



AIRCRAFT
MAINTENANCE MANUAL

AURAL WARNING - ADJUSTMENT/TEST

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to do the operational test of the Aural Warning Unit.
- 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).

<i>TASK NUMBER</i>	<i>DESCRIPTION</i>	<i>EFFECTIVITY</i>
31-51-00-700-801-A	AURAL WARNING UNIT - OPERATIONAL TEST	ALL



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

TASK 31-51-00-700-801-A

EFFECTIVITY: ALL

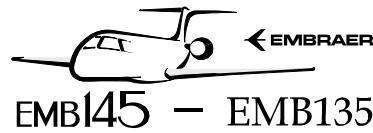
2. AURAL WARNING UNIT - OPERATIONAL TEST

A. General

- (1) This task gives the procedures to do the operational check of the aural warning unit.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM SDS 23-51-00/1	
AMM SDS 23-81-00/1	
AMM SDS 24-60-00/1	
AMM SDS 26-10-00/1	
AMM SDS 27-36-00/1	
AMM SDS 27-40-00/1	
AMM SDS 27-43-00/1	
AMM SDS 27-50-00/1	
AMM SDS 27-53-00/1	
AMM SDS 27-60-00/1	
AMM SDS 27-63-00/1	
AMM SDS 31-41-00/1	
AMM SDS 31-42-00/1	
AMM SDS 31-51-00/1	
AMM SDS 32-44-00/1	
AMM SDS 34-15-00/1	
AMM SDS 34-21-00/1	
AMM SDS 34-22-00/1	
AMM SDS 34-27-00/1	
AMM SDS 34-31-00/1	
AMM SDS 34-41-00/1	
AMM SDS 34-43-00/1	
AMM SDS 34-51-00/1	
AMM SDS 34-52-00/1	
AMM SDS 34-61-00/1	
AMM SDS 34-62-00/1	
AMM SDS 73-22-00/1	
AMM TASK 10-10-01-500-801-A/200	AIRCRAFT NORMAL PARKING
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE



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(Continued)

REFERENCE	DESIGNATION
AMM TASK 29-10-00-860-801-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH HTS
AMM TASK 32-44-00-700-801-A/500	EMERGENCY/PARKING BRAKE SYSTEM - FUNCTIONAL CHECK
SB145-31-0028	-

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
223	223LZ	Cockpit, LH side - Maintenance panel

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 044	Headset - Ramp handling	For communication	

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	Does the task	Outside the aircraft

I. Preparation

SUBTASK 841-002-A

- (1) Make sure that the aircraft is safe for maintenance.
- (2) Do not put the aircraft on jacks.
- (3) Put chocks at the landing gear wheels ([AMM TASK 10-10-01-500-801-A/200](#)).
- (4) Energize the aircraft with the External DC Power Supply ([AMM TASK 20-40-01-860-801-A/200](#)).
- (5) Connect the headsets (GSE 044).
- (6) Make sure that the emergency parking brake handle is released and the BRAKE ON light is off, on the instrument and ramp panels ([AMM TASK 32-44-00-700-801-A/500](#)).

NOTE: To prevent hydraulic fluid transference from system 1 to system 2 or vice versa, first apply brake with the pedals and then pull or release the emergency/parking brake handle.

