

WIRELESS STATION NO. 31 AFV

TECHNICAL HANDBOOK - TECHNICAL DESCRIPTION

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INTRODUCTION

1. The Wireless set No. 31 AFV is intended for installation into squadron and regimental command tanks and certain other armoured fighting vehicles, to give communication between these AFVs and infantry units. It will replace the Wireless set No. 88 AFV in gun tanks which are converted to a command role.

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ELECTRICAL AND MECHANICAL
ENGINEERING REGULATIONS

2. The Wireless set No. 31 AFV, in conjunction with Control units No. 16 and No. 17 or No. 33, works into the Wireless set No. 19 harness to be used in the following roles:-

- (a) Operation of the two 'A' sets, for example - a Wireless set No. 19, a Wireless set No. 19 H.P., together with the Wireless set No. 31 AFV, and in communication between the crew (I.C.). (Control unit No. 16 and No. 33).
- (b) Operation of 'A' and 'B' sets of Wireless set No. 19 together with the Wireless set No. 31 AFV, and communication between the crew (I.C.). (Control unit No. 16 and No. 17).

Re-broadcast facilities are available in both these roles.

GENERAL FEATURES

3. The Wireless set No. 31 AFV installation consists of four units:-

- (a) The Wireless set.
- (b) The Power supply and L.F. amplifier unit No. 3.
- (c) Control unit No. 16.
- (d) Control unit No. 17 or No. 33.

4. The wireless set is basically a Wireless set No. 31 (see Tels F 362) with minor component changes and the following modifications to suit it for operation in the AFV role:-

- (a) The battery compartment has been removed, together with webbing straps, various securing clips on the case and the front panel lid.
- (b) The existing aerial matching device has been replaced by a coaxial plug and the aerial coil has been tapped to match a 45Ω feeder.
- (c) The existing battery plug is replaced by a 12-point Mk 4 type to connect with the Power supply and L.F. amplifier unit and the A.F. voltages to and from the wireless set are also taken via this plug. The headset socket on the wireless set remains on the front panel but is not normally used except for checking that the wireless set is in working order.
- (d) Send/receive switching is accomplished by interrupting the sender H.T. instead of the filament circuit.
- (e) The on/off switch on the volume control has been short-circuited so that switching is carried out on the power supply and L.F. amplifier unit.
- (f) The dial lamp is always alight, instead of being illuminated only when the calibration button is pressed.
- (g) The calibration button switches the H.T. circuit of V2 instead of the L.T. circuit.

5. The Power supply and L.F. amplifier unit No. 3 may be used on 12V or 24V by inserting the appropriate sub-chassis at the rear of the main chassis. Inter-connection between these chassis is by seven solder tags. The voltage of the particular unit is added after the designation, thus: 'Power supply and L.F. amplifier unit (12V) or (24V)' and the description label is reversible giving either designation as required.

6. In addition to providing power supplies for the wireless set, the power supply and L.F. amplifier unit amplifies the moving coil microphone input sufficiently to work the wireless set and also raises the level of the wireless set output to overcome the noise experienced in an AFV. A relay in the power supply and L.F. amplifier unit, operated from the pressel switch, performs send/receive switching. Sidetone is obtained in the same manner as in the manpack set.

7. The unit is enclosed by a metal case and is ventilated by louvres. The unit is secured into the case by two bolts at the rear end.

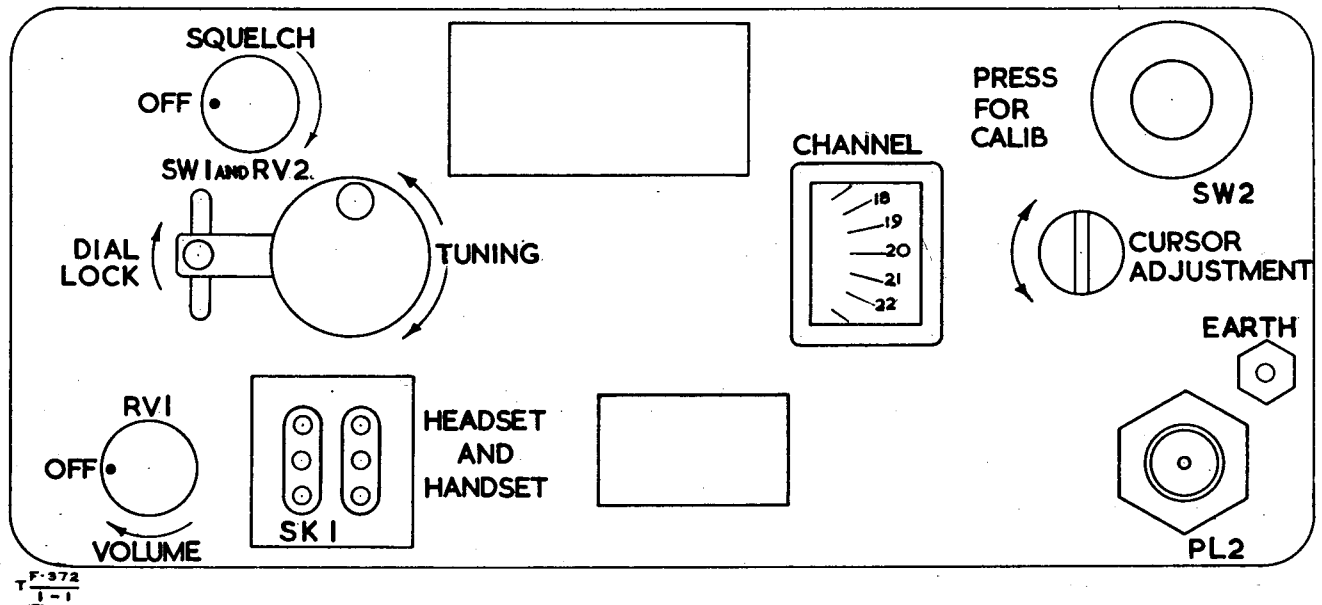


Fig 1 - Wireless set No. 31 AFV - front panel view

Controls

8. Wireless set No. 31 AFV and Power supply and L.F. amplifier unit No. 3 controls as shown below and in Fig 1.

Designation	Circuit ref	Function
VOLUME	RV1	A.F. gain control
TUNING	C8, C17, C28, C24 and C43	5-gang tuning condenser
SQUELCH	RV2 and SW1	RV2 controls bias on V17, hence squelch operating level SW1 is ON/OFF switch for V16, V17 and V18
PRESS FOR CALIB	SW2	This push-button completes H.T. circuit of sender crystal oscillator V2 when set is on receive to provide calibration signals
CURSOR ADJUSTMENT		Used in conjunction with calibrator

Wireless set front panel controls

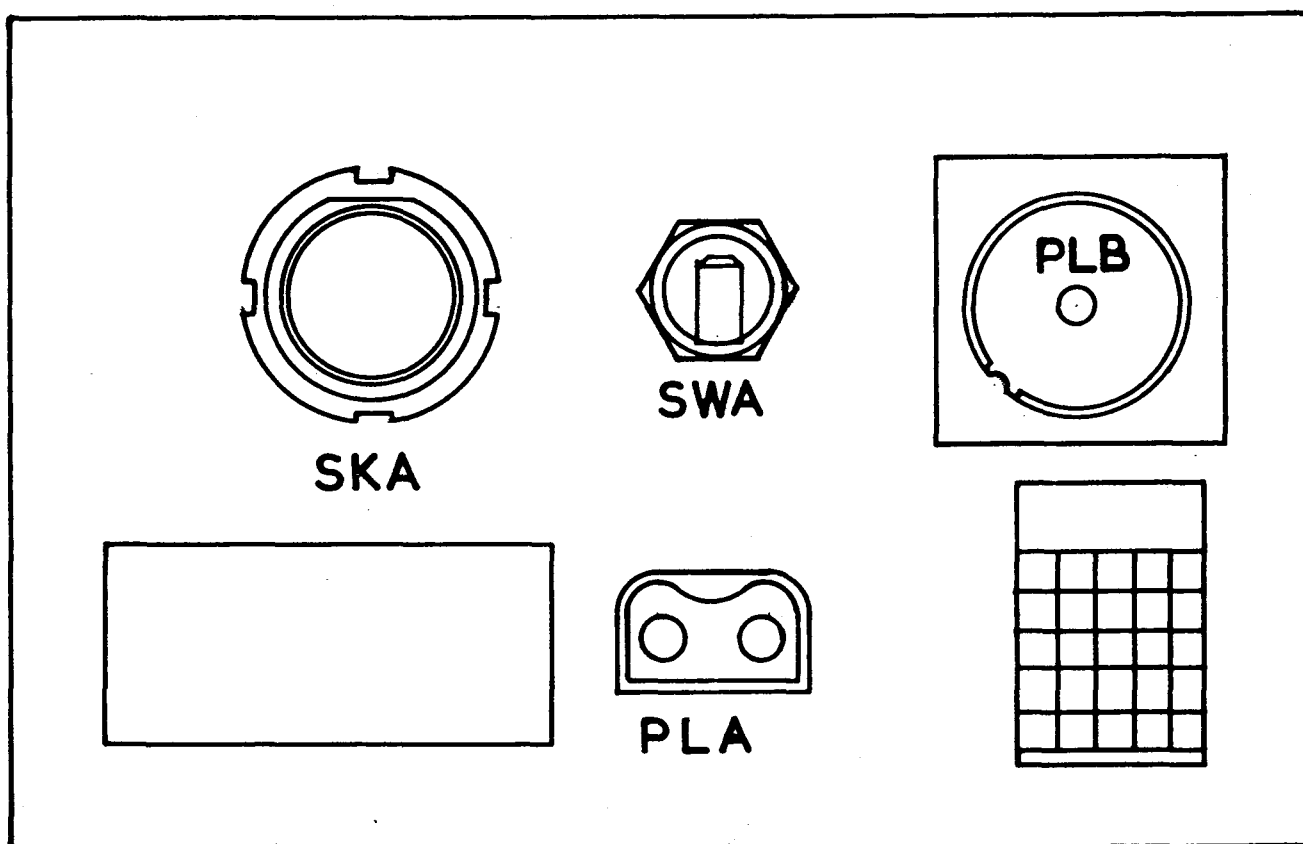
Designation	Circuit ref	Function
SWA (ON/OFF)	SWAa and SWAb	On/off switch for equipment
SKA	SKA-A to M	12-point Mk 4 socket, connects to wireless set
PLB	PLB-1 to 4	6-point Pye plug, connects to control unit No. 16
PLA	PLA-1 and 2	2-point plug, connects to battery via vehicle junction box

Power supply and L.F. amplifier unit No. 3, front panel controls and points

TECHNICAL DESCRIPTION

Wireless set (Fig 1001)

9. The wireless set is similar electrically to the manpack set, except for the aerial tapping point which is made nearer the earthy end to match a 45Ω feeder and the send/receive switching, which is effected on the H.T. circuit by $\frac{RLA}{2}$ in the power supply and L.F. amplifier unit. This relay is energised by the pressel switch, and contact RLA2 connects the sender valves V1 and V2 to the H.T. supply via SKA-G. The dial lamp LP1 is permanently connected across the L.T. supply.



