Group 3 H2S EQUIPMENT

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For routing of H2S sequential switching relay wiring (*Mod.* 1504) *see Book* 2, *Sect.* 5, *Chap.* 1, *Group* 3, *Fig.* 33.

DESCRIPTION

Introduction

1. This group is concerned with the installation of the equipment in the aircraft. Information concerning the complete system and the individual units will be found in A.P.2894K, Vol. 1. The location of the units is given in Table 1 and is shown pictorially in Group 4. The inter-connection of the units is shown on the routing diagrams together with a schedule of connections. Only the power supplies to the equipment and controls that are part of the aircraft wiring will be described.

TABLE 1

H2S Mk. 9A equipment

Unit	No. off	Type	Ref. No.	Location
Amplidyne	1	Mk. 6	5UB/5748 (pre-Mod. 2899) 5UB/7394 (post Mod. 2899)	Nose radome
Control unit	1	Type 626	10L/16060	Radio crate
Control unit	1	Type 595	10LB/6376	Radio crate
Control unit	1	Type 585	10LB/6366	Radio crate

TABLE 1—*continued*

Unit	No. off	Type	Ref. No.	Location
Control unit	1	Type 12558 (Mod. 2865)		Radio crate
Control unit	1	Type 203	10L/16154	Radio crate, behind Type 595
Control unit	1	Type 6223	10L/16430 (Mod. 2216)	Radio crate
		Type T12580	10L/16495 (post Mod. 2866)	
Waveform generator	1	Type 68	10VB/6250	Radar crate
Power unit	1	Type 729	10DB/8811	Radar crate
Calculator	1	Type 5	10D/18640	Radar crate
Indicating unit	1	Type 301	10QB/6493	Radio crate
Camera	1	Type R88	14A/4260	On indicating unit
Scanning unit	1	Type 121	10B/16327	Nose radome
Co-ordinate analyser	1		10AD/703	
Amplifier	1	Type A.3703	10D/16761	On scanning unit
Modulator	1	Type 2	10D/18638	On scanning unit
Transmitter-receiver	1	Type 3702	10D/18637	On scanning unit
Gyro unit	1	Mk. 6	6W/5	On scanning unit
Azimuth ballast unit	1	—		On scanning unit (pre-Mod. 2900); Under pilot's floor (post Mod. 2900)

Power supplies

2. A.C. power for this system is supplied by No. 1 radar inverter, Type 350, mounted in the compartment above the nosewheel bay. In case of failure of this inverter, No. 3 radar inverter can be switched to supply the faulty machine's load. The control of the inverters is described in Chap. 1. D.C. power is obtained from H.R.C. fuses on the aircraft main supply panels J and Z.

3. The four supplies required by the equipment are 115-volts, 400 c.p.s., 3-phase a.c.; 115-volts, 1600 c.p.s., single-phase a.c.; 28-volts d.c. and 112-volts d.c. All supplies are controlled by the H2S ON/OFF switch on the front of the power distribution box. Due to peaking of the Type 350 inverter when load is removed, the 1600 c.p.s. load has to be switched off in two stages with a delay between stages of not less than 80 milli-seconds. Mod. 845, fitted concurrently or prior to installing the H2S equipment, introduces an ON/OFF switch with a mechanical delay on the appropriate bank of the switch. Mod. 1504, fitted to later aircraft, replaces this switch and achieves the delay by a sequential system of relays; this Mod. is to be incorporated if a post Mod. 845 switch goes faulty. The distribution of these supplies in the equipment is detailed in A.P.2894K, Vol. 1, Part 2, Sect. 2, Chap. 2.

Pre-Mod. 1504 (*fig.* 1)

4. The ON/OFF switch (Ref. R163M-F73-TA) has six banks with a mechanical delay of 80 milli-seconds (approximately) on bank 6. With the switch at ON, banks 1 and 2 connect phases A and C of the 400 c.p.s. supply via fuses in the distribution box to the control unit Type 903 and the scanning unit Type 121; phase B is not switched but is connected to earth at the three-phase neutral bus-bar in the power distribution box. The H2S failure neon indicators are connected between phases A and C and neutral (earth) and should light up when the switch is selected ON. In the event of an excessive fall in voltage between the switch and the equipment, due to a supply or an equipment fault, the indicators will go out to indicate failure.

5. Bank 3 of the switch connects the 28-volt d.c. supply via a fuse in the distribution box to the control unit Type 903 and via another fuse to the scanning unit Type 121, the power unit Type 729, the control unit Type 595, the control unit Type 6223 (post Mod. 2216 and pre-Mod. 2866), the SCANNER ROTATE switch and to Pole B of the SCANNER STABILIZE switch. Bank 4 of the switch connects the 112-volt d.c. supply to the scanning unit Type 121 and to pole A of the SCANNER STABILIZER switch.

6. Bank 5 of the switch connects the "live" phase of 1600 c.p.s. supply to the control

unit Type T12580 (post Mod. 2866) and via fuses in the distribution box to the power unit Type 729 and the scanning unit Type 121. Bank 6 of the switch closes, 80 milli-seconds (approximately) after selecting the switch to ON, to connect the "live" phase of 1600 c.p.s. via a fuse in the distribution box to the control unit Type 595. The neutral phase of the 1600 c.p.s. supply is not switched but is connected to earth.

7. When the switch is selected OFF, all the supplies are cut, the 1600 c.p.s. load to the control unit Type 595 being removed 80 milli-seconds after the other supplies have been out.

Post Mod. 1504 (*fig.* 2)

8. The ON/OFF switch (Ref. R.157-7B) has five banks. The delay of 80 milli-seconds on switching off the 1600 c.p.s. load is achieved by a system of relays operating in sequence (Note:— These relays were erroneously connected pre-Mod. 2731 and thus did not achieve the required delay). With the switch at ON, banks 1 and 2 connect phases A and C of the 400 c.p.s. supply via fuses in the distribution box to the control unit Type 903 and the scanning unit, Type 121; phase B is not switched but is connected to earth at the three-phase neutral bus-bar in the power distribution box. The H2S failure neon indicators are connected between phases A and C and neutral (earth) and should light up when the switch is selected ON. In the event of an excessive fall in voltage between the switch and the equipment, due to a supply or an equipment fault, the indicators will go out to indicate failure.

9. Bank 3 of the switch connects the 28-volt d.c. supply via a fuse in the distribution box to the control unit Type 903 and via another fuse to the power unit Type 729, the control unit Type 595, the control unit Type 6223 (post Mod. 2216 and pre-Mod. 2866), the SCANNER ROTATE switch and to pole B of the SCANNER STABILIZE switch. The supply is also connected, unfused, to the scanning unit Type 121 and to the coil of the No. 1 sequential relay R1 (Type 8A, No. 4) via its auxiliary contact R1/1. This relay operates four contacts:—

R1/1 opens to introduce two, parallel, economy resistances into its coil line.

