ENGINE THERMAL ANTI-ICING SYSTEM - ADJUSTMENT/TEST

EFFECTIVITY: ALL

1. General

A. This section gives the procedures to do the functional and operational tests of the engine thermal anti-icing system and the functional check of its pressure sensors (pressure switches or pressure transducers).

B. The pressure sensors are made up of the overpressure switch and:

- (PRE-MOD. S.B. 145-30-0022) Low pressure switches, Overpressure switches, Position indicator switches.
- (POST-MOD. S.B. 145-30-0022) Pressure transducers.

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*
30-21-00-700-801-A ♦	PRESSURE SENSORS OF THE ENGINE THERMAL ANTI-ICING SYSTEM - FUNCTIONAL CHECK	ALL
30-21-00-700-802-A	ENGINE THERMAL ANTI-ICING SYSTEM - FUNCTIONAL TEST	ALL
30-21-00-700-803-A	ENGINE THERMAL ANTI-ICING SYSTEM - OPERATIONAL TEST	ALL
30-21-00-700-804-A	ENGINE ANTI-ICING VALVE - OPERATIONAL TEST	ALL
30-21-00-700-805-A	ENGINE THERMAL ANTI-ICING SYSTEM - FUNCTIONAL TEST (HEALTH CHECK)	ALL

TASK 30-21-00-700-801-A
EFFECTIVITY: ALL

2. PRESSURE SENSORS OF THE ENGINE THERMAL ANTI-ICING SYSTEM - FUNCTIONAL CHECK

A. General

(1) This check is done on a bench.

B. References

REFERENCE	*DESIGNATION*
ACMM 30-21-06	-
AMM 06-43-01/101	-
AMM TASK 30-21-02-000-801-A/400	LOW PRESSURE SWITCH - REMOVAL
AMM TASK 30-21-02-400-801-A/400	LOW PRESSURE SWITCH - INSTALLATION
AMM TASK 30-21-03-000-801-A/400	OVERPRESSURE SWITCH - REMOVAL
AMM TASK 30-21-03-400-801-A/400	OVERPRESSURE SWITCH - INSTALLATION
AMM TASK 30-21-04-000-801-A/400	POSITION INDICATOR SWITCH - REMOVAL
AMM TASK 30-21-04-400-801-A/400	POSITION INDICATOR SWITCH - INSTALLATION
AMM TASK 30-21-06-000-801-A/400	PRESSURE TRANSDUCER - REMOVAL
AMM TASK 30-21-06-400-801-A/400	PRESSURE TRANSDUCER - INSTALLATION
AMM TASK 71-11-01-000-801-A/400	ENGINE UPPER COWLING - REMOVAL
S.B. 145-30-0005	-
S.B. 145-30-0006	-
S.B. 145-30-0022	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
412		Engine 1 - Upper cowling
422		Engine 2 - Upper cowling

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Bottle of nitrogen with pressure gauge or compressed air source with pressure gauge	To do the check	
GSE 050	Multimeter, digital	To do the check	

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	At a bench

I. Preparation

SUBTASK 841-002-A

(1) Remove access panel 412AT or 422AT (AMM 06-43-01/101) or engine upper cowlings (AMM TASK 71-11-01-000-801-A/400) as applicable.

(2) (PRE-MOD. S.B. 145-30-0022) Remove the switches from the aircraft (AMM TASK 30-21-02-000-801-A/400, AMM TASK 30-21-03-000-801-A/400, and AMM TASK 30-21-04-000-801-A/400).

(3) (POST-MOD. S.B. 145-30-0022) Remove the transducers from the aircraft (AMM TASK 30-21-06-000-801-A/400).

J. Functional Check of Pressure Sensors of the Engine Thermal Anti-Icing System (Bench Test) (Figure 501)

SUBTASK 720-002-A

(1) (PRE-MOD. S.B. 145-30-0022) Do the check of the low pressure switch as follows:

(a) Apply a pressure of 55 psi to the low pressure switch. Slowly increase the pressure to 61 psi.

- There will be continuity between pins A and B of the low pressure switch between 58 ± 3 psi.

(b) Decrease the pressure to the low pressure switch down to 55 ± 3 psi.

- There will be continuity between pins B and C of the low pressure switch in this range.

(2) (PRE-MOD. S.B. 145-30-0005) Do the check of the overpressure switch as follows:

(a) Apply a pressure of 73 psi to the overpressure switch. Slowly increase the pressure to 83 psi.

- There will be continuity between pins A and B of the overpressure switch between 78 ± 5 psi.

(b) Decrease the pressure to the overpressure switch down to 73 ± 5 psi.

- There will be continuity between pins B and C of the overpressure switch in this range.

(3) (POST-MOD. S.B. 145-30-0005) Do the check of the overpressure switch as follows:

(a) Apply a pressure of 85 psi to the overpressure switch. Slowly increase the pressure to 95 psi.

- There will be continuity between pins A and B of the overpressure switch between 90 ± 5 psi.

(b) Decrease the pressure to the overpressure switch down to 85 ± 5 psi.

- There will be continuity between pins B and C of the overpressure switch in this range.

(4) (POST-MOD. S.B. 145-30-0006 and PRE-MOD. S.B. 145-30-0022) Do the check of the position indication pressure switch as follows:

(a) Apply a pressure of 14 psi to the position indication pressure switch. Slowly increase the pressure to 16 psi.

- There will be continuity between pins A and B and discontinuity between pins B and C of the position indication pressure switch between 15 ± 1 psi.

(b) Decrease the pressure to the position indication pressure switch down to 10 ± 1 psi.

- There will be continuity between pins B and C and discontinuity between pins A and B of the position indication switch in this range.

(5) (POST-MOD. S.B. 145-30-0022) Do a check of the pressure transducers as follows:

Refer to the last revision of ACMM 30-21-06 (Kulite) to do the functional check of the pressure transducers.

