CABIN PRESSURE ACQUISITION MODULE - ADJUSTMENT/TEST

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to do the functional test of the cabin-pressure acquisition module (CPAM).

   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*
21-32-01-700-801-A	CABIN-PRESSURE ACQUISITION MODULE - FUNCTIONAL TEST	ALL

TASK 21-32-01-700-801-A
EFFECTIVITY: ALL

2. CABIN-PRESSURE ACQUISITION MODULE - FUNCTIONAL TEST

A. General

(1) The CPAM sends the EICAS the cabin altitude, cabin-altitude rate of change, and cabin differential pressure.

(2) To do this check, it will be necessary to use anemometric benches.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM SDS 34-52-00/1	
AMM TASK 34-13-00-400-801-A/400	PITOT/STATIC-SYSTEM TEST SET - CONNECTION
SB145-31-0016	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
224	224JRW	RH console of the cockpit
224	224KRW	RH console of the cockpit

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 044	Headset - Ramp	To permit communication between the technicians	
GSE 128	Kit - Air Data	To connect the anemometric benches to the pitot/static sensor 3 and to the CPAM	
GSE 129	Test Set - Pitot-Static	To accomplish the task	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	A - Does the task	Cockpit
1	B - Helps technician A	Outside the aircraft

I. Preparation

SUBTASK 841-002-A

(1) Remove access panels 224JRW and 224KRW (AMM MPP 06-41-03/100).

(2) Connect the ramp interphone to permit communication between the technicians.

J. Functional Test of the Cabin-Pressure Acquisition Module (Figure 501)

SUBTASK 720-002-A

EFFECTIVITY: AIRCRAFT NOT EQUIPPED WITH HIGH ALTITUDE MODE

(1) Connect the CPAM test assembly of the Air Data Kit to the cabin pressure port of the CPAM.

(2) Connect the static hose of the anemometric bench (bench 1) to the CPAM test assembly.

NOTE: This procedure can cause interference with the local air traffic during simulations of altitude with the anemometric bench test. To prevent this, make sure that the transponder is on the STANDBY condition (AMM SDS 34-52-00/1).

(3) Refer to Table 501 and set the altitudes on the anemometric bench (bench 1). Then make sure that the cabin altitude values shown on the EICAS obey the tolerances.

NOTE:
- At 9900 ± 100 ft, the CABIN aural warning sounds and the master WARNING lights flash. Push one of the master WARNING lights, on the glareshield panel, to make the lights go off.
- At a cabin altitude of more than 40000 ft or less than − 1500 ft, the CAB ALT message on the EICAS goes out of view and amber dashs are shown.
- At a cabin rate of more than 2000 ft/min or less than − 2000 ft/min, the CAB RATE message on the EICAS versions up to 18.5 goes out of view and amber dashs are shown.
- At a cabin rate of more than 4000 ft/min or less than − 4000 ft/min, the CAB RATE message on the EICAS versions 19.0 and on goes out of view and amber dashs are shown.
- At a CAB ΔP of more than 10 psi or less than − 0.5 psi, the CAB ΔP message on the EICAS goes out of view and amber dashs are shown.
- The color of the cabin altitude indication on the EICAS is directly related with the cabin altitude value displayed on the EICAS.

Table 501 - CABIN ALTITUDE

ALTITUDE (ft) (BENCH 1)	CABIN ALTITUDE SHOWN ON EICAS (ft) (Tolerance ± 100 ft)	COLOR OF INDICATION ON EICAS
− 1500	− 1500	green

Table 501 - CABIN ALTITUDE (Continued)

ALTITUDE (ft) (BENCH 1)	CABIN ALTITUDE SHOWN ON EICAS (ft) (Tolerance ± 100 ft)	COLOR OF INDICATION ON EICAS
8100 [1] 8300 [2]	8100 [1] 8300 [2]	green
8200 [1] 8400 [2]	8200 [1] 8400 [2]	amber
9900	9900	amber
10000	10000	red
25000	25000	red

[1] For aircraft PRE-MOD SB145-31-0016.
[2] For aircraft POST-MOD SB145-31-0016.

(4) Refer to Table 502 and set the cabin rate on bench 1. Then make sure that the values of CAB RATE shown on the EICAS obey the tolerances.

