RECEPTION SET R206, MK. I AND POWER SUPPLY UNIT NO. 15

GENERAL DESCRIPTION

MAIN FEATURES

1. The Reception set R 206 is a high-grade, eleven-valve, superheterodyne receiver designed for special wireless services. It is suitable for the reception of R/T (A.M.), M.C.W. and C.W. signals, and capable of high resetting accuracy.

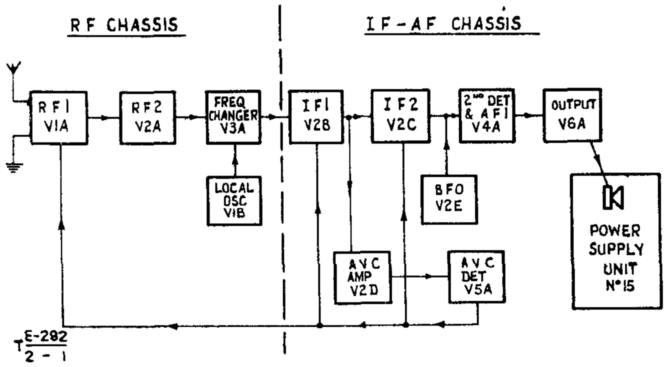

Fig. 1—Reception set R 206, Mk. I, block circuit diagram

2. The frequency range coverage is 0·55 to 30 Mc/s, in the following bands:—

Range 1	..	30 to 20Mc/s
„ 2	..	20·1 to 9·8Mc/s
„ 3	..	10 to 4·5Mc/s
„ 4	..	4·9 to 2·2Mc/s
„ 5	..	2·3 to 1Mc/s
„ 6	..	1·1 to 0·55Mc/s

This coverage can be extended down to 50kc/s by using an Adaptor, frequency range, No. 1. Three output jacks are provided on the receiver for 600Ω, 150Ω and 10Ω loads. A 30Ω output socket is coupled to the third I.F. transformer for special purposes.

POWER SUPPLY

3. The power supply is derived from a separate power unit, Power supply unit No. 15, which is provided with an additional output socket for the Adaptor, frequency range, No. 1. Separate non-interchangeable input sockets are fitted to the power unit for the A.C. mains and 12V D.C. battery leads, the required input being selected by means of a six-pole, two-way switch. A small moving coil loudspeaker is incorporated in the power unit and may be switched on or off as required. This loudspeaker is connected in parallel with the 10Ω output jack of the receiver.

MECHANICAL DETAILS

4. The R.F. and I.F./A.F. units of the receiver are built on separate chassis which are secured to the common front panel (Fig. 2). Range switching is accomplished by means of a rotating turret at the rear of the R.F. chassis which is driven through worm gearing from the RANGE CONTROL handle on the front panel. Each R.F. coil and its trimming condenser are mounted in a separate copper bucket, an arrangement which provides for efficient screening and the easy servicing of any coil. Contact to the rhodium-plated blocks on the turret is made by pointed solid silver contacts mounted on nickel-plated phosphor bronze strips, which are backed by shorter strips of the same material. A chain drive from the turret turns the range number drum so that the number of the range in operation is seen as a luminous figure in the RANGE window on the front panel.

5. The four-gang tuning condenser has its axis parallel to the front panel, the drive from the main tuning control being through a worm and split bevel gear, giving a 25 : 1 reduction ratio free of backlash. An epicyclic ball drive gives a further reduction of 5 : 1, this drive being brought into action by means of a locking clamp situated below the main tuning control. The tuning drum is driven from the main tuning control shaft through skew gearing at the shaft and worm gearing at the drum.

6. The I.F./A.F. chassis carries the three I.F. transformers, the two crystal filters, the audio filter box, beat oscillator box and the A.F. output transformer, together with the associated valves and components. I.F. bandwidth switching and A.V.C. switching are carried out by means of wafer switches using double contacts.

7. The receiver is housed in a metal case in which it is secured by means of three bolts with coin-slotted heads passing through the front panel. Two handles on the front panel are provided for withdrawing the receiver from its case for inspection purposes. A metal lid covers and protects the front panel when the receiver is not in use.

8. The power supply unit (Fig. 3) is housed in a separate metal case, access to the plugs at the rear of the unit being gained through openings in the back of the case. Two bolts through the rear of the case hold the unit in position.

Reception set R 206 controls and connections (Figs. 1, 1001 and 1002)

9. All controls and connecting points of the receiver are located on the front panel. These are:—

(*a*) Main tuning control drives the four-gang tuning condenser (C1A-D) and also the tuning drum.

(*b*) RANGE CONTROL rotates the turret to the range required.

(*c*) AE. TRIMMER (C2A) trims the aerial coil to the particular aerial in use.

(*d*) OSC. VERN. (C6A) is a variable condenser in parallel with the local oscillator section of the tuning condenser C1D. This control may be used to follow slight transmitter or receiver drift.

(*e*) L.F. GAIN (R18A) varies the proportion of signal fed from the detecting diodes of V4A to the triode section of the same valve.

(*f*) H.F. GAIN (R19A) varies the bias applied to valves V1A, V2B and V2C. This control is inoperative when the A.V.C. system is in use.

Distribution—Code No. 4

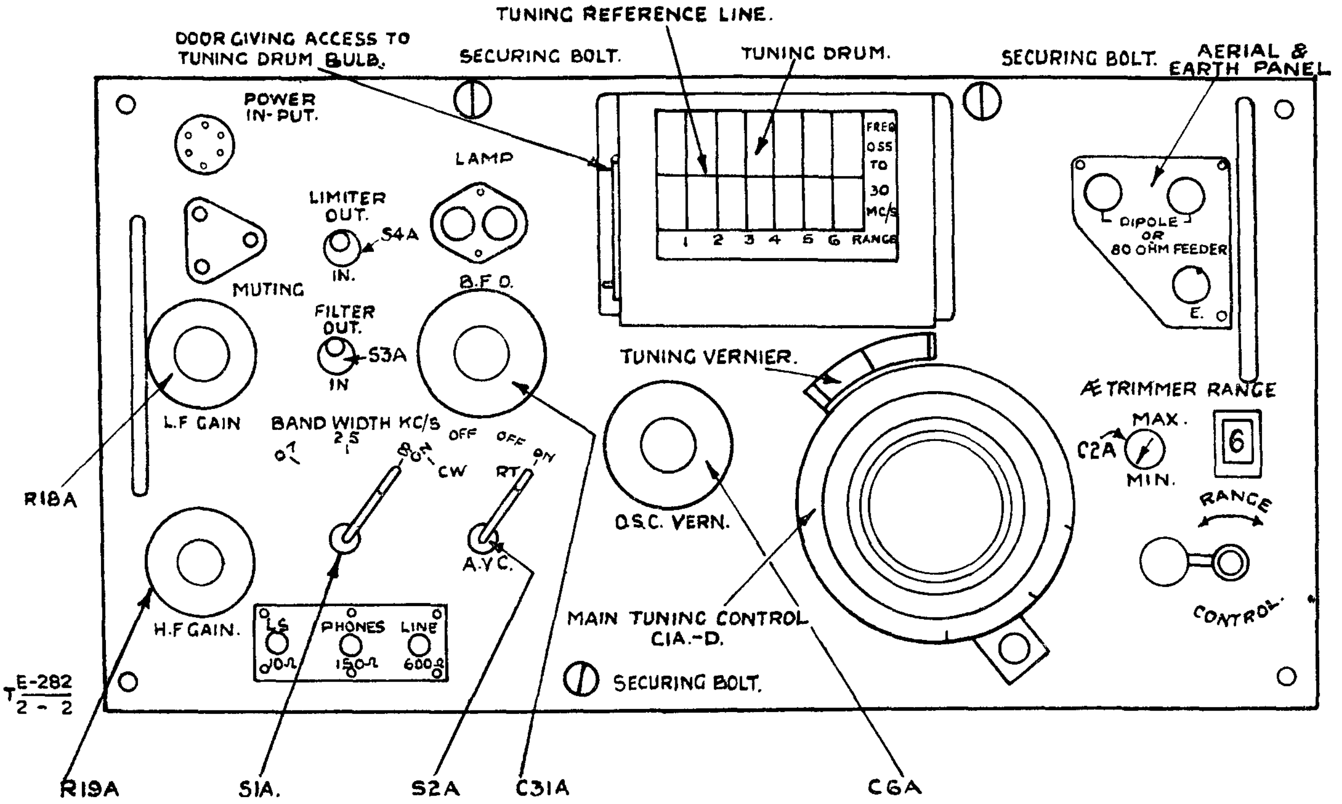

Fig. 2—Front panel layout, Reception set R 206

(*g*) BANDWIDTH KC/S (S1A), a three-way switch which selects a nominal I.F. pass band of 8, 2·5 or 0·7kc/s, in the two latter cases crystal filters are used to obtain the necessary selectivity.

