



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

EMERGENCY LOCATOR TRANSMITTER SYSTEM - ADJUSTMENT/TEST

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to check the Emergency Locator Transmitter (ELT) System.
- 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
25-61-00-700-801-A ♦	EMERGENCY LOCATOR TRANSMITTER SYSTEM (ELT 110-4) - OPERATIONAL CHECK	ALL
25-61-00-700-802-A ♦	EMERGENCY-LOCATOR-TRANSMITTER SYSTEM (ELT SATORI) - OPERATIONAL CHECK	ALL
25-61-00-700-803-A ♦	EMERGENCY LOCATOR TRANSMITTER SYSTEM (ELT C406-2) - OPERATIONAL CHECK	ALL



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

TASK 25-61-00-700-801-A

EFFECTIVITY: ALL

2. EMERGENCY LOCATOR TRANSMITTER SYSTEM (ELT 110-4) - OPERATIONAL CHECK

A. General

- (1) This task gives three different procedures to do the test of the ELT activation as follows:
- With the ELT switch of the ELT unit.
 - With the ELT Remote switch in the cockpit.
 - With the G-Switch, while a longitudinal acceleration and deceleration is manually simulated.

For all the tests above, the aircraft VHF is used to confirm the ELT activation.

B. References

REFERENCE	DESIGNATION
AMM SDS 23-12-00/1	
AMM SDS 23-31-00/1	
AMM SDS 23-51-00/1	
AMM SDS 34-22-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 25-61-01-000-801-A/400	EMERGENCY LOCATOR TRANSMITTER (ELT 110-4) - REMOVAL
AMM TASK 25-61-01-400-801-A/400	EMERGENCY LOCATOR TRANSMITTER (ELT 110-4) - INSTALLATION
ITEM GSE 209	TEST PLUG

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
223		Instrument panel
262		Passenger cabin/lavatory - RH

D. Tools and Equipment

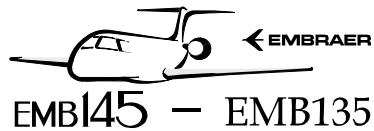
ITEM	DESCRIPTION	PURPOSE	QTY
GSE 209	Test plug	To do the G-Switch test	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Cockpit
1	Does the task	Passenger cabin/lavatory

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) Open the Toilet Maintenance Panel.
- (3) Get access to the ELT Unit, in center fuselage IV.
- (4) Make sure that the ON/OFF switch of the ELT unit is on the OFF position.
- (5) On the instrument panel, set the ON/ARM switch, on the ELT Remote Switch, to ARM.
- (6) Make sure that the systems below are operational and on:
 - VHF System ([AMM SDS 23-12-00/1](#)).
 - Passenger Address & Cabin Interphone System ([AMM SDS 23-31-00/1](#)).
 - Airborne Audio System ([AMM SDS 23-51-00/1](#)).
 - EFIS ([AMM SDS 34-22-00/1](#)).

J. Operationally Check Emergency Locator Transmitter System (ELT 110-4)

SUBTASK 710-002-A

- WARNING:** • DO ALL TEST IN ACCORDANCE WITH LOCAL OR NATIONAL REGULATIONS. IF REQUIRED, TERMINATE ELT INTO 50Ω LOAD OR DO THE TEST IN AN RF SHIELDED ENVIRONMENT.
- YOU CAN OPERATE THE EMERGENCY LOCATOR TRANSMITTER SYSTEM ONLY IF THE AIR-TRAFFIC CONTROLLER PERMITS IT. OBEY THIS NOT TO BREAK THE LAW.

- (1) Set the frequency of VHF 1 or 2 to 121.500 MHz ([AMM SDS 23-12-00/1](#)).
- (2) Use the ON/OFF switch of the ELT unit to do the transmission check as follows:
 - (a) Set the ON/OFF switch, on the ELT unit, to the ON position, for 2 or 3 seconds only.
Result:
1 The audio changes from 1600 Hz to 300 Hz, three times a second.
 - (b) Set the ON/OFF switch, on the ELT unit, to the OFF position.

Result:

- 1 The transmission stops.

(3) Use the ELT remote switch to do the transmission check as follows:

- (a) Set the ON/ARM switch of the ELT remote switch to the ON position, for 2 to 3 seconds only.

Result:

- 1 The audio changes from 1600 Hz to 300 Hz, three times a second.

- 2 The red LED of the ELT remote switch comes on immediately, during the first 3 seconds of the test.

- (b) Set the ON/ARM switch of the ELT remote switch to the ARM position.

Result:

- 1 The transmission stops.

- 2 The red LED of the ELT remote switch goes off.

(4) Do the test of the Crash Switch operation as follows:

- (a) Remove the ELT unit ([AMM TASK 25-61-01-000-801-A/400](#)).

- (b) Make sure that the ON/OFF switch on the ELT unit is set to OFF.

- (c) Put test plug ([ITEM GSE 209](#)) on the ELT molex connector between pins 5 and 8.

NOTE: The ELT cannot be thus activated, unless pins 5 and 8 are jumped.

- (d) Near the ELT antenna cable connector, activate the ELT with a rapid forward (throwing) motion, in the direction of the arrow, followed by a rapid reversion action.

Result:

- 1 The audio changes from 1600 Hz to 300 Hz, three times a second.

- (e) Set ON/OFF switch of the ELT Unit to ON position and then back to OFF position.

Result:

- 1 The transmission stops.

- (f) Remove test plug ([ITEM GSE 209](#)) from the ELT molex connector.

- (g) Install the ELT unit ([AMM TASK 25-61-01-400-801-A/400](#)).

