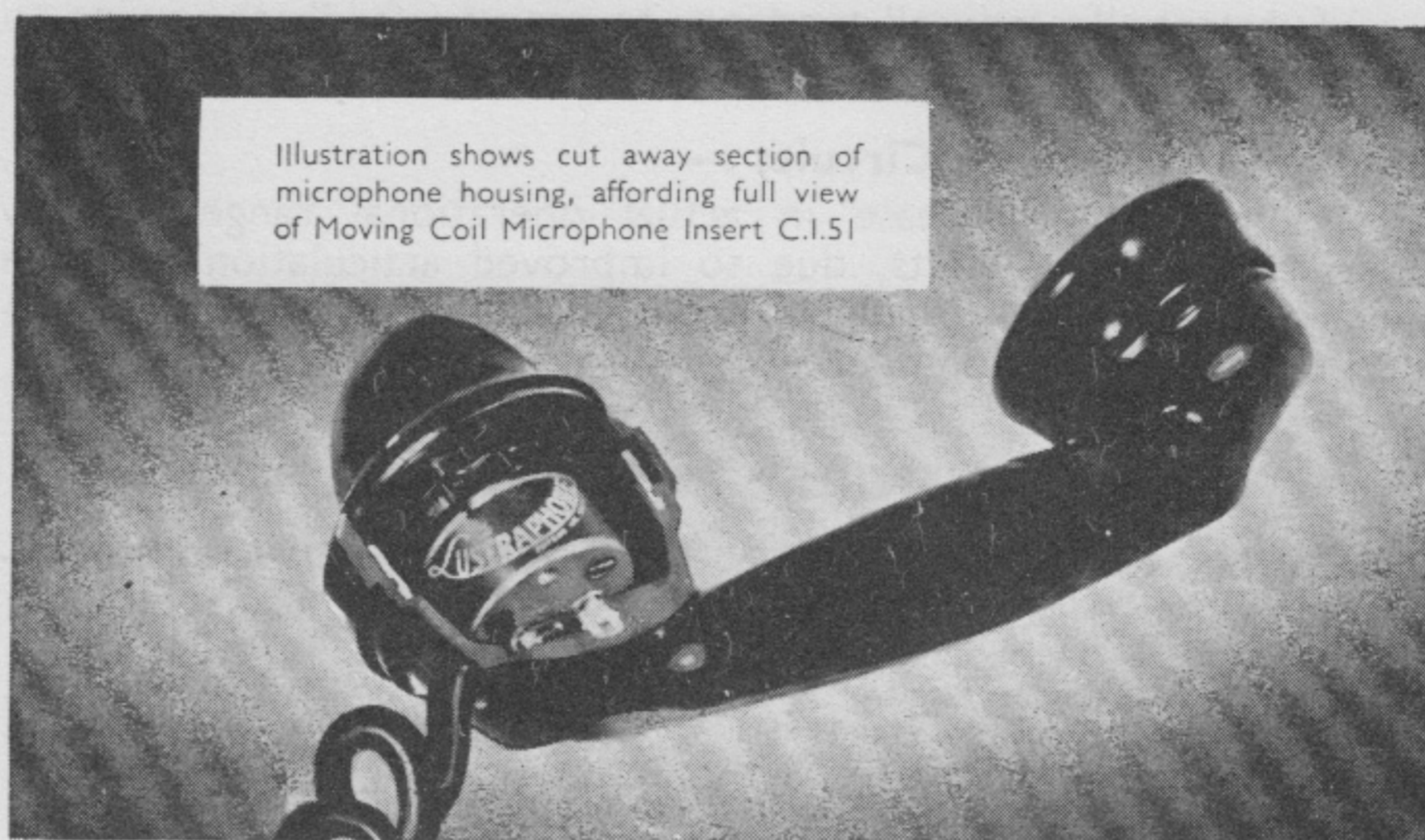
Telephone:- PRIMrose 0630  
Telegrams:- LUSTRAPHON NORWEST LONDON  
Cables:- LUSTRAPHON LONDON



## HAND-MICRO-TELEPHONE

**MODEL C.1.51/HMT**

Brit. Pat. No. 556,137



This instrument was designed and introduced at the request of several important Public Bodies who were requiring a HIGH FIDELITY MICROPHONE VERSION of the normal handset incorporating a carbon microphone.