NOTE: The color of the cabin rate indication on the EICAS is directly related with the cabin rate value shown on the EICAS.

Table 502 - CABIN RATE

CABIN RATE (ft/min) BENCH 1	CABIN RATE SHOWN ON EICAS (ft/min) (Tolerance ± 50 ft/min)	COLOR OF INDICATION ON EICAS
− 2000	− 2000	green
− 1500	− 1500	
− 1000	− 1000	
− 500	− 500	
500	500	
1000	1000	
1500	1500	
2000	2000	

(5) Connect other anemometric bench (bench 2) to pitot/static sensor 3 (AMM TASK 34-13-00-400-801-A/400).

(6) Set the cabin altitude to zero on the anemometric bench (bench 1) connected to the cabin pressure port of the CPAM.

(7) Refer to Table 503 and set the altitude on the anemometric bench (bench 2) connected to pitot/static sensor 3. Then, make sure that the CAB ΔP values shown on the EICAS obey the tolerances.

NOTE: The color of the CAB ΔP indication on the EICAS is directly related with the CAB ΔP value shown on the EICAS.

Table 503 - DIFFERENTIAL PRESSURE (ΔP)

ALTITUDE (ft) (BENCH 2)	Expected CAB ΔP on EICAS (psi) (Tolerance ± 0.1 psi)	COLOR OF INDICATION ON EICAS

Table 503 - DIFFERENTIAL PRESSURE (ΔP) (Continued)

− 925	− 0,5	red
− 740	− 0,4	red
− 560	− 0,3	amber
− 200	− 0,1	amber
0	0,0	green
8600	4,0	green
20000	7,9	green
20200	8,0	amber
21400	8,3	amber
21750	8,4	red
24000	9,0	red

(8) Set the benches to the test field altitude.

(9) Remove the benches and the CPAM test assembly.

K. Functional Test of the Cabin-High Altitude Indication

SUBTASK 720-003-A

EFFECTIVITY: AIRCRAFT EQUIPPED WITH HIGH ALTITUDE MODE

(1) Connect the CPAM test assembly of the Air Data Kit to the cabin pressure port of the CPAM.

(2) Connect the static hose of the anemometric bench (bench 1) to the CPAM test assembly.

(3) Refer to Table 504 and set the altitudes on the anemometric bench (bench 1). Then make sure that the cabin altitude values shown on the EICAS obey the tolerances.

NOTE:
- At 9900 ± 100 ft, the CABIN aural warning sounds and the master WARNING lights flash. Push one of the master WARNING lights, on the glareshield panel, to make the lights go off.
- At a cabin altitude of more than 40000 ft or less than − 1500 ft, the CAB ALT message on the EICAS goes out of view and amber dashs are shown.
- At a cabin rate of more than 2000 ft/min or less than − 2000 ft/min, the CAB RATE message on the EICAS versions up to 18.5 goes out of view and amber dashs are shown.
- At a cabin rate of more than 4000 ft/min or less than − 4000 ft/min, the CAB RATE message on the EICAS versions 19.0 and on goes out of view and amber dashs are shown.
- At a CAB ΔP of more than 10 psi or less than − 0.5 psi, the CAB ΔP message on the EICAS goes out of view and amber dashs are shown.
- The color of the cabin altitude indication on the EICAS is directly related with the cabin altitude value displayed on the EICAS.

Table 504 - CABIN ALTITUDE

ALTITUDE (ft) (BENCH 1)	CABIN ALTITUDE SHOWN ON EICAS (ft) (Tolerance ± 100 ft)	COLOR OF INDICATION ON EICAS
− 1500	− 1500	green
8300	8300	green
8400	8400	amber
9900	9900	amber
10000	10000	red
25000	25000	red

(4) Refer to Table 505 and set the cabin rate on bench 1. Then make sure that the values of CAB RATE shown on the EICAS obey the tolerances.

NOTE: The color of the cabin rate indication on the EICAS versions up to 18.5 is directly related with the cabin rate value shown on the EICAS, as follows below:

Table 505 - CABIN RATE

CABIN RATE (ft/min) BENCH 1	CABIN RATE SHOWN ON EICAS (ft/min) (Tolerance ± 50 ft/min)	COLOR OF INDICATION ON EICAS
− 2000	− 2000	green
− 1500	− 1500	
− 1000	− 1000	
− 500	− 500	
500	500	
1000	1000	
1500	1500	
2000	2000	

(5) Refer to Table 506 and set the cabin rate on bench 1. Then make sure that the values of CAB RATE shown on the EICAS obey the tolerances.

