EMERGENCY LOCATOR TRANSMITTER
(ELT, INTEGRA FAMILY)

PART NUMBER
S1850501-01 / S1850501-02 / S1850501-03
S1851501-01 / S1851501-02 / S1851501-03
S1852501-01 / S1852501-02 / S1852501-03
S1854501-01 / S1854501-02 / S1854501-03

COMPONENT MAINTENANCE MANUAL LEVEL 2
WITH
ILLUSTRATED PARTS LIST

Revision N°00
First Issue :OCT 09/2015

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### RECORD OF REVISIONS

<table>
<thead>
<tr>
<th>REV. Nb</th>
<th>REVISION DATE</th>
<th>INSERTION DATE</th>
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<td>OCT 09/2015</td>
<td>OCT 09/2015</td>
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## RECORD OF TEMPORARY REVISIONS

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<thead>
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<th>TEMPORARY REVISION</th>
<th>INCORPORATED</th>
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</tr>
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<tbody>
<tr>
<td>No.</td>
<td>PAGE No.</td>
<td>DATE</td>
</tr>
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</tr>
<tr>
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</table>

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25-63-08

RTR Page 1
OCT 09/2015
## SERVICE BULLETIN LIST

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25-63-08
## LIST OF EFFECTIVE PAGES

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>PAGE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title Page</td>
<td>1</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td>Record of Revisions</td>
<td>1</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td>Service Bulletin List</td>
<td>1</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td>List of Effective Pages</td>
<td>1</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>1</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td>List of Illustrations</td>
<td>1</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td>Description and Operation</td>
<td>1</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td>Disassembly</td>
<td>3001</td>
<td>OCT 09/2015</td>
</tr>
</tbody>
</table>

© Orolia S.A.S.
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<tr>
<th>SUBJECT</th>
<th>PAGE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning</td>
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<td>OCT 09/2015</td>
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<td>OCT 09/2015</td>
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<td>OCT 09/2015</td>
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<tr>
<td></td>
<td>7008</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td>Special tools, fixtures, equipment and consumables</td>
<td>9001</td>
<td>OCT 09/2015</td>
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<tr>
<td></td>
<td>9002</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td>Illustrated Parts List</td>
<td>10001</td>
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</tr>
<tr>
<td></td>
<td>10002</td>
<td>OCT 09/2015</td>
</tr>
<tr>
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<td>OCT 09/2015</td>
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<tr>
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<tr>
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<th>PAGE</th>
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<tbody>
<tr>
<td>Storage (Including Transportation)</td>
<td>15001</td>
<td>OCT 09/2015</td>
</tr>
<tr>
<td></td>
<td>15002</td>
<td>OCT 09/2015</td>
</tr>
</tbody>
</table>
# Component Maintenance Manual

P/N S185X501-XX

### TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTRODUCTION</strong></td>
<td>1</td>
</tr>
<tr>
<td>1. GENERAL</td>
<td>1</td>
</tr>
<tr>
<td>2. SHOP CHECK</td>
<td>2</td>
</tr>
<tr>
<td>3. REVISIONS</td>
<td>2</td>
</tr>
<tr>
<td><strong>DESCRIPTION AND OPERATION</strong></td>
<td>1</td>
</tr>
<tr>
<td>1. DESCRIPTION</td>
<td>1</td>
</tr>
<tr>
<td>A. General</td>
<td>1</td>
</tr>
<tr>
<td>B. Purpose</td>
<td>2</td>
</tr>
<tr>
<td>C. Variants</td>
<td>2</td>
</tr>
<tr>
<td>D. Characteristics</td>
<td>4</td>
</tr>
<tr>
<td>E. Detailed Description</td>
<td>6</td>
</tr>
<tr>
<td>F. Labelling</td>
<td>9</td>
</tr>
<tr>
<td>G. Dimensions</td>
<td>15</td>
</tr>
<tr>
<td>2. OPERATION</td>
<td>17</td>
</tr>
<tr>
<td>A. Functions</td>
<td>17</td>
</tr>
<tr>
<td>B. Transmission</td>
<td>18</td>
</tr>
<tr>
<td>C. Internal switch and Integral antenna</td>
<td>18</td>
</tr>
<tr>
<td>transmission</td>
<td>18</td>
</tr>
<tr>
<td>D. GPS</td>
<td>19</td>
</tr>
<tr>
<td><strong>TESTING AND FAULT ISOLATION</strong></td>
<td>1001</td>
</tr>
<tr>
<td>1. TESTING</td>
<td>1001</td>
</tr>
<tr>
<td>A. Preamble</td>
<td>1001</td>
</tr>
<tr>
<td>B. Test Equipment</td>
<td>1001</td>
</tr>
<tr>
<td>C. Special Precautions and Environmental</td>
<td>1001</td>
</tr>
<tr>
<td>Conditions</td>
<td>1001</td>
</tr>
<tr>
<td>D. Test Procedure</td>
<td>1001</td>
</tr>
<tr>
<td>E. ELT Self-test</td>
<td>1002</td>
</tr>
<tr>
<td>F. Software control</td>
<td>1003</td>
</tr>
<tr>
<td>G. ELT Operating Tests</td>
<td>1003</td>
</tr>
<tr>
<td>H. Reset of counters and software control</td>
<td>1007</td>
</tr>
<tr>
<td>I. Labelling</td>
<td>1007</td>
</tr>
<tr>
<td>2. FAULT ISOLATION</td>
<td>1008</td>
</tr>
<tr>
<td>A. Faults Flowchart</td>
<td>1008</td>
</tr>
<tr>
<td><strong>SCHEMATICS AND WIRING DIAGRAMS</strong></td>
<td>NOT APPLICABLE</td>
</tr>
<tr>
<td><strong>DISASSEMBLY</strong></td>
<td>3001</td>
</tr>
<tr>
<td>1. GENERAL</td>
<td>3001</td>
</tr>
<tr>
<td>A. Preamble</td>
<td>3001</td>
</tr>
</tbody>
</table>

