Eddystone

MODEL 40A
BOOK 1

OPERATORS HANDBOOK

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FIRST AID IN CASE OF ELECTRIC SHOCK

The Royal Life Saving Society recommends the **Expired Air** *method of artificial respiration for use in any case of electric shock.* **It is comparatively simple and produces the best and quickest results when correctly applied.** *It also has an important advantage over the accepted manual methods in that* **it can be carried out in awkward situations in confined spaces,** *such as might well be encountered at sea.*

However, where there is a facial injury, or if the patient is trapped in a face downwards position, *it might be necessary to use a manual method of artificial respiration: of this type the* **Holger Nielson** *method is considered the most satisfactory*

Directions for applying both methods are therefore given.

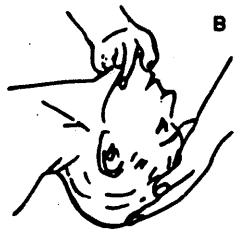
EXPIRED AIR METHOD OF ARTIFICIAL RESPIRATION

It is essential to commence artificial respiration without delay.

DO NOT TOUCH THE VICTIM WITH YOUR BARE HANDS until the circuit is broken.

SWITCH OFF. If this is not possible, **PROTECT YOURSELF** with dry insulating material and pull the victim clear of the conductor.

1. **Lay the patient on his back** and, if on a slope, have the stomach slightly lower than the chest.



2. **Make a brief inspection of the mouth and throat** to ensure that they are clear of obvious obstruction.

3. **Give the patient's head the maximum backwards tilt** so that the chin is prominent, the mouth closed and the neck stretched to give a clear airway—Fig. A.

4. **Open your mouth wide, make an airtight seal over the nose of the patient and blow.** The operator's cheek or the hand supporting the chin can be used to seal the patient's lips—Fig. B, **or if the nose is blocked,** open the patient's mouth using the hand supporting the chin; open your mouth wide and make an airtight seal over his mouth and blow—Fig. C. This may also be used as an alternative to the mouth-to-nose technique.

5. **After exhaling, turn your head to watch for chest movement** whilst inhaling deeply in readiness for blowing again—Fig. D.

6. If the chest does not rise, check that the patient's mouth and throat are free of obstruction and the head is tilted backwards as far as possible. Blow again.

Send for medical assistance if possible.

HOLGER NIELSON METHOD OF ARTIFICIAL RESPIRATION

It is essential to commence artificial respiration without delay.

DO NOT TOUCH THE VICTIM WITH YOUR BARE HANDS until the circuit is broken.

SWITCH OFF. If this is not possible, **PROTECT YOURSELF** with dry insulating material and pull the victim clear of the conductor.

1. **Lay patient face downwards** with the forehead resting on the hands, placed one above the other.

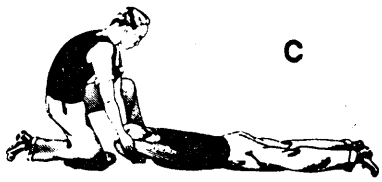
2. **Remove false teeth, tobacco or gum** from patient's mouth; make sure the **tongue is free** by firm blows between the shoulders with the flat of the hand.

3. **Kneel on one knee at patient's head,** one foot by the patient's elbow.

4. **Place palms of your hands on patient's shoulder blades**—Fig. A.

5. **Rock forward until arms are vertical,** the pressure should be light and without force (22–30 lb. is sufficient); this should take 2½ seconds—Fig. B.

6. **Release the pressure** by allowing the hands to slide down the arms to the patient's elbow (approximately 1 second) then raise the patient's arms and shoulders slightly pulling at the same time by swinging backwards (approximately 2½ seconds)—Fig. C, lower the patient's arms—Fig.D, and return your hands to the patient's shoulder blades.



7. **Repeat the movements** taking 7 seconds for each complete respiration.

8. **While artificial respiration is continued, have someone else—**

   (*a*) Loosen patient's clothing.

   (*b*) Keep patient warm.

9. **If patient stops breathing, continue artificial respiration.** Four hours or more may be required.

