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ARROW 1  
By authority of AVRS  
Date 30 Sept 96  
MAINTENANCE INSTRUCTIONS  
ELECTRICS - MASTER WARNING SYSTEM  
Signature [Signature]  
Unit / Rank / Appointment 71/MAINT 11/3  
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MAINTENANCE INSTRUCTIONS Signature AKSS

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ELECTRICS - MASTER WARNING SYSTEM

71/MAINT 11/3

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TABLE

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ILLUSTRATIONS

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COMPONENT DATA

M.D.R. E11/7	Indicator Lights - Master Warning - Red
M.D.R. E11/9	Indicator Lights - Master Warning - Amber
M.D.R. E11/63	Indicator Lights - Green - Pre-Bail-Out
M.D.R. E14/13	Switch Pilots Pre-Bail-Out
M.D.R. E15	Panel Master Warning
M.D.R. E15/22	Switch Master Warning Reset
M.D.R. E15/23	Switch Master Test
M.D.R. E15/28	Switch Master Dimming
M.D.R. E27/1	Warning Lights Bail-Out-Red
M.D.R. E125	Switch Cabin Aneroid
M.D.R. E140	Master Warning Control Box
M.D.R. E272	Buzzer Navs. Bail-Out-Warning



## 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 (E11). 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 E14 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 (E15) 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, excepting fire warning lights. This is accomplished by inserting a resistor (located in E140) 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.



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- 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.



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- 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 over-speeds beyond a pre-determined figure, the appropriate L.H. or R.H. ROTOR O<sup>1</sup>SPEED indicator light and the amber MASTER WARNING light will illuminate.
- 1.2.5.12 If the cabin altitude exceeds 31,000 ± 1,800 feet, 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.



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- 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  $80^{\circ} \pm 5^{\circ}\text{F}$  rising temperature and completes the circuit for the AIR COND. FAIL. indicator light and the amber 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  $100^{\circ} \pm 5^{\circ}\text{F}$  rising temperature, thereby sensing an impending overheat condition of the air conditioned equipment. This completes the circuit for the EQUIP. O<sup>o</sup>HEAT indicator light and the amber MASTER WARNING light. The thermostat opens at  $60^{\circ} \pm 5^{\circ}$  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  $375^{\circ} \pm 25^{\circ}\text{F}$  or  $120 \pm 5$  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 EI circuit breaker panel to be selected.

### 2.2 Warning Light Serviceability Test

2.2.1 Ensure that the circuit breaker MASTER TEST on EI 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  $1000 \pm 100$  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  $1000 \pm 100$  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  $1000 \pm 100$  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  $1600 \pm 100$  psi. The warning lights EMERG. BRAKE 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 E20, 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.



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- (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 ~~de-energized~~ 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 E1, 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 E1 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.



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- 2.3.15.1 Ensure that the circuit breaker L. PWR. FAIL. located on E1 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 E20 panel, is serviceable.
- 2.3.17.2 With the left engine running, select the left afterburner to the ON position. The warning lights ROTOR 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 R1 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 red 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 out.



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 E1 panel, is serviceable.

2.3.23.2 Select the fire detection test switch, located on E21 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 E1 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 E1 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<sup>H</sup>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 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	E-15	Master Warning
Emergency Brake Hydraulics - Amber	E-15	Master Warning
Cabin 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
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-15	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	E-14	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
		Pilot's Main
Pre-Bail-Out- Green	E-11	Instrument
		Front C/pit
Landing Gear Position Warning Light	Landing Gear Selector Lever	
		Master Warning
*Equipment Overheat - Amber	E-15	