Since its introduction the instrument has found high favour with designers and users, for all types of Radio-Telephony both static and mobile.

Widely specified by Government Departments, Public Authorities and Leading Equipment Manufacturers all over the World for use ON LAND, AT SEA AND IN THE AIR.

### IN OPERATIONAL SERVICE ON:—

POLICE CARS AND MOTOR CYCLES.  
MARINE INSTALLATIONS—SHIP AND SHORE.  
RAILWAYS. AERODROMES AND AIRCRAFT.  
PORTABLE V.H.F. TRANS-RECEIVERS.  
V.H.F. INSTALLATIONS OF VARIOUS DESCRIPTIONS.

***LUSTRAPHONE—the foremost name in MICROPHONES***

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND

**LUSTRAPHONE LTD.**

Telephone:- PRImrose 0630.

Telegrams:- Lustraphon, Norwest, London

Cables:- Lustraphon, London.



## HAND-MICRO-TELEPHONE

### MODEL C.I.51/HMT

Brit. Pat. No. 556,137

Model C.I.51/HMT represents a marked advance in the Technique of Speech Transmission.

*The outstanding Contributions which give enhanced overall performance to equipment incorporating this handset include—*

#### **In Amplified Telephone Circuits :—**

Substantially reduced tendency to acoustic feedback, owing to level frequency characteristic.

#### **In Radio-Telephone Circuits :—**

Considerable increase in actual operational range of Low Power and mobile units, due to improved articulation at given unfavourable signal-to-noise ratio levels, especially when the additional complication of accent or dialect is present.

### TECHNICAL DESCRIPTION

#### **ESSENTIAL FEATURES :—**

1. LUSTRAPHONE High Fidelity Moving Coil Microphone Model C.I.51 replaces Carbon Transmitter Inset in an Improved Type Standard Pattern Hand-Micro-Telephone.

2. High Effective Sensitivity, 1mV at 20 Ohms Impedance, at normal Speech Level.

3. Supplied with or without Press-to-talk Switch.

4. Standard fitting includes Sprung, Coiled Multicore Cable, Tough—Rubber—Sheathed.

5. Weight :— Approximately 1½ lbs. (including cable).

#### **RESULTANT ADVANTAGES :—**

Undistorted Reproduction of Speech.

Absence of Background Hiss.  
No Polarizing Voltage required.

No screened leads required.

A variety of Circuit arrangements can be catered for, to particular requirements and specification.

No twisting of leads.  
Extends to over five times its original length. Unaffected by moisture. No stowage difficulties.

Exceeds by only 2 ozs. weight of handset fitted with standard Carbon Transmitter Inset.

