GPWS/WINDSHEAR - ADJUSTMENT/TEST

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to do the check of the GPWS/Windshear System and EGPWS/Windshear System.

   B. The EGPWS/Windshear is a better version of the GPWS/Windshear. The better features are:

      1. Terrain Awareness.

      2. Terrain Clearance Floor.

   C. 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*
34-41-00-700-801-A ♦	GPWS/WINDSHEAR - OPERATIONAL CHECK	ALL
34-41-00-700-802-A	GPWS/WINDSHEAR RESET SWITCH - OPERATIONAL CHECK	ALL
34-41-00-700-803-A ♦	EGPWS/WINDSHEAR - OPERATIONAL CHECK	ALL
34-41-00-700-804-A	EGPWS/WINDSHEAR RESET SWITCH - OPERATIONAL CHECK	ALL

TASK 34-41-00-700-801-A
EFFECTIVITY: ALL

2. GPWS/WINDSHEAR - OPERATIONAL CHECK

A. General

(1) This task gives the procedures to do the operational check of the GPWS/Windshear system.

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 27-36-00/1	
AMM SDS 27-53-00/1	
AMM SDS 31-41-00/1	
AMM SDS 31-42-00/1	
AMM SDS 31-51-00/1	
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 73-22-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
223		Cockpit - Maintenance panel

D. Tools and Equipment

Not Applicable

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

I. Preparation

SUBTASK 841-002-A

(1) Energize the aircraft with the External DC Power Supply (AMM TASK 20-40-01-860-801-A/200).

(2) 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).

– Stall Protection System (AMM SDS 27-36-00/1).

– Flap (AMM SDS 27-53-00/1).

– 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).

– ADC System (AMM SDS 34-15-00/1).

– AHRS (AMM SDS 34-21-00/1) or IRS (AMM SDS 34-27-00/1).

– EFIS (AMM SDS 34-22-00/1).

– Radio Altimeter (AMM SDS 34-31-00/1).

– GPWS/Windshear (AMM SDS 34-41-00/1).

– FADEC System (AMM SDS 73-22-00/1).

(3) Get access to the Maintenance Panel (AMM MPP 06-41-03/100).

J. Operationally Check GPWS/Windshear (Figure 501) (Figure 502)

SUBTASK 710-002-A

(1) Do the Short Self-Test sequence as follows:

(a) Momentarily set the GPWS/WDSH TEST switch, on the maintenance panel, to the up position.

Result:

1 On the instrument panel, the EICAS shows the caution messages (amber) below:

• WINDSHEAR INOP.

• GPWS INOP.

2 On the glareshield panel, the MASTER CAUTION lights flash.

3 The Aural Warning gives out the GLIDE SLOPE voice warning.

4 The EICAS shows the GPWS warning message (red).

5 On the glareshield panel, the Master Warning lights flash.

6 The Aural Warning gives out a WHOOP-WHOOP aural tone followed by a PULL UP voice warning.

7 On the EICAS, the GPWS warning message (red) goes out of view.

8 The PFDs show the WDSHEAR message (red).

9 The Aural Warning gives out the WINDSHEAR-WINDSHEAR-WINDSHEAR voice message.

10 On the PFDs, the WDSHEAR message (red) goes out of view.

11 The PFDs show the WDSHEAR message (amber) for 0.75 seconds and then the message goes out of view.

12 All failure messages go out of view.

(2) Do the Long Self-Test sequence as follows:

(a) On the maintenance panel, set the GPWS/WDSH TEST switch to the up position and hold it in this position.

Result:

1 The EICAS shows the caution messages (amber) below:

- WINDSHEAR INOP.
- GPWS INOP.

2 The Master Caution lights flash.

3 The Aural Warning gives the GLIDE SLOPE voice warning.

4 The EICAS shows the GPWS warning message (red).

5 The Master Warning lights flash.

6 The Aural Warning gives out a WHOOP-WHOOP aural tone followed by a PULL UP voice warning.

7 On the EICAS, the GPWS warning message (red) goes out of view.

8 The PFDs show the WDSHEAR message (red).

9 The Aural Warning gives out the WINDSHEAR-WINDSHEAR-WINDSHEAR voice message.

10 On the PFDs, the red WDSHEAR message goes out of view.

11 The PFDs show the WDSHEAR message (amber) for 0.75 seconds and then the message goes out of view.

(b) Release the GPWS/WDSH TEST switch, on the maintenance panel.

Result:

1 The voice annunciations below are heard:

- SINK RATE.
- WHOOP-WHOOP PULL UP.
- TERRAIN.
- WHOOP-WHOOP PULL UP.
- DON'T SINK.
- TOO LOW TERRAIN.
- TOO LOW GEAR.
- TOO LOW FLAPS.
- TOO LOW TERRAIN.
- GLIDESLOPE.
- BANK ANGLE BANK ANGLE.
- APPROACHING MINIMUMS-MINIMUMS-MINIMUMS.
- FIVE HUNDRED.
- TWO HUNDRED.
- ONE HUNDRED.
- WINDSHEAR-WINDSHEAR-WINDSHEAR.

2 All failure messages stop.

(c) Push the MASTER WARNING pushbutton, on the glareshield panel.

Result:

1 The MASTER WARNING lights go out.

(3) Do the Windshear Escape Guidance test as follows:

NOTE: Make sure that the PLI (Pitch Limit Indicator) is not shown on the ADI. If it is shown, turn the AOA (Angle of Attack) vane until the PLI goes out of view on the ADI top.

(a) Push the GA switch, on the engine thrust lever.

Result:

1 The PFDs show:

- The indication ROL - TO (green).
- The Flight Director Command Bars.

(b) Momentarily set the GPWS/WDSH TEST switch, on the maintenance panel, to the up position.

Result:

1 The PFDs show:

- The indication ROL - WSHR (green).
- The Flight Director Command Bars go down to the current pitch attitude and they stay in view.

(c) Immediately after the WDSHEAR annunciation is removed from the PFDs, push FD1 and FD2 on the GC-550, on the glareshield panel.

Result:

1 The Flight Director Bars and annunciation are removed from the PFDs.

(d) Set the Engine Thrust Lever to the MAX POWER position.

(e) Momentarily set the GPWS/WDSH TEST switch again to the up position.

Result:

1 The PFDs show:

- The ROL - WSHR indication (green).
- The Flight Director Command Bars come into view automatically.

K. Follow-on

SUBTASK 842-002-A

(1) Close the maintenance panel (AMM MPP 06-41-03/100).

(2) Deenergize the aircraft (AMM TASK 20-40-01-860-801-A/200).

TASK 34-41-00-700-802-A
EFFECTIVITY: ALL

3. GPWS/WINDSHEAR RESET SWITCH - OPERATIONAL CHECK

A. General

(1) This task gives the procedures to do the auto-test and resetting of the GPWS/Windshear System.

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 27-36-00/1	
AMM SDS 27-53-00/1	
AMM SDS 31-41-00/1	
AMM SDS 31-42-00/1	
AMM SDS 31-51-00/1	
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 73-22-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
223		Cockpit - Maintenance panel

D. Tools and Equipment

Not Applicable

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

I. Preparation

SUBTASK 841-003-A

(1) Energize the aircraft with the External DC Power Supply (AMM TASK 20-40-01-860-801-A/200).

(2) 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).

– Stall Protection System (AMM SDS 27-36-00/1).

– Flap (AMM SDS 27-53-00/1).

– 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).

– ADC System (AMM SDS 34-15-00/1).

– AHRS (AMM SDS 34-21-00/1) or IRS (AMM SDS 34-27-00/1).

– EFIS (AMM SDS 34-22-00/1).

– Radio Altimeter (AMM SDS 34-31-00/1).

– GPWS/Windshear (AMM SDS 34-41-00/1).

– FADEC System (AMM SDS 73-22-00/1).

(3) Get access to the Maintenance Panel (AMM MPP 06-41-03/100).

J. Operationally Check GPWS Reset Switch (Figure 501) (Figure 502)

SUBTASK 710-003-A

(1) Do the Reset Switch Test as follows:

NOTE: Make sure that the PLI (Pitch Limit Indicator) is not shown on the ADI. If it is shown, turn the AOA (Angle of Attack) vane until the PLI goes out of view on the ADI top.

(a) On the maintenance panel, momentarily set the GPWS/WDSH TEST switch to the up position.

NOTE: Make sure that the Radio Altitude is less than 5 feet and the computed air speed is less than 90 knots.

Result:

1 On the instrument panel, the EICAS shows the caution messages (amber) below:

- WINDSHEAR INOP.
- GPWS INOP.

2 On the glareshield panel, the Master Caution lights flash.

3 The Aural Warning gives out the GLIDE SLOPE voice warning.

4 The EICAS shows the GPWS warning message (red).

5 On the glareshield panel, the Master Warning lights flash.

6 The Aural Warning gives out the WHOOP-WHOOP aural tone followed by a PULL UP voice warning.

7 On the EICAS, the GPWS warning message (red) goes out of view.

8 The PFDs show the WDSHEAR message (red).

9 The Aural Warning gives out the WINDSHEAR-WINDSHEAR-WINDSHEAR voice message.

10 On the PFDs, the WDSHEAR message (red) goes out of view.

11 The PFDs show the WDSHEAR message (amber) for 0.75 seconds and then the message goes out of view.

12 All failure messages go out of view.

(b) Push the GA switch, on the engine thrust lever.

Result:

1 The PFDs show:

- The indication ROL - TO (green).
- The Flight Director Command Bars.

(c) On the maintenance panel, momentarily set the GPWS/WDSH TEST switch to the up position.

Result:

1 The PFDs show:

- The indication ROL - WSHR (green).
- The Flight Director Command Bars go down to the current pitch attitude and they stay in view.

