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ANNEXE J. H. PARKIN CNRC - ICIST



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ELECTRICS - MASTER WARNING SYSTEM 71/MAINT 11/3

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Prepared:

For Maintenance and Reliability

Approved:

For Technical Design Department

Approved:

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1. DESCRIPTION

1.1 General

- 1.1.1 A visual warning of malfunction or failure of certain aircraft systems is indicated by means of one master amber and one master red warning light fitted on the pilot's main instrument panel (Ell). The specific faulty system or component is identified by the illumination of a secondary amber or red warning light, located on the pilot's L.H. or R.H. consoles. All fire warning indicators are red and are located on El4 fuel and fire panel on the L.H. console. Engine bleed indicators are red and are located on E22 oxygen panel on the R.H. console. All other indicators are amber and are housed in the master warning panel (El5) located on the R.H. console.
- 1.1.2 The master warning panel(E15) incorporates twenty-five amber indicator warning lights, a press-to-RESET push button switch a, DAY-NIGHT selector switch and a press-to-TEST push button switch.
- 1.1.3 A master warning control box (E140), located in the nose wheel well L.H. side, houses all the relays and necessary circuitry for the control and operation of (a) 31 Warning circuits, (b) one red and one amber master warning lights and (c) three manually operated facilities as described in Paras. 1.2.1, 1.2.2 and 1.2.3.

1.2 Operation

- 1.2.1 The press-to-RESET switch, in conjunction with the master warning control box, facilitates switching off the red and amber MASTER WARNING lights in order to allow indication of a second or subsequent failure. The system or component indicator light remains on until the failure or fault is rectified.
- 1.2.2 The DAY-NIGHT switch, when selected to NIGHT, dims or reduces the illumination of all warning lights in the system, exepting fire warning lights. This is accomplished by inserting a resistor (located in El40) into each warning light circuit.
- 1.2.3 The press-to-TEST switch provides a means of carrying out a quick check of all warning light filaments associated with the master warning system, as shown in Table 1, Warning Lights Location, but does not check the navigator's bail-out warning light filaments. These can only be illuminated by operation of the pilot's pre-bail-out switch.
- 1.2.4 The lens cap of each warning light is engraved with its related system designation. L.H. or R.H. is indicated by means of an arrow pointing in the appropriate direction.



- 1.2.5 The function of each indicator and the master warning lights are as follows:
 - 1.2.5.1 If the fuel level in the L.H. or the R.H. fuel collector tank falls below approximately 94 gallons (65% of tank capacity), the appropriate FUEL LOW (L.H. or R.H.) indicator light and the amber MASTER WARNING light will illuminate.
 - 1.2.5.2 The FUEL PROP indicator light and the amber MASTER WARNING light will be illuminated when any of the following four conditions exist:
 - (a) The "valve-open" circuit of either the L.H. or the R.H. fuel flow proportioning by-pass valve is complete.
 - (b) The L.H. or the R.H. fuel transfer pump has failed. (In this condition the warning lights circuit is completed by the action of differential pressure switches sensing fuel transfer line pressures).
 - (c) The L.H. or the R.H. refuelling adaptor door is open.
 - (d) The MASTER REFUEL switch is ON.
 - 1.2.5.3 The ENG. EMERG. FUEL indicator illuminates whenever the L.H. or the R.H. ENG. FUEL switches, located on the L.H. console, are in the EMERG. position. (There is no master warning light operation in this system).
 - 1.2.5.4 If the fuel delivery pressure to the L.H. or the R.H. engine falls below 17.3 p.s.i.a., the appropriate L.H. or R.H. ENG. FUEL PRESS. indicator light and the amber MASTER WARNING light will illuminate. On rising pressure, the warning lights will go out at 18.3 p.s.i.a.
 - 1.2.5.5 If the oil pressure of the L.H. or the R.H. engine falls below 25 p.s.i., the appropriate L.H. or R.H. OIL PRESS. indicator light and amber MASTER WARNING light will illuminate.
 - 1.2.5.6 If the hydraulic pressure in the A or B flying control hydraulic systems falls below 1000 p.s.i., the relevant FLY. CONT. HYD. indicator light will illuminate, (inboard light for A system and outboard light for B system) and the amber MASTER WARNING light will illuminate. If both systems pressures fall below 1000 p.s.i., simultaneously, the amber and the red MASTER WARNING lights, along with the two system indicator lights, will illuminate.



- 1.2.5.7 If the utility hydraulic system pressure falls below 1000 p.s.i., the UTIL. HYD. indicator light and the amber MASTER WARNING light will illuminate.
- 1.2.5.8 If the emergency brake hydraulic system pressure falls below 1600 p.s.i., the EMERG. BRAKE HYD. indicator light and the amber MASTER WARNING light will illuminate.
- 1.2.5.9 In the event of a phase failure in either the L.H. or
 R.H. A-C power systems, the appropriate L.H. or R.H.
 A-C FAIL. indicator light and the amber MASTER WARNING
 light will illuminate. This will also initiate
 illumination of the D-C FAIL. indicator light. An A-C
 FAIL. indicator light illumination also shows that non essential A-C and D-C loads have been shed (i.e.
 disconnected from supply bus.)
- 1.2.5.10 If either L.H. or R.H. transformer rectifier unit output fails, the D-C FAIL. indicator light and the amber MASTER WARNING light will illuminate. This will also indicate that non-essential D-C loads have been shed.
- 1.2.5.11 If the L.H. and R.H. engine low-compressor rotor overspeeds beyond a pre-determined figure, the appropriate L.H. or R.H. ROTOR O'SPEED indicator light and the amber MASTER WARNING light will illuminate.
- 1.2.5.12 If the cabinaltitude exceeds 31,000 teet, the CABIN PRESS. indicator light and the amber MASTER WARNING light will illuminate.
- 1.2.5.13 When icing conditions in the engine air intakes are detected, the ICE indicator light and amber MASTER WARNING light will illuminate. This will be a flashing on and off indication caused by the cycling of the ice detectors.
- 1.2.5.14 When the emergency damping system takes over rudder control and operation, the EMERG. DAMP. indicator light and the amber MASTER WARNING light will illuminate.
- 1.2.5.15 A damping system failure will initiate illumination of the DAMP OUT indicator light and the amber MASTER WARNING light.
- 1.2.5.16 The R-P AXIS OUT indicator light and the amber MASTER WARNING light will illuminate when the roll and pitch axis damping is out or inoperative.



- 1.2.5.17 In the event of failure of both the transformer rectifier units, the battery is automatically disconnected from the main D-C bus, but continues to supply certain essential services through both the battery and emergency busses. This condition is indicated by illumination of the BATT. USE indicator light and the amber MASTER WARNING light.
- 1.2.5.18 A thermostat mounted in the air conditioning ducting to the front cockpit, and located aft of the navigator's bulkhead, operates at 80° ± 5°F rising temperature and completes the circuit for the AIR COND. FAIL. indicator light and the umber MASTER WARNING light.
- 1.2.5.19 A thermostat mounted in the air conditioning ducting to the radar nose, and housed in the nose wheel well, will close at 100° ± 5°F rising temperature, thereby sensing an impending overheat condition of the air conditioned equipment. This completes the circuit for the EQUIP. O'HEAT indicator light and the amber MASTER WARNING light. The thermostat opens at 60° ± 5° decreasing temperature.
- 1.2.5.20 A combination of three leak-sensing thermostats and one pressure switch are attached or located adjacent to each engine bleed line. At 375° 25°F or 120 ± 5 p.s.i.g., rising temperatures or pressures, any one or a combination of these units will operate and complete the circuit for the applicable L.H. or R.H. ENGINE BLEED INDICATOR light. There is no master warning light function for this system.
- 1.2.6 Fire warning will be indicated by illumination of any one or a combination of three fire warning indicator lights and the red MASTER WARNING light.
- 1.2.7 The bail-out indication system provides a pilot-initiated navigator bail-out warning facility, both visual and audible. Selection to ON of the pilot's PRE-BAIL-OUT switch will illuminate a red BAIL-OUT LIGHT and operate a buzzer in the navigator's cockpit. Simultaneously, a green pre-bail-out light in the pilot's cockpit will illuminate. This circuit is completed through a micro-switch mounted on the navigator's seat guide rail, normally closed with the seat in position, and on ejection of the navigator's seat, the pilot's pre-bail-out green light will go out. The pre-bail-out green light circuit is routed through the master warning control box to provide a press-to-TEST and a DAY-NIGHT dimming facility.
- 1.2.8 The landing gear position warning light, housed in the landing gear selector lever, is connected into the master warning system only for the purpose of providing a press-to-TEST facility for this light.