10. **Do not give liquids until patient is conscious.**

Send for medical assistance if possible.

HEALTH & SAFETY AT WORK ACT 1974 (UNITED KINGDOM)

The objective of this Act is to maintain or improve standards of health, safety and welfare of persons at work, and to protect persons at work and others, against risks to health, safety and welfare.

To the best of current knowledge, there is no risk to health or safety when Eddystone equipment is installed and operated properly, provided it has been properly maintained.

Precautions have been taken during the design and manufacture of this equipment to reduce the risks involved when repairing or maintaining the equipment but a certain degree of risk must always be present, particularly under fault conditions. The list below has been prepared to draw attention to the general risks envisaged; further information is available from Eddystone Radio Limited, at any time.

1. **Electric Shock**
   Beware mains voltage and induced aerial voltages, ensure metal chassis is properly bonded to earth. Some units generate a high voltage even when the equipment is operated from a battery supply. Circuitry operating at low voltage is not necessarily at or near earth potential.

2. **Physical Strain**
   Obtain assistance if a heavy unit is to be lifted or removed from an equipment rack.

3. **Explosion and Implosion**
   Cathode ray tubes may implode if carelessly handled or dropped.
   Use protective masks and gloves.
   Electrolytic capacitors may explode if subjected to excessive voltage or voltage of incorrect polarity, and toxic materials may be released.

4. **Burns**
   Resistors and power transistors (for example) may attain a high temperature. Avoid contact with these.

5. **X-Rays**
   Cathode ray tubes operated at excessive voltage may generate harmful X-rays.

6. **Soldering**
   Beware of flying droplets of molten solder and careless use of soldering irons (place in a proper stand when not in use). Avoid fumes. Do not handle food or drink, cigarettes, etc., without washing hands (risk from lead poisoning).

7. **Cleaning Solutions**
   Certain solutions give off flammable or toxic fumes, e.g., trichloroethylene and its derivatives. Do not smoke and avoid inhalation of vapours.

8. **Disposal of Faulty Components**
   Certain components contain toxic materials which may be released if the component is broken or disposed of carelessly, e.g., semi conductor devices containing poisonous metallic compounds; electrolytic capacitors containing poisonous organic compounds.

TREATMENT FOR BURNS

1. No attempt should be made to remove clothing adhering to the burn.

2. If other help is available, or as soon as artificial respiration is no longer required, cover the burn with a dry dressing.

3. Oil or grease in any form should not be applied.

4. Warm, weak, sweet tea may be given when the patient is able to swallow.

These instructions are approved by The Royal Life Saving Society. A handbook and charts dealing with Artificial Respiration can be obtained from the Society at 14 Devonshire Street, London, W.1.

NOTE : : AC MAINS CONNECTOR

The following information is issued in compliance with British Standard BS415:-

If the colours of the wires in the mains lead of this apparatus do not correspond with the coloured markings identifying the terminals in your mains connector (or plug) proceed as follows:-

1. The GREEN/YELLOW wire must be connected to the plug terminal marked "E" or " ⏚ " or coloured GREEN or GREEN/YELLOW.

2. The BLUE wire must be connected to the plug terminal marked "N" or coloured either BLUE or BLACK.

3. The BROWN wire must be connected to the plug terminal marked "L" or coloured either BROWN or RED.

4. If a 13 amp (BS1363) FUSED PLUG is used to facilitate connection to the supply outlet, the plug MUST be protected by a 3 AMP FUSE unless expressly declared otherwise (see para. 5 below). If another type of plug is used, a fuse of the appropriate rating must be fitted either in the plug, or the adaptor, OR AT THE DISTRIBUTION BOARD.

