

AUTOFLIGHT STATUS ANNUNCIATOR
PART NO. D434-56-001

COMPONENT
MAINTENANCE MANUAL
with
ILLUSTRATED PARTS LIST
Pub. Ref. CMM 434-56

This manual complies with British Civil Airworthiness Requirements, Section A, Chapter A6-2. The technical accuracy of this manual has been verified and is certified as correct.

Signed : 

Date : April 30th 1986

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NOTE : The above certification does not apply to revisions or amendments made after the date of initial certification by other Approved Organisations. Revisions or amendments made by other Approved Organisations must each be separately certified and recorded on separate record sheets.

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COMPONENT MAINTENANCE MANUAL PART NO. D434-56-001

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INTRODUCTION

The instructions in the manual provide the information necessary to perform maintenance functions ranging from simple checks and replacements to complete shop type repairs.

This manual contains procedures which are designed to facilitate the identification and rectification of component defects with the minimum disturbance of serviceable parts.

Unless all details of a fault are known, carry out the full procedure given in TESTING AND FAULT ISOLATION to determine the extent of any unserviceability, before effecting a repair.

To assist in the identification and location of parts, the item number (in brackets) which immediately follows each part named refers directly to the item number shown in the appropriate figure included with the Illustrated Parts List (IPL).

Tools, fixtures and equipment required are listed in SPECIAL TOOLS, FIXTURES AND EQUIPMENT and separately referred to under the work heading in which they are needed for a particular task.

Dual quantities are shown in the manual and, unless otherwise stated are given in Imperial units followed (in brackets) by Systeme International (SI) units. In each instance, the decimal point is indicated by the full stop e.g. 1.0 in (25.4 mm).

The manual will be revised as necessary to reflect current information

Verification:

Testing and Fault Isolation)	
Disassembly)	Verified by Shop Procedures
Assembly)	

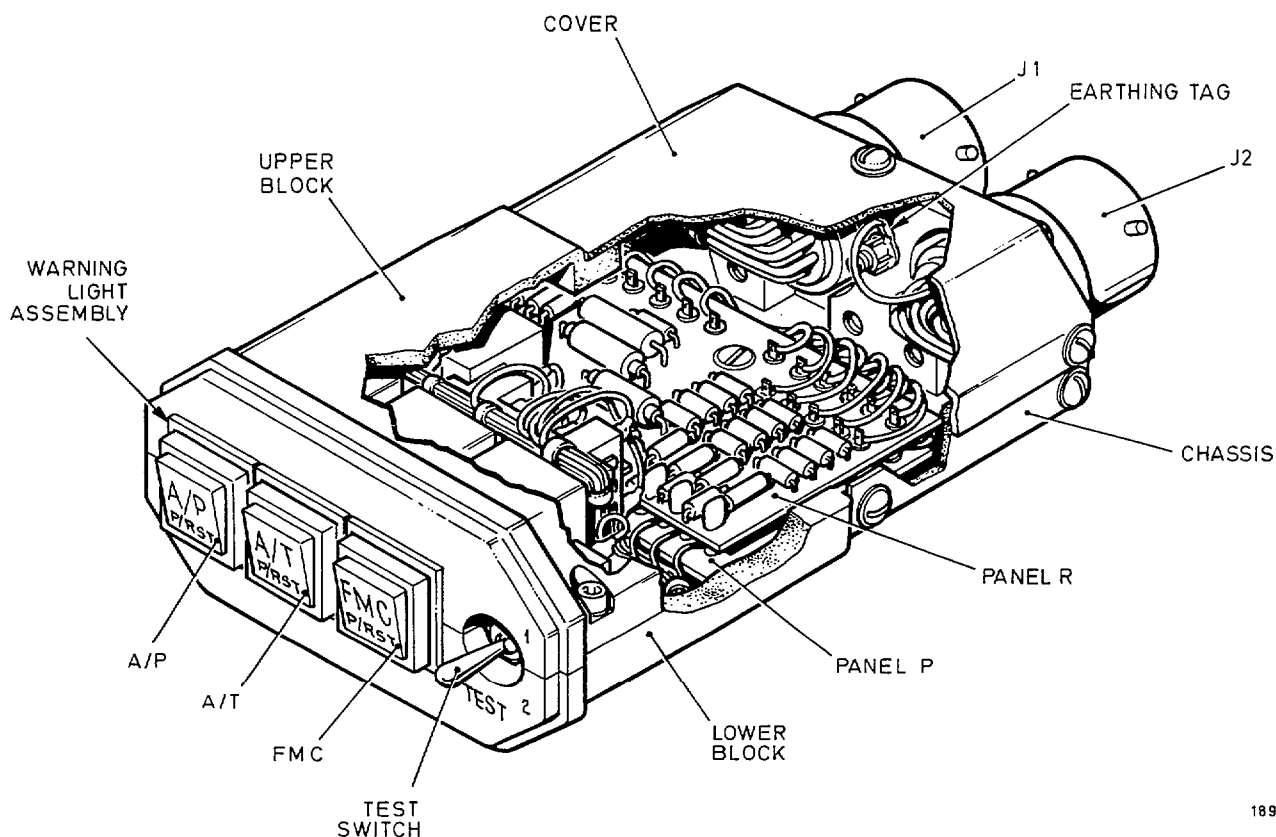
DESCRIPTION AND OPERATION

1. Description

A. General (Fig.1)

The Autoflight Status Annunciator unit, D434-56-001, is used to present visual warnings on receipt of electrical signals. The unit comprises essentially, three warning light annunciators (WLA), incorporating pushbutton switches, a three position self-test toggle switch and two printed circuit boards. When energised, the WLAs display the following coloured legends:

A/P	P/RST	Red or Amber
A/T	P/RST	Red or Amber
FMC	P/RST	Amber



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Autoflight Status Annunciator
Figure 1

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The three WLAs and test switch are mounted at the front of the unit between two plastic mouldings (blocks) which form the front part of the unit case. The boards and internal wiring are enclosed by a fabricated aluminium alloy cover and chassis. An aluminium alloy rear panel carries two receptacles for electrical interface and a stud, on the inner face of the panel, provides a chassis ground bonding connection.

B. Warning Light Annunciators

Each WLA contains four 28V, 0.04A filament lamps (LP1 - LP4) and a single pole, single way switch actuated by pressing the WLA facia (cap). In each WLA, two lamps (LP2 and LP3) are located behind an amber filter and two (LP1 and LP4) behind a red filter. Lamps LP1 and LP4 in the FMC WLA are not connected.

2. Operation (Fig. 2)

A. Test Switch

A d.c. ground signal is fed, via pin 3 on receptacle J1, through a blocking diode to the test switch. The switch is spring loaded to its central (open) position.

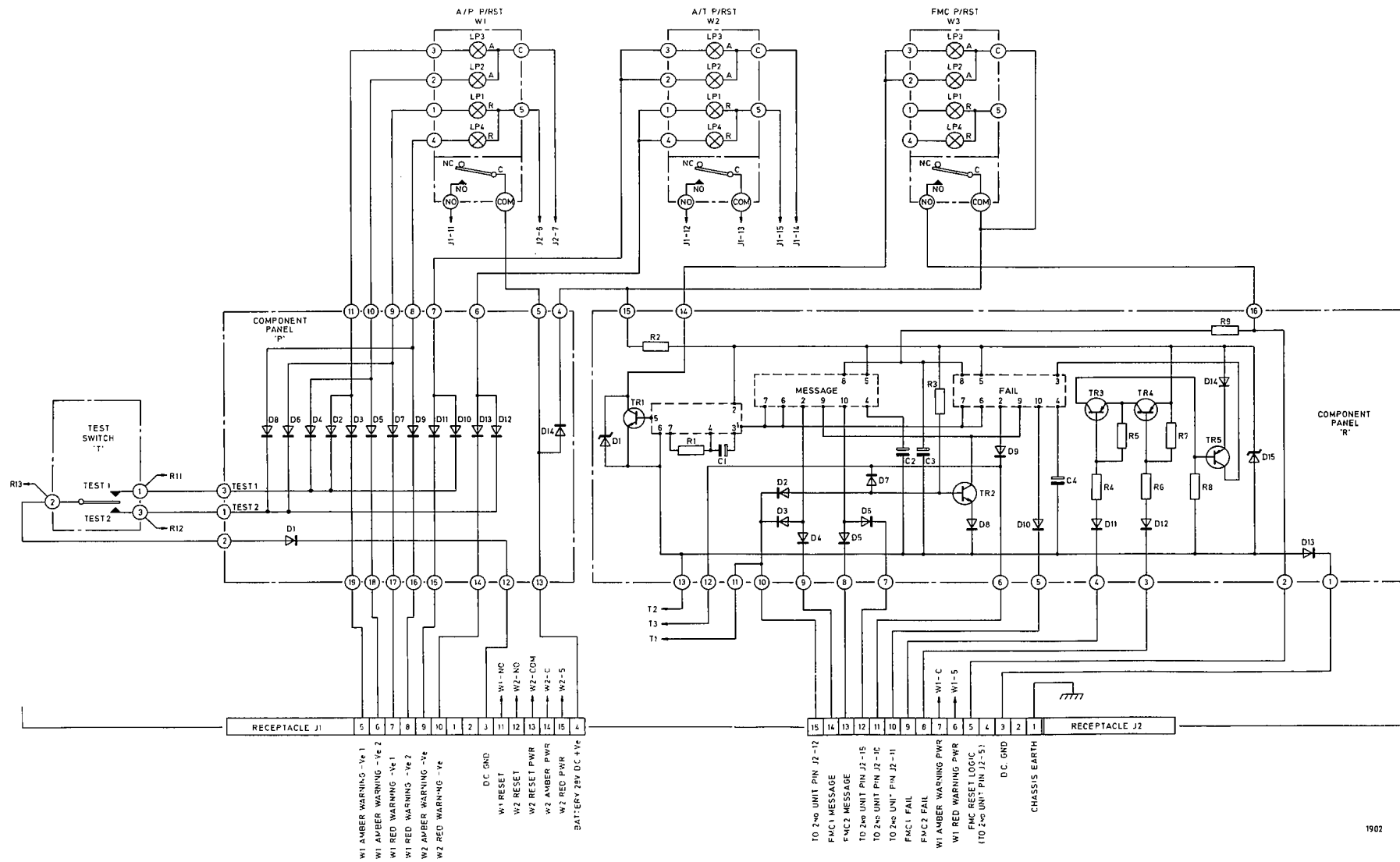
With the unit connected normally, and all power supplies switched ON, pressing the test switch UP to position 1 will energise lamps LP2 and LP3 (amber) in the three WLAs (FMA WLA via the 'Message' control circuit). Pressing the switch DOWN to position 2 will energise lamps LP1 and LP4 (red) in the A/P and A/T WLA and, via the 'Fail' control circuit, lamps LP2 and LP3 (amber) in the FMC WLA.