R1/2 closes to connect the 28-volt supply to the coil of the No. 2 sequential relay R2 (Type SM-3LV/85).

R1/3 and R1/4, in series, close to connect the 112-volt supply from panel J to the SCANNER STABILIZER switch, pole A, and via an H.R.C. fuse adjacent to the relay to the scanning unit Type 121.

10. Pre-Mod. 2731, sequential relay R2 closes its contact R2/1 to connect the 28-volt supply, via contact R1/2 of relay R1, to the coil of No. 3 sequential relay R3 (Type S2). Relay R3 closes its contact R3/1 to connect the 1600 c.p.s. supply from the output side bank 5 of the ON/OFF switch to the control unit Type 595 (*para.* 12). The negative returns are not switched but are earthed at the d.c. earth bus-bar in the distribution box.

10A. Post Mod. 2731, sequential relay R2 closes its contact R2/1 to connect the 28-volt supply from the input side of bank 3 of the ON/OFF switch to the coil of No. 3 sequential relay R3 (Type 2S). Relay R3 closes its contact R3/1 to connect the 1600 c.p.s. supply from the input side of bank 5 of the ON/OFF switch to the control unit, Type 595 (*para.* 12). The negative returns are not switched, but are earthed at the d.c. earth bus-bar in the distribution box.

11. Post Mod. 2533 bank 3 also connects the 28-volt d.c. supply through the contacts R4/1 and R4/2, in parallel, of the compass cut-out relay (introduced by Mod. 2190) to the GM4B COMPASS CUT-OUT switch on the radio crate (*para.* 18).

12. Bank 5 of the switch connects the "live" phase of the 1600 c.p.s. supply to the control unit Type T12580 (post Mod. 2866) and via fuses in the distribution box to the power unit Type 729 and the scanning unit Type 121. A fraction of a second after switch ON, the 1600 c.p.s. supply from this bank of the switch is connected by contact R3/1 of the sequential relay R3 via a fuse in the distribution box to the control unit Type 595 (paras. 9 and 10); pre-Mod. 2731 this supply is taken from the output side of the switch, post Mod. 2731 the supply is taken from the input side of the switch.

13. Pre-Mod. 2731, all the supplies are cut when the switch is selected OFF. The 28-volt d.c., the 115-volt a.c. 400 c.p.s. and the 115-volt a.c. 1600 c.p.s. supplies are broken by the switch; although the sequential relays are in circuit, they are not correctly connected and therefore do not cause the necessary delay in switching off the 1600 c.p.s. load.

14. This condition is corrected by Mod. 2731 so that when the switch is selected OFF, all the supplies are broken by the switch except for the 28-volt d.c. supply to the coil R3 of the No. 3 sequential relay and the 1600 c.p.s. supply to the control unit Type 595. When the switch is selected OFF, sequential relays R1 and R2 are de-energized. Relay R1 opens its contacts R1/3 and R1/4 in series to break the 112-volt d.c. supply, closes its contact R1/1 in its coil line to short-circuit the economy resistances and opens its contact R1/2 in the coil circuit of the sequential relay R2. Relay R2 opens its contact R2/1 to break the supply to relay R3, contact R3/1 of which then opens to break the 1600 c.p.s. supply to the control unit Type 595. In this way the the 1600 c.p.s. load is removed from the Type 350 inverter in two stages with a delay, due to the time lag between the operation of relays R2 and R3, of 80 milli-seconds (approximately) between stages.

Post Mod. 2728 (fig. 2A)

15. Mod. 2728 introduces independent

facilities for switching the scanner supplies and enables the d.c. supply to the control unit 585, ◄(and control unit, Type 12558, post Mod. 2865)► to be switched by either the H2S of the N.B.C. ON/OFF switches. In order to achieve this, alterations have been made to the pre-Mod. circuitry.

16. With the H2S switch at ON, banks 1 and 2 connect phases A and C of the 400 c.p.s. supply via fuses at the distribution box to the control unit Type 903 and the scanning unit Type 121; phase B is not switched but is connected to earth at the three-phase neutral bus-bar in the power distribution box. The H2S failure neon indicators are connected between phases A and C and neutral (earth) and should light up when the switch is selected ON. In the event of an excessive fall in voltage between the switch and the equipment, due to a supply or an equipment fault, the indicators will go out to indicate the failure.

17. Bank 3 of the switch connects a 28-volt d.c. supply via fuses in the distribution box to the control unit Type 903, to the power unit Type 729, the control unit Type 595, and to the SCANNER ROTATE switch. The supply is also connected, unfused, to the scanning unit Type 121, to the contacts R4/1 and R4/2, in parallel, of the compass cut-out relay (introduced by Mod. 2190) and to the coil R2 of the sequential relay No. 2. This relay operates R2/1 to connect the 28-volt supply from the input side of bank 3 of the switch to the coil R3 of sequential relay No. 3. Relay No. 3 closes R3/1 in turn to connect the 1600 c.p.s. supply from the input side of bank 5 of the switch to the control unit Type 595 (see para. 19).

18. Bank 4 of the switch is connected in parallel with bank 4 of the N.B.C. ON/OFF switch and connects a 28-volt supply from a ◄ fuse in the distribution box, via the N.B.C. junction box, Type 343, to the control unit, Type 585 and, post Mod. 2865, the control unit, Type 12558. ►

19. Bank 5 of the switch connects the "live" phase of the 1600 c.p.s. supply via fuses in the distribution box to the power unit Type 729, and to the scanning unit Type 121. A fraction of a second after switching ON, the 1600 c.p.s. supply from this bank of the switch is connected by contact R3/1 of the sequential relay No. 3 via a fuse in the distribution box to the control unit Type 595 (see para. 17).

20. When the switch is selected OFF all the supplies are immediately disconnected except for the d.c. supply to the coil R3 of the sequential relay No. 3 and the 1600 c.p.s. supply to the control unit Type 595. The d.c. supply to the control unit Type 585, ◄ and control unit, Type 12558 post Mod. 2865, ► will not be cut if the N.B.C. switch is still at ON. When the H2S switch is selected OFF, the sequential relay R2 is de-energized and its contact R2/1 opens to break the supply to the coil of the sequential relay R3, contact R3/1 of which then opens to break the 1600 c.p.s. supply to the control unit Type 595. In this way the 1600 c.p.s. load is removed from the Type 350 inverter in two stages with a delay, due to the time lag between the operation of relays R2 and R3 of 80 milli-seconds approximately between stages.