**THERE ARE  
LUSTRAPHONE "MASTER" MICROPHONES  
FOR ALL REQUIREMENTS**

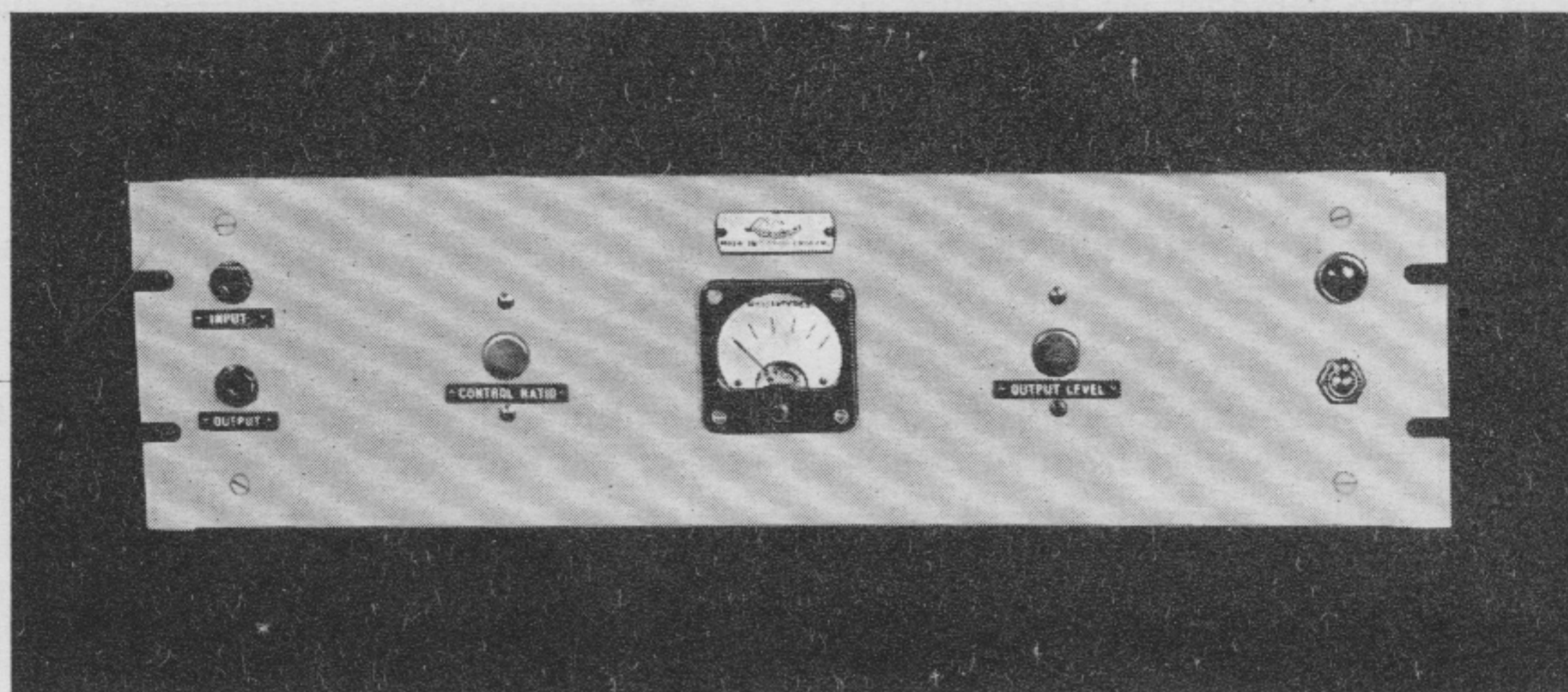
ST. GEORGE'S WORKS,  
REGENTS PARK ROAD.  
LONDON, N.W.1., ENGLAND

**LUSTRAPHONE LTD.**

Telephone :— PRImrose 0630.

Telegrams :— Lustraphon, Norwest, London.

Cables :— Lustraphon, London.



## LUSTRAPHONE

Automatic Audio Frequency Gain  
Control Unit

**MODEL AGC. 496**  
with Power supply

**MODEL AGC. 496a.**  
without Power supply

This instrument has been developed to meet the requirements of **Public Utility Companies and Authorities, Airports, Railway and Transport Undertakings and large Arenas of all descriptions**, so that the necessity to keep specially trained personnel exclusively available for required announcements can be obviated.

The principal difficulties encountered have been:—

- i. That the level of different announcers' speech varies from little above a whisper to a shout.
- ii. That the distance of the announcer from the microphone usually varies considerably.

The deterrent results from the above difficulties are symbolised by the varying output levels coupled with the probability of overloading the Amplifier and the consequent deterioration in speech intelligibility. In actual operation the Unit will reduce variations in microphone output from about forty decibels to negligible proportions at the amplifier input.

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND

**LUSTRAPHONE LTD.**

Telephone:- PRImrose 0630.  
Telegrams:- Lustraphon, Norwest, London.  
Cables:- Lustraphon, London.



# AUTOMATIC AUDIO FREQUENCY GAIN CONTROL UNIT

**MODEL AGC. 496**

with Power supply

**MODEL AGC. 496a.**

without Power supply

## Description :

In the LUSTRAPHONE AUTOMATIC A.F. GAIN CONTROL UNIT, the Microphone input is taken to the grids of a pair of variable  $\mu$  Pentodes push pull.

