



AIRCRAFT MAINTENANCE MANUAL

AIRCRAFT ENERGIZATION BY EXTERNAL POWER - MAINTENANCE PRACTICES

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to energize and deenergize the aircraft when you use an external power source.
- 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
20-40-01-860-801-A	ENERGIZATION OF THE AIRCRAFT WITH ALL AN EXTERNAL POWER SOURCE	



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

TASK 20-40-01-860-801-A

EFFECTIVITY: ALL

2. ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

A. General

- (1) The 28 V DC external power source is connected to the aircraft through the receptacle installed on the left side of the fuselage nose.
- (2) [Figure 201](#) shows the access door location and the external DC-power receptacle.
- (3) [Figure 202](#) shows the location of the cockpit controls and indicators used in the procedures of this task.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-00/100	-
AMM MPP 06-41-01/100	-
AMM SDS 31-41-00/1	
AMM TASK 20-40-02-910-801-A/200	STATIC GROUNDING - STANDARD PRACTICES

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
113	113EL	Forward fuselage I

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 050	Multimeter - Digital	To measure the GPU Voltage	
GSE 051	Power Rectifier	For Ground Service/Tests	
GSE 053	Cable, Electrical Power	For Ground Service/Tests and APU Start	
GSE 054	DC Ground Power Unit (GPU)	For Ground Service/Tests and APU Start	

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	On the left side of the fuselage nose and in the cockpit

I. Preparation ([Figure 201](#))

SUBTASK 841-002-A

WARNING: MAKE SURE THAT IT IS SAFE TO ENERGIZE THE AIRCRAFT. CIRCUITS THAT ARE NOT SAFE CAN CAUSE INJURY TO PERSONS AND/OR DAMAGE TO EQUIPMENT.

CAUTION: WHEN YOU USE AN AC-FED EXTERNAL POWER SOURCE (GSE 051), CONNECT A GROUND CABLE BETWEEN THE HANGAR STRUCTURE AND THE POWER SOURCE, AND OTHER GROUND CABLE BETWEEN THE POWER SOURCE AND THE AIRCRAFT ([AMM TASK 20-40-02-910-801-A/200](#)).

- (1) Set the DC GPU or power rectifier to ON.
- (2) Adjust the output voltage of the external power to 28 ± 0.5 V DC and measure with the multimeter.
- (3) Set the DC GPU or power rectifier to OFF.
- (4) Open access door 113EL (AMM MPP 06-41-00/100).
- (5) Connect the DC ground power unit (GPU) or the power rectifier to the external DC-power receptacle.

J. Energize the Aircraft with the External DC Power Source ([Figure 201](#)) ([Figure 202](#))

SUBTASK 861-002-A

WARNING: DO NOT TOUCH THE PROBES IMMEDIATELY AFTER AIRCRAFT POWER-UP. DURING FADEC INITIALIZATION ITS SENSORS ARE HEATED FOR 20 SECONDS AND IF YOU TOUCH THEM, THEY CAN CAUSE INJURIES.

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.

CAUTION: MAKE SURE THAT THE GPU VOLTAGE IS 28 ± 0.5 V DC, BEFORE YOU SET THE GPU PUSHBUTTON TO ON TO PREVENT DAMAGE TO COMPONENTS.

- (1) Set the DC GPU or power rectifier to ON.

CAUTION: IF THE AIRCRAFT IS SUPPLIED WITH EXTERNAL POWER ONLY DURING THE CLEANING PROCEDURES, MAKE SURE THAT ONLY THE GROUND SERVICE BUSES ARE ENERGIZED. FOR THIS, THE "GPU AVAIL" INDICATION MUST COME ON AS SHOWN IN STEPS (2) AND (3).

- (2) Make sure that the GPU AVAIL indication above the external power receptacle comes on.
- (3) Make sure that the GPU AVAIL indication, on the electrical panel, on the overhead panel (GPU pushbutton), comes on.
- (4) For Aircraft on Ground:
 - (a) Set BATT 1 and BATT 2 switches, on the electrical panel on the overhead panel, to AUTO.

- (b) Make sure that the BACKUP pushbutton, on the electrical panel on the overhead panel is set to ON.
- (c) Set AVIONICS MASTER 1 and AVIONICS MASTER 2 pushbuttons, on the electrical panel on the overhead panel, to ON.
- (d) Set MFD 1 (or 2) to ELEC page ([AMM SDS 31-41-00/1](#)).
- (e) ON MFD 1 (or 2) ELEC page, make sure the GPU Voltage is 28 ± 0.5 V DC.

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 AIRCRAFT CAN OCCUR.

- (f) 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.

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.

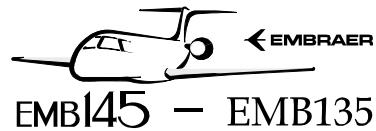
CAUTION: MAKE SURE THAT THE GPU VOLTAGE IS 28 ± 0.5 V DC, BEFORE SET THE GPU PUSHBUTTON TO ON TO PREVENT DAMAGE TO COMPONENTS.