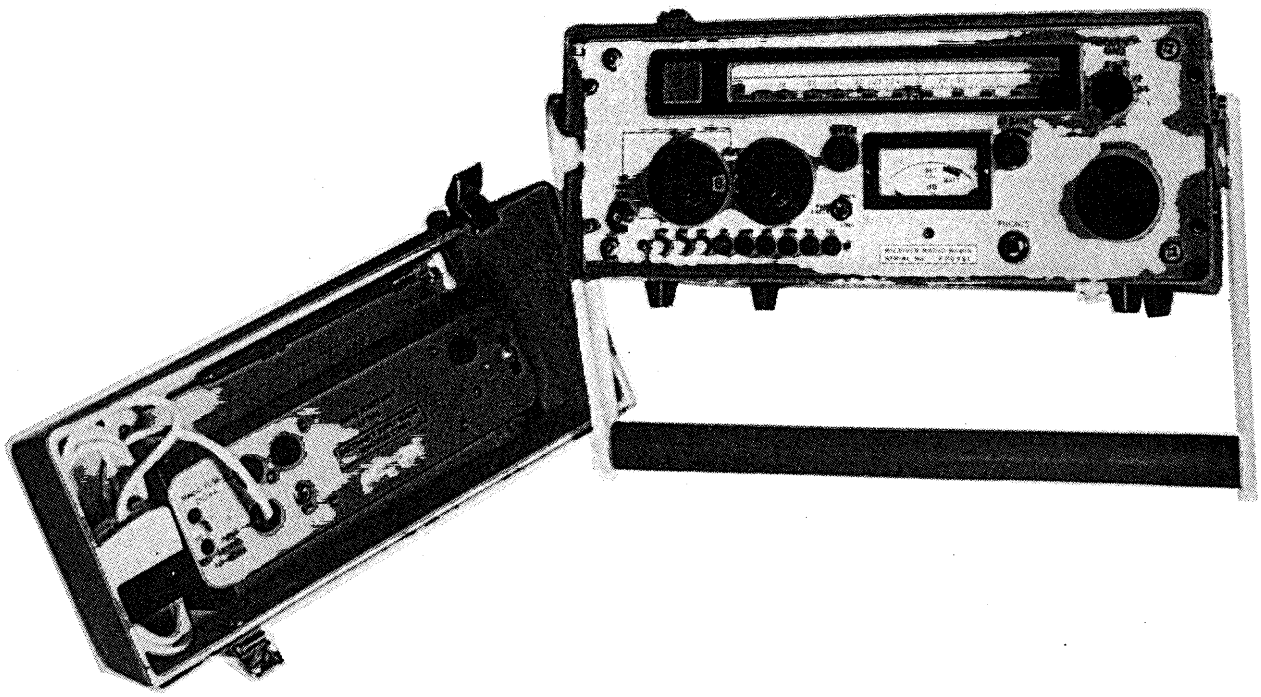
5. NOTE:

   A 3 AMP fuse rating is sufficient for most equipments, but in some instances, to allow for switching surges, it may be necessary to use a 5 AMP FUSE RATING. In all instances where the higher rating is applicable, specific notice will be given in the INSTALLATION SECTION of the handbook at the POWER SUPPLIES subsection.

Eddystone

NOISE MEASURING SET

MODEL 40A



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AMENDMENT RECORD

Amend No.	Pages subject to change	Amended by	Date
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The Manufacturer reserves the right to modify the content of this publication as necessary to accommodate modifications, design improvements etc. Relevant Amendment Sheets will be incorporated at date of issue.

MODEL 40A

BOOK 1.

CONTENTS

NOTE : : Refer to BOOK 2 for all technical data and Circuit Diagrams.

INTRODUCTION

General

Book 1

This handbook provides the detailed commissioning notes and comprehensive operating instructions required for Radio Receiver type 40A (British Home Office design) manufactured by Eddystone Radio Limited.

It is important to note that Book 2, which is a separate publication, provides the overall technical information and service data. It is therefore essential to refer to Book 2 whenever detailed modification data or maintenance instruction is required.

Guarantee

All 40A Series receivers are suitable for continuous use under normal operating conditions and should require very little routine maintenance over long periods of operation. With the exception of the semi-conductor devices, all components are guaranteed by the Manufacturer for a period of one year from the date of purchase. The semi-conductor devices are covered by a separate guarantee.