(d) Immediately after the WDSHEAR annunciation is removed from the PFDs, push FD1 and FD2 on GC-550, on the glareshield panel.

Result:

1 The Flight Director Bars and annunciation are removed from the PFDs.

(e) Set the Engine Thrust Lever to the MAX POWER position.

(f) Momentarily set the GPWS/WDSH TEST switch again to the up position.

Result:

1 The PFDs show:

- The ROL - WSHR indication (green).
- The Flight Director Command Bars come into view automatically.

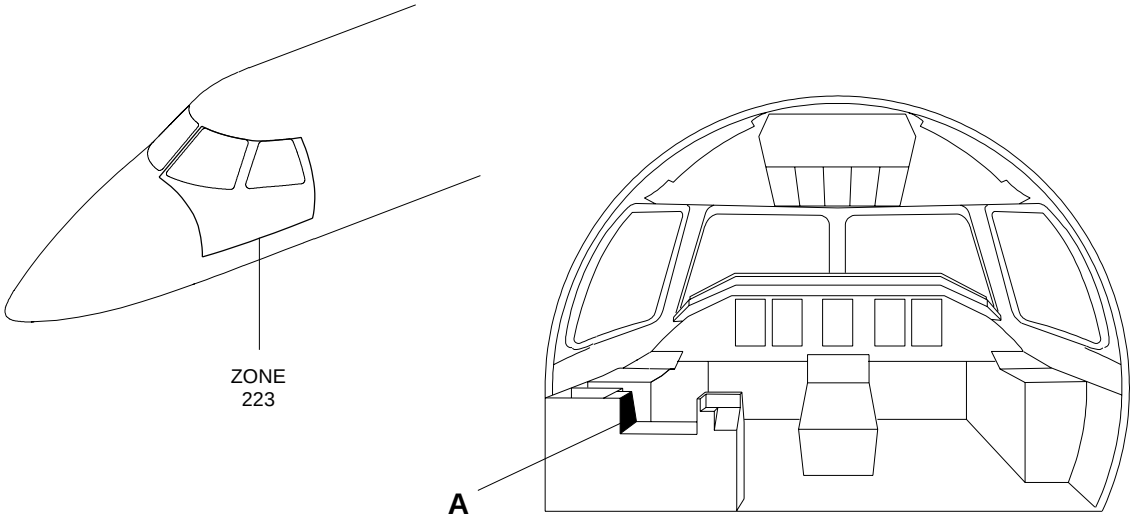
K. Follow-on

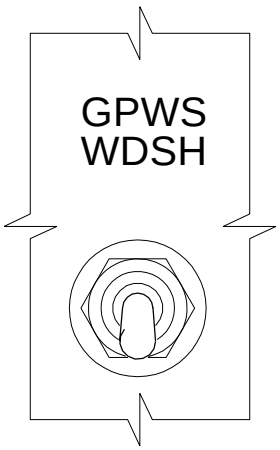
SUBTASK 842-003-A

(1) Close the Maintenance Panel (AMM MPP 06-41-03/100).

(2) Deenergize the aircraft (AMM TASK 20-40-01-860-801-A/200).

EFFECTIVITY: ALL
GPWS/Windshear Test Switch
Figure 501



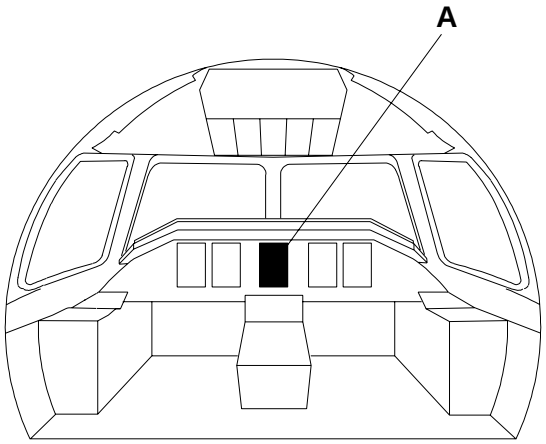


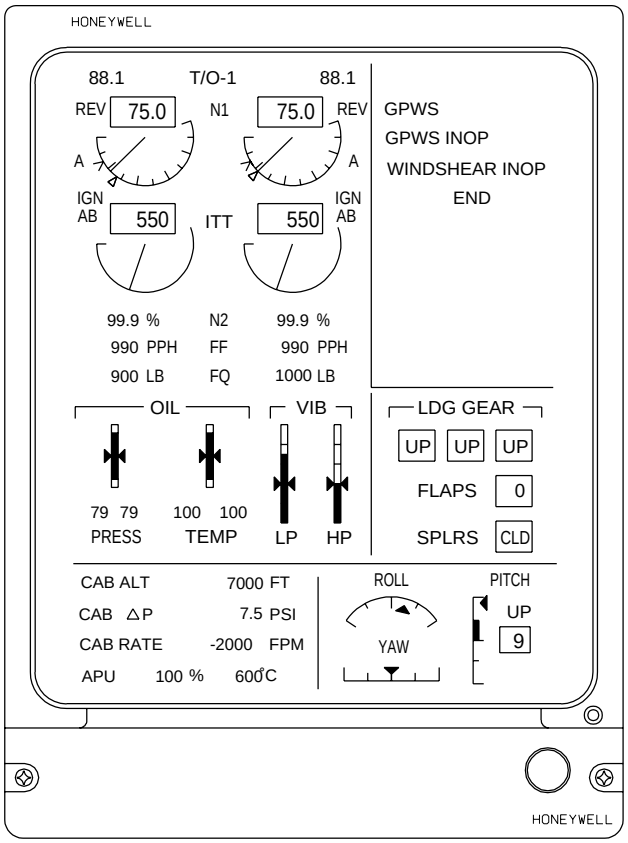
DET. A
MAINTENANCE PANEL

EM145AMM341380A.DGN

EFFECTIVITY: ALL

EICAS - GPWS/Windshear Messages
Figure 502





DET. A

145AMM340003.MCE A

TASK 34-41-00-700-803-A
EFFECTIVITY: ALL

4. EGPWS/WINDSHEAR - OPERATIONAL CHECK

A. General

(1) This task gives the procedures to do the operational check of the EGPWS/Windshear system.

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 27-36-00/1	
AMM SDS 27-53-00/1	
AMM SDS 31-41-00/1	
AMM SDS 31-42-00/1	
AMM SDS 31-51-00/1	
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 34-61-00/1	
AMM SDS 34-62-00/1	
AMM SDS 73-22-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 32-00-02-910-801-A/200	SAFETY PIN OF THE NLG DOORS SOLENOID VALVE - INSTALLATION AND REMOVAL
AMM TASK 34-41-00-470-801-A/400	TERRAIN DATA BASE - LOADING
AMM TASK 34-61-00-470-802-A/200	FMS - MODE CONFIGURATION
S.B.145-34-0078	-
S.B.145-34-0088	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
223		Cockpit - Maintenance panel

D. Tools and Equipment

Not Applicable

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

I. Preparation

SUBTASK 841-004-A

(1) Energize the aircraft with the External DC-Power Supply (AMM TASK 20-40-01-860-801-A/200).

(2) Make sure that these systems are operational and on:

– Airborne Audio System (AMM SDS 23-51-00/1).

– Radio Management System (AMM SDS 23-81-00/1).

– Stall Protection System (AMM SDS 27-36-00/1).

– Flap (AMM SDS 27-53-00/1).

– 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).

– ADC System (AMM SDS 34-15-00/1).

– AHRS (AMM SDS 34-21-00/1) or IRS (AMM SDS 34-27-00/1).

– EFIS (AMM SDS 34-22-00/1).

– Radio Altimeter (AMM SDS 34-31-00/1).

– FADEC System (AMM SDS 73-22-00/1).

– FMS (UNIVERSAL) (AMM SDS 34-62-00/1) or FMS (HONEYWELL) (AMM SDS 34-61-00/1).

(3) Get access to the Maintenance Panel (AMM MPP 06-41-03/100).

(4) (Aircraft with UNIVERSAL FMS) After the FMS CDUs POWER ON SELF TEST, on the INIT 1/1 page, push the 5L line select key to accept (Figure 510).

(5) (Aircraft with HONEYWELL FMS) Make sure that the FMS is configured to operate in the pattern mode (AMM TASK 34-61-00-470-802-A/200).

(6) (Aircraft with HONEYWELL FMS) Do the FMS position update as follows (Figure 511):

(a) On the CDU, push the NAV mode key.
Result:
1 The CDU shows the NAV INDEX 1/2 page.

(b) On the CDU, push the NEXT function key.
Result:
1 The CDU shows the NAV INDEX 2/2 page.

(c) On the CDU, push the POS INIT left line select key (3L).
Result:
1 The CDU shows the POSITION INIT 1/1 page.

(d) On the CDU keyboard, enter with the airport ID.
Result:
1 The airport ID comes into view on the scratchpad.

(e) Push the REF WPT line select key (2L).
Result:
1 The REF WPT field is updated with the new airport ID and its coordinates.

(f) Push the REF WPT LOAD line select key (2R).
Result:
1 The CDU CRT shows the LOADED POSITION coordinates.

J. Operational Check of EGPWS/Windshear

SUBTASK 710-004-A

(1) Do the Short Level 1 Self-Test sequence as follows:

NOTE: For aircraft with EGPWS installed but configured as GPWS, go to step (2).

(a) Make sure that the Terrain Sys OVRD pushbutton is in the normal position (striped bar off) (Figure 505).

(b) Momentarily (less than 2 seconds) set the GPWS/WDSH TEST switch, on the maintenance panel, to the up position (Figure 503).
Result:
1 The MFDs, on the instrument panel, show the "TERR TEST" message (Figure 508)/(Figure 509).
2 On the instrument panel, the EICAS shows these caution (amber) messages (Figure 504):
- GPWS INOP.
- WINDSHEAR INOP.
- TERR INOP.
3 On the glareshield panel, the MASTER CAUTION lights flash.
4 All those messages go out of view.
5 The Aural Warning gives out the GLIDE SLOPE voice warning.
6 The PFDs, on the instrument panel, show the "GND PROX" message.