(*h*) A.V.C. SWITCH (S2A), this is a four-way switch having the following positions:—

C.W. { ON—Beat oscillator on, A.V.C. on.
OFF—Beat oscillator on, A.V.C. off.

R/T { OFF—Beat oscillator off, A.V.C. off.
ON—Beat oscillator off, A.V.C. on.

(*i*) B.F.O. (C32A) varies the beat oscillator frequency (5kc/s approx.) above or below the I.F. of 465kc/s.

(*j*) FILTER IN/OUT switch (S3A) by which the A.F. filter may be brought into use.

(*k*) LIMITER IN/OUT (S4A), switches the rectifiers W1A across the output to reduce sudden interference surges.

There are the following connecting points:—

(*l*) POWER INPUT plug for connection to the supply unit.

(*m*) MUTING plug whereby the receiver can be muted from either an associated sender or its control unit, by short-circuiting the 600Ω winding of the output transformer.

(*n*) L.S., 10Ω, jack.

(*o*) PHONES, 150Ω, jack.

(*p*) LINE, 600Ω, jack.

(*q*) LAMP, two-point socket giving a 12V supply for Lamps, operator, No. 6A.

(*r*) Aerial and earth panel. This is a triangular plate situated in the top right-hand corner of the front panel to which aerial and earth connections are made. Two such panels are provided with the receiver, one fitted with a co-axial socket and the other having three terminals. Either panel may be fitted according to the type of aerial lead-in. The panel not in use is housed in the Power supply unit.

Power supply unit No. 15, controls and connections (Fig. 3 and 1003)

10. On the front panel there are:—

(*a*) POWER ON/OFF switch (S1A).

(*b*) L.S. ON/OFF switch (S3A).

(*c*) A.C./D.C. switch (S2A).

(*d*) POWER OUTPUT plug from which power is supplied to the receiver by means of Connector, 6-point, No. 21.

(*e*) 10A fuse, fitted in the D.C. lead to the vibrator.

(*f*) Two 250mA cartridge type fuses are mounted below the 10A fuse, one in each power rectifier anode circuit.

On the rear panel (Fig. 3):—

(*g*) A.C. INPUT plug—PL2A.

(*h*) D.C. INPUT plug—PL1A.

(*i*) A.F.R. No. 1 plug PL1B, from which power is supplied to the Adaptor, frequency range, No. 1, when this is in use.

On the mains transformer a panel is fitted for the adjustment of the A.C. mains voltage tappings.

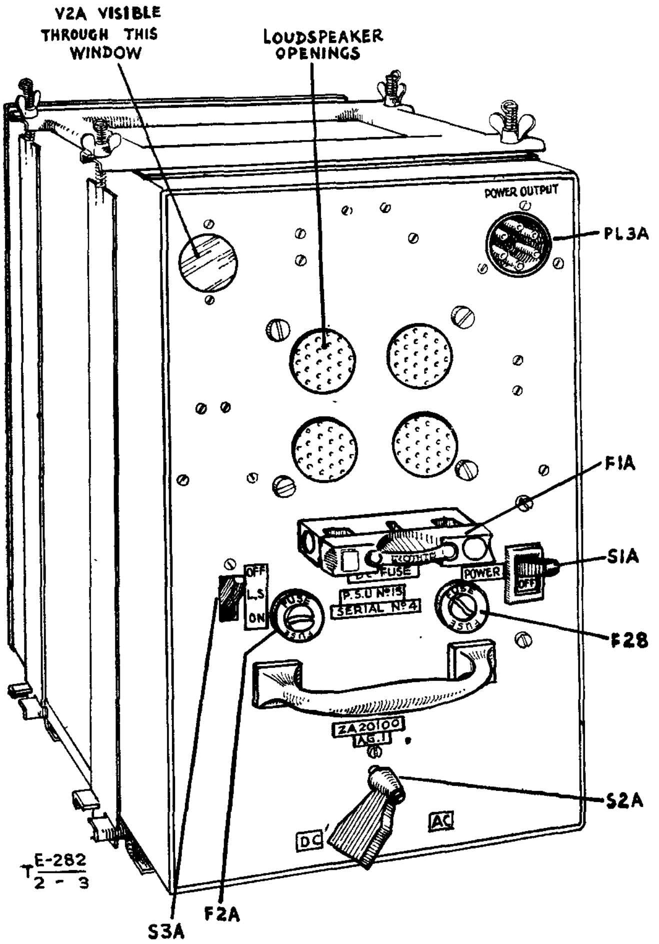

Fig. 3—Front panel layout, Power supply unit No. 15

TECHNICAL DESCRIPTION

THE CIRCUIT

11. The Reception set R 206 is a high-performance superheterodyne receiver, having eleven valves, including a separate local oscillator valve, beat oscillator valve, and two valves (amplifier and detector) in the A.V.C. system.

R.F. UNIT (Figs. 1001, 1005 and 1006)

12. On ranges 2 to 6 the aerial input of 80Ω impedance is obtained with a coupling coil wound at the earthy end of the main tuning coil. On range 1 a tapped coil is used in order to obtain the correct coupling. At the higher frequency end of each range, trimming of the tuned circuit is accomplished by means of trimming condensers located with the tuning coil in the turret cans, whilst at the low-frequency end iron dust inductance trimmers are used. The frequency coverage of range 1 is restricted by a padding condenser C7A in series with the main tuning condenser C1A, which is common to all ranges. Variable condenser C2A (AE TRIMMER) is used for trimming the aerial coil to the particular aerial in use.

13. The signal is fed to the grid of the first R.F. amplifier V1A which is a low-noise, high-slope, R.F. pentode (ARP35), via C14A, the grid condenser, and L1A. This valve is biassed either by the A.V.C. system or manually by R19A the H.F. GAIN control, through R6A, decoupled to earth by C15A. Standing cathode bias is applied to the valve by R4A.

14. After amplification the signal is fed through R7A to the coupling coil of the first R.F. transformer located in the turret. The function of R7A and L1A is to suppress any tendency to parasitic oscillation of V1A.

Second R.F. amplifier V2A

15. On range 2 to 6 the tuned circuit of the first R.F. transformer is across the grid of V2A, whilst on range 1 it is in the anode circuit of V1A. C1B is the tuning condenser common to all ranges. Only low gain is required from this stage on the low-frequency ranges, and hence in ranges 4 to 6 only a portion of the voltage generated across the tuning coil is passed on to V2A. This is achieved by tapping the grid of V2A down the coil.

16. The signal is now fed to the grid of V2A through L1B which prevents parasitic oscillations. V2A is a normal R.F. pentode operated with fixed cathode bias provided by R5A.

Frequency-changer V3A

17. Coupling between V2A and V3A follows the same lines as between V1A and V2A, the signal being fed on to the signal grid of V3A a triode-hexode frequency-changer. Only the hexode portion of this valve is used, there being a separate local oscillator valve. The anode of the triode section has H.T. supplied to it through R20A-B, to ensure that a steady D.C. current is passed. If this is not done then, on A.C. operation, a capacitance change occurs between grid and cathode of this section, due to magnetic variation of the space charge present, which change is reflected back across the local oscillator section of the receiver, causing frequency modulation of the oscillator. C15O by-passes R.F. current from the triode anode to earth.

18. The local oscillator voltage is fed from a suitable tap on the oscillator coil through C14B to the triode grid of V3A, bias for which is obtained by grid current through R11A. Standing cathode bias to this valve is obtained by R4B.

The local oscillator V1B

19. The oscillator valve V1B is used in a parallel-fed Hartley circuit, the grid condenser C16A having a negative temperature coefficient to minimize drift due to changes in ambient temperature. The H.T. supply to the anode of this valve is obtained direct from the main H.T. line, R3B and C15L acting as a filter network. The supply to the screen is approximately 100V, stabilized by the neon valve V8A in the Power supply unit, C15K effectively earthing this electrode and forming part of the oscillatory circuit. The screen is in fact the anode of the oscillator. The OSC. VERN. control C6A is a variable condenser with a small capacity swing connected across the section of the main tuning condenser C1D, and provides a very fine tuning control. R2C and C17A form an R.F. filter network.

I.F./A.F. UNIT (FIG. 1002)

20. The R.F. unit is electrically connected to the I.F./A.F. unit by a seven-way cable-form, terminated in a 6-point plug (PL3A), the socket for which (SO3A) is situated on top of the beat oscillator box on the I.F./A.F. unit. The seventh lead (earth connection) is secured underneath one of the four screws that secure this socket to the beat oscillator. A

screened flexible concentric lead, terminated in a single-point plug (PL4A) feeds the I.F. output from the frequency-changer to the first I.F. can assembly. The three I.F. transformers L26A-B, L26C-D and L26E-F, with their relevent tuning condensers and trimmers, and the two crystal filters, provide the three I.F. bandwidths of 8, 2·5 and 0·7kc/s (nominal). When the BANDWIDTH KC/S switch S1A is set to 8, no crystal filter is in circuit and the three transformers are over-coupled, this being achieved by the use of common coupling condensers C33B, D and E (bottom coupling) in addition to the mutual inductance coupling. This method ensures symmetry of the pass band about the centre frequency, which is always taken as that of the 0·7kc/s crystal filter. With the BANDWIDTH KC/S switch set at either 2·5 or 0·7, crystal filters of these nominal bandwidths are introduced into circuit, and the first and second I.F. transformers are critically coupled by the introduction of condensers C33A and C. The third I.F. transformer is left over-coupled. In these two positions of the switch, the crystal filters control the bandwidth and cut-off slope, the I.F. transformers being mainly used to suppress the return peaks of these filters.