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25-63-08

TOC Page 1

OCT 09/2015
Component Maintenance Manual
P/N S185X501-XX

2. DISASSEMBLY ................................................................. 3002
   A. Procedure .............................................................. 3002

CLEANING ............................................................................. 4001
1. CLEANING EQUIPMENT ........................................................ 4001
   A. List ................................................................. 4001

2. CLEANING PROCEDURE ...................................................... 4001
   A. Plastic Parts ......................................................... 4001
   B. Connectors .......................................................... 4001

              .................................................. CHECK 5001
1. GENERAL .............................................................. 5001
   A. Precautions ......................................................... 5001

2. VISUAL INSPECTION ........................................................ 5001
   A. General Inspection ................................................... 5001
   B. Special Inspection ............................................... 5001

REPAIR. ............................................................... NOT APPLICABLE

ASSEMBLY ........................................................................... 7001
1. GENERAL .............................................................. 7001
   A. Preamble .......................................................... 7001
   B. Introduction ...................................................... 7001
   C. Special Instruction .............................................. 7001
   D. Tools, Fixtures and Equipment ............................... 7001
   E. Annual Inspection Kit ........................................... 7001
   F. Consumables ...................................................... 7002
   G. Installation of Bracket ........................................... 7002

2. ASSEMBLY .............................................................. 7002
   A. Procedure .......................................................... 7002

3. REPLACEMENT OF LABELS ............................................... 7007
   A. Procedure .......................................................... 7007
LIST OF ILLUSTRATIONS

FIGURE 1 / 25-63-08-991-011-1
EXAMPLE OF ELT SYSTEM ........................................... 1

FIGURE 2 / 25-63-08-991-012-1
COSPAS-SARSAT CONCEPT .......................................... 2

FIGURE 3 / 25-63-08-991-013-1
CONFIGURATION ...................................................... 3

FIGURE 4 / 25-63-08-991-014-1
CONTROLs AND INTERFACEs ..................................... 5

FIGURE 5 / 25-63-08-991-015-1
EXTERNAL DESCRIPTION ........................................... 6

FIGURE 6 / 25-63-08-991-016-1
INTERNAL DESCRIPTION ............................................ 8

FIGURE 7 - SHEET 1 OF 2 / 25-63-08-991-017-1
INSTRUCTIONS LABELS OF AUTOMATIC PORTABLE VERSIONs 10

FIGURE 7 - SHEET 2 OF 2 / 25-63-08-991-017-2
INSTRUCTIONS LABELS OF PORTABLE VERSIONs ................. 11

FIGURE 8 - SHEET 1 OF 2 / 25-63-08-991-018-1
INSTRUCTIONS LABELS OF AUTOMATIC FIXED VERSIONs .... 11

FIGURE 8 - SHEET 2 OF 2 / 25-63-08-991-018-2
INSTRUCTIONS LABELS OF AUTOMATIC FIXED VERSIONs ... 12

FIGURE 9 / 25-63-08-991-019-1
IDENTIFICATION / INSPECTION / ARM OFF ON / REGULATIONS / TRACEABILITY LABELS 13

FIGURE 10 / 25-63-08-991-020-1
EXAMPLE OF BATTERY PACK LABEL ................................ 13

FIGURE 11 / 25-63-08-991-021-1
TRACEABILITY LABEL ................................................ 14

FIGURE 12 / 25-63-08-991-022-1
DIMENSIONS OF AUTOMATIC PORTABLE VERSIONs ............. 15

FIGURE 13 / 25-63-08-991-023-1
DIMENSIONS OF AUTOMATIC FIXED VERSIONs ................... 16

FIGURE 1001 / 25-63-08-991-102-01
TESTS FLOWCHART .................................................. 1002

FIGURE 1002 / 25-63-08-991-102-01
EXAMPLES OF MEASUREMENTS WITH BT100 ................. 1005

FIGURE 1003 / 25-63-08-991-103-01
TEST MODEL FOR CURRENT MEASUREMENT .................... 1006

FIGURE 1004 / 25-63-08-991-104-01

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TESTS FLOWCHART .......................................................... 1008