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

Fuel and Fire - Pilot's Left Hand Console

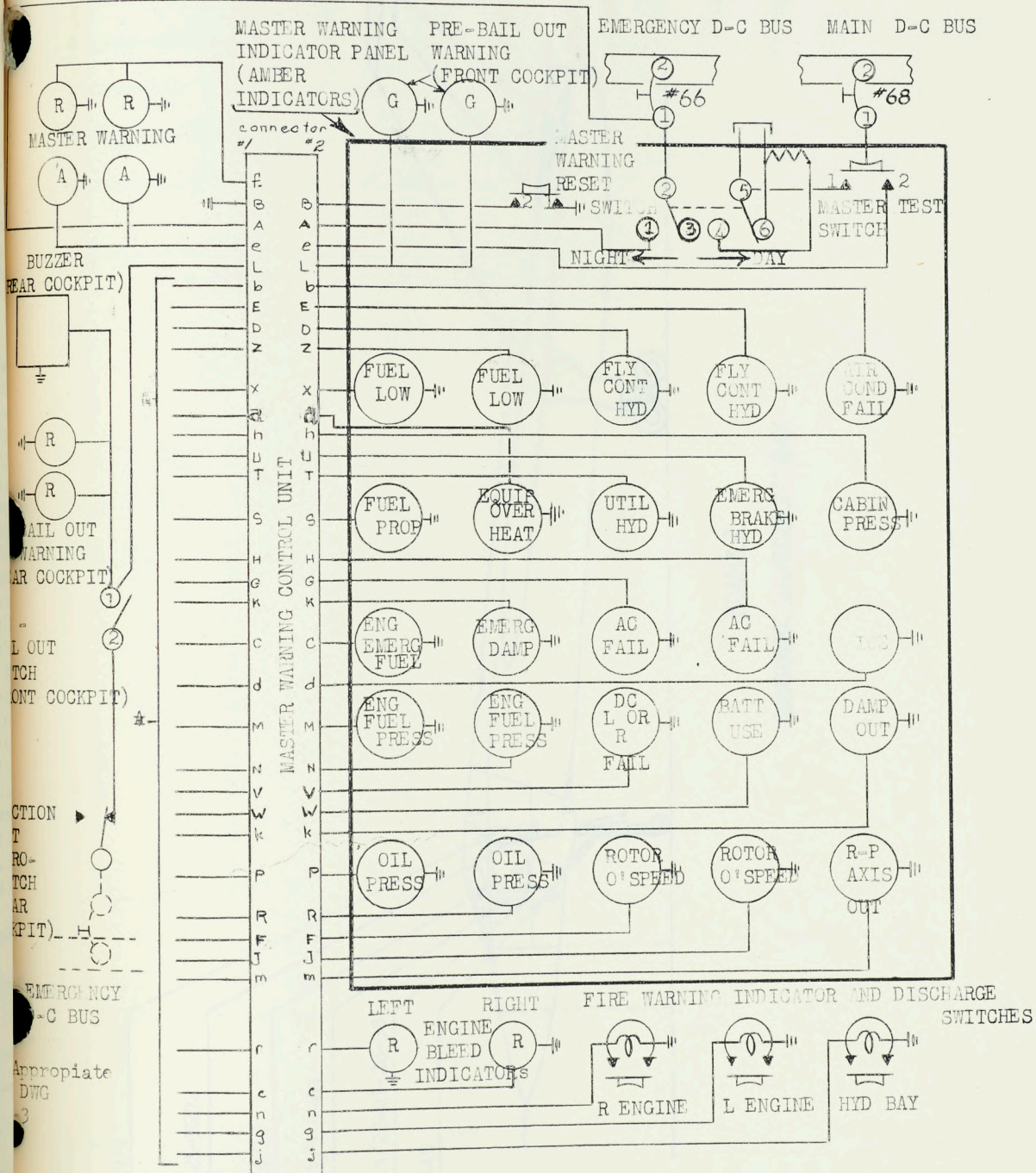


FIG. 1 MASTER WARNING SYSTEM SCHEMATIC



CONFIDENTIAL

71/MAINT 11/3

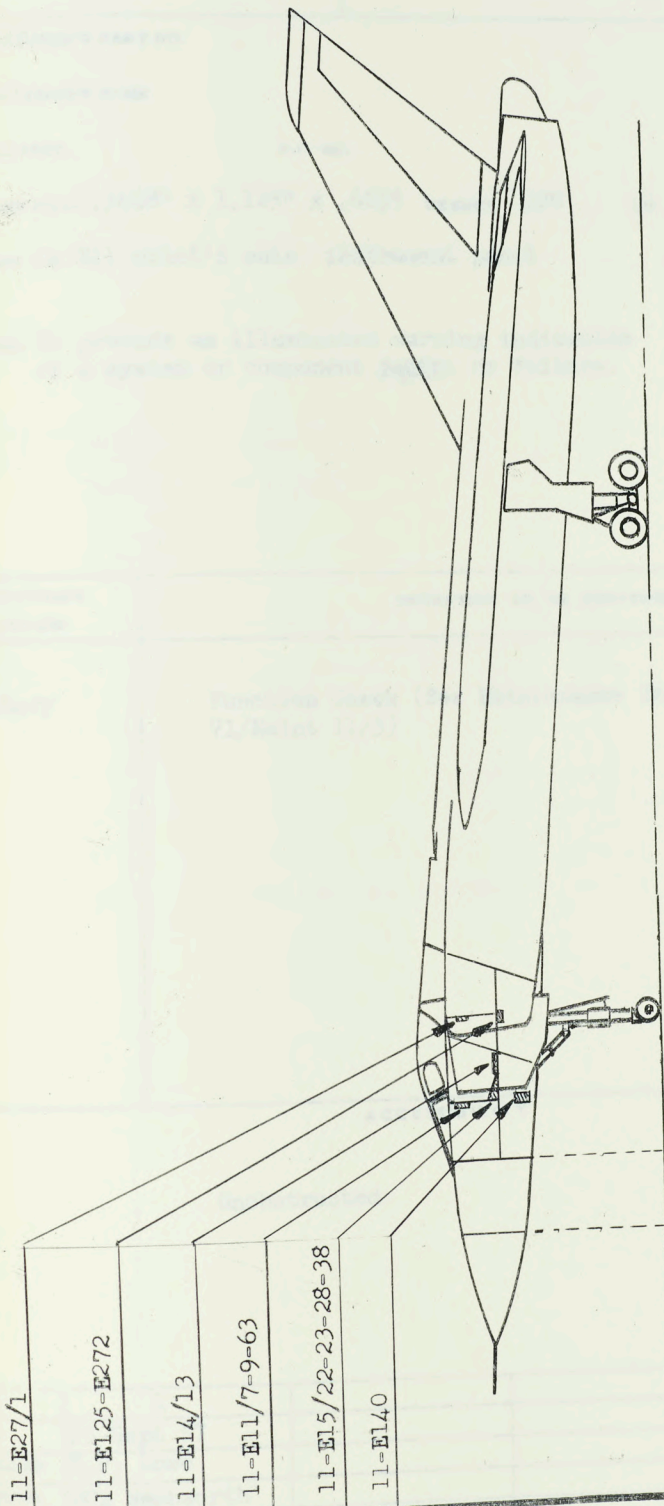


FIGURE 2  
COMPONENT LOCATION DIAGRAM

MAINTENANCE DATA RECORD			SYSTEM	REF. NO.
AVRO AIRCRAFT LTD.		Engineering Div.	ELECTRICS	11-E11/7
DISTRIBUTION: STANDARD + S. Brown K. Knowlton	A/C TYPE - Arrow 1 EFF. A/C - 25201	COMPONENT Indicator Lights - Master Warning - Red		
MANUFACTURER'S PART NO.		AVRO PART NO.		
MANUFACTURER'S NAME		ICS-I-109		
AVROCAN SPEC. E.O. NO.		REF. DWGS.		
ENVELOPE SIZE 2.3428" x 1.125" x .625" WEIGHT .08 LB.		7-1100-3 sht 11 7-1100-2 sht 3		
LOCATION On Ell pilot's main instrument panel		REF. M.D.R. 11-E11		
FUNCTION To provide an illuminated warning indication of a system or component fault or failure.		RELIABILITY		
		OVERHAUL LIFE 1500 HRS. WASTAGE Q.T.R.		