7 On the glareshield panel, the Master Warning lights flash.

8 The Aural Warning gives out the "PULL UP" voice message.

9 The PFDs show the "WDSHEAR" message in red.

10 The Aural Warning gives out the "SIREN WINDSHEAR WINDSHEAR WINDSHEAR" voice message.

11 On the PFDs, the WDSHEAR message (red) goes out of view.

12 The PFDs momentarily show the "WDSHEAR" message in amber.

13 The MFDs show the Terrain Display Self-Test Pattern (Figure 508)/(Figure 509).

14 (Aircraft with EGPWS with "Peaks Display Mode" function) The MFD's show the Terrain Display Self-Test Pattern and the Terrain Database (TDB-XXX) version (Figure 509).

15 The PFDs show the "PULL UP" message.

16 The Aural Warning gives the "TERRAIN TERRAIN" and "PULL UP" voice messages.

17 On the PFDs, the "PULL UP" message goes out of view.

18 On the MFDs, the Terrain Display Self-Test goes out.

19 The Terrain Display is automatically deselected.

(2) (For aircraft with EGPWS installed but configured as GPWS) Do the Short Level 1 Self-Test sequence as follows:

(a) Momentarily (less than 2 seconds) set the GPWS/WDSH TEST switch, on the maintenance panel, to the up position.

Result:

1 On the instrument panel, the EICAS shows these caution (amber) messages:

- GPWS INOP.
- WINDSHEAR INOP.

2 On the glareshield panel, the MASTER CAUTION lights flash.

3 All those messages go out of view.

4 The Aural Warning gives out the "GLIDE SLOPE" voice warning.

5 The EICAS shows the GPWS warning message.

6 On the glareshield panel, the Master Warning lights flash.

7 The Aural Warning gives out the "PULL UP" voice message.

8 On the EICAS, the GPWS warning message (red) goes out of view.

9 The PFDs show the "WDSHEAR" message in red.

10 The Aural Warning gives out the "SIREN WINDSHEAR WINDSHEAR WINDSHEAR" voice message.

11 On the PFDs, the "WDSHEAR" message (red) goes out of view.

12 The PFDs momentarily show the "WDSHEAR" message in amber.

13 The Aural Warning gives out the "TERRAIN INHIBITED" voice message.

(3) (PRE-MOD S.B.145-34-0078) Do the Long Level 1 Self-Test sequence as follows:

NOTE: For aircraft with EGPWS installed but configured as GPWS, go to step (5).

(a) Make sure that the Terrain Sys OVRD pushbutton is on the normal position (striped bar off).

(b) On the maintenance panel, set the GPWS/WDSH TEST switch to the up position and hold it until the self test voice messages start.

Result:

1 The Aural Warning gives out these voice messages:

- "SINK RATE".
- "PULL UP".
- "TERRAIN".
- "PULL UP".
- "DON'T SINK - DON'T SINK".
- "TOO LOW TERRAIN".
- "TOO LOW GEAR".
- "TOO LOW FLAPS".
- "TOO LOW TERRAIN".
- "GLIDESLOPE".
- "BANK ANGLE - BANK ANGLE".
- "APPROACHING MINIMUMS".
- "MINIMUMS - MINIMUMS".
- "TWO HUNDRED".
- "ONE HUNDRED".
- "FIVE HUNDRED".
- "SIREN WINDSHEAR WINDSHEAR WINDSHEAR".
- "CAUTION WINDSHEAR".
- "TOO LOW TERRAIN".
- "CAUTION TERRAIN - CAUTION TERRAIN".
- "TERRAIN TERRAIN".
- "PULL UP".
- (Aircraft with EGPWS with "Peaks Display Mode" function) "CAUTION OBSTACLE - CAUTION OBSTACLE".
- (Aircraft with EGPWS with "Peaks Display Mode" function) "OBSTACLE OBSTACLE PULL UP".

(4) (POST-MOD S.B.145-34-0078) Do the Long Level 1 Self-Test sequence as follows:

NOTE: For aircraft with EGPWS installed but configured as GPWS, go to step (5).

(a) Make sure that the Terrain Sys OVRD pushbutton is on the normal position (striped bar off).

(b) On the maintenance panel, set and hold in the up position the GPWS/WDSH TEST switch until the self test voice messages start.

Result:

1 The Aural Warning gives out the voice messages listed below:

- "SINK RATE".
- "PULL UP".
- "TERRAIN".
- "PULL UP".
- "DON'T SINK - DON'T SINK".
- "TOO LOW TERRAIN".
- "TOO LOW GEAR".
- "TOO LOW FLAPS".
- "TOO LOW TERRAIN".
- "GLIDESLOPE".
- "BANK ANGLE - BANK ANGLE".
- "APPROACHING MINIMUMS".
- "MINIMUMS - MINIMUMS".
- "ONE THOUSAND".
- "FIVE HUNDRED".
- "FOUR HUNDRED".
- "THREE HUNDRED".
- "TWO HUNDRED".
- "ONE HUNDRED".
- "FIFTY".
- "FOURTY".
- "THIRTY".
- "TWENTY".
- "TEN".
- "SIREN WINDSHEAR WINDSHEAR WINDSHEAR".
- "CAUTION WINDSHEAR".
- "TOO LOW TERRAIN".
- "CAUTION TERRAIN - CAUTION TERRAIN".
- "TERRAIN TERRAIN".
- "PULL UP".

– (Aircraft with EGPWS with "Peaks Display Mode" function) "CAUTION OBSTACLE - CAUTION OBSTACLE".

– (Aircraft with EGPWS with "Peaks Display Mode" function) "OBSTACLE OBSTACLE PULL UP".

(5) (For aircraft with EGPWS installed but configured as GPWS) Do the Long Level 1 Self-Test sequence as follows:

(a) On the maintenance panel, set and hold in the up position the GPWS/WDSH TEST switch until the self test voice messages start.

Result:

1 The Aural Warning gives out the voice messages listed below:

– "SINK RATE".

– "PULL UP".

– "TERRAIN".

– "PULL UP".

– "DON'T SINK - DON'T SINK".

– "TOO LOW TERRAIN".

– "TOO LOW GEAR".

– "TOO LOW FLAPS".

– "TOO LOW TERRAIN".

– "GLIDESLOPE".

– "BANK ANGLE - BANK ANGLE".

– "APPROACHING MINIMUMS".

– "MINIMUMS - MINIMUMS".

– "TWO HUNDRED".

– "ONE HUNDRED".

– "FIVE HUNDRED".

– "SIREN WINDSHEAR WINDSHEAR WINDSHEAR".

– "CAUTION WINDSHEAR".

(6) Do the Self-Test Level 2 sequence as follows:

NOTE: For aircraft with EGPWS installed but configured as GPWS, go to step (7).

(a) On the maintenance panel, set the GPWS/WDSH TEST switch to the up position within 3 seconds of the end of the level 1 self-test.

Result:

1 If there is no failures (internal and external), the Aural Warning gives out the "NO FAULTS" voice message.

2 If there are external failures only, the Aural Warning gives out the "GPWS COMPUTER OK" voice message and a listing of the external failures found.

(7) (For aircraft with EGPWS installed but configured as GPWS) Do the Self-Test Level 2 sequence as follows:

(a) On the maintenance panel, set the GPWS/WDSH TEST switch to the up position within 3 seconds of the end of the level 1 self-test.

Result:

1 If there are external failures only, the Aural Warning gives out the "GPWS COMPUTER OK" voice message, these voice messages, and the other messages related to external failures.

- "LEFT DISPLAY RANGE INVALID".
- "RIGHT DISPLAY RANGE INVALID".
- "IC#1 DATA BUS DISCRETE WORD LEFT FAULT".
- "IC#2 DATA BUS DISCRETE WORD RIGHT FAULT".

(8) (Aircraft with EGPWS with "Peaks Display Mode" function) Do the Terrain Peaks Mode test as follows:

(a) On the MFDs, push the WX/TERR menu key to select the TERR option.

Result:

1 The MFDs show the ground map with Peak Numbers on the right side of the display.

(b) On the MFDs, turn the knob clockwise and counterclockwise.

Result:

1 The Peak Numbers change.

(9) Do the Windshear Escape Guidance test as follows:

NOTE: Make sure that the PLI (Pitch Limit Indicator) is not shown on the ADI. If it is shown, turn the AOA (Angle of Attack) vane until the PLI goes out of view on the ADI top.

(a) Push the GA switch, on the engine thrust lever.

Result:

1 The PFDs show:

- The indication ROL - TO (green).
- The Flight Director Command Bars.

(b) Momentarily set the GPWS/WDSH TEST switch, on the maintenance panel, to the up position.

Result:

1 The PFDs show:

- The indication ROL - WSHR (green).
- The Flight Director Command Bars go down to the current pitch attitude and stay in view.

(c) Immediately after the WDSHEAR annunciation is removed from the PFDs, push FD1 and FD2 on GC-550, on the glareshield panel.

Result:

1 The Flight Director Bars and annunciation are removed from the PFDs.

(d) Set the Engine Thrust Lever to the MAX POWER position.

(e) Momentarily set the GPWS/WDSH TEST switch again to the up position.

Result:

1 The PFDs show:

- The ROL - WSHR indication (green).
- The Flight Director Command Bars come into view automatically.

(10) (POST-MOD S.B.145-34-0088) Do the Time Delay Relay (Discrete Input) test as follows:

NOTE:
- Short Cancel means: To set the EGPWS/WDSH TEST switch, on the maintenance panel, to the up position momentarily (less than 2 seconds).
- Long Cancel means: To set the EGPWS/WDSH TEST switch, on the maintenance panel, to the up position momentarily (more than 2 seconds).