Servicing

Spares for user servicing can be supplied and advice will be freely given when required. Any enquiries relating to service matters should be directed to the "Sales and Service Department", Eddystone Radio Limited, at our usual address. Please quote the equipment Model number and Serial number in all communications. Should major servicing become necessary the unit can, by prior arrangement, be returned to the Manufacturer for attention; care should be taken to ensure that the unit is well protected against possible damage during transit.

General Description

Radio Receiver type 40A, is a portable Radio Frequency Interference (RFI) measuring set, designed to meet the special requirements of the British Post Office and, in general, the special requirements of the specification set down in CISPR (16). The equipment is primarily intended for use by personnel engaged in the investigation of RFI in the frequency range 130kHz to 30MHz. The receiver is also ideally suited to many industrial uses, including acceptance testing on a wide range of electrical appliances.

32 MHz

Measurements can be taken of the voltage or field strength of CW signals, or impulsive noise with pulse repetition frequencies as low as 1Hz. Integral ferrite loop aerials or the "whip" aerial supplied, are utilized for interference tracing. Separate correction and conversion tables are supplied with calibrated aerials specifically intended for field strength measurements or radiated noise measurements, or to facilitate the assessment of conducted noise using a suitable artificial mains network.

The equipment is extremely simple to operate and long term accuracy of a high order is assured by standardising the overall system gain against an internal impulse calibrator, prior to taking each reading. Power is derived from a self-contained battery supply (type LP3627) utilizing six International Type D dry cells ("U2" or equivalent) for field operation.

Alternatively, a standard AC source in the range 105-125/190-270V 40-60Hz can be used via the mains power supply module (type LP3618) supplied.

The receiver takes the form of a conventional single superhet with an intermediate frequency of 1.75MHz. As such it has an input impedance of 50Ω and is fed via the front panel "RF INPUT 50Ω" socket and the 10dB and 1dB step attenuators. When either 'LOOP' or 'WHIP' aerials are selected, they are switched (internally) to this input via an additional impedance converting aerial amplifier. For gain standardisation (Calibration) the fixed level output of the internal broadband impulse generator is also switched to this input, though in this case by-passing the attenuators. The output meter is fed from the amplified output of the quasi-peak rectifier. A high impedance DC output direct from the detector is provided on the rear ancillary connector. Other facilities include AGC and a +20dB gain setting, both which operate on the IF amplifier. The AGC line is brought out to the rear ancillary connector to enable the connection of additional AGC time constant capacitors. A buffered pre-detector output from the IF amplifier is brought out to the rear panel BNC connector. The receiver can also be operated from an external DC supply via an input on the rear ancillary connector. This input is diode protected to prevent accidental polarity reversal of the supply from causing damage - however the internal power supply must be disconnected when an external power supply is used. (See Commissioning Notes).

The extendable whip aerial is supplied in the cabinet lid and must be fitted to the UHF - type input socket located beneath the protection cover on the RH side of the cabinet (See Commissioning Notes), when 'WHIP' is selected.

For audio monitoring an envelope detector is provided with an audio amplifier supplying an internal monitor speaker and the 'PHONES' jack socket on the front panel. When a plug is inserted in this socket, the internal loudspeaker is automatically muted.

TECHNICAL DATA SUMMARY

Input impedance	:	50Ω ± 10% at the tuned frequency with 10dB or more attenuation being used.
Measurement range	:	(equivalent sinewave p. d. input) 0dBμV to 100dBμV with use of 'IF +20dB' facility. An extra ± 5dB range at any point is obtainable using the meter, but with a slight reduction in accuracy (0.5dB).
Detector output	:	⩾+150mV D.C. at 'SET CAL' reading on meter (output across 10MΩ load). Output is proportional to quasi-peak rectifier output voltage.
IF Output	:	⩾50mV p. to p. emf with a sinewave input giving 'SET CAL' on meter.
IF Frequency	:	1.75MHz.
External power supply input	:	+8.0 to +10.5V DC for optimum operation (n.b. this input is diode protected against accidental reversal of polarity).
Weight	:	= 10kg total package (approx).
Dimensions	:	WIDTH : 385mm including handle. HEIGHT : 161mm including feet. DEPTH : 358mm including feet.
Bandwidth	:	9kHz ± 1kHz.
Bandwidth at 60dB	:	36kHz maximum.
Electrical charge time constant of rectifier circuit	:	approx 1mS.
Electrical discharge time constant of rectifier circuit	:	approx 160mS.
Mechanical time constant of critically damped meter (to 35% of steady deflection)	:	approx 160mS.
IF and image rejection (150kHz - 30MHz)	:	better than 40dB.
Spurious response rejection	:	better than 40dB.
Accuracy of sinewave voltage measurement	:	Within ± 2dB (at 'SET CAL' mark on meter).

