

## EXTERNAL POWER - ADJUSTMENT/TEST

*EFFECTIVITY: ALL*

### 1. General

- A. This section gives the procedures to do a check of the GPU (ground power unit) overvoltage protection.
- B. The procedures in this section are given in the sequence below. The tasks identified with (◆) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	DESCRIPTION	EFFECTIVITY
24-40-00-700-801-A ◆	GPU OVERVOLTAGE PROTECTION - FUNCTIONAL CHECK	ALL

TASK 24-40-00-700-801-A

EFFECTIVITY: ALL

## 2. GPU OVERVOLTAGE PROTECTION - FUNCTIONAL CHECK

### A. General

- (1) The function of this check is to make sure that the GPU overvoltage protection circuit operates correctly.

### B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
<a href="#">AMM SDS 31-41-00/1</a>	
<a href="#">AMM TASK 20-40-02-910-801-A/200</a>	STATIC GROUNDING - STANDARD PRACTICES

### C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
113	113DL	LH Forward Fuselage
113	113EL	LH Forward Fuselage

### D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
<a href="#">GSE 049</a>	Plug-External Power Supply	For connection of the DC power supply to the aircraft	
<a href="#">GSE 210</a>	System Power Supply	To energize the aircraft	

### E. Auxiliary Items

Not Applicable

### F. Consumable Materials

Not Applicable

### G. Expandable Parts

Not Applicable

### H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Cockpit
1	Increase/Decrease Power Supply Voltage	Power Supply Control

### I. Preparation ([Figure 501](#))

SUBTASK 841-002-A

- (1) Open access door 113DL (AMM MPP 06-41-01/100).

- (2) On the Main Battery 2 Relay Box, open the GROUND SERVICE 1, 2, and 3 circuit breakers. This will prevent damage to the ground service bus loads during the GPU Overvoltage Check.

**CAUTION:** BEFORE YOU DO THIS SUBTASK, MAKE SURE THAT BATTERY 1 IS INSTALLED ON THE AIRCRAFT. IF NOT, THE EXTERNAL POWER OVERVOLTAGE PROTECTION WILL NOT BE AVAILABLE.

- (3) Make sure that Main Batteries 1 and 2 are installed and connected.
- (4) Set the BATT 1 and BATT 2 switches, on the electrical panel, on the overhead panel, to AUTO.
- (5) Make sure that the BACKUP pushbutton, on the electrical panel on the overhead panel is set to ON.
- (6) Set AVIONICS MASTER 1 and AVIONICS MASTER 2 pushbuttons, on the electrical panel on the overhead panel, to ON.
- (7) Set MFD 1 (or 2) to ELEC page ([AMM SDS 31-41-00/1](#)).

**CAUTION:** MAKE SURE THAT THE MINIMUM VOLTAGE OF BATTERIES IS 24 V DC. IF YOU KEEP AIRCRAFT ENERGIZED BY GPU FOR A LONG TIME, THE BATTERIES VOLTAGE CAN DECREASE BELOW THIS VALUE. IF BATTERY 1 VOLTAGE DECREASES, THE EXTERNAL POWER OVERVOLTAGE PROTECTION WILL NOT BE AVAILABLE. IF YOU DO NOT OBEY THIS PRECAUTION, DAMAGE TO THE AICRAFT CAN OCCUR.

- (8) ON MFD 1 (or 2) ELEC page, do the check of the batteries voltage and make sure that the minimum voltage is 24 V DC.

(a) **NOTE:** While the GPU is ON, the batteries will not be recharged.

- 1 If the battery voltage is less than 24 V DC, it is recommended to recharge it.

**NOTE:** The minimum necessary voltage for APU start is 23.5 V DC

- 2 If the battery voltage is less than 19 V DC, removed it from the aircraft to be recharged by maintenance persons.

- (9) Make sure that the voltage of the Power Supply (GSE 210) is  $28.0 \pm 0.5$  V DC and that the Power Supply is disconnected from the aircraft.

- (10) Make sure that the EMERG LT switch, on the overhead panel, is set at OFF.