INSPECTION PERIOD	OPERATION TO BE PERFORMED	MEN X MINUTES		
		EST.	ACTUAL	
Primary	Function Check (See Maintenance Instructions Report 71/Maint 11/3)	1	x 2	
ACCESSIBILITY				
Unobstructed				
ISSUE	1			
DATE	25 Sept 57			
COMPILED	K.P. Lowe			
CHECKED	WO2 Wentworth			
APPROVED	R.F. Reid			





LUBRICATION NIL

APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS	
DETAILS:					
GROUND SUPPORT EQUIPMENT					
SPECIAL TOOLS FOR AIRCRAFT USE		SPECIAL TOOLS FOR BENCH USE			
NIL		NIL			
GROUND TESTING EQUIPMENT		GROUND HANDLING EQUIPMENT			
A-C Ground Power Unit		Cockpit Access Stand			
INTERCHANGEABLE	XX	REMOVAL INSTRUCTIONS		MEN × MINUTES	
REPLACEABLE				EST.	ACTUAL
		Remove 2 indicator securing screws. Unsolder 2 electrical connections.			
		Remove and Replace		1	5

**MAIN**

AVRO AIR

DISTRIBUTION: S  
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K. P

MANUFACTURER

MANUFACTURER

AVROCAN SPEC.