K. Follow-on

SUBTASK 842-002-A

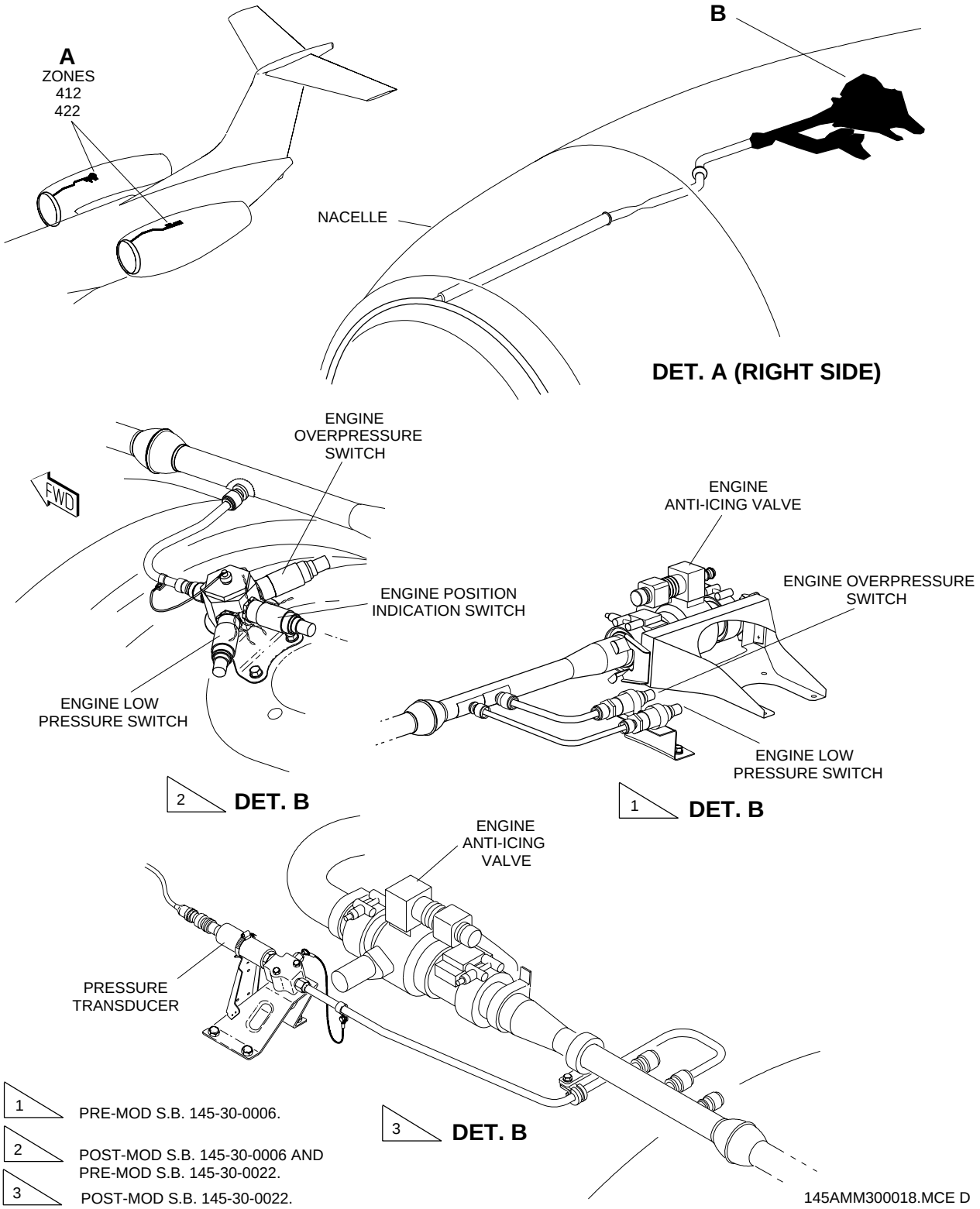
(1) (PRE-MOD. S.B. 145-30-0022) Install the switches to the aircraft (AMM TASK 30-21-02-400-801-A/400, AMM TASK 30-21-03-400-801-A/400, and AMM TASK 30-21-04-400-801-A/400).

(2) (POST-MOD. S.B. 145-30-0022) Install the transducers to the aircraft (AMM TASK 30-21-06-400-801-A/400).

(3) Install access panel 412AT or 422AT (AMM 06-43-01/101) or engine upper cowlings (AMM TASK 71-11-01-000-801-A/400) as applicable.

EFFECTIVITY: ALL

Pressure Switches of the Engine Thermal Anti-Icing System - Location
Figure 501



TASK 30-21-00-700-802-A
EFFECTIVITY: ALL

3. ENGINE THERMAL ANTI-ICING SYSTEM - FUNCTIONAL TEST

A. General

(1) This task gives the procedures to do a check of the engine anti-icing valve outlet pressure.

B. References

REFERENCE	*DESIGNATION*
AMM 06-43-01/101	-
AMM TASK 30-21-01-000-801-A/400	ANTI-ICING VALVE - REMOVAL
AMM TASK 71-00-01-910-801-A/200	ENGINE START PROCEDURE (NORMAL)
AMM TASK 71-00-01-910-804-A/200	ENGINE STOP PROCEDURE
AMM TASK 71-11-01-000-801-A/400	ENGINE UPPER COWLING - REMOVAL
AMM TASK 71-11-01-400-801-A/400	ENGINE UPPER COWLING - INSTALLATION
S.B. 145-30-0006	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
412	412	LH nacelle - Upper cowling
422	422	RH nacelle - Upper cowling

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Pressure gauge with scale up to 100 psig and accuracy of ± 1.0 psig	To measure the pressure of the engine outlet valve	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Hose (5 m minimum)	To permit connection between the pressure gauge and to the test port	1

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	Engine

I. Preparation

SUBTASK 841-003-A

(1) Remove access panel 412AT or 422AT (AMM 06-43-01/101) or engine upper cowlings (AMM TASK 71-11-01-000-801-A/400) as applicable.