NOTE: The color of the cabin rate indication on the EICAS versions 19.0 and on is directly related with the cabin rate value shown on the EICAS, as follows below:

Table 506 - CABIN RATE

CABIN RATE (ft/min) BENCH 1	CABIN RATE SHOWN ON EICAS (ft/min) (Tolerance ± 50 ft/min)	COLOR OF INDICATION ON EICAS
-4000	-4000	green
-3500	-3500	
-3000	-3000	
-2500	-2500	
− 2000	− 2000	
− 1500	− 1500	
− 1000	− 1000	
− 500	− 500	
500	500	
1000	1000	
1500	1500	
2000	2000	
2500	2500	
3000	3000	
3500	3500	
4000	4000	

(6) Connect other anemometric bench (bench 2) to pitot/static sensor 3 (AMM TASK 34-13-00-400-801-A/400).

(7) Set the cabin altitude to zero on the anemometric bench (bench 1) connected to the cabin pressure port of the CPAM.

(8) Refer to Table 507 and set the altitude on the anemometric bench (bench 2) connected to pitot/static sensor 3. Then, make sure that the CAB ΔP values shown on the EICAS obey the tolerances.

NOTE: The color of the CAB ΔP indication on the EICAS is directly related with the CAB ΔP value shown on the EICAS.

Table 507 - DIFFERENTIAL PRESSURE (ΔP)

ALTITUDE (ft) (BENCH 2)	Expected CAB ΔP on EICAS (psi) (Tolerance ± 0.1 psi)	COLOR OF INDICATION ON EICAS
− 925	− 0,5	red
− 740	− 0,4	red
− 560	− 0,3	amber
− 200	− 0,1	amber
0	0,0	green
8600	4,0	green
20000	7,9	green

Table 507 - DIFFERENTIAL PRESSURE (ΔP) (Continued)

ALTITUDE (ft) (BENCH 2)	Expected CAB ΔP on EICAS (psi) (Tolerance ± 0.1 psi)	COLOR OF INDICATION ON EICAS
20200	8,0	amber
21400	8,3	amber
21750	8,4	red
24000	9,0	red

(9) Select the "HIGH ALT" option from the Vspeed submenu of the MFD display.

– The "HIGH ALT" option will be boxed on the MFD display.

– The CAUTION message “HI ALT LDG-T/O” will come into view on the aircraft with EICAS before version 20.5.

– The ADVISORY message “HI ALT LDG-T/O” will come into view on the aircraft with EICAS versions 20.5 and above.

– The message “HI ALT LDG-T/O” will only be available for aircraft with EICAS versions 19.0 and on.

(10) Refer to Table 508 and set the cabin altitude on the anemometric bench (bench 1). Then, make sure that the cabin altitude values shown on the EICAS obey the tolerances.

NOTE:
- At 9900 ± 100 ft, the CABIN aural WARNING cannot sound.
- At 14500 ± 100 ft, the CABIN aural WARNING sounds and the master WARNING light flash.
- Push one of the master WARNING lights, on the glareshield panel, to make the lights go off.
- The color of the cabin altitude indication on the EICAS is directly related with the cabin altitude value displayed on the EICAS.

(11) Table 508 - CABIN ALTITUDE

ALTITUDE (ft) (BENCH 1)	CABIN ALTITUDE SHOWN ON EICAS (ft) (Tolerance ± 100 ft)	COLOR OF INDICATION ON EICAS
− 1500	− 1500	green
8300	8300	green
8400	8400	amber
9900	9900	amber
14400	14400	amber
14500	14500	red
25000	25000	red

(12) Put the aircraft back to its normal configuration. To do do, select the "HIGH ALT" option again from the Vspeed sub-menu of the MFD display.

– The CAUTION message “HI ALT" LDG-T/O” will go out of view from the EICAS before version 20.5 and the HIGH ALT option will not be boxed on the MFD display.

– The ADVISORY message “HI ALT LDG-T/O” will go out of view from the EICAS versions 20.5 and above.

(13) Set the benches to the test field altitude.