(a) Set the flap selector lever to 22° or 45° and set the thrust lever to IDLE.

(b) Go into the Level 6 Self-Test, as follows.

1 Do a Short Cancel.

a The Aural Warning gives out the "Glideslope" message.

2 Do a Short Cancel.

a The Aural Warning gives out the "Current Faults" and "GPWS" messages.

3 Do a Short Cancel

a The Aural Warning gives out the "Press to Continue" message.

4 Do a Short Cancel.

a The Aural Warning gives out the "System Configuration" message.

5 Do a Long Cancel.

a The Aural Warning gives out the "Press to Continue" message.

6 Do a Short Cancel.

a The Aural Warning gives out the "Fault History" or "No Faults" message.

7 Do a Long Cancel.

a The Aural Warning gives out the "Press to Continue" message.

8 Do a Short Cancel.

a The Aural Warning gives out the "Warning History" or "No Warnings" message.

9 Do a Long Cancel.

a The Aural Warning gives out the "Press to Continue" message.

10 Do a Short Cancel.

a The Aural Warning gives out the "Discrete Input Test" message.

11 Push the TOGA button and set the thrust lever to THRUST SET and flap selector level to 18°, 9° and 0°.

a The Aural Warning gives out the "Not Landing Flaps" message after 10 seconds.

NOTE: The Test Time Delay Relay (Discrete Input) gives aural warning messages of changes in the EGPWS discrete inputs. As a function of the types of changes in other discrete inputs, while the Level 6 Self-Test is done, other aural warning messages can occur.

12 Do a Short Cancel to complete the test.

a The Aural Warning gives out the "End of Self-Test" message.

(11) (For aircraft equipped with Steep Approach function) Do a check in Steep Approach function as follows:

WARNING: MAKE SURE THAT THERE ARE NO PERSONS OR EQUIPMENT IN THE FLAP TRAVEL AREA.

(a) Set the flap selector lever to 22° and set the thrust lever to IDLE.

(b) Simulate a "flight" condition in LGEU outputs B2 and D2 as follows:

1 Install the safety pin of the NLG door solenoid valve (AMM TASK 32-00-02-910-801-A/200).

2 On the overhead panel, make sure the BATT 1 and BATT 2 switches are set to OFF.

NOTE: The switches of batteries 1 and 2 must be set to OFF position to permit the external power to energize the electrical systems when the aircraft is in the AIR condition.

3 Make sure that the sensors (PITOT 1 / TAT 1 / AOA 1; PITOT 2 / TAT 2 / AOA 2; PITOT/STATIC 3) pushbuttons, on the overhead panel, are set to OFF (lights ON) and attach a DO-NOT-TURN-TO-AUTO tag to them.

WARNING: IF THE SENSORS HTG CIRCUIT BREAKER IS OPENED, THE HEATING OF THE PITOT TUBES AND STATIC PORTS WILL BE ACTIVATED.

4 On the circuit breaker panel, on the cockpit ceiling, make sure that the SENSORS HTG circuit breaker is closed.

5 Attach metallic targets with adhesives in front of the WOW 1 and 2 proximity switches of the LH MLG, WOW 1 and 2 proximity switches of the RH MLG, and in front of the NLG WOW proximity switch.

6 Open the AIR/GND A, AIR/GND B, AIR/GND C and AIR/GND D circuit breakers. Then close the circuit breakers in 10 seconds maximum.

NOTE: During the reset procedure (3 seconds maximum), the LG AIR/GND FAIL caution message is activated. After the reset, the message goes out of view.

7 To make sure that the LGEU outputs are in the "flight" condition after you do the steps above, do as follows:

- Push the PGE button of RMU 1/RMU 2 and make sure that the MAINTENANCE label is not available on the RMU display. In this condition, LGEU channels B/D (outputs B2/D2) inhibits the MAINTENANCE label. This shows that the aircraft is in the "flight" condition.

(c) Go into the Level 6 Self-Test (Discrete Input Test) as follows:

NOTE:
- Short Cancel means: To set the EGPWS/WDSH TEST switch, on the maintenance panel, to the up position momentarily (less than 2 seconds).
- Long Cancel means: To set the EGPWS/WDSH TEST switch, on the maintenance panel, to the up position momentarily (more than 2 seconds).

1 Do a Short Cancel.

a The Aural Warning gives out the "Glideslope" message.

2 Do a Short Cancel.

a The Aural Warning gives out the "Current Faults" and "GPWS" messages.

3 Do a Short Cancel

a The Aural Warning gives out the "Press to Continue" message.

4 Do a Short Cancel.

a The Aural Warning gives out the "System Configuration" message.

5 Do a Long Cancel.

a The Aural Warning gives out the "Press to Continue" message.

6 Do a Short Cancel.

a The Aural Warning gives out the "Fault History" or "No Faults" message.

7 Do a Long Cancel.

a The Aural Warning gives out the "Press to Continue" message.

8 Do a Short Cancel.

a The Aural Warning gives out the "Warning History" or "No Warnings" message.

9 Do a Long Cancel.

a The Aural Warning gives out the "Press to Continue" message.

10 Do a Short Cancel.

a The Aural Warning gives out the "Discrete Input Test" message.

NOTE: The Discrete Input Test gives out Aural Warnings Messages of changes in the EGPWS discrete inputs. As a function of the changes in other discrete inputs, while Level 6 Self-Test is done, other Aural Warnings Messages can occur.

(d) Set the flap selector lever to 45°.

1 The white "STEEP" indication on the Steep Approach pushbutton goes on.

2 The "Steep Approach Enabled" aural message is enunciated.

(e) Push the Steep Approach pushbutton.

1 The green lamp on the Steep Approach pushbutton goes on.

2 The "Steep Approach Selected" aural message is enunciated.

(f) Push again the Steep Approach pushbutton.

1 The green lamp on the Steep Approach pushbutton goes off.

2 The "Steep Approach Not Selected" aural message is enunciated.

(g) Set the flap selector lever to 22°.

1 The white "STEEP" indication on the Steep Approach pushbutton goes off.

2 The "Steep Approach Disabled" aural message is enunciated.

(h) On the Circuit Breaker Panel, open the STEEP circuit breaker.

1 The ambar lamp on the Steep Approach pushbutton goes on.

(i) On the Circuit Breaker Panel, close the STEEP circuit breaker.

1 The ambar lamp on the Steep Approach pushbutton goes off.

(j) Do a Short Cancel to complete the Level 6 Self-Test.

1 The "End of Self-Test" aural message is enunciated.

(12) Verify the Terrain and Envelope Databases versions as follows:

NOTE: If it is necessary to update the Terrain and Envelope Databases, do the loading procedure as given in AMM TASK 34-41-00-470-801-A/400.

(a) Go into the Level 3 Self-Test (System Configuration) as follows:

NOTE: Short Cancel means: To set the EGPWS/WDSH TEST switch, on the maintenance panel, to the up position momentarily (less than 2 seconds).

1 Do a Short Cancel.

a The Aural Warning gives out the "Glideslope" message.

2 Do a Short Cancel.

a The Aural Warning gives out the "Current Faults" and "GPWS" messages.

3 Do a Short Cancel

a The Aural Warning gives out the "Press to Continue" message.

4 Do a Short Cancel.

a The Aural Warning gives out the "System Configuration" message.

(b) Among other messages, the Aural Warning gives out the "Terrain Database Version" and "Envelope Database Version" messages.

K. Follow-on

SUBTASK 842-004-A

(1) Close the Maintenance Panel (AMM MPP 06-41-03/100).

(2) Remove the metallic targets and the adhesives from the WOW 1 and 2 proximity switches of the LH MLG, WOW 1 and 2 proximity switches of the RH MLG, and from the NLG WOW proximity switch.

(3) Deenergize the aircraft (AMM TASK 20-40-01-860-801-A/200).

TASK 34-41-00-700-804-A
EFFECTIVITY: ALL

5. EGPWS/WINDSHEAR RESET SWITCH - OPERATIONAL CHECK

A. General

(1) This task gives the procedures to do the Auto-Test and Resetting of the EGPWS/Windshear System.

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 27-36-00/1	
AMM SDS 27-53-00/1	
AMM SDS 31-41-00/1	
AMM SDS 31-42-00/1	
AMM SDS 31-51-00/1	
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 34-61-00/1	
AMM SDS 34-62-00/1	
AMM SDS 73-22-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 34-61-00-470-802-A/200	FMS - MODE CONFIGURATION

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
223		Cockpit - Maintenance panel

D. Tools and Equipment

Not Applicable

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

I. Preparation

SUBTASK 841-005-A

(1) 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).
- Stall Protection System (AMM SDS 27-36-00/1).
- Flap (AMM SDS 27-53-00/1).
- 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).
- ADC System (AMM SDS 34-15-00/1).
- AHRS (AMM SDS 34-21-00/1) or IRS (AMM SDS 34-27-00/1).
- EFIS (AMM SDS 34-22-00/1).
- Radio Altimeter (AMM SDS 34-31-00/1).
- FADEC System (AMM SDS 73-22-00/1).
- FMS (UNIVERSAL) (AMM SDS 34-62-00/1) or FMS (HONEYWELL) (AMM SDS 34-61-00/1).

(2) (Aircraft with UNIVERSAL FMS) After the FMS CDUs POWER ON SELF TEST, on the INIT 1/1 page, push the 5L line select key to accept (Figure 510).

(3) (Aircraft with HONEYWELL FMS) Make sure that the FMS is configured to operates in pattern mode (AMM TASK 34-61-00-470-802-A/200).

(4) (Aircraft with HONEYWELL FMS) Do the FMS position update as follows (Figure 511):

(a) On the CDU, push the NAV mode key.