ENVELOPE SIZE

LOCATION On

FUNCTION To  
the

INSPECTION PERIOD

Primary  
Electrics

ISSUE

DATE

COMPILED

CHECKED

APPROVED

# MAINTENANCE DATA RECORD

AVRO AIRCRAFT LTD.

Engineering Div.

SYSTEM

ELECTRICS

REF. NO.

11-E11/63

DISTRIBUTION: STANDARD +

S. Brown  
K. Knowlton

A/C TYPE - ARROW 1

EFF. A/C - 25201

COMPONENT

Indicator - Lights - Green  
Pre-Bail-out.

MANUFACTURER'S PART NO.

MANUFACTURER'S NAME

AVROCAN SPEC.

E.O. NO.

ENVELOPE SIZE 2.3428" x 1.125" x .625" WEIGHT .08 LB.

LOCATION On E11 Pilot's Maint Instrument Panel.

FUNCTION To indicate to the pilot that he has operated the Bail-Out Warning to the Navigator

AVRO PART NO.

CS-I-109-3

REF. DWGS.

7-1100-3 sht 11  
7-1100-2 sht 3

REF. M.D.R.

11-E11

RELIABILITY

OVERHAUL LIFE

HRS.

WASTAGE

Q.T.R.

INSPECTION PERIOD	OPERATION TO BE PERFORMED	MEN X MINUTES	
		EST.	ACTUAL
Primary Electrics	Function Check (See Maintenance Instructions Report 71/Maint 11/3)	1	x 2

ACCESSIBILITY

Unobstructed

ISSUE	1				
DATE	25 Sept 57				
COMPILED	K.P. Lowe				
CHECKED	W02 Wentworth				
APPROVED	R.F. Reid				

LUBRICATION NIL

APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS

DETAILS:

GROUND SUPPORT EQUIPMENT

SPECIAL TOOLS FOR AIRCRAFT USE	SPECIAL TOOLS FOR BENCH USE
NIL	NIL
GROUND TESTING EQUIPMENT	GROUND HANDLING EQUIPMENT
A-C Ground Power Unit	Cockpit Access Stand

INTERCHANGEABLE REPLACEABLE	XX	REMOVAL INSTRUCTIONS	MEN × MINUTES	
			EST.	ACTUAL

Unsolder 2 electrical connections.  
Remove 2 indicator securing screws.

Remove and Replace

1 x 5

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MAINTENANCE DATA RECORD		SYSTEM	REF. NO.
AVRO AIRCRAFT LTD. Engineering Div.		ELECTRICS	11-E14/13
DISTRIBUTION: STANDARD + S. Brown K. Knowlton	A/C TYPE - ARROW 1 EFF. A/C - 25201	COMPONENT Switch - Pilot's Pre-Bail-Out	
MANUFACTURER'S PART NO. 8801K16		AVRO PART NO.	
MANUFACTURER'S NAME Cutler-Hammer			
AVROCAN SPEC. E.O. NO.			
ENVELOPE SIZE 2.2015" x 1.125" x .625" WEIGHT .08 LB.		REF. DWGS. 7-1100-3 sht 11 7-1100-2 sht 5	
LOCATION On E14 Fuel and Fire Panel Pilot's Cockpit L.H. console.			
FUNCTION To enable the pilot to operate the Navigator Bail-Out-Warning light.		REF. M.D.R. 11-E14	
RELIABILITY			
		OVERHAUL LIFE 1500	HRS.
		WASTAGE	
		Q.T.R.	
INSPECTION PERIOD	OPERATION TO BE PERFORMED	MEN X MINUTES	
		EST.	ACTUAL
Primary Electrics	Function Check (See Maintenance Instructions Report 71/Maint 11/3)	1 x 2	
ACCESSIBILITY			
Unobstructed			
ISSUE	1		
DATE	25 Sep 57		
COMPILED	K.P. Lowe		
CHECKED	W02 Wentworth		
APPROVED	R.F. Reid		