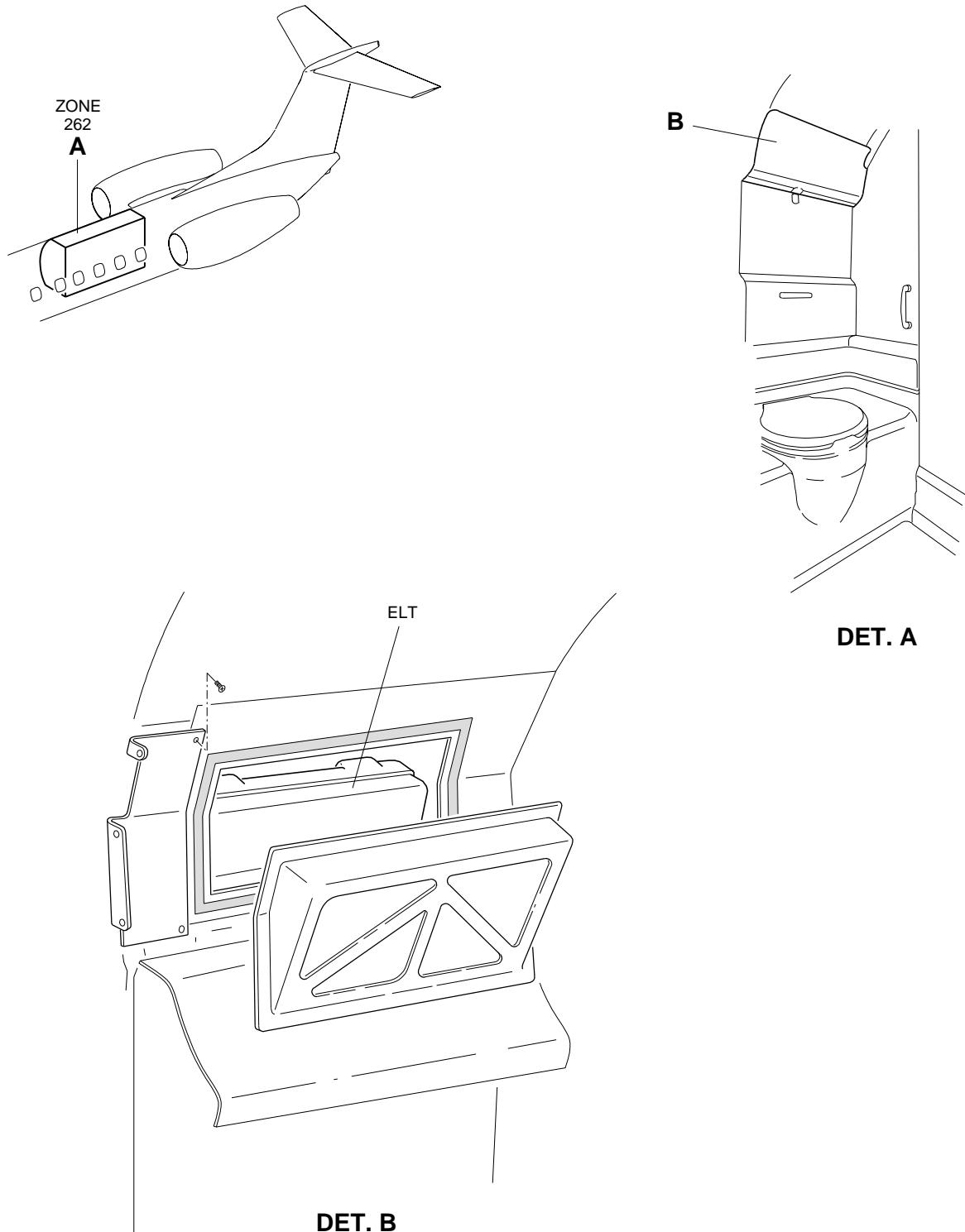
K. Follow-on

SUBTASK 842-002-A

(1) Close the Toilet Maintenance Panel.