Screening	:	With the receiver in a RF field 80dBμV/M in frequency range 130kHz - 32MHz, the indication on the meter shall not exceed 'SET CAL' after calibration.
Internal noise	:	Does not exceed -5dB point on meter after calibration.
Pulse response ('CISPR' selected).	:	Between 150kHz and 30MHz after calibration.

n.b. When 'LONG' is selected the variation in response at low prfs is widened by a few dB.

PRF (Hz)	Relative equivalent level of pulse for 'SET CAL' on meter (dB).
1000	-4.5 ± 1.0
100 (ref)	0 (ZERO)
20	+6.5 ± 1.0
10	+ 10 ± 1.5
2	+20.5 ± 2.0
1	+22.5 ± 2.0
Isolated pulse	+23.5 + 2.0/ -3.0

Frequency calibration	:	Within ± 2%.
Audio Output	:	At least 100mW into an 8Ω load at the front panel phone jack.
Environmental	:	Equipment meets DEF 135 for category III equipment. Operating temperature - range -5°C to +55°C RH not exceeding 30% and 0°C to 40°C, RH not less than 95% at +40°C.

Section 2

COMMISSIONING NOTES

A) The receiver is generally supplied as follows:

(1) Radio Receiver type 40A fitted in glass-fibre cabinet.

(2) Battery supply module type LP3627 (for use with 6 x International Type D dry cells).

(3) Removable cabinet lid which is also utilized for storing the Mains power supply module type LP3618.

(4) Extending "whip" aerial type LP3628 (also stored in cabinet lid).

B) The receiver is normally supplied ready for portable field operation: e.g. Battery supply module LP3627 fitted. The cabinet lid can be completely removed, by releasing the two retaining catches.

A small, protection cover-plate is provided, which safe'guards the IF OUTPUT and ANCILLARY sockets located at the rear of the cabinet. Access to these sockets is achieved by slackening-off the cover-plate retaining screws: swing the cover plate to one side and lock in position by tightening the relevant retaining screw. A similar arrangement is incorporated for the protection of the "whip" aerial socket located on the right-hand side of the receiver. The "whip" aerial is stored in the cabinet lid and is held firmly in place during transit by the lid mounted anchorage clips.

C) To convert the receiver to mains AC operation; remove the battery supply module fitted on the rear of the receiver and substitute the unit for the mains power supply module (the relevant supply modules are stored in the cabinet lid when not in use). When fitted into the receiver, the supply units are held in place by two special anchored screws. NOTE: Care should be taken when removing either power supply module from the receiver to ensure that the connector has been released (located at right-hand side of unit when viewed from rear).

D) The receiver carrying handle is adjustable and can be set securely in any one of three positions to facilitate ease of operation. A simple locking pin arrangement is provided at each pivot point (the locking pin mating with one of three recesses).

E) Input and Output Sockets.

(1) Input Socket: : 50Ω impedance. The socket is a BNC type connector located on the left-hand side of the receiver front panel. The receiver is calibrated in terms of the RMS value of the sinewave equivalent of the signal level p.d. applied to the input. The input is principally used for the measurement of conducted RF interference via a suitable mains "V" network, or for the measurement of field strength via a separate calibrated aerial. In both cases, the relevant correction factor (taken from Tables supplied with the "V" network and calibrated aerial) must be applied to the reading obtained.