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Fig 2 - Power supply and L.F. amplifier unit No. 3 - front panel view

Power supply and L.F. amplifier unit No. 3 (Fig 1002)

General

10. The unit supplies 3.9V L.T. for the wireless set valve filaments and V1 and V2 in the unit from a carbon pile, which compensates for variations of input voltage from 11V-15V and 22V-30V for the 12V and 24V versions, respectively. H.T. voltages of nominally 150V and 90V are available for the wireless set and the 90V supply also feeds V1 and V2 in the unit. By means of a link, LK1, the 150V supply may be dropped to 90V if required. V1 and V2 are A.F. amplifiers, V1 amplifying the wireless set output from whence it is taken to the control units, and V2 amplifying the microphone input to a suitable level to work the wireless set.

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F 372L.T. supply

11. The battery voltage is fed in via PLA1-2, through R.F. choke L1, switch SWAa, to the carbon pile X1, which maintains an approximately constant output of 7V. R11 drops this output to 5.9V to supply the series/parallel valve filaments. Filter circuits C1, C26 and L1, L6, C10 and C7 prevent vibrator interference from entering the battery. R1 is the pile diverter resistor and RV1 is a pre-set resistor to adjust the pile operating coil current. Additional resistors R13 and R14 are provided in the 24V model to reduce the pile working voltage to 12V. The L.T. output is decoupled by C5, C9, C11 and C12, and is taken out to the wireless set through SKA-D and E.

H.T. supply

12. The battery voltage is taken through fuse FS1 to the primary of vibrator transformer TR1 and also to the vibrator operating coil. The vibrator is of the synchronous type and the unidirectional output is taken from the centre-tap of the transformer secondary to the filter circuits L3, L4, C15, C18 and C20. The smoothed H.T. at 150V is fed to the wireless set through SKA-G to supply the sender valves V1 and V2.

13. The supply for the receiver at 90V is taken via dropping resistor R9, filter circuit L5, C21, C23 and SKA-C and F. The link LK1 is provided so that the sender supply may be reduced from 150V to 90V to permit operation at reduced power. This arrangement is adopted to minimise interference with other sets in certain installations. The 150V supply is also fed out through SKA-L to the calibration button in the receiver, operation of which applies the H.T. to V1 and V2 to provide calibration signals on RECEIVE.

A.F. amplifiers V1 and V2Send

15. When the set is switched to send by means of the pressel switch, RLA² operates applying H.T. voltage to valves V1 and V2 in the wireless set via RLA2 and SKA-G.

16. The input from the moving coil microphone through PLB-1 and 6 is applied to transformer TR6 and thence to the grid of V2. This valve is automatically biased, due to C17 and R8, proportional to the audio input voltage level. The amplified output at the anode is fed via transformer TR5, through SKA-K and so to the sender reactor valve.

Receive

17. On receive, the output of the wireless set is applied through SKA-M to transformer TR4 and via TR3 to the grid of V1. This valve is also automatically biased, depending on the audio input level, by means of C8 and R2. The amplified output is taken from the anode circuit through TR2 and thence to the harness via PLB-2.

18. I.C. signals are fed in through PLB-4 and SWAb to TR3 and the grid of V1, are amplified and also fed out to the harness via PLB-2. Should the unit be switched off, the I.C. signals are fed back into the harness through SWAb and PLB-2.

19. Relay contact RLA1 short-circuits the microphone amplifier on receive; this is done to prevent instability in the wireless set.

CONTROL UNITS

20. In the Regimental Command role, the AFV wireless equipment may include two 'A' sets (A1 and A2), eg, a Wireless set No. 19 and a Wireless set No. 19 H.P. With such a system, the control boxes used are the No. 16 and No. 33, see Fig 1006.

21. The Control unit No. 33 is similar to the Control unit No. 17, except that an additional plug, PL11, is provided to bring the A2 set wiring into the control unit, where it is connected through to the 'B' set wiring of the Control unit No. 16 via PL6. The facilities provided are then similar to those shown in Table 1001 of Tels F 662 for the Wireless set No. 88 AFV system, except that where the 'B' set is mentioned, A2 set should be substituted.

22. Should the Wireless set No. 31 AFV be installed into a gun tank for a Squadron Command role, it will be used in conjunction with the control units No. 16 and No. 17, the arrangement being identical to that of the Wireless set No. 88 AFV, see Fig 1007.

Note: The next page is Page 1001.

Table 1001 - Wireless set No. 31 AFV - list of components (see Fig 1001)

Circuit reference	Location of components circuit diagram	Value	Rating	Tolerance and type
CAPACITORS				
C1	A1	680pF	500V	+20% Tubular ceramic
C2	A2	100pF	500V	+5% Tubular ceramic
C3	A1	11pF	500V	+5% Tubular ceramic
C4	A1	0.01μF	350V	+20% Tubular paper
C5	A2	200pF	500V	+5% Tubular ceramic
C6	A3	0.01μF	350V	+20% Tubular paper
C7	B1	5-12pF		Trimmer
C8	B1	7-36pF		Part of 5-gang tuning
C9	B1	680pF	500V	+20% Tubular ceramic
C10	B2	100pF	500V	+5% Tubular ceramic
C11	C1	20pF	500V	+5% Tubular ceramic
C12	C1	0.01μF	350V	+20% Tubular paper
C13	C2	200pF	300V	+5% Tubular ceramic
C14	C1	5-12pF		Trimmer
C15	C2	25pF	500V	+5% Tubular ceramic
C16	C3	0.01μF	350V	+20% Tubular paper
C17	C1	7-36pF		Part of 5-gang tuning
C18	C3	680pF	500V	+20% Tubular ceramic
C19	D3	680pF	500V	+20% Tubular ceramic
C20	D2	20pF	500V	+5% Tubular ceramic
C21	D1	15pF	500V	+5% Tubular ceramic
C22	D1	0.01μF	350V	+20% Tubular paper
C23	E1	5-12pF		Trimmer
C24	E1	7-36pF		Part of 5-gang tuning
C25	E3	0.01μF	350V	+20% Tubular paper
C26	E3	0.01μF	350V	+20% Tubular paper
C27	E1	7-36pF		Part of 5-gang tuning
C28	F1	5-12pF		Trimmer
C29	F1	9pF	500V	+5% Tubular ceramic
C30	E2	100pF	500V	+5% Tubular ceramic
C31	F1	0.01μF	350V	+10% Moulded mica
C32	F3	100pF	500V	+5% Tubular ceramic
C33	G2	25pF	500V	+5% Tubular ceramic
C34	G3	0.01μF	350V	+20% Tubular paper
C35	G3	0.01μF	350V	+20% Tubular paper
C36	G3	0.01μF	350V	+20% Tubular paper
C37	G3	0.01μF	350V	+20% Tubular paper
C38	A6	0.01μF	350V	+10% Moulded mica
C39	A4	15pF	500V	+5% Tubular ceramic
C40	A4	200pF	500V	+5% Tubular ceramic
C41	B4	5-12pF		Trimmer
C42	B5	100pF	500V	+5% Tubular ceramic
C43	B4	7-36pF		Part of 5-gang tuning
C44	B4	0.01μF	350V	+20% Tubular paper
C45	B4	25pF	500V	+5% Tubular ceramic
C46	C4	0.01μF	350V	+20% Tubular paper
C47	C5	100pF	500V	+5% Tubular ceramic
C48	C4	25pF	500V	+5% Tubular ceramic

Table 1001 - (contd.)

Circuit reference	Location of components circuit diagram	Value	Rating	Tolerance and type
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CAPACITORS (contd.)

C49	D4	0.01 μ F	350V	+20% Tubular paper
C50	D4	0.01 μ F	350V	+20% Tubular paper
C51	D5	100pF	500V	+5% Tubular ceramic
C52	D4	25pF	500V	+5% Tubular ceramic
C53	E4	0.01 μ F	350V	+20% Tubular paper
C54	E5	100pF	500V	+5% Tubular ceramic
C55	E4	25pF	500V	+5% Tubular ceramic
C56	E6	0.01 μ F	350V	+20% Tubular paper
C57	E5	15pF	500V	+5% Tubular ceramic
C58	E5	100pF	500V	+5% Tubular ceramic
C59	F4	0.01 μ F	120V	+20% Tubular paper
C60	E4	0.01 μ F	120V	+20% Tubular paper
C61	F4	25pF	500V	+5% Tubular ceramic
C62	F4	0.01 μ F	350V	+20% Tubular paper
C63	F5	100pF	500V	+5% Tubular ceramic
C64	G6	0.01 μ F	350V	+20% Tubular paper
C65	G4	25pF	500V	+5% Tubular ceramic
C66	G4	0.01 μ F	350V	+20% Tubular paper
C67	G5	100pF	500V	+5% Tubular ceramic
C68	G6	0.01 μ F	350V	+20% Tubular paper
C69	H4	25pF	500V	+5% Tubular ceramic
C70	G4	0.01 μ F	350V	+20% Tubular paper
C71	H4	0.01 μ F	350V	+20% Tubular paper
C72	H5	50pF	500V	+10% Tubular ceramic
C73	J5	100pF	500V	+5% Tubular ceramic
C74	J5	100pF	500V	+5% Tubular ceramic
C75	J5	10pF	500V	+10% Tubular ceramic
C76	K4	0.005 μ F	350V	+10% Moulded mica
C77	H6	0.01 μ F	350V	+20% Tubular paper
C78	H6	0.01 μ F	350V	+20% Tubular paper
C79	J6	100pF	500V	+10% Tubular ceramic
C80	J6	100pF	500V	+10% Tubular ceramic
C81	K6	100pF	500V	+10% Tubular ceramic
C82	K5	50pF	500V	+10% Tubular ceramic
C83	K4	100pF	500V	+10% Tubular ceramic
C84	L6	0.01 μ F	350V	+10% Moulded mica
C85	H6	0.01 μ F	350V	+20% Tubular paper
C86	L5	100pF	500V	+10% Tubular ceramic
C87	M6	100pF	500V	+10% Tubular ceramic
C88	M4	100pF	500V	+10% Tubular ceramic
C89	M4	0.01 μ F	350V	+20% Tubular paper
C90	F8	0.01 μ F	350V	+20% Tubular paper
C91	F8	0.01 μ F	350V	+20% Tubular paper
C92	G7	0.01 μ F	350V	+20% Tubular paper
C93	G8	0.01 μ F	350V	+20% Tubular paper
C94	H7	0.01 μ F	350V	+20% Tubular paper
C95	H7	0.01 μ F	350V	+20% Tubular paper
C96	H8	0.01 μ F	350V	+10% Moulded mica

Table 1001 - (contd)

Circuit reference	Location of components circuit diagram	Value	Rating	Tolerance and type
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CAPACITORS (contd)

C97	H8	0.01 μ F	350V	+20% Tubular paper
C98	H8	0.01 μ F	350V	+10% Moulded mica
C99	J7	0.01 μ F	350V	+20% Tubular paper
C100	J8	0.01 μ F	350V	+20% Tubular paper
C101	K7	0.01 μ F	350V	+20% Tubular paper
C102	K7	0.01 μ F	350V	+20% Tubular paper
C103	K8	0.01 μ F	350V	+20% Tubular paper
C104	L8	0.01 μ F	350V	+20% Tubular paper
C105	M8	0.01 μ F	350V	+20% Tubular paper
C106	E5	15pF	500V	+5% Tubular ceramic
C107	A1	6.8pF	500V	+10% Tubular ceramic