LUBRICATION <span style="float: right;">NIL</span>				
APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS

DETAILS:

**GROUND SUPPORT EQUIPMENT**

SPECIAL TOOLS FOR AIRCRAFT USE		SPECIAL TOOLS FOR BENCH USE	
NIL		NIL	
GROUND TESTING EQUIPMENT		GROUND HANDLING EQUIPMENT	
A-C Ground Power Unit		Cockpit Access Stand	

INTERCHANGEABLE REPLACEABLE	XXX	REMOVAL INSTRUCTIONS	MEN × MINUTES	
			EST.	ACTUAL
		Disconnect 2 electrical <del>connections</del> . Remove switch securing nut and lock washers  <div style="text-align: center;">Remove and Replace</div>	1 x 5	

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MAINTENANCE DATA RECORD				SYSTEM	REF. NO.
AVRO AIRCRAFT LTD.		Engineering Div.		INSTRUMENTS	12-25 11-E15
DISTRIBUTION: STANDARD + S. Brown K. Knowlton		A/C TYPE - Arrow 1 EFF. A/C - 25201		COMPONENT Panel - Master Warning	
MANUFACTURER'S PART NO. N/A				AVRO PART NO. 7-1252-68	
MANUFACTURER'S NAME Avro Aircraft Limited				REF. DWGS. 7-1252-179 7-1252-69 7-1152-86 7-1100-3 sht 11	
AVROCAN SPEC. Nil E.O. NO.				REF. M.D.R. 11-E140	
ENVELOPE SIZE 5.8" x 6.4" x 3.8" WEIGHT 3.78 est. L.B.				RELIABILITY	
LOCATION Pilot's cockpit - R/H FWD console				OVERHAUL LIFE 1500 HRS. WASTAGE Q.T.R. Pending	
FUNCTION Houses: - warning lights, night and day switch. Press-to-test switch, press-to-reset switch. Used as part of the master warning system.					
INSPECTION PERIOD	OPERATION TO BE PERFORMED			MEN X MINUTES	
				EST.	ACTUAL
Primary Instruments	Check panel for security and cleanliness.			1 x 2	
Primary Electrics	Function Check (See Maintenance Instructions Report 71/Maint 11/3)			1 x 3	
25 Hrs. Instrument	Lift panel			1 x 1	
25 Hrs. Electrics	Check wiring and hardware for security and damage. Function check (See Maintenance Instructions Report 71/Maint 11/3)			2 x 30	
ACCESSIBILITY					
Unobstructed					
ISSUE	1	2	3		
DATE	June 14/56	March 25/57	25 Sept 57		
COMPILED	D. Collingwood	D. Collingwood	K.P. Lowe		
CHECKED	WO2 Wentworth	Sgt McEgan	WO2 Wentworth		
APPROVED	G. Emmerson	R.F. Reid	R.F. Reid		

LUBRICATION NIL

APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS

DETAILS:

GROUND SUPPORT EQUIPMENT

SPECIAL TOOLS FOR AIRCRAFT USE	SPECIAL TOOLS FOR BENCH USE
NIL	NIL
GROUND TESTING EQUIPMENT	GROUND HANDLING EQUIPMENT
A-C Ground Power Unit	Cockpit Access Stand

INTERCHANGEABLE REPLACEABLE	XX	REMOVAL INSTRUCTIONS	MEN X MINUTES	
			EST.	ACTUAL

Unfasten 6 quick fasteners.  
Disconnect electrical wiring.

Remove and Replace

1 x 20

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DATE
COMPILED
CHECKED
APPROVED

# MAINTENANCE DATA RECORD

AVRO AIRCRAFT LTD.		Engineering Div.	SYSTEM ELECTRICS	REF. NO. 11-E15/22
DISTRIBUTION: STANDARD + S. Brown K. Knowlton		A/C TYPE - Arrow 1 EFF. A/C - 25201	COMPONENT Switch - Master Warning Reset.	
MANUFACTURER'S PART NO.			AVRO PART NO. MS25089-1D.	
MANUFACTURER'S NAME				
AVROCAN SPEC.		E.O. NO.		
ENVELOPE SIZE 1.344" x .750" dia		WEIGHT 1/4 oz.	REF. DWGS. 7-1100-3 sht 11 7-1252-179	
LOCATION Housed in Master warning panel, Pilot's cockpit R.H. console				
FUNCTION To enable the Pilot to reset the red or amber master warning lights.			REF. M.D.R. 11-E15	
			RELIABILITY	
			OVERHAUL LIFE 1500 HRS.	
			WASTAGE	
			Q.T.R.	