B. Warning Light Annunciators

On the A/P WLA (W1) the four lamps are separately connected and may be separately energised. On the A/T WLA (W2) the red and amber illuminating lamps are energised and switched in pairs so that, for each colour, both lamps are lit together. Similarly on the FMC WLA (W3) the amber lamps only are energised together.

Separate blocking diodes are provided in each lamp circuit for A/P (W1) and A/T (W2) WLA.

On each WLA, pressing the facia actuates the integral single-pole, single-way switch. On the A/P and A/T WLAs the switch is connected to the external Autopilot and Autothrottle circuits to provide a 28V d.c. output for external reset purposes.



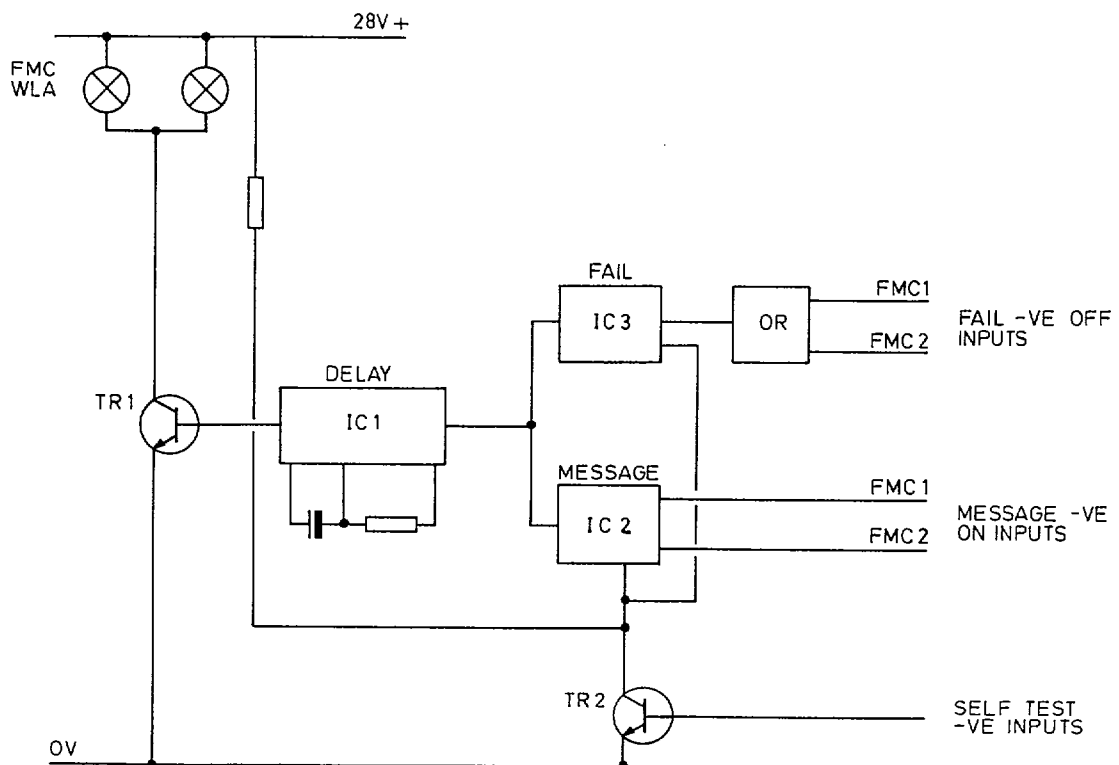
COMPONENT MAINTENANCE MANUAL PART NO. D434-56-001

The FMC WLA amber lights are operated via circuitry on panel 'R'. The lamps illuminate 300ms (nominal) after the following:

- when a ground signal is applied to input pins J2/13 (MESSAGE 2) or J2/14 (MESSAGE 1)
- when the ground signal is removed from pins J2/8 (FAIL 2) OR J2/9 (FAIL 1).

Momentary pressure on the WLA cap supplies a reset signal to either the FAIL or MESSAGE logic circuitry on panel 'R' and the lamps extinguish. Cancelling a FAIL signal enables the unit to receive a MESSAGE signal; conversely, cancellation of a MESSAGE signal enables the unit to receive a FAIL signal.

To ensure full testing of all FMC FAIL and MESSAGE I/P modules, the Pilots and 2nd Pilots Autoflight Status Annunciators are interconnected, when installed on the aircraft, via pins J2/10, J2/11, J2/12 and J2/15.



1901

FMC WLA Control-Block Schematic Diagram
Figure 3

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C. Circuit Function (Panel 'R')

The FMC WLA control circuits, mounted on panel 'R', operate in response to negative inputs initiated remotely (in FMC1 and FMC2) or by the unit self-test switch. Refer to circuit diagram Fig. 2 and block schematic diagram Fig. 3.

The FAIL and MESSAGE ICs include latch circuits which ensure that, once activated by negative signals, no further change can occur, i.e. the control circuit will not revert to the original state of readiness to accept signals, until reset by means of the push-button switch incorporated in the FMC WLA. If the unit is in a cancelled state when the TEST switch is operated, the latch will release in both channels.

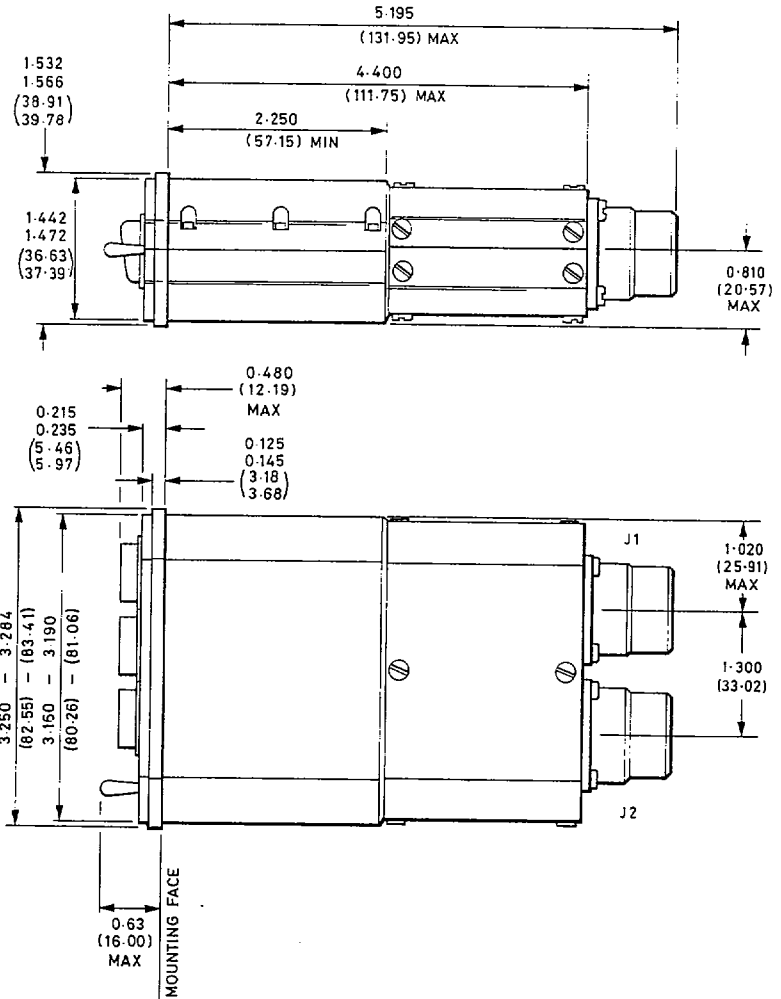
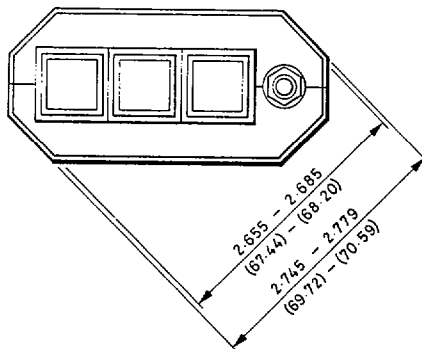
A delay is embodied in the control circuit to minimise the effects of transient supply voltage disturbances. The DELAY IC includes a 'quick-action' switch used to ensure instantaneous operation of the ON/OFF transistor switch (TR1) once the delay period is completed.

3. Data

Unit details:

Name	Autoflight Status Annunciator
Part No.	D434-56-001
Dimensions:	See Fig. 4
Mass	1.13 lb (0.51Kg)
Power Supply:	28V d.c.
Lamps:	28V d.c. 0.04A MS25237-387 (T 1 3/4)
Receptacles:	
J1	MS24264R14B15PX
J2	MS24264R14B15P6X
Case:	
Construction/size	ARINC 408A, 1.5 X 3, ATI - R
Finish	
Front blocks	- Flat grey to BAC 703
Cover, chassis and rear panel	- Flat black to BAC 706

NOTE: DIMENSIONS IN
INCHES (MILLIMETERS)



1903

Unit Dimensions
Figure 4

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TESTING AND FAULT ISOLATION

1. General

All the following tests must be carried out, in the order given, after any maintenance or repair to the unit, or whenever it is necessary to establish serviceability.

The test results, together with the associated fault isolation information, should indicate the extent of any unserviceability and the repair procedure required.

Results of all tests should be recorded and retained.

2. Test Equipment

Items 11 to 15 listed in Table 901 will be required.

NOTE: Equivalent substitutes may be used for listed items.

Connections for all tests, except Bonding (para. 4.A below), may conveniently be made using Test Set A301-237-001, with Interconnecting Cable Loom C301-237-020, in accordance with manual OMM301/237. If the purpose-built test set is not available, connect the unit as shown in the appropriate diagram (Fig. 102 and 103).

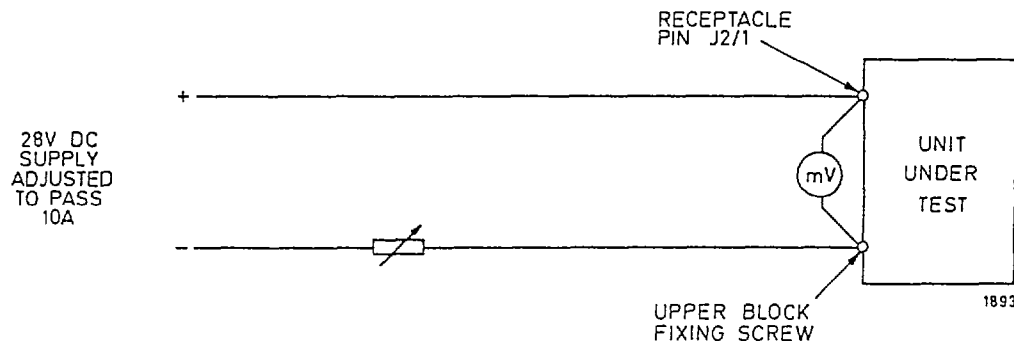
3. Electrical Supplies

Nominal 28V d.c., 10A supply, adjustable from 22.5V to 30V.