- (7) Make sure that the spoilers are closed ([AMM SDS 27-63-00/1](#)).
- (8) Make sure that the systems below are operational and on:
 - Airborne Audio System ([AMM SDS 23-51-00/1](#)).
 - Radio Management System ([AMM SDS 23-81-00/1](#)).
 - Fire Detection System ([AMM SDS 26-10-00/1](#)).
 - Stall Protection System ([AMM SDS 27-36-00/1](#)).
 - Horizontal Stabilizer ([AMM SDS 27-40-00/1](#)).
 - Flap System ([AMM SDS 27-50-00/1](#)).
 - Spoiler ([AMM SDS 27-60-00/1](#)).
 - EICAS ([AMM SDS 31-41-00/1](#)).
 - Integrated Computer System ([AMM SDS 31-42-00/1](#)).
 - Aural Warning System ([AMM SDS 31-51-00/1](#)).
 - Emergency/Parking Brake System ([AMM SDS 32-44-00/1](#)).
 - ADC System ([AMM SDS 34-15-00/1](#)).
 - AHRS ([AMM SDS 34-21-00/1](#)) or IRS ([AMM SDS 34-27-00/1](#), as applicable).
 - EFIS ([AMM SDS 34-22-00/1](#)).
 - Radio Altimeter System ([AMM SDS 34-31-00/1](#)).
 - EGPWS/Windshear System or GPWS/Windshear System, as applicable ([AMM SDS 34-41-00/1](#)).
 - TCAS ([AMM SDS 34-43-00/1](#)).
 - DME System ([AMM SDS 34-51-00/1](#)).
 - Mode-S Transponder ([AMM SDS 34-52-00/1](#)).
 - (Applicable only to aircraft equipped with EGPWS/Windshear system) FMS UNIVERSAL ([AMM SDS 34-62-00/1](#)) or FMS HONEYWELL ([AMM SDS 34-61-00/1](#)).
 - FADEC System ([AMM SDS 73-22-00/1](#)).
- (9) On the LH electrical-power control/distribution box ([AMM SDS 24-60-00/1](#)), open the HEATING/TAT 1, HEATING/PITOT 1, and HEATING/AOA 1 circuit breakers and attach DO-NOT-CLOSE tags to them.

- (10) On the RH electrical-power control/distribution box ([AMM SDS 24-60-00/1](#)), open the HEATING/TAT 2, HEATING/PITOT 2, HEATING/AOA 2, and PITOT HTG 3 circuit breakers and attach DO-NOT-CLOSE tags to them.

- (11) Open maintenance panel door 223LZ ([AMM MPP 06-41-03/100](#)).

J. Aural Warning Unit - Operational Test

SUBTASK 710-002-A

- (1) Do the task as follows:

- (a) On the electrical panel, on the overhead panel, set the AVIONICS MASTER pushbuttons to OFF.

Result:

- 1 The striped bar on the AVIONICS MASTER pushbuttons comes on.

- (b) On the circuit breaker panel, open the AWS 1 (Location Tip: ESSENTIAL DC BUS 1/MISCELLANEOUS) and AWS 2 (Location Tip: DC BUS 2/MISCELLANEOUS) circuit breakers.

- (c) Stop for 2 minutes and then close the AWS 1 (Location Tip: ESSENTIAL DC BUS 1/MISCELLANEOUS) circuit breaker.

Result:

- 1 The aural warning system gives out the AURAL UNIT OK voice message.

- (d) Open the AWS 1 (Location Tip: ESSENTIAL DC BUS 1/MISCELLANEOUS) circuit breaker.

- (e) Stop for 2 minutes and then close the AWS 2 (Location Tip: DC BUS 2/MISCELLANEOUS) circuit breaker.

Result:

- 1 The aural warning system gives out the AURAL UNIT OK voice message.

- (f) Close the AWS 1 (Location Tip: ESSENTIAL DC BUS 1/MISCELLANEOUS) circuit breaker.

- (g) On the electrical panel, on the overhead panel, set the AVIONICS MASTER pushbuttons to ON.

Result:

- 1 The striped bar on the AVIONICS MASTER pushbuttons goes out.

- (h) On the maintenance panel, set the GPWS/WDSH test switch to the up position and hold it more than 2 seconds. Make sure that you hear the voice messages related to the GPWS.

NOTE: To check the voice messages related to GPWS go to task [AMM SDS 34-41-00/1](#).

- (i) On the overhead panel, set the BATT1 and BATT2 switches to the OFF position.

NOTE: Make sure that the AOA sensors ([AMM SDS 27-36-00/1](#)) are in the middle position.

- (j) Put the aircraft in the flight configuration (AIR) as follows:

- Aircraft on the ground.

- On the circuit breaker panel, open the AIR/GND A, AIR/GND B, AIR/GND C, and AIR/GND D circuit breakers.

Result:

- 1 Make sure that the LG AIR/GND FAIL caution message is shown on the EICAS.
- 2 On the glareshield panel, the master caution and the master warning lighted pushbuttons flash.
- 3 The master warning and master caution tone sounds.

- (k) On the glareshield panel, push a master warning and a master caution lighted pushbutton.

Result:

- 1 The master warning lighted pushbuttons go off.
- 2 The master caution lighted pushbuttons go off.
- 3 The master warning and master caution tone stops.