RESISTORS

R1	A1	220 Ω	1W	+20% Carbon insulated
R2	B3	1M Ω	1W	+20% Carbon insulated
R3	B3	220k Ω	1W	+20% Carbon insulated
R4	B1	220 Ω	1W	+20% Carbon insulated
R5	B1	220 Ω	1W	+20% Carbon insulated
R6	C3	1M Ω	1W	+20% Carbon insulated
R7	C3	220k Ω	1W	+20% Carbon insulated
R8	C1	2.2k Ω	1W	+20% Carbon insulated
R9	D1	10k Ω	1W	+20% Carbon non-insulated
R10	D3	68k Ω	1W	+20% Carbon insulated
R11	E1	5.6k Ω	1W	+20% Carbon insulated
R12	E1	2.7k Ω	1W	+10% Carbon insulated
R13	F1	5.6k Ω	1W	+10% Carbon insulated
R14	F3	22k Ω	1W	+20% Carbon insulated
R15	F2	2.7k Ω	1W	+10% Carbon insulated
R16	G3	1M Ω	1W	+20% Carbon insulated
R17	G1	2.2k Ω	1W	+20% Carbon insulated
R18	G3	100k Ω	1W	+20% Carbon insulated
R19	G3	470k Ω	1W	+20% Carbon insulated
R20	H3	56 Ω	1W	+20% Carbon insulated
R21	H3	330 Ω	1W	+20% Carbon insulated
R22	A6	1M Ω	1W	+20% Carbon insulated
R23	A5	1M Ω	1W	+20% Carbon insulated
R24	A6	680k Ω	1W	+20% Carbon insulated
R25	A4	10k Ω	1W	+20% Carbon insulated
R26	B4	100k Ω	1W	+20% Carbon insulated
R27	B6	3.3M Ω	1W	+20% Carbon insulated
R28	C4	22k Ω	1W	+20% Carbon insulated
R29	C6	220k Ω	1W	+10%
R30	C4	10k Ω	1W	+20% Carbon non-insulated
R31	D4	39k Ω	1W	+20% Carbon insulated
R32	D6	220k Ω	1W	+10% Carbon insulated
R33	D4	22k Ω	1W	+20% Carbon insulated

Table 1001 - (contd)

Circuit reference	Location of components circuit diagram	Value	Rating	Tolerance and type
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RESISTORS (contd)

R34	E6	220kΩ	1W	+10% Carbon insulated
R35	E4	10kΩ	1/2W	+10% Carbon non-insulated
R36	F6	1MΩ	1/2W	+20% Carbon insulated
R37	E6	10kΩ	1/2W	+20% Carbon insulated
R38	E6	100kΩ	1/2W	+20% Carbon insulated
R39	E4	100kΩ	1/2W	+20% Carbon insulated
R40	F5	100kΩ	1/2W	+10% Carbon non-insulated
R41	F4	15kΩ	1/2W	+20% Carbon insulated
R42	F6	100kΩ	1/2W	+10% Carbon non-insulated
R43	F5	1MΩ	1/2W	+20% Carbon insulated
R44	G4	22kΩ	1/2W	+20% Carbon insulated
R45	G6	100kΩ	1/2W	+10% Carbon non-insulated
R46	G5	1MΩ	1/2W	+20% Carbon insulated
R47	H4	68kΩ	1/2W	+20% Carbon insulated
R48	H4	4.7kΩ	1/2W	+20% Carbon non-insulated
R49	H4	4.7kΩ	1/2W	+20% Carbon insulated
R50	J5	220kΩ	1/2W	+20% Carbon insulated
R51	H6	1MΩ	1/2W	+20% Carbon insulated
R52	J6	100kΩ	1/2W	+20% Carbon insulated
R53	J5	220kΩ	1/2W	+20% Carbon insulated
R54	H6	39kΩ	1/2W	+10% Carbon insulated
R55	K6	4.7kΩ	1/2W	+20% Carbon insulated
R56	K6	4.7kΩ	1/2W	+20% Carbon insulated
R57	K4	100kΩ	1/2W	+20% Carbon insulated
R58	K4	68kΩ	1/2W	+20% Carbon insulated
R59	K6	1MΩ	1/2W	+20% Carbon insulated
R60	K5	3.3MΩ	1/2W	+10% Carbon insulated
R61	L4	68kΩ	1/2W	+20% Carbon insulated
R63	L5	3.3MΩ	1/2W	+10% Carbon insulated
R64	L4	39kΩ	1/2W	+10% Carbon insulated
R65	L5	68kΩ	1/2W	+10% Carbon insulated
R66	H6	4.7kΩ	1/2W	+20% Carbon insulated
R67	F6	1MΩ	1/2W	+20% Carbon insulated
R68	M4	68kΩ	1/2W	+20% Carbon insulated
R69	M6	100kΩ	1/2W	+20% Carbon insulated
R71	L8	39Ω	1/2W	+10% Wirewound
R73	M7	4.7Ω	1/4W	+10% Wirewound

VARIABLE RESISTORS

RV1	H6	500kΩ		+20% Linear
RV2	L4	1MΩ		+20% Linear

INDUCTORS

L1	A1			Aerial coil
L2	B1			Mixer anode coil
L3	C2			Crystal oscillator coil

Table 1004 - (contd)

Circuit reference	Location of components circuit diagram	Type
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INDUCTORS (contd)

L4	F1	Local oscillator anode coil
L5	F3	Local oscillator grid coil
L6	A4	R.F. anode coil
L7	B4	Mixer anode coil
L8	C4	1st I.F. anode coil
L9	D4	2nd I.F. anode coil
L10	E4	2nd mixer anode coil
L11	F4	3rd I.F. anode coil
L12	G4	1st limiter anode coil
L13	G4	2nd limiter anode coil
L14	J5	Discriminator coil
L15	M4	Squelch oscillator anode coil
L16	M5	Squelch oscillator grid coil
L17	F8	Filament choke
L18	G8	Filament choke
L19	G8	Filament choke
L20	H8	Filament choke
L21	H8	Filament choke
L22	J8	Filament choke
L23	J8	Filament choke
L24	K7	Filament choke
L25	K8	Filament choke

TRANSFORMERS

TR1	D2	
TR2	H3	
TR3	J4	

VALVES

V1	A2	CV 807	Power amplifier
V2	B2	CV 807	Sender mixer and crystal oscillator
V3	D2	CV 785	Doubler
V4	F2	CV 785	Master oscillator
V5	G2	CV1758	Reactor and A.F.C.
V6	A5	CV 785	R.F. amplifier
V7	B5	CV1758	1st mixer
V8	C5	CV 785	1st I.F. amplifier
V9	D5	CV 785	2nd I.F. amplifier
V10	E5	CV 782	2nd mixer and crystal oscillator
V11	F5	CV 785	3rd I.F. amplifier
V12	G5	CV1758	1st limiter
V13	H5	CV1758	2nd limiter
V14	J6	CV 753	Discriminator
V15	K5	CV 784	A.F. amplifier and discriminator

Table 1001 - (contd)

Circuit reference	Location of components circuit diagram	Type	
VALVES (contd)			
V16	K5	CV 784	Noise amplifier and rectifier
V17	L5	CV1758	D.C. amplifier
V18	M5	CV 784	Squelch oscillator and rectifier
LAMP			
LP1	E8	6V .15A	
CRYSTALS			
XL1	D2	4,300kc/s	
XL2	E5	6,815kc/s	

**ELECTRICAL AND MECHANICAL
ENGINEERING REGULATIONS**

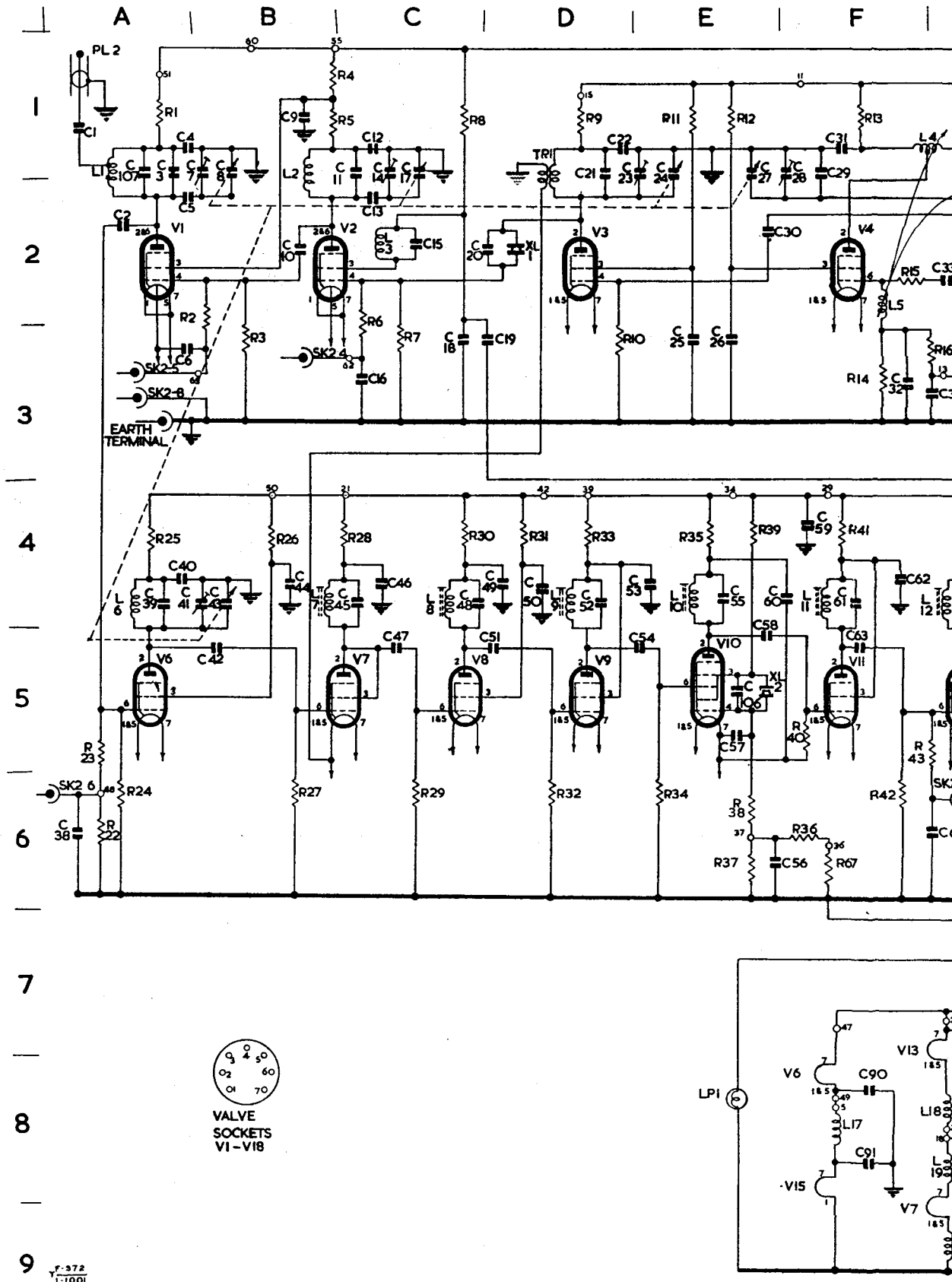
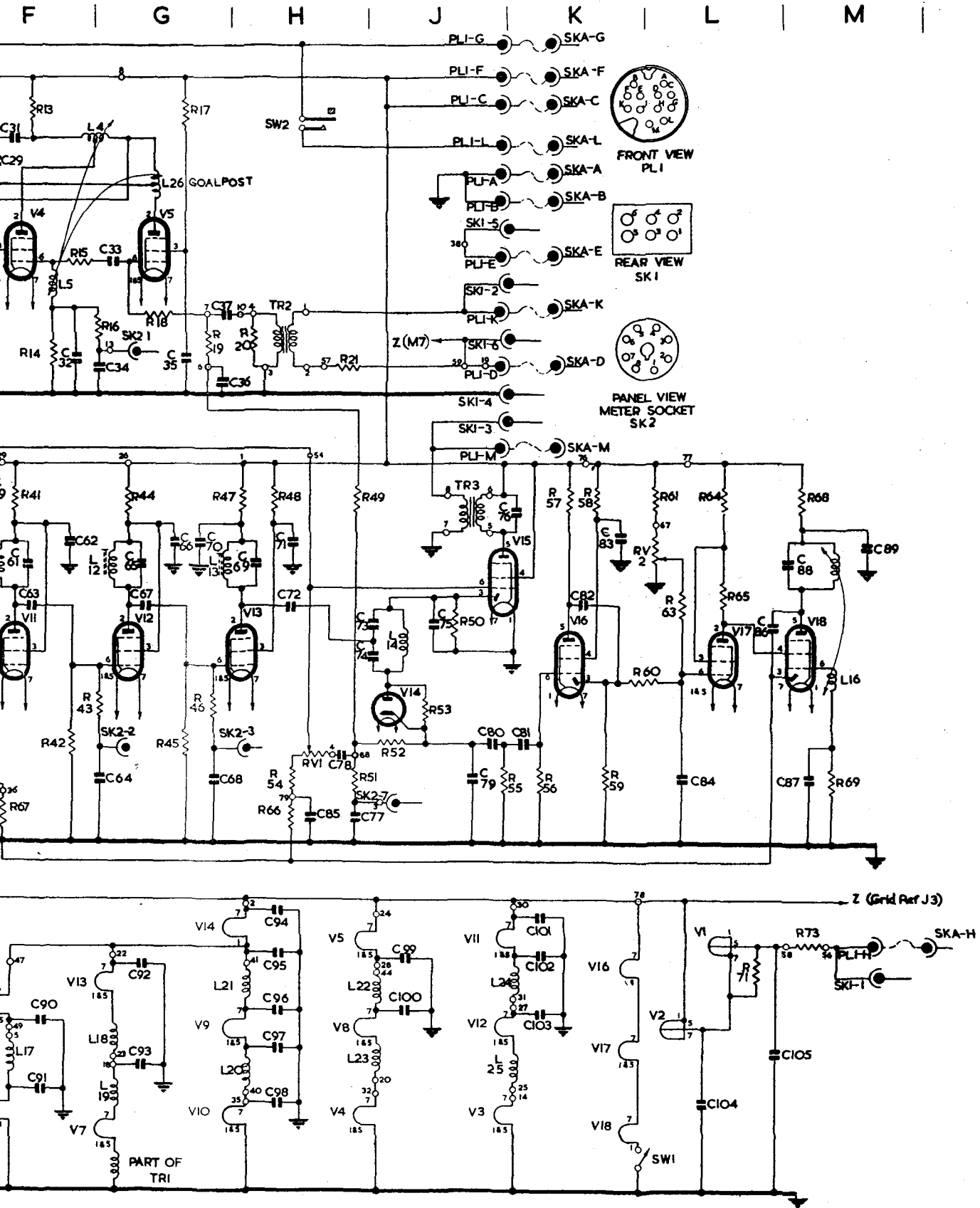