4. Test Procedure

A. Bonding

- (1) Connect the unit as shown in Fig. 101.
- (2) Adjust the supply to pass a 10A current through the test circuit and then note the millivoltmeter indication. The voltage drop must be less than 50mV.
- (3) Disconnect the test circuit



Bonding Test Connections
Figure 101

B. Insulation Resistance

- (1) Connect together all pins on receptacles J1 and J2, except pin 1 on J2.
- (2) Using a 200V d.c. insulation tester, measure between the commoned pins and J2/1. Check, over a period of at least five seconds, that the measured value is greater than 5 megohms.
- (3) Disconnect the tester and the receptacle pins.

C. Self Test

CAUTION: INCORRECT SUPPLY POLARITY MAY DAMAGE THE UNIT.

- (1) Connect the unit as shown in Fig. 102. Ensure that switches S1 to S14 are set as shown.
- (2) Adjust the supply voltage to 22.5V.
- (3) Check that none of the warning lamp annunciator (WLA) lamps are lit.
- (4) Press the unit TEST switch to position 1. Check that all three WLA are illuminated AMBER.

NOTE: A slight delay will occur before the FMC WLA illuminates.

- (5) Release the TEST switch and check that all three WLA are extinguished.
- (6) Press the TEST switch to position 2 and check that the A/P and A/T WLA illuminate RED and that the FMC WLA illuminates AMBER; the slight delay will again occur.
- (7) Release the TEST switch and check that all three WLA are extinguished.
- (8) Adjust the supply to 30V and then repeat paras. (4), (5), (6) and (7) above.

D. Inputs

CAUTION: INCORRECT SUPPLY POLARITY MAY DAMAGE THE UNIT.

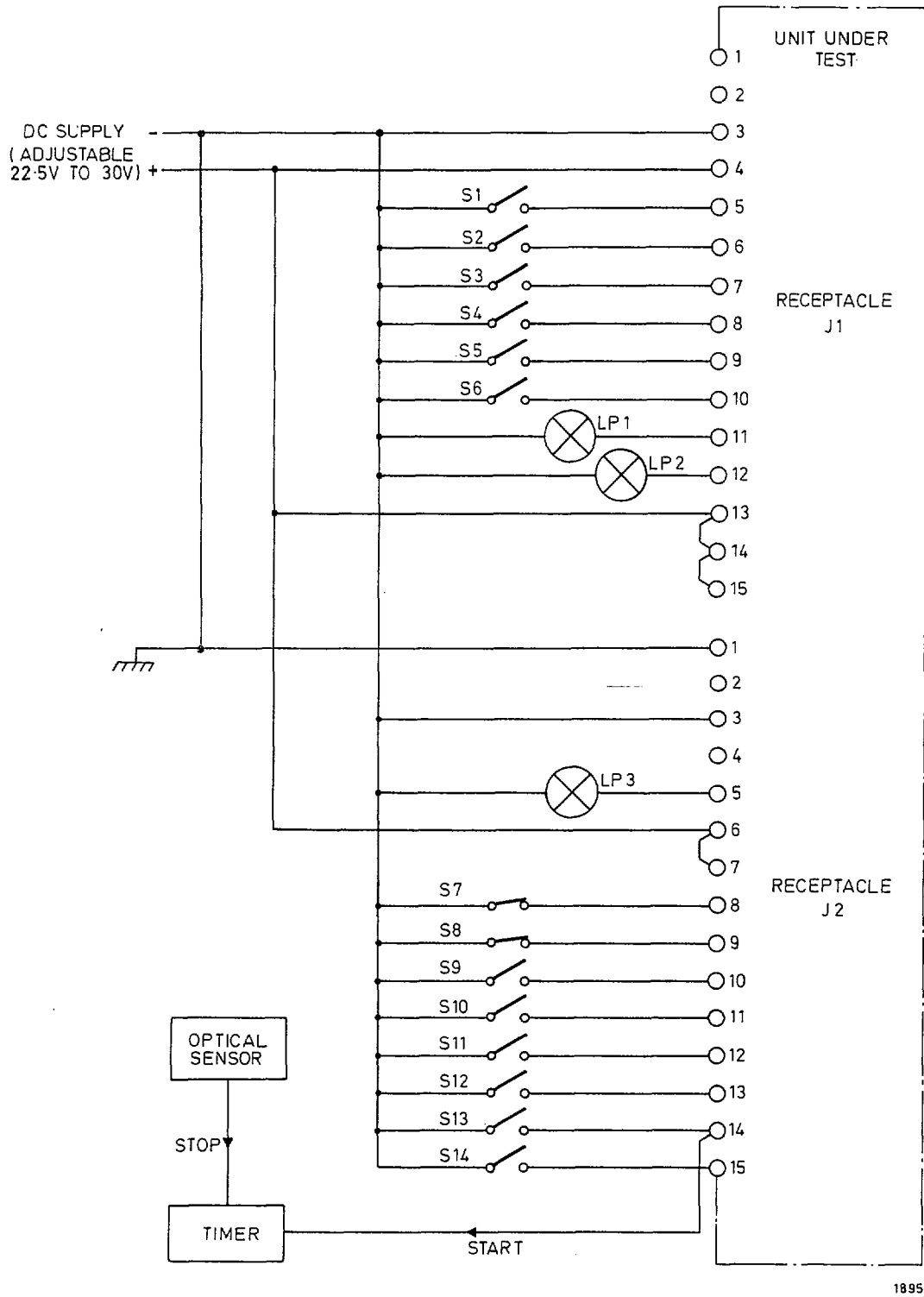
- (1) Ensure that the unit is connected as shown in Fig 102, with switches set as shown.

- (2) Adjust the supply voltage to 22.5V.
- (3) Check that none of the WLA lamps are illuminated.
- (4) Momentarily operate each test switch, in the order given in column 1 of Table 101 and check that:
 - (a) The appropriate WLA is illuminated in the correct colour given in the Table.
 - (b) Only the appropriate WLA is illuminated, unless otherwise specified in the Table.
 - (c) The WLA is extinguished when the switch is returned to its original condition.
 - (d) A slight, but noticeable delay occurs before illumination whenever the FMC WLA lamps are energised.

TABLE 101

1 Switch	2 Action	3 WLA Legend	4 Colour
S1	Close	A/P	Amber
S2	Close	A/P	Amber
S3	Close	A/P	Red
S4	Close	A/P	Red
S5	Close	A/T	Amber
S6	Close	A/T	Red
S7	Open	FMC	Amber
S8	Open	FMC	Amber
S9	Close	FMC	Amber
S10	Close	ALL	Red/Red/Amber
S11	Close	FMC	Amber
S12	Close	FMC	Amber
S14	Close	ALL	Amber

- (5) Close test switch S13 and check that the FMA WLA is illuminated after a slight delay.
- (6) Press the FMC WLA cap. Check that the FMC WLA is extinguished and that test lamp LP3 is lit.
- (7) Release the FMC WLA cap and check that the test lamp is extinguished.



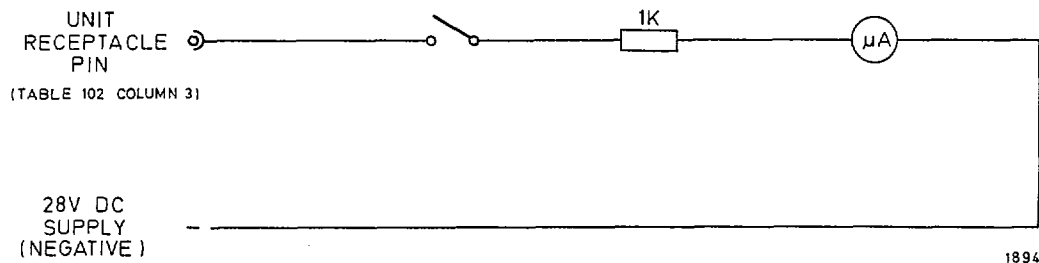
Test Set-Up
Figure 102

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- (8) Press the unit TEST switch to position 1 and check that the FMC WLA is again illuminated after a slight delay. Release the unit TEST switch and check that the FMC WLA remains illuminated.
- (9) Open switch S13 and check that the FMC WLA is extinguished.
- (10) Close test switch S9 and check that the FMC WLA is illuminated after a slight delay.
- (11) Press the FMC WLA cap. Check that the FMC WLA is extinguished and that test lamp LP3 is lit.
- (12) Release the FMC WLA cap and check that the test lamp is extinguished.
- (13) Press the TEST switch to position 2 and check that the FMC WLA is again illuminated after a slight delay. Release the unit TEST switch and check that the FMC WLA remains illuminated.
- (14) Open switch S9 and check that the FMC WLA is extinguished.
- (15) Adjust the power supply to 30V and then repeat, para. (3) to (1) above.
- (16) Adjust the power supply to 28V.
- (17) Place the optical sensor immediately in front of the FMC WLA cap.
- (18) Switch ON the timer supply and CLOSE test switch S13.
- (19) Check that the FMC WLA is lit and that the timer indicates a delay period between 250 milliseconds and 350 milliseconds.
- (20) Open test switch S13. Switch OFF, disconnect and remove the timer and optical sensor.
- (21) Press the A/P WLA cap and check that test lamp LP1 illuminates and is extinguished when the cap is released.
- (22) Press the A/T WLA cap and check that test lamp LP2 illuminates and is extinguished when the cap is released.
- (23) Disconnect the unit from the test set-up.

E. Inverse Voltage Leakage

- (1) Connect, in turn, each unit receptacle pin listed in column 2 of Table 102 to a 28V d.c. supply (positive) and the corresponding pin in column 3 of the Table to the test circuit shown in Fig. 103. For each step, check that the indicated leakage current is less than 100 microamps.
- (2) Remove all connections.
- (3) Connect receptacle pin J1/4 to the test circuit shown in Fig. 103 and pin J2/5 to 28V d.c. positive. Press the FMC WLA cap and check that the indicated leakage current is less than 100 microamps.
- (4) Remove all connections.



Inverse Leakage Test Connections
Figure 103

TABLE 102

1	2	3
Step	Pin connected to 28V + ve	Pin connected as shown in Fig. 103
1	J1/3	J2/3
2	J1/5	J2/7
3	J1/6	J2/7
4	J1/7	J2/6
5	J1/8	J2/6
6	J1/9	J1/14
7	J1/10	J1/15
8	J2/3	J1/3
9	J2/11	J1/7
10	J2/11	J1/8
11	J2/11	J1/15
12	J2/11	J2/15
13	J2/12	J2/13
14	J2/13	J2/12
15	J2/14	J2/15
16	J2/15	J2/14
17	J2/15	J2/11
18	J2/15	J1/14
19	J2/15	J1/5
20	J2/15	J1/6

5. FAULT ISOLATION

Test	Fault	Probable Cause	Remedial Action
4.A	Voltage drop excessive.	Loose or dirty connection.	Check security and cleanliness of earth bonding stud and connection to pin J2/1.
4.B	Insulation resistance low.	Dirty receptacle or damaged wiring.	Examine, clean and rectify as necessary.
4.C	Lamps not lit, or only dimly lit, when TEST switch is pressed.	Burnt-out or aged lamps.	Renew as necessary.
4.D. (4). (a)	Incorrect colour illuminated.	Wiring incorrect.	Examine and rectify.
4.D. (4) (b)	Incorrect WLA illuminated.	Wiring incorrect	Examine and rectify.
4.D. (4) (c)	WLA remains energised.	Internal short circuit caused by dirt or damaged wiring.	Examine, clean and rectify as necessary.
4.D. (4) (d)	No visible delay.	Control circuit fault (panel 'R').	Repair or renew panel.
4.D. (7)	Incorrect delay period	Control circuit fault (panel R)	Repair or renew panel.
4.D. (10)	Incorrect response when WLA cap is pressed or released.	WLA switch defective or wiring fault.	Examine wiring. Renew WLA switch body if necessary.
4.E.	Excessive leakage current	Faulty diode	Isolate and renew faulty component.