Scanner supply switch (Mod. 2728) (fig. 2A)

21. The special service switch (M.W.) on the front of the power distribution box is now utilized to control the scanner 112-volt supplies and has accordingly been re-labelled. The switch is supplied at 28-volts from the input side of bank 3 of the H2S switch via a fuse in the distribution box. When selected ON the switch connects its supply to the coil R1 of the sequential relay No. 1 via its auxiliary contact R1/1 and to pole B of the SCANNER STABILIZE switch (see para. 24) and to the scanning unit Type 121.

22. Relay R1 operates to connect R1/1 two parallel connected economy resistances into its coil circuit and R1/2 and R1/3, in series, to connect the 112-volt supply from panel J to the SCANNER STABILIZE switch, pole A, and via an H.R.C. fuse, adjacent to the relay, to the scanning unit Type 121.

"Scanner stabilize" switch

23. This switch has two poles, A and B, has four positions OFF/EMERG/ST.BY/ON and is mounted on the front of the power distribution box. Pole A is supplied at 112-volts d.c. when the H2S switch is selected ON (see paras. 5 and 9) or post Mod. 2728, when the SCANNER SUPPLY switch is selected ON (see para. 21-22). With the switch at EMERG., ST.BY or ON, the 112-volt d.c. supply is connected to the amplidyne motors on the scanning unit. The negative return is not switched, but is earthed at the d.c. earth bus-bar in the distribution box.

Note . . .

On some amplidynes, the earth link has been removed from the 2-pin connector (for cable 138B) and a separate LT—ve cable has been run. It is important on replacement, to ensure that where a separate LT—ve cable is fitted, the earth link is removed.

24. Pole B of the switch is supplied at 28-volts d.c. when the H2S switch is selected ON (para. 5 and 9), or post Mod. 2728, when the SCANNER SUPPLY switch is selected ON (para. 21-22). Post Mod. 2504 the OFF and EMERG. positions are linked (B1-B2). With the switch at OFF or EMERG., the 28-volt d.c. supply is connected to the amplifier on the scanning unit and energizes the gyro hold-off relay RL6801 in that unit. This relay breaks the 400 c.p.s. supply to the gyro and torque motors. With the switch at ST.BY., the 28-volt d.c. supply is connected to the 6 deg. roll-error cut-out override relay RL.6802 in the amplifier which prevents the roll error cut-out from tripping the torque motors and allows satisfactory initial erection of the gyro. With the switch at ON, the d.c. supply is completely disconnected from the equipment, thus allowing full stabilization with 6 deg. roll error correction.

25. The principle and system of scanner stabilization are described in A.P.2894K, Vol. 1, Part 2, Sect. 2, Chap. 12. Briefly, therefore, the switch operates as follows:—

(1) At OFF, the gyro and torque motor a.c. supplies and the amplidyne d.c. supplies are broken.

(2) To prepare for initial erection of the gyros, the switch is selected to EMERG. This brings the scanner platform into

TABLE 2

Removal of H2S units

Unit	Removal
Control unit, Type 626	Held by four screws to the radio crate table top. Remove the connectors from underneath the table. Remove the four screws and lift unit away.
Control unit, Type 595	Held by three screws to the face of the radio crate. Remove the connectors and the three screws and washers. Withdraw into the cabin.
Control unit, Type 585	Held by two nuts to the tray in the radio crate and by retaining wires to the crate structure. Remove the connectors. Remove the retaining wire by withdrawing the pin from the eye at the top front of the unit. Remove the two knurled nuts and withdraw the unit on to the table.
Control unit, Type 903	Held by three screws to the structure behind control unit Type 595. Remove Type 595 unit and the connectors. Remove the three screws and lift the unit away.
Waveform generator, Type 68	Held by two knurled nuts to a resiliently mounted. tray in the radar crate. Remove the connectors and the two nuts. Withdraw the unit towards the pressure bulkhead.
Power unit, Type 729	Held by two knurled nuts to a resiliently mounted tray in the radar crate. Remove the connectors and the two nuts. Withdraw the unit towards the pressure bulkhead.
Calculator, Type 5	Held by two knurled nuts to a resiliently mounted tray in the radar crate. Remove the connectors and the two nuts. Withdraw the unit towards the pressure bulkhead.
Indicating unit, Type 301	Held by two knurled nuts to the tray in the radio crate and by retaining wires to the crate structure. Remove the connectors. Swing the camera unit to one side of its hinge, after releasing the screw on the right-hand side. Remove the retaining wire by withdrawing the pin from the eye at the top front of the unit. Remove the two knurled nuts and withdraw the unit on to the table.
Control unit, Type 6223 (post 2216) or Type T12580 (Post Mod. 2866)	Held by four screws and stiffnuts to brackets on the radio crate table. Remove the electrical connectors, remove the screw and stiffnuts and lift away.
Azimuth Ballast unit (post Mod. 2900)	Held by four screws, nuts and spring washers to brackets on the starboard side of the forward crew floor member. Remove the electrical connector, remove the screws and stiffnuts then lift away. On re-assembly, the screw heads must be inserted from behind the brackets i.e. with the nuts bearing on the mounting feet of the Unit.
Control unit, Type 12558	Held by four bolts below radio crate table top. Lift the hinged cut-out in the table top and remove the four unit securing bolts. Carefully withdraw the unit onto the table, and release the cable connector.

a level position with respect to the aircraft's pitch and roll axes. The 400 c.p.s. supply to the gyro and torque motors is broken by relay RL.6801 in the amplifier but the amplidyne motor supplies are connected. The amplidynes are connected directly across the respective servo motors via the pitch and roll limit sliders, resulting in the platform brought into the level position to within $\pm \frac{1}{2}$ deg. as though it were rigidly connected to the aircraft. One minute should be allowed for this operation.

(3) To erect the gyro, the switch is selected to ST.-BY. This overrides the 6 deg. roll-error cut-out system so that the torque motors can operate even if the gyro axis is precessed more than 6 deg. off the vertical, and allows the gyro to erect. The 400 c.p.s. supply to the gyro and torque motors is connected by relays RL.6801 and RL.6802 in the amplifier and the amplidyne motor supplies are maintained. 15 minutes should be allowed for the warming up of the servos and gyro erection.

(4) For full stabilization, the switch is selected to ON. The gyro is erected and the torque motors and amplidynes are running. The 6 deg. roll-error cut-out function is allowed to operate. The roll-error cut-out operates, if the aircraft angle of bank exceeds 6 deg. either way, so that the effect of the centrifugal force on the roll mercury switch does not switch on the roll torque motor to apply unwanted torque to the gyro axis.