Fig 1001 - Wireless set



Wireless set No. 31 AFV - circuit diagram

R E S T R I C T E D

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ENGINEERING REGULATIONS

Table 1002 - Power supply and L.F. amplifier unit No. 3 - list of components
(see Figs 1002 and 1010)

Circuit reference	Location of components		Value	Rating	Tolerance and type
	Circuit diagram	Layout Fig 1010			

CAPACITORS

C1	A1	K8	500pF	350V	+20% Moulded mica
C2	A1	D8	500pF	350V	+20% Moulded mica
C3	B4	F8	500pF	350V	+20% Moulded mica
C4	B3	E8	500pF	350V	+20% Moulded mica
C5	D5	C8	500pF	350V	+20% Moulded mica
C6	H2	A8	500pF	350V	+20% Moulded mica
C7	D1	E6	250μF	50V	-20% +50% Electrolytic
C8	D4	M7	0.001μF	350V	+20% Tubular paper insulated
C9	D5	E4	1000μF	6V	-20% +50% Electrolytic
C10	D1	E6	250μF	50V	-20% +50% Electrolytic
C11	E5	E5	1000μF	6V	-20% +50% Electrolytic
C12	E5	E4	1000μF	6V	-20% +50% Electrolytic
C13	E1	K3	2μF	150V	+20% Tubular paper insulated
C14	E1	L1	0.02μF	500V	+20% Tubular paper insulated
C15	F1	E3	8μF	375V	-20% +50% Electrolytic
C16	F4	K6	0.01μF	350V	+20% Tubular paper insulated
C17	F4	M6	0.001μF	350V	+20% Tubular paper insulated
C18	F4	E4	8μF	375V	-20% +50% Electrolytic
C20	G1	E5	8μF	375V	-20% +50% Electrolytic
C21	H3	B8	500pF	350V	+20% Moulded mica
C22	H4	D8	500pF	350V	+20% Moulded mica
C23	G3	E3	8μF	375V	-20% +50% Electrolytic
C24	J1	B8	500pF	350V	+20% Moulded mica
C26	A1	K8	0.1μF	350V	+20% Tubular paper insulated
C27	D1	H2	0.1μF	350V	+20% Tubular paper insulated

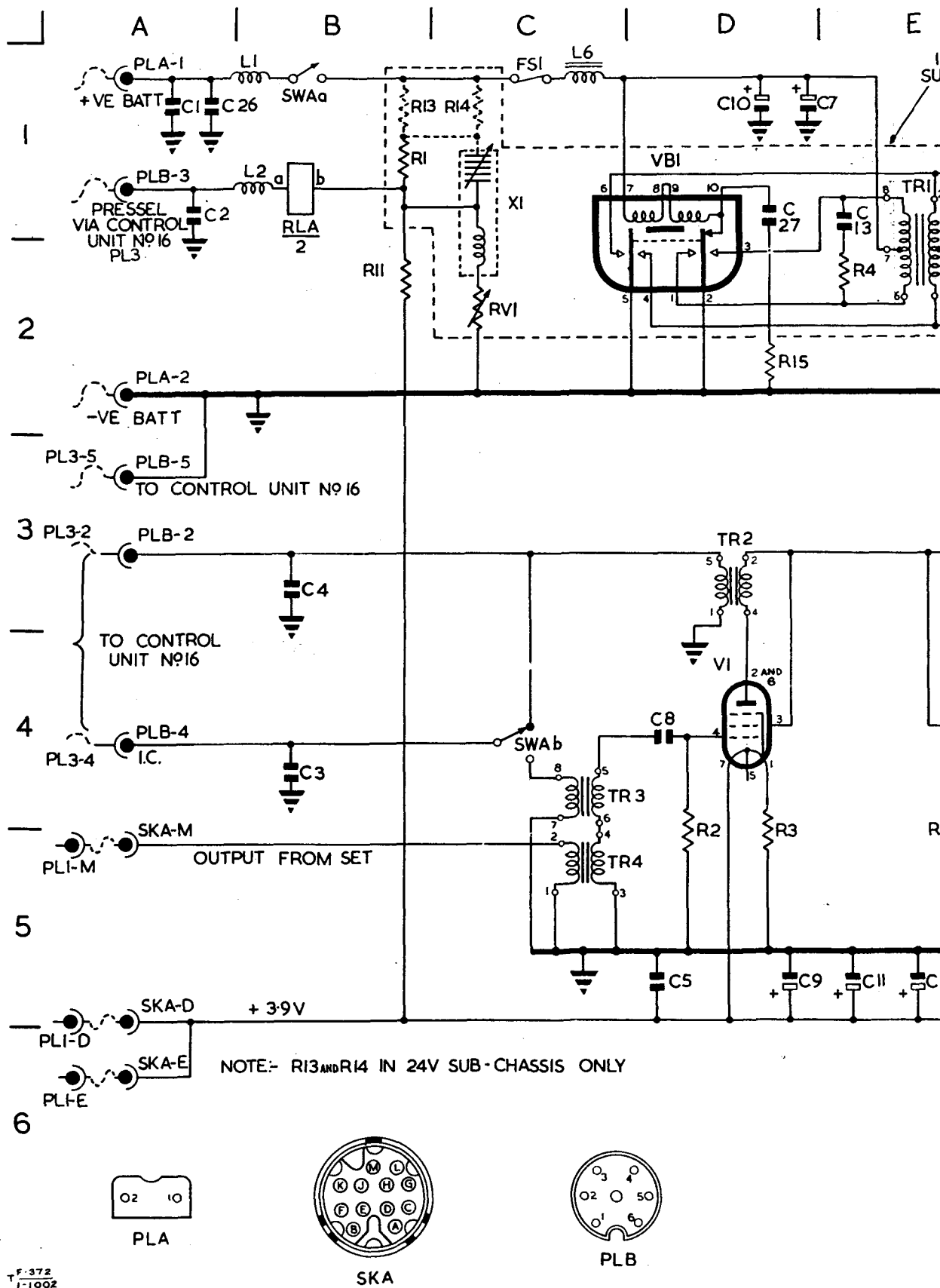
RESISTORS

R1 *	B1	F1	8Ω	15W	+5% Wirewound
R2	D4	M7	10MΩ	1/2W	+10% Carbon insulated
R3	D4	M7	12Ω	1/2W	+10% Carbon insulated
R4	E2	N2	47Ω	1/2W	+10% Carbon insulated
R5	E2	N2	4.7kΩ	3W	+10% Carbon insulated
R6	E3	K7	22kΩ	1/2W	+10% Carbon insulated
R7	E4	M7	56Ω	1/2W	+10% Carbon insulated
R8	F4	M7	10MΩ	1/2W	+10% Carbon insulated
R9	G3	L6	1kΩ	5W	+5% Wirewound
R10	G1	L6	2.7kΩ	5W	+5% Wirewound
R11	B2	L6	3Ω	3W	+5% Wirewound
R13	B1	F2	12Ω	5W	+5% Wirewound
R14 *	C1	F2	12Ω	5W	+5% Wirewound
R15 *	D2	J3	18Ω	1/2W	+10% Carbon insulated

* Note: R1 for 24V model is 15Ω, 15W.
R13 and R14 in 24V model only.