FIGURE 3001 / 25-63-08-991-301-1
REMOVAL OF FRONT PANEL ASSEMBLY ................................ 3002

FIGURE 3002 / 25-63-08-991-302-1
REMOVAL OF BATTERY .................................................... 3003

FIGURE 7001 / 25-63-08-991-701-1
BATTERY AND INSPECTION LABEL FILLING .......................... 7003

FIGURE 7002 / 25-63-08-991-702-1
PROTECTING THE BATTERY PACK ..................................... 7004

FIGURE 7003 / 25-63-08-991-703-1
FRONT PANEL ASSEMBLY, INSTALLATION ......................... 7005

FIGURE 7004 / 25-63-08-991-704-1
FRONT PANEL ASSEMBLY, INSTALLATION ......................... 7006

FIGURE 10001 / 25-63-08-991-010-01
ELT, INTEGRA .............................................................. 10012
INTRODUCTION

TASK 25-63-08-990-801-A01

1. General

   A. This component maintenance manual is compliant with ATA Specification 2200 (iSpec 2200, AIR TRANSPORT ASSOCIATION OF AMERICA) and with Orolia S.A.S. "Manual of alternative procedures for ETSO equipment". This manual gives the procedures used in the shops of the manufacturer. A technician who does not know the equipment can put it back to a serviceable condition or can do an overhaul on it with these procedures if the workshop is an accredited PART 145 of FAR 145 maintenance station, or equivalent agreement according to local regulations.

   B. This manual gives the work instructions for the Level 2 Maintenance of the Emergency Locator Transmitters:
      - ELT, AP INTEGRA (ER), PN S1850501-01;
      - ELT, AP INTEGRA, PN S1850501-02;
      - ELT, AP INTEGRA (ER-N), PN S1850501-03;
      - ELT, AF INTEGRA (ER), PN S1851501-01;
      - ELT, AF INTEGRA, PN S1851501-02;
      - ELT, AF INTEGRA (ER-N), PN S1851501-03;
      - ELT, AF-H INTEGRA (ER), PN S1852501-01;
      - ELT, AF-H INTEGRA, PN S1852501-02;
      - ELT, AF-H INTEGRA (ER-N), PN S1852501-03;
      - ELT, AP-H INTEGRA (ER), PN S1854501-01;
      - ELT, AP-H INTEGRA, PN S1854501-02;
      - ELT, AP-H INTEGRA (ER-N), PN S1854501-03;

      manufactured by Orolia S.A.S. (Address: Orolia S.A.S. CS10028, Zone Industrielle des cinq Chemins 56520 GUIDEL-FRANCE or at www.kannadaviation.com).

   C. The procedures must be performed in maintenance shops with special tools and test benches.

   D. All maintenance for Canadian installation must be performed in accordance with CAR 571 Appendix G and CAR 551. As indicated in the Canadian operating rule, ".... the ELT shall be checked at intervals not exceeding 12 months..."

   E. This manual does not include recommended technical maintenance intervals or details which change for the different shop equipment that is available. For regulatory requirements regarding maintenance periodicity, please consult your national aviation authority. Field "Next Control" of the inspection label is to be filled according to these regulatory requirements.

   F. The dimensions are given in Metric Units (SI Units) with values in Imperial Units given in brackets, after or below the Metric Units values. In addition to the common symbols of Metric and Imperial Units, the abbreviations that follow are used in the manual:

      - IPL = illustrated parts list
      - Assy = assembly
      - mfg = manufacturing
      - P/N = part number
      - OD = outer diameter
      - ID = inner diameter
2. **Shop Check**
   A. The manufacturer did a check to make sure that the procedures given in the sections of the manual are satisfactory. For this, he carried out the maintenance procedures such as disassembly, assembly and testing.

3. **Revisions**
   A. With each revision written for the manual, full instructions are supplied. These refer to the related page numbers for insertion and deletion. A vertical line in the left margin shows the revised, added or removed material.
TASK 25-63-08-871-801-A01

1. DESCRIPTION

   A. General

      (1) The Emergency Locator Transmitter (ELT) system generally includes:

         (a) One Emergency Locator Transmitter (ELT) with:
           1. One auxiliary antenna (**);
           2. The attaching parts (*)
         (b) One Mounting Bracket(*), P/N S1840502-XX, to attach the ELT to the aircraft;
         (c) One Remote Control Panel(*) (***) , P/N S1820513-XX;
         (d) One Programming Dongle(*) (***) or DIN12 connector, P/N S1820514-XX;
         (e) One External Navigation Device (*) (***) , IF-GPS -RS232, P/N S1820514-08, or INTEGRA
             ARINC e-NAV P/N S1850581-01 (not shown on Figure 1);
         (f) One outside antenna (*).