NOTE: After any fault has been remedied, carry out the complete TESTING procedure.

DISASSEMBLY

1. General

- A. Refer to TESTING AND FAULT ISOLATION to establish any fault condition and to determine the probable cause.
- B. Disassemble the unit only to the extent necessary to effect fault rectification.
- C. Ensure that all wires are identified before disconnection. Do not unsolder any wire unless absolutely necessary. If a connection must be unsoldered, use an aspirated soldering iron and fit heat shunts as appropriate to minimise transference of heat to components and terminals.

2. Equipment

Items 1, 2 and 3 listed in Table 901 will be required.

NOTE: Equivalent substitutes may be used for listed items.

3. Procedure

A. Cover (IPL. Fig.1)

Remove the six screws (20) and washers (25) to detach the cover (15).

B. Upper Block (IPL. Fig.1)

- (1) Slacken the nut securing the test switch (140).
- (2) On each warning light annunciator (WLA) (160, 185, 210) withdraw the cap assembly fully and hinge down to provide access to the two jacking screws in the WLA body (see Fig.601). Rotate the screws to slacken the mounting sleeve.
- (3) Remove the six screws (35) and washers (40) securing the upper block (30).
- (4) Ensure that the TEST switch tab washer is disengaged from the hole in the upper block (30) and then lift the block away to leave the TEST switch and WLA supported by the lower block (230).

C. Panel 'R' (IPL. Fig.1)

Unscrew the captive screw (IPL.Fig.2, item 5) to detach panel 'R' assembly (50). Retain the loose spacer (55).

D. Panel 'P' (IPL. Fig.1)

Unscrew the captive screw (IPL.Fig.2, item 90) to detach panel 'P' assembly (60).

E. Receptacles (IPL. Fig.1)

Remove the four screws (75 and 105) and washers (80 and 110) to detach the receptacles (85 and 115 respectively). If necessary, use Amphenol tool 294-108 to press connecting pins from the receptacle cores.

F. Wiring

If soldered connections are disturbed, remove and discard any insulating sleeves fitted over the connections. New heat-shrink sleeving must be fitted to appropriate terminals as described in REPAIR.

CLEANING

1. Equipment and Materials

Item 1, 2 and 3 listed in Table 902 will be required.

NOTE: Equivalent substitutes may be used for listed items.

2. Procedure

Clean all parts of the unit with Trichloroethane and a lint-free cloth, or soft nylon bristle brush for persistent dirt; ensure that all soldering debris is removed. Dry with a low pressure air jet.

WARNING: TRICHLOROETHANE VAPOUR MAY CAUSE DROWSINESS. AVOID BREATHING FUMES AND ENSURE ADEQUATE VENTILATION. PROTECT EYES; IF CONTACT OCCURS, FLUSH WITH WATER IMMEDIATELY AND SEEK MEDICAL ATTENTION. SKIN CONTACT MAY CAUSE IRRITATION, WASH WITH SOAP AND WATER.

CHECK

1. General

Visually inspect the unit and parts as follows:

A. Examine all components as applicable for:

- (1) Cleanliness
- (2) Cracks
- (3) Corrosion
- (4) Security
- (5) Serviceability of screw threads
- (6) Deterioration of protective finish
- (7) Legibility of captions and legends

B. Additionally, check electrical components and wiring for:

- (1) Deterioration of insulation
- (2) Security of terminations
- (3) Evidence of over-heating

REPAIR

1. General

- A. Refer to TESTING AND FAULT ISOLATION to confirm a fault condition and to determine the probable cause of failure.
- B. Use rosin cored type RMA solder for connections.
- C. Ensure that all wires are identified before disconnection.
NOTE: Do not disturb soldered connections unnecessarily.
- D. CLEANING and CHECK procedures must be applied to all new components before fitting.
- E. Avoid over-tightening screws. Where no specific tightening torque value is given, tighten screws only until fully inserted in the mating threads.

2. Equipment and Materials

Items 1 to 10 listed in Table 901 and items 1 to 7, 9, 10, 11, 12 and 13 in Table 902 may be required, depending on repairs to be effected.

NOTE: Equivalent substitutes may be used for listed items.

3. Procedure

A. Filament Lamps (Fig. 601 and IPL Fig. 1)

Renew defective lamps (165, 190, 215) in the warning light annunciators (WLA) as follows:

- (1) Grip the sides of the WLA cap (170, 195, 220) and withdraw it as far as possible from the WLA body. Hinge the cap down to obtain access to the lamps.
- (2) Substitute lamps as necessary. It is recommended that all lamps are renewed together.

NOTE: In the FMC WLA (W3) only the two lamps behind the amber filter are used.

- (3) Refit the cap assembly to the WLA body.

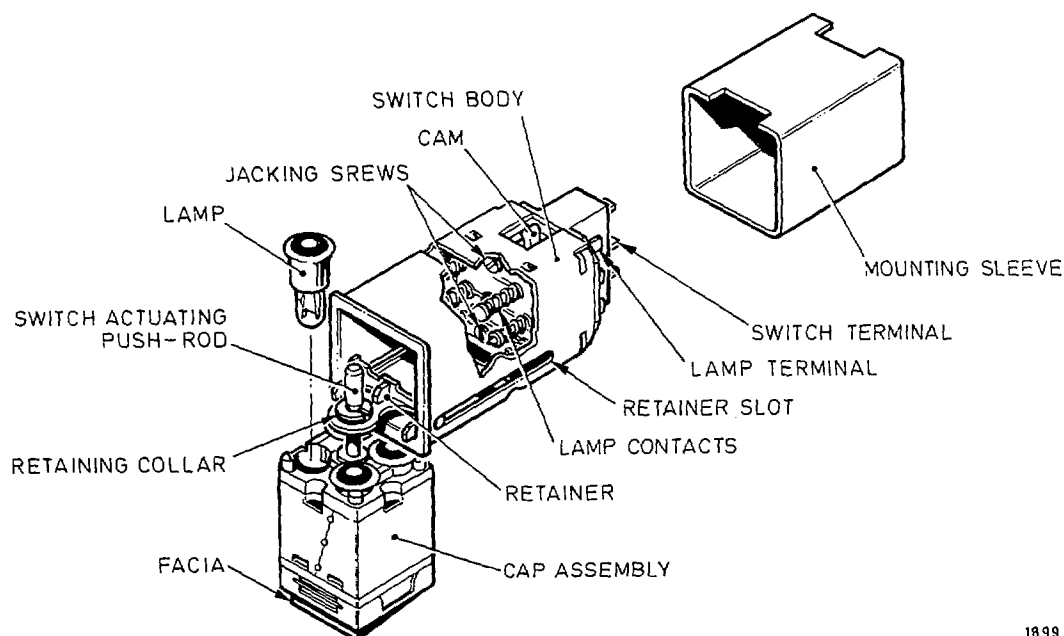
B. WLA Cap (Fig. 601 and IPL Fig. 1)

Renew a defective WLA cap (170, 195, 220) as follows:

- (1) Withdraw the cap and hinge down to expose the cap retainer.

- (2) Disengage the retainer from the slots in the body and remove the cap assembly.
- (3) Ensure that serviceable lamps are fitted in the new cap assembly.
- (4) Engage the cap retainer with the slots in the body, hinge up the cap and slide it into the body.

NOTE: A keyway in the bottom of the cap ensures insertion in the correct attitude.



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Warning Light Annunciator
Figure 601

C. WLA Switch Body (Fig. 601 and IPL, Fig. 1)

Renew a defective WLA switch body (175, 200, 225) or complete WLA assembly (160, 185, 210) as follows:

- (1) Unsolder the connecting wires from the WLA terminals. Discard the insulating sleeves.
- (2) Lift off the WLA. If necessary, release the WLA from the lower block (230) by withdrawing the cap assembly and rotating the two jacking screws inside the WLA body to release the mounting sleeve.
- (3) On the new switch body or indicator module, obtain access to the jacking screws (para. (2) above) and rotate them to release the mounting sleeve. Remove the mounting sleeve and panel spacer.

Discard the spacer and refit the sleeve. Rotate the jacking screws to retain the sleeve.

- (4) Position the new component on the lower block (230) and then tighten the jacking screws just sufficiently to clamp the mounting sleeve against the block.
- (5) Fit a new heat-shrink sleeve (2.4 mm id. x 1/2 in long) to each connecting wire.
- (6) Solder each wire to the appropriate WLA terminal (see Fig. 602).
- (7) Push the heat-shrink sleeves over the soldered connections. Place suitable reflectors to protect the WLA, wiring and adjacent components and then apply heat with a hot-air gun to shrink each sleeve.
- (8) If only the switch body (175, 200, 225) is to be renewed, release the cap assembly from the old body, ensure that the filament lamps are serviceable and engage the cap retainer with the slots in the new switch body. Slide the cap assembly into the body.

D. Test Switch (IPL, Fig. 1)

Renew a defective test switch (140) as follows:

- (1) Unsolder connecting wires from the switch terminals. Discard the insulating sleeves.
- (2) Discard the switch (140) but retain the crinkle washer (135). If serviceable, the nut and tab washer fitted to the old switch may be retained for future use.
- (3) Fit a new heat-shrink sleeve (2.4 mm id. x 1/2 in long) over each pair of connecting wires.
- (4) Solder each pair of wires to the appropriate terminals of the new switch (140) (see Fig. 602).
- (5) Push the heat-shrink sleeves over the soldered connections, Place suitable reflectors to protect the switch, wiring and adjacent components and then apply heat with a hot-air gun to shrink each sleeve.
- (6) Remove the switch nut, ensure that the tab washer is fitted with the tab facing away from the switch body, fit the crinkle washer (135) and loosely re-fit the nut.

- (7) Position the switch on the lower block (230) with the tab washer behind (tab uppermost) and the crinkle washer in front of the block flange. Tighten the nut to lightly clamp the switch in place.

E. Panels 'P' and 'R' (IPL Fig. 2)

Any component on panel 'P' or 'R' can be renewed as follows. If a board or a printed track is damaged renew the complete board assembly. Use heat sinks to protect components.