(5) In the event of failure of the normal stabilizer system, the switch should be re-selected to EMERG. (sub-para. 2), thus allowing the platform to be brought to the level position (as though rigidly connected to the aircraft). If this is not done, and the scanner is left completely unstabilized, scanner platform would fall over hard to port as it is mechanically unbalanced.

Scanner rotate switch

26. This is a single-pole switch with ON and OFF positions and is mounted on the front of the power distribution box. It is supplied at 28-volts d.c. when the H2S switch is ON (para. 5 and 9). When the switch is selected ON, the 28-volt d.c. supply is connected to the relay RL.7411 in to the scanner distribution unit, via a micro switch SW.7411 which is "made" provided that the azimuth lock bolt is in position (A.P.2894K, Vol. 1, Part 2, Sect. 2, Chap. 12). The relay RL.7411 switches the 112-volt d.c. supply to the azimuth drive motor.

Note . . .

Mod. 2900 *on B/K/PR. Mk.* 1 *and B/K Mk.* 1 *aircraft only, removes the Azimuth Ballast Unit from the Scanning Unit, Type* 121, *and respositions it under the pilot's floor thereby reducing the fire hazard resulting from fuel vapour entering the nose compartment of receiver aircraft immediately following in-flight refuelling.*

GM.4B compass cut-out (Mod. 2190)

27. Mod. 2190 introduces facilities for switching to directional gyro, in lieu of magnetic monitoring, to reduce errors in the GM.4B compass during turns when using the N.B.S. system. The magnetic monitoring can be cut manually by using the D.G. switch on the compass control panel, or automatically from the H2S system. A switch is provided on the radio crate to isolate or select this automatic facility as required.

28. Automatic cut-out is achieved by connecting the cut-out system to the 6 deg. roll error cut-out on the scanner platform. The connection is made at the ST.BY. terminal B.3 of the SCANNER STABILIZE switch. When the aircraft angle of bank exceeds 6 deg. either way, the supply to the coil of the cut-out relay R4 (Ref. No. Z.530453 and mounted in the power distribution box) is broken by the 6 deg. contacts in the roll limit box on the scanner platform. Contacts R4/1 and R4/2, connected in parallel, close to connect a 28-volt supply from the H2S switch at ON to the manually-operated compass cut-out switch on the radio crate. If this switch is at D.G. automatic cut-out is selected, the 28-volt supply is connected to a relay in the G4B compass amplifier; this relay breaks the magnetic monitoring circuit and puts the compass on directional gyro. If the switch is at G4B, automatic cut-out is isolated, the compass will be continuously on magnetic monitoring irrespective of the angle of bank of the aircraft.

Note . . .

(1) *During erection of the scanner gyro, with the* SCANNER STABILIZE *switch at* ST.BY. *the* 6 *deg. roll limit cut-out will be overriden and cut-out relay R*4. *The compass will remain energized irrespective of the position of the angle of bank of the aircraft or the position of the scanner platform in roll.*

(2) *On introduction of Mod.* 2190 *the* 28*-volt supply to the contacts R*4/1 *and R*4/2 *of the compass cut-out relay was erroneously obtained from the N.B.C. switch. This error was corrected by Mod.* 2593 *which obtains the supply from the H2S switch. All aircraft fitted with Mod.* 2190 *should also have Mod.* 2533 *incorporated.*

Removal of units

29. The method of removing all the units, except the scanning unit complete and the units mounted on the scanning unit, is given in Table 2. Reference should also be made to the illustrations in Group 4. A lifting rail is fitted to the aircraft from station 350 to station 370. This rail is fitted with a ring and eye for supporting a hoist. This is used with sling (Ref. No. 26SR/95380) for lowering the units from the bay above the nosewheel to the ground.

Removal of scanning unit

30. Remove the scanner unit as follows:—

(1) With trestles on each side, obtain access through the hatch on the starboard side of the scanner bonnet.

(2) Disconnect the cooling intake duct, the air line from the pressurizing bottle and the electrical connectors at the scanning unit.

(3) On B/K Mk. 1 and B/K/PR Mk. 1 aircraft, withdraw the refuelling system vent pipes from the port and starboard (forward) louvres. Drain the probe piping, disconnect the refuelling pipe brackets and remove the refuelling piping (Book 1, Sect. 4, Chap. 2).

(4) Disconnect the servicing lamp and switch wiring at the connector block on the diaphragm (starboard side, aft).

(5) Attach the sling, scanner bonnet (Ref. No. 26SR/95128) to the bonnet.

(6) Release the shear pins and fasteners of bonnet to structure with tool (Ref. No. 26SR/95243). Using the screwdriver end of the tool rotate the shear pin about ½-turn either way when the shear pin will spring out exposing its mushroom head. Wind the tool handle until the extractor end is clear of the shroud. Place the extractor end over the shear pin head and wind the tool handle until the shear pin is out of engagement.

(7) With an operator on each side of the bonnet, lift by means of the hand holds provided and move forward approximately 8 inches.

(8) Remove davit eyebolt from its stowage on the davit and screw hard home into the bulkhead (starboard side). Turn back to align with the hole in the diaphragm.

(9) Engage the davit (Ref. No. 26SR/95127) with the eyebolt and drop the ball foot into the hole in the diaphragm. Attach the hoist ◄ (Ref. No. 4GC/5703) ► to the outer-most eye fitting of the davit.

(10) With the operator on the starboard trestle, attach the hoist lug to the bonnet sling and raise until the bonnet is clear of the structure.

(11) Rotate the davit until the bonnet is clear of the aircraft, and lower it to the ground. Carry the bonnet clear.

(12) Place the scanner servicing ladder in the radome (para. 35).

(13) Remove the starboard trestle and wheel the scanner unit maintenance rig into position. The side nearest the aircraft is to be not more than 18 inches away and not less than 12 inches away.

(14) Remove the three portions of the cooling system ducting which are suitably marked and lash the electric cables out of the way.

(15) Attach the scanner sling (Ref. No. 4GC/6207) to the scanner chassis with the four "pip" pins provided and fit the hoist to the innermost eye fitting of the davit.

Attach the hoist to the sling, and take the strain on the hoist.

(16) Remove the 'pip' pins from the feet of the mounting spider.

(17) Raise the unit until the bottom of the aerial is clear of the diaphragm, care being taken not to damage the aerial while lifting.

(18) Rotate the davit, swinging the scanner unit clear of the aircraft with the forward feet of the spider outermost.

(19) Dismantle the sides of the scanner maintenance rig.

(20) Lower the scanning unit sufficiently to allow the side of the maintenance rig nearest the aircraft to engage the support, re-assemble and "stay" into position.

(21) Bolt the side of the maintenance rig temporarily into position.