         NOTE:  
         - (*) not described in this manual, (**) according to variant, (***) option.
           - For the Mounting Brackets: Refer to relevant ACMM.
           - For the Remote Control Panels: Refer to relevant ACMM.
           - For the Programming dongles: Refer to relevant ACMM.
           - For the External Navigation Devices: Refer to relevant ACMMs.

Figure 1 / 25-63-08-991-011-1
EXAMPLE OF ELT SYSTEM
B. Purpose

(1) The INTEGRA ELTs are aeronautical distress beacons that operate at civil frequencies of 121.5 MHz and 406.037 MHz as part of the COSPAS-SARSAT system.

(2) The INTEGRA ELTs transmit through an antenna attached to the aircraft fuselage or through an integral antenna if the external antenna or the link to the external antenna is not available. AP variants (Refer to Table 1 / 25-63-08-992-011-A01) can also transmit through an auxiliary antenna when used as portable ELTs. They are fitted with a built-in GPS giving a more accurate position transmitted within minutes following the distress.

C. Variants

ELTs detailed in this manual are of type:

(a) Automatic Portable (AP):

NOTE: Automatic Portable ELTs are intended to be rigidly attached to the aircraft before the crash but readily removable from the aircraft after the crash. They are automatically activated when a crash occurs and can be manually activated when removed from the aircraft. They can be tethered to a life raft.

1 AP INTEGRA (ER), 2-Frequency ELT, COSPAS-SARSAT Class I designed for fixed wings aircraft and helicopters;
2 AP INTEGRA (ER-N), 2-Frequency ELT, COSPAS-SARSAT Class I designed for fixed wings aircraft and helicopters, compatible with INTEGRA ARINC e-NAV P/N S1850518-01;
3 AP INTEGRA 2-Frequency ELT, COSPAS-SARSAT Class II designed for fixed wings aircraft and helicopters;
4 AP-H INTEGRA (ER), 2-Frequency ELT, COSPAS-SARSAT Class I designed for helicopters only;
5 AP-H INTEGRA (ER-N), 2-Frequency ELT, COSPAS-SARSAT Class I designed for helicopters, compatible with INTEGRA ARINC e-NAV P/N S1850518-01
6 AP-H INTEGRA, 2-Frequency ELT, COSPAS-SARSAT Class II designed for helicopters only.

(b) Automatic Fixed (AF):

NOTE: Automatic Fixed ELTs are intended to be permanently attached to the aircraft. They are automatically activated when a crash occurs.

1 AF INTEGRA (ER), 2-Frequency ELT, COSPAS-SARSAT Class I designed for fixed wings aircraft and helicopters;
2 AF INTEGRA (ER-N) 2-Frequency ELT, COSPAS-SARSAT Class I designed for fixed
wings aircraft and helicopters; compatible with INTEGRA ARINC e-NAV P/N S1850518-01

3 AF INTEGRA, 2-Frequency ELT, COSPAS-SARSAT Class II designed for fixed wings aircraft and helicopters;

4 AF-H INTEGRA (ER), 2-Frequency ELT, COSPAS-SARSAT Class I designed for helicopters only;

5 AF-H INTEGRA (ER-N) 2-Frequency ELT, COSPAS-SARSAT Class I designed for helicopters; compatible with INTEGRA ARINC e-NAV P/N S1850518-01.

6 AF-H INTEGRA, 2-Frequency ELT, COSPAS-SARSAT Class II designed for helicopters only.

Table 1 / 25-63-08-992-011 : ELT Variants

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<td>B</td>
<td>AP INTEGRA</td>
<td>S1850501-02</td>
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<td>C</td>
<td>AF INTEGRA (ER)</td>
<td>S1851501-01</td>
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<td>D</td>
<td>AF INTEGRA</td>
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<td>E</td>
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<td>S1854501-02</td>
</tr>
<tr>
<td>J</td>
<td>AP INTEGRA (ER-N)</td>
<td>S1850501-03</td>
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<tr>
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</tr>
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<td>S1852501-03</td>
</tr>
<tr>
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<td>AP-H INTEGRA (ER-N)</td>
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</tr>
</tbody>
</table>

Figure 3 / 25-63-08-991-013-1

CONFIGURATION

A, B, G, H, J, M variants

C, D, E, F, K, L variants

Auxiliary antenna

Tie mounting

Nylon thread

Lanyard

Snap Hook
D. Characteristics

(1) Transmission 406 MHz
- Frequency: 406.037 MHz ± 0.001 MHz
- Transmission power: 5 W (37 dBm ± 2 dB)
- Long-term stability: -0.002 MHz, +0.005 MHz over 5 years
- Modulation type: 16K0G1D (Bi-phase L encoding)
- Message length: 520 ms
- Repetition period: 47.5 to 52.5 s
- Transmission speed: 400 bps ± 1%
- Frame synchronization: 0 0010 1111 (0 1101 0000 during self-test)
- Transmission duration at 406 MHz:
  1. 24 hours at -40 degrees Celsius for Variants A, C, E, G, J, K, L, M;
  2. 24 hours at -20 degrees Celsius for Variants B, D, F, H.