NOTE: A new component must be fitted in the same position and attitude as the original part.

- (1) Use a hot soldering iron to remove conformal coating from around the defective component and its connections.

WARNING: WHEN HEATED, THE COATING WILL GIVE OFF FUMES AND SMOKE WHICH MAY CAUSE EYE IRRITATION. ENSURE ADEQUATE VENTILATION AND WEAR PROTECTIVE GOGGLES. IF EYES ARE AFFECTED, FLUSH WITH CLEAN WATER IMMEDIATELY AND SEEK MEDICAL ATTENTION.

- (2) Using an aspirated soldering iron, drain solder to detach the component. Take care to avoid applying excessive heat to the panel.
- (3) Trim away any charred conformal coating and clean the panel as described in CLEANING.
- (4) Tin and trim the component leadwires and then fit the component on the board. Ensure that :
 - (a) The component is mounted centrally between mounting holes (where appropriate).
 - (b) Wires are straight for at least 0.06in (1.5mm) at each end of the component.
 - (c) Identification marks are visible when component is mounted.
 - (d) Lead wire tails are in line with the printed track.
 - (e) Diode polarity and component position is as shown in IPL Fig. 2.
- (5) Solder the component in position. Clean flux and soldering debris from the panel as described in CLEANING.
- (6) Use a brush to apply conformal coating PCI8M over the renewed component and surrounding area.

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- (7) Support the panel horizontally, components uppermost. After ten minutes, ensure that no bubbles larger than 0.06 in (1.5 mm) remain visible. If necessary, burst any large bubbles with a pointed wooden stick.
- (8) Allow the panel to dry at ambient temperature for 24 hours.

NOTE: Complete cure time is seven days.

F. Wiring (IPL. Fig. 1 and Fig. 602)

- (1) Ensure that all renewed wiring conforms closely to the original route and layout.
- (2) Use Amphenol tool 294-108 to remove and insert connecting pins (90, 115) in a receptacle core.
- (3) Use Amphenol tool 294-542 (with turret head 294-1889-01) to crimp new connecting pins (90, 115) to wires.
- (4) If the earthing tag (150) is renewed, cover the soldered connection with a heat-shrink sleeve (2.4 mm i.d. x 1/2 in long). Place suitable reflectors to protect wiring and adjacent components and then apply heat with a hot-air gun to shrink the sleeve.
- (5) Tighten cable ties (280) with an Insuloid Mk.3 tensioning tool set to No. 1 for five wires or less, or No. 2 for more than five wires.

G. Labels (IPL. Fig. 1)

If necessary, renew a nameplate or modification label (5 or 10) as follows:

- (1) Record all information given on the existing damaged or loose label.
- (2) Engrave (vibro-etch) the recorded data on the appropriate new label.
- (3) Use a sharp blade to lift and peel off the old label.
- (4) Use methyl-ethyl-ketone (MEK) to remove all traces of old adhesive from the unit chassis (280).

WARNING: MEK. IS HIGHLY FLAMMABLE; KEEP AWAY FROM DIRECT HEAT AND OPEN FLAME. AVOID DIRECT SKIN CONTACT AND PROTECT EYES.

- (5) Use isopropyl alcohol and a lint-free cloth to degrease the chassis surface.

- (6) Remove the protective paper from the back of the new label.
- (7) Activate the label adhesive by applying a thin coat of MEK. Use a single brush stroke only.
- (8) Wait for between three and five seconds to allow the label adhesive to soften to a sticky, pressure sensitive state. Position the label on the chassis, in its original position, and press firmly to ensure complete contact.

H. Thread Inserts (IPL. Fig. 1)

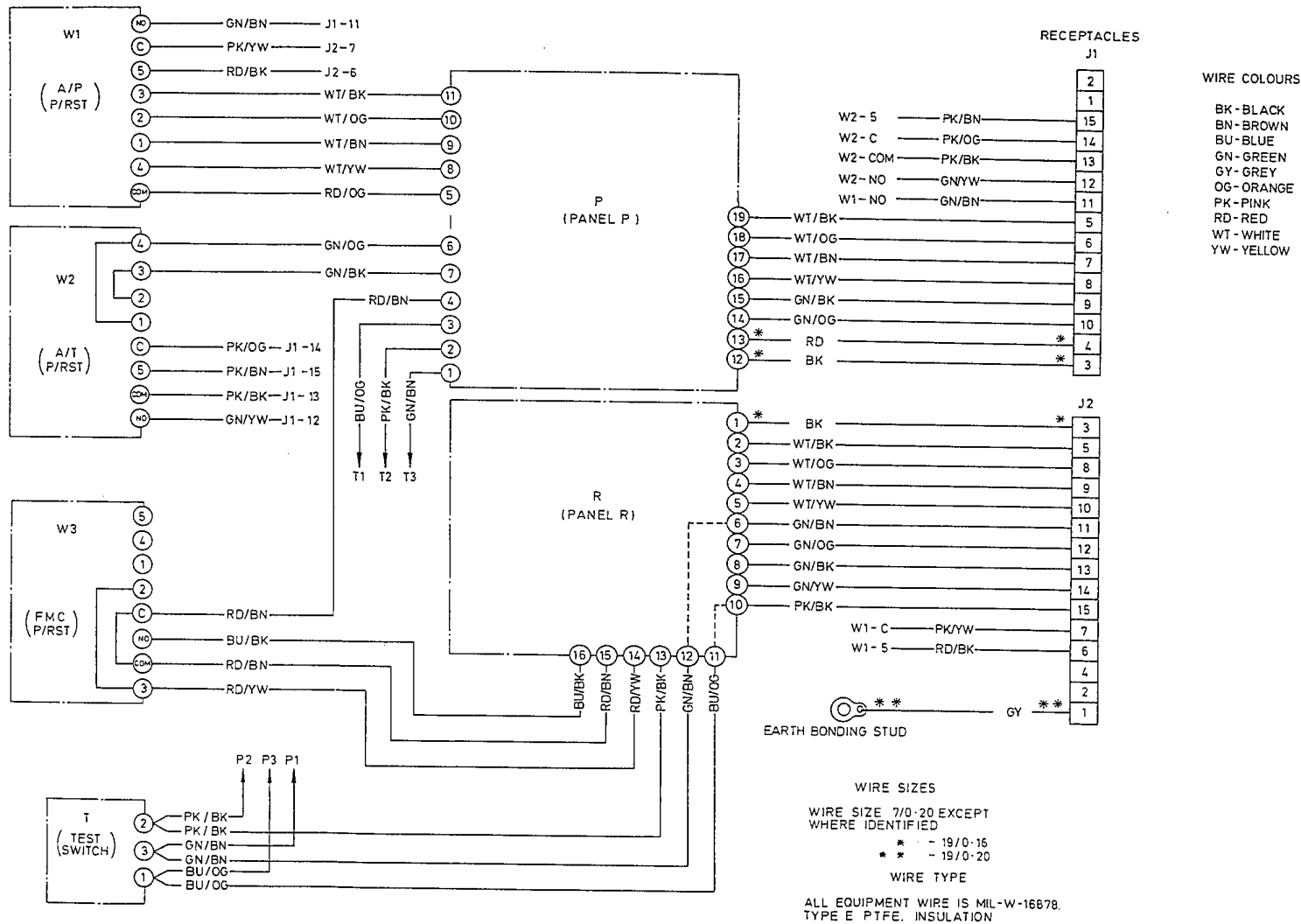
Helicoil screw thread inserts (270) are fitted in the rear panel (255). If necessary, an insert may be renewed if the retaining screw thread in the rear panel is seen to be undamaged after an unserviceable insert has been removed.

- (1) Use the Helicoil extractor 1227-06 to screw out the old insert.
- (2) Check that the retaining screw thread is undamaged.
- (3) Use Helicoil tool 3551-04 (4-40 UNC) to fit a new insert fully into the component. Ensure that the insert does not protrude from the panel surface.
- (4) Use Helicoil tool 3580-04 (4-40 UNC) to break off the tang from the end of the insert.

J. Paint Finish (IPL. Fig. 1)

If damaged, the paint finish on the upper and lower blocks (30 and 230), WLA, (160, 185 and 210), cover (15), chassis (275) or rear panel (255) may be restored. Apply the appropriate colour paint by brush, using toluene as a thinner if required, as follows.

- (1) Matt grey on blocks and WLA flanges.
- (2) Matt black on rear panel, cover and chassis.



Wiring Diagram
Figure 602

ASSEMBLY
(INCLUDING STORAGE)

1. General

Ensure cleanliness of workplace, tools and unit components.

Take care to avoid overtightening screws and nuts. Where no specific tightening torque value is given, tighten screws only until fully inserted in the mating threads.

Use Multicore solder for all soldered connections. Remove deposited flux and debris as described in CLEANING.

Use heat sinks where appropriate to protect components.

Renew all disturbed crinkle washers and insulating sleeves.

2. Tools, Equipment and Materials

Items 1,2, 3 and 7 listed in Table 901 and items 4, 8, and 14 to 19 inclusive in Table 902 will be required.

NOTE: Equivalent substitutes may be used for listed items.

3. Procedure

A. Wiring (Fig. 602)

- (1) Ensure that all soldered connections are covered with Hysol PC18M conformal coating.
- (2) Fit cable ties and apply initial tension by hand. Use the Insuloid Mk. 3 tool to tension the ties. Set the tool to No. 1 for up to five wires and to No. 2 for more than five wires.

B. Receptacles (IPL, Fig. 1)

- (1) Use Amphenol tool 294-108 to press connecting pins into the receptacle cores.
- (2) Attach each receptacle (85 and 115) to the unit rear panel (255) with four screws (75 and 105) and crinkle washers (80 and 110).

C. Panel 'P' (IPL, Fig. 1)

Position panel assembly 'P' (60) on the lower block (230) and over the pillar (65). Secure the panel with the captive screw (IPL, Fig. 2, item 90), ensure that a crinkle washer (IPL, Fig. 2, item 95) is fitted to the captive screw. Tighten the screw with a torque value of 0.4 lbf.in (3.6 Nm).

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D. Panel 'R' (IPL. Fig. 1)

- (1) Fit the spacer (55) over the pillar (65) projecting through panel 'P'.
- (2) Position panel 'R' (50) on the spacer and lower block (230). Secure the panel with the captive screw (IPL. Fig. 2, item 5), ensure that a crinkle washer (IPL. Fig. 2, item 10) is fitted to the captive screw.