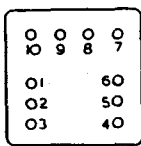
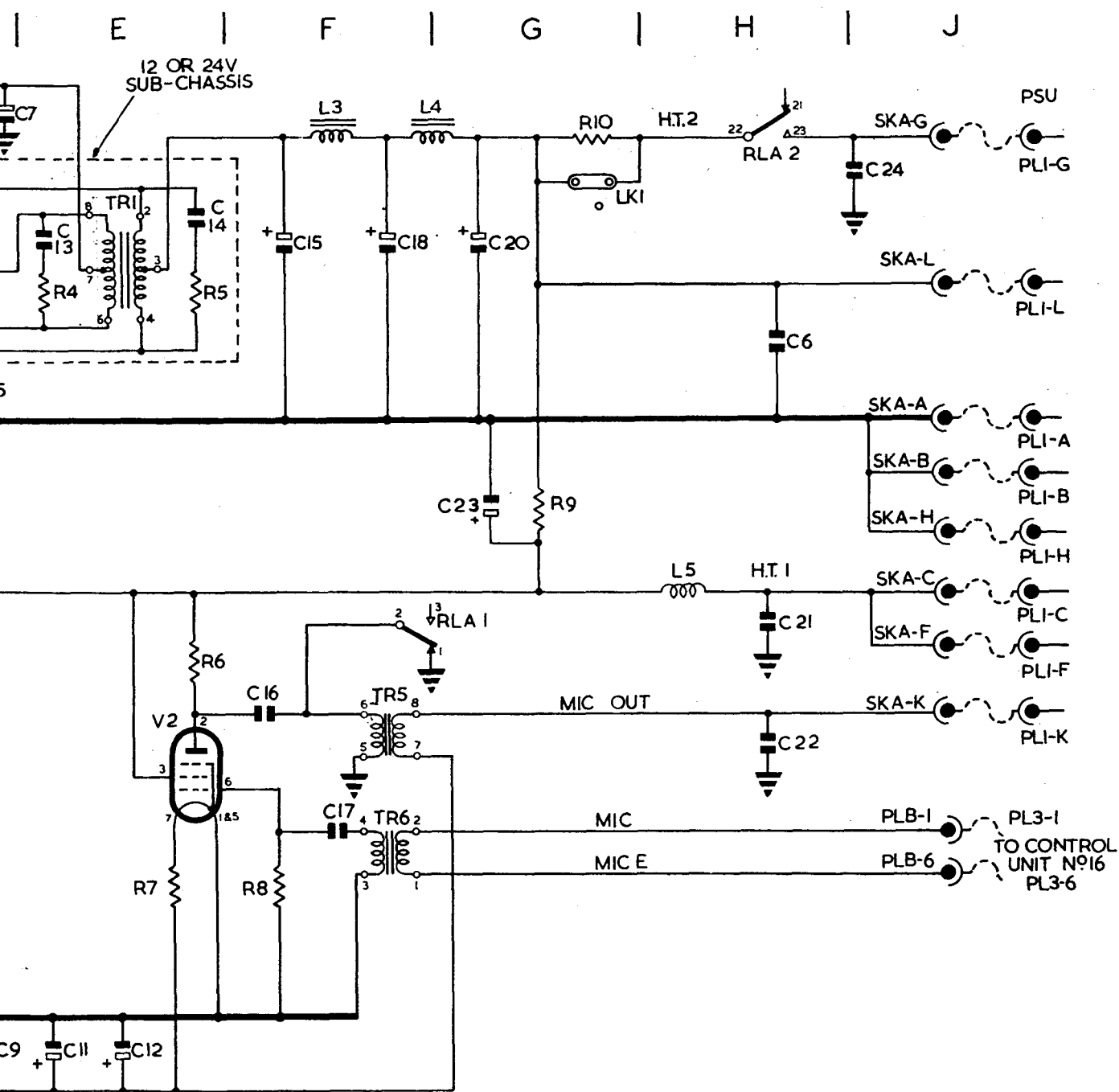
Table 1002 - (contd)

Circuit reference	Location of components		Value	Rating	Tolerance and type
	Circuit diagram	Layout Fig 1010			
VARIABLE RESISTOR					
RV1	C2	F2	9Ω		±10%
INDUCTORS					
L1	B1	K7	4A		R.F. choke
L2	B1	D8	150mA		R.F. choke
L3	F1	C4			H.T. smoothing choke
L4	F1	K4			H.T. smoothing choke
L5	H3	B8	150mA		R.F. choke
L6	C1	B5			L.T. smoothing choke
TRANSFORMERS					
TR1	E2	B2			Vibrator transformer
TR2	D3	A7			Phones output
TR3	C4	H7			I.C. input
TR4	C5	H7			A.F. input
TR5	F4	F7			Microphone output
TR6	F4	E7			Microphone input
RELAYS					
RLA/2	B1	C, D7			
RLA1	F3				
RLA2	H1				
SWITCHES					
SWAa	B1	D8			
SWAb	C4				
VALVES					
V1	D4	L7			CV 807
V2	E4	J7			CV1758
FUSES					
FS1	C1) Front panel			5A (24V)
FS1	C1				10A (12V)
VIBRATOR					
VB1	D2	J2			
CARBON PILE					
X1	C1	M4			

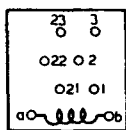


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Fig 1002 - Power supply and L.F. amplifier



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V1 AND 2

L.F. amplifier unit No. 3 - circuit diagram

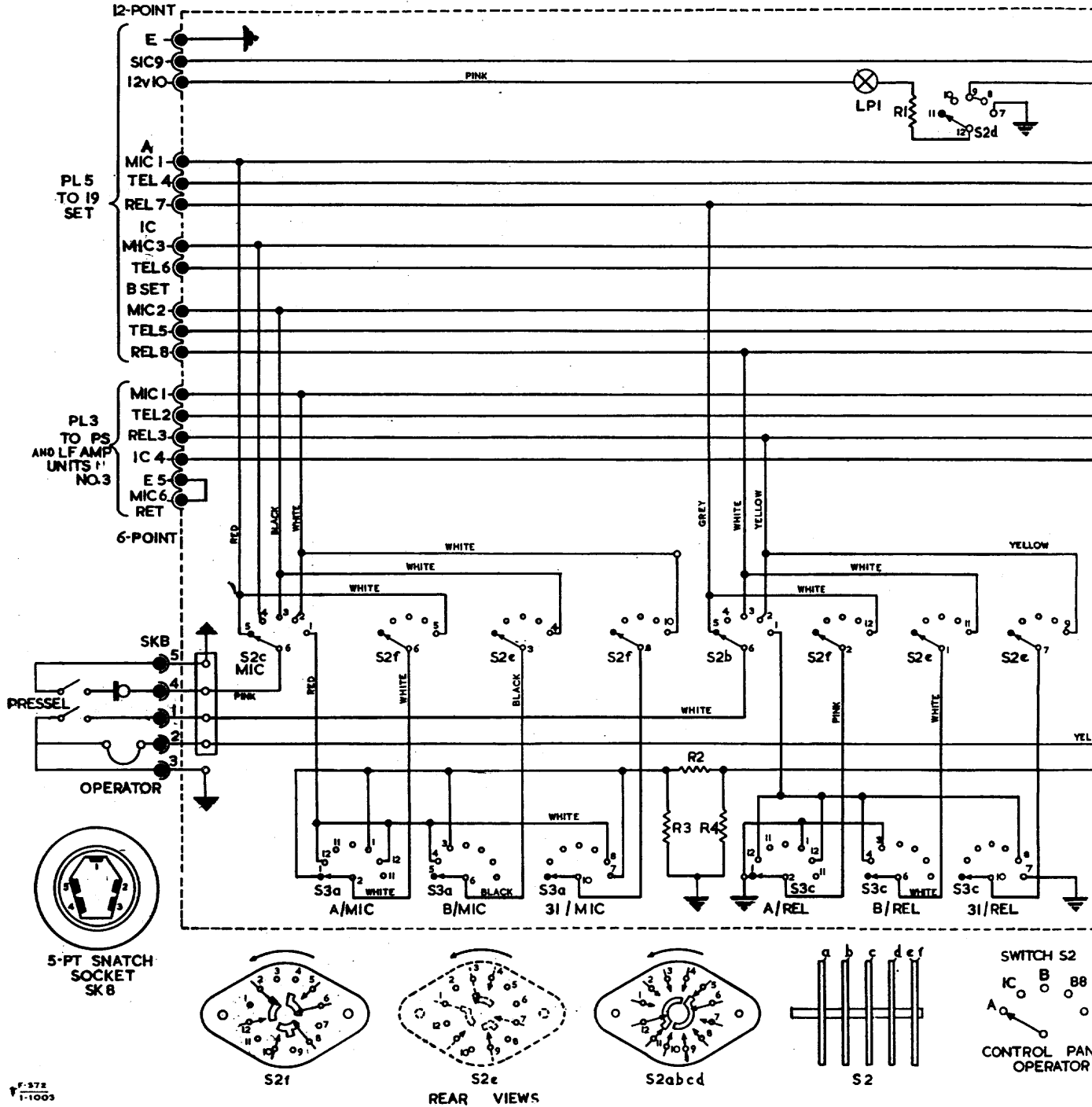
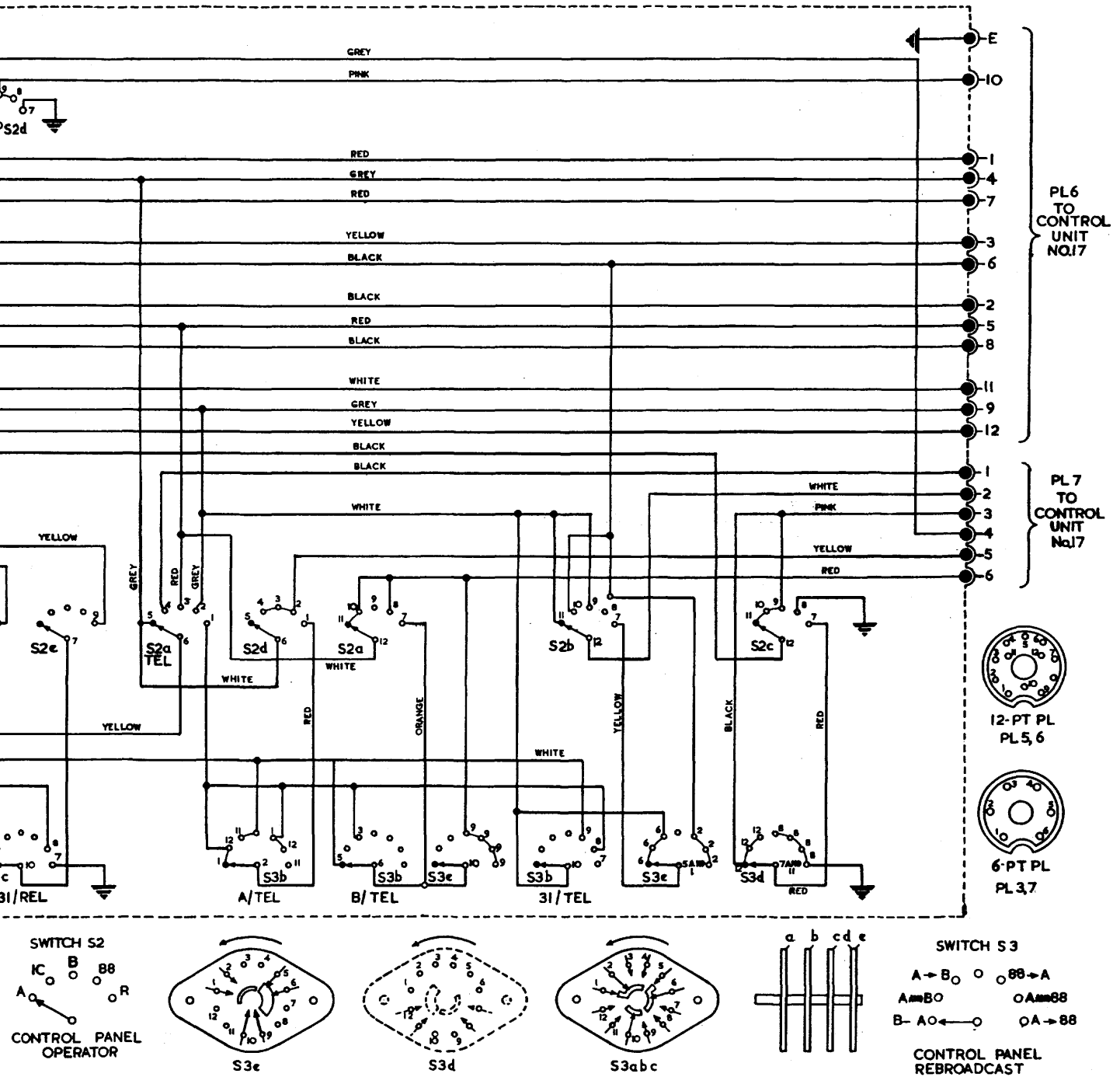