(22) Re-assemble the side of the maintenance rig furthest away from the aircraft, carefully threading the forward feet of the spider through the cross tubes. "Stay" into position.

(23) Lower the scanning unit on to the support brackets and lock the four retaining bolts.

(24) Remove the slinging equipment from the scanning unit chassis. The unit can now be wheeled away.

To re-assemble the scanning unit into the aircraft, the above procedure should be reversed.

SERVICING

Introduction

31. Detailed servicing instructions for the equipment are given in the relevant publications. On the aircraft, the security of all units in their mountings and adequate freedom of movement of the anti-vibration mountings should be checked. All flexible bonding leads should be in good condition mechanically and electrically. All connectors should be checked periodically for continuity (pin-to-pin), for short circuits between pins for soundness of insulation.

Scanning unit servicing ladder

32. A maintenance ladder (Ref. No. 26 SR/95201) is designed to assist servicing of the scanning unit in situ. The latter is curved to suit the inside of the radome and is fitted in two ways, according to whether the scanner bonnet is on or off the aircraft.

33. When the scanner bonnet is on, the ladder is pushed through the access hatch with its curved bracket pinned at its inner position. The top of the ladder is pinned to the brackets below the access hatch with the 'pip' pins provided. It is important that the support hooks behind the lifting handle are in engagement with the nose structure diaphragm.

34. When the scanner bonnet is off, the ladder is placed in the radome with its curved bracket pinned at its outer position. The ladder rests on the support hooks behind the lifting handles and the curved bracket.

Power supplies

35. The a.c. and d.c. power supplies at the power distribution box can be checked from the four test sockets on the voltage trimmer panel on the port wall of the cabin. The testing of these supplies is described in Chapter 1. In addition, post Mod. 994, there is a test socket for the 1600 c.p.s. output from Type 350 inverter No. 1 in the nose radome compartment (starboard side, aft).

36. With the Type 350 radar inverters running, select the H2S switch to ON and check that the two H2S supply neon indicators light. Select the inverter emergency switch to NO. 1 FAIL and check that the neon indicators remain alight. Switch off the H2S switch, the inverters and d.c. supplies.

37. Check the fuses in the distribution box (*Chapter* 1, *Table* 2) and the main feeder fuses as follows:—

Panel J	*Panel Z*
H2S supply	W/T No. 1

Note . . .

The main feeder fuses on panel Z also feed other aircraft services.

DN. 4540/625/4.61/B. & S. Ltd./1437

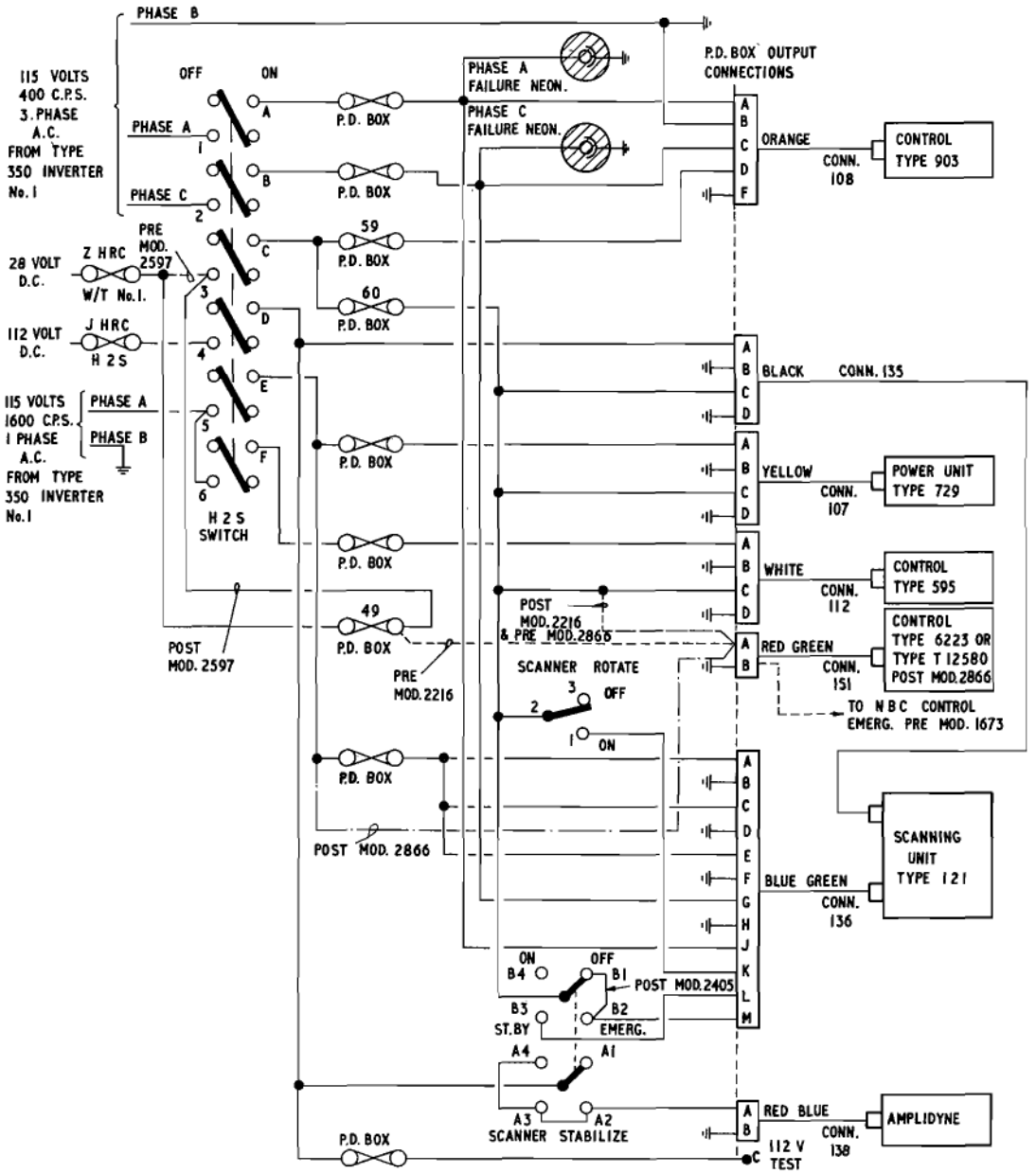

Fig. 1 H 2 S power supplies (pre Mod. 1504)