E. Upper Block (IPL. Fig. 1)

- (1) Ensure that the warning lamp annunciator (WLA) jacking screws are slackened to release the mounting sleeves and that the test switch (140) nut is slackened sufficiently to allow rotation of the switch tab washer. The tab washer must be fitted behind the lower block (230), with the tab protruding forward, and the crinkle washer (135) between the front face of the block and the switch nut.
- (2) Position the switch tab washer with the tab uppermost. Fit the upper block (30) and, holding the block in place, pull the test switch forward to engage the washer tab with the hole in the block. Tighten the switch nut sufficiently to hold the tab washer in position.
- (3) Secure the upper block (30) with six special screws (35) and crinkle washers (40); apply Loctite 221 to the screw threads. Tighten screws with a torque value between 1.44 and 1.76 lbf.in (0.16 and 0.2 Nm).
- (4) Tighten the test switch nut.
- (5) For each WLA (160, 185, 210) tighten the jacking screws (see Fig. 601) with a torque value of 1.0 to 1.5 lbf.in (0.11 to 0.17 Nm).
- (6) Ensure that all filament lamps are fitted in the WLA caps and then locate each cap assembly securely into its switch body.

F. Cover (IPL. Fig. 1)

Secure the cover (15) to the rear of the unit with six screws (20) and crinkle washers (25).

G. Testing

Carry out the full procedure described in TESTING AND FAULT ISOLATION, Para 4.

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4. Storage

A. Materials

NOTE: Equivalent substitutes may be used for listed items.

Items 14 to 19 inclusive, listed in Table 902 will be required.

B. Packing

Prepare the unit for storage or transit as follows:

- (1) Fit protective caps (IPL Fig. 1, item 285) to cover the receptacles.
- (2) Record all data given on the unit nameplate and modification record label.
- (3) Place the unit in the smallest available, suitable transparent polythene bag. Expel as much air as possible and heat-seal the bag.
- (4) Wrap the unit in 'Aircap' plastic sheet and seal with adhesive tape.
- (5) Place the package in a strong cardboard box of suitable size, with a firmly packed and evenly distributed layer of 'Aircap' plastic sheet (or tissue) around all sides, top and bottom of the package.
- (6) Seal any relevant documents in a transparent polythene bag. Place the bag on top of the upper layer of packing in the box.
- (7) Seal the box with waterproof adhesive tape.
- (8) Fix a label to the box and mark it with all the information recorded in para. (2) above. Additionally, mark the label, or the box, with the date of packing.

C. Storage Conditions

Store the unit in an environment free from heavy vibrations and corrosive fumes, conforming to the following conditions:

Temperature range:	0°C to +40°C
Relative humidity:	45% to 80%
Atmospheric pressure:	800 mb to 1067 mb) (600 mm Hg to 800 mm Hg)

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SPECIAL TOOLS, FIXTURES AND EQUIPMENT

1. Environmental Conditions

All maintenance tasks should be carried out in a clean, dry and dust-free environment conforming to the following requirements:

Ambient temperature	15°C to 35°C (59°F to 95°F)
Air pressure	867mb to 1067mb (650mm Hg to 800mm Hg)
Relative humidity	less than 85%

2. Electrical Supply

Nominal 28V d.c. at 10A, adjustable from 22.5V to 30V.

3. Tools, Fixtures and Equipment

NOTE : Equivalent substitutes may be used for listed items.

Table 901

Item	Description	Pt. No. or Specification	Vendor
1	Soldering iron, 25W (aspirated)	-	Local supply
2	Heat shunts	-	Local supply
3	Receptacle pin insertion/removal tool	-	Amphenol Ltd., Thanet Way, Whitstable, Kent, CT5 3JF, UK.
4	Crimping tool	294-542	Amphenol Ltd.
5	Turret head (use with item 4)	294-1889-01	Amphenol Ltd.
6	Hot-air gun	545-137	RS Components Ltd., PO Box 99, Corby, Northants, NN7 9RS, UK.
7	Tensioning tool (cable ties)	Mk 3	Hellermann Ltd., Sharston Works, Sharston Road, Wythenshawe, Manchester, M22 4RH, UK.

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Table 901 (Cont.)

Item	Description	Pt. No. or Specification	Vendor
8	Helicoil extractor	1227-06	Armstrong Fastenings Ltd., Gibson Lane, Molton, North Ferriby, North Humberside, JU14 3HY, UK.
9	Helicoil insertion tool (4UN)	3551-04	Armstrong Fastenings Ltd.
10	Helicoil tang break-off tool (4UN)	3580-04	Armstrong Fastenings Ltd.
11	Digital multimeter	3800	Dana Electronics Ltd., Collingdon Street, Luton, Bedfordshire, LU1 1RX, UK.
12	Insulation tester, 5 Mohm at 200V	1905	Comark Electronics Ltd., Brookside Avenue, Rustington, West Sussex, BH16 3LF, UK.
13	Universal timer	9903	Racal-Dana Instruments Ltd., 480 Bath Road, Slough, Berks. SL1 6BE, UK.
14	Test set, use with interconnecting cable loom	A301-237-001 C301-237-020	Page Aerospace Ltd., Forge Lane, Sunbury-on-Thames Middlesex, TW16 6EQ, UK.
	OR		
	Test set-up (see Fig 101 to 103)	-	Local supply
15	Optical sensor	C301-160-125	Page Aerospace Ltd.

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4. Materials

NOTE: Equivalent substitutes may be used for listed items.

Table 902

Item	Description	Pt. No. or Specification	Vendor
1	Trichloroethane 1.1.1	BS.4487	Local supply
2	Lint-free cloth	-	Local supply
3	Soft, nylon bristle brush	-	Local supply
4	Conformal coating	PC 18M	Dexter Hysol Ltd., Rose Industrial Estate, Coves End Road, Bourne End, Bucks., UK.
5	Methyl-ethyl-ketone	-	Local supply
6	Isopropyl alcohol	-	Local supply
7	Solder, 60/40 tin/lead rosin cored	FED.STAN. QQ 571 Type RMA	Alpha Metals Ltd., 1, The Broadway, Tolworth, Surbiton, Surrey, KTE 7DG, UK.
8	Lockant	221	Loctite (UK) Ltd., Watchmead, Welwyn Garden City, Herts. AL7 1JB, UK.
9	Paint, matt grey, BSX31	FED.STAN. 295A36118	Local supply
10	Paint, matt black, BSX31	FED.STAN. 295A36118	Local supply
11	Toluene	-	Local supply
12	Wire, equipment, 7/0.20mm, type E PTFE insulation. (Colours as listed in wiring diagram, Fig. 602)		BICC General Cables Leigh Works Leigh, Manchester. WN7 4HB, UK.

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Table 902 (Cont'd.)

Item	Description	Pt. No. or Specification	Vendor
13	Wire, equipment, 19/0.16mm type E PTFE insulation. (Colours as listed in wiring diagram, Fig. 602)	-	BICC General Cables
14	Transparent polythene bag; 6 in x 10 in (150mm x 250mm). is suitable	-	Local supply
15	'Aircap' plastic sheet	-	Local supply
16	Strong cardboard box; 10 in x 8 in x 5 in (250mm x 200mm x 125mm) is suitable	-	Local supply
17	Transparent polythene bag, for documents.	-	Local supply
18	Waterproof adhesive tape.	-	Local supply
19	Adhesive label	-	Local supply

NOTE: Items 14 to 19 inclusive are required for storage or transit packing; ASSEMBLY (INCLUDING STORAGE), para. 4.

ILLUSTRATED PARTS LIST

1. Introduction

A. Purpose

(1) General

This list details the parts required for the D434-56-001 Autoflight Status Annunciator and is used to facilitate identification of parts during maintenance procedures.

(2) Equipment Designator Index

All equipment designators shown on schematics and wiring diagrams contained in the manual are listed in alph-numeric sequence. The figure and item number column contains the Detailed Parts List figure and item number assigned to those items allocated an equipment designator.

(3) Numerical Index

(a) The part number column contains all part numbers included in the Detailed Parts List. Part numbers that have been deleted or superseded within the unit are listed, identified as deleted or superseded and cross referenced to the new part number. The index is arranged in alpha-numeric sequence.

(b) The figure and item number column contains the Detailed Parts List figure and item numbers for all parts listed.

(c) The TTL REQ column reflects the total quantity, required for each part number, figure and item listing.

(4) Detailed Parts List

(a) This list is arranged in order of disassembly and is intended to show the assembly and detail relationship.

(b) Parts not illustrated are identified by a dash (-) preceeding the item number.

(c) Attaching parts are listed immediately following the assembly they attach and precede the detail parts of that assembly.

- (d) Vendors are identified in the list by a code, in parenthesis, immediately following the part description. Code symbols used are in accordance with the Federal Supply Code for Manufacturers, except that each code is prefixed by the letter V. The names and addresses relating to the codes are listed in para. 1D.

B. Usage

- (1) To find the part number or description of an item, refer to Figure 1 and locate the part, or the sub-assembly containing that part, in the illustration. From the illustration, obtain the assigned item number, then refer to the accompanying Detailed Parts List. Read off the information adjacent to the located figure/item number. Where a further illustrated breakdown is indicated, repeat the procedure until the part is identified.
- (2) To find the illustration or description when a part number or equipment designator is known, refer to and locate the item in the appropriate index. Read off the accompanying figure and item number, then turn to the illustration and locate the part identified by the item number.

C. Symbols and Abbreviations

All symbols and abbreviations used in this list are as defined in ATA Specifications.

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D. Vendor Codes

Code	Manufacturer
K0017	Tucker Fasteners Ltd., Walsall Road, Birmingham, B42 1BT, UK.
K0609	Thorn Electrical Components Ltd., Great Cambridge Road, Enfield, Middlesex, EN1 1UL, UK.
K0720	Insuloid Manufacturing Co. Ltd., Sharston Works, Leestone Road, Wythenshawe, Manchester, M22 4RH, UK.
K1010	Raychem Ltd., Faraday House, Dorcan, Swindon, Wilts., SN3 5HH, UK.
K1012	Armstrong Fastenings Ltd., Gibson Lane, Melton, N. Ferriby, N. Humberside, JU14 3HY, UK.
K1100	Amphenol Ltd., Thanet Way, Whitstable, Kent, CT5 3JF, UK.
K1369	Polypenco Ltd., PO. Box 56, Welwyn Garden City, Herts., AL7 1LA, UK.
U2656	Iskra Ltd., Redlands, Coulsdon, Surrey, CR3 2HT, UK.
K6405	Kaynar (UK) Ltd., Blackthorn Road, Colnbrook, Slough, Berks., SL3 0AG, UK.
K7766	British Standards Institution, 2, Park Street, London, W1A 2BS, UK.
08719	Jay-EI Products Inc., Gardena, California, USA.

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2. Equipment Designator Index

NOTE: Some designators are listed with a P/ or R/ suffix. This is given to identify components with similar references on panel 'P' and panel 'R'.