(2) Set these pushbuttons as follows:

- BLEED 1 and BLEED 2 - OFF.
- ENGINE 1 and ENGINE 2 - ON.

J. Functional Test of the Engine Thermal Anti-Icing System (Figure 502)

SUBTASK 720-003-A

NOTE: These steps are applicable to the LH engine.

WARNING:
- **STAY AT A SAFE DISTANCE FROM THE ENGINE IN OPERATION.**
- **DO NOT TOUCH THE LH ENGINE AREA IMMEDIATELY AFTER THE ENGINE STOPS BECAUSE OF THE HIGH TEMPERATURE.**

(1) Connect an end of the hose to the LH engine test port and connect the other end to a pressure gauge at a safe distance from the aircraft.

(2) Set the OVERRIDE knob to ENG.

(3) Start the LH Engine (AMM TASK 71-00-01-910-801-A/200).

NOTE: Make sure that the inscription OPEN on the ENGINE 1 pushbutton comes on.

(4) Set the LH thrust lever to 83% of N2 minimum.

(5) Read the pressure on the pressure gauge and write it.

NOTE:
- (PRE-MOD. S.B. 145-30-0006) The pressure value must be 68 ± 5 psig.
- (POST-MOD. S.B. 145-30-0006) The pressure value must be 69 ± 6 psig.

(6) If the pressure value is out of range, change the engine anti-icing valve (AMM TASK 30-21-01-000-801-A/400) and do the test again.

(7) Stop the LH engine (AMM TASK 71-00-01-910-804-A/200).

(8) Remove the hose from the test port and install a plug to it.

NOTE: These steps are applicable to the RH engine.

WARNING:
- **STAY AT A SAFE DISTANCE FROM THE ENGINE IN OPERATION.**
- **DO NOT TOUCH THE LH ENGINE AREA IMMEDIATELY AFTER THE ENGINE STOPS BECAUSE OF THE HIGH TEMPERATURE.**

(9) Connect an end of the hose to the RH engine test port and connect the other end to a pressure gauge at a safe distance from the aircraft.

(10) Set the OVERRIDE knob to ENG.

(11) Start the RH engine (AMM TASK 71-00-01-910-801-A/200).

NOTE: Make sure that the inscription OPEN on the ENGINE 2 pushbutton comes on.

(12) Set the RH thrust lever to 83% of N2 minimum.

(13) Read the pressure on the pressure gauge and write it.

NOTE:
- (PRE-MOD. S.B. 145-30-0006) The pressure value must be 68 ± 5 psig.
- (POST-MOD. S.B. 145-30-0006) The pressure value must be 69 ± 6 psig.

(14) If the pressure value is out of range, change the engine anti-icing valve (AMM TASK 30-21-01-000-801-A/400) and do the test again.

(15) Stop the RH engine (AMM TASK 71-00-01-910-804-A/200).

(16) Remove the hose from the test port and install a plug to it.

K. Follow-on

SUBTASK 842-003-A

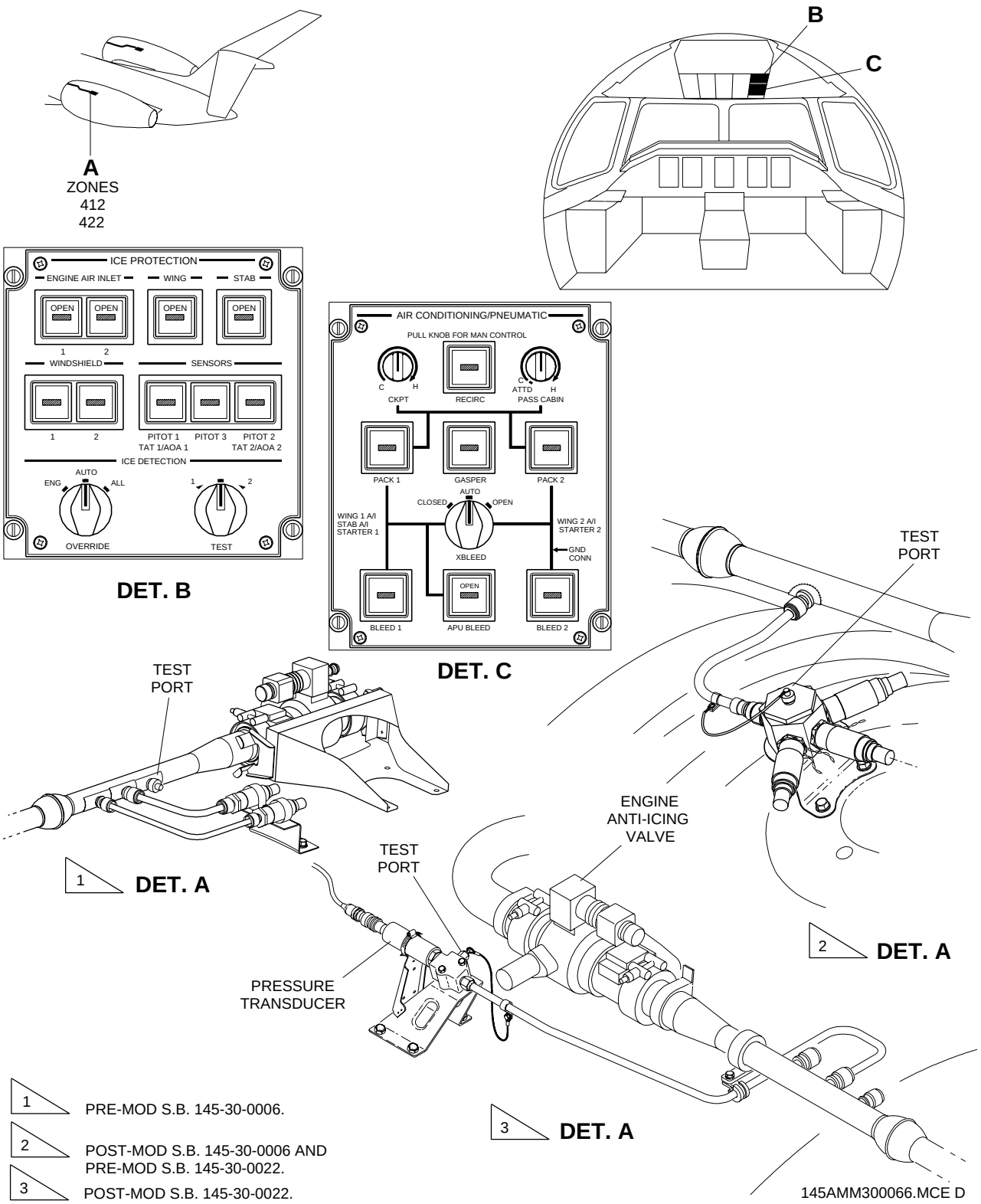
(1) Install access panel 412AT or 422AT (AMM 06-43-01/101) or engine upper cowlings (AMM TASK 71-11-01-400-801-A/400) as applicable.