- (l) On the RMU, set the ATC/TCAS window to the TA/RA mode ([AMM SDS 34-43-00/1](#)).

- (m) Push and hold for 7 seconds the RMU TST function key.

Result:

- 1 The aural warning system gives out the TCAS TEST voice message.

- (n) At the end of the TCAS test cycle:

Result:

- 1 The aural warning gives out the TCAS TEST PASS voice message.

NOTE: If the TCAS is defective, the TCAS FAIL voice message is heard.

- (o) On the circuit breaker panel, close the AIR/GND A, AIR/GND B, AIR/GND C, and AIR/GND D circuit breakers in 10 seconds maximum to put the aircraft in the ground configuration again.

Result:

- 1 Make sure that the LG AIR/GND FAIL caution message is not shown on the EICAS.

WARNING: MAKE SURE THAT THERE ARE NO PERSONS OR EQUIPMENT IN THE FLAP, HORIZONTAL STABILIZER, AND SPOILER TRAVEL AREA.

NOTE: Do not do other tasks on the flap system.

- (p) Do a check of the TAKE-OFF TRIM aural warning as follows:
1. Set the flaps to the 9-degree position ([AMM SDS 27-53-00/1](#)).
 2. Make sure that the thrust control levers are at the IDLE position.
 3. On the control yoke, operate the pilot trim switch to make the pitch trim indication show 1 DN (indication out of green band) on the EICAS display ([AMM SDS 27-43-00/1](#)).
 4. Advance the left (engine 1) thrust control lever to the THRUST SET position.

- The TAKE-OFF TRIM aural warning will be in operation.
- On the glareshield panel, the master warning lighted pushbuttons flash.
- The master warning tone sounds.

5. Move the left (engine 1) thrust control lever back to the IDLE position.
 - The TAKE-OFF TRIM aural warning is canceled.
6. On the glareshield panel, push a master warning lighted pushbutton.
 - The master warning lighted pushbuttons go off.
 - The master warning tone stops.
7. Advance the right (engine 2) thrust control lever to the THRUST SET position.
 - The TAKE-OFF TRIM aural warning will be in operation.
 - On the glareshield panel, the master warning lighted pushbuttons flash.
 - The master warning tone sounds.
8. Move the right (engine 2) thrust control lever back to the IDLE position.
 - The TAKE-OFF TRIM aural warning is canceled.
9. On the glareshield panel, push a master warning lighted pushbutton.
 - The master warning lighted pushbuttons go off.
 - The master warning tone stops.
10. On the control yoke, operate the pilot trim switch to make the pitch trim indication show 5 UP (indication within green band) on the EICAS display ([AMM SDS 27-43-00/1](#)).
11. Advance the left (engine 1) thrust control lever to the THRUST SET position.
 - The TAKE-OFF TRIM aural warning stays off.
 - (Aircraft with -005, -006, or -007 CMC) The E1-2 LOW N1 message is shown on the EICAS display, the master warning lighted pushbuttons flash, and the master warning tone sounds.
12. (Aircraft with -005, -006, or -007 CMC) On the glareshield panel, push a master warning lighted pushbutton.
 - The master warning lighted pushbuttons go off.
 - The master warning tone stops.
13. Advance the right (engine 2) thrust control lever to the THRUST SET position.
 - The TAKE-OFF TRIM aural warning stays off.
 - (Aircraft with -005, -006, or -007 CMC) The E1-2 LOW N1 message stays on the EICAS display, the master warning lighted pushbuttons flash, and the master warning tone sounds.
14. (Aircraft with -005, -006, or -007 CMC) On the glareshield panel, push a master warning lighted pushbutton.
 - The master warning lighted pushbuttons go off.
 - The master warning tone stops.
15. Move the two thrust control levers back to the IDLE position.
 - (Aircraft with -005, -006, or -007 CMC) On the EICAS display, the E1-2 LOW N1 message goes off.