Result:

1 The CDU shows the NAV INDEX 1/2 page.

(b) On the CDU, push the NEXT function key.

Result:

1 The CDU shows the NAV INDEX 2/2 page.

(c) On the CDU, push the POS INIT left line select key (3L).

Result:

1 The CDU shows the POSITION INIT 1/1 page.

(d) On the CDU keyboard, enter with airport ID.

Result:

1 The airport ID appears on the SCRATCHPAD.

(e) Press the REF WPT line select key (2L).

Result:

1 The REF WPT field is update with the new airport ID and its coordinates.

(f) Press the REF WPT LOAD line select key (2R).

Result:

1 The CDU CRT shows the LOADED POSITION coordinates.

(5) Get access to the Maintenance Panel (AMM MPP 06-41-03/100).

J. Operationally Check EGPWS/Windshear Reset Switch

SUBTASK 710-005-A

(1) NOTE: For aircraft with EGPWS installed but configured as GPWS, the steps 1(a), 1 (b) and 1(c) related to TERRAIN SYS OVRD pushbutton are not applicable.

Do the Reset Switch Test as follows:

(a) On the MFDs, push the WX/TERR menu key to select the TERR option (Figure 506)/(Figure 507).

Result:

1 The MFDs show the ground map.

(b) On the Main Instrument Panel or Control Pedestal Panel, as applicable, push the TERRAIN SYS OVRD pushbutton (Figure 505).

Result:

1 On the MFDs, the ground map goes out of view.

2 The MFDs show the message "TERR INHB" on the upper left side.

(c) On the Main Instrument Panel or Control Pedestal Panel, as applicable, push to release the TERRAIN SYS OVRD pushbutton.

Result:

1 The MFDs show the ground map.

(2) Do the Windshear Escape Guidance test as follows:

NOTE: Make sure that the PLI (Pitch Limit Indicator) is not shown on the ADI. If it is shown, turn the AOA (Angle of Attack) vane until the PLI goes out of view on the ADI top.

(a) Push the GA switch, on the engine thrust lever.

Result:

1 The PFDs show:

- The indication ROL - TO (green).
- The Flight Director Command Bars.

(b) Momentarily set the GPWS/WDSH TEST switch, on the maintenance panel, to the up position (Figure 503).

Result:

1 The PFDs show:

- The indication ROL - WSHR (green).
- The Flight Director Command Bars go down to the current pitch attitude and stay in view.

(c) Immediately after the WDSHEAR annunciation is removed from the PFDs, push FD1 and FD2 on GC-550, on the glareshield panel.

Result:

1 The Flight Director Bars and annunciation are removed from the PFDs.

(d) Set the Engine Thrust Lever to the MAX POWER position.

(e) Momentarily set the GPWS/WDSH TEST switch again to the up position.

Result:

1 The PFDs show:

- The ROL - WSHR indication (green).
- The Flight Director Command Bars come into view automatically.

K. Follow-on

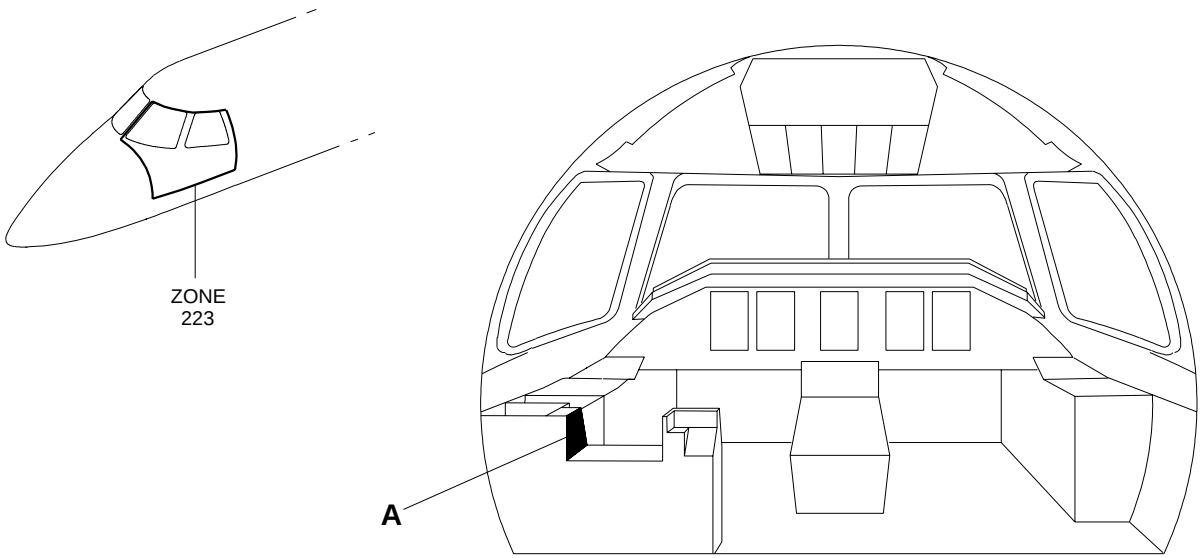
SUBTASK 842-005-A

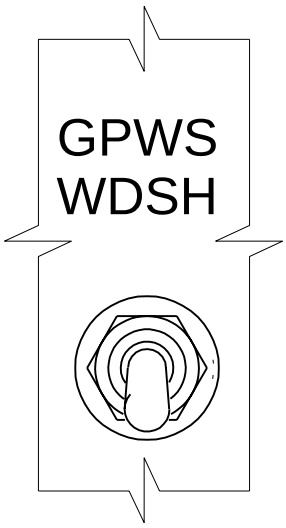
(1) Close the Maintenance Panel (AMM MPP 06-41-03/100).

(2) Deenergize the aircraft (AMM TASK 20-40-01-860-801-A/200).