(2) Transmission at 121.5 MHz
- Frequencies: 121.5MHz ± 0.006 MHz
- Transmission power: 50 mW to 400 mW (17 dBm to 26 dBm).
- Modulation factor: higher than 85%
- Modulation type: 3K20A3X
- Decreasing scan modulation signal frequency: from 1420Hz to 490Hz
- Repetition frequency: 3Hz
- Transmission duration:
  2. Over 48 hours at -20 degrees Celsius for Variants B, D, F, H.

(3) Auxiliary antenna
NOTE: For variants A, B, G, H, Refer to Table 1 / 25-63-08-992-011-A01.
- Type: 1/2 wave UHF and 1/4 wave VHF.
- Connector: BNC male.

(4) ELT Controls and Interface, Refer to Figure 4 / 25-63-08-991-014-1
- Front panel:
  • “ANT” connector: BNC female.
  • Three-position switch: ARM/OFF/ON.
  • Red visual indicator: display of ELT status.
  • DIN 12 receptacle: test, programming, remote control.
- On electronic PCB A1:
  • G-SWITCH for automatic activation.
  • Buzzer for audible operating signal.
(c) On electronic PCB A2:
  • Integral antenna
(5) Battery
- Type: LiMnO₂ two-element battery.
- ELT Battery life: 7 years from date of cell manufacturing (CDOM), Refer to Figure 10 / 25-63-08-991-020-1.
- Battery Replacement: according to expiry date written on the battery pack and on the ELT label, Refer to Figure 9 / 25-63-08-991-019-1.

(6) Physical Characteristics
- Dimensions:
  - Variants A, B, G, H, J, M: Refer to Figure 12 / 25-63-08-991-022-1.
  - Variants C, D, E, F, K, L: Refer to Figure 13 / 25-63-08-991-023-1.
- Weight (without bracket and without auxiliary antenna in relation with the variant):
  - Variants A, B, J: Typical 878 g. (1.935 lb).
  - Variants C, D, K: Typical 755 g. (1.664 lb).
  - Variants E, F, L: Typical 760 g. (1.675 lb).
  - Variants G, H, M: Typical 883 g. (1.946 lb).
E. Detailed Description

(1) External description:
   (a) The housing is a molded yellow plastic rectangular box.
   (b) The housing has these items on the sides:
      1. Front panel screwed to the housing with four screws and nuts:
         a. one female BNC 50 Ohm connector for connection of an external or auxiliary antenna (according to the variant),
         b. one 3-position switch,
         c. one red visual indicator,
         d. one DIN-12 receptacle,
         e. a label showing the position of switch: “ARM/OFF/ON”.
      2. Rear panel with an identification and inspection label;
      3. Top side with an instruction label;
      4. Left side with a traceability label;
      5. Right side with labels for US and Canadian regulations;

Figure 5 / 25-63-08-991-015-1
EXTERNAL DESCRIPTION

3/4 front view
Label instruction

BNC connector Visual indicator 3-position switch Label ARM / OFF / ON DIN-12 receptacle Label traceability

View from top
Label identification inspection Label US regulations Label Canada Ribs

3/4 rear view
(2) Internal Description (Refer to Figure 6 / 25-63-08-991-016-1).
(a) The housing is divided into two cavities (upper and lower) used to receive the electronic PCBs and the battery pack.
(b) An electronic PCB (A1), interdependent of the front panel, is inserted into slides of the upper cavity. The front panel and the electronic PCB are inserted into the slides of the internal housing then fixed with four female hexagonal socket screws and nuts to the housing.
   • The BNC connector and the switch of the front panel are directly soldered to the electronic PCB.
   • A led is also soldered on the PCB and displayed on the front panel (visual indicator) thanks to a lightguide.
   • A foam is stuck on the lower part of the front panel. This foam is used to protect the battery pack and to house a desiccant capsule.
(c) A second electronic PCB (A2) is fixed to the first electronic PCB (A1). This PCB (A2) supports the integral antenna.
(d) The lower cavity contains the battery pack (BT1). The battery pack includes two lithium batteries connected in series and held together by a heat shrink sleeve. The battery is fitted with two wires (red and black) with a connector.
(e) Watertightness is ensured thanks to an O-ring inserted in the groove of the front panel.
F. Labelling

(1) External identification (Refer to Figure 5 / 25-63-08-991-015-1 for labels locations)

(a) Instruction label on the top cover, this label shows the following information:
    Refer to Figure 7 / 25-63-08-991-017-1 for variants A, B, G, H, Refer to Figure 8 / 25-63-08-991-018-1 for variants C, D, E, F.
    1 Flight Direction (arrow);
    2 ELT instructions use;
    3 Approval and environmental categories;
    4 Manufacturer references.