- (g) Set the GPU pushbutton, on the electrical panel on the overhead panel, to ON.
- (h) On the electrical panel, on the overhead panel (GPU pushbutton), make sure that:
 - The striped bar comes on.
 - The GPU AVAIL legend goes off.

(5) For Aircraft on Jacks:

CAUTION: MAKE SURE THAT THE GPU VOLTAGE IS 28 ± 0.5 V DC, BEFORE SET THE GPU PUSHBUTTON TO ON TO PREVENT DAMAGE TO COMPONENTS.

- (a) **NOTE:** Make sure that tBATT 1 and BATT 2 switches are set to OFF.
Set the GPU pushbutton, on the electrical panel on the overhead panel, to ON.
- (b) On the electrical panel, on the overhead panel (GPU pushbutton), make sure that:
 - The striped bar comes on.



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

- The GPU AVAIL legend goes off.

K. Deenergize the Aircraft ([Figure 201](#)) ([Figure 202](#))

SUBTASK 862-002-A

- (1) Set BATT 1 and BATT 2 switches, on the electrical panel on the overhead panel, to OFF.
- (2) Set the GPU pushbutton, on the electrical panel on the overhead panel, to OFF.
- (3) On the GPU pushbutton, make sure that:
 - The striped bar goes off.
 - The GPU AVAIL legend comes on.
- (4) Set the DC GPU or power rectifier to OFF.
- (5) Make sure that the GPU AVAIL indication above the external power receptacle goes off.

L. Follow-on

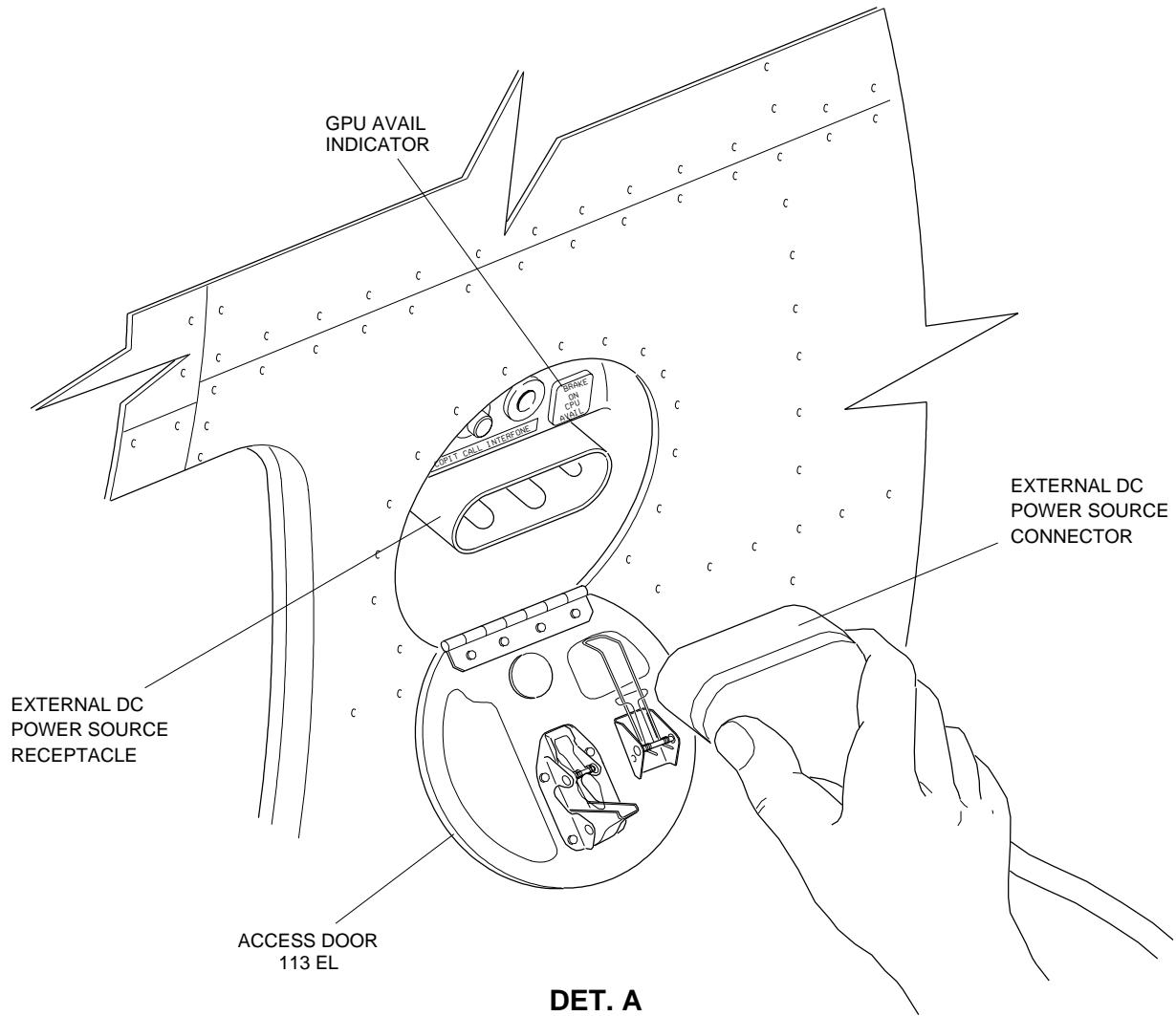
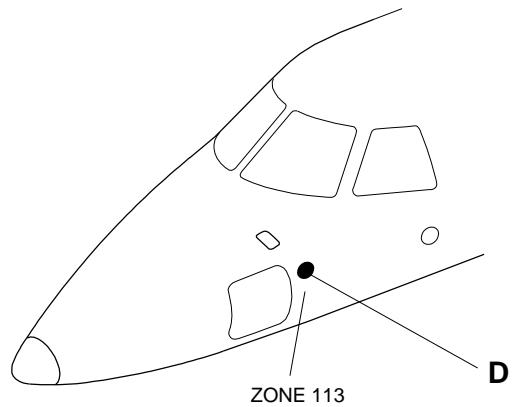
SUBTASK 842-002-A