2. FUNCTION TESTS

2.1 Ground Equipment

2.1.1 A-C ground power unit.

NOTE

The following checks require the A-C ground power unit to be connected to the aircraft, the MASTER ELECTRICS switch to be ON and the circuit breaker MASTER WARNING located on El circuit breaker panel to be selected.

2.2 Warning Light Serviceability Test

- 2.2.1 Ensure that the circuit breaker MASTER TEST on El panel is serviceable.
- 2.2.2 With the DAY-NIGHT switch in DAY position, press the press-to TEST switch. All the warning lights should illuminate (See Table 1 Warning Lights Location)
- 2.2.3 With the press-to-TEST switch actuated, select the DAY-NIGHT switch to NIGHT. The brilliance of all the warning lights should dim.

2.3 Warning Light Circuit Tests

2.3.1 Fuel Low-Level - Left

To check the fuel low-level warning lights, a fuel low-level condition in tank #5 is required.

- 2.3.1.1 Ensure that the current limiter L. LOW-LEVEL, located on panel E20, is serviceable.
- 2.3.1.2 When the low-level control unit located in #5 fuel tank senses a fuel low-level condition, the warning lights FUEL LOW (left) and amber MASTER WARNING should illuminate.
- 2.3.1.3 Pulse the master RESET switch, located on the master warning panel. The amber MASTER WARNING light should go out.
- 2.3.1.4 After refueling, select the MASTER REFUEL switch to the OFF position. The FUEL LOW (left) warning light should be out.

2.3.2 Fuel Low-Level - Right

2.3.2.1 Repeat Para 2.3.1, reading Right for Left.

2.3.3 Hydraulic Flying Control Systems - A and B Warning

To carry out an electrical check of these systems, hydraulic pressure to the flying control systems A and B will be required.

- 2.3.3.1 Ensure that the current limiter FLT. HYD. PRESS., located on E20 panel, is serviceable.
- 2.3.3.2 With the hydraulic fluid supply pressure of both systems reading 3,000 p.s.i., the warning lights FLY. CONT. HYD. A and FLY. CONT. HYD. B should be out.
- 2.3.3.3 Set the hydraulic fluid supply pressure of the A system to 1000 ± 100 psi. The warning lights FLY. CONT. HYD. A and the amber MASTER WARNING should illuminate. Re-set the amber MASTER WARNING light.
- 2.3.3.4 Raise the hydraulic fluid supply pressure of the A system to 3,000 p.s.i. The warning light FLY. CONT. HYD. A should go out.
- 2.3.3.5 Repeat Paras 2.3.3.3 and 2.3.3.4, reading System B for System A.
- 2.3.3.6 Reduce the hydraulic fluid supply pressure of both systems to 1000 100 psi. The warning lights FLY. CONT. HYD. A, FLY. CONT. HYD. B and the amber and red MASTER WARNING should illuminate.
- 2.3.3.7 Re-set the amber and red MASTER WARNING lights.

2.3.4 Utility Hydraulics System Warning

To carry out an electrical check of this system, hydraulic pressure to the utility hydraulics system will be required.

- 2.3.4.1 Ensure that the current limiter UTIL. HYD. PRESS., located on E20 panel, is serviceable.
- 2.3.4.2 Have the hydraulic supply pressure of the utility hydraulics system raised to 3000 psi. The warning light UTIL. HYD. should go out.



- 2.3.4.3 Have the hydraulic supply pressure of the utility hydraulics system reduced to 1000 ± 100 psi. The warning lights UTIL. HYD. and amber MASTER WARNING should illuminate.
- 2.3.4.4 Re-set the amber MASTER WARNING light.

2.3.5 Emergency Brake Warning

To carry out an electrical check of this system, hydraulic pressure to the utility hydraulics system will be required.

- 2.3.5.1 Ensure that the current limiter UTIL. HYD. PRESS.; located on E20 panel, is serviceable.
- 2.3.5.2 Have the hydraulic supply pressure of the utility hydraulics system raised to 3000 psi. The warning light EMERG. BRAKE HYD. should go out.
- 2.3.5.3 Have the hydraulic supply pressure of the emergency brake hydraulics system reduced to 1600 100 psi.

 The warning lights EMERG. ERAKE HYD. and amber MASTER WARNING should illuminate.
- 2.3.5.4 Re-set the amber MASTER WARNING light.

2.3.6. Fuel Proportioner Warning

The warning light FUEL PROP. should be illuminated by actuation of any of the following switches:

Master Refuel Switch

Tank #1 and Tank #2 fuel pump pressure switches.

Low Level control units, L and R

Two point refueling door switches, L and R

2.3.6.1 Refueling Master Switch

- (a) Ensure that the current limiter A/C FUEL DIFF. PRESS, located on panel E2O, is serviceable.
- (b) Select the MASTER REFUEL switch, located on panel E21, to the ON position. The warning lights FUEL PROP. and amber MASTER WARNING should illuminate.
- (c) Pulse the master RESET switch located on the master warning panel. The amber MASTER WARNING should go out.



(d) Select the MASTER REFUEL switch to the OFF position. The FUEL PROP. warning light should go out.

2.3.6.2 No. 1 Fuel Pump Pressure Switch

The FUEL PROP. light should be illuminated when there is no fuel pressure from tank #1 fuel pump, but with the #1 pump relay desenergized to signify pump operation.

- (a) Ensure that #1 and #2 fuel tanks are full.
- (b) Remove the three current limiters TANK #1 PUMP from panel E20.
- (c) Ensure that the current limiter R/F AND TEST PANEL is serviceable.
- (d) Select and hold the GROUND TEST SAFETY OVER-RIDE switch, located on panel E21, to the TEST position. The warning lights FUEL PROP. and amber MASTER WARNING should illuminate.
- (e) Pulse the master RESET switch located on the master warning panel. The warning light amber MASTER WARNING should go out.
- (f) Release the GROUND TEST SAFETY OVER-RIDE switch to the NORMAL position. The warning light FUEL PROP. should go out.
- (g) Replace the three TANK #1 PUMP current limiters.

2.3.6.3 No. 2 Fuel Pump Pressure Switch

(a) Repeat Para. 2.3.6.2, reading #2 for #1.
For 2.3.6.2 (c) read A/C FUEL DIFF. PRESS. limiter.

2.3.6.4 Low Level Control Unit - Left

The FUEL PROP. warning light should be illuminated on a fuel low level condition.

- (a) Ensure that the current limiter L. LOW LEVEL, located on panel E20, is serviceable.
- (b) When the low level control unit senses a fuel low level condition, the warning lights FUEL PROP. and amber MASTER WARNING should illuminate.