J. Functionally Check GPU Overvoltage Protection ([Figure 502](#))

*SUBTASK 720-002-A*

- (1) Connect a ground electrical cable to the aircraft ( [AMM TASK 20-40-02-910-801-A/200](#)).

**WARNING:** • TO PREVENT INJURY TO PERSONS, DO NOT TOUCH THE PITOT/STATIC SENSOR 3 BECAUSE DURING THE TASK IT WILL BECOME HOT.

- THE PITOT/STATIC SENSOR 3 AND ITS INTERNAL TUBES CAN BE HOT IMMEDIATELY AFTER HEATER POWER REMOVAL AND CAN BURN YOUR HAND IF YOU TOUCH THEM.

**CAUTION:** TO PREVENT DAMAGE, BEFORE YOU DO THE TASK, REMOVE THE PITOT/STATIC SENSOR 3 PROTECTION COVER BECAUSE IT WILL BECOME HOT DURING THE TASK.

(2) Do the check as follows:

- (a) Set the BATT 1 and BATT 2 switches, on the electrical panel, on the overhead panel, to AUTO.

Result:

- 1 The EICAS display shows the SHED BUS 1-2 OFF caution messages.
- 2 The master CAUTION lights flash.

- (b) Push a master CAUTION light.

Result:

- 1 The master CAUTION lights go off.

- (c) Set the ESSENTIAL POWER pushbutton, on the electrical panel, on the overhead panel, to ON.

Result:

- 1 The EICAS display shows the DC BUS 1-2 OFF caution messages.
- 2 The PFDs and MFDs go off.
- 3 The master CAUTION lights flash.
- 4 On the EICAS display, the SHED BUS 1-2 OFF caution messages stay in view.

- (d) Push a master CAUTION light.

Result:

- 1 The master CAUTION lights go off.

- (e) Open access door 113EL (AMM MPP 06-41-01/100).

- (f) Connect the external power plug (GSE 049) to the aircraft receptacle.

- (g) Turn on the Power Supply (GSE 210).

Result:

- 1 The GPU AVAIL inscription at the GPU pushbutton, on the electrical panel of the overhead panel, comes on.

- (h) Set the GPU pushbutton, on the electrical panel of the overhead panel, to ON.

Result:

- 1 The GPU AVAIL inscription, on the GPU pushbutton, goes off.
- 2 On the EICAS display, the SHED BUS 1-2 OFF and DC BUS 1-2 OFF caution messages stay in view.