Designator	Fig - Item	Designator	Fig - Item	Designator	Fig - Item
R/C1	2 - 50	P/D11	2 - 100	LP4	1 - 190
R/C2	2 - 55	R/D11	2 - 40	LP4	1 - 215
R/C3	2 - 55	P/D12	2 - 100	R1	2 - 80
R/C4	2 - 55	R/D12	2 - 40	R2	2 - 60
P/D1	2 - 100	P/D13	2 - 100	R3	2 - 75
R/D1	2 - 45	R/D13	2 - 40	R4	2 - 75
P/D2	2 - 100	P/D14	2 - 105	R5	2 - 70
R/D2	2 - 40	R/D14	2 - 40	R6	2 - 75
P/D3	2 - 100	D15	2 - 45	R7	2 - 70
R/D3	2 - 40	IC1	2 - 15	R8	2 - 75
P/D4	2 - 100	IC2	2 - 20	R9	2 - 65
R/D4	2 - 40	IC3	2 - 20	T	1 - 130
P/D5	2 - 100	J1	1 - 70	TR1	2 - 35
R/D5	2 - 40	J2	1 - 100	TR2	2 - 25
P/D6	2 - 200	LP1	1 - 65	TR3	2 - 30
R/D6	2 - 40	LP1	1 - 190	TR4	2 - 30
P/D7	2 - 100	LP1	1 - 215	TR5	2 - 30
R/D7	2 - 40	LP2	1 - 65	W1	1 - 155
P/D8	2 - 100	LP2	1 - 190	W2	1 - 180
R/D8	2 - 40	LP2	1 - 215	W3	1 - 205
P/D9	2 - 100	LP3	1 - 65		
R/D9	2 - 40	LP3	1 - 190		
P/D10	2 - 100	LP3	1 - 215		
R/D10	2 - 40	LP4	1 - 65		

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3. Numerical Index

	PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ.
	A105-23		1	135	1
	A110-118		1	65	1
	A111-104		1	55	1
R	A123-202		1	35A	6
R			1	235A	3
	A123-77		1	35	6
	A124-19		2	90	1
R	A124-52		2	5	1
R			2	90A	1
	B201-03		2	100	1
	B202-01		2	45	2
	B337-20-285		2	15	1
	B434-56-085		1	130	RF
	B3040		1	5	1
	B3041		1	10	1
	BSA218A8		1	20	6
			1	75	4
			1	105	4
			1	235	3
			1	260	3
	C434-56-030		1	30	1
	C434-56-040		1	230	1
	C434-56-050		1	275	1
	C434-56-060		1	15	1
	C434-56-070		1	255	1
	C434-56-091		1	70	RF
	C434-56-092		1	100	RF
R	C434-56-130		1	30A	1
R	C434-56-140		1	230A	1
	C434-56-150		1	60	1
			2	85	RF
	C434-56-160		1	50	1
			2	1	RF
	C463-01-150		2	20	2
	CAPTSS2201		2	50	1
	CAPTSS4709		2	55	3
	D218-04-001		1	160	1
	D218-04-002		1	185	1
	D218-04-003		1	210	1
	D434-56-080		1	155	RF
	D434-56-081		1	180	RF
	D434-56-082		1	205	RF
	DI00027		2	40	13
			2	105	13
	HW14-06		1	150	1
	MS 24254-20P		1	90	13

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3.

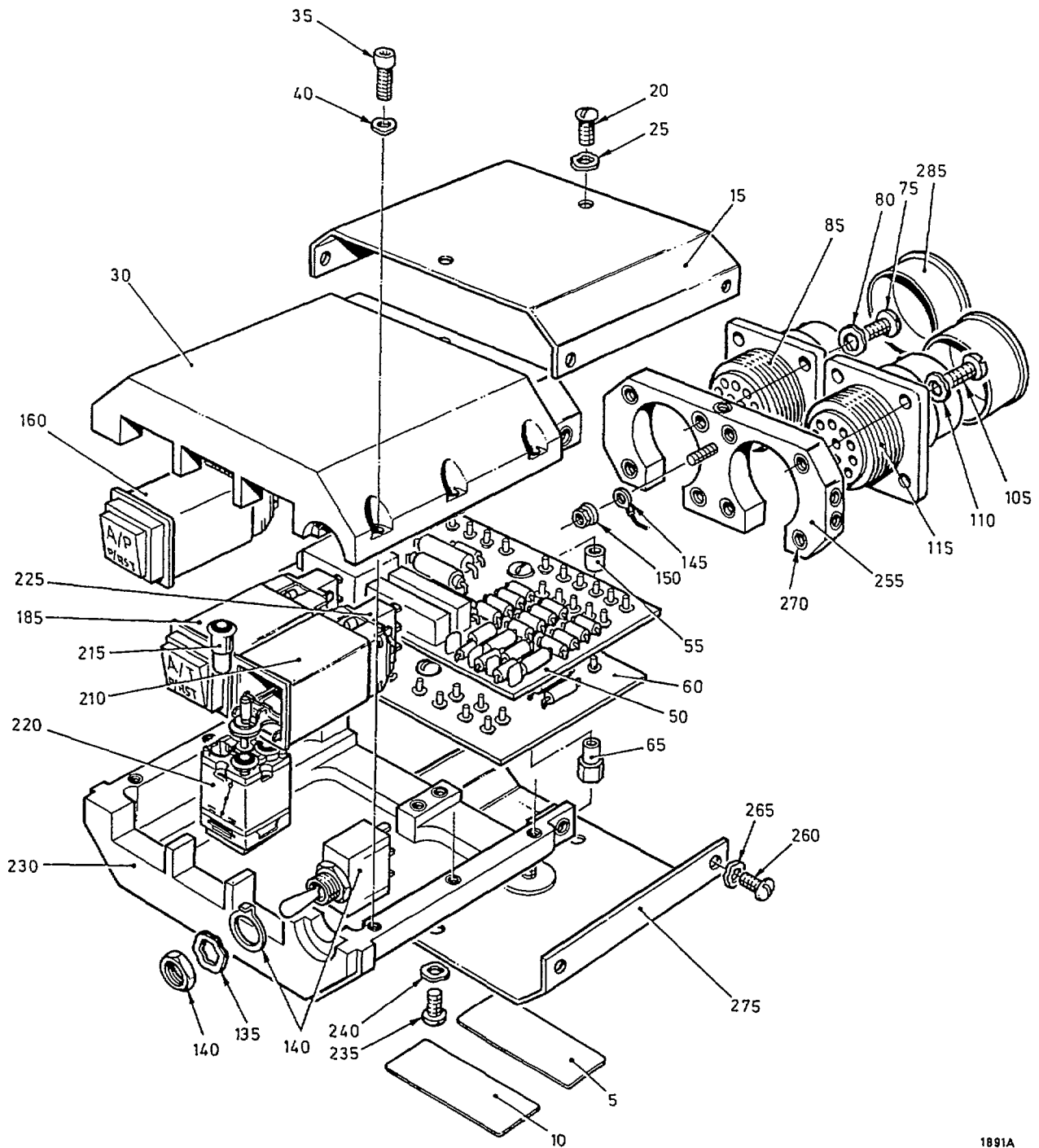
Numerical Index (cont.)

PART NUMBER	AIRLINE PART NO.	FIG.	ITEM	TTL REQ.
MS24264R14B15PX		1	85	1
MS25237-387		1	165	4
		1	190	4
		1	215	4
MS27488-20		1	95	2
		1	125	2
RESMOF0144		2	65	1
RESMOF0178		2	70	2
RESMOF0194		2	75	4
RESMOF0227		2	80	1
RESWWX0058		2	60	1
T23RHS		1	280	20
T573		1	145	1
TRA0005		2	25	1
TRA0007		2	30	3
TRA0017		2	35	1
10-70506-16		1	285	2
3585-04CN168		1	270	14
5310-99-9445616		1	40	6
5310-99-9713720		1	25	6
		1	80	4
		1	110	4
		1	240	3
		1	265	3
		2	10	1
		2	95	1
5637 AG		1	140	1
10800PAE1-101		-	170	1
10800PAE1-102		-	195	1
10800PAE1-103		-	220	1
10800PAE2-201		-	175	1
		-	200	1
		-	225	1

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1891A

Exploded view - spares
Figure 1

COMPONENT MAINTENANCE MANUAL PART NO. D434-56-001

4. Detailed Parts List

FIG. ITEM	PART NUMBER	AIRLINE PART NO.	NOMENCLATURE	EFF. CODE	UNITS PER ASSY.
			1234567		
1-1	D434-56-001		ANNUNCIATOR,AUTOFLIGHT STATUS		RF
5	B3040		.LABEL,NAMEPLATE (BLANK)		1
10	B3041		.LABEL,MODIFICATION (BLANK)		1
15	C434-56-060		.COVER		1
20	BSA218A8		ATTACHING PARTS .SCREW, 4-40 UNC X 1/4 IN. PAN HD. SS. BSA218A8 IS REF. CODE FOR BS.A218-A8 (VK7766)		6
25	5310-99-9713720		.WASHER,CRINKLE, 4UN, BS.4463 ***		6
30	C434-56-030		.BLOCK,UPPER,PRINTED (PRE AR1148)		1
30A	C434-56-130		.BLOCK,UPPER,PRINTED (POST AR1148)		1
35	A123-77		ATTACHING PARTS .SCREW,SPECIAL,2-56UNC		6
35A	A123-202		.SCREW,SPECIAL,2-56 UNC (POST AR1148)		6
40	5310-99-9445616		.WASHER, CRINKLE, 0 UN, (PRE AR1148)BS. 4463 (VK7766) ***		6
45	3585-04CN168		ITEM DELETED		
50	C434-56-160		.PANEL ASSY. 'R' (SEE FIG.2 FOR BREAKDOWN)		1
55	A111-104		.SPACER		1
60	C434-56-150		.PANEL ASSY. 'P' (SEE FIG.2) FOR BREAKDOWN)		1
65	A110-118		.PILLAR		1
-70	C434-56-091		.RECEPTACLE,WIRING (J1)		RF
75	BSA218A8		ATTACHING PARTS .SCREW,4-40UNC X 1/4 IN. PAN.HD. SS. BSA218A8 IS REF.CODE FOR BS.A218-A8 (VK7766)		4
80	5310-99-9713720		.WASHER,CRINKLE, 4UN, BS.4463 ***		4
85	MS24264R14B15PX		..RECEPTACLE (VK1100)		1
-90	MS24254-20P		...PIN,SIZE 20 (VK1100)		13
-95	MS27488-20		..PLUG,SEALING,SIZE 20,RED (VK1100)		2
-100	C434-56-092		.RECEPTACLE,WIRING (J2)		RF

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4. Detailed Parts List (Cont'd)