(2) Set this pushbutton/knob as follows:

- ENGINE 1 and ENGINE 2 - OFF.
- OVERRIDE - AUTO.

EFFECTIVITY: ALL

Engine Thermal Anti-Icing System - Functional Test
Figure 502



TASK 30-21-00-700-803-A
EFFECTIVITY: ALL

4. ENGINE THERMAL ANTI-ICING SYSTEM - OPERATIONAL TEST

A. General

(1) This test is done to make sure that the engine anti-icing system operation is correct.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 71-00-01-910-801-A/200	ENGINE START PROCEDURE (NORMAL)
AMM TASK 71-00-01-910-804-A/200	ENGINE STOP PROCEDURE
S.B. 145-30-0022	-

C. Zones and Accesses

Not Applicable

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	A - Does the task	Cockpit
1	B - Helps technician A	Outside the aircraft

I. Preparation

SUBTASK 841-004-A

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

(2) Set these pushbuttons/knob as follows:

(a) OVERRIDE knob - AUTO.

(b) BLEED 1 - OFF.

(c) BLEED 2 - OFF.

(d) APU BLEED - OFF.

J. Operational Check of the Engine Thermal Anti-Icing System (Figure 503) (Figure 504)

SUBTASK 710-002-A

(1) (For aircraft PRE-MOD. S.B. 145-30-0022) Do a check of the LH engine as follows:

(a) On the overhead circuit breaker panel, open the ENG AIR INLET 1 circuit breaker.

Result:

1 After 10 seconds approximately, the E1 A/ICE FAIL caution message comes into view on the EICAS.

(b) On the overhead circuit breaker panel, close the ENG AIR INLET 1 circuit breaker.

Result:

1 The E1 A/ICE FAIL caution message goes out of view on the EICAS.

(c) Start the LH engine (AMM TASK 71-00-01-910-801-A/200).

(d) Set the OVERRIDE knob to the ENG position.

(e) Set the ENGINE AIR INLET pushbutton to ON

(f) Set the LH thrust lever to 90% N2.

Result:

1 The ENG REF A/I DISAG caution message comes into view on the EICAS.

2 After 1 (one) minute, make sure that there is no other messages related to engine anti-icing on the EICAS.

(g) Stop the LH engine (AMM TASK 71-00-01-910-804-A/200).

(2) (For aircraft PRE-MOD. S.B. 145-30-0022) Do a check of the RH engine as follows:

(a) Set the OVERRIDE knob to the AUTO position.

(b) On the overhead circuit breaker panel, open the ENG AIR INLET 2 circuit breaker.

Result:

1 After 10 seconds approximately, the E2 A/ICE FAIL caution message comes into view on the EICAS.

(c) On the overhead circuit breaker panel, close the ENG AIR INLET 2 circuit breaker.

Result:

1 The E2 A/ICE FAIL caution message goes out of view on the EICAS.

(d) Start the RH engine (AMM TASK 71-00-01-910-801-A/200).

(e) Set the OVERRIDE knob to the ENG position.

(f) Set the ENGINE AIR INLET pushbutton to ON

(g) Set the RH thrust lever to 90% N2.

Result:

1 The ENG REF A/I DISAG caution message comes into view on the EICAS.

2 After 1 (one) minute, make sure that there is no other messages related to engine anti-icing on the EICAS.

(h) Stop the RH engine (AMM TASK 71-00-01-910-804-A/200).

(3) (For aircraft POST-MOD. S.B. 145-30-0022) Do a check of the LH engine as follows:

(a) On the overhead circuit breaker panel, open the ENG AIR INLET 1 circuit breaker.

Result:

1 After 10 seconds approximately, the E1 A/ICE FAIL caution message comes into view on the EICAS.

(b) On the overhead circuit breaker panel, open the ENG 1 A/I IND circuit breaker.

Result:

1 The E1 A/ICE FAIL caution message goes out of view on the EICAS.

(c) On the overhead circuit breaker panel, close the ENG AIR INLET 1 circuit breaker.

Result:

1 After 10 seconds approximately, the E1 A/ICE FAIL caution message comes into view on the EICAS.

(d) On the overhead circuit breaker panel, close the ENG 1 A/I IND circuit breaker.

Result:

1 The E1 A/ICE FAIL caution message goes out of view on the EICAS.

(e) Start the LH engine (AMM TASK 71-00-01-910-801-A/200).