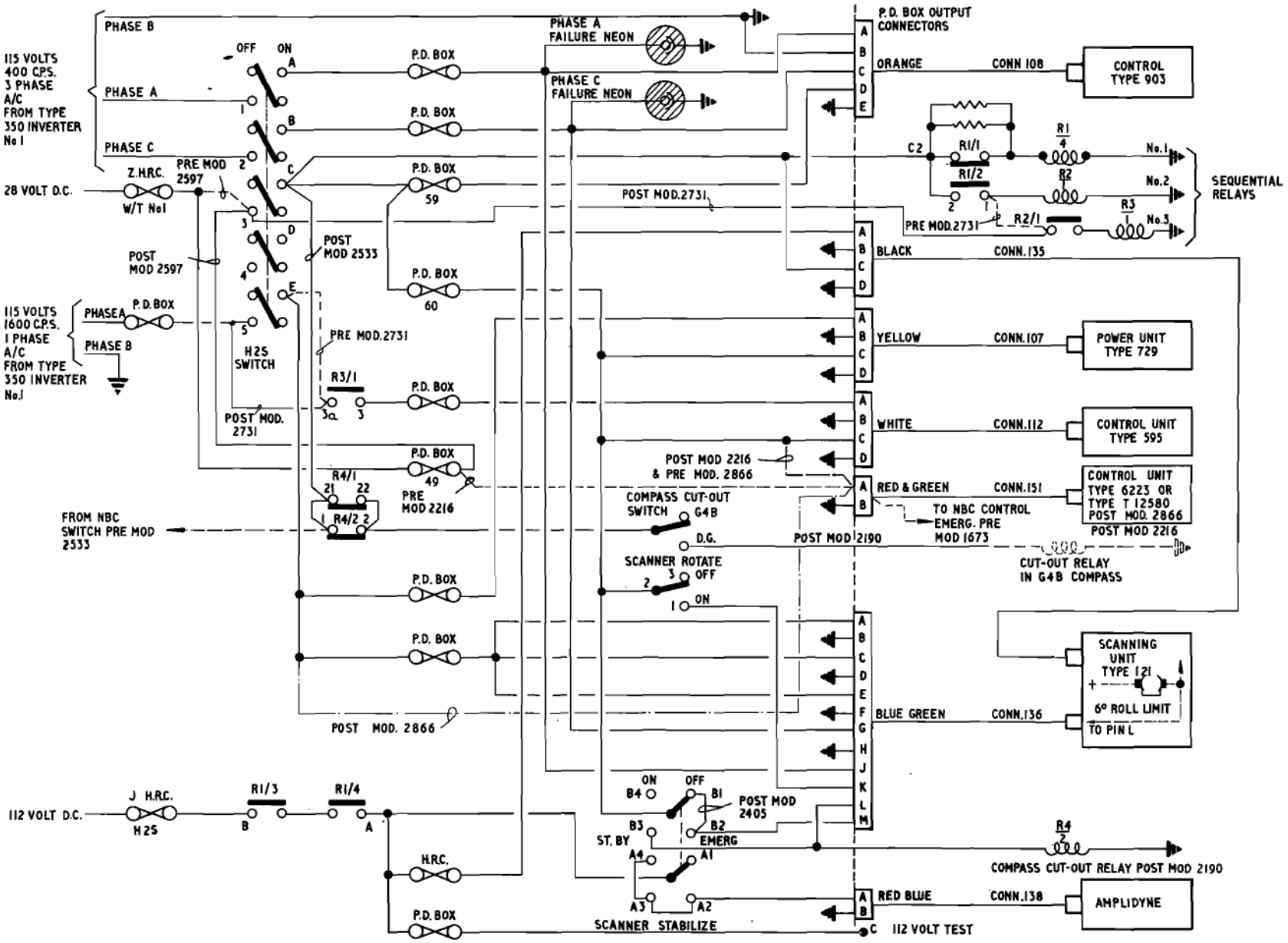

Fig. 2. H2S power supplies (post Mod 1504, pre Mod 2728)

924/8/4541/54130/625/2/61 J. T. & S.

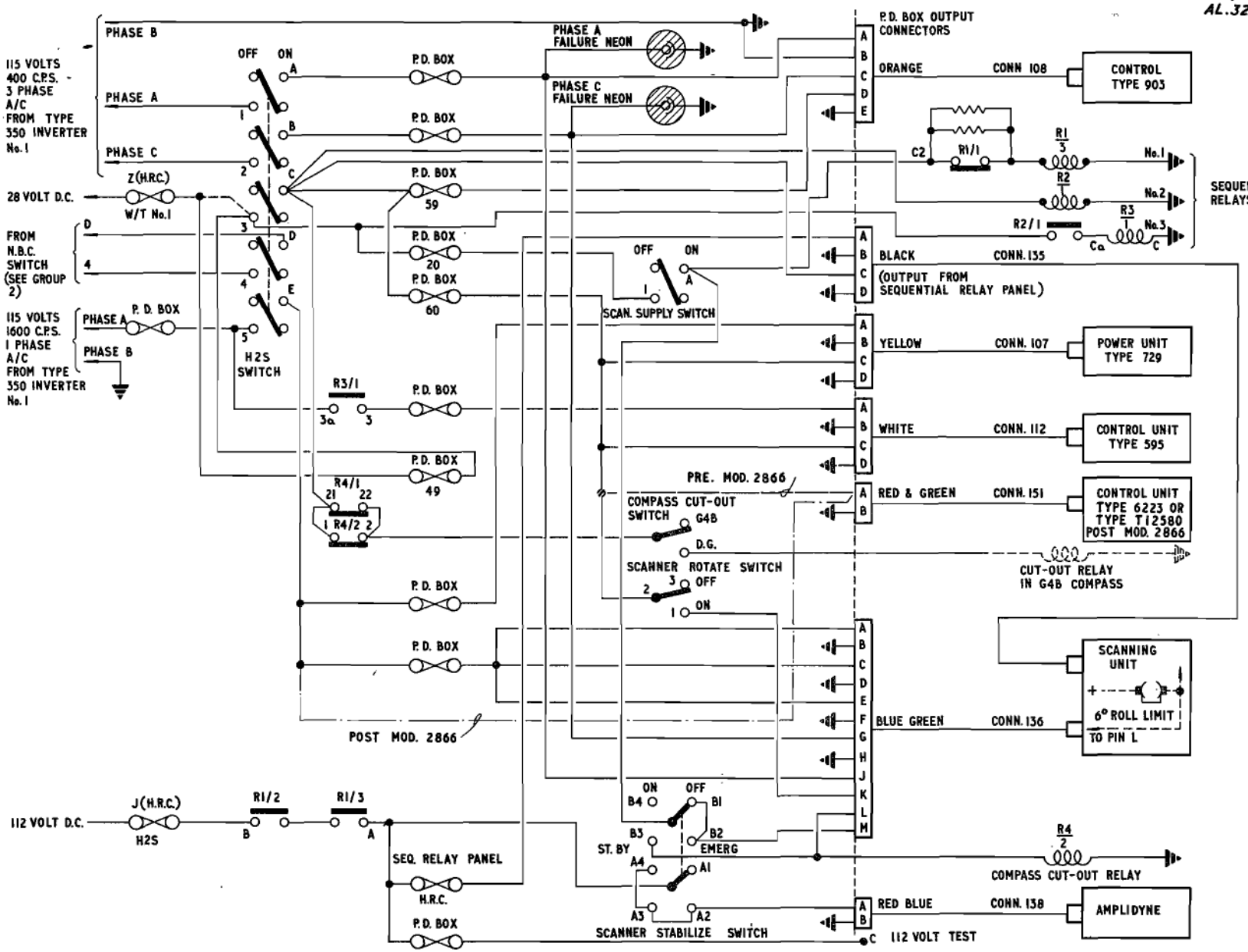

Fig. 2A. H2S power supplies (up to and including Mod. 2728)