FIG. ITEM	PART NUMBER	AIRLINE PART NO.	NOMENCLATURE	EFF. CODE	UNITS PER ASSY.
			1234567		
1-105	BSA218A8		ATTACHING PARTS .SCREW, 4-40 UNC X 1/4 IN PAN HD. SS. BSA218A8 IS REF. CODE FOR BS.A218-A8 (VK7766)		4
110	5310-99-9713720		.WASHER, CRINKLE, 4UN, BS.4463 (VK7766) ***		4
115	MS24264-0201		..RECEPTACLE, MS24264R14B15P6X (VK1100)		1
-120	MS24254-20P		...PIN, SIZE 2U (VK1100)		13
-125	MS27488-20		..PLUG, SEALING, SIZE 20, RED (VK1100)		2
-130	B434-56-085		.SWITCH, TEST, WIRING (T)		RF
135	A105-23		ATTACHING PARTS .WASHER, CRINKLE ***		1
140	5637AG		..SWITCH, TOGGLE (SUPPLIED WITH NUT AND TAB WASHER) 5637AG IS REF. CODE FOR 5637-AG (VK2656)		1
145	T573		.TAG, M4, ETP. (VK0017)		1
150	HW14-06		ATTACHING PARTS NUT, CAPTIVE WASHER 6-32UNC (VK6405) ***		1
-155	D434-56-080		.SWITCH LIGHT, WIRING (W1)		RF
160	D218-04-001		..INDICATOR MODULE, SWITCHED (WARNING LIGHT ANNUNCIATOR) (AP)		1
-165	MS25237-387		...LAMP, FILAMENT 28V, 0.04A (LP1-LP4)(VK1100)		4
-170	10800PAE1-101		...CAP, ASSY. (08719)		1
-175	10800PAE2-201		...BODY, SWITCH (08719)		1
-180	D434-56-081		.SWITCH LIGHT, WIRING (W2)		RF
185	D218-04-002		..INDICATOR MODULE SWITCHED (WARNING LIGHT ANNUNCIATOR) (A/T)		1

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4. Detailed Parts List (Cont'd)

FIG. ITEM	PART NUMBER	AIRLINE PART NO.	NOMENCLATURE	EFF. CODE	UNITS PER ASSY.
			1234567		
R	-190	MS25237-387	...LAMP, FILAMENT, 28V, 0.04A (LP1-LP4) (VK1100)		4
	-195	10800PAE1-102	...CAP ASSY. (V08179)		1
	-200	10800PAE2-201	...BODY, SWITCH (V08179)		1
	-205	D434-56-082	.SWITCH LIGHT, WIRING (W3)		RF
	210	D218-04-003	..INDICATOR, MODULE, SWITCHED (WARNING LIGHT ANNUNCIATOR) (FMC)		1
R	215	MS25237-387	...LAMP, FILAMENT, 28V, 0.04A (LP1-LP4) (VK1100)		4
	220	10800PAE1-103	...CAP ASSY. (V08179)		1
	225	10800PAE2-201	...BODY, SWITCH (V08179)		1
	230	C434-56-040	.BLOCK, LOWER, PRINTED (PRE AR1148)		1
	230A	C434-56-140	.BLOCK, LOWER, PRINTED (POST AR1148)		1
R	235	BSA218A8	ATTACHING PARTS .SCREW, 4-40UNC X 1/4 IN. PAN HD. SS. BSA218A8 IS REF. CODE FOR BS.A218-A8 (VK7766)		3
	235A	A123-202	.SCREW, SPECIAL 2-56 UNC (POST AR1148)		
	240	5310-99-9713720	.WASHER, CRINKLE, 4UN BS.4463 (VK7766)		3
	245	3585-04CN168	*** ITEM DELETED		
	250	1185-02CN172	ITEM DELETED		
R	255	C434-56-070	.PANEL ASSY., REAR ATTACHING PARTS		1
	260	BSA218A8	.SCREW, 4-40UNC X 1/4 IN. PAN HD. SS. BSA218A8 IS REF. CODE FOR BS.A218-A8 (VK7766)		3
	265	5310-99-9713720	.WASHER, CRINKLE, 4UN, BS.4463 (VK7766) ***		3

4. Detailed Parts List (cont.)

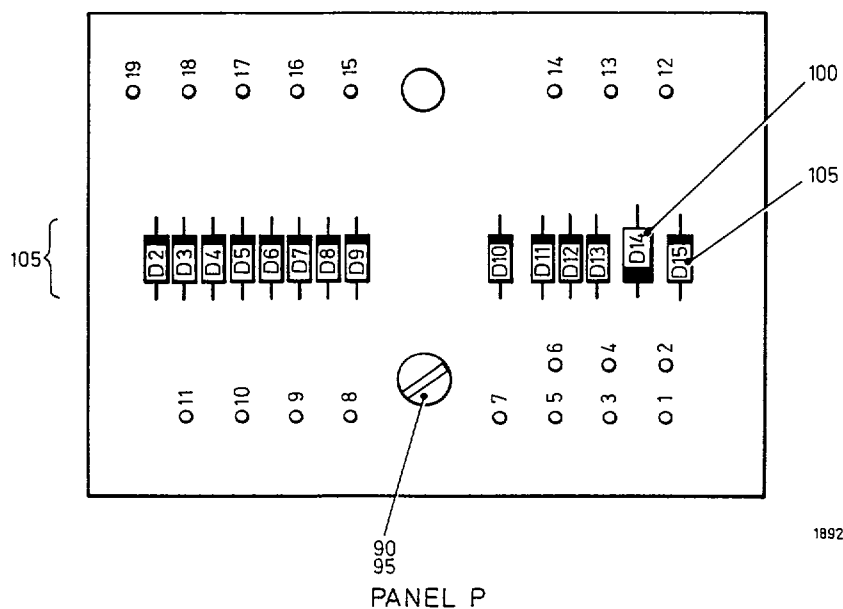
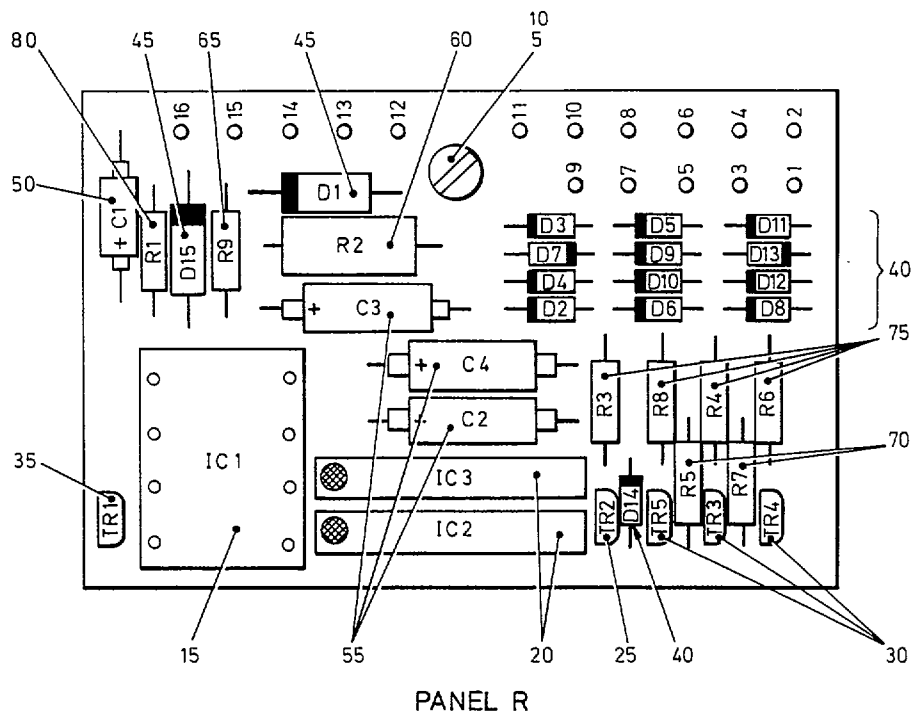
FIG. ITEM	PART NUMBER	AIRLINE PART NO.	NOMENCLATURE	EFF. CODE	UNITS PER ASSY.
			1234567		
270	3585-04CN168		..INSERT,THREAD 4-40UNC X 1 1/2 DIA,HELICOIL, SCREW LOCK (VK1012)		14
275 -280	C434-56-050 T23RHS		.CHASSIS ASSY .TIE,CABLE (VK0720)		1 20
			<u>TRANSIT PARTS</u>		
285	10-70506-16		CAP,PROTECTIVE (VK0609)		2

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4. Detailed Parts List (Cont'd)

FIG. ITEM	PART NUMBER	AIRLINE PART NO.	NOMENCLATURE	EFF. CODE	UNITS PER ASSY.
			1234567		
2-1	C434-56-160		.PANEL ASSY 'R'		RF
5	A124-52		..SCREW, CAPTIVE, 4-40UNC		1
10	5310-99-9713720		..WASHER, CRINKLE, 4UN, BS.4466 (VK7766)		1
15	B337-20-285		..CIRCUIT, INTEGRATED (IC1)		1
20	C463-01-150		..CIRCUIT, INTEGRATED (IC2, IC3)		2
R 25	TRA0005		..TRANSISTOR, ZTX 304, (TR2) TRA0005 IS REF. CODE FOR TRA-0005		1
R 30	TRA0007		..TRANSISTOR, ZTX504, (TR3, TR4, TR5) TRA0007 IS REF. CODE FOR TRA-0007		3
R 35	TRA0017		..TRANSISTOR, ZTX450 (TR1) TRA0017 IS REF. CODE FOR TRA-0017		1
R 40	D1000027		..DIODE, NLCECC 50-001-022 (D2-D14) D1000027 IS REF. CODE FOR D10-0027		13
45	B202-01		..DIODE, ZENNER (D1, D15)		2
50	CAPTSS2201		..CAPACITOR, 3μ3, 10% 16VW (C1) CAPTSS2201 IS REF. CODE FOR CAP-TSS-2201		1
55	CAPTSS4709		..CAPACITOR, 4μ7, 20%, 50VW (C2, C3, C4), CAPTSS4709 IS REF. CODE FOR CAP-TSS-4709		3
60	RESWWX0058		..RESISTOR, 22R, 5%, JB, (R2) RESWWX0058 IS REF. CODE FOR RES-WWX-0058		1
65	RESMOF0144		..RESISTOR, 39R, 2%, FX, (R9) RESMOF0144 IS REF. CODE FOR RES-MOF-0144		1
70	RESMOF0178		..RESISTOR, 1K, 2%, FX, (R5, R7) RESMOF0178 IS REF. CODE FOR RES-MOF-0178		2
75	RESMOF0194		..RESISTOR, 4K7, 2%, FX, (R3, R4, R6, R8) RESMOF0194 IS REF. CODE FOR RES-MOF-0194		4

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4. Detailed Parts List (Cont'd)

FIG. ITEM	PART NUMBER	AIRLINE PART NO.	NOMENCLATURE 1234567	EFF. CODE	UNITS PER ASSY.
80	RESMOF0227		..RESISTOR,110K,2%,FX (R1) RESMOF0227 IS REF. CODE FOR RES-MOF-0227		1
85	C434-56-150		..PANEL ASSY. 'P'		RF
90	A124-19		..SCREW,CAPTIVE,4-40UNC SUPERSEDED BY ITEM 90A		1
90A	A124-52		..SCREW CAPTIVE SUPERSEDES ITEM 90		1
95	5310-99-9713720		..WASHER,CRINKLE,4UN. BS.4466 (VK7766)		1
100	B201-03		..DIODE (D14)		1
105	DI00027		..DIODE NLCECC 50-001-022 (D1-D13) DI00027 IS REF. CODE FOR DIO-0027		13

R