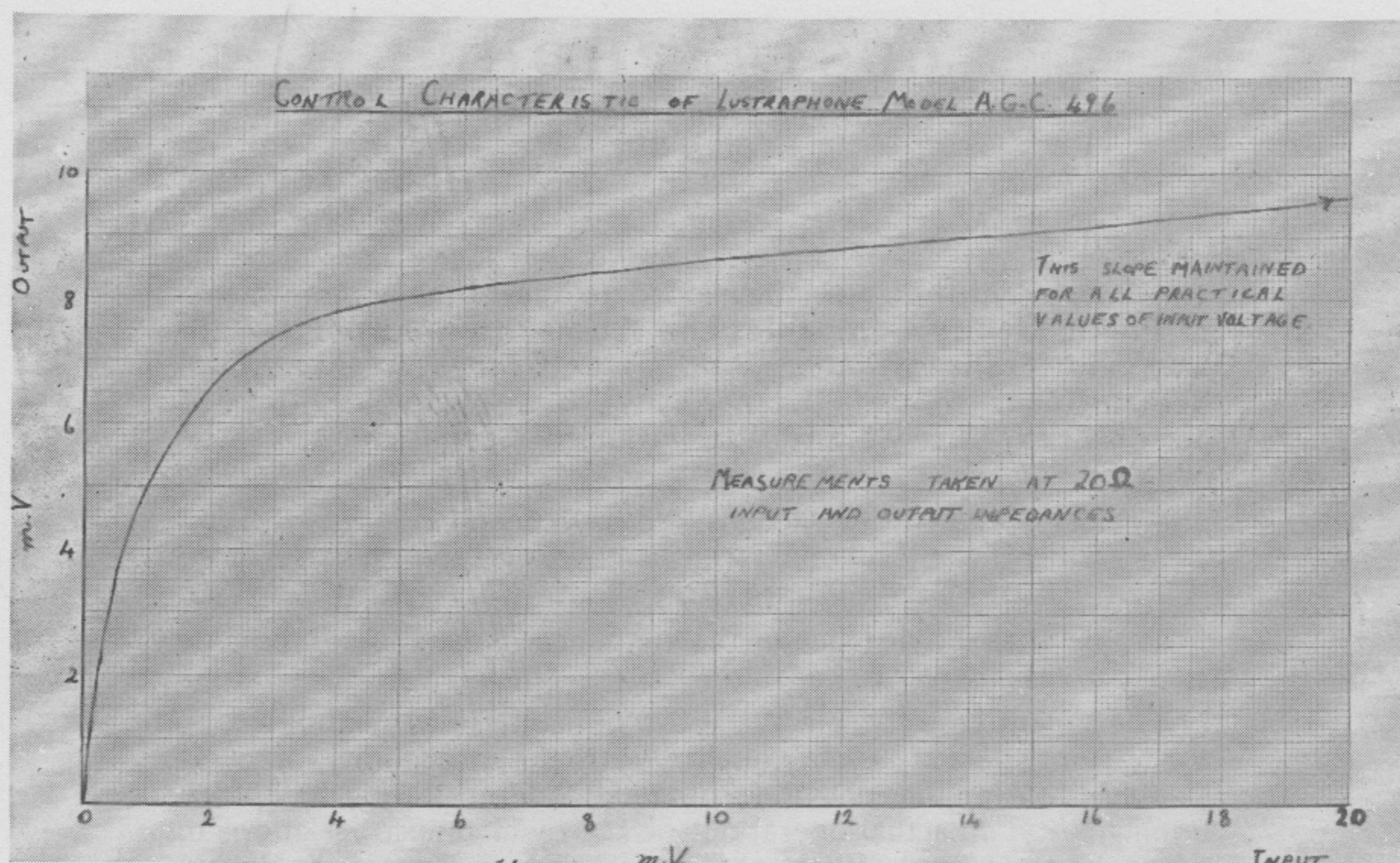
The output of the Pentodes is applied to the input of the normal amplifier (asymmetrical) and and to a further stage of voltage amplification followed by a diode rectifier. The resulting D.C. voltage is applied via an R.C. Network having a suitable voltage decay constant to the grids of the two Pentodes via the centre tap of the microphone input transformer, in such a manner as to reduce the gain of this stage.