- (c) Pulse the master RESET switch located on the master warning panel. The amber MASTER WARNING light should go out.
- (d) The warning light FUEL PROP. should go out when the MASTER ELECTRICS switch is selected to the OFF position.
- 2.3.6.5 Low Level Control Unit Right
 - (a) Repeat Para 2.3.6.4, reading Right for Left.
- 2.3.6.6 Two Point Refueling Door Left

When the two point refueling door is opened, the warning light FUEL PROP. should illuminate.

- (a) Ensure that the current limiter FUEL DIFF. PRESS., located on panel E20, is serviceable.
- (b) Open the left two point refueling door.

 The warning lights FUEL PROP. and amber MASTER WARNING should illuminate.
- (c) Pulse the master RESET switch located on the master warning panel. The warning light amber MASTER WARNING should go out.
- (d) Close the left point refueling door. The warning light FUEL PROP. should go out.
- 2.3.6.7 Two Point Refueling Door Right

Repeat Para 2.3.6.6, reading Right for Left.

2.3.7 Cabin Pressure

- 2.3.7.1 Ensure that the circuit breaker VISOR HEAT, located on panel El, is closed.
- 2.3.7.2 Remove the electrical connector from the cabin pressure aneroid switch and place a jumper between pins C and B on the connector. The warning lights CABIN PRESS. and amber MASTER WARNING should illuminate.
- 2.3.7.3 Pulse the master RESET switch located on the master warning panel. The amber MASTER WARNING light should go out.
- 2.3.7.4 Remove the jumper wire from the connector and the warning light CABIN PRESS. should go out.



2.3.7.5 Re-connect the electrical connector to the cabin pressure aneroid switch.

2.3.8 Engine Emergency Fuel-L and R

This test should be carried out with both engines running.

- 2.3.8.1 Ensure that the circuit breakers L ENG. FUEL CONTROL and R. ENG. FUEL CONTROL are closed.
- 2.3.8.2 Select the left FUEL CONTROL switch, located on the pilot's left hand console, to the EMERG. position. The warning light ENG. EMERG. FUEL should illuminate.
- 2.3.8.3 Select the left FUEL CONTROL switch to the RESET position. The warning light ENG. EMERG. FUEL should go out.
- 2.3.8.4 Select the right FUEL CONTROL switch to the EMERG. position. The warning light ENG. EMERG. FUEL should illuminate.
- 2.3.8.5 Select the right FUEL CONTROL switch to the RESET position. The warning light ENG. EMERG. FUEL should go out.

2.3.9 Engine Fuel Pressure - Left

This test should be carried out during engine run.

- 2.3.9.1 Ensure the current limiter L. ENG. WARN located on E20 panel is serviceable.
- 2.3.9.2 With the left engine running the warning light ENG. FUEL PRESS. left should be out.
- 2.3.9.3 When the left engine is shut down the warning lights ENG. FUEL PRESS. left and the amber Master Warning light should illuminate.
- 2.3.9.4 Pulse the Master RESET switch, and the amber MASTER WARNING light should go out.

2.3.10 Engine Fuel Pressure - Right

2.3.10.1 Repeat para 2.3.9 reading Right for Left.

2.3.11 Oil Pressure - Left

This test should be carried out during engine run.

2.3.11.1 Ensure that the current limiter L. ENG. WARN. located on panel E20, is serviceable.



- 2.3.11.2 With the left engine running the warning light OIL PRESS. left should be out.
- 2.3.11.3 When the left engine is shut down the warning lights OIL PRESS. left and the amber MASTER WARNING should illuminate.
- 2.3.11.4 Pulse the Master RESET switch, and the amber MASTER WARNING light should go out.

2.3.12 Oil Pressure - Right

Repeat para 2.3.11 reading Right for Left.

2.3.13 A-C Failure - Left

This test should be carried out during engine run. without A-C GROUND POWER UNIT connected to A/C.

- 2.3.13.1 Ensure that the circuit breaker L. ALT. CONT., located on El panel, is closed.
- 2.3.13.2 With the left engine not running and the left ALTERNATOR switch selected to the ON position, the warning lights A-C FAIL. (left) and amber MASTER WARNING should be illuminated.
- 2.3.13.3 Pulse the master RESET switch located on the master warning panel and the amber MASTER WARNING light should go out.
- 2.3.13.4 With the left ALTERNATOR switch selected to the ON position, start the left engine.
- 2.3.13.5 When the left engine is running at idle speed, the warning light A/C FAIL. (left) should go out.
- 2.3.13.6 With the left engine running at idle speed, select the left ALTERNATOR switch to the OFF position. The warning lights A-C FAIL. (left) and amber MASTER WARNING should illuminate.
- **2.3.13.7 Select the left ALTERNATOR switch to first, RESET, and then to the ON positions. The warning light A-C FAIL. (left) should go out.

2.3.14 A-C Failure - Right

2.3.14.1 Repeat Para 2.3.13, reading Right for Left.

2.3.15 D-C Failure - Left

This test should be carried out during engine run without A-C GROUND POWER UNIT connected to A/C.



- 2.3.15.1 Ensure that the circuit breaker L. PWR. FAIL. located on El panel, is closed.
- 2.3.15.2 With the left engine not running and the left ALTERNATOR switch selected to the ON position, the warning lights D=C FAIL. and amber MASTER WARNING should be illuminated.
- 2.3.15.2 Pulse the master RESET switch located on the master warning panel. The amber MASTER WARNING light should go out.
- 2.3.15.4 With the left engine running at idle speed and the left ALTERNATOR switch selected to the ON position, the warning light D-C FAIL. should go out.
- 2.3.15.5 With the left engine running at idle speed, select the left ALTERNATOR switch to the OFF position.

 The warning lights D-C FAIL. and amber MASTER WARNING should illuminate.
- 2.3.15.6 Pulse the master RESET switch. The amber MASTER WARNING light should go out.
- 2.3.15.7 Select the left ALTERNATOR switch to first, RESET, and then to the ON positions. The warning light D-C FAIL. should go out.
- 2.3.15.8 Select the MASTER ELECTRICS switch to OFF and back to ON.

2.3.16 D-C Failure - Right

2.3.16.1 Repeat Para. 2.3.15, reading Right for Left.

2.3.17 Rotor Over-Speed - Left

This test should be carried out when the left engine is running.

- 2.3.17.1 Ensure that the current limiter L. ENG. WARN., located on E2O panel, is serviceable.
- 2.3.17.2 With the left engine running, select the left afterburner to the ON position. The warning lights ROTCR O'SPEED (left) and amber MASTER WARNING may illuminate. The warning light ROTOR O'SPEED (left) should be illuminated only momentarily, then go out.

2.3.18 Rotor Over-Speed - Right

2.3.18.1 Repeat Para 2.3.17, reading Right for Left.



2.3.19 Ice Warning - L and R

This test should be carried out in conjunction with engine intake de-icing tests. (Refer to Maintenance Instructions Report 71/MAINT 11/8 - Electrics - Duct De-Icing)

- 2.3.19.1 With the left duct ice detector actuated, check that the warning lights ICE and amber MASTER WARNING are illuminated.
- 2.3.19.2 Pulse the master RESET switch and the warning light amber MASTER WARNING should go out.
- 2.3.19.3 With the right duct ice detector actuated, check that the warning lights ICE and amber MASTER WARNING are illuminated.
- 2.3.19.4 Pulse the master RESET switch and the amber MASTER WARNING light should go out.