(2) IF Output: : A standard BNC type socket is provided on the receiver rear panel, beneath the small protection cover-plate (note B of this section refers). The output impedance is several hundred ohms; an emf output of not less than 50mV p. to p. is obtainable at 1.75MHz with a sinewave input of a level to give "SET-CAL" reading on the meter. (See Operating Instructions).

(3) Ancillary Socket: : A standard 240° 5 pin DIN socket is provided with the following input/outputs. (Fig. 1 refers).

Pin 1 : : Ground

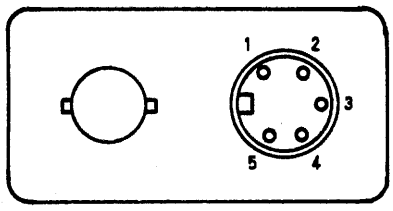
Pin 2 : : AGC Extra Time Constant - Used for additional external capacitor to increase AGC circuit time constants.

Pin 3 : : Detector Output - derived from the internal rectifier stage, giving an output of not less than 150mV across a 10MΩ load with an input signal of a level to give "SET-CAL" reading on the meter. The output impedance is several MΩ.

Pin 4 : : External Power Supply Input - used to power the receiver from an external supply source. NOTE that the Battery or Mains power supply modules (LP3627 or LP3618 respectively) should NOT be connected when power is derived from an external supply source. Refer to note F of this section (Power Supplies) for relevant details.

Pin 5 : : Ground.

Fig. 1. IF OUTPUT SOCKET and ANCILLARY CONNECTIONS VIEWED FROM REAR OF RECEIVER.



(4) "Whip" aerial socket: : A "Series UHF" connector is provided to facilitate operation with the "Whip" aerial supplied. NOTE; this socket should only be used for connecting the "Whip" aerial, otherwise the overall specification characteristics will not be met.

The socket is located beneath a protection cover-plate situated on the right-hand side of the receiver cabinet (note B of this section refers to protection cover-plate).

F) Power Supplies:-

(1) THE BATTERY POWER SUPPLY MODULE : requires six International Type D dry cells (or equivalent U2 types). Polarities are indicated on the module itself and the interconnecting plug/socket is colour coded to show polarity.

(2) THE MAINS POWER SUPPLY MODULE : is suitable for 40-60Hz AC mains operation in the range 190-270V (without changing transformer voltage taps). For 105-125V 40/60Hz conversion, refer to (4) below.

CAUTION If the cover is removed from the module, extreme care must be taken if the mains voltage is applied.

An integral mains lead of approximately 2m length is supplied with a standard 13 amp (BS 1363) plug FITTED WITH A 3 AMP FUSE. When fitting an alternative plug connector (to suit the local outlet) observe the following colour code:-

LINE	: :	BROWN
NEUTRAL	: :	BLUE
EARTH	: :	GREEN/YELLOW

All primary and secondary fuses in the power supply module are 500mA rating. Spare fuses are supplied in the accessory pack. The maximum power consumption with 240V AC mains input is of the order of 3VA.

(3) EXTERNAL POWER SUPPLY UNIT : NOTE, BOTH THE BATTERY SUPPLY MODULE AND THE MAINS SUPPLY MODULE ARE REMOVED FROM CIRCUIT.

The external DC power supply (V+ applied to pin 4 of the ANCILLARY connector) should be in the order of +8.0V to +10.5V. The supply should have an output current capability of about 250mA (quiescent current 100mA approx).

The input at pin 4 of the ANCILLARY connector is diode protected against possible voltage polarity reversal.

The "CHECK BATT" facility (see Section 3, "Operating Instructions") can be used to ensure that the input voltage is within the required range.

(4) MAINS POWER SUPPLY MODULE CONVERSION DATA.