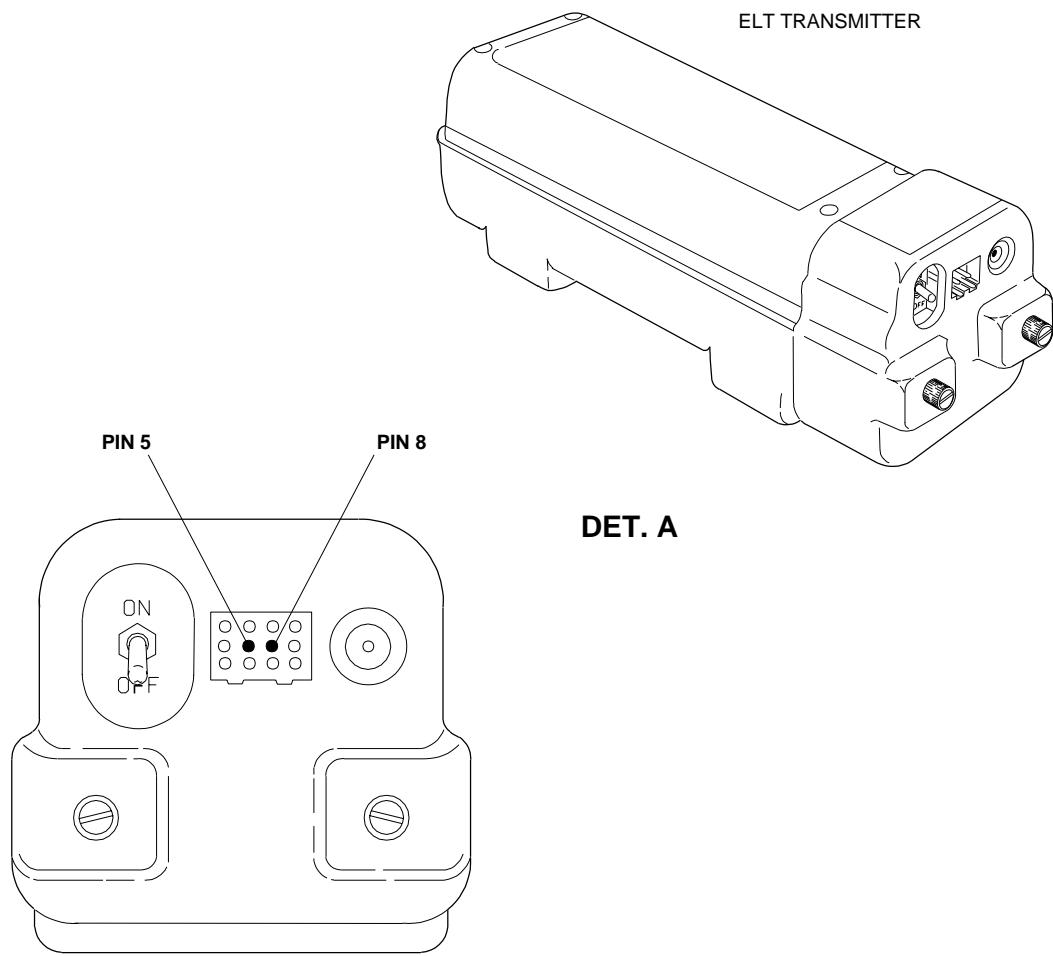
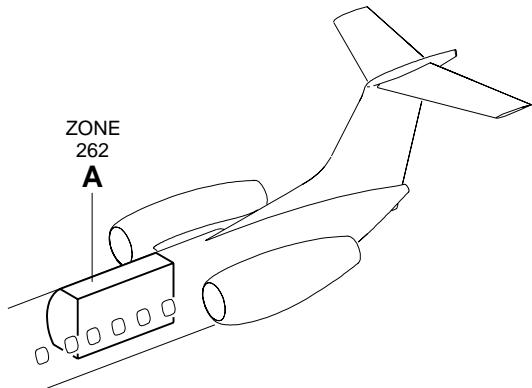
(2) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

EFFECTIVITY:: ALL
 Toilet Maintenance Panel
 Figure 501

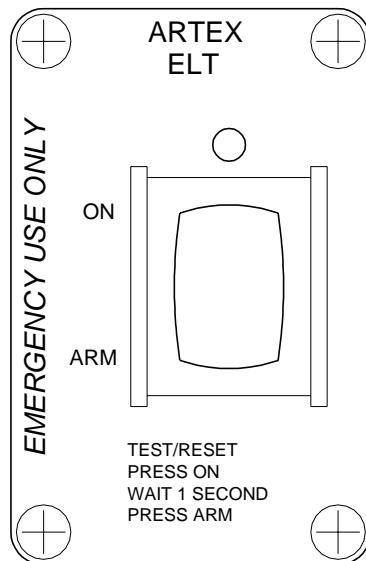
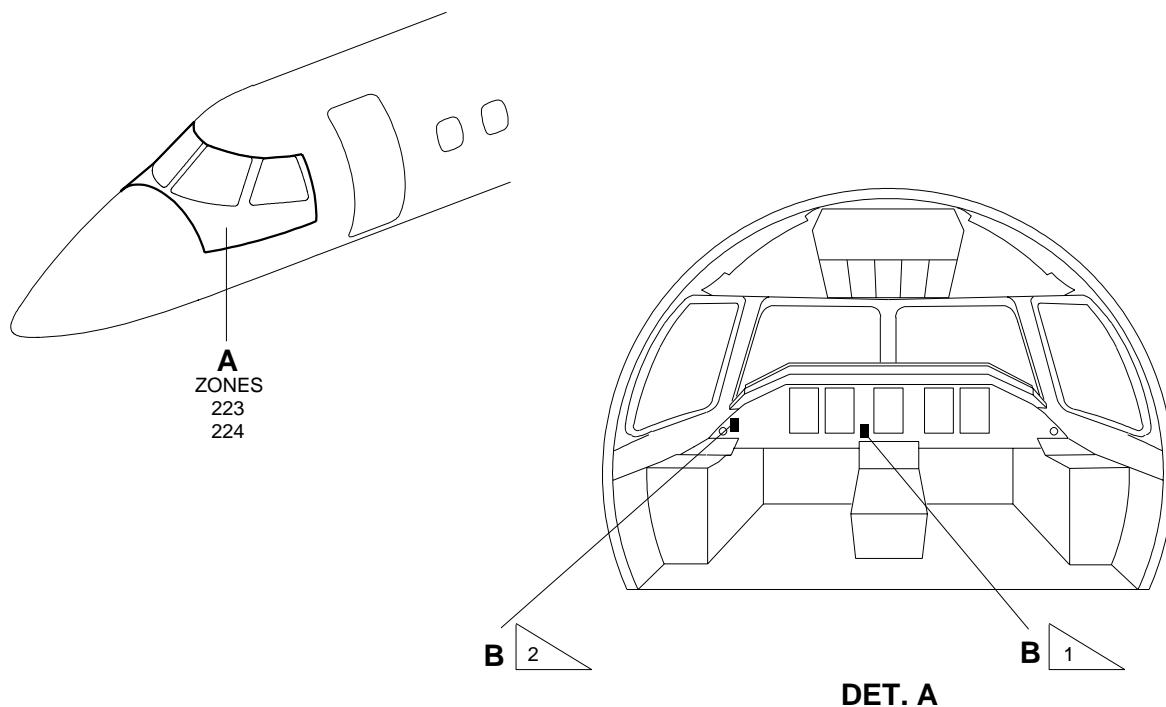