(f) Set the OVERRIDE knob to the ENG position.

(g) Set the ENGINE AIR INLET pushbutton to ON

(h) Set the LH thrust lever to 90% N2.

Result:

1 The ENG REF A/I DISAG caution message comes into view on the EICAS.

2 After 1 (one) minute, make sure that there is no other messages related to engine anti-icing on the EICAS.

(i) Stop the LH engine (AMM TASK 71-00-01-910-804-A/200).

(4) (For aircraft POST-MOD. S.B. 145-30-0022) Do a check of the RH engine as follows:

(a) Set the OVERRIDE knob to the AUTO position.

(b) On the overhead circuit breaker panel, open the ENG AIR INLET 2 circuit breaker.

Result:

1 After 10 seconds approximately, the E2 A/ICE FAIL caution message comes into view on the EICAS.

(c) On the overhead circuit breaker panel, open the ENG 2 A/I IND circuit breaker.

Result:

1 The E2 A/ICE FAIL caution message goes out of view on the EICAS.

(d) On the overhead circuit breaker panel, close the ENG AIR INLET 2 circuit breaker.

Result:

1 After 10 seconds approximately, the E2 A/ICE FAIL caution message comes into view on the EICAS.

(e) On the overhead circuit breaker panel, close the ENG 2 A/I IND circuit breaker.

Result:

1 The E2 A/ICE FAIL caution message goes out of view on the EICAS.

(f) Start the RH engine (AMM TASK 71-00-01-910-801-A/200).

(g) Set the OVERRIDE knob to the ENG position.

(h) Set the ENGINE AIR INLET pushbutton to ON

(i) Set the RH thrust lever to 90% N2.

Result:

1 The ENG REF A/I DISAG caution message comes into view on the EICAS.

2 After 1 (one) minute, make sure that there is no other messages related to engine anti-icing on the EICAS.

(j) Stop the RH engine (AMM TASK 71-00-01-910-804-A/200).

K. Follow-on

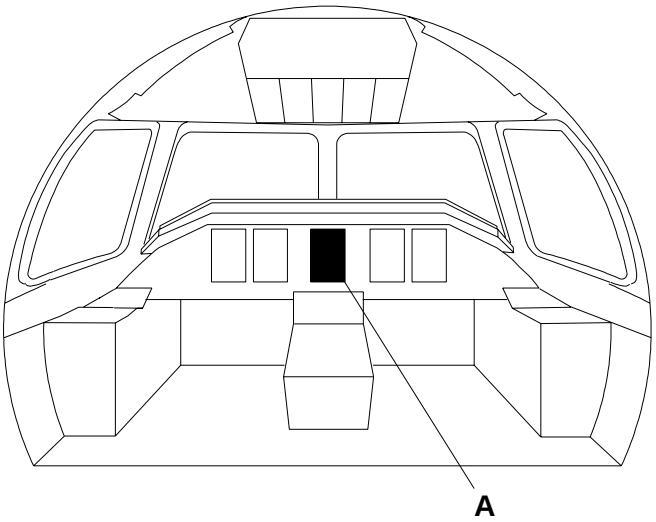
SUBTASK 842-004-A

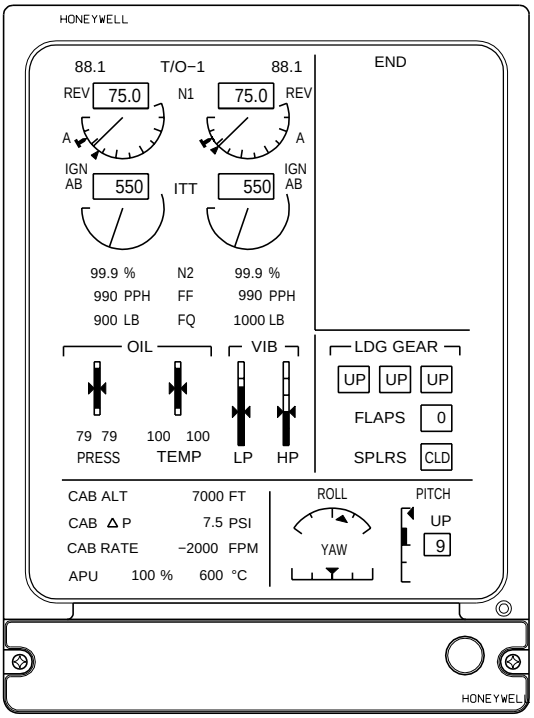
(1) Deenergize the aircraft (AMM TASK 20-40-01-860-801-A/200).

(2) Put the aircraft back to its initial condition.

EFFECTIVITY: ALL

Engine Thermal Anti-Icing System - Operational Test
Figure 503





DET. A

EICAS DISPLAY

145AMM300067.MCE B

TASK 30-21-00-700-804-A
EFFECTIVITY: ALL

5. ENGINE ANTI-ICING VALVE - OPERATIONAL TEST

A. General

(1) Do this test to make sure that the engine anti-icing valve operates correctly.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 71-00-00/200	- MAINTENANCE PRACTICES
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 71-00-01-910-801-A/200	ENGINE START PROCEDURE (NORMAL)
AMM TASK 71-00-01-910-804-A/200	ENGINE STOP PROCEDURE

C. Zones and Accesses

Not Applicable

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	A - Does the task	Cockpit

I. Preparation

SUBTASK 841-005-A

WARNING: REFER TO THE GROUND SAFETY PRECAUTIONS GIVEN IN AMM MPP 71-00-00/200 WHEN YOU DO THE ENGINE GROUND-RUN PROCEDURES.

WARNING:
- **STAY AT A SAFE DISTANCE FROM THE ENGINES IN OPERATION.**
- **DO NOT TOUCH THE ENGINES IMMEDIATELY AFTER THEY STOP BECAUSE OF THE HIGH TEMPERATURE.**

(1) Start the two engines (AMM TASK 71-00-01-910-801-A/200).