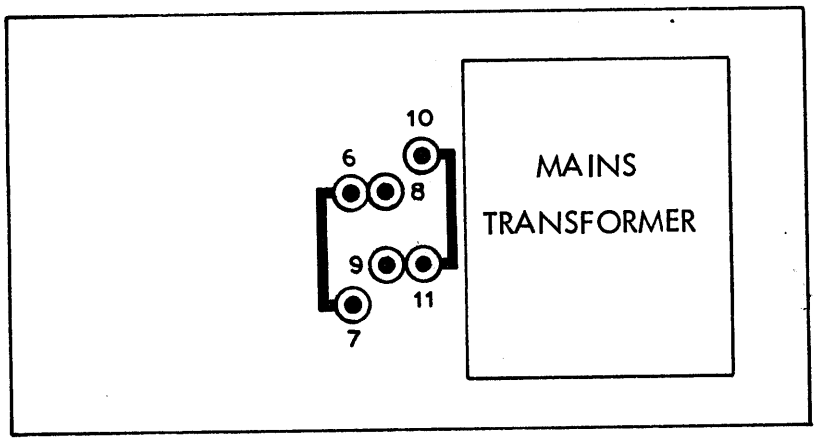
105 - 125V 40/60Hz AC.
190 - 270V 40/60Hz AC.

The relevant printed circuit board link data is clearly illustrated below for both voltage range options.

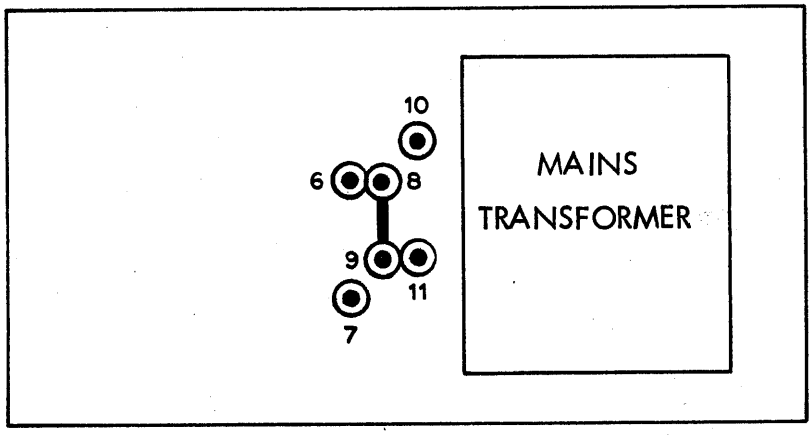
IT IS ESSENTIAL TO AFFIX THE RELEVANT INPUT LABEL FOR THE CORRECT VOLTAGE RANGE, EXTERNALLY ON THE MODULE WHEN A LINK CHANGE HAS BEEN MADE.

The labels supplied with the accessories are as follows:-

LOW VOLTAGE INPUT LABEL	(105 - 125V)	Part No. 10316P.
HIGH VOLTAGE INPUT LABEL	(190 - 270V)	Part No. 10317P.



PCB LINK ARRANGEMENT FOR 105 - 125V 40/60Hz AC.



PCB LINK ARRANGEMENT FOR 190 - 270V 40/60Hz AC.

Section 3

OPERATING INSTRUCTIONS

Receiver Controls

PUSH BUTTON SWITCHES : : Colour Coded Red, Black and Grey:-
Red Button is the power On/Off switch.
Grey Buttons are used to select the required input.
Black Buttons are used to select the required operating function.

NOTE: : The above switches are self-lock/self-cancel types and operate as follows:-

BUTTON DEPRESSED = SWITCH ON

BUTTON RELEASED = SWITCH OFF.

TUNING SCALE ILLUMINATION : : A biased push button is provided and is marked "ILLUM". When held in the depressed position the tuning scale will be illuminated.

3-WAY TOGGLE SWITCH : : The switch positions (and respective functions) are marked as follows:-

"CISPR" - "BATT CHECK" - "LONG".

AF GAIN CONTROL : : Provides adjustment of the output level for the internal loudspeaker and the "PHONES" output socket.

FREQUENCY BAND SWITCH: : An eight position rotary action switch selects the required Frequency Range.

TUNING CONTROL : : Used in conjunction with the Frequency Band switch, to enable the tuned frequency to be set.