INSPECTION PERIOD	OPERATION TO BE PERFORMED	MEN X MINUTES	
		EST.	ACTUAL
Primary	Function Check (See Maintenance Instructions Report 71/Maint 11/3)	1 x 1	
ACCESSIBILITY			
With E15 panel lifted clear of console. Ref. M.D.R. 11-E15.			

ISSUE	1				
DATE	4th Oct 57				
COMPILED	K.P. Lowe				
CHECKED	W02 Wentworth				
APPROVED	R.F. Reid				

LUBRICATION				
NIL				
APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS

DETAILS:

GROUND SUPPORT EQUIPMENT

SPECIAL TOOLS FOR AIRCRAFT USE	SPECIAL TOOLS FOR BENCH USE
NIL	NIL
GROUND TESTING EQUIPMENT	GROUND HANDLING EQUIPMENT
A-C Ground Power Unit	Cockpit Access Stand

INTERCHANGEABLE REPLACEABLE	XX	REMOVAL INSTRUCTIONS	MEN X MINUTES	
			EST.	ACTUAL
		Unsolder 2 electrical connections. Remove switch securing nut and lock-washers.  Remove and Replace	1	4

**MAIN**  
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# MAINTENANCE DATA RECORD

AVRO AIRCRAFT LTD.

Engineering Div.

SYSTEM

ELECTRICS

REF. NO.

11-E15/23

DISTRIBUTION: STANDARD +  
S. Brown  
K. Knowlton

A/C TYPE - Arrow 1

EFF. A/C - 25201

COMPONENT

Switch - Master Test.

MANUFACTURER'S PART NO.

MANUFACTURER'S NAME

AVROCAN SPEC.

E.O. NO.

AVRO PART NO.

MS25089-4D.

ENVELOPE SIZE 1.344" x .750" dia      WEIGHT 1/4 oz.      LB.

REF. DWGS. 7-1100-3 sht 11

LOCATION Housed in Master warning panel, Pilot's cockpit R.H. console.

FUNCTION To provide a press-to-test facility for all warning light filaments.

REF. M.D.R.

11-E15

RELIABILITY

OVERHAUL LIFE      1500      HRS.  
WASTAGE  
Q.T.R.

INSPECTION PERIOD

OPERATION TO BE PERFORMED

MEN X MINUTES  
EST.      ACTUAL

Primary

Function Check (See Maintenance Instructions Report 71/Maint 11/3)

1 x 3

ACCESSIBILITY

With E15 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



# MAINTENANCE DATA RECORD

AVRO AIRCRAFT LTD. Engineering Div.		SYSTEM ELECTRICS	REF. NO. 11-E15/28
DISTRIBUTION: STANDARD + S. Brown K. Knowlton		A/C TYPE - Arrow 1 EFF. A/C - 25201	COMPONENT Switch - Master Dimming.
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 7-1252-179	
LOCATION Housed in Master warning panel, Pilot's cockpit R.H. console.			
FUNCTION When switched to night, inserts a resistor into the warning light circuits and reduces illumination.		REF. M.D.R. 11-E15	
<b>RELIABILITY</b>			
		OVERHAUL LIFE 1500	HRS.
		WASTAGE	
		Q.T.R.	

INSPECTION PERIOD	OPERATION TO BE PERFORMED	MEN X MINUTES	
		EST.	ACTUAL
Primary	Function Check (See Maintenance Instructions Report 71/Maint 11/3)	1	2

**ACCESSIBILITY**

With E15 panel lifted clear of console.  
Ref. M.D.R. 11/E15.