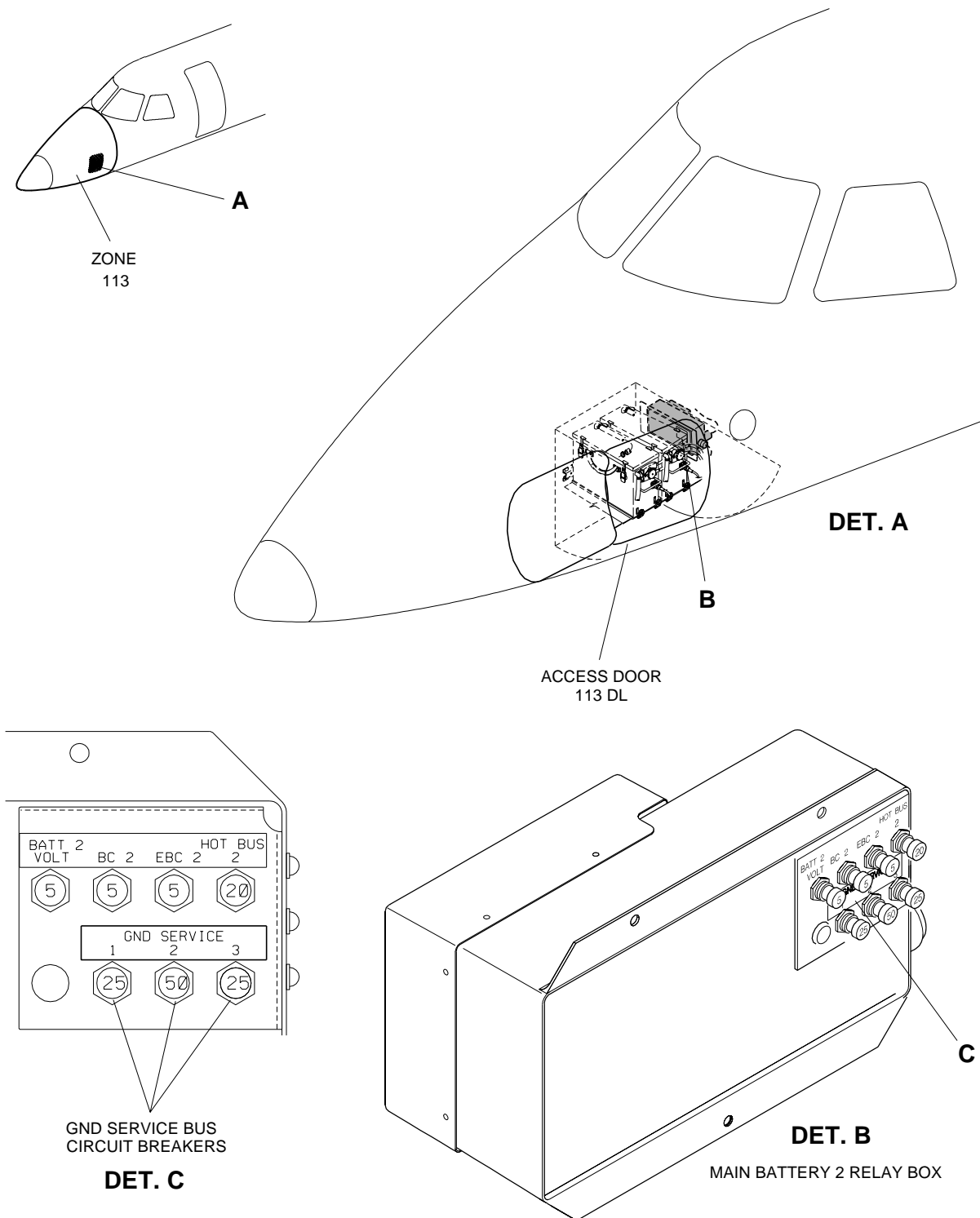
# AIRCRAFT MAINTENANCE MANUAL

K. Follow-on [\(Figure 501\)](#) [\(Figure 502\)](#)

*SUBTASK 842-002-A*

- (1) Disconnect the external power plug to the aircraft receptacle.
- (2) Set the BATT 1 and BATT 2 switches, on the electrical panel of the overhead panel, to OFF.
- (3) Close the GROUND SERVICE 1, 2, and 3 circuit breakers, on the Main Battery 2 Relay Box.
- (4) Close access doors 113DL and 113EL (AMM MPP 06-41-01/100).

EFFECTIVITY: ALL  
Ground Service Circuit Breakers  
Figure 501

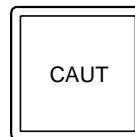
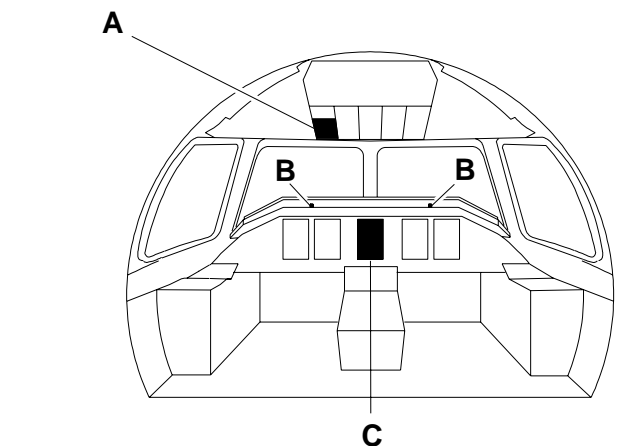