21. The I.F. amplifying valves V2B and V2C are biassed either by the A.V.C. system or manually by the H.F. GAIN control.

Detector and first A.F. amplifier V4A

22. V4A is a double-diode-triode, the diodes being strapped together and used in a parallel diode circuit for detection. R15A is the diode load, R21A and C19E forming an I.F. filter network. R15A is returned to the cathode to avoid delay. Cathode bias for the triode section is provided by R2D.

23. The rectified signal is fed from R18A, the L.F. GAIN control to the grid of the triode section of V4A, R11C being the anode load of this section of the valve. When this switch is put to IN the A.F. filter is brought into the circuit. This filter has a peak frequency of approximately 900c/s, a pass bandwidth of approximately 200c/s at 6db. down and an insertion loss of the order of 3db. With the filter switch set to OUT the A.F. output is fed to the primary winding of T1A through C21S and R14C. R14C introduces an artificial insertion loss into the circuit to equalize the overall gain with the filter switch at either IN or OUT. The aural effect is that the A.F. filter appears to have only a small insertion loss.

Output stage V6A

24. The signal is fed from the secondary of the parallel-fed A.F. transformer T1A, which is damped by R13C to flatten the frequency response characteristic, to the grid of V6A through R17A, a grid stopper. Negative voltage feedback is applied to this valve by C25A, R11D and R22A. L31A and C26A filter out any I.F. voltage remaining in the output of this valve. The output transformer T2A has three output impedances, namely, 10, 150 and 600Ω. The loudspeaker located in the power supply unit, is connected across the 10Ω output. A full-wave metal rectifier W1A may be shunted across the 10Ω output by putting the LIMITER switch to IN to act as a crash limiter.

Beat oscillator V2E

25. The beat oscillator valve V2E is an electron-coupled oscillator. C32A is the B.F.O. pitch control, C31A being a pre-set trimmer which brings the beat oscillator with the B.F.O. control at 0 on the dial to that of the I.F. of 465kc/s. Access to the trimmer is gained through a small hole in the front panel below the B.F.O. control. R11F is the anode load resistor, the oscillator voltage being fed to the diode section of V4A via C29A, H.T. to this valve is cut off by S2A/3, the A.V.C. switch, when this switch is at R/T position.

A.V.C. system V2D and V5A

26. A portion of the output from the first I.F. amplifier V2B is fed through C22A to V2D where the signal is amplified. This valve operates with fixed bias provided by R5D. L29A and C24A are tuned to the I.F. of 465kc/s by means of an iron dust-cored trimmer in L29A, and form the anode impedance. V5A, a double-diode which has its diodes strapped together, rectifies the output from V2D. A.V.C bias is applied to V1A, V2B and V2C when A.V.C. switch S2A is at an A.V.C. ON position. At the same time S2A/2 short-circuits R19A and R2M so that the H.F. GAIN control R19A is inoperative and the cathode bias resistors R4A, R5B and R5C are returned to earth.

27. With the A.V.C. switch (S2A) at A.V.C. OFF position the H.F. GAIN control R19A becomes operative. The cathode currents of V1A, V2B and V2C flow through R19A shunted by R2E and develop a potential drop across them. The slider of R19A is connected through relevant resistors to the grids of the above valves, so that the amount of bias applied to these grids may be varied. The position of maximum H.F. gain, i.e., minimum bias, is when the slider is away from the earthed end of R19A.

VALVE HEATING

28. All the valves are heated from the 12V supply from the supply unit by a series-parallel arrangement. Thus, if one heater burns out, in most cases two valves will be rendered inoperative. It will obviously not be necessary to replace both these valves in these circumstances.

VALVE TEST POINTS

29. The valve test points on the R.F. chassis as viewed from the front of the set are shown in Fig. 4.

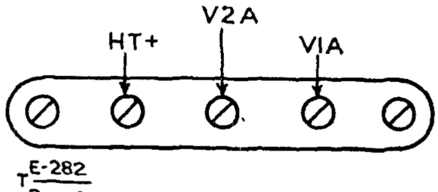

Fig. 4—R.F. chassis valve test points

Test between H.T. + and V2A or V1A to measure the respective anode currents. The valve test points on the I.F./A.F. chassis as viewed from the front of the set are shown in Fig. 5.

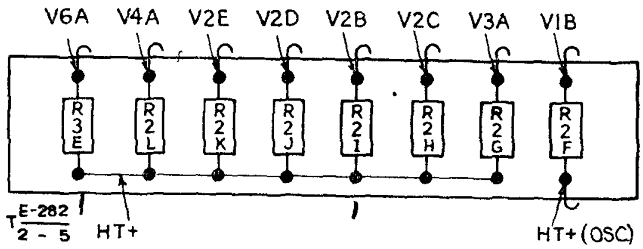

Fig. 5—I.F./A.F. chassis valve test points

Test between H.T. + and V6A, V4A, V2E, V2D, V2B, V2C and V3A to measure the respective anode currents. Test between H.T. + (osc.) and V1B to measure the screen current of V1B.

THE POWER SUPPLY UNIT NO. 15 (FIG. 1003)

A.C. OPERATION

30. The power transformer (T1A) has a tapped primary which permits an A.C. supply voltage of from 100 to 250V, 40 to 60c/s to be used. Full-wave rectification is employed, each rectifier (V1A-B) having its anodes strapped together to work as a half-wave rectifier. The cathodes are operated at a potential difference equal to the full H.T. (220V D.C.). Voltage from the heaters and fuses F2A-B are included in each anode circuit to protect the power transformer in the event of a heater/cathode breakdown. C2A is the reservoir condenser and smoothing is accomplished by L9A-B and C2B-C. The H.T. D.C. output is fed to the R 206, via PL3A and when it is in use, to the Adaptor, frequency range, No. 1 via PL1B. The R 206 local oscillator (V2B) H.T. screen supply is stabilized at 100V (approx.) by V2A, fed by dropping resistors R1A and B. The heaters of the rectifier, all valves in the R 206 and those in the Adaptor, frequency range, No. 1, when in use, are supplied from one 13V centre-tapped winding on T1A. The power consumption is of the order of 60V/A, at a power factor not worse than 0·8.

D.C. OPERATION

31. The unit is designed to work from a 12V battery accumulator and when this is in use, a second primary winding is used in conjunction with a non-synchronous vibrator, V1A-B. Comprehensive filtering and screening is included and the unit is substantially free from vibrator noise over the whole frequency band of 0·05 to 30Mc/s. A fuse F1A is included in the L.T. +ve lead to protect the power unit in the event of a breakdown. The H.T. D.C. supply and smoothing is the same for D.C. as for A.C. The entire heater supply is switched from the secondary of the power transformer to the battery supply. The power consumption is of the order of 50W.

Designation	Value	Remarks
		CONDENSERS
C1A-D	240pF each section	
C2A	Variable, 10pF max.	
C6A	Variable, 0·5pF max.	
C14A-B	200pF	300V D.C. working, ± 20%
C15A-T	0·01μF	300V D.C. working, ± 25%
C16A	50pF	300V D.C. working, ± 5% −ve temp: coeff:
C17A-C	50pF	350V D.C. working, ± 5%
		RESISTORS
R1A-F	5kΩ	½W, 20%
R2A-M	1kΩ	½W, 20%
R3A-E	500Ω	½W, 20%
R4A-B	300Ω	½W, 20%
R5A-D	400Ω	½W, 20%
R6A-F	0·25MΩ	½W, 20%
R7A	100Ω	½W, 20%
R8A-B	75kΩ	½W, 20%
R9A	4kΩ	½W, 20%
R10A-C	30kΩ	½W, 20%
R11A-F	50kΩ	½W, 20%
R12A-B	30Ω	½W, ± 5%
		INDUCTORS
L1A-B	0·5μH	
		VALVES
V1A-B		ARP35
V2A-E		ARP34
V3A		ARTH2

Table 1001—Details of components of R.F. unit (Fig. 1001)