EFFECTIVITY: ALL

EGPWS/Windshear Test Switch
Figure 503





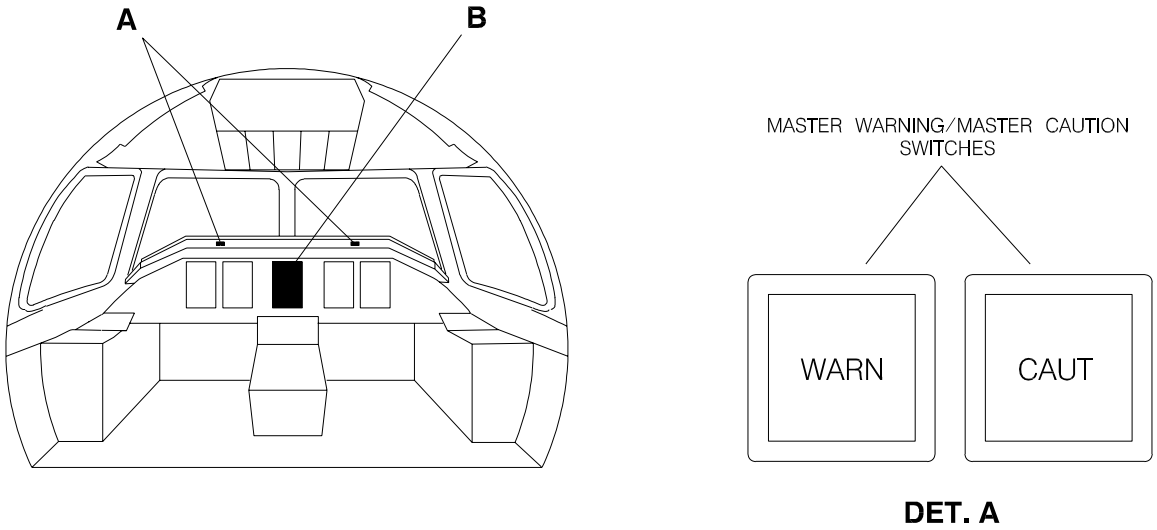
DET. A

MAINTENANCE PANEL

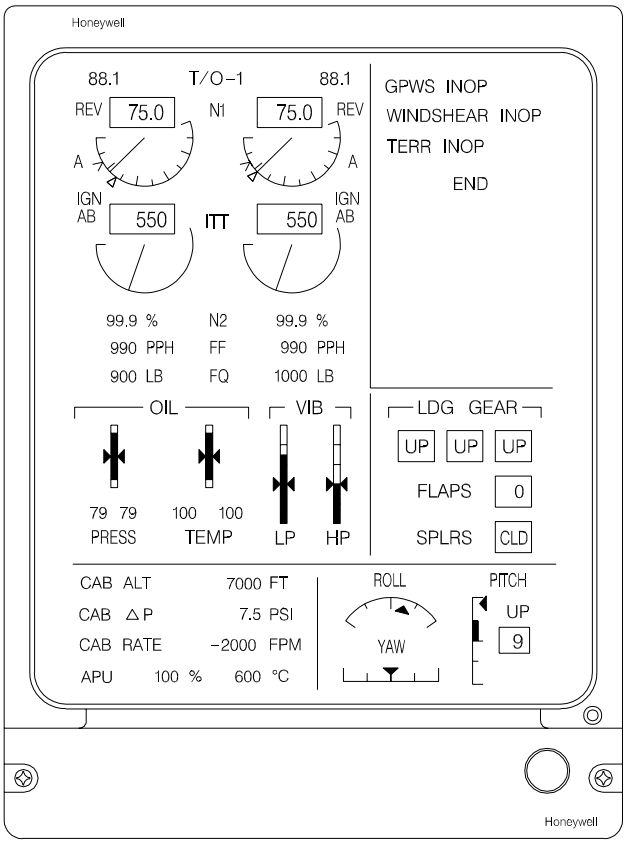
145AMM340002.MCE B

EFFECTIVITY: ALL

EICAS - EGPWS/Windshear Messages
Figure 504



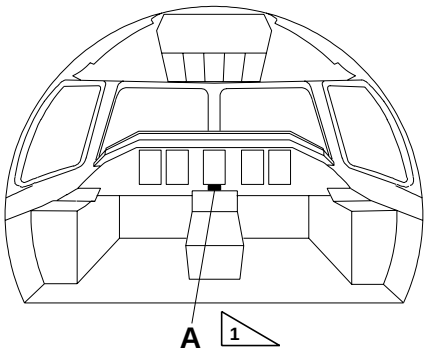
DET. A

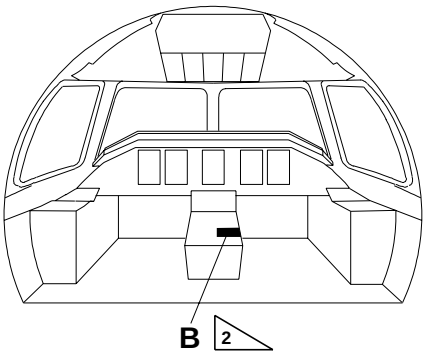


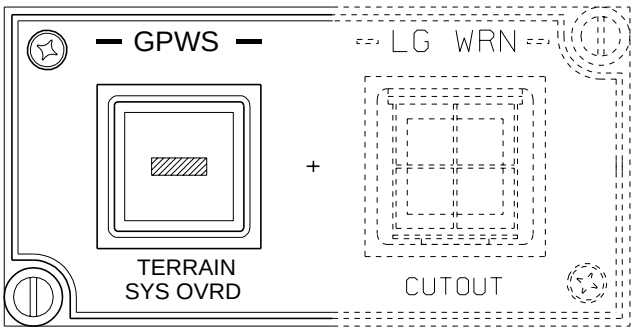
DET. B

145AMM340019.MCE A

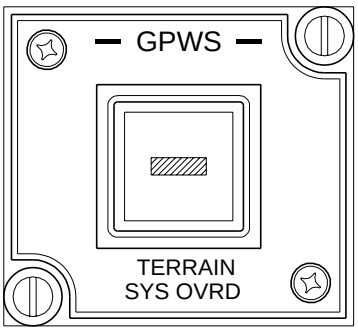
EFFECTIVITY: ALL
Terrain Sys OVRD Pushbutton
Figure 505



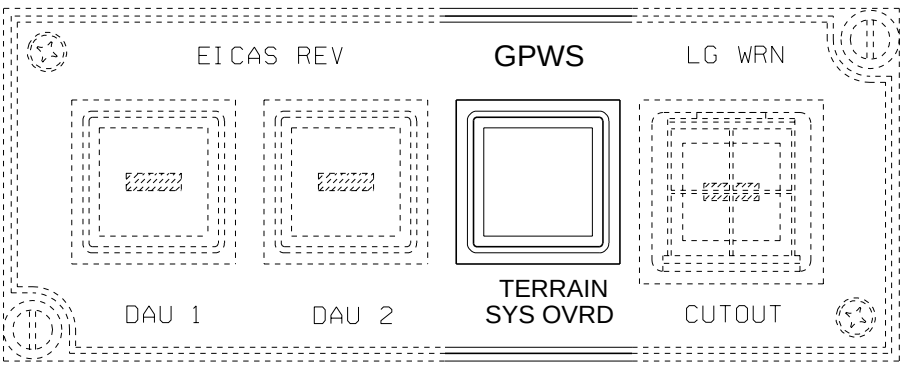




DET. A



DET. A



DET. B

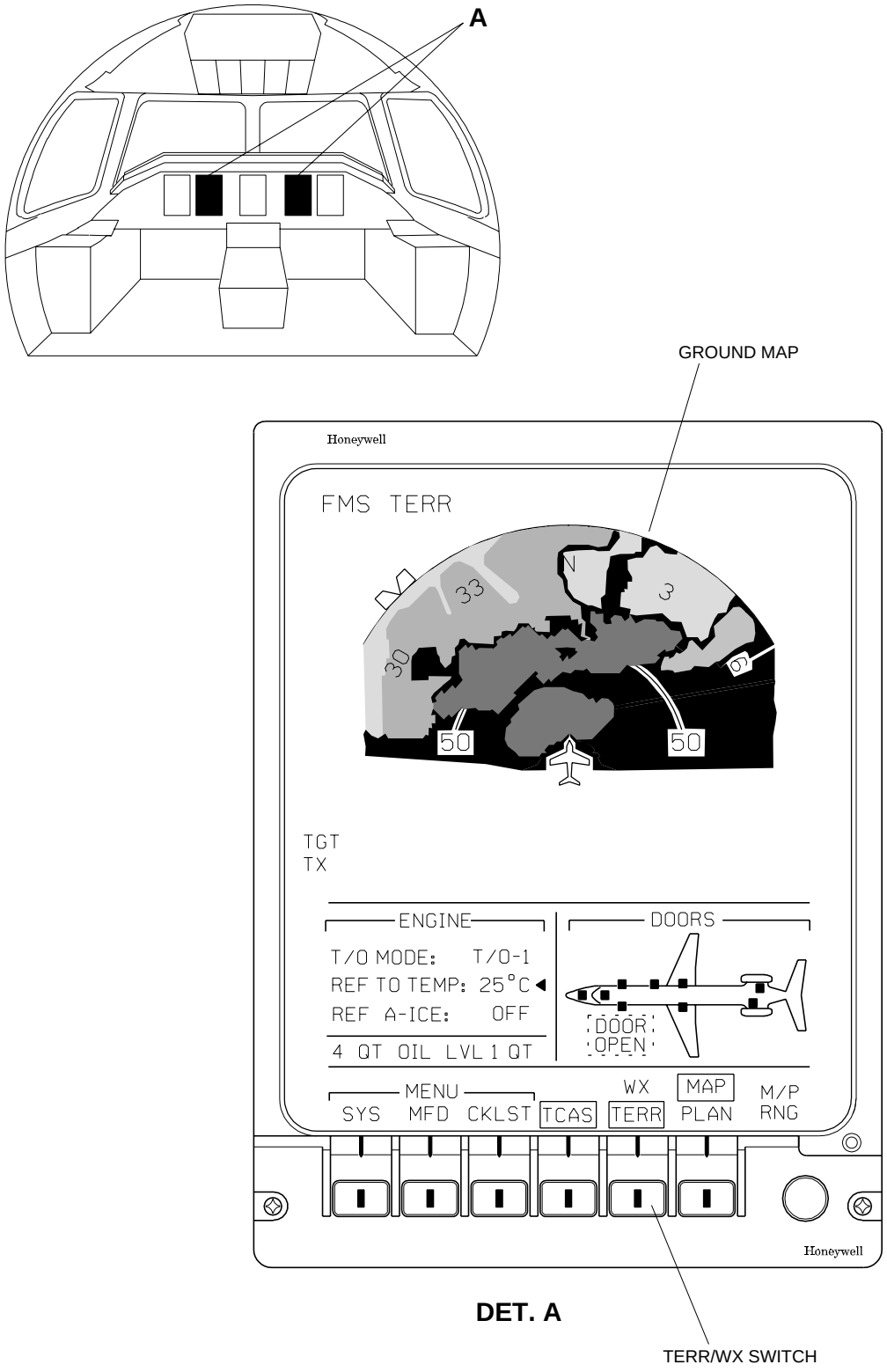
1 AIRCRAFT WITH CDU INSTALLED ON CONTROL PEDESTAL AFT PANEL.