145AMM250026.MCE A

EFFECTIVITY:: ALL
ELT ARTEX 110-4
Figure 502



145AMM250313.MCE

EFFECTIVITY:: ALL
ELT ARTEX 110-4 - Remote Switch Panel
Figure 503

DET. B

 1 AIRCRAFT WITH RMU INSTALLED ON CONTROL PEDESTAL

 2 AIRCRAFT WITH RMU INSTALLED ON MAIN INSTRUMENT PANEL

145AMM250022.MCE B

TASK 25-61-00-700-802-A
EFFECTIVITY: ALL
3. EMERGENCY-LOCATOR-TRANSMITTER SYSTEM (ELT SATORI) - OPERATIONAL CHECK
A. General

- (1) This task gives the procedures to do the operational check of the ELT SATORI System.
- (2) The automatic test permits a check for the system performance and a check for the condition of the lithium batteries.

B. References

<i>REFERENCE</i>	<i>DESIGNATION</i>
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 25-61-01-000-802-A/400	EMERGENCY LOCATOR TRANSMITTER (ELT SATORI) - REMOVAL
AMM TASK 25-61-01-400-802-A/400	EMERGENCY LOCATOR TRANSMITTER (ELT SATORI) - INSTALLATION
WM 20-00-03	-
WM 20-00-05	-

C. Zones and Accesses

<i>ZONE</i>	<i>PANEL/DOOR</i>	<i>LOCATION</i>
223		Instrument panel

D. Tools and Equipment

<i>ITEM</i>	<i>DESCRIPTION</i>	<i>PURPOSE</i>	<i>QTY</i>
GSE 443	Attenuator BNC 40dB	Used to attenuate the RF output signal of the ELT unit.	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

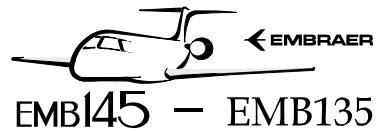
Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

<i>QTY</i>	<i>FUNCTION</i>	<i>PLACE</i>
1	Does the task	Cockpit



I. Preparation

SUBTASK 841-003-A

- (1) Make sure that Battery 1 is installed on the aircraft.
- (2) On the circuit breaker panel, make sure that the ELT circuit breaker is closed.
- (3) Open the toilet maintenance panel.
- (4) On the ELT, make sure that:
 - The fixed antenna coaxial plug is in the "ANT" plug.
 - The "MAN/RESET - OFF - AUTO" switch is in the "AUTO" position.
- (5) On the ELT remote control panel, on the instrument panel, make sure that the "MAN/AUTO" switch is in the "AUTO" position.

J. Operational Check of the Emergency-Locator-Transmitter System(ELT SATORI)

SUBTASK 710-003-A

CAUTION: DO NOT PUT THE MAN/AUTO SWITCH IN THE "MAN" POSITION. THIS WILL MAKE THE ELT TRANSMIT AND THE SATELLITE WILL DETECT ITS SIGNALS.

- (1) Do the ELT operational test as follows:
 - (a) On the remote control panel, on the instrument panel, push the "AUTO TEST/RESET" pushbutton.
Result:
 - 1 The "XMIT ALERT" red warning light comes on for 2 seconds and then goes off.

NOTE: If there is a problem during the AUTO TEST sequence, the "XMIT ALERT" red warning light will flash during 10 seconds.
One quick flashing can occur, but you must not think that this is a sign of failure.
To make sure that there is a problem, do action (a) again.
If the problem continues, set the "MAN/RESET- OFF - AUTO" ELT switch to "OFF". Tell the problem to the nearest approved distributor or manufacturer.
- (2) Do the test of the Crash Switch operation as follows:
 - (a) Make sure that the ELT switch is set to OFF.
 - (b) Remove the ELT Unit ([AMM TASK 25-61-01-000-802-A/400](#)).
 - (c) Put a 50-ohm, 40dB attenuator on the ELT.
 - (d) (AIRCRAFT POST-MOD BS 145-25-0305) Install a jumper between pins 8 and 9 (LOOP OUT / LOOP IN).
NOTE: To make the jumper you can use the AWG #22 wire (refer to WM 20-00-05, type code "AA") and the pins type code "CNM" (refer to WM 20-00-03).
 - (e) Set the ELT switch to the AUTO position.

NOTE: The ELT must not transmit.

- (f) Do as follows to simulate the shock given to the ELT in an accident and set it to on: With your two hands, hold the ELT vertically with its front face pointed down and shake the unit strongly. Do this procedure again and again, until the ELT is set to on.

Result:

- 1 The red warning light comes on.

- (g) Set the ELT switch to the OFF position.

- (h) Remove the attenuator from the ELT.

- (i) (AIRCRAFT POST-MOD BS 145-25-0305) Remove the jumper between pins 8 and 9 (LOOP OUT / LOOP IN).

- (j) Install the ELT Unit ([AMM TASK 25-61-01-400-802-A/400](#)).

- (k) On the remote control panel, on the instrument panel, push the "AUTO TEST/RESET" pushbutton.

Result:

- 1 The "XMIT ALERT" red warning light comes on for 2 seconds and then goes off.

NOTE: If there is a problem during the AUTO TEST sequence, the "XMIT ALERT" red warning light will flash during 10 seconds.

One quick flashing can occur, but you must not think that this is a sign of failure.

To make sure that there is a problem, do action (a) again.