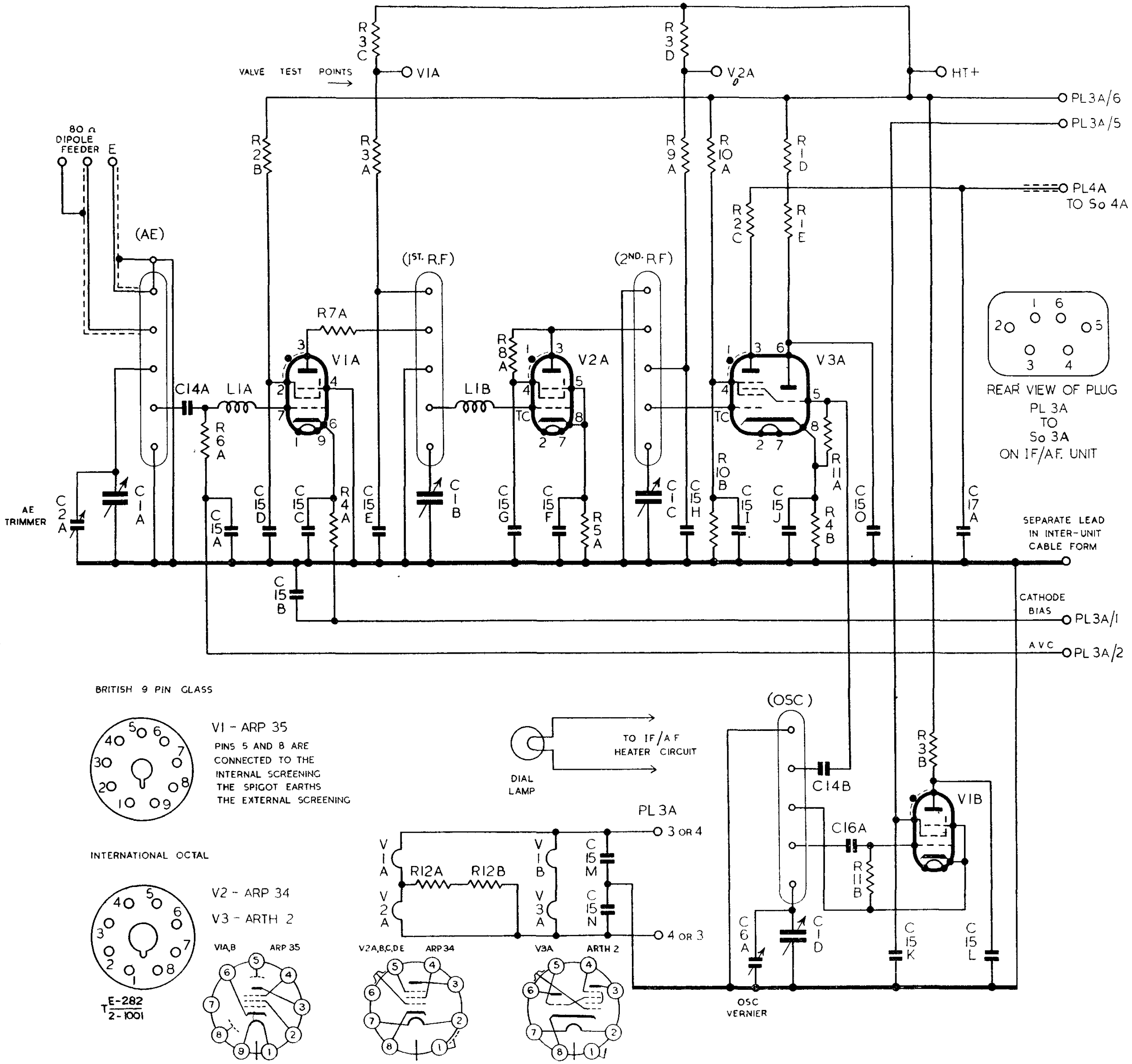

Fig. 1001—Circuit diagram, R.F. unit

Designation	*Value*	*Remarks*
		CONDENSERS
C5A-G	Variable, 50pF max.	
C15A-T	0·01μF	350V D.C. working, ±25%
C17A-C	50pF	350V D.C. working, ± 5%
C18A	350pF	350V D.C. working, ± 2%
C19A-E	400pF	350V D.C. working, ± 2%
C20A	425pF	350V D.C. working, ± 2%
C21	0·1μF	350V D.C. working
C22A	20pF	350V D.C. working, ± 5%
C23A-B	100pF	350V D.C. working, ± 5%
C24A	500pF	350V D.C. working, ± 2%
C25A	0·1μF	450V D.C. working, ±20%
C26A-B	1,000pF	350V D.C. working, ± 2%
C27A	0·01μF	350V D.C. working, ± 5%
C28A-B	0·02μF	350V D.C. working, ± 5%
C29A	10pF	350V D.C. working, ±10%
C30A-B	25μF	20V, − 20% + infinity
C31A	Preset, 100pF max.	
C32A	Variable, 50pF max.	
C33A-E	0·05μF	± 5%
		RESISTORS
R1A-F	5kΩ	½W, 20%
R2A-M	1kΩ	½W, 20%
R3A-E	500Ω	½W, 20%
R5A-D	400Ω	½W, 20%
R6A-F	0·25MΩ	½W, 20%
R8A-B	75kΩ	½W, 20%
R10A-C	30kΩ	½W, 20%
R11A-F	50kΩ	½W, 20%
R13A-D	0·1MΩ	½W, 20%
R14A-D	10kΩ	½W, 20%
R15A-B	0·5MΩ	½W, 20%
R16A	20kΩ	½W, 20%
R17A	200Ω	½W, 20%
R18A	Variable, 1MΩ max.	± 20%
R19A	Variable, 10kΩ max.	± 20%
R20A	30Ω	1W, ± 5%
R21A	1MΩ	½W, ± 20%
R22A	2kΩ	½W, ± 20%
		INDUCTORS
L31A	10μH	
L32A	0·265μH	± 2%

Designation	*Remarks*
	VALVES
V2A-E	ARP34
V4A	AR21
V5A	ARDD5
V6A	VT52
	TRANSFORMERS
T1A	Ratio 1 : 4Ω, primary current 5mA
T2A	Ratios 4 : 1,600Ω; 8 : 1,150Ω; 33 : 1,010Ω } primary current 20mA
	SWITCHES
S1A/1-4	4-bank, 3-way
S2A/1-3	3-bank, 4-way
S3A/1-2	Double-pole, change-over, 250V, 1A
S4A	Single-pole, ON/OFF, 250V, 3A
	RECTIFIER
W1A	4-section, copper oxide, 10mA

Table 1002—Details of components of I.F./A.F. unit (Fig. 1002)