2 AIRCRAFT WITH CDU INSTALLED ON CONTROL PEDESTAL FORWARD PANEL.

145AMM340282.MCE C

EFFECTIVITY: Aircraft with EGPWS without "Peaks Display Mode" function

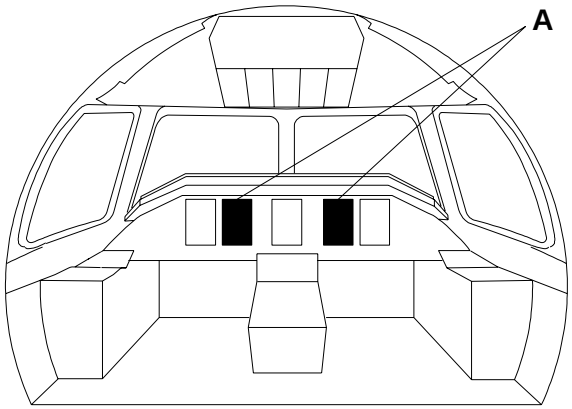
Ground Map Sample
Figure 506

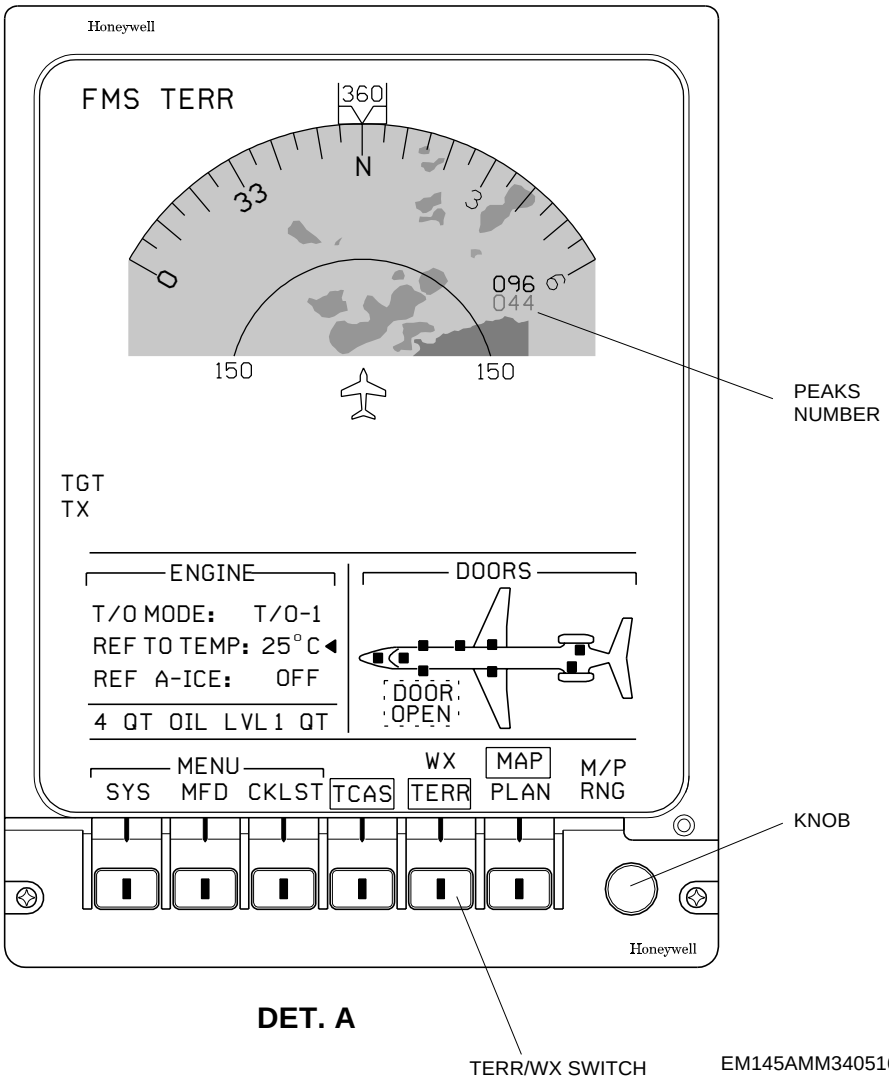


145AMM340287.MCE A

EFFECTIVITY: Aircraft with EGPWS with "Peaks Display Mode" function

Ground Map Sample
Figure 507



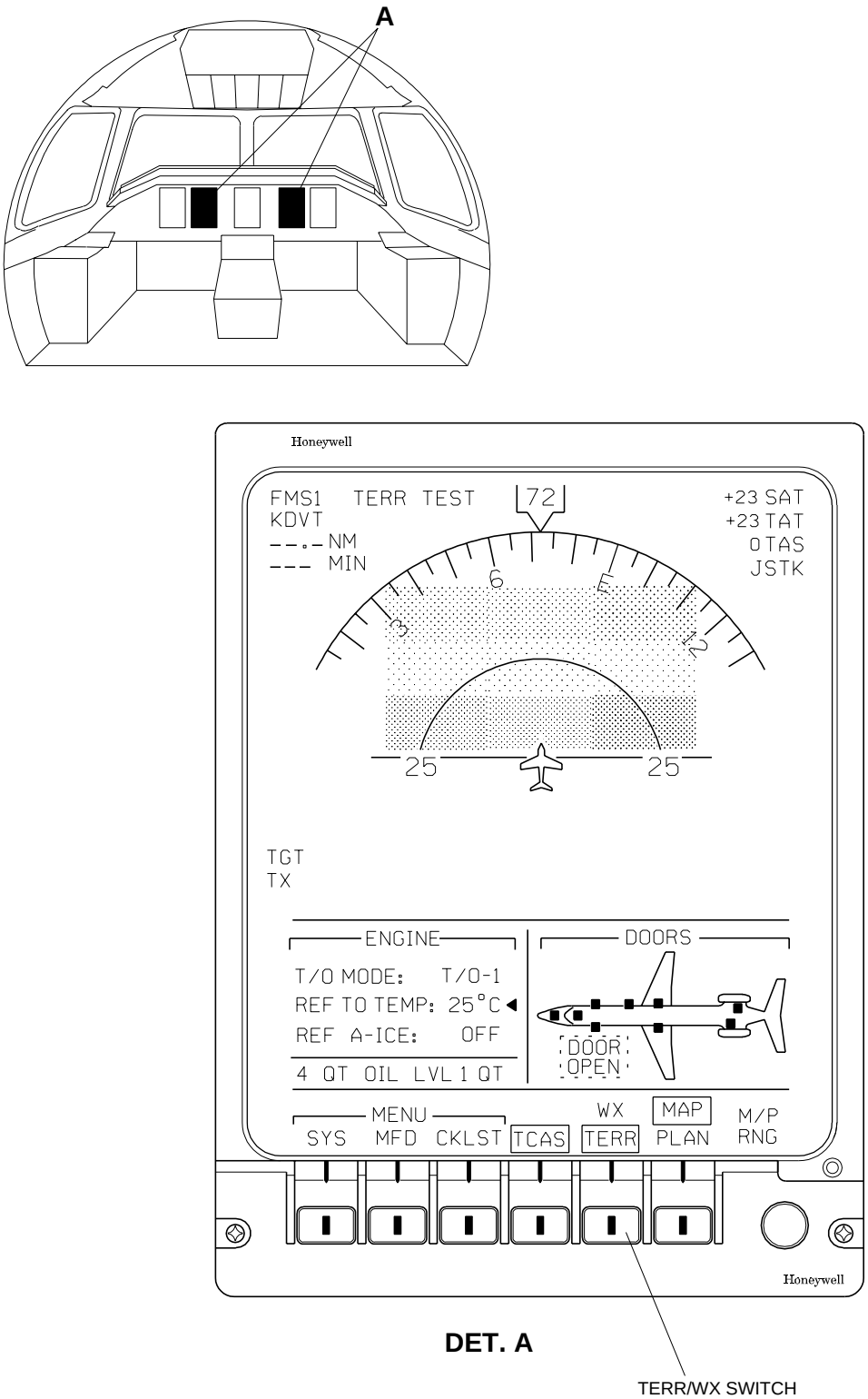


DET. A

EM145AMM340516A.DGN

EFFECTIVITY: Aircraft with EGPWS without "Peaks Display Mode" function

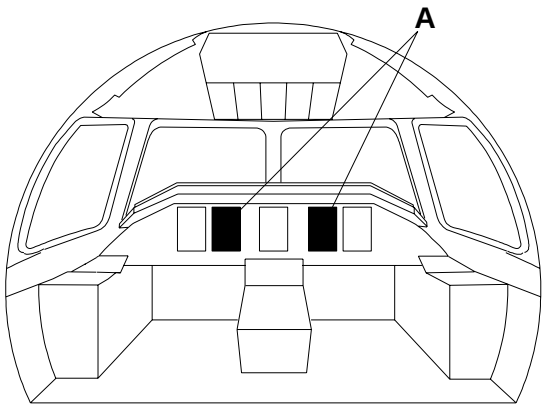
Terrain Display Self-Test Pattern
Figure 508