ISSUE	1				
DATE	4 Oct 57				
COMPILED	K.P. Lowe				
CHECKED	W02 Wentworth				
APPROVED	R.F. Reid				

LUBRICATION NIL

APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS

DETAILS:

GROUND SUPPORT EQUIPMENT

SPECIAL TOOLS FOR AIRCRAFT USE	SPECIAL TOOLS FOR BENCH USE
NIL	NIL
GROUND TESTING EQUIPMENT	GROUND HANDLING EQUIPMENT
A-C Ground Power Unit	Cockpit Access Stand

INTERCHANGEABLE  XX  
 REPLACEABLE

REMOVAL INSTRUCTIONS

MEN × MINUTES  
 EST. ACTUAL

Disconnect 5 electrical connections.  
 Remove switch securing nut and lock-washers

Remove and Replace

1 x 5

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LUBRICATION NIL

APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS

DETAILS:

GROUND SUPPORT EQUIPMENT

SPECIAL TOOLS FOR AIRCRAFT USE	SPECIAL TOOLS FOR BENCH USE
NIL	NIL
GROUND TESTING EQUIPMENT	GROUND HANDLING EQUIPMENT
A-C Ground Power Unit	Cockpit Access Stand

INTERCHANGEABLE	XX	REMOVAL INSTRUCTIONS	MEN X MINUTES	
			EST.	ACTUAL
REPLACEABLE		Unsolder 2 electrical connections. Remove 2 indicator securing screws.  Remove and Replace	1 x 5	

DISTRIB

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# MAINTENANCE DATA RECORD

AVRO AIRCRAFT LTD.

Engineering Div.

SYSTEM

ELECTRICS

REF. NO.

11-E125

DISTRIBUTION: STANDARD +  
S. Brown  
K. Knowlton

A/C TYPE - Arrow 1

EFF. A/C - 25201

COMPONENT

Cabin Aneroid Switch

MANUFACTURER'S PART NO. 415-10-19

AVRO PART NO.

MANUFACTURER'S NAME Meltron Corp.

AVROCAN SPEC. Nil E.O. NO.

ENVELOPE SIZE 3.5" x 3.75" Dia WEIGHT 0.75 LB.

REF. DWGS.

7-1100-3 sht 11

7-1152-168

7-1100-2 sht 8

LOCATION Navigator's Cockpit - Stn. 210 Under nav's M.I.P.

FUNCTION Actuates a warning light in the pilot's cockpit when the cabine altitude reaches 31,000 feet  $\pm$  1,800 feet.

REF. M.D.R.

### RELIABILITY

OVERHAUL LIFE 1500 HRS.

WASTAGE

Q.T.R. Pending

INSPECTION PERIOD	OPERATION TO BE PERFORMED	MEN X MINUTES	
		EST.	ACTUAL
25 hrs.	Check electrical connector for security. Check switch for security and damage.	1 x 2	
<b>ACCESSIBILITY</b>			
Unobstructed			
ISSUE	1	2	
DATE	Jan. 3/57	25 Sept 57	
COMPILED	D. Collingwood	K.P. Lowe	
CHECKED	W02 Wentworth	W02 Wentworth	
APPROVED	R.F. Reid	R.F. Reid	

ACCESS

FOR BENCH USE

ING EQUIPMENT

Access Stand

MEN X MINUTES

EST.

ACTUAL

1 x 5

LUBRICATION NIL

APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS

DETAILS:

GROUND SUPPORT EQUIPMENT

SPECIAL TOOLS FOR AIRCRAFT USE	SPECIAL TOOLS FOR BENCH USE
NIL	NIL
GROUND TESTING EQUIPMENT	GROUND HANDLING EQUIPMENT
A-C Ground Power Unit	Cockpit Access Stand

INTERCHANGEABLE REPLACEABLE	XX	REMOVAL INSTRUCTIONS	MEN X MINUTES	
			EST.	ACTUAL
		1. Disconnect 1 electrical connector. 2. Remove 2 mounting screws, washers and nuts.  Remove and Replace	1 x 10	