It will therefore be seen that the output voltage from the unit tends to remain constant irrespective of the applied input voltage.

It has been found desirable to keep the initiation time constant short with a relatively long restoration period. In operation the unit will reduce large variations in microphone output to almost negligible proportions at the amplifier input.

## Installation :

Two versions of the unit are available, AGC.496 complete with power supply and AGC.496a, deriving its power supplies from an external source of 250 volts D.C. smoothed and 6.3 volts A.C., the consumption being 8 to 10 milliamps and 1 amp respectively. The heater circuit is not connected to earth in model AGC.496a, so as to allow for either a balanced or unbalanced external 6.3 volt source. H.T. negative is internally connected to the chassis. The Unit is accommodated on a standard 19 inch by 5 $\frac{1}{4}$  inch panel suitable for rack mounting. Unless otherwise specified, the input and output impedances are 20 ohms asymmetrical.



ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND

**LUSTRAPHONE LTD.**

Telephone :- PRImrose 0630.

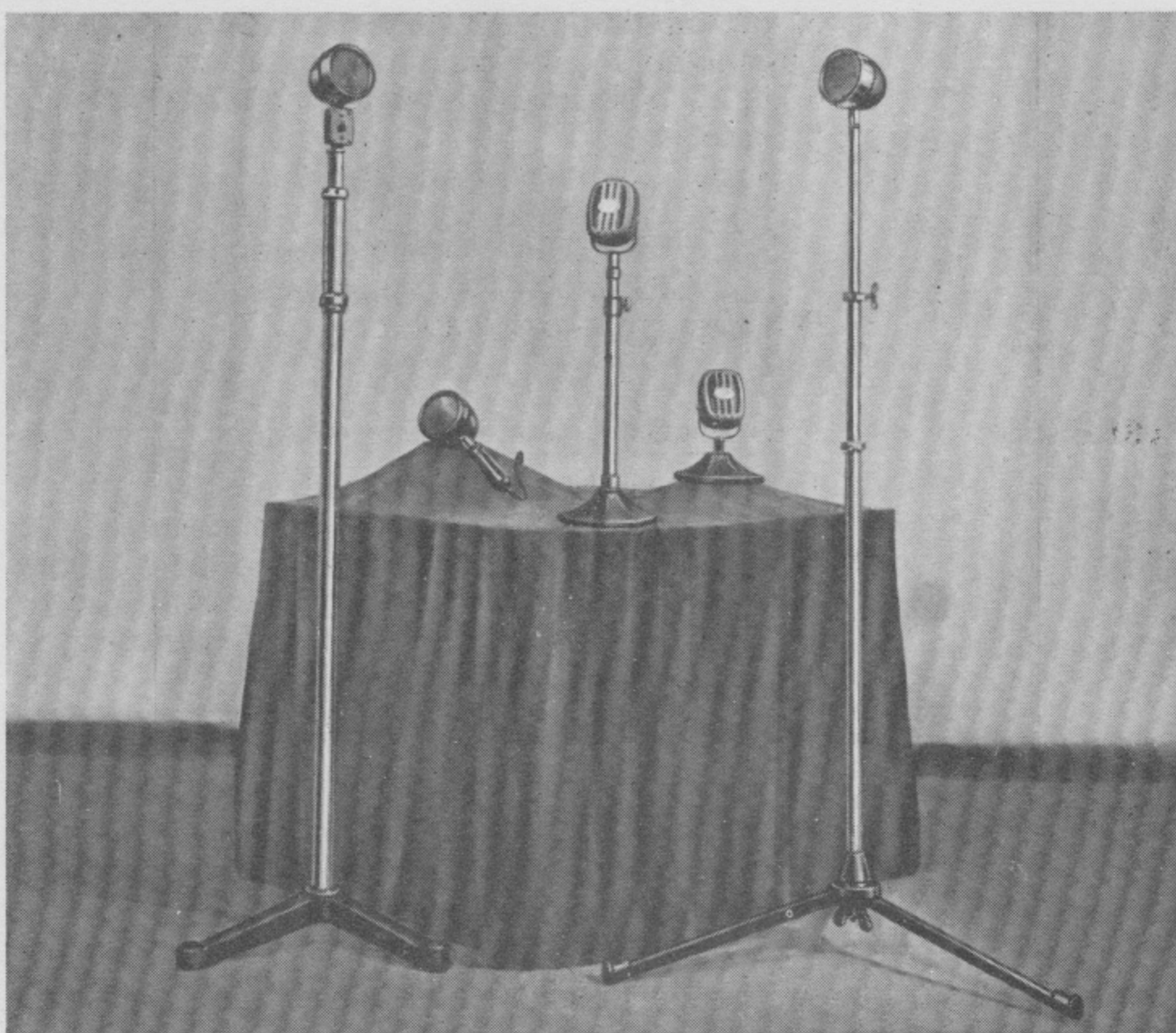
Telegrams :- Lustraphon, Norwest, London.