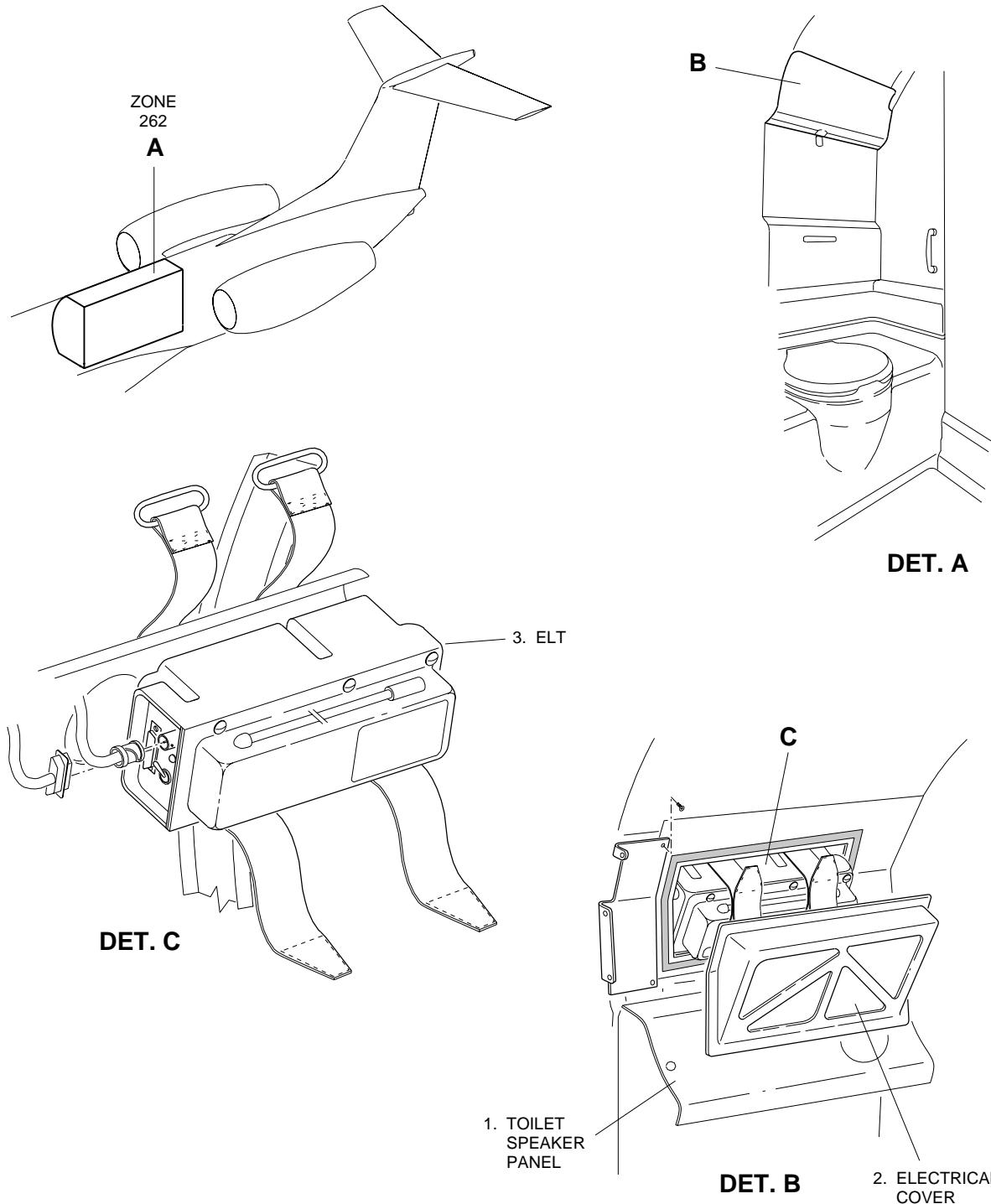
If the problem continues, set the "MAN/RESET- OFF - AUTO" ELT switch to "OFF". Tell the problem to the nearest approved supplier or to its manufacturer.