(q) Do a check of the TAKE-OFF FLAPS aural warning as follows:

1. Set the flaps to the 45-degree position ([AMM SDS 27-53-00/1](#)).
 2. Advance the left (engine 1) thrust control lever to the THRUST SET position.
 - The TAKE-OFF FLAPS aural warning will be in operation.
 3. Pull the left (engine 1) thrust control lever back to the IDLE position.
 - The TAKE-OFF FLAPS aural warning is canceled.
 4. Advance the right (engine 2) thrust control lever to the THRUST SET position.
 - The TAKE-OFF FLAPS aural warning will be in operation.
 5. Pull the right (engine 2) thrust control lever back to the IDLE position.
 - The TAKE-OFF FLAPS aural warning is canceled.
 6. Set the flaps to the 0-degree position ([AMM SDS 27-53-00/1](#)).
- (r) Pressurize the hydraulic system ([AMM TASK 29-10-00-860-801-A/200](#)).
- (s) Do a check of the TAKE-OFF SPOILER aural warning as follows:
1. Set the flaps to the 9-degree position ([AMM SDS 27-53-00/1](#)).
 2. Make sure that the pitch trim indication shows 5 UP (indication within green band) on the EICAS display ([AMM SDS 27-43-00/1](#)).
 3. Make sure that the thrust control levers are at the IDLE position.
 4. On the maintenance panel, set the SPOILER switch to the TEST position and hold it in this position ([AMM SDS 27-63-00/1](#)).
 - The ground spoiler panels open.
 - On the EICAS display, there is an indication of open spoiler.
 5. Advance the two thrust control levers to the THRUST SET position.
 - The TAKE-OFF SPOILER aural warning will be in operation.
 - On the glareshield panel, the master warning lighted pushbuttons flash and the master warning tone sounds.
 6. Move the two thrust control levers back to the IDLE position.
 - The TAKE-OFF SPOILER aural warning is canceled.
 7. On the glareshield panel, push a master warning lighted pushbutton.
 - The master warning lighted pushbuttons go off.
 - The master warning tone stops.
 8. On the maintenance panel, set the SPOILER switch to the NORM position ([AMM SDS 27-63-00/1](#)).
 - The ground spoiler panels close.
 - On the EICAS display, there is an indication of closed spoiler.
 9. Advance the two thrust control levers to the THRUST SET position.
 - The TAKE-OFF SPOILER aural warning stays off.
 - (Aircraft with -005, -006, or -007 CMC) The E1-2 LOW N1 message is shown on the EICAS display, the master warning lighted pushbuttons flash, and the master warning tone sounds.

10. (Aircraft with -005, -006, or -007 CMC) On the glareshield panel, push a master warning lighted pushbutton.
 - The master warning lighted pushbuttons go off.
 - The master warning tone stops.
 11. Move the two thrust control levers back to the IDLE position.
 - (Aircraft with -005, -006, or -007 CMC) On the EICAS display, the E1-2 LOW N1 message goes off.
 12. Set the flaps to the 0-degree position ([AMM SDS 27-53-00/1](#)).
- (t) Do a check of the TAKE-OFF BRAKES aural warning as follows:
- NOTE: When applying the emergency/parking brake, in order to prevent hydraulic fluid transference from system 1 to system 2 or vice versa, first apply brake with the pedals and then pull or release the emergency/parking brake handle.
1. Set the left (engine 1) thrust control lever to the THRUST SET position.
 - The TAKE-OFF FLAPS aural warning will be in operation.
 - On the glareshield panel, the master warning lighted pushbuttons flash and the master warning tone sounds.
 2. Slowly pull the emergency/parking brake handle until the BRAKE ON lights come on, on the instrument and ramp panels ([AMM SDS 32-44-00/1](#)).
 - The TAKE-OFF FLAPS BRAKES aural warning will be in operation.
 - On the glareshield panel, the master warning lighted pushbuttons flash and the master warning tone sounds.
 3. Pull the emergency/parking brake handle fully ([AMM SDS 32-44-00/1](#)).
 - The TAKE-OFF FLAPS BRAKES aural warning stays in operation and the flashing of the master warning lighted pushbuttons continues.
 4. Set the left (engine 1) thrust control lever to the IDLE position.
 - The TAKE-OFF FLAPS BRAKES aural warning is canceled.
 5. On the glareshield panel, push a master warning lighted pushbutton.
 - The master warning lighted pushbuttons go off.
 - The master warning tone stops.
 6. Release the emergency parking brake handle ([AMM TASK 32-44-00-700-801-A/500](#)).
 - On the instrument and ramp panels, the BRAKE ON light goes off
 7. Set the right (engine 2) thrust control lever to the THRUST SET position.
 - The TAKE-OFF FLAPS aural warning will be in operation.
 - On the glareshield panel, the master warning lighted pushbuttons flash and the master warning tone sounds.
 8. Slowly pull the emergency/parking brake handle until the BRAKE ON lights come on, on the instrument and ramp panels ([AMM SDS 32-44-00/1](#)).
 - The TAKE-OFF FLAPS BRAKES aural warning will be in operation.
 - On the glareshield panel, the master warning lighted pushbuttons flash and the master warning tone sounds.
 9. Pull the emergency/parking brake handle fully ([AMM SDS 32-44-00/1](#)).