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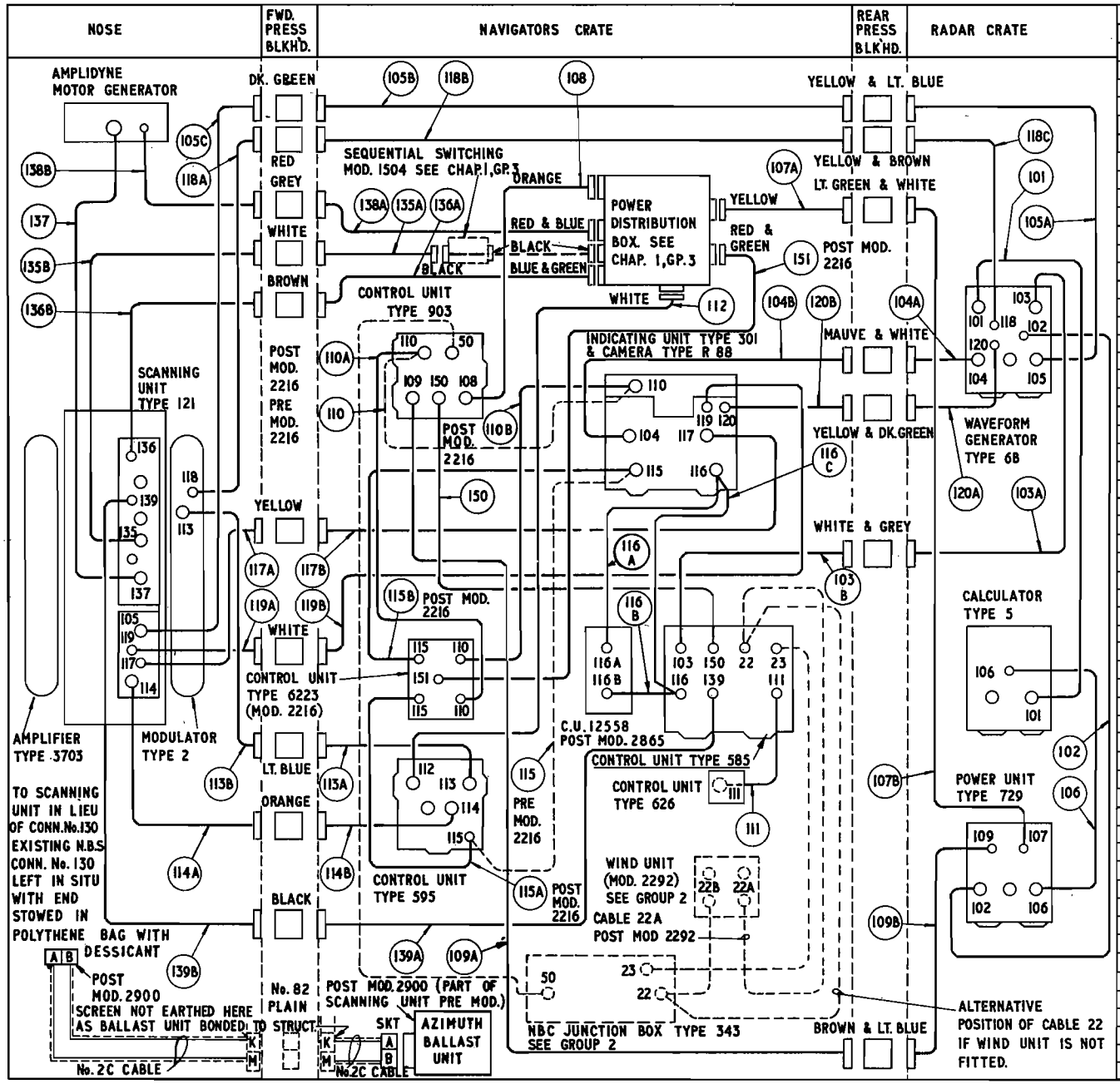
PP9012 172525/7934 4/62 631 C & P Gp 924 (4)



CONNECTORS			
ITEM No.	A.M. REF.	REMARKS	No.OFF
101	10HA/17864		1
102	10HA/12883		1
103A	10HA/12884		1
103B	10HA/12904		1
104A	10HA/17865		1
104B	10HA/12905		1
105A	10HA/12885		1
105B	10HA/12906		1
105C	10HA/12907		1
106	10HA/12886		1
107A	10HA/12887		1
107B	10HA/12908		1
108	10HA/12888		1
109A	10HA/12890		1
109B	10HA/12909		1
110	10HA/12891	PRE MOD. 2216	1
111	10HA/12892		1
112	10HA/12893		1
113A	10HA/12894		1
113B	10HA/12910		1
114A	10HA/12895		1
114B	10HA/12911		1
116C	70653 SHT.289	PRE MOD. 2865	1
117A	10HA/12897		1
117B	10HA/12912		1
135A	10HA/1289		1
135B	10HA/12913		1
136A	10HA/12899		1
136B	10HA/12915Z	PRE MOD. 1959	1
136B	10HA/12914	POST MOD. 1959	1
137	10HA/12900		1
138A	10HA/12901		1
138B	10HA/12915		1
139A	10HA/12902		1
139B	10HA/12916		1
115	10HA/12903	PRE MOD 2216	1
118A	10HA/12917	PRE MOD 1959	1
118A	10HA/16690	POST MOD 1959	1
118B	10HA/12918		1
118C	10HA/12919		1
119A	10HA/12920		1
119B	10HA/12921		1
120A	10HA/12922		1
120B	10HA/12923		1
150	10HA/12865		1
110A	10HB/1215	TYPE B12/20/A/T806	1
110B	10HB/1216	TYPE B12/20/D/T807	1
115A	10HB/1217	TYPE D270/10/A/T808	1
115B	10HB/1218	TYPE D270/20/A/T809	1
151	10HB/1219	TYPE B22/20/A/T810	1
		POST MOD 2216	
116A	70653 SHT.287	POST MOD. 2865	1
116B	70653 SHT.288	" " "	1