K. Follow-on

SUBTASK 842-003-A

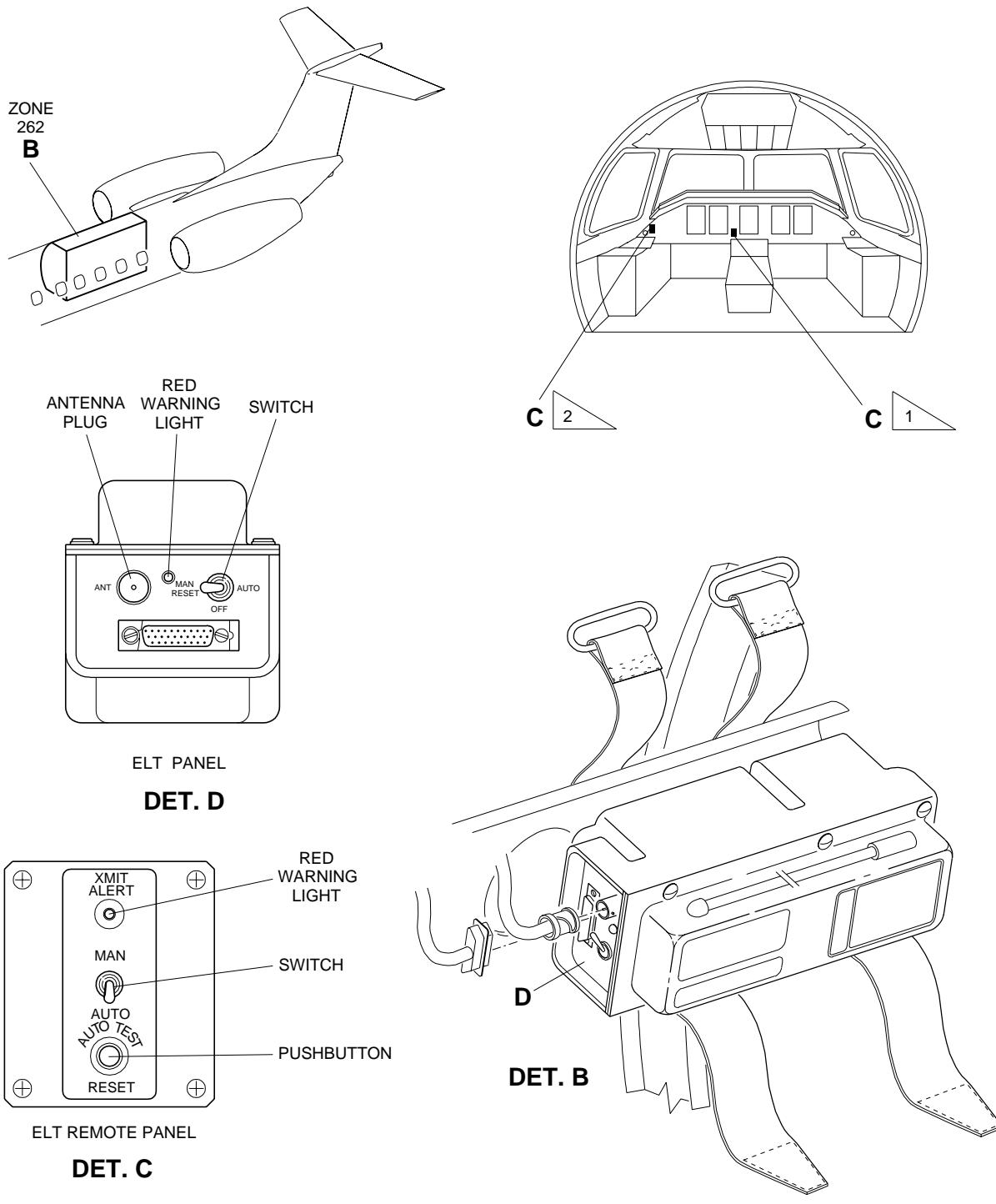
- (1) Close the Toilet Maintenance Panel.
- (2) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

EFFECTIVITY:: ALL
 Toilet Maintenance Panel
 Figure 504



145AMM250272.MCE

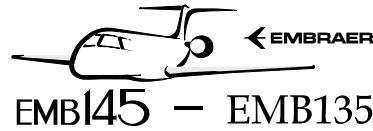
EFFECTIVITY:: ALL
ELT SATORI System - Check
Figure 505



1 AIRCRAFT WITH RMU INSTALLED ON CONTROL PEDESTAL.

2 AIRCRAFT WITH RMU INSTALLED ON MAIN INSTRUMENT PANEL

145AMM250034.MCE B



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

TASK 25-61-00-700-803-A

EFFECTIVITY: ALL

4. EMERGENCY LOCATOR TRANSMITTER SYSTEM (ELT C406-2) - OPERATIONAL CHECK

A. General

- (1) This task gives three different procedures to do the test of the ELT activation as follows:
- With the ELT switch of the ELT transmitter.
 - With the ELT remote switch in the cockpit.
 - With the G-Switch, when the BIT (Built in test) is used.

For all the tests above, the aircraft VHF is used to confirm the ELT activation.

B. References

REFERENCE	DESIGNATION
AMM SDS 23-12-00/1	
AMM SDS 23-31-00/1	
AMM SDS 23-51-00/1	
AMM SDS 34-22-00/1	
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		Instrument panel
262		Passenger cabin / lavatory - RH

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

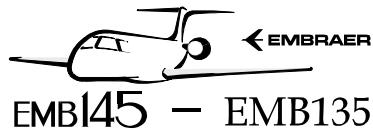
Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Cockpit
1	Does the task	Passenger cabin/lavatory



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

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) Open the Toilet Maintenance Panel.
- (3) Get access to the ELT Unit, in center fuselage IV.
- (4) Make sure that the ON/OFF switch of the ELT Transmitter is on the OFF position.
- (5) On the instrument panel, set the ON/ARM switch, on the ELT Remote Switch, to ARM.
- (6) Make sure that the systems below are operational and on:
 - VHF System ([AMM SDS 23-12-00/1](#)).
 - Passenger Address & Cabin Interphone System ([AMM SDS 23-31-00/1](#)).
 - Airborne Audio System ([AMM SDS 23-51-00/1](#)).
 - EFIS ([AMM SDS 34-22-00/1](#)).

J. Operationally Check Emergency Locator Transmitter System (ELT C406-2)

SUBTASK 710-004-A

WARNING: • DO ALL TEST IN ACCORDANCE WITH LOCAL OR NATIONAL REGULATIONS. IF REQUIRED, TERMINATE ELT INTO 50Ω LOAD OR DO THE TEST IN AN RF SHIELDED ENVIRONMENT.

- YOU CAN OPERATE THE EMERGENCY LOCATOR TRANSMITTER SYSTEM ONLY IF THE AIR-TRAFFIC CONTROLLER PERMITS IT. OBEY THIS NOT TO BREAK THE LAW.
- ALWAYS DO THE TESTS IN 5 MINUTES PAST THE HOUR (FOR EXAMPLE, BETWEEN 9:00 AND 9:05 H).
- DO NOT LET THE TEST CONTINUE FOR MORE THAN 5 SECONDS. DURING THIS TIME, THE SATELLITE SYSTEM CONSIDERS THE 406.025 MHz TRANSMISSION TO BE A TEST MESSAGE AND IGNORES IT. AFTER APPROXIMATELY 47 SECONDS, IF THE TRANSMISSION CONTINUES, THE SATELLITE SYSTEM CONSIDERS THE TRANSMISSION TO BE A VALID DISTRESS SIGNAL.