Fig 1003 - Control unit No



Control unit No. 16 - circuit diagram

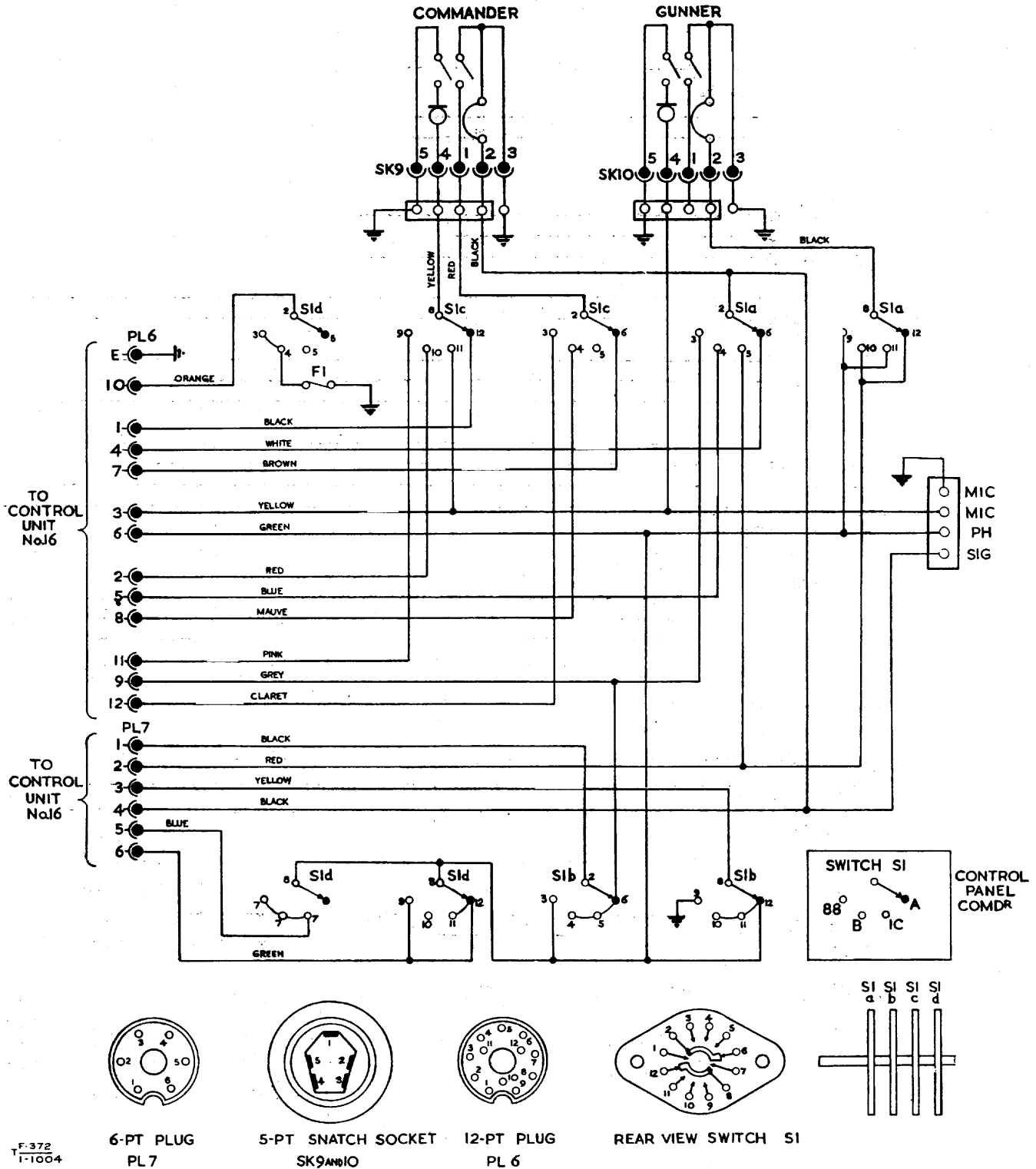
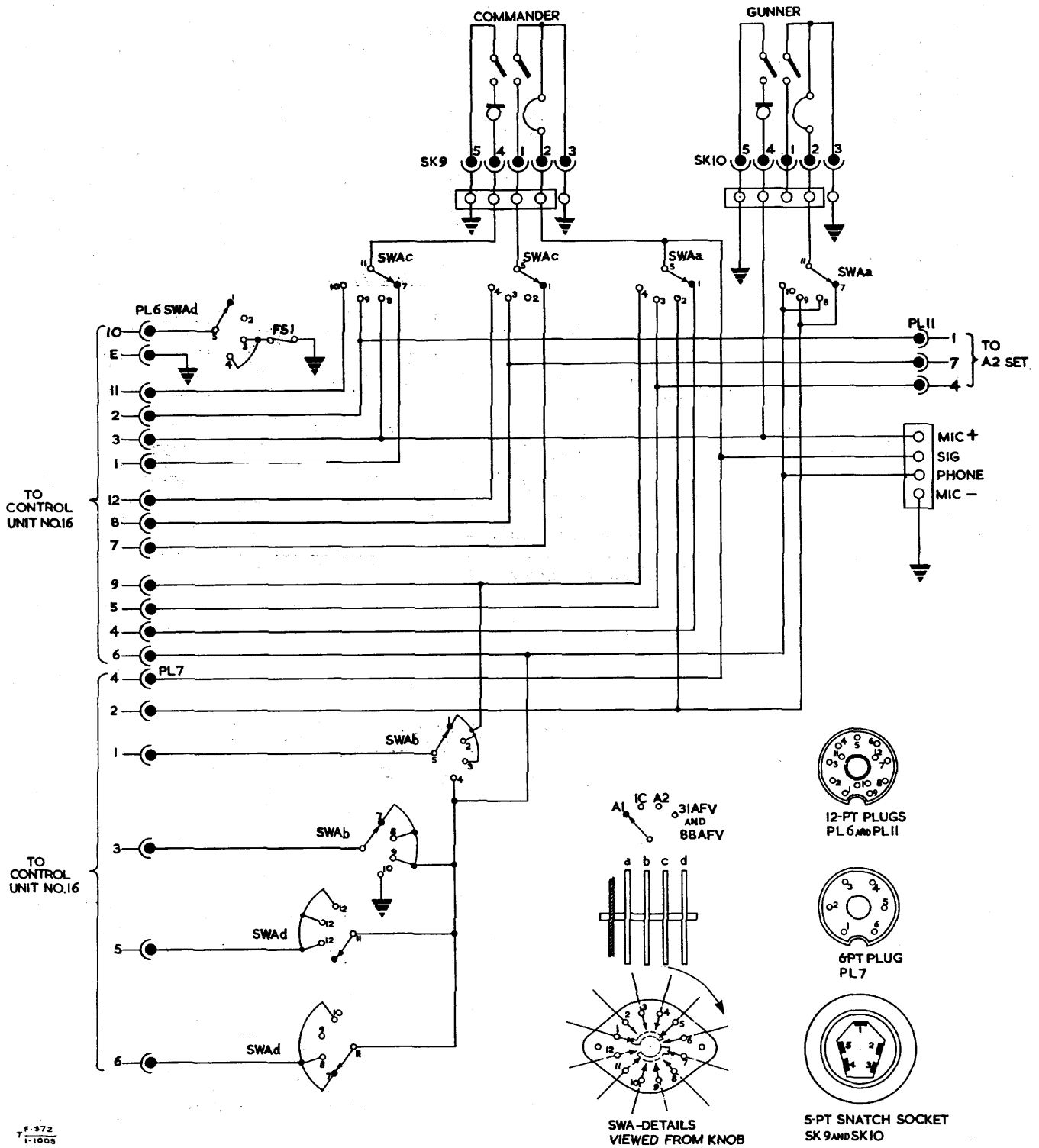


Fig 1004 - Control unit No. 17 - circuit diagram



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Fig 1005 - Control unit No. 33 - circuit diagram

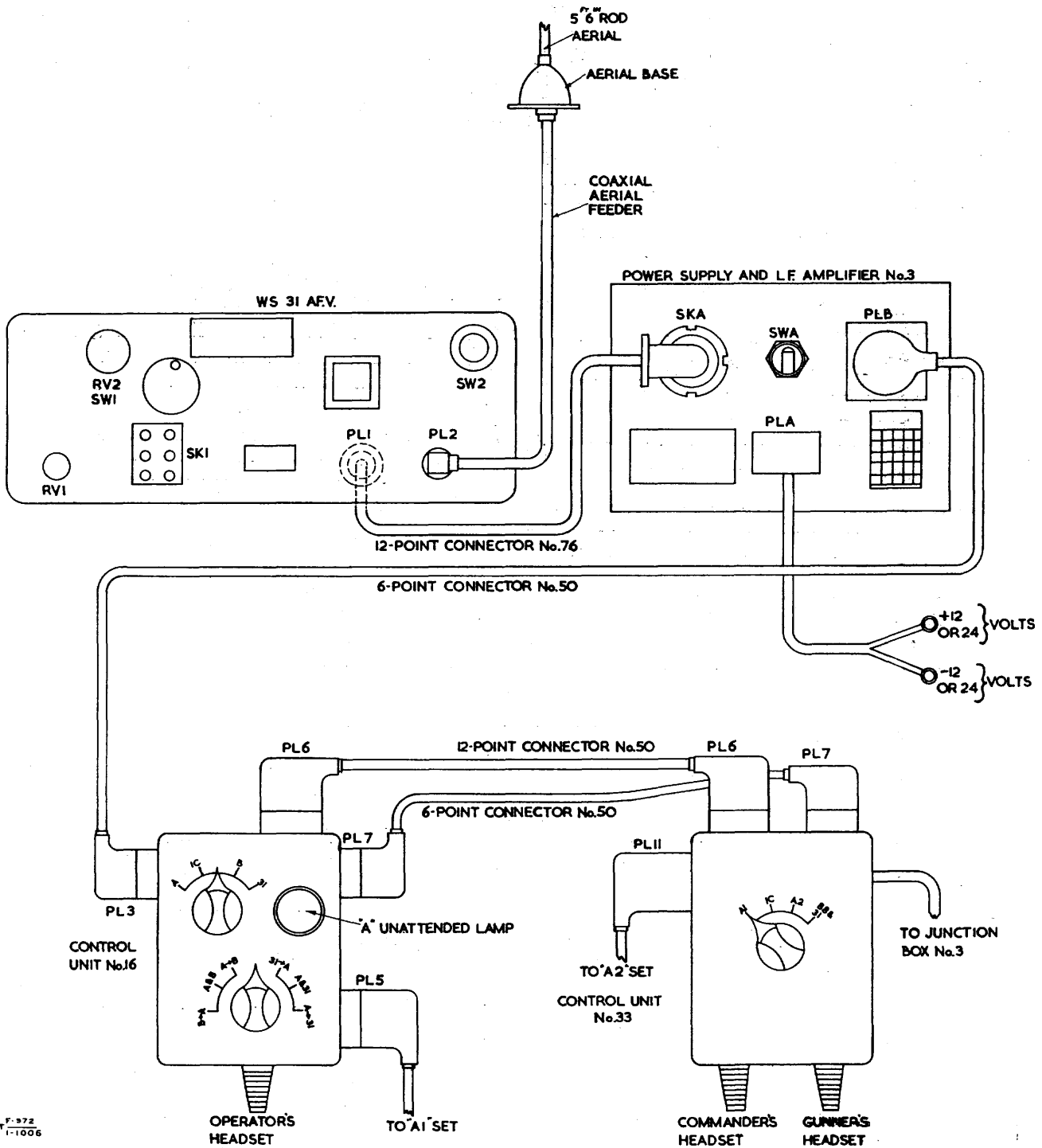


Fig 1006 - Wireless set No. 31 AFV - example of layout in Regimental Command role