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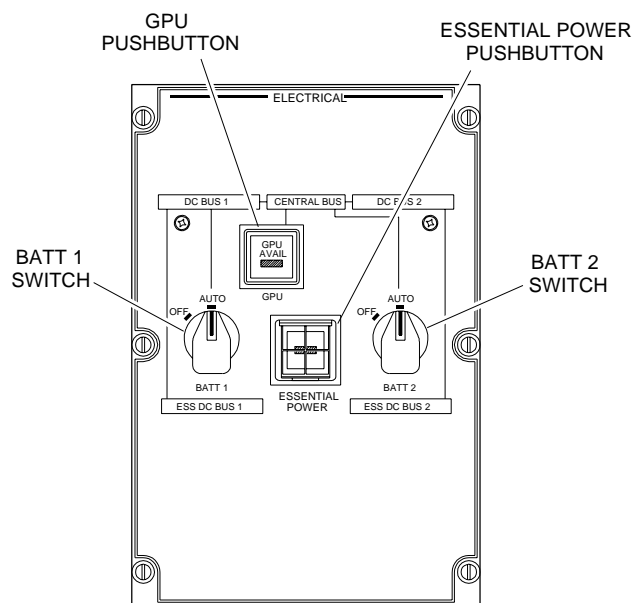
EFFECTIVITY: ALL

GPU Overvoltage Protection Functional Check

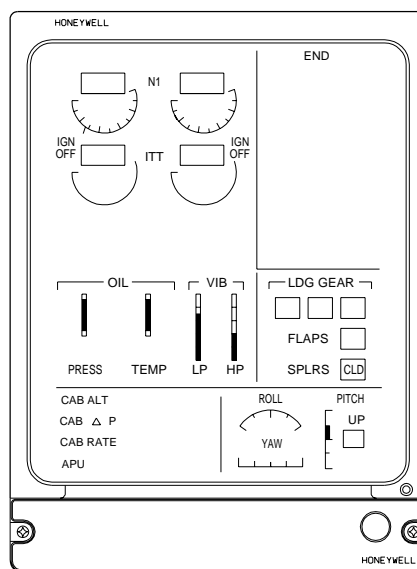
Figure 502



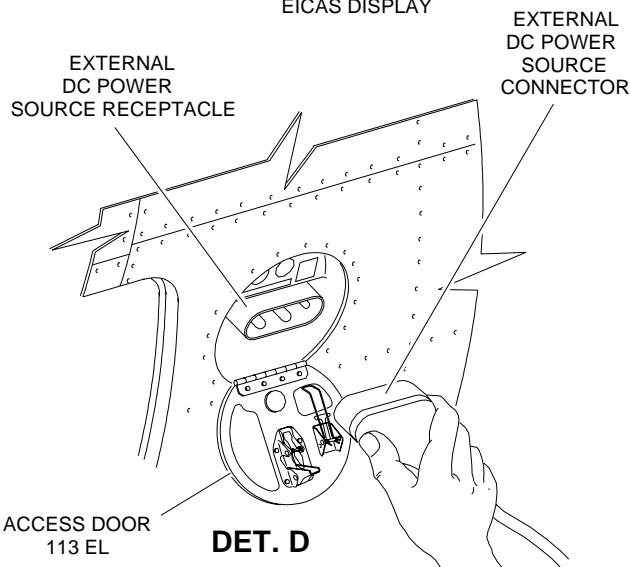
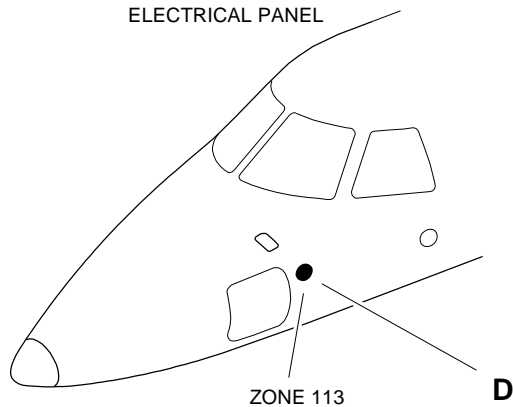
**DET. B**  
MASTER CAUTION  
LIGHT



**DET. A**  
ELECTRICAL PANEL



**DET. C**  
EICAS DISPLAY



**DET. D**

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