- (1) Set the frequency of VHF 1 or 2 to 121.500 MHz ([AMM SDS 23-12-00/1](#)).
- (2) Use the ON/OFF switch of the ELT Transmitter to do the transmission check as follows:
 - (a) Set the ON/OFF switch, on the ELT Transmitter, to the ON position, for 2 or 3 seconds only.
Result:
1 The audio changes from 1600 Hz to 300 Hz, three times a second.
 - (b) Set the ON/OFF switch, on the ELT Transmitter, to the OFF position.

Result:

- 1 The transmission stops.

(3) Use the ELT remote switch to do the transmission check as follows:

- (a) Set the ON/ARM switch, on the ELT remote switch, to the ON position, for 2 to 3 seconds only.

Result:

- 1 The audio changes from 1600 Hz to 300 Hz, three times a second.

- 2 The red LED of the ELT remote switch comes on immediately, during the first 3 seconds of the test.

- (b) Set the ON/ARM switch of the ELT remote switch to the ARM position.

Result:

- 1 The transmission stops.

- 2 The red LED of the ELT remote switch goes off.

(4) Do the BIT (Built in test) of the ELT as follows:

- (a) Make sure that the ELT remote switch, on the main instrument panel, is in the ARM position.

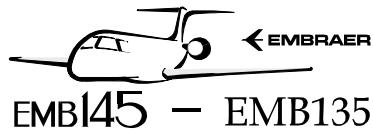
- (b) Make sure that the ON/OFF switch, on the ELT Transmitter, is in the OFF position.

- (c) Make sure that the ELT circuit breaker, on the cockpit circuit breaker, is closed.

- (d) Set the ELT remote switch to the ON position.

- (e) Wait for 3 sweeps on the receiver, which takes about 1 second.

- (f) Turn the switch back to the ARM position and see the LED activity when in the ARM condition.



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

Result:

- 1 This procedure enables the BIT (Built in test).

NOTE: The BITE does these checks: a check of the G-switch latching circuit, pins 5 and 8 on the 12-pin connector at the ELT; the 406.025 MHz transmitter for correct RF output; that the 406.025 MHz transmitter turned off; and a battery check.

If a problem is found, the LED gives a coded signal after the initial 1-second pulse. The coded signals and the related problem are as follows (in order of importance).

1. 1 flash shows a G-switch loop open failure.
2. 3 flashes shows a 406.025 MHz transmitter problem (i.e. a bad or unconnected coaxial cable, an antenna problem, the battery not connected to the 406.025 MHz module, a programming error or a problem with the ELT itself).
3. 5 flashes shows that there is no navigation data present. This is most likely because of incorrect wiring between the system interface connections, incorrect programming, invalid navigation data, or an ELT/NAV Interface unit is not used.
4. 7 flashes shows a battery problem (i.e. battery usage time more than an hour).

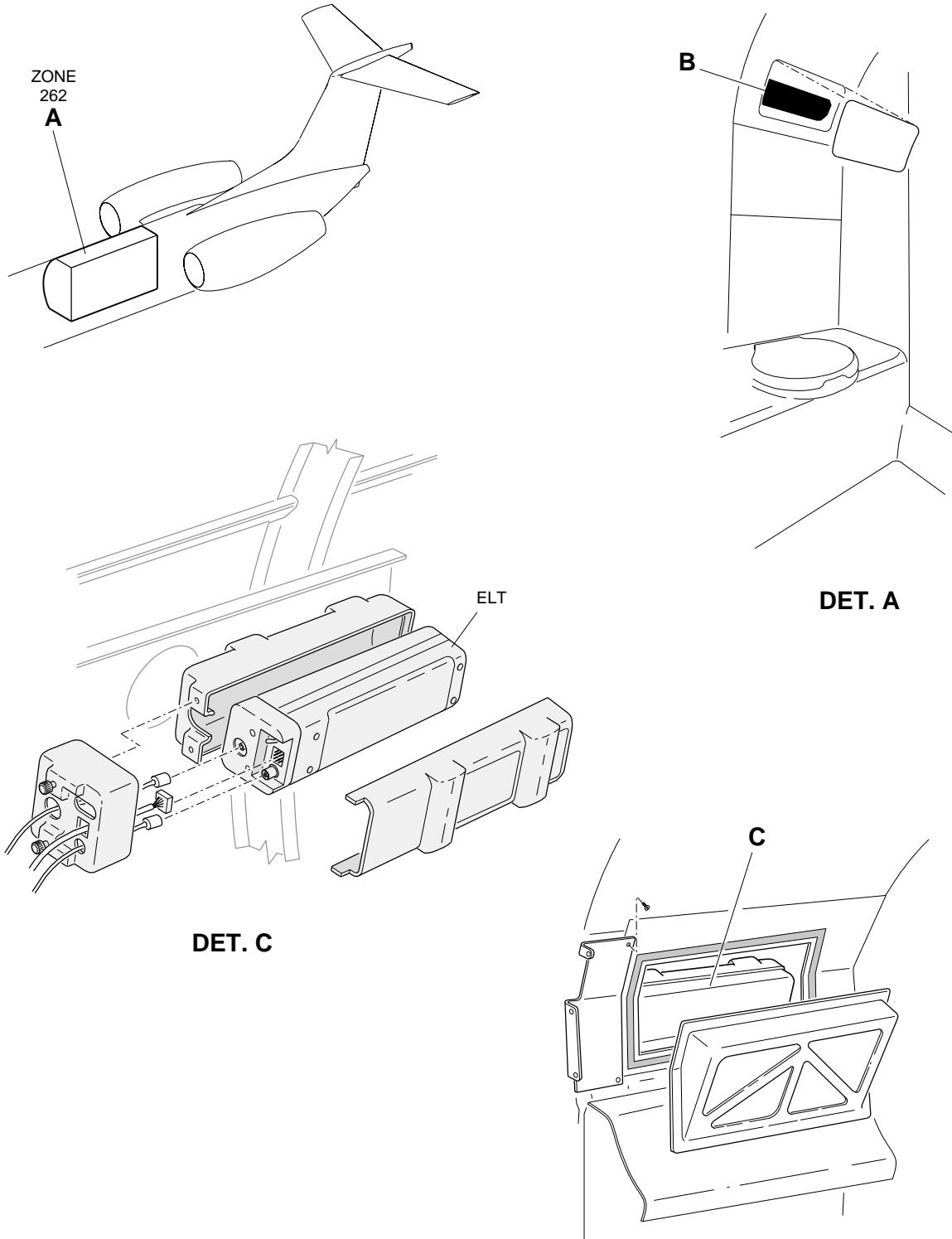
NOTE: Because the NAV function is not enabled, the result of the BIT will be 5 flashes, even in normal condition.