- The TAKE-OFF FLAPS BRAKES aural warning stays in operation and the flashing of the master warning lighted pushbuttons continues.
10. Set the right (engine 2) thrust control lever to the IDLE position.
 - The TAKE-OFF FLAPS BRAKES aural warning is canceled.
11. On the glareshield panel, push a master warning lighted pushbutton.
 - The master warning lighted pushbuttons go off.
 - The master warning tone stops.
- (u) Release the pressure from the hydraulic system ([AMM TASK 29-10-00-860-801-A/200](#)).
- (v) On the overhead panel, on the fire control panel, push the FIRE TEST switch ([AMM SDS 26-10-00/1](#)).
- Result:
 1 The master warning and master caution lighted pushbuttons flash.
 2 The aural warning system gives forth a bell discrete tone.
- (w) Release the FIRE TEST switch.
- Result:
 1 The bell discrete tone stops.
 2 The master warning and master caution lighted pushbuttons continue to flash.
 3 The master warning and master caution tone sounds.
- (x) On the glareshield panel, push a master warning and a master caution lighted pushbutton.
- Result:
 1 The master warning and master caution lighted pushbuttons go off.
 2 The master warning and caution tone stops.
- (y) Hold a control wheel strongly.
- (z) On the control pedestal, push the STALL PROTECTION TEST pushbutton ([AMM SDS 27-36-00/1](#)).
- Result:
 1 The master warning and master caution lighted pushbuttons flash.
 2 The aural warning system gives forth a clacker discrete tone.
 3 The stick shakers and stick pushers operate.
- (aa) (Aircraft POST-MOD [SB145-31-0028](#)) On the pilot's control yoke pitch trim switch, on the copilot's control yoke pitch trim switch, or on the backup pitch trim switch on the control pedestal, operate a half of any of the three switches that command the pitch trim up or down for more than one second.
- Result:
 1 The aural warning gives forth SINGLE CHIME discrete tones and TRIM aural messages many times.
- (ab) After the completion of the test, on the glareshield panel, push a master warning and master caution lighted pushbutton.

Result:

- 1 The master warning and master caution lighted pushbuttons go off.
- (ac) On the control yoke, operate the pilot trim switch to make the pitch trim indication show 0 on the EICAS display ([AMM SDS 27-43-00/1](#)).

K. Follow-on

SUBTASK 842-002-A

- (1) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).
 - (2) Make sure that the emergency/parking brake is set ([AMM SDS 32-44-00/1](#)) and remove the chocks from the landing gear wheels ([AMM TASK 10-10-01-500-801-A/200](#)).
- NOTE:** To prevent hydraulic fluid transference from system 1 to system 2 or vice versa, first apply brake with the pedals and then pull or release the emergency/parking brake handle.
- (3) Close maintenance panel door 223LZ ([AMM MPP 06-41-03/100](#)).
 - (4) On the LH electrical-power control/distribution box ([AMM SDS 24-60-00/1](#)), remove the DO-NOT-CLOSE tags and close the HEATING/TAT 1, HEATING/PITOT 1, and HEATING/AOA 1 circuit breakers.
 - (5) On the RH electrical-power control/distribution box ([AMM SDS 24-60-00/1](#)), remove the DO-NOT-CLOSE tags and close the HEATING/TAT 2, HEATING/PITOT 2, HEATING/AOA 2, and PITOT HTG 3 circuit breakers.
 - (6) Disconnect the headsets (GSE 044).