(b) ARM/OFF/ON label on the front face, below the 3-position switch. 
    Refer to Figure 9 / 25-63-08-991-019-1

(c) Identification / inspection label on the rear panel.
    Refer to Figure 9 / 25-63-08-991-019-1

    The Identification / inspection label shows the following information:

    1 On the identification part of the label:
        - ELT part number;
        - ELT amendment;
        - ELT serial number;
        - Identification protocol;
        - Identification number;
        - COSPAS-SARSAT Serial Number (CSN) between 250000 and 499999;
        - Aircraft identification number (Tail Number);
        - MSN (Mainframe Serial Number);
        - ELT identification hexadecimal code (also named «15HEXID»).

    2 On the inspection part of the label:
        - Date on which the ELT was put into service or date of latest inspection;
        - Date of the next inspection (as required by the relevant Civil Aviation Authorities);
        - Battery type (P/N written on the battery pack);
        - Expiry date (Battery expiry date written on the battery pack).

    NOTE: This label has to be replaced for each battery replacement

(d) Traceability label on the right side of the ELT. 
    Refer to Figure 9 / 25-63-08-991-019-1

(e) Labels required by US and Canadian regulations. 
    Refer to Figure 9 / 25-63-08-991-019-1

    NOTE: US regulations label not present on ELTs at amendment A.
    IC label not present on ELTs at amendment A and B.
INSTRUCTIONS LABELS OF AUTOMATIC PORTABLE VERSIONS

**Variant A**

1-260A

**Variant B**

1-260B

**Variant G**

1-260G

**Variant H**

1-260H
STRICTIONS LABELS OF AUTOMATIC FIXED VERSIONS

1- 260E
Variant E

1- 260F
Variant F

1- 260K
Variant K

1- 260L
Variant L
(2) The battery (BT1) has a label that shows these indications:

- Part number;
- Amendment;
- Serial number;
- Inspection operator;
- Cell Date Of Manufacture (C.D.O.M.);
- Battery pack Date Of Manufacture (D.O.M.);
- Expiry date.
- Manufacturer identification.

**NOTE:** This label is affixed on the battery pack itself. When replacing the battery, some of its indications must be reported on the inspection label (1-110) of the ELT. (Refer to Figure 9 / 25-63-08-991-019-1).
(3) Traceability labels

NOTE: In order to manage the equipment manufactured or sold, our configuration management requires the use of traceability labels. Accordingly, all assemblies and sub-assemblies of KANNAD ELTs are identified by a traceability label. This marking enables to determine the status of the equipment and some of its sub-assemblies. It mainly gives information on:

- P/N, Part Number;
- AMDT, amendment;
- S/N, Serial Number or BN, Batch Number.

(a) A bar code including full part number and full serial number.
(b) Part Number (PN) under the form S18 + five digits + dash + two digits (S185x501-xx)
(c) Amendment (a letter corresponding to the index of evolution).
(d) A full Serial Number (SN) composed of 12 characters.
(e) Final technical inspection mark.

Figure 11 / 25-63-08-991-021-1
TRACEABILITY LABEL
G. Dimensions

(1) AP versions transmitter outline dimensions
140 x 86 x 75.4 mm (5.512 x 3.385 x 2.968 inches).

Figure 12 / 25-63-08-991-022-1
DIMENSIONS OF AUTOMATIC PORTABLE VERSIONS
(2) AF versions transmitter outline dimensions
131 x 86 x 75.4 mm (5.157 x 3.385 x 2.968 inches).

Figure 13 / 25-63-08-991-023-1
DIMENSIONS OF AUTOMATIC FIXED VERSIONS

ANT ARM OFF ON RC

Label instruction

Label identification
2. OPERATION

A. Functions

(1) General

(a) The ELT has four different modes:

- Off.
- Self-test (temporary mode).
- Armed: standby mode to permit automatic activation by the shock sensor or the remote control panel.
- On (Transmission).

NOTE: transmission operates if the ELT is activated ("ON" switch on the ELT control panel, "ON" switch on the remote control panel with ELT on ARM position or automatic activation).

(2) Modes (Refer to Figure 4 / 25-63-08-991-014-1)

(a) Off

1 The ELT is off when the switch is in the "OFF" position. No part of the ELT is energized.
2 This mode must be selected when the ELT is removed from the aircraft.