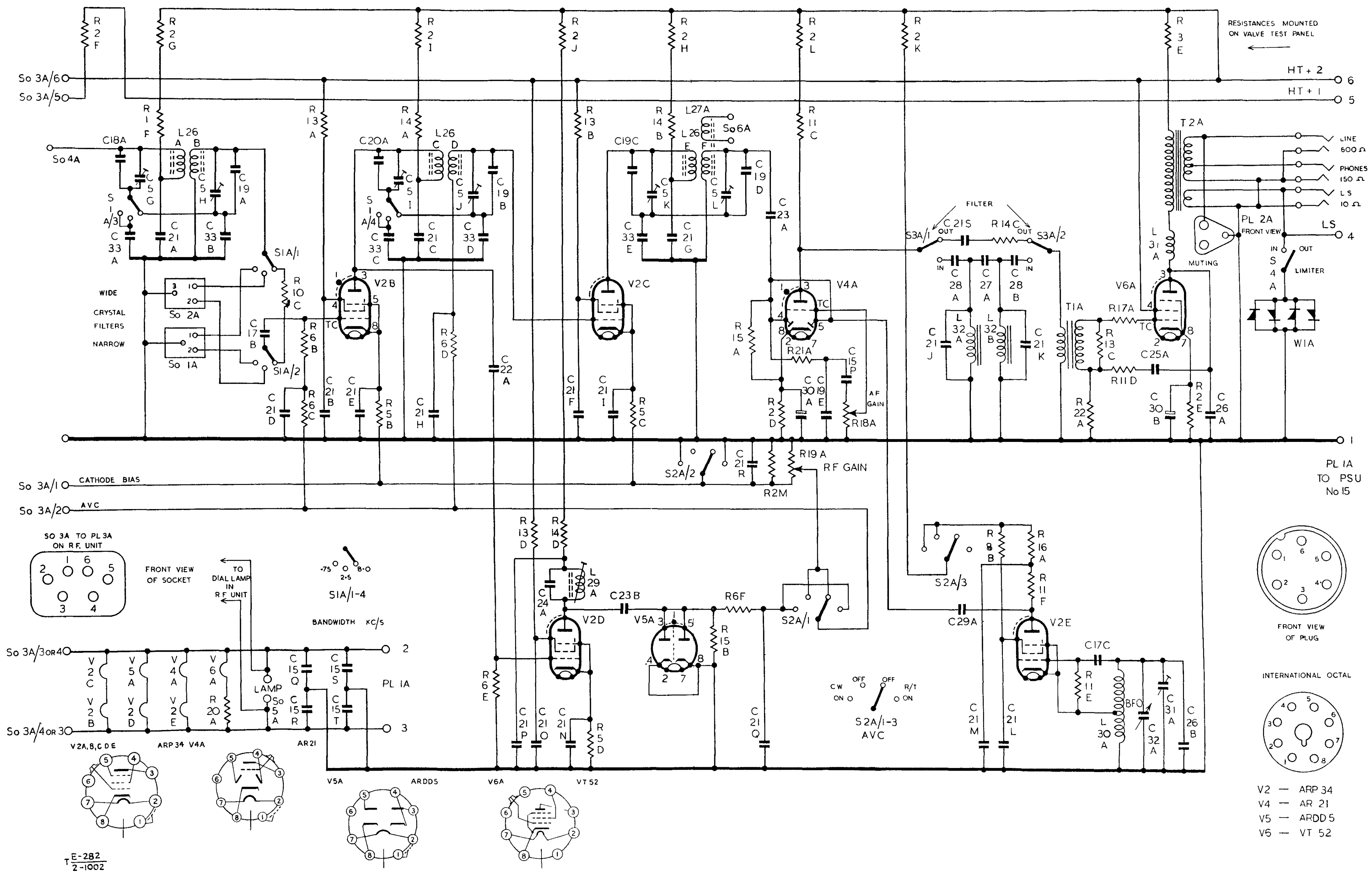

Fig. 1002—Circuit diagram, I.F./A.F. unit

Designation	*Value and remarks*
	CONDENSERS
C1A	1,000μF
C2A-C	4μF
C3A-D	2μF
C4A-C	1μF
C5A-D	0·5μF
C6A-D	0·1μF
C7A	0·01μF
C8A-D	0·01μF
C9A-E	0·01μF
	RESISTORS
R1A-B	28kΩ
	VALVES
V1A-B	6X5G
V2A	AW2
	FUSES
F1A	5A
F2A-B	250mA
	INDUCTORS
L2A	0·6mH (75Ω)
L5A	2·2mH
L6A	250mH at 1kc/s (0·16Ω)
L7A	400mH at 1kc/s (0·32Ω)
L8A	9mH
L9A-B	10H (220Ω)

Table 1003—Details of components of Power supply unit No. 15

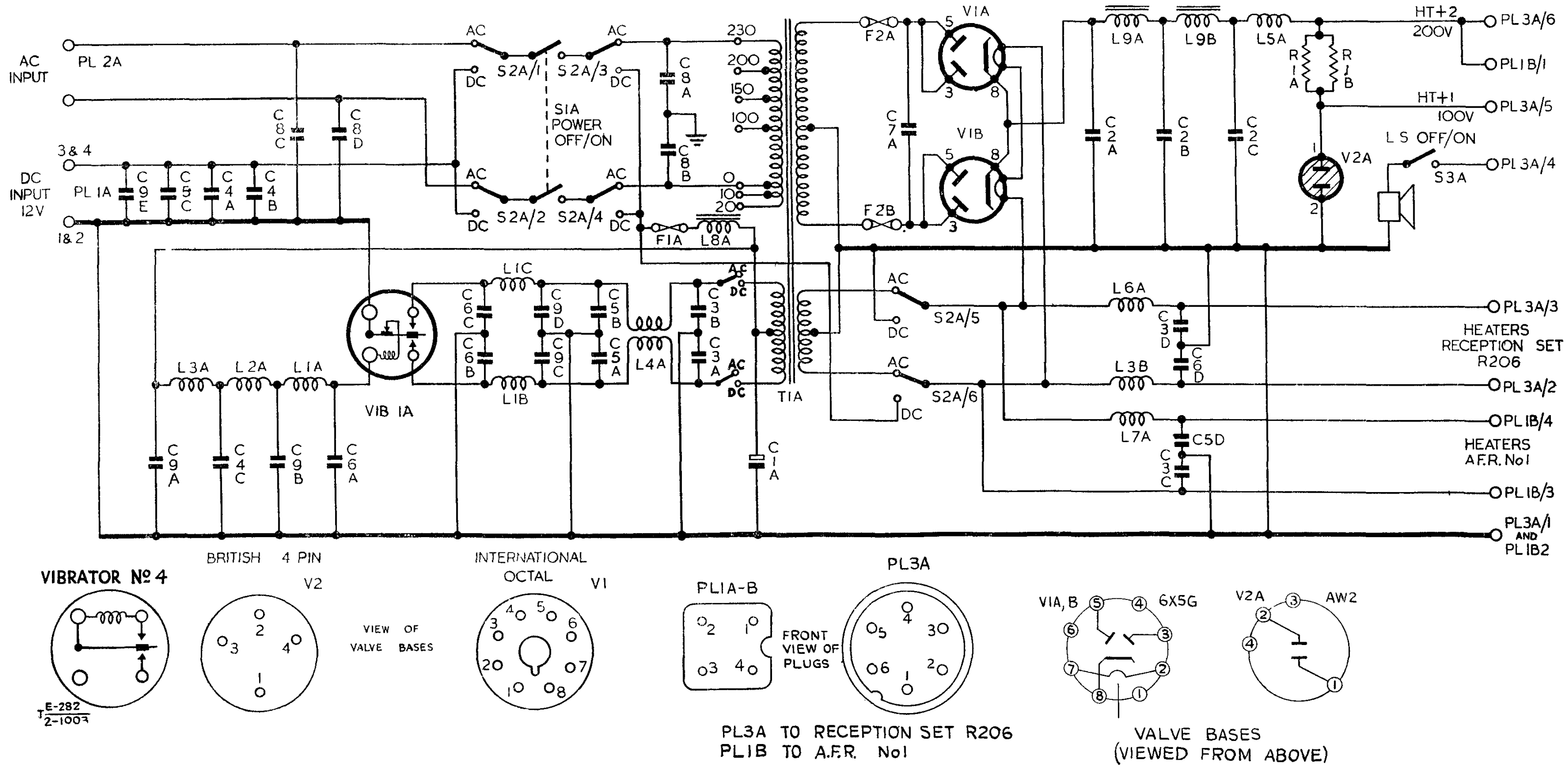

Fig. 1003—Circuit diagram, Power supply unit No. 15

Designation	Value	Remarks
		CONDENSERS
C34A-B	2,027pF	350V, ± 1%
C35A-B	746pF	350V, ± 1%
C36A-D	Preset, 30-100pF	350V, ± 2%
C37A-B	Preset, 3-30pF	350V, ± 2%
C38A	15pF	350V, ± 2%
		RESISTOR
R25A	Less than 1Ω	
		INDUCTORS
L33A-B	55μH	± 1%
L34A-B	137μH	± 1%
		CRYSTALS
X1A		G.P.O., W4/411
X2A		G.P.O., W4/412

Table 1004—Details of components of crystal filters (Fig. 1004)

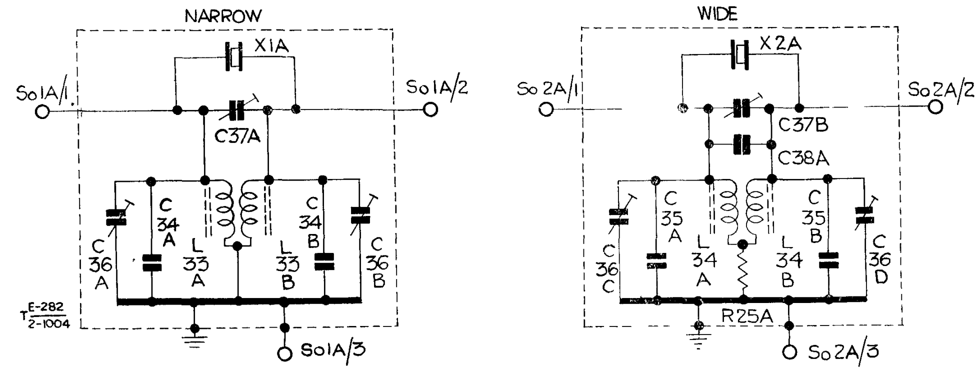

Fig. 1004—Circuit diagram, crystal filters

Designation	*Value*	*Remarks*
		CONDENSERS
C3A-D	Preset, 10pF max.	
C4A-N	Preset, 25pF max.	
C7A-C	150pF	350V D.C. working, ± 2%
C8A	140pF	350V D.C. working, ± 2%
C9A	3,000pF	350V D.C. working, ± 2%
C10A	2,580pF	350V D.C. working, ± 2%
C11A	1,150pF	350V D.C. working, ± 2%
C12A	610pF	350V D.C. working, ± 2%
C13A	360pF	350V D.C. working, ± 2%
		RESISTORS
R1A-F	5kΩ	½W, 20%

Table 1005—Details of components of R.F. turret (Fig. 1006)