K. Follow-on

SUBTASK 842-004-A

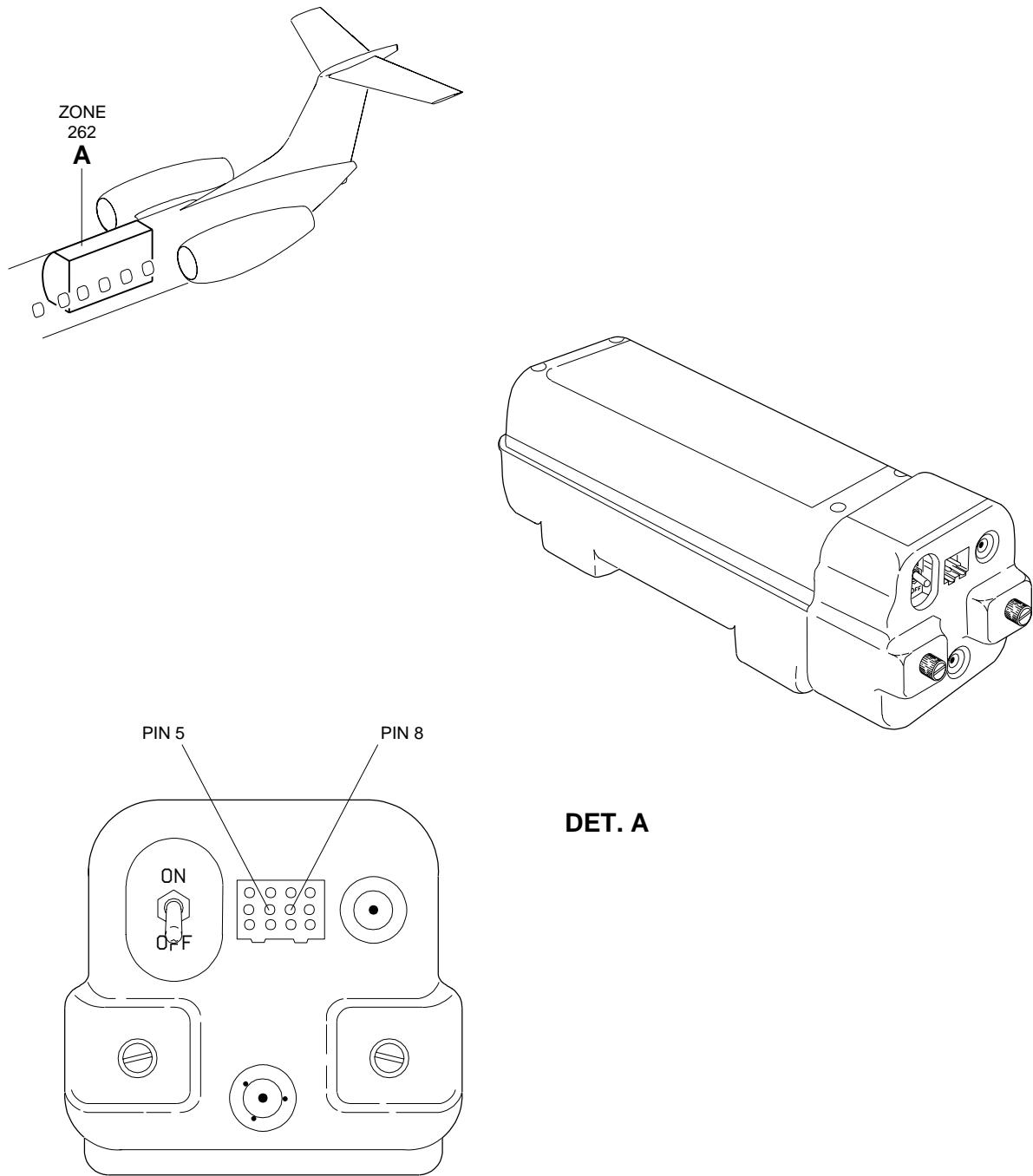
- (1) Close the Toilet Maintenance Panel.
- (2) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

EFFECTIVITY:: ALL
 Toilet Maintenance Panel
 Figure 506



145AMM251084.MCE

EFFECTIVITY:: ALL
ELT ARTEX C406-2
Figure 507



DET. A

145AMM251060.MCE