Fig. 3 H2S Mk 9A installation (pre Mod. 2866)

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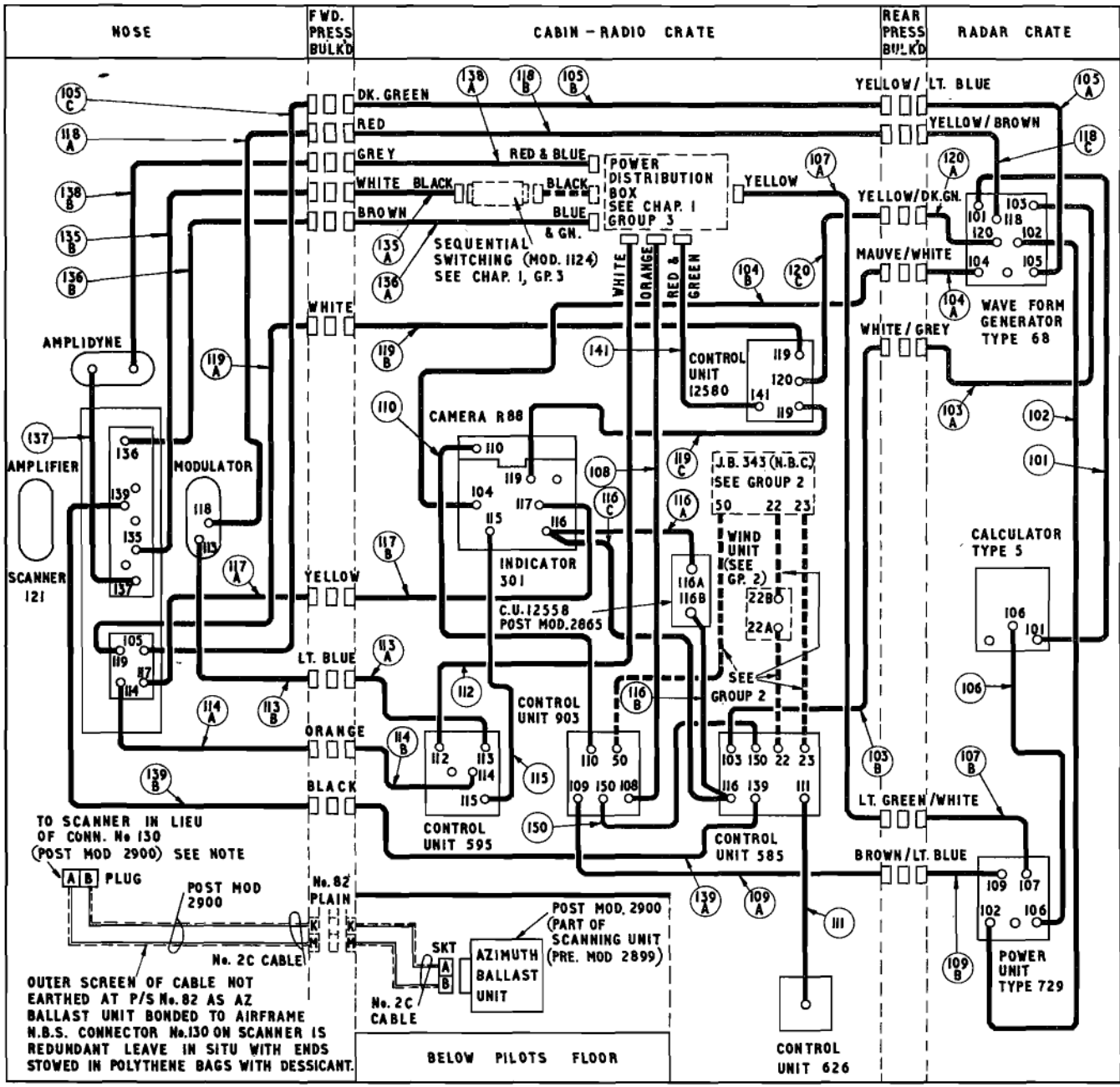
70692 SHT 463/53 A
67453 SHT. 71-S



CONNECTORS			
ITEM No.	A.M. REF.	REMARKS	No. OFF
101	10HA-17864	B47/20/C/T500	1
102	10HA-12883	B16/20C/17	1
103A	10HA-12884	B27/20C/25	1
103B	10HA-12904	B27/20C/27	1
104A	10HA-17865	B166/10/C/T501	1
104B	10HA-12905	B18/30B/42	1
105A	10HA-12885	B27/20C/26	1
105B	10HA-12906	B27/20D/5	1
105C	10HA-12907	B27/20A/8	1
106	10HA-12886	B12/20C/9	1
107A	10HA-12887	B20/20B/3	1
107B	10HA-12908	B20/20C/2	1
108	10HA-12888	B8/20A/27	1
109A	10HA-12890	B8/20B/15	1
109B	10HA-12909	B8/20C/11	1
111	10HA-12892	B12/20D/16	1
112	10HA-12893	B20/20B/4	1
113A	10HA-12894	B20/20D/2	1
113B	10HA-12910	B20/20B/5	1
114A	10HA-12895	B27/20A/7	1
114B	10HA-12911	B27/20B/5	1
116C	70653 SH.289	PRE MOD. 2865	1
117A	10HA-12897	B20/20A/8	1
117B	10HA-12912	B20/20A/10	1
118A	10HA-16690	10259/3	1
118B	10HA-12918	3354/28	1
118C	10HA-12919	10238/1	1
119A	10HA-12920	3775/3	1
120A	10HA-12922	10239/1	1
135A	10HA-12898	B20/20A/9	1
135B	10HA-12913	B20/20A/11	1
136A	10HA-12899	B12/20A/33	1
136B	10HA-12914	B12/20A/34	1
137	10HA-12900	B12/20B/5	1
138A	10HA-12901	B2/20A/6	1
138B	10HA-12915	B2/20A/7	1
139A	10HA-12902	B8/20D/8	1
139B	10HA-12916	B8/20A/28	1
150	10HA-12865	B12/20B/3	1
110	10HB-8415		1
115	10HB-8416		1
119B	10HB-8417		1
119C	10HB-8418		1
120	10HB-8419		1
141	10HB-8420		1
116A	70653 SH.287	POST MOD. 2865	1
116B	70653 SH.288	" " "	1

Fig. 4 H2S Mk. 9A installation (post Mod. 2866)

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