2.3.20 Bail Out

- 2.3.20.1 Ensure that the circuit breaker BAIL-OUT, located on Rl panel, is closed.
- 2.3.20.2 Select the PRE-BAIL-OUT switch, located on the pilot's left hand console, to the ON (pre-bail-out) position. The warning light PRE-BAIL-OUT in the pilot's cockpit the BAIL-OUT light in the navigator's cockpit should illuminate and the buzzer located in the navigator's cockpit should sound.
- 2.3.20.3 Select the PRE-BAIL-OUT switch to the OFF position.
 The warning lights BAIL-OUT and PRE-BAIL-OUT should go out and the buzzer should cease to sound.

2.3.21 Engine Fire Warning-Left

- 2.3.21.1 Ensure that the current limiter L. ENG. FIRE DET., located on E20 panel, is serviceable.
- 2.3.21.2 Select the fire detection test switch, located on E21 panel, to the TEST position. The warning lights L. ENGINE and red MASTER WARNING should illuminate.
- 2.3.21.3 Pulse the master RESET switch located on the master warning panel and the read MASTER WARNING light should go out.
- 2.3.21.4 Select the fire detection test switch to the NORMAL position and the warning light L. ENGINE should go



2.3.22 Engine Fire Warning - Right

2.3.22.1 Repeat Para 2.3.21, reading Right for Left.

2.3.23 Hydraulic Bay Fire Warning

- 2.3.23.1 Ensure that the circuit breaker HYD. BAY FIRE PROTECTION, located on El panel, is serviceable.
- 2.3.23.2 Select the fire detection test switch, located on E2l panel, to the TEST position. The warning light HYD. BAY and red MASTER WARNING should be illuminated.
- 2.3.23.3 Pulse the master RESET switch located on the master warning panel and the red MASTER WARNING light should go out.
- 2.3.23.4 Select the fire detection test switch to the NORMAL position and the warning light HYD. BAY should go out.

2.3.24 Air Conditioning Failure

- 2.3.24.1 Ensure that the circuit breaker BAIL-OUT, on El circuit breaker panel, is closed.
- 2.3.24.2 Disconnect the connector from the air conditioning system duct thermostat and connect a jumper wire between pins A and B at the connector. The warning lights AIR. COND. FAIL. and amber MASTER WARNING should illuminate.
- 2.3.24.3 Pulse the master RESET switch on the master warning panel and the amber MASTER WARNING light should go out.
- 2.3.24.4 Remove the jumper wire from the connector and the AIR. COND. FAIL. warning light should go out.
- 2.3.24.5 Re-connect the connector to the air conditioning duct thermostat.

2.3.25 Equipment Overheat

- 2.3.25.1 Ensure that the circuit breaker VALVE CONT. AIR COND., located on El circuit breaker panel, is closed.
- 2.3.25.2 Disconnect the connector from the thermostat located in the air-conditioning ducting to the radar nose and connect a jumper wire between pins A and B at the connector. The warning lights EQUIP. O'HEAT and amber MASTER WARNING should illuminate.



- 2.3.25.3 Pulse the master RESET switch on the master warning panel and the amber MASTER WARNING light should go out.
- 2.3.25.4 Remove the jumper wire from the connector and the EQUIP. O'HEAT warning light should go out.
- 2.3.25.5 Re-connect the connector to the radar nose air conditioning duct thermostat.

2.3.26 Engine Bleed - Left

- 2.3.26.1 Ensure that the current limiter L. ENG. WARN., located on E20 aft limiter panel, is serviceable.
- 2.3.26.2 Disconnect the connector from the left forward thermostat and connect a jumper wire between pins A and B at the connector.

 The ENG. BLEED (left) indicator light should illuminate.
- 2.3.26.3 Remove the jumper wire and the ENG. BLEED (left) indicator light should go out.
- 2.3.26.4 Disconnect the connectors from the left aft thermostat, left aft centre thermostat and the left pressure switch in turn and repeat the test as outlined in Paras 2.3.26.2 and 2.3.26.3.
- 2.3.26.5 Re-connect the four connectors to their applicable units.

2.3.27 Engine Bleed - Right

- 2.3.27.1 Disconnect the connectors from the right forward thermostat right aft thermostat, right aft centre thermostat and the right pressure switch in turn and repeat the test as outlined in Paras 2.3.26.2 and 2.3.26.3, reading Right for Left.
- 2.3.27.2 Re-connect the four connectors to their applicable units.

2.3.28 R.P. Axis Out, Emergency Damping and Damping Out

2.3.28.1 These indicators are to be tested when carrying out a complete damping system test. (Refer to Maintenance Instructions Report 71/MAINT 13/8 - Electronics - Damping System).



TABLE 1

WARNING LIGHTS LOCATION

WARNING LIGHT TITLE

LOCATION

	PANEL NO.	PANEL NAME
Fuel Low Level - Left - Amber	E-15	Master Warning
Fuel Low Level - Right - Amber	E-15	Master Warning
Flying Control Hydraulics A - Amber	E-15	Master Warning
Flying Control Hydraulies A - Amber	E-15	Master Warning
Flying Control Hydraulics B - Amber	E-15	Master Warning
Air Conditioning Failure - Amber	E-15	Master Warning
Fuel Proportioning - Amber	E-15	Master Warning
Utility Hydraulics - Amber		Master Warning
Emergency Brake Hydraulics - Amber	E-15	Master Warning
Gabin Pressure - Amber	E-15	Master Warning
Emergency Damping - Amber	E-15	Master Warning
A-C Failure - Left - Amber	E-15	Master Warning
A-C Failure - Right - Amber	E-15	Master Warning
Ice Warning - Amber	E-15	Master Warning
Engine Fuel Pressure - Left - Amber	E-15	Master Warning
Engine Fuel Pressure - Right - Amber	E-15	Master Warning
D-C Failure - Left - Right - Amber	E-15	Master Warning
Battery - USE - Amber	E-15	Master Warning Master Warning
	E-15	
Damping Out - Amber	E-15	Master Warning
Oil Pressure - Left - Amber	E-15	Master Warning
Oil Pressure - Right - Amber	E-15	Master Warning
Rotor Over Speed - Left - Amber	E-15	Master Warning
Rotor Over Speed - Right - Amber	E-15	Master Warning
R-P Axis Out - Amber	E=14	Fuel & Fire
Engine Fire Warning - Left - Red	E-14	Fuel & Fire
Engine Fire Warning - Right - Red	E-14	Fuel & Fire
Hydraulic Bay Fire Warning - Red		Pilot's Main Instr.
Master Warning - Red	E=11	Oxygen Panel
Engine Bleed - Red	E-22	Oxygen Panel
Engine Bleed - Red	E-22	Pilot s Main
Master Warning - Amber	E=11	Instrument
nastor warming - masor		Pilot's Main
Pre-Bail-Out- Green	E-11	Instrument
-10 Dall-Out of Gen		Front C/pit
Landing Gear Position Warning	Landing Gear	
Light	Selector Lever	Moston Monning
	E-15	Master Warning
*Equipment Overheat - Amber	ローエン	
	AND PROPERTY COMES TO A SECURE CONTRACTOR CO	

The panel locations are as follows:

Pilot's Main Instrument - Pilot's Cockpit, forward
Master Warning - Pilot's Right Hand Console
Oxygen Panel - Pilot's Right Hand Console