- (1) Disconnect the DC ground power unit or power rectifier from the external DC power receptacle.
- (2) Close access door 113EL (AMM MPP 06-41-01/100).

EFFECTIVITY: ALL

Access Door and Indicator - Location

Figure 201

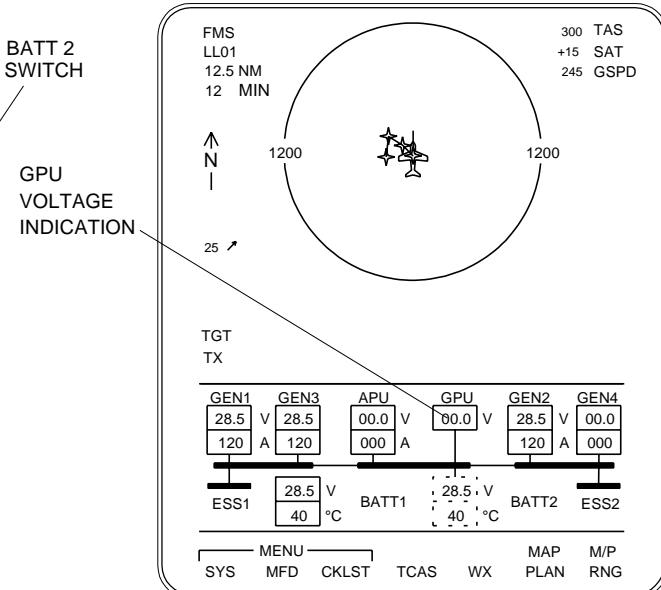
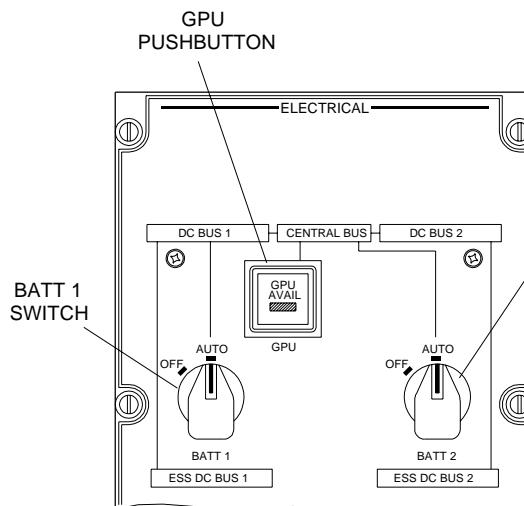
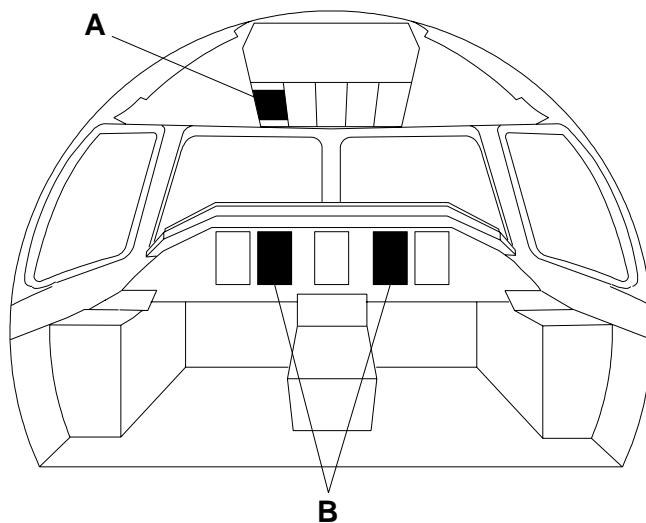


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EFFECTIVITY: ALL

Controls and Indicators - Location

Figure 202



EM145AMM200002C.DGN