(b) Self-test

1 The self-test mode is a temporary mode (max duration 15 sec): this mode checks the main characteristics of the transmitter (Battery voltage, transmission power, VCO locking, Programming, VSWR of external antenna, GPS receiver) then permits digital communication with a programming and testing equipment. Self-test sequence consists in a short modulated 121.5 MHz transmission (1 sec.) and a 406.037 MHz test burst. 406.037 MHz self-test transmission is coded with the inverted frame requested by COSPAS-SARSAT technical specification.
2 This mode is selected:
- when the switch is set from "OFF" to "ARM";
- when the switch is set to "ON" before transmission;
- when the Remote Control Panel switch (on the aircraft’s cockpit) is set to the "Test/Reset" position (provided that the ELT switch is in the "ARM" position).
3 The buzzer operates during the self-test procedure. After a few seconds, the test result is displayed on the visual indicator as follows:
- one long flash indicates a good test;
- a series of short flashes indicates a failed test.

(c) Armed

1 To permit activation, the ELT must be in standby mode with the switch in the "ARM" position.

(d) On

1 This mode is selected:

- Manually:
  - when the switch is set to the "ON" position;
  - when the Remote Control Panel switch (on the aircraft’s cockpit) is set to the "ON" position (provided that the ELT switch is in the "ARM" position).
- Automatically when a shock occurs thanks to the G-Switch sensor (provided that
the ELT switch is in the “ARM” position).

2. When this mode is selected, the ELT starts transmitting after 50 seconds:
   - on 406 MHz (one 406 MHz burst every 50 seconds);
   - on 121.5 MHz (continuous transmission between each 406 MHz burst).
   Note: the 121.5 MHz is not present during the first 50 seconds after ELT activation.
   - The red visual indicator and the buzzer operate immediately on the ELT.
     - Red visual indicator:
       - 1 short flash during ELT transmission on 121.5 MHz (every 0.7 seconds);
       - 1 long flash during ELT transmission on 406 MHz (every 50 seconds).
     - Buzzer:
       - 1.5 Hz pulse signal (recurrence 0.7 s) during ELT transmission on 121.5 MHz (except if the ELT has switched to internal antenna).

   NOTE: when switching from the external to the integral antenna the pulse signal of the buzzer switches from one beep every 0.7 second to 2 beeps every 0.7 second.

3. In case of accidental activation, the ELT can be reset (set the switch to “OFF”).
   NOTE: if activation longer than 50 seconds, inform ATC (Air Traffic Control).

4. The number of 406 MHz bursts transmitted is recorded. This information is available when the ELT is connected to a programming equipment.

B. Transmission
   (1) The ELT is designed to transmit on two frequencies (121.5 and 406.037 MHz).
   (2) The basic aeronautical emergency frequency (121.5 MHz) is principally used for homing in the final stages of the rescue operations.
   (3) After activation, the transmitter operates continuously on 121.5 with an output power of 100 mW. The modulation is an audio frequency with a downward sweep from 1390 Hz to 480 Hz with a repetition rate of 3 Hz. The AM modulation factor is over than 85%.
   (4) During operations, a digital message is transmitted on 406.037 MHz every 50 seconds. The output power on 406 MHz is 5 W (37 dBm ± 2 dB).
     NOTE: The 406.037 MHz frequency is used by the COSPAS-SARSAT satellites for precise pinpointing and identification.
   (5) The message transmitted by the ELT on 406.037 MHz is a 144-bit identification long message.
   (6) Biphase L modulation at 400 bps makes possible to transmit all the related identification information to the COSPAS-SARSAT satellites in 520 ms.

C. Internal switch and Integral antenna transmission
   A VSWR measurement circuit is used to check the availability of the external antenna (broken antenna, broken coaxial, antenna not connected, etc.).
   During the 406 MHz burst, the Voltage Standing Wave Ratio (VSWR) is measured. After five 406 MHz bursts with wrong VSWR measurements, the ELT switches from the external to the integral antenna to enable transmission towards the integral antenna.
   After thirty six 406 MHz bursts, the ELT decides to re-switch or not according to the result of two VSWR measurements (e.g. auxiliary antenna connected).
D. GPS

To avoid consumption, the GPS receiver is not power supplied in ARM mode. After a crash (automatic activation) or manual activation, the GPS will try to acquire a position in continuous mode during one hour. If the GPS receiver acquires a valid position, then the message will contain the true position in the next 406 MHz burst. If the GPS receiver does not acquire a valid position, then the message will contain the default value (GPS position not valid).
TESTING AND FAULT ISOLATION

TASK 25-63-08-700-801-01

1. TESTING

A. Preamble
   
   **NOTE:** A full Testing and Fault Isolation procedure MUST be carried out at each battery replacement

B. Test Equipment
   - PR600 Programming equipment.
   - Digital microammeter.
   - BT100AVTRIPLE COSPAS SARSAT beacon tester or equivalent (Refer to TASK 25-63-08-940-802-A01).
   - 6.5 V DC power supply.
   - 50 Ohm load BNC plug.