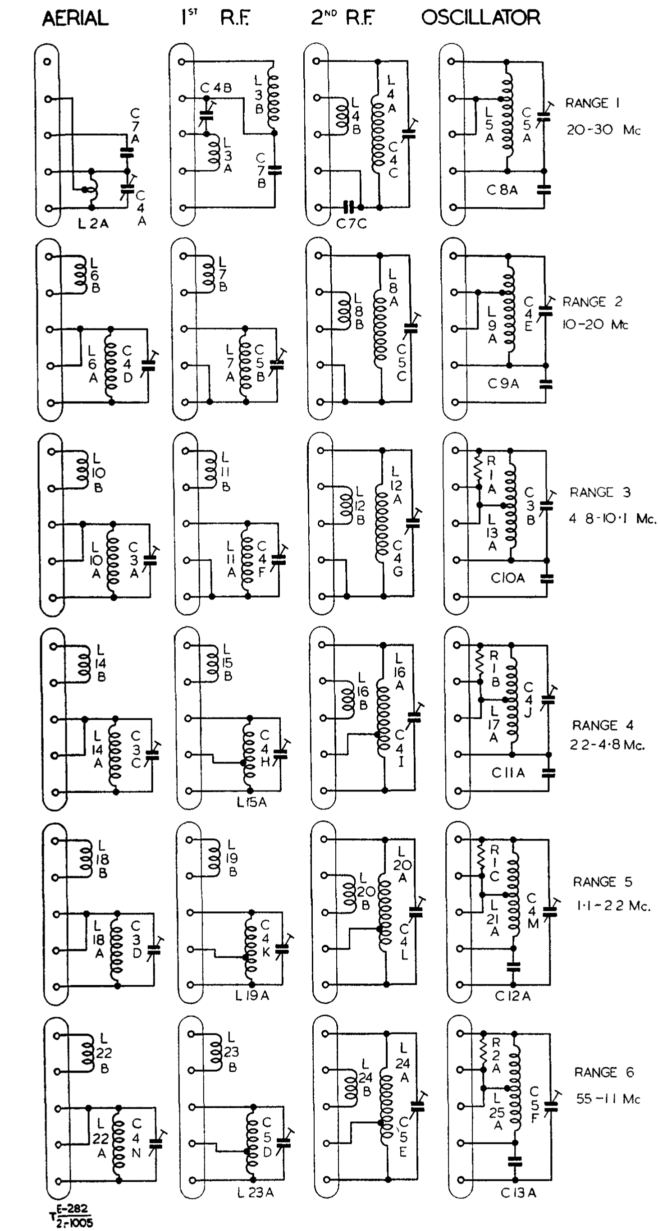

Fig. 1005—Circuit diagram, R.F. turret

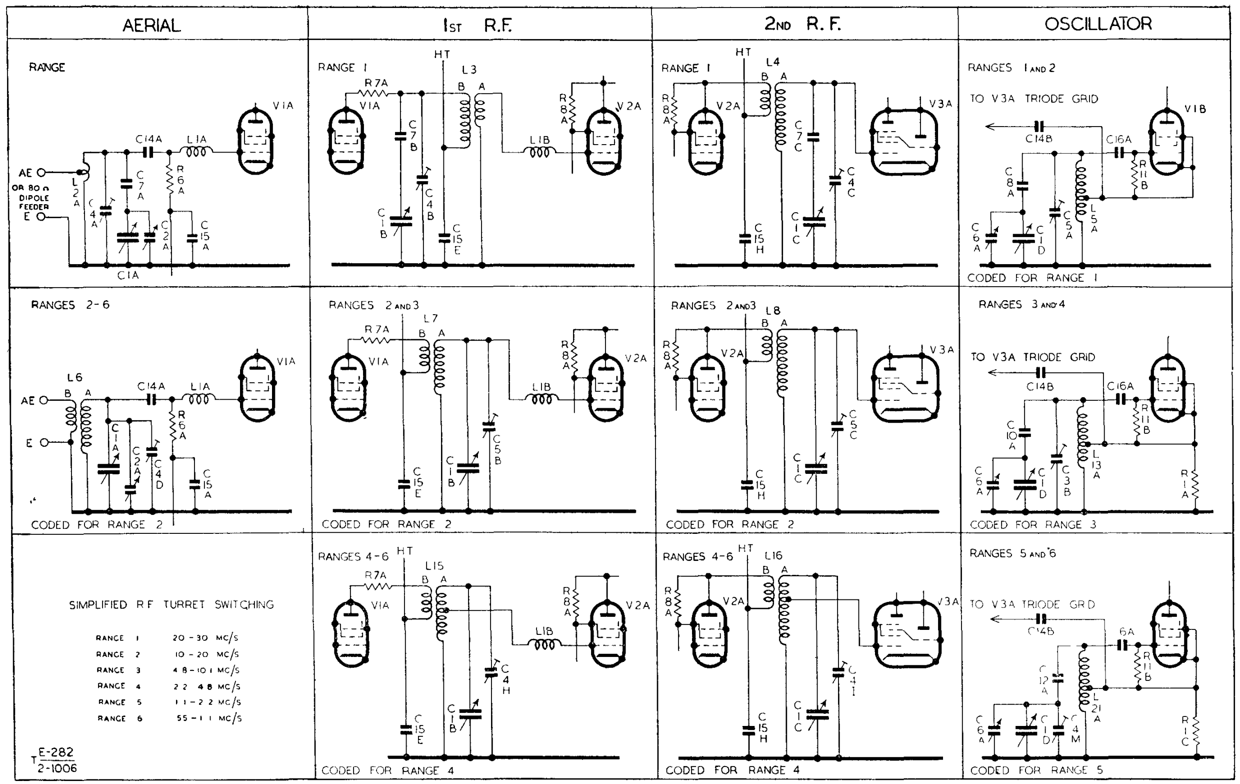

Fig. 1006—Simplified R.F. turret switching

END

Designation	Value	Remarks
		CONDENSERS
C1A-D	240pF each section	
C2A	Variable, 10pF max.	
C6A	Variable, 0·5pF max.	
C14A-B	200pF	300V D.C. working, ± 20%
C15A-T	0·01μF	300V D.C. working, ± 25%
C16A	50pF	300V D.C. working, ± 5% −ve temp: coeff:
C17A-C	50pF	350V D.C. working, ± 5%
		RESISTORS
R1A-F	5kΩ	½W, 20%
R2A-M	1kΩ	½W, 20%
R3A-E	500Ω	½W, 20%
R4A-B	300Ω	½W, 20%
R5A-D	400Ω	½W, 20%
R6A-F	0·25MΩ	½W, 20%
R7A	100Ω	½W, 20%
R8A-B	75kΩ	½W, 20%
R9A	4kΩ	½W, 20%
R10A-C	30kΩ	½W, 20%
R11A-F	50kΩ	½W, 20%
R12A-B	30Ω	½W, ± 5%
		INDUCTORS
L1A-B	0·5μH	
		VALVES
V1A-B		ARP35
V2A-E		ARP34
V3A		ARTH2

Table 1001—Details of components of R.F. unit (Fig. 1001)