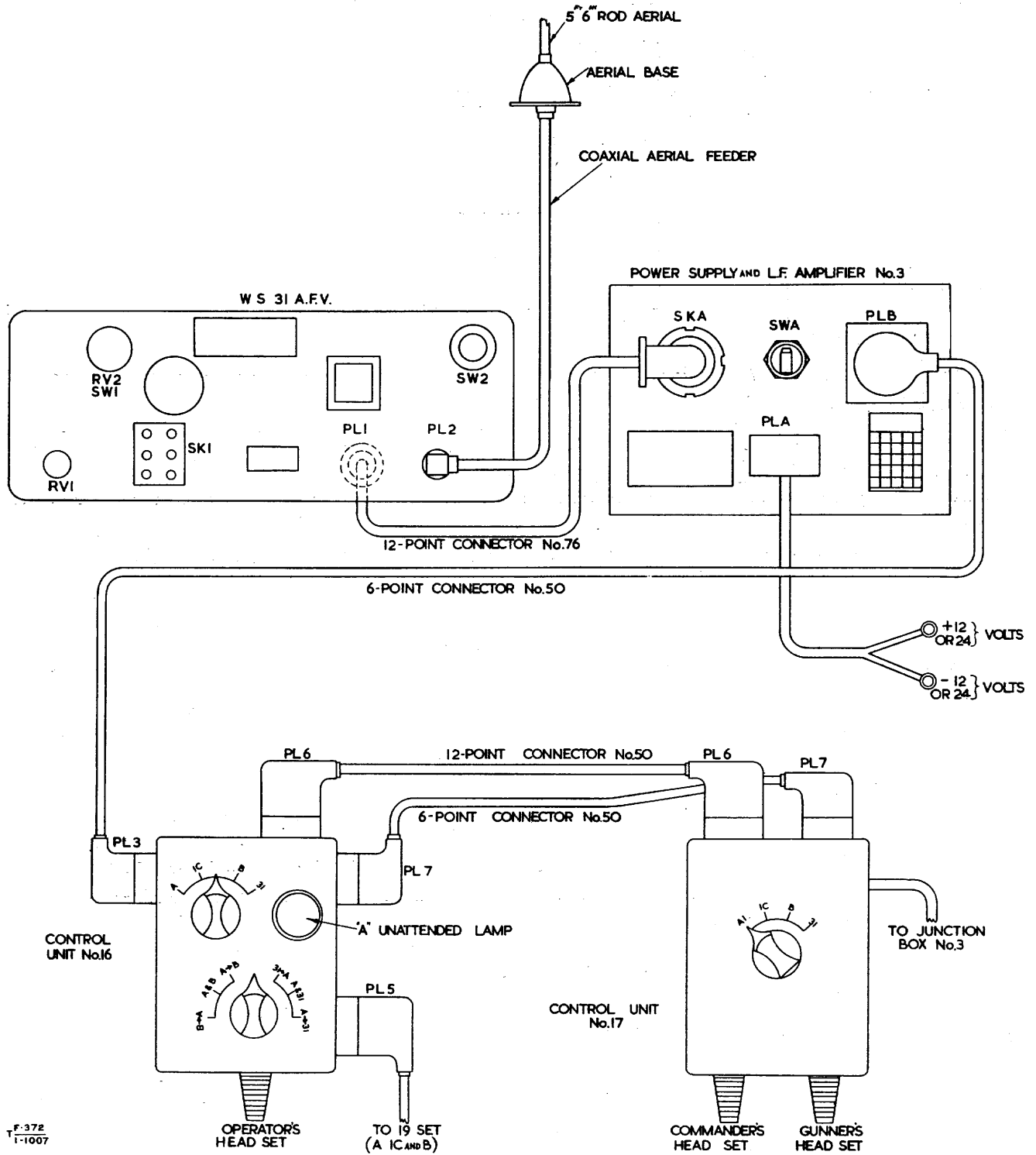
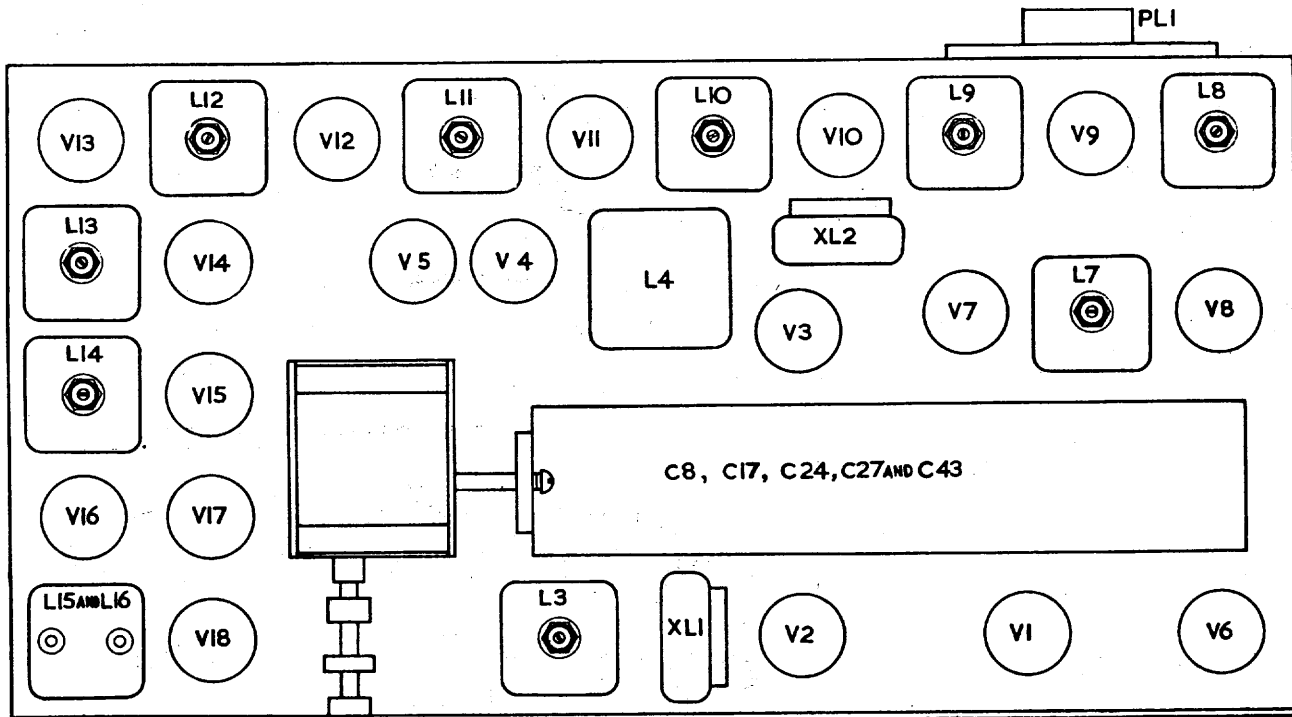
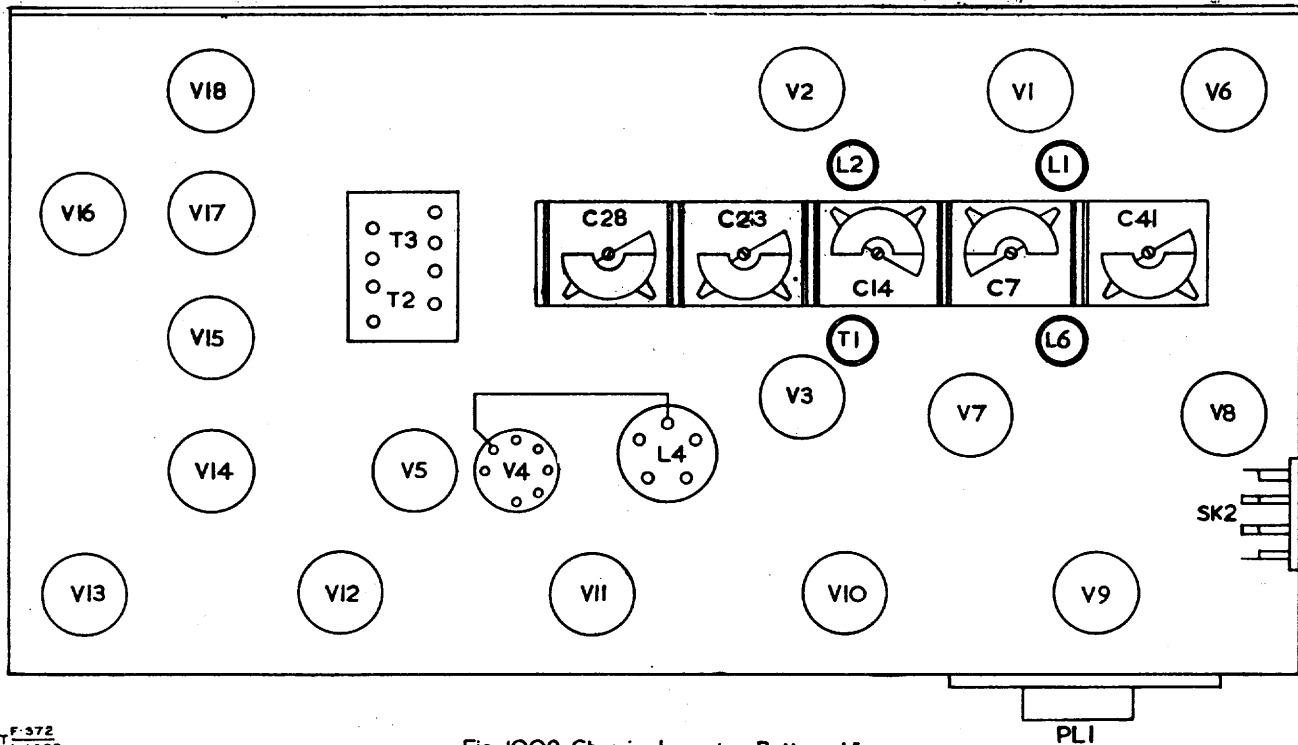


Fig 1007 - Wireless set No. 31 AFV - example of layout in Squadron Command role



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Fig 1008 - Wireless set No. 31 AFV - chassis layout top view



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Fig 1009 Chassis Layout - Bottom View