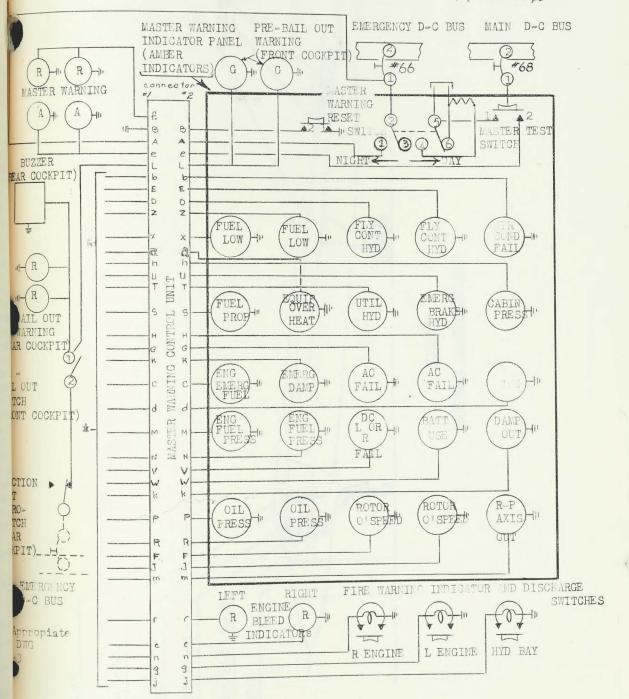
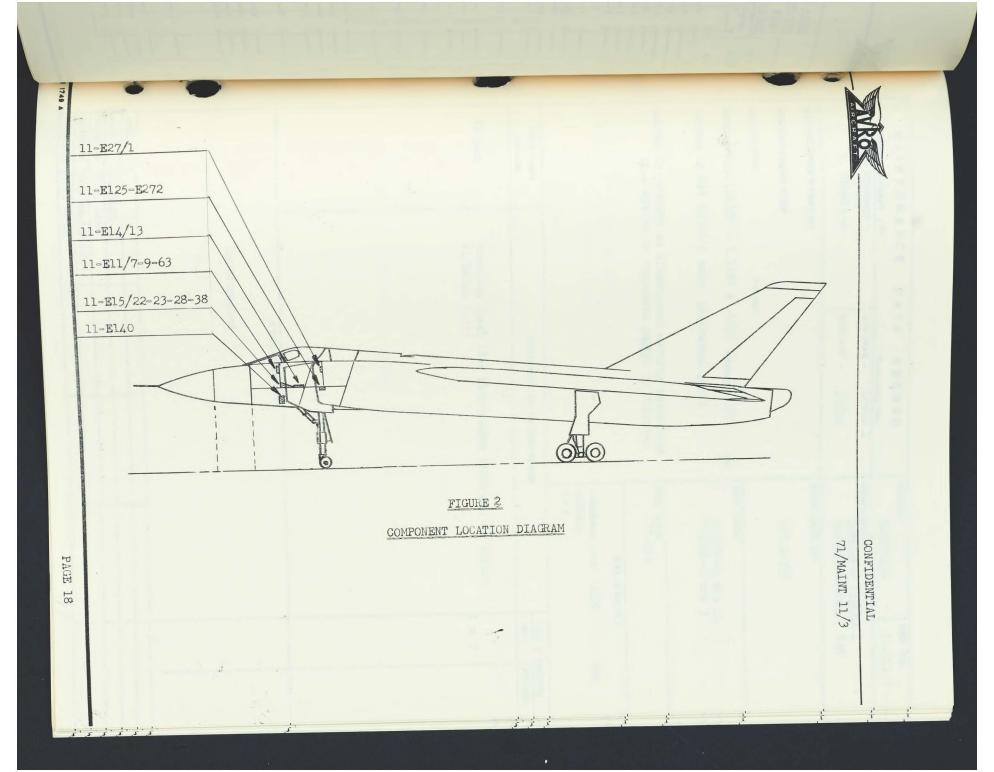


FIG. 1 MASTER WARNING SYSTEM SCHENATIC



MAINTE	NANCE I	DATA RECORD	SYSTEM	REF.	
AVRO AIRCRAF	T LTD.	Engineering Div.	ELECTRICS	11-	E11/7
STRIBUTION: STANDA		A/C TYPE - Arrow 1	COMPONENT Indicator Li	ghts -	
K. Knowl	ton	EFF. A/C - 25201	Master Warnin		1
ANUFACTURER'S PAR	T NO.		AVRO PART'NO.		
MANUFACTURER'S NAM	E		ICS-I-109		
VROCAN SPEC.	E.O	NO.			
envelope size2.342	8" x 1.125"	x .625" WEIGHT .08 LB.	REF. DWGS.	77	•
ocation On Ell p	oilot's main	instrument panel	7-1100-3 sht 7-1100-2 sht		
unction To provi	de an illumi	nated warning indication	331		
		ment faultt or failure.	REF. M.D.R. 11-E11		
			RELIABIL	ITY	
			OVERHAUL LIFE 1500 WASTAGE Q.T.R.	0	HRS.
INSPECTION		OPERATION TO BE PERFORME	D	MEN X	MINUTES
PERIOD		ordanion to be ten onne		EST.	ACTUAL
Primary	Function 71/Maint	Check (See Maintenance Inst	tructions R e port	1 x 2	
					F
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25 Sept 57 K.P. Lowe

CHECKED WO2 Wentworth APPROVED R.F. Reid

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APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS
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DETAILS:	to sal		40.00	AND THE STREET SAFETY SAFETY AND THE STREET SAFETY
		GROUND SUPPORT	EQUIPMENT	SELF WEST, Van Moleves
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CROUN	ND TESTING EQUIPME	NT	GROUND HA	ANDLING EQUIPMENT
A-C Ground F		163 1.0		it Access Stand
OTTORIN N. HOLD		manage 107	agard a definition	MEN × MINUTES
REPLACEABLE	EXX	REMOVAL INS	TRUCTIONS	EST. ACTUAL
1 5 7 6	TOTAL BALL	ACTION SOURISM	201 (60) WORD PO (6)1(4a)	EST. ACTUAL
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5 % [Remove 3 indi Unsolder 2 el	cator securing sc lectrical connecti	ons.	
5 % .	Remove 3 indi Unsolder 2 el	ectrical connecti	ons.	ace 1 x 5
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ENCE				
ECIAL TOOLS FOR BEXCH IN	LOCATION On Ell F	Engineering Div. ARD + A/C TYPE - Arrow 1 Lton EFF. A/C - 25201 TNO. E E.O. NO. 28" x 1.125" x .625" WEIGHT .08 Pilot's Main Instrument Panel	SYSTEM ELECTRICS COMPONENT Indicator Land Master Warn AVRO PART NO. 2CS-I-109 REF. DWGS. 7-1100-2 sh	ing - Amber
DUND HANDLING EQUIPMENT Cockpit Access Stani	FUNCTION TO provi	de an illuminated warning indication tem or component fault or failure	REF. M.D.R. 11-E11 RELIABI	LITY
Access Stand			OVERHAUL LIFE 1 WASTAGE Q.T.R.	500 нrs.
ENTER	INSPECTION PERIOD	OPERATION TO BE PERF	ORMED	MEN X MINUTES EST. ACTUAL
place lx5	Primary	Function Check (See Maintenance 71/Maint 11/3)	Instructions Report	1 x 2
		ACCESSIBILITY	,	
		Unobstructed		
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	APPROVED R.F. Re	id		

APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	AC	CCESS	ion -
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		2.0				
DIDNER K NOW		AND MEDICAL PROPERTY OF				
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FUNCTION			NIL	-	NIL	
		UIPMENT	GROUND HANDLING EC		TESTING EQUIPMENT	GROUNI
		Stand	Cockpit Acces		ower Unit	A-C Ground I
INSPE	i contra	Married	1000	SHOWS AND THE REAL PROPERTY.		
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MATERIA .		7.59			
0	MAINTENANCE DATA RECORD AVRO AIRCRAFT LTD. Engineering Div.			SYSTEM EIECTRICS	REF. NO. 11-E14/13
	DISTRIBUTION: STANDARD + S. Brown K. Knowlton A/C TYPE - Arrow 1 EFF. A/C - 25201			COMPONENT Switch - Pil Out	ot's Pre-Bail-
	MANUFACTURER'S PART		mmer	AVRO PART NO.	·
at thatte	AVROCAH SPEC.	E.O.	NO.		
MON WIND SELL	ENVELOPE SIZE 2. 201	5" x 1.125" x	.625" WEIGHT .08	REF. DWGS.	
L Tall	LOCATION On E14 F	uel and Fire	7-1100-3 sht 7-1100-2 sht		
	FUNCTION To enabl Bail-Out	e the pilot t -Warning ligh	o operate the Navigator t.	REF. M.D.R.	٠,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
COLOR STORY CLASS	The second secon			RELIABI	LITY
Social English				OVERHAUL LIFE 150 WASTAGE Q.T.R.	OO HRS.
	INSPECTION		OPERATION TO BE PERFO	DRMED	MEN × MINUTES
MITELETERS BIT	PERIOD	******			EST. ACTUAL
nervectors zi	Primary Electrics	Function 71/Maint		Instructions Report	1 x 2
			ACCESSIBILITY		
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	DATE 25 Sep 5				, i
	COMPILED K.P. LOW				
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APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS
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DETAILS:		T. A.		GOR DE HOUSE STATISTICS
		GROUND SUPPORT	EQUIPMENT	I I w "Elle Cape means a
SPECIAL	TOOLS FOR AIRCRAF	T USE	SPECIAL TOO	LS FOR BENCH USE
	NIL	TO SOUTH OF	NIL	
GROUI	ND TESTING EQUIPME	NT	GROUND HAN	DLING EQUIPMENT
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	INTENANCE	DATA RE	CORD	SYSTEM INSTRUMENTS	REF.	
	O AIRCRAFT LTD.		eering Div.	TMOTHOMENTO	12-2 11-E	25
	. Brown	A/C TYPE -	Arrow 1	COMPONENT		
	. Knowlton	EFF. A/C -	25201	Panel - Mast	er Warni	ng
· · · A NYIE A CTI	urer's part no. N/A		2,201			
MANUFACIO				AVRO PART NO.		
		Aircraft Limited		7-1252-68		
AVROCAN SI	PEC. Nil	E.O. NO.				
	size5.8" x 6.4" x		r 3.78 est.в.	REF. DWGS. 7-1252-179		
LOCATIONP	ilot's cockpit -	R/H FWD console		7-1252-69 7-1152-86 7-1100-3 sht	11	
MUNCTIONH	ouses: - warning	g lights, night and	d down ouritab		11	
P	ress-to-test swi	tch, press-to-rese. the master warning	et switch.	REF. M.D.R. 11-E140		
	The second second	and the second		RELIABIL	ITY	
				overhaul Life 1500 WASTAGE Q.T.R. Pending	0	HRS.
INSPEC	TION				MEN X B	ВЯТИИ
PERI		OPERATION	TO BE PERFORMED		EST.	ACTUA
Primary Instrum	ents	k panel for secur			1 x 2	
Primary Electri	cs 71/M	tion Check (See Ma Maint 11/3)	aintenance Inst	ructions Report	1 x 3	
25 Hrs. Instrum		panel			1 x 1	
25 Hrs. Electri	cs Func	k wiring and hardy tion check (See Ma Maint 11/3)	ware for securi aintenance Inst	ity and damage. tructions Report	2 x 30	
	N N	ACCESSIBILIT	T V			
	U _{nob}	structed				
	4	2	3			
		4			-	
IBSUE	1 /-2	. 05/57	I OF Cant 57		- N	
DATE	June 14/56	March 25/57	25 Sept 57		+	
	June 14/56 D. Collingwood WO2 Wentworth	March 25/57 D. Collingwood Sgt McEgan	25 Sept 57 K.P. Lowe WO2 Wentworth			

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PLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS	
ETAILS:					
		GROUND SUPPORT			
SPECIAL T	OOLS FOR AIRCRAF	T USE	SPECIAL TOO	DLS FOR BENCH USE	
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MAINTENANCE DATA RECORD SYSTEM REF. NO. AVRO AIRCRAFT LTD. Engineering Div. ELECTRICS 11-E15/22 DISTRIBUTION: STANDARD + A/C TYPE - Arrow 1 COMPONENT S. Brown Switch - Master Warning EFF. A/C -K. Knowlton 25201 Reset. MANUFACTURER'S PART NO. AVRO PART NO. MANUFACTURER'S NAME MS25089-1D. AVROCAN SPEC. E.O. NO. ENVELOPE SIZE]. 344" x .750" dia WEIGHT 1/4 oz. REF. DWGS. LB. 7-1100-3 sht 11 LOCATION Housed in Master warning panel, Pilot's 7-1252-179 cockpit R.H. console FUNCTION To enable the Pilot to reset the red or REF. M.D.R. amber master warning lights. 11-E15 RELIABILITY OVERHAUL LIFE HRS. 1500 WASTAGE Q.T.R. INSPECTION MEN × MINUTES OPERATION TO BE PERFORMED PERIOD EST. ACTUAL Primary Function Check (See Maintenance Instructions Report 71/Maint 11/3) 1 x 1 ACCESSIBILITY With El5 panel lifted clear of console. Ref. M.D.R. 11-E15. ISSUE DATE 4th Oct 57 COMPILED K.P. Lowe CHECKED WO2 Wentworth APPROVED R.F. Reid

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		CDECIPICA TION	FREQUENCY		ACCESS	
PPLICATION	MATERIAL	SPECIFICATION	PERCENCI		Text I car	tests to d
al could not be				She She		
				0.5736	100	
DETAILS:	OR THE			Total Section	e reson	Lengus.
		GROUND SUPPORT		70010	ION MAN	
SPECIAL '	TOOLS FOR AIRCRAI	T USE	SPECIAL 7	TOOLS FOR BEN	CH USE	
NIL			NIL			
A/ TT						
GROUN	D TESTING EQUIPME	ENT	GROUND	HANDLING EQUI	PMENT	
(mm) 5/6	E . 902 /500					
A-C G	round Power Un	it	Cockpit A	ccess Stand		
		DESIGNATION OF STREET				
INTERCHANGEABL	xx x	REMOVAL IN	STRUCTIONS			MINUTES
REPLACEABLE Unsol	der 2 electric	REMOVALIN al connections. ing mut and lock-	vashera	71/20	EST.	
REPLACEABLE Unsol	der 2 electric	al connections.	2,47	eplace		MINUTES
REPLACEABLE Unsol	der 2 electric	al connections.	vashera	eplace	EST.	
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REPLACEABLE Unso.l. Remov	der 2 electric e switch secur	al connections. ing mut and lock-	Remove and R		1 x 4	ACTUAL
REPLACEABLE Unso.l. Remov	der 2 electric e switch secur	al connections. ing mut and lock-	Remove and R		1 x 4	ACTUAL

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MAINTENANCE REF. NO. DATA SYSTEM RECORD ELECTRICS 11-E15/23 AVRO AIRCRAFT LTD. Engineering Div. DISTRIBUTION: STANDARD + S. Brown A/C TYPE - Arrow 1 COMPONENT Switch - Master Test. K. Knowlton EFF. A/C -25201 AVRO PART NO. MANUFACTURER'S PART NO. MS25089-4D. MANUFACTURER'S NAME AVROCAN SPEC. E.O. NO. REF. DWGS. 7-1100-3 sht 11 envelope size 1.344" x .750" dia WEIGHT 1/4 oz. LB. LOCATION Housed in Master warning panel, Pilot's cockpit R.H. console. FUNCTION To provide a press-to-test facility for all REF. M.D.R. warning light filaments. 11-E15 RELIABILITY HRS. 1500 OVERHAUL LIFE WASTAGE Q.T.R. MEN X MINUTES INSPECTION OPERATION TO BE PERFORMED ACTUAL EST. PERIOD Function Check (See Maintenance Instructions Report Primary 1 x 3 71/Maint 11/3) ACCESSIBILITY With El5 panel lifted clear of console. Ref. M.D.R. 11-E15. ISSUE DATE 4 Oct 57 K.P. Lowe COMPILED CHECKED WO2 Wentworth APPROVED R.F. Reid