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MAINTENANCE DATA RECORD		SYSTEM	REF. NO.	
AVRO AIRCRAFT LTD. Engineering Div.		ELECTRICS	11-E140	
DISTRIBUTION: STANDARD + S. Brown K. Knowlton	A/C TYPE - Arrow 1 EFF. A/C - 25201	COMPONENT Master Warning Control Box		
MANUFACTURER'S PART NO.		AVRO PART NO. 7-1152-12		
MANUFACTURER'S NAME Aircraft Appliances & Equipment				
AVROCAN SPEC. E376 E.O. NO.				
ENVELOPE SIZE 7.0" x 5.50" x 5.25" WEIGHT 8.0 LB.		REF. DWGS. 7-1052-37 7-1052-33 7-0111-87 7-1100-2 sht 17 7-1100-3 sht 11		
LOCATION Nose wheel-well Sta. 166.66 - 176.00 - L/H side		REF. M.D.R. 11-E15		
FUNCTION Provides for the control and testing of the warning circuits and supplies electrical warning signal to the circuit indicator lights and master indicator lights in the pilot's cockpit.		RELIABILITY		
		OVERHAUL LIFE 500 HRS. WASTAGE Q.T.R. Pending		
INSPECTION PERIOD	OPERATION TO BE PERFORMED	MEN X MINUTES		
		EST.	ACTUAL	
Primary	Function Check (See Maintenance Instructions Report 71/Maint 11/3) Check connectors for security. Check unit for security.	2 x 10		
ACCESSIBILITY				
With battery in Air Conditioning pipe removed. Remove and Replace pipe		1 x 4		
ISSUE	1	2	3	4
DATE	May 3/56	March 19/56	November 27/56	25 Sept 57
COMPILED	C. Wright	D. Collingwood	D. Collingwood	K.P. Lowe
CHECKED	G. Emmerson	G. Emmerson	WO2 Wentworth	WO2 Wentworth
APPROVED			R.F. Reid	R.F. Reid

LUBRICATION NIL

APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS

DETAILS:

GROUND SUPPORT EQUIPMENT

SPECIAL TOOLS FOR AIRCRAFT USE	SPECIAL TOOLS FOR BENCH USE
NIL	NIL
GROUND TESTING EQUIPMENT	GROUND HANDLING EQUIPMENT
A-C Ground Power Unit	Maintenance Platform 4G/1596

INTERCHANGEABLE REPLACEABLE	XX	REMOVAL INSTRUCTIONS	MEN × MINUTES	
			EST.	ACTUAL
		Disconnect 2 electrical connectors. Remove 4 mounting screws.  Remove and Replace	1 x 7	

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MAINTENANCE DATA RECORD				SYSTEM	REF. NO.
AVRO AIRCRAFT LTD.		Engineering Div.		ELECTRICS	11-E272
DISTRIBUTION: STANDARD + S. Brown K. Knowlton		A/C TYPE - Arrow 1  EFF. A/C - 25201		COMPONENT Buzzer - Navigator's Bail-Out Warning	
MANUFACTURER'S PART NO. 319 Type J2 (AN5776-1)				AVRO PART NO. AN5776-1	
MANUFACTURER'S NAME Edwards					
AVROCAN SPEC. NIL E.O. NO.					
ENVELOPE SIZE 2.3" x 3.5" dia		WEIGHT 1.0 LB.		REF. DWGS. 7-1100-3 sht 11 7-1100-2 sht 2 7-1152-168 7-1152-2 7-1152-6332	
LOCATION Navigator's Cockpit under M.I.P. Sta. 209				REF. M.D.R.	
FUNCTION To provide a Pilot-initiated audible navigator's bail-out warning.				RELIABILITY  OVERHAUL LIFE 1500 HRS. WASTAGE Q.T.R. Pending	
INSPECTION PERIOD	OPERATION TO BE PERFORMED			MEN X MINUTES	
				EST.	ACTUAL
Primary	Function Check (See Maintenance Instructions Report 71/Maint 11/3)			1	1
25 Hrs.	Check for security and damage			1	2
ACCESSIBILITY					
Unobstructed					
ISSUE	1	2			
DATE	December 7/56	8th Oct 57			
COMPILED	W02 Wentworth	K.P. Lowe			
CHECKED	D. Collingwood	W02 Wentworth			
APPROVED	R.F. Reid	R.F. Reid			

LUBRICATION NIL

APPLICATION	MATERIAL	SPECIFICATION	FREQUENCY	ACCESS

DETAILS:

GROUND SUPPORT EQUIPMENT

SPECIAL TOOLS FOR AIRCRAFT USE	SPECIAL TOOLS FOR BENCH USE
NIL	NIL
GROUND TESTING EQUIPMENT	GROUND HANDLING EQUIPMENT
A-C Ground Power Unit	Cockpit access stand

INTERCHANGEABLE REPLACEABLE	XX	REMOVAL INSTRUCTIONS	MEN X MINUTES	
			EST.	ACTUAL

		Disconnect electrical wiring from unit. Remove 3 screws, nuts, washers and spacers.  Remove and Replace	1 x 10	
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