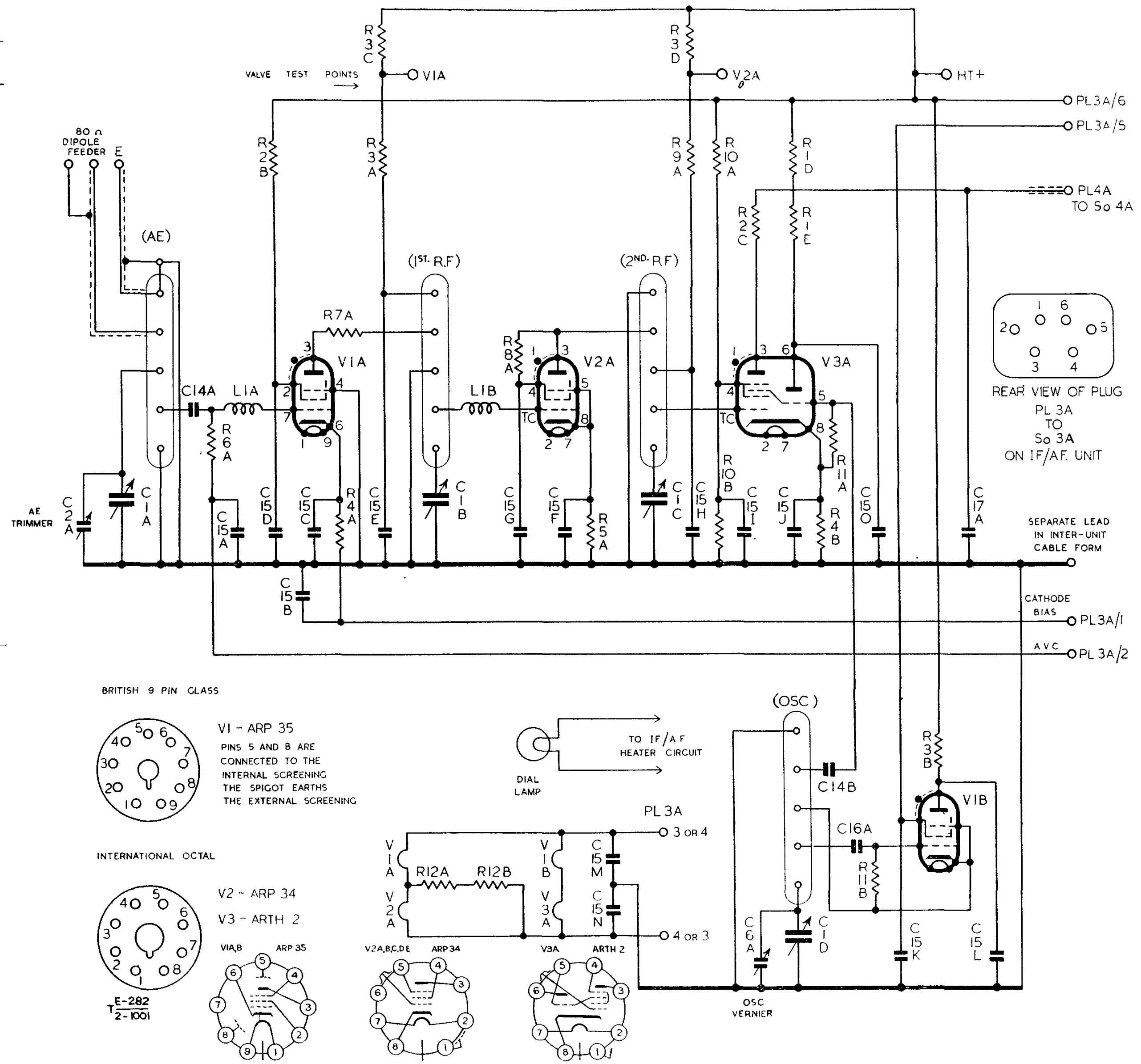

Fig. 1001—Circuit diagram, R.F. unit

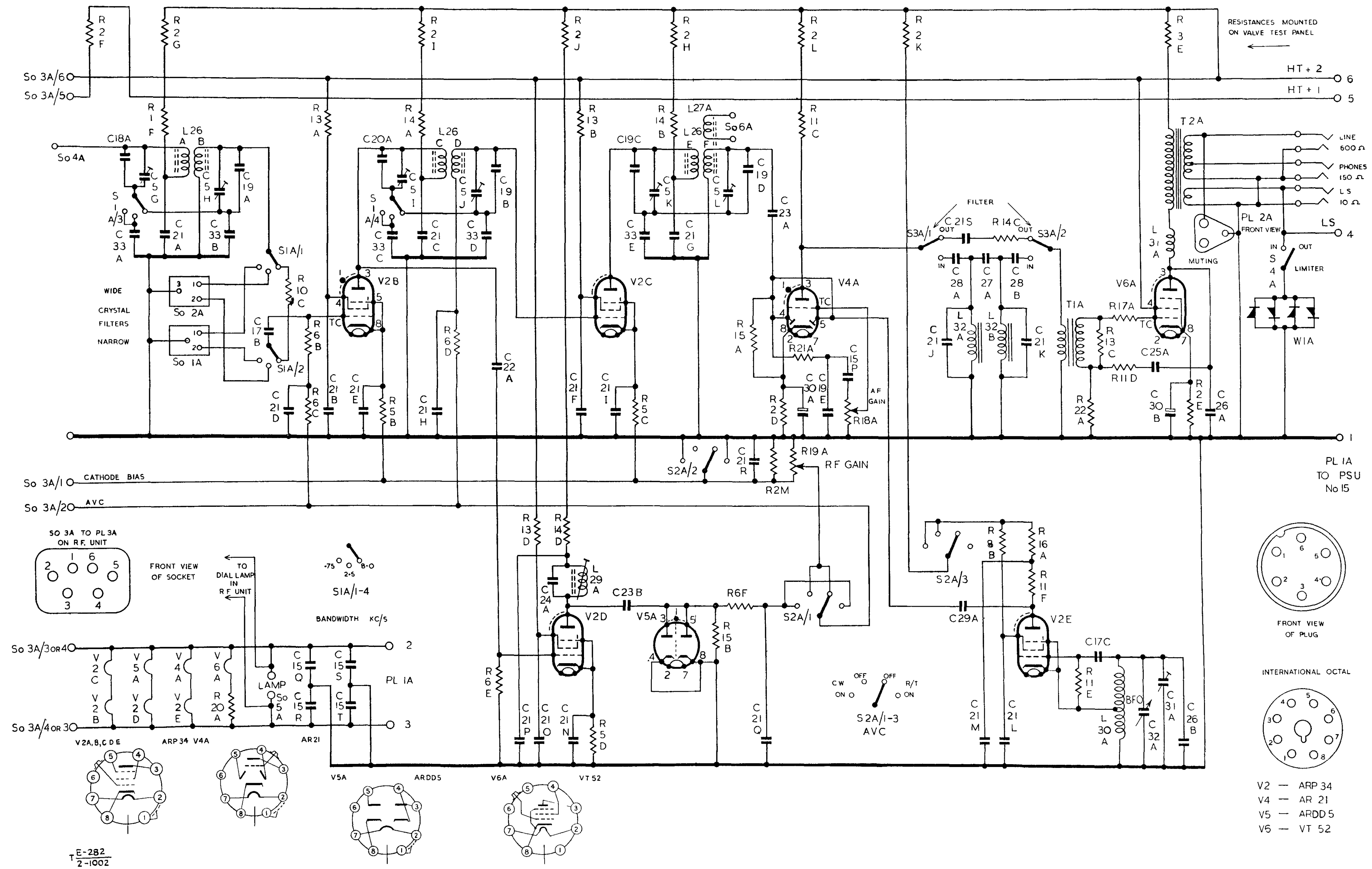

Fig. 1002—Circuit diagram, I.F./A.F. unit

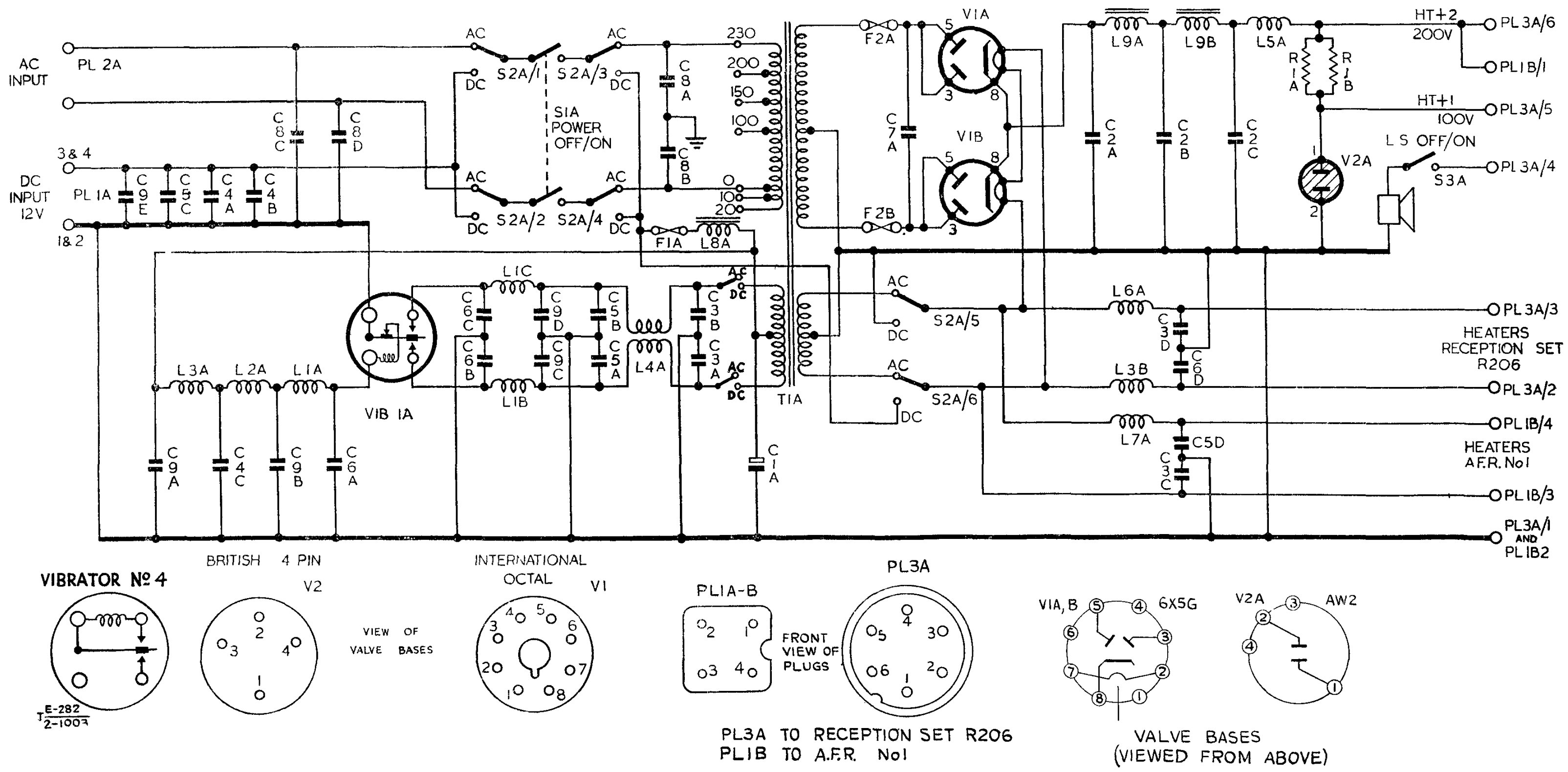

Fig. 1003—Circuit diagram, Power supply unit No. 15

Designation	*Value*	*Remarks*
		CONDENSERS
C34A-B	2,027pF	350V, ± 1%
C35A-B	746pF	350V, ± 1%
C36A-D	Preset, 30-100pF	350V, ± 2%
C37A-B	Preset, 3-30pF	350V, ± 2%
C38A	15pF	350V, ± 2%