Fig 1009 - Wireless set No. 31 AFV - chassis layout bottom view

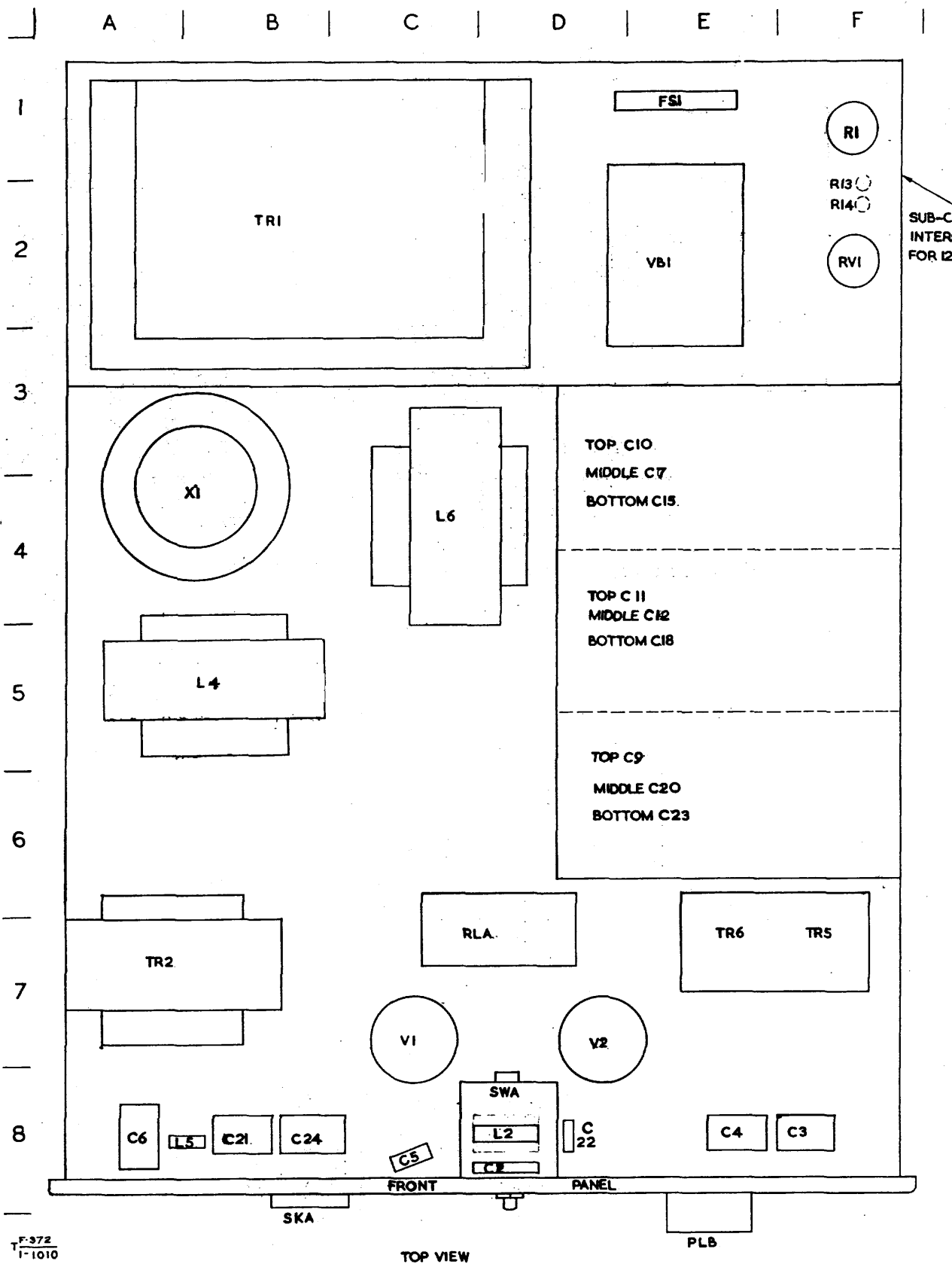
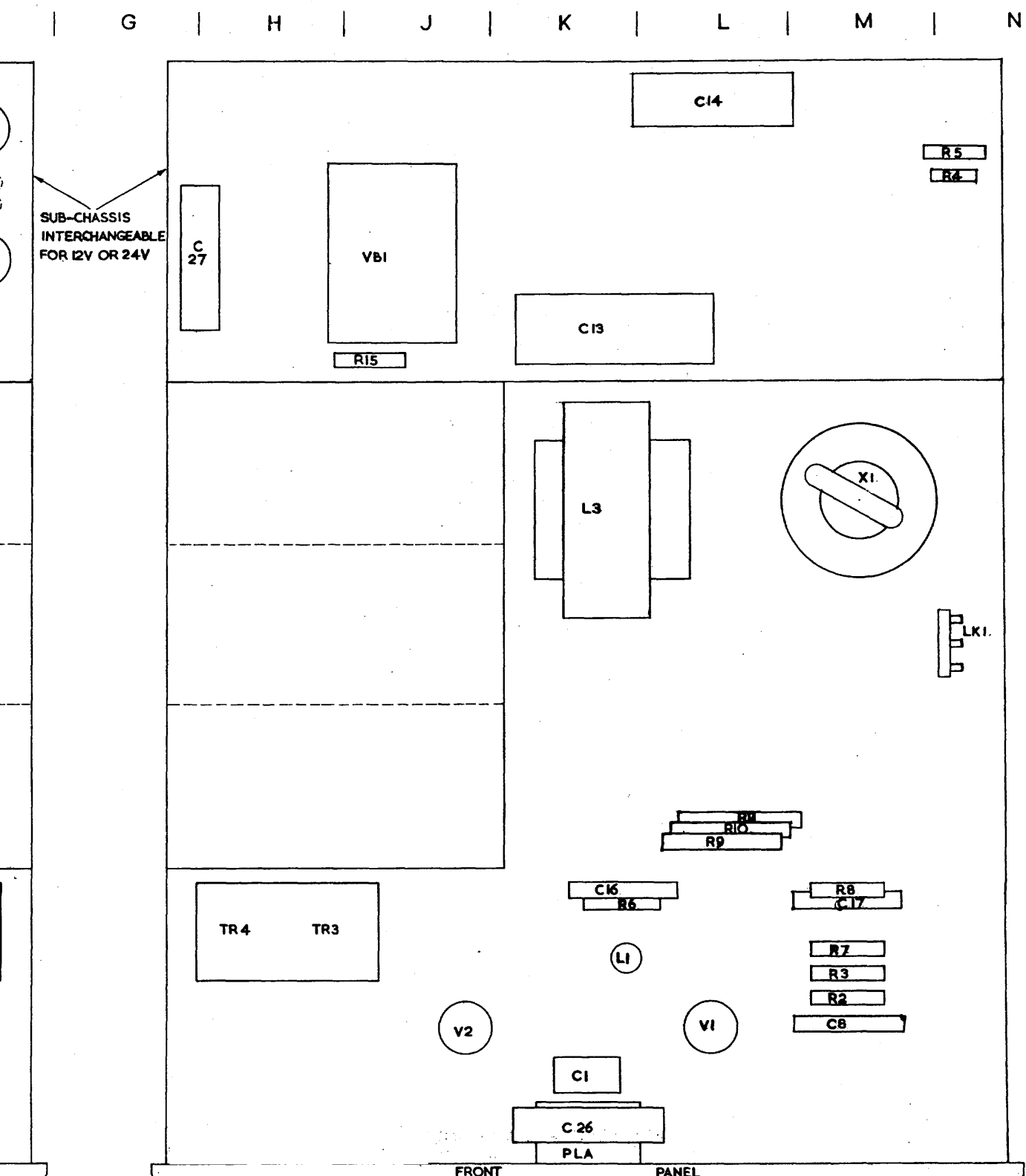
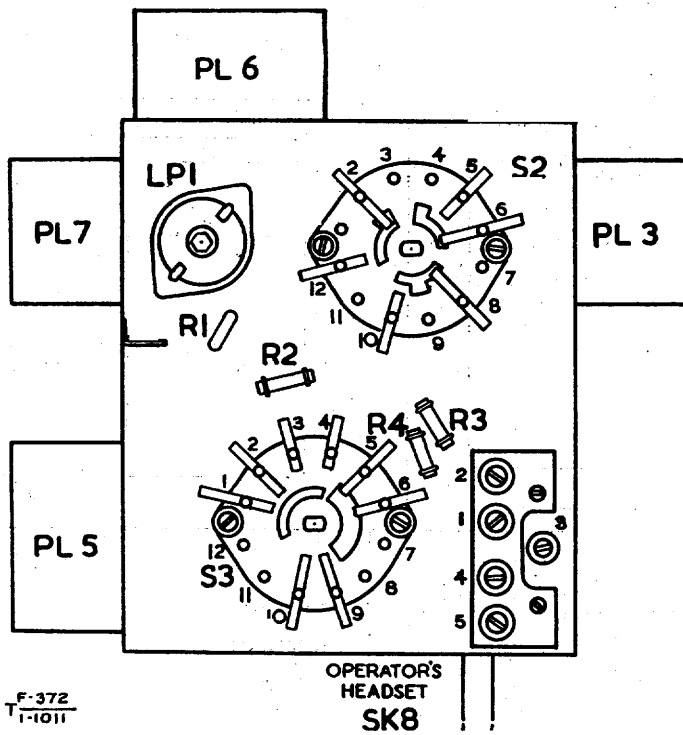


Fig 1010 - Power supply and L.F.



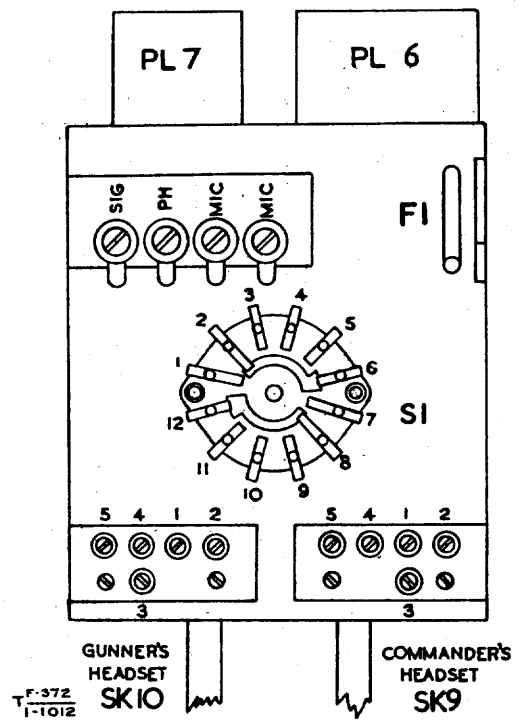
UNDERSIDE VIEW

L.F. amplifier unit No. 3 - component layout



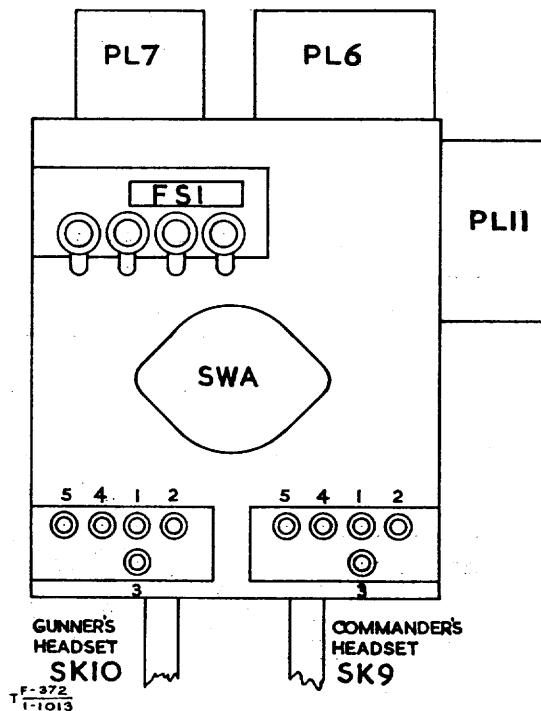
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Fig 1011 - Control unit No. 16 - component layout



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Fig 1012 - Control unit No. 17 component layout



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Fig 1013 - Control unit No. 33 - component layout.

END