(2) Set these pushbuttons and knob as follows:

(a) BLEED 1 pushbutton - ON.

(b) BLEED 2 pushbutton - OFF.

(c) XBLEED - OPEN.

(d) PACK 1 pushbutton - ON

(e) PACK 2 pushbutton - ON

(f) APU BLEED pushbutton - OFF.

(g) WING pushbutton - OFF.

(h) STAB pushbutton - OFF.

(i) ENG AIR INLET 1 - OFF

(j) ENG AIR INLET 2 - OFF

(k) OVERRIDE knob - ENG.

J. Operational Test of the Engine Anti-Icing Valve

SUBTASK 720-004-A

NOTE: These steps are applicable to the two engines.

(1) Do the check as follows:

(a) Set the two thrust levers to the IDLE position.

(b) Set the ENG AIR INLET 1 pushbuttons to ON.

(c) Set the ENG AIR INLET 2 pushbuttons to ON.

(d) Wait 20 seconds for the system to stabilize:
Result:

1 Make sure that the inscription OPEN, on the engine pushbuttons, comes on.

2 Make sure that the E1 A/ICE FAIL and/or E2 A/ICE FAIL or ENG 1(2) A/ICE FAIL messages do not come into view on the EICAS.

(2) Set these pushbuttons as follows:

(a) ENG AIR INLET 1 - OFF

(b) ENG AIR INLET 2 - OFF
Result:

1 Make sure that the inscription OPEN goes off from the engine pushbuttons.

(3) Wait 10 seconds for the system to stabilize:

(4) Set these pushbuttons as follows:

(a) BLEED 1 pushbutton - OFF.

(b) BLEED 2 pushbutton - ON.

(c) ENG AIR INLET 1 - ON.

(d) ENG AIR INLET 2 - ON.

(5) Do the check as follows:

(a) Make sure that the two thrust reversers are at the IDLE position.

(b) Wait 20 seconds for the system to stabilize:
Result:

1 Make sure that the inscription OPEN comes on, on the engine pushbuttons.

2 Make sure that the E1 A/ICE FAIL and/or E2 A/ICE FAIL or ENG 1(2) A/ICE FAIL messages do not come into view on the EICAS.

(6) Set these pushbuttons as follows:

(a) ENG AIR INLET 1 - OFF.

(b) ENG AIR INLET 2 - OFF.
Result:

1 Make sure that the inscription OPEN goes off, on the engine pushbuttons.

K. Follow-on

SUBTASK 842-005-A

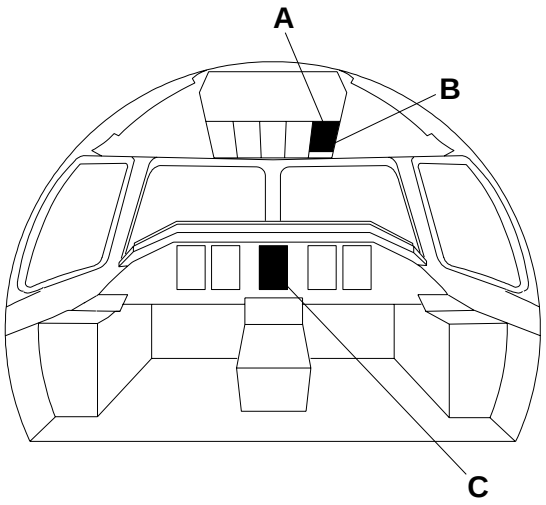
(1) Stop the engines (AMM TASK 71-00-01-910-804-A/200).

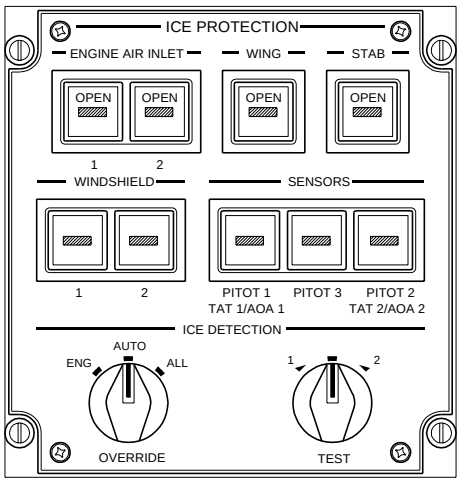
(2) Set the pushbuttons and knobs to the initial configuration.

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

EFFECTIVITY: ALL

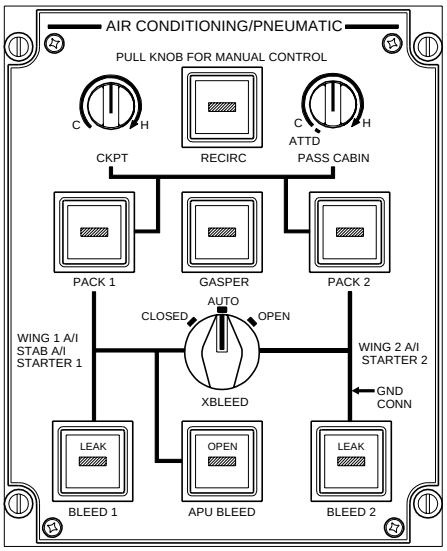
Engine Anti Ice Valve - Operational Test
Figure 504