TOOLS FOR SENCE IN

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Access Stand

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PPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	A	CCESS	20
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ETAILS:	all also in				in tras-	Service Service
100	A PARTY AND A	GROUND SUPPORT	EQUIPMENT	Note while	a Tarana	
SPECIAL	TOOLS FOR AIRCRAF	T USE	SPECIAL TO	OOLS FOR BENCH	H USE	
NIL		In what	NIL			
GROUI	ND TESTING EQUIPMEN	NT	GROUND HA	ANDLING EQUIPM	ENT	
A-C G	round Power Uni	t	Cockpit Acc	cess Stand		
TERCHANGEABL	EXX	REMOVAL IN	STRUCTIONS		MEN X	MINUTES
NTERCHANGEABLE	EXX	REMOVAL IN	STRUCTIONS	Last Last	MEN X	MINUTES
EPLACEABLE Unsol Remov	der 2 electrica e switch securi		TOLL OF	ace		
EPLACEABLE Unsol Remov	der 2 electrica	l connections.	vashers.	ace	EST.	
EPLACEABLE Unsol Remov	der 2 electrica e switch securi	l connections. ng nut and lock-w	vashers.	ace	EST.	
EPLACEABLE Unsol Remov	der 2 electrica e switch securi	l connections. ng nut and lock-w	vashers. Remove and Repla		EST.	

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MAINTENANCE DATA RECORD SYSTEM REF. NO. 11-E15/28 ELECTRICS AVRO AIRCRAFT LTD. Engineering Div. DISTRIBUTION: STANDARD + A/C TYPE -Arrow 1 COMPONENT S. Brown EFF. A/C - 25201 Switch - Master Dimming. K. Knowlton MANUFACTURER'S PART NO. 8824K8 AVRO PART NO. MANUFACTURER'S NAME Cutler-Hammer AVROCAN SPEC. E.O. NO. ENVELOPE SIZE 2 11/32" x 1 5/16" x 3/4" WEIGHT 0.10 LB. REF. DWGS. 7-1100-3 sht 11 LOCATION Housed in Master warning panel, Pilot's 7-1252-179 cockpit R.H. console. FUNCTION When switched to night, inserts a resistor REF. M.D.R. into the warning light circuits and reduces 11-E15 illumination. RELIABILITY OVERHAUL LIFE 1500 WASTAGE Q.T.R. MEN X MINUTES INSPECTION OPERATION TO BE PERFORMED EST. ACTUAL PERIOD Function Check (See Maintenance Instructions Report Primary 1 x 2 71/Maint 11/3) ACCESSIBILITY With El5 panel lifted clear of console. Ref. M.D.R. 11/E15. ISSUE 1 DATE 4 Oct 57 COMPILED K.P. Lowe CHECKED WO2 Wentworth APPROVED R.F. Reid

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DETAILS:			ammallani passas	COS LA TOAN PERSONANCE LOUI MANN PARAMENTARIO
		GROUND SUPPORT	EQUIPMENT	Ta Mill Time treatment
SPECIAL	TOOLS FOR AIRCRAF	T USE	SPECIAL TOOI	S FOR BENCH USE
NIL		endada in ancelore in	NIL	
GROUN	D TESTING EQUIPMEN	NT	GROUND HAN	DLING EQUIPMENT
A=C Gr	round Power Unit	t	Cockpit Acces	ss Stand
A-C Gr	round Power Unit		Cockpit Acces	ss Stand
A=C Gr		REMOVAL INS	SECTION SECTION	ss Stand Men × Minutes
INTERCHANGEABLE REPLACEABLE	E xx	REMOVAL INS	SECTION SECTION	76-13-60
INTERCHANGEABLE REPLACEABLE Discor	xx nnect 5 electric	REMOVALINS cal connections.	TRUCTIONS	MEN × MINUTES

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MAINTENANCE DATA RECORD SYSTEM REF. NO. 11-E27/1 ELECTRICS AVRO AIRCRAFT LTD. Engineering Div. DISTRIBUTION: STANDARD + A/C TYPE - Arrow 1 COMPONENT S. Brown Indicator - Warning Lights K. Knowlton EFF. A/C -25201 - Red - Bail-out. MANUFACTURER'S PART NO. AVRO PART NO. 2CS-I-122 MANUFACTURER'S NAME AVROCAN SPEC. E.O. NO. REF. DWGS. 7-1100-3 sht 11 ENVELOPE SIZE 2.3428" x 1.50" x 0.8125 WEIGHT .08 LB. CH USE 7-1100-2 sht 8 LOCATIONOn E27 Nav's Main Panel - Rear cockpit. FUNCTION To provide an illuminated Bail-out warning to the REF. M.D.R. navigator. 11-E27 PMENT RELIABILITY OVERHAUL LIFE HRS. WASTAGE Q.T.R. INSPECTION MEN × MINUTES OPERATION TO BE PERFORMED MEN X MINUTES PERIOD ACTUAL EST. ACTUAL Function Check (See Maintenance Instructions Report Primary Electrics 71/Maint 11/3) 1 x 2 1 x 5 ACCESSIBILITY Unobstructed ISSUE DATE 25 Sept 57 COMPILED K.P. Lowe CHECKED WO2 Wentworth APPROVED R.F. Reid

PPLICATION ETAILS:	MATERIAL	SPECIFICATION	FREQUENCY	A	ACCESS	Manufacture.
ETAILS:	Total State of State	100	- 24 90			
ETAILS:	or next or	10	344 334			
ETAILS:	20,543,000					
		GROUND SUPPOR	T EQUIPMENT			
SPECIAL TO	OLS FOR AIRCRAF	T USE	SPECIAL TO	OOLS FOR BENC	H USE	
	NIL		NIL			
GROUND	TESTING EQUIPME	NT	GROUND H	ANDLING EQUIP	MENT	
A-C Ground Pow	ver Unit	100	Cockp	it Access S	tand	
NTERCHANGEABLE	xx	BENOVALI	INSTRUCTIONS		MEN X	MINUTES
EPLACEABLE		REMOVALI	NSTRUCTIONS		EST.	ACTUAL
	Remove 2 indi	ectrical connected connect		ce	1 x 5	

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MAINTENANCE DATA RECORD SYSTEM REF. NO. AVRO AIRCRAFT LTD. ELECTRICS 11-E125 Engineering Div. DISTRIBUTION: STANDARD + A/C TYPE -Arrow 1 S. Brown COMPONENT K. Knowlton Cabin Aneroid Switch EFF. A/C -25201 MANUFACTURER'S PART NO. 415-10-19 AVRO PART NO. MANUFACTURER'S NAME Meltron Corp. Nil E.O. NO. AVROCAN SPEC. envelope size 3.5" x 3.75" Dia weight 0.75 lb. FOR BENCH USE REF. DWGS. 7-1100-3 sht 11 Location Navigator's Cockpit - Stn. 210 Under nav's M.I.P. 7-1152-168 7-1100-2 sht 8 FUNCTION Actuates a warning light in the pilot's cockpit REF. M.D.R. when the cabine altitude reaches 31,000 feet $\stackrel{\perp}{=}$ 1,800 feet. ING EQUIPMENT RELIABILITY Access Stand OVERHAUL LIFE 1500 HRS. WASTAGE Q.T.R. Pending INSPECTION MEN × MINUTES OPERATION TO BE PERFORMED MEN X MINUTES PERIOD ACTUAL EST. ACTUAL 25 hrs. Check electrical connector for security. Check switch for security and damage. 1 x 2 1 x 5 ACCESSIBILITY Unobstructed ISSUE DATE 25 Sept 57 Jan. 3/57 COMPILED K.P. Lowe D.Collingwood CHECKED WO2 Wentworth WO2 Wentworth APPROVED R.F. Reid R.F. Reid