SET CAL CONTROL *

dBμV (ATTENUATOR) *

METER *

NOTE: The control items marked * above are used to carry out the required measurements as described in the following text. ("Measurement Procedure" refers).

Operating Preliminaries

1) Switch on receiver by depressing the RED button. Check the internal battery state as follows:

   (a) Set the CISPR - BATT CHECK - LONG toggle switch to the central "BATT CHECK" position.

   (b) The green section of the METER scale now indicates the optimum range of supply voltage. Note that this check facility may also be used to set an EXTERNAL supply voltage source if necessary.

   (c) NOTE : : Operation marginally outside of the indicated voltage range (green scale) is possible, but accuracy may be impaired.

   (d) Set the CISPR - BATT CHECK - LONG toggle switch to either the "CISPR" or "LONG" position as required.

2) Set the FREQUENCY BAND SWITCH and adjust the TUNING CONTROL to the signal or frequency of interest.

3) Set the AF GAIN CONTROL to obtain the desired output level at the internal monitor loudspeaker, or at the PHONES drive socket.

4) The PHONES drive jack socket is a low impedance output capable of supplying greater than 100mW into 8Ω and is therefore suitable for use with a wide range of loudspeaker or headphone impedances. When a jack plug is inserted into the PHONES socket, the internal monitor loudspeaker is automatically muted.

Measurement Procedure : : Using 50Ω input ("RF INPUT 50Ω")

1) Ensure "AGC" is off.

2) Ensure "CISPR - BATT CHECK - LONG" toggle switch is set to either "CISPR" of "LONG" as required.

3) Ensure "IF + 20dB" is off.

4) Ensure "BFO" is off.

5) CALIBRATE RECEIVER AS FOLLOWS:-

   (a) Ensure all INPUTS are off (grey switch buttons released).

   (b) Switch calibrator ("CAL") ON.

   (c) Adjust "SET CAL" control to obtain "SET CAL" reading on METER (calibration from internal impulse calibrator signal).

   (d) Switch calibrator ("CAL") OFF.

NOTE: this sequence (items (a) to (d) above) must be performed at ALL relevant measurement frequencies prior to making the actual measurement.

6) Connect source of signal to be measured to the "RF INPUT 50Ω" (BNC) socket and select this input only (via relevant grey button switch).

7) Adjust the "dBμV" (ATTENUATORS) to obtain "SET CAL" reading on METER (e.g. "SET CAL" meter reading derived from the external signal or interference applied to "RF INPUT 50Ω" socket).

8) Note; the actual VALUE settings of the two "dBμV" (ATTENUATORS) now indicates the RMS value of the sinewave input (p.d.) equivalent to the signal being measured.

9) For signal levels greater than 80dBμV equivalent, use should be made of the "IF +20dB" switch facility. In this case, 20dBμV should be added to the level indicated on the "dBμV" (ATTENUATORS).

10) It is essential to note that any correction factors that may be necessary due to the measurement method (e.g. via a "V" network) should now be added to the reading shown on the "dBμV" (ATTENUATORS).

Measurement Procedure : : RF tracing using "internal loop" or "whip" aerial supplied:-

1) Select "LOOP" or "WHIP" input as required via relevant grey button switch.

2) If "WHIP" has been selected, connect the extendable aerial (stored in receiver cabinet lid) to the relevant UHF - type socket located beneath the protective cover plate on the rear RH side of the cabinet (Section 2, Item E part (4) refers).

3) For general monitoring purposes, select "AGC" on.

4) For tracing purposes, ensure "AGC" is off.

5) Adjust the input attenuators ("dBμV") to set the signal within the dynamic range of the receiver; preferably within the range of the METER scale.

NOTE: The reading obtained has no direct relationship with the signal level.

Note also that the "IF + 20dB" facility may be necessary in order to reduce the higher quiescent noise level present when "loop" or "whip" inputs are used.

6) To obtain relative readings of signal strength at a given frequency, the calibration procedure previously described may be used.

7) When tuning for sinusoidal signals, the "BFO" facility may be selected. This facility will produce an audible beat note when tuning is close to the signal. The "BFO" should then be switched off.

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