Cables :- Lustraphon, London.



## MICROPHONE

FLOOR STANDS — TABLE STANDS — TABLE BASES — HANDLES



MODEL S1/A	MODEL SH/1	MODEL S/2	MODEL S2/B Heavy cast or moulded	MODEL S5/X
An exceptionally well proportioned Floor Stand stream-lined heavy triangular Base, with black crackle finish. Chromium plated stems. Stand fitted with Plunger action giving automatic rigid setting. No thumb screws or adjusting nuts. Height extension to 5ft. 6ins.	A well designed handle, sturdily fashioned to hold comfortably. Handsomely finished in heavy black glossy enamel. with chromium plated knurled locking ring.	A handsome Table stand for Restaurants, Boardrooms, Studios etc. Diecast base finished black crackle and heavy chromium plated stems. Height extension to 20 ins.	A desk base handsomely finished in black crackle. Constructed to stand rigid and an excellent fixture for broadcasting and recording from Desk or Table. Light moulded grey crackle table base also available.	Heavy Chromium plated Collapsible Rod type Floor Stand Especially constructed to disassemble into bottom section. Feet fold into sides and are fitted with rubber shock absorbers. Height extension to 5ft. Very convenient and easily portable.

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND

**LUSTRAPHONE LTD.**

Telephone:- PRImrose 0630.  
Telegrams:- Lustraphon, Norwest, London.  
Cables:- Lustraphon, London.



## MICROPHONE ACCESSORIES

### TRANSFORMERS

Lustraphone specially constructed matching transformers to match low impedance microphones to high impedance amplifier input. All types are enclosed in MUMETAL cases of substantial thickness to reduce magnetic coupling to a minimum. Frequency response of all types level throughout audio frequency band :-

Type T.S. 100 - Ratio 1-100

„ T.S. 50 - „ 1-50

„ TSLa 20/500 ohms Impedance match

„ TSLb 500/200,000 ohms Grid.

Other types to specification.

• • •

### CABLES

Microphone Cables. specification,

1. Twin circular PVC sheathed
2. Twin Screened circular PVC sheathed.
3. Rubber insulated and sheathed spring coiled flexible cable, extending to approximately 5 times its length at rest. Sizes 3 to 6 core. 19/.006.
4. Other sizes and cores to specification.

• • •

### SWITCH ADAPTOR Independent switch control.

ON/OFF switch mounted in attractively finished black crackle diecast housing.

Standard threads to connect to Microphone and Stands. Type No. GA. 110.

• • •

### PLUGS and CONNECTORS

The following are available :-

1. Three pin moulded plug Cat. No. P1248/9.
2. Jack Plug Cat. No. P1128
3. Jack Socket Cat. No. P/1127

**THERE ARE  
LUSTRAPHONE "MASTER" MICROPHONES  
FOR ALL REQUIREMENTS**

ST. GEORGE'S WORKS,  
REGENTS PARK ROAD,  
LONDON, N.W.1., ENGLAND

**LUSTRAPHONE LTD.**

Telephone:- PRImrose 0630.

Telegrams:- Lustraphon, Norwest, London.

Cables:- Lustraphon, London.