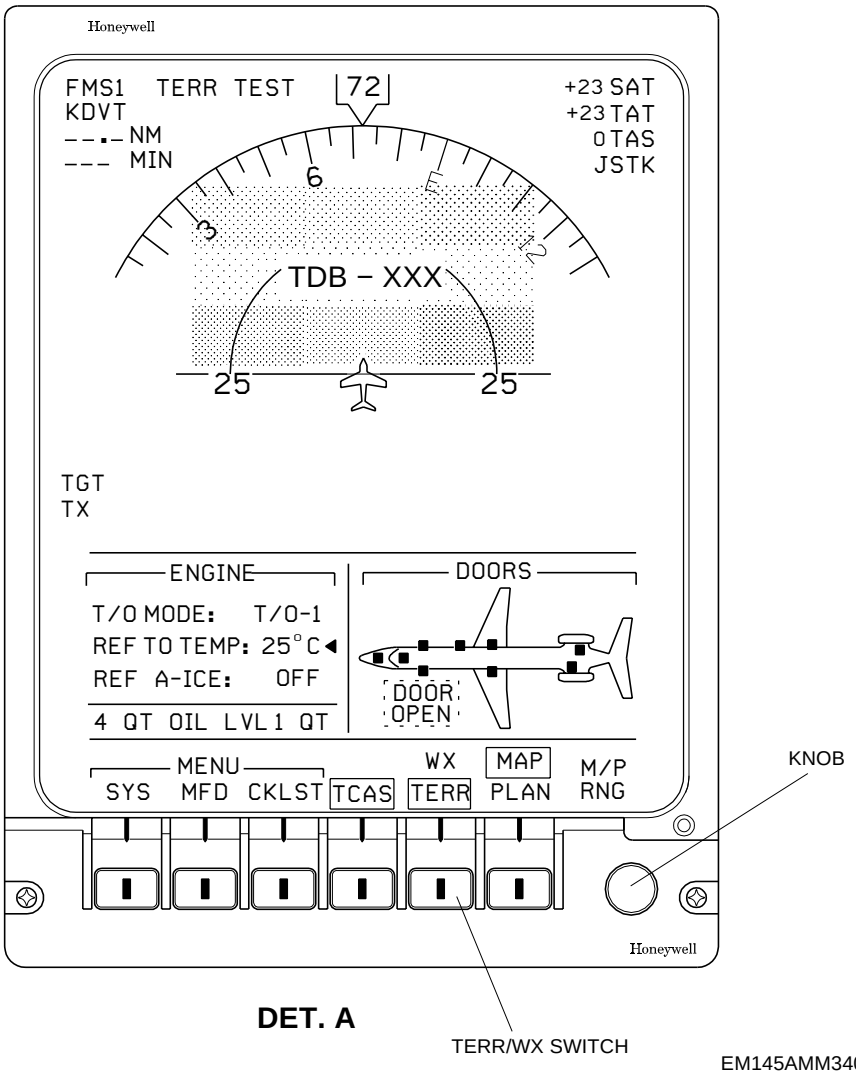


145AMM340286.MCE A

EFFECTIVITY: Aircraft with EGPWS with "Peaks Display Mode" function

Terrain Display Self-Test Pattern
Figure 509

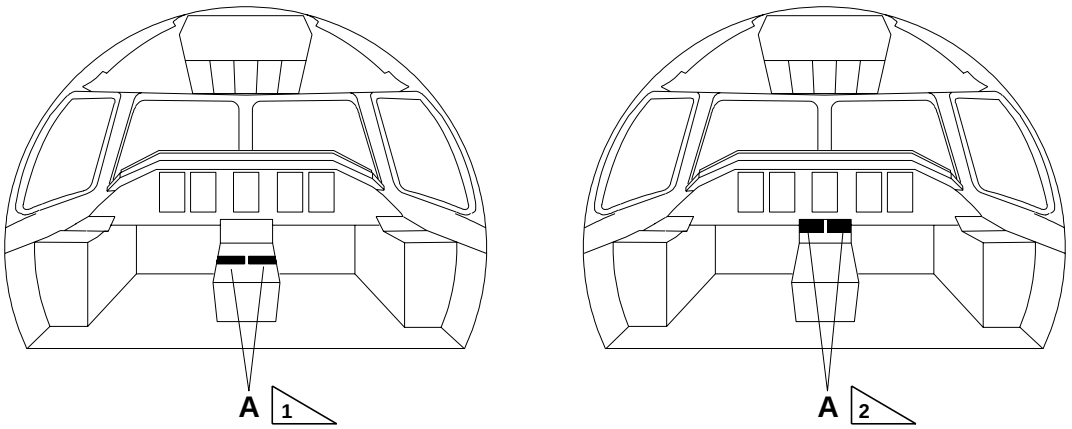


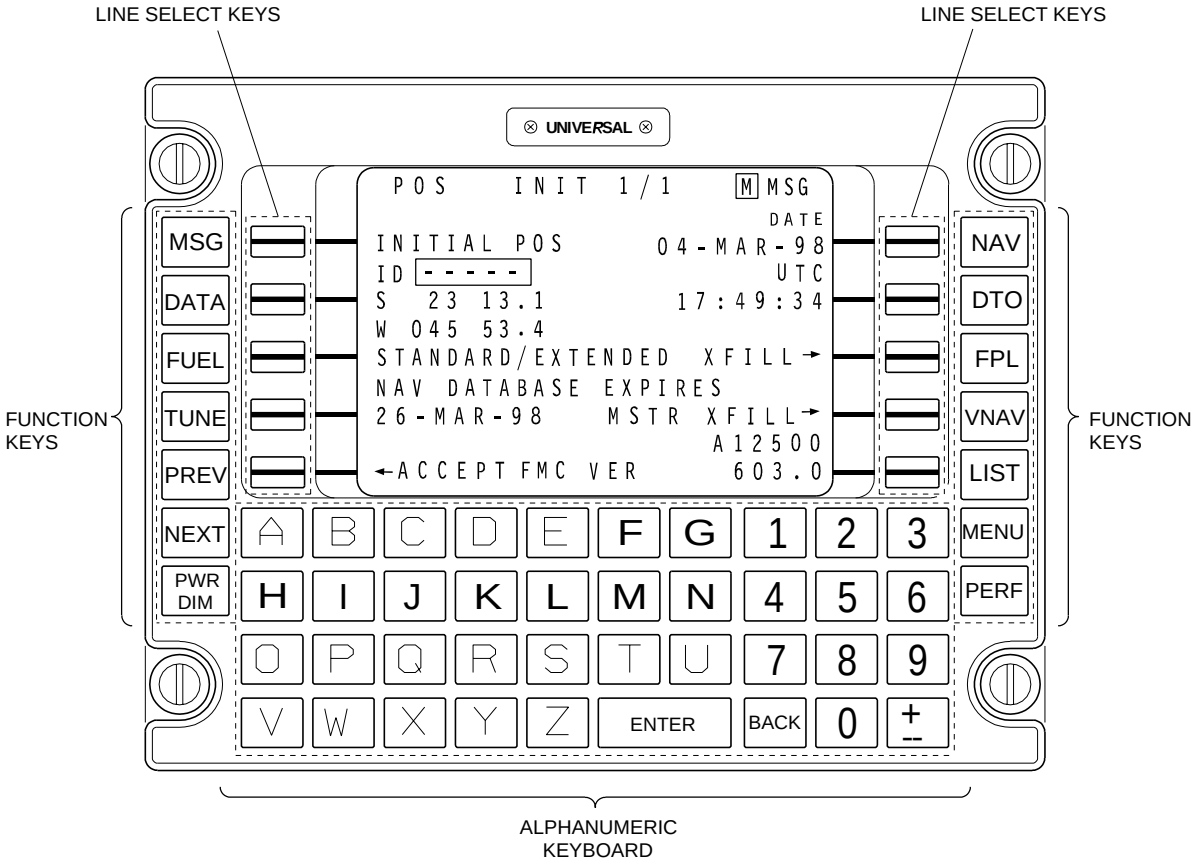


DET. A

EM145AMM340494B.DGN

EFFECTIVITY: AIRCRAFT WITH FMS (UNIVERSAL)
FMS CDU
Figure 510





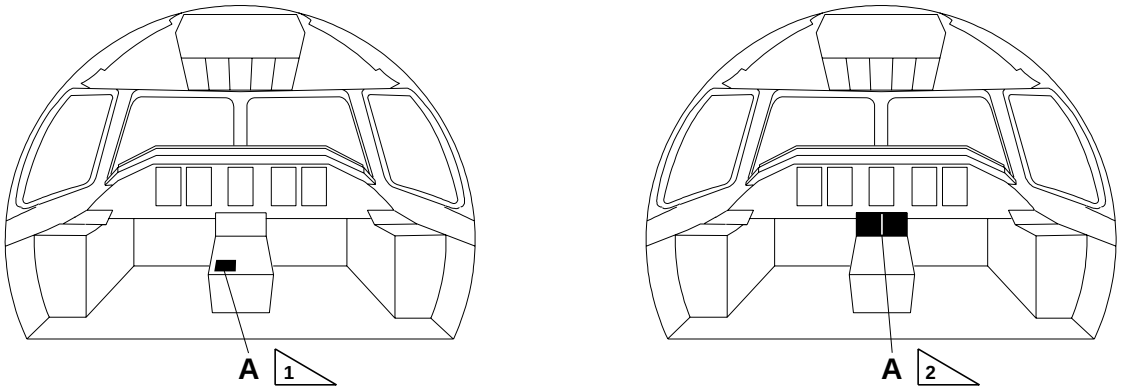
DET. A

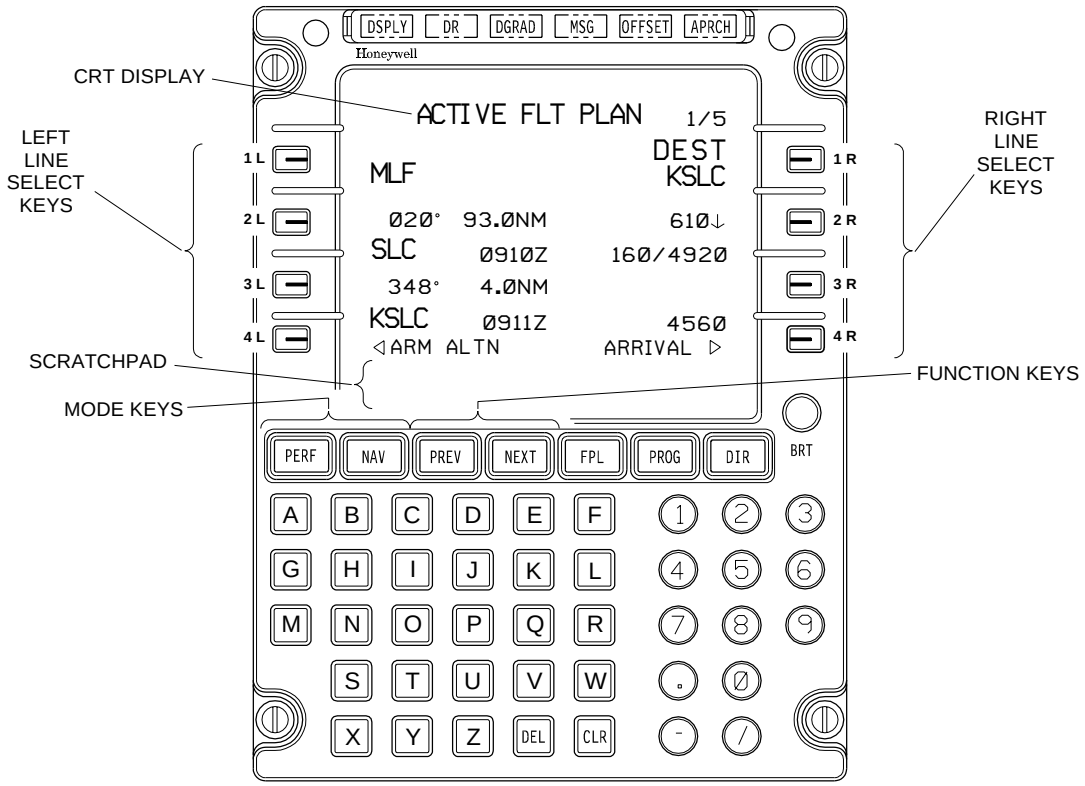
1 AIRCRAFT WITH FMS CDUS INSTALLED ON CONTROL PEDESTAL AFT PANEL.

2 AIRCRAFT WITH FMS CDUS INSTALLED ON CONTROL PEDESTAL FORWARD PANEL.

145AMM340276.MCE B

EFFECTIVITY: AIRCRAFT WITH FMS (HONEYWELL)
FMS CDU
Figure 511





DET. A

1 AIRCRAFT WITH SINGLE FMS

2 AIRCRAFT WITH DUAL FMS

EM145AMM341401A.DGN