(14) Remove the benches and the CPAM test assembly.

L. Follow-on

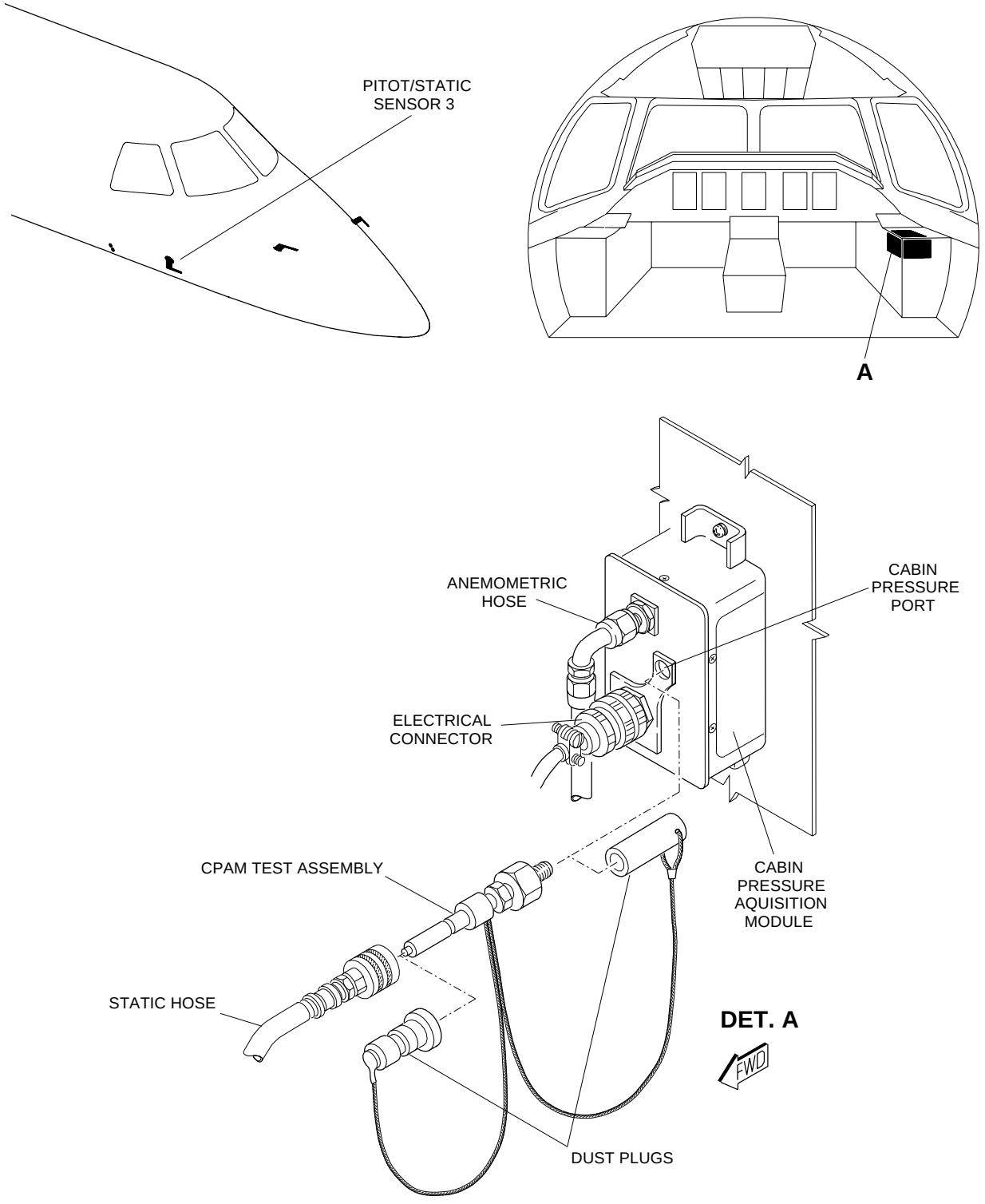
SUBTASK 842-002-A

(1) Install access panels 224JRW and 224KRW (AMM MPP 06-41-03/100).

(2) Disconnect the ramp interphone.

EFFECTIVITY: ALL

Cabin-Pressure Acquisition Module - Functional Test
Figure 501



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