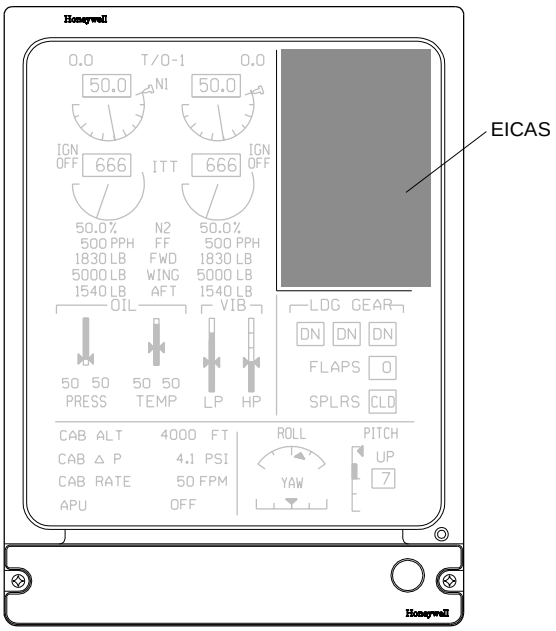
DET. A

ICE PROTECTION
PANEL



DET. B

AIR CONDITIONING/PNEUMATIC
PANEL



DET. C

EICAS DISPLAY

145AMM300296.MCE

TASK 30-21-00-700-805-A
EFFECTIVITY: ALL

6. ENGINE THERMAL ANTI-ICING SYSTEM - FUNCTIONAL TEST (HEALTH CHECK)

A. General

(1) This task gives the procedures to do a check of the engine anti-icing valve outlet pressure.

(2) This task is applicable to do the health check of the engine anti-icing system.

B. References

REFERENCE	*DESIGNATION*
AMM 06-43-01/101	-
AMM MPP 30-21-01/400	- REMOVAL/INSTALLATION
AMM TASK 71-00-01-910-801-A/200	ENGINE START PROCEDURE (NORMAL)
AMM TASK 71-00-01-910-804-A/200	ENGINE STOP PROCEDURE
AMM TASK 71-11-01-000-801-A/400	ENGINE UPPER COWLING - REMOVAL
AMM TASK 71-11-01-400-801-A/400	ENGINE UPPER COWLING - INSTALLATION
S.B. 145-30-0006	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
412	412	LH nacelle - Upper cowling
422	422	RH nacelle - Upper cowling

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Pressure gauge with scale up to 100 psig and accuracy of ± 1.0 psig	To measure the pressure of the engine outlet valve	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Hose (10 m minimum)	To permit connection between the pressure gauge and to the test port	1

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	Engine

I. Preparation

SUBTASK 841-008-A

(1) Remove access panel 412AT or 422AT (AMM 06-43-01/101) or engine upper cowlings (AMM TASK 71-11-01-000-801-A/400) as applicable.

(2) Set these pushbuttons as follows:

- BLEED 1 and BLEED 2 - OFF.
- ENGINE 1 and ENGINE 2 - ON.

J. Functional Test of the Engine Thermal Anti-Icing System (Figure 505)

SUBTASK 720-007-A

NOTE: These steps are applicable to the LH engine and RH engine.

(1) To do the test of the LH engine anti-icing valve, go to step (3).

(2) To do the test of the RH engine anti-icing valve, go to step (14).

(3) The following steps are applicable to the LH engine.

WARNING:
- **USE PRECAUTIONS AND OBEY OPERATION LIMITATIONS FOR THE ENGINE GROUND OPERATION DURING THE AIRCRAFT MAINTENANCE(AMM 71-00-00/201).**
- **STAY AT A SAFE DISTANCE FROM THE ENGINE IN OPERATION.**
- **DO NOT TOUCH THE LH ENGINE AREA IMMEDIATELY AFTER THE ENGINE STOPS BECAUSE OF THE HIGH TEMPERATURE.**

(4) Connect an end of the hose to the LH engine test port and connect the other end to a pressure gauge at a safe distance from the aircraft.

NOTE: NOTE: The hoses for the test must have a length of approximately 10,000 mm (393.70 in) and their diameter must not be greater than 6.35 mm (¼ in).

(5) Set the OVERRIDE knob to ENG.

(6) Start the LH Engine (AMM TASK 71-00-01-910-801-A/200).

NOTE: Make sure that the inscription OPEN on the ENGINE 1 pushbutton comes on.

(7) Set the LH thrust lever to the THRUST SET position.

(8) Make sure that these pushbuttons are set as follows:

- BLEED 1 and BLEED 2 - ON

- XBLEED - AUTO
- PACK 1 and PACK 2 - ON
- WING - ON
- STAB - ON

(9) Set OVERRIDE knob to ALL, hold it for 15 seconds, at the same time read the pressure on the pressure gauge and write it and then return to AUTO.

NOTE:
- Take note of the aircraft clock time when the override is set to ALL.
- (PRE-MOD. S.B. 145-30-0006) The pressure value must be 68 ± 5 psig.
- (POST-MOD. S.B. 145-30-0006) The pressure value must be 69 ± 6 psig.

(10) Stop the LH engine (AMM TASK 71-00-01-910-804-A/200).

(11) If the pressure value is out of range, replace the engine anti-icing valve (AMM MPP 30-21-01/400).

(12) Remove the hose from the test port and install a plug to it.

(13) If you will do the test of the RH engine anti-icing valve, go to step (14), if not, go to step (Follow-on).

(14) The following steps are applicable to the RH engine.

WARNING:
- **USE PRECAUTIONS AND OBEY OPERATION LIMITATIONS FOR THE ENGINE GROUND OPERATION DURING THE AIRCRAFT MAINTENANCE(AMM 71-00-00/201).**
- **STAY AT A SAFE DISTANCE FROM THE ENGINE IN OPERATION.**
- **DO NOT TOUCH THE LH ENGINE AREA IMMEDIATELY AFTER THE ENGINE STOPS BECAUSE OF THE HIGH TEMPERATURE.**

(15) Connect an end of the hose to the RH engine test port and connect the other end to a pressure gauge at a safe distance from the aircraft.

NOTE: NOTE: The hoses for the test must have a length of approximately 10,000 mm (393.70 in) and their diameter must not be greater than 6.35 mm (¼ in).