		RESISTOR
R25A	Less than 1Ω	
		INDUCTORS
L33A-B	55μH	± 1%
L34A-B	137μH	± 1%
		CRYSTALS
X1A		G.P.O., W4/411
X2A		G.P.O., W4/412

Table 1004—Details of components of crystal filters (Fig. 1004)

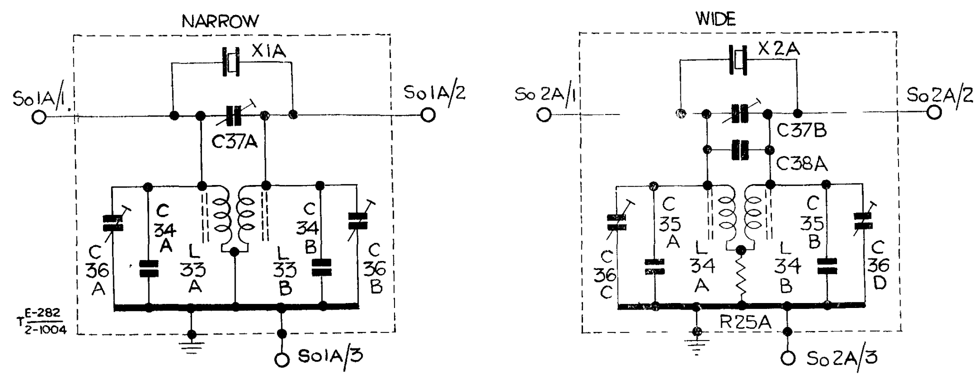

Fig. 1004—Circuit diagram, crystal filters

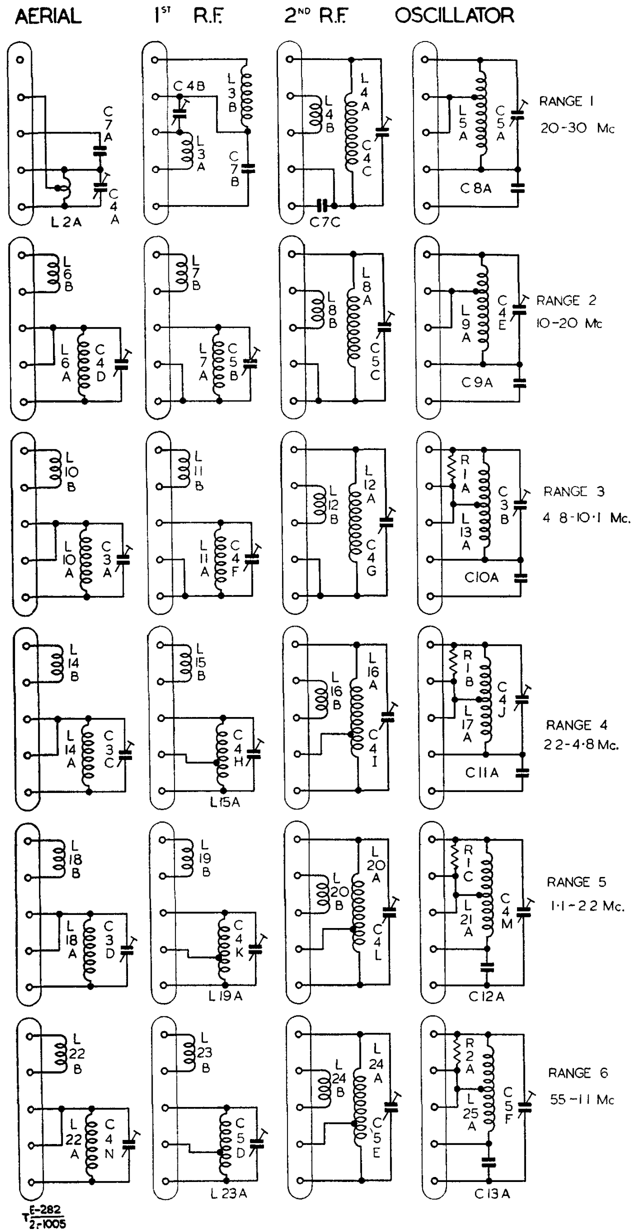

Fig. 1005—Circuit diagram, R.F. turret

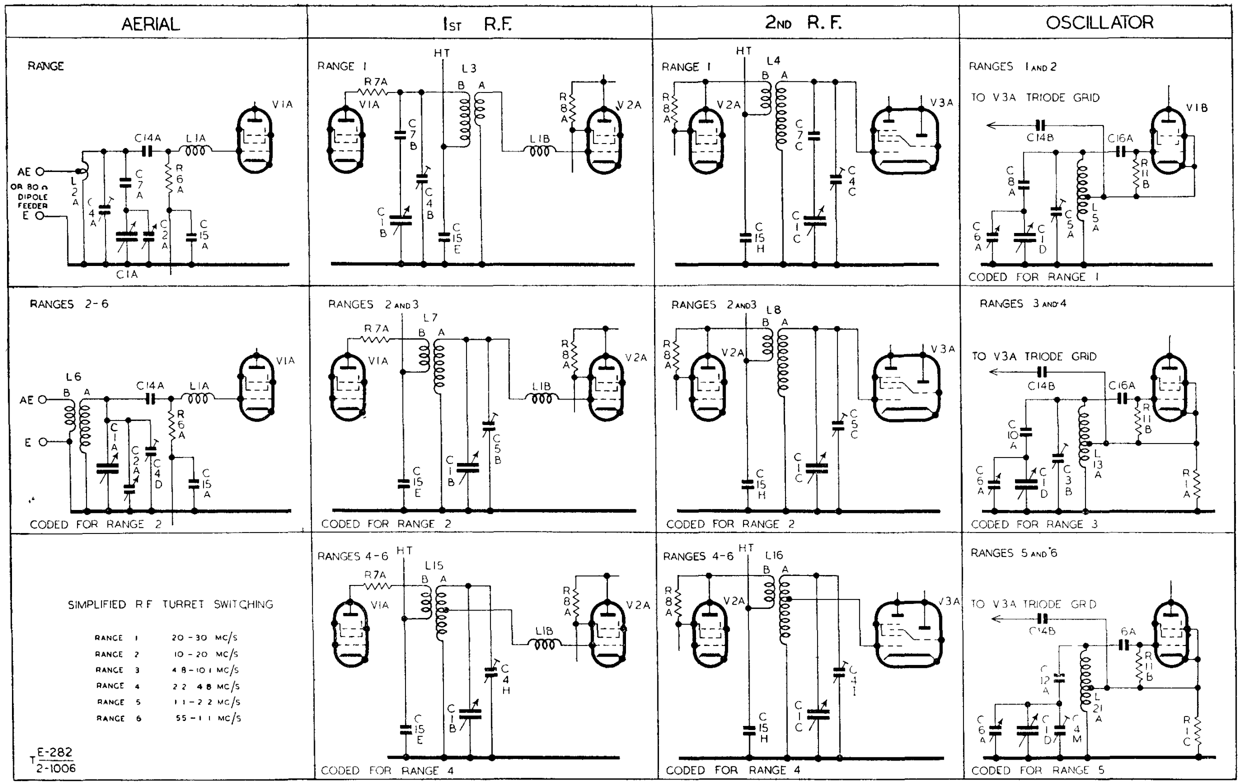

Fig. 1006—Simplified R.F. turret switching

END