		LUBRICAT	ION NIL		
PPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS	
	reserved and the	50588	- 304 752	mod 2010 3	
ETAILS:	W 000 0			CLL servingerman (SS) plus Press (SS) spec	
		GROUND SUPPORT	EQUIPMENT		
SPECIAL T	COOLS FOR AIRCRAF	T USE	SPECIAL TOOLS	S FOR BENCH USE	
	NIL		NIL		
GROUNI	TESTING EQUIPME	NT	GROUND HAND	DLING EQUIPMENT	
A-C Ground Po	ower Unit		Cockpit	Access Stand	
NTERCHANGEABLE	Two I			MEN X	MINUTES
EPLACEABLE	XX	REMOVAL IN	STRUCTIONS	EST.	ACTUAL
	2. Remove 2		washers and nuts. Remove and Replace	e 1 x 10	
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		ENANCE		UKU	STEM EIE CTRICS	REF. NO	
	AVRO AIRCI		Engineer		JAHMTAN		
	S. Bro		A/C TYPE - Ari EFF. A/C - 25:		Master Warning Box	g Control	
	MANUFACTURER'S		ft Appliances & E		VRO PART NO. 7-1152-12		
	AVROCAN SPEC.	E376 E	E.O. NO.				
	ENVELOPE SIZE 7	.0" x 5.50" x	5.25 ¹¹ WEIGHT	8.0 LB.	ef. Dwgs. 7-1052-37 7-1052-33		
	LOCATION NOSE	wheel-well St	a. 166.66 - 176.0	0 - L/H side	7-0111-87 7-1100-2 sht 7-1100-3 sht		
	warni	ng circuits a	ontrol and testin nd supplies elect the circuit indic	rical	EF. M.D.R. 11-E15		
	light	s and master	indicator lights		RELIABIL	ITY	
	pilot	's cockpit.			overhaul Life 500 wastage o.t.r. Pending	harres	HRS.
	INSPECTION			TO DE DEDECRMED		MEN × M	INUTES
	PERIOD		OPERATION	TO BE PERFORMED		EST.	ACTUA
		Check Check	nt 11/3) connnectors for sunit for security	security.	In Supermonio	2 x 10	
			ACCESSIBILIT	Y			
		With	ACCESSIBILIT	nditioning pipe		2 25 /	
		With		nditioning pipe	e removed.	1 x 4	
			battery in Air Co	nditioning pipe Remove and		1 x 4	
)	ISSUE		battery in Air Co	Remove and	Replace pipe	1 x 4	
	DATE May	1 3/56	battery in Air Co	Remove and	Replace pipe 4 6 25 Sept 57	1 x 4	
	DATE May	1	battery in Air Co	Remove and	Replace pipe	1 x 4	

		LUBRICATI	ONNIT		14.5
PPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS	
Section 1	Harris Harris		0 - 20.393		
ETAILS:	QL-08-Lor	200-000	t a constitue star	and seems	nigress treeses
	1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1	GROUND SUPPORT	EQUIPMENT	10-12-10-14	
SPECIAL	TOOLS FOR AIRCRA	FT USE	SPECIAL TOOL	LS FOR BENCH USE	
1	NIL	-01	NIL		
			GROUND HAN	DLING EQUIPMENT	
GROU	ND TESTING EQUIPM	ENT	GROUND HAN	DENIA DQUE MEM	
A-C Ground	Power Unit	100 G	Mainten 4G/1596	ance Platform	
			r statement	ME	N × MINUTES
NTERCHANGEABI	LE XX	REMOVAL IN	STRUCTIONS		T. ACTUAL
	Remove 4 mou	electrical conne	Remove and Rep	place 1:	x 7

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AVR	O AIRCRAFT LTD.	Engineering Div.	ELECTRICS	REF. NO. 11-E272
	Brown	A/C TYPE - Arrow 1	COMPONENT	
	. Knowlton	Fig. 4 (a)	Buzzer - N.	avigator's
	, mio	EFF. A/C - 25201	Bail-Out W	
MANUFACTI	JRER'S PART NO. 319	Type J2 (AN5776-1)	AVRO PART NO.	
MANUFACTI	JRER'S NAME Edw	ards	AN5776-1	
AVROCAN S	PEC. NIL	E.O. NO.		
ENVELOPE	size2.3" x 3.5" d	ia werght 1.0 LB.	REF. DWGS. 7-1100- 7-1100-	
LOCATIONN	avigatoria Coal-	24 W. T. D. G.	7-1152-	
Document,	avigator's cockp	it under M.I.P. Sta. 209	7-1152- 7-1152-	2
FUNCTIONT	o provide a Pilo	t-initiated audible navigator's		
р	ail-out warning.			
			RELIAB	ILITY
			OVERHAUL LIFE WASTAGE	1500 HRS.
			Q.T.R. Pending	
INSPEC		OPERATION TO BE PERFORME	CD CD	MEN × MINUTE
PERI	OD O			EST. ACTU
25 Hrs.	Check	for security and damage		1 x 2
		ACCESSIBILITY		
	Unobs	tructed		
ISSUE	1	2		
DATE	December 7/56	8th Oct 57		
	WO2 Wentworth	K.P. Lowe		
COMPILED	wuz wentworth			
COMPILED		INO Wantwarth		
CHECKED APPROVED	D. Collingwood R.F. Reid	WO2 Wentworth R.F. Reid		

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PPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	A	CCESS	
e*==:0e;1v		1008	- 334 799		went it	
ETAILS:	2-3777.64		abo	CALC NO.		A SUPLANIA
		GROUND SUPPORT	EQUIPMENT	gridate a f	r, specim	XPI E TOTAL
SPECIAL	TOOLS FOR AIRCRAF			OOLS FOR BENC	H USE	
NIL		7.	NIL .			
GROUP	ND TESTING EQUIPME	NT	GROUND "H	ANDLING EQUIP	MENT	
A-C Ground P	ower Unit	7.7	Cockpit acce	ess stand		
INTERCHANGEABL	E XX		TRUCTIONS		MEN × N	INUTES
REPLACEABLE	J. J.C.	REMOVAL IN	STRUCTIONS		EST.	ACTUAL
		C				
Disconnect e Remove 3 scr	lectrical wiring the sews, nuts, was	ng from unit. ners and spacers.	Remove and Re	place	1 x 10	edi es
Disconnect e Remove 3 scr	lectrical wiring was leave, nuts, was leave, nuts, was leave as leave and leave and leave and leave and leave a	ng from unit.	Remove and Re	place	1 x 10	ed es
Disconnect e Remove 3 scr	ews, nuts, was	ners and spacers.	Remove and Re	place	1 x 10	25 165
Disconnect e Remove 3 scr	ews, nuts, was	ners and spacers.			1 x 10	edi esi
Remove 3 scr	rews, nuts, was	ners and spacers.		place	1 x 10	edi es
Remove 3 scr	rews, nuts, was	ners and spacers.				edi es
Remove 3 scr	rews, nuts, was	ners and spacers.				70 CES
Remove 3 scr	rews, nuts, was	ners and spacers.				