(16) Set the OVERRIDE knob to ENG.

(17) Start the RH engine (AMM TASK 71-00-01-910-801-A/200).

NOTE: Make sure that the inscription OPEN on the ENGINE 2 pushbutton comes on.

(18) Set the RH thrust lever to the THRUST SET position.

(19) Make sure that these pushbuttons are set as follows:

- BLEED 1 and BLEED 2 - ON

- XBLEED - AUTO
- PACK 1 and PACK 2 - ON
- WING - ON
- STAB - ON

(20) Set OVERRIDE knob to ALL, hold it for 15 seconds, at the same time read the pressure on the pressure gauge and write it and then return to AUTO.

NOTE:
- Take note of aircraft clock time when override is set ALL.
- (PRE-MOD. S.B. 145-30-0006) The pressure value must be 68 ± 5 psig.
- (POST-MOD. S.B. 145-30-0006) The pressure value must be 69 ± 6 psig.

(21) Stop the RH engine (AMM TASK 71-00-01-910-804-A/200).

(22) If the pressure value is out of range, replace the engine anti-icing valve (AMM MPP 30-21-01/400).

(23) Remove the hose from the test port and install a plug to it.

K. Follow-on

SUBTASK 842-008-A

(1) Install access panel 412AT or 422AT (AMM 06-43-01/101) or engine upper cowlings (AMM TASK 71-11-01-400-801-A/400) as applicable.

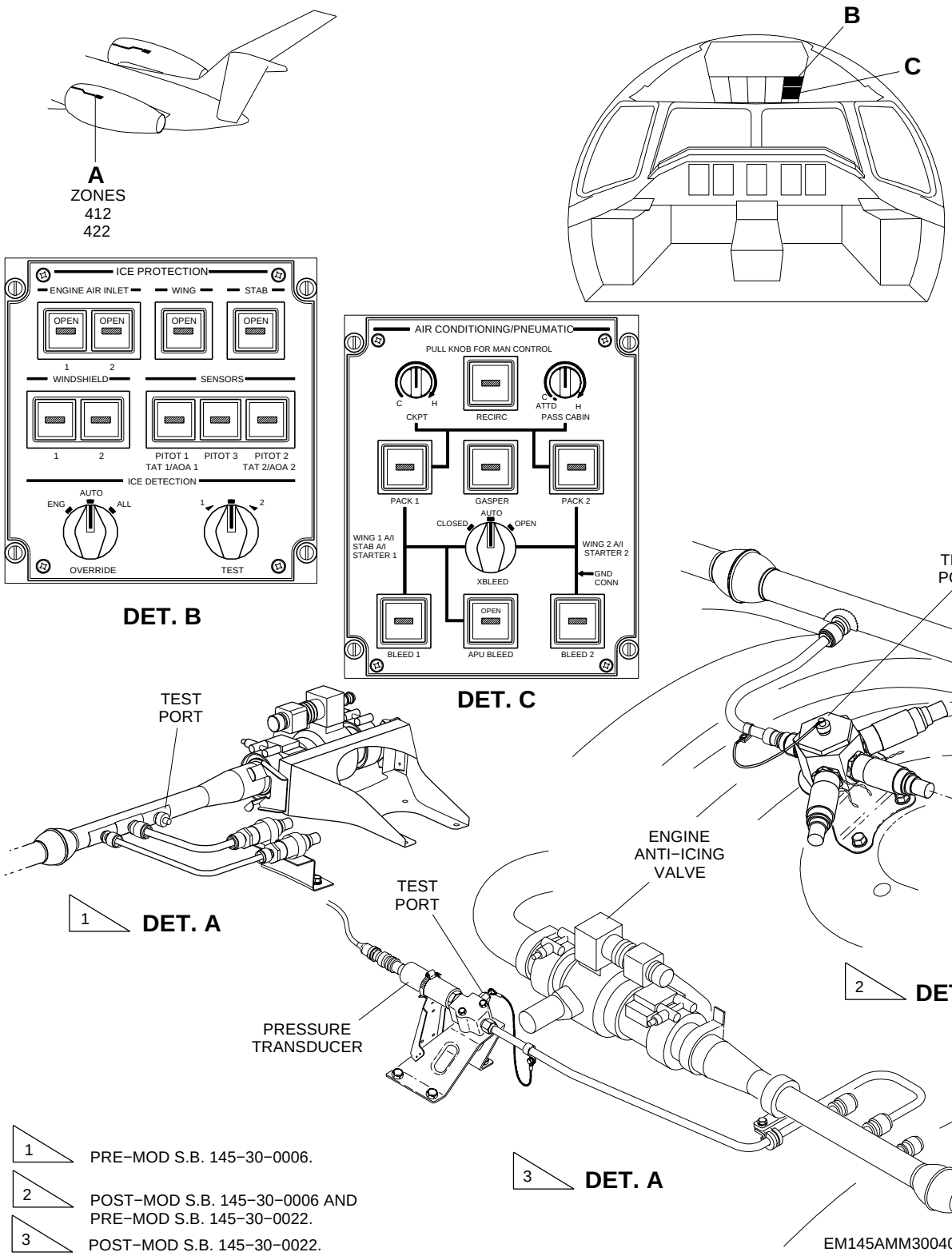
(2) Set this pushbutton/knob as follows:

- ENGINE 1 and ENGINE 2 - OFF.
- OVERRIDE - AUTO.

(3) Make sure that you put the aircraft back to its initial configuration..

EFFECTIVITY: ALL

Engine Thermal Anti-Icing System - Functional Test
Figure 505



1 PRE−MOD S.B. 145−30−0006.

2 POST−MOD S.B. 145−30−0006 AND PRE−MOD S.B. 145−30−0022.

3 POST−MOD S.B. 145−30−0022.