C. Special Precautions and Environmental Conditions
   - Temperature: between 15 degrees Celsius and 35 degrees Celsius.

D. Test Procedure
   (1) Tests Flowchart
E. ELT Self-test

**NOTE:** The ELT self-test is a temporary mode (with a duration of 15 seconds). It is active when the switch is moved from the “OFF” position to “ARM” or “ON”.

- Connect a 50 Ohm load to the “ANT” receptacle on the front panel of the ELT.
- Switch from position OFF to ARM.
- The buzzer operates during the whole self-test procedure.
- After a few seconds, the test result is displayed with the visual indicator of the front panel as follows:
  - One long flash indicates that the system is operational and that no error conditions were found.
  - A series of short flashes indicates the test has failed (Refer to Table 1001 / 25-63-08-992-101-01).
Table 1001 / 25-63-08-992-101 : Operating Failure

<table>
<thead>
<tr>
<th>Nº OF FLASHES</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 + 1</td>
<td>Low battery voltage</td>
</tr>
<tr>
<td>3 + 2</td>
<td>Low transmission power</td>
</tr>
<tr>
<td>3 + 3</td>
<td>Faulty VCO locking (Faulty frequency)</td>
</tr>
<tr>
<td>3 + 4</td>
<td>No identification programmed (Programming error). Note: this result is normal if the ELT is not programmed.</td>
</tr>
<tr>
<td>3 + 5</td>
<td>Faulty Voltage Standing Wave Ratio (wrong external antenna link).</td>
</tr>
<tr>
<td>3 + 7</td>
<td>INTEGRA ARINC e-NAV Faulty connection (For variants J, K, L, M only. See NOTE below)</td>
</tr>
</tbody>
</table>

- Record the test result, then switch back to “OFF”.

NOTE: If self test fails, Refer to Figure 1004 / 25-63-08-991-104-A1

INTEGRA (ER-N) ELTs, variants J, K, L, M, will always have a 3+7 self-test result if the External Navigation Device, INTEGRA ARINC e-NAV, P/N S1850581-01 is not connected to ELT, +28VDC and an external GPS receiver

Except External GPS data transmission tests (6. External GPS Data Transmission Test (Optional)), all tests below can be carried-out without External Navigation Device External GPS data transmission function can be tested with both ELT and External Navigation Device: Refer to 6. External GPS Data Transmission Test (Optional).

F. Software control

(1) Connect PR600 and record:
   (a) 36 HexID (full Cospas-sarsat message),
   (b) number of 406 MHz transmissions,
   (c) number of self - tests;

(2) set the switch to “OFF”.

G. ELT Operating Tests

(1) Operating Test on G-Switch
   - With the 50 Ohm load still plugged, set the ELT switch from "OFF" to "ARM".
   - Wait for the end of the self test then wait 10 seconds to make sure that the ELT does not operate.
   - For variants A, B, C, D, J, K, cause abrupt move of the ELT towards the front;
   - For variants E, F, G, H, L, M, cause abrupt move of the ELT towards the front with the ELT having a 45-degree upward tilt.
   - Make sure that the ELT operates (audible buzzer).
   - Switch the ELT to “OFF”.
   - Disconnect the 50 Ohm load.

(2) Frequency and Power Check
   - Connect the BNC connector of the ELT front panel to the BT100AVTRIPLE or any equivalent COSPAS-SARSAT beacon tester.
   CAUTION: SOME BEACON TESTERS MAY REQUIRE THE USE OF AN ATTENUATOR (RISK OF DAMAGE OF THE TEST SET), REFER TO THE APPLICABLE OPERATION
- Perform a self-test.
- Measure these frequencies and power values:
  - Transmission at 121.5 MHz:
    - Frequency: 121.5 MHz ± 0.006 MHz.
    - Power: 50 to 400 mW (17 to 26 dBm).
  - Transmission at 406.037 MHz
    - Frequency: 406.037 MHz ± 0.001 MHz.
    - Power: 5 W (37 dBm ± 2 dB).

(3) Modulation Factor Check at 121.5 MHz
- Perform a self-test.
- Make sure that the modulation factor is higher than 85 %.

(4) Check of Transmission Coding at 406.037 MHz
- Perform a self-test.
- The code displayed to the COSPAS SARSAT beacon tester must be identical to the code read with the PR600 in section E. **Software control** except D0 instead of 2F.
  
  Example of message programmed in ELT:
  FF FE **2F** 96 E3 AF 0F 0F 7F DF FF 62 60 B7 83 E0 F6 6C.
  
  Example of same message decoded by Cospas-Sarsat Decoder:
  FF FE **D0** 96 E3 AF 0F 0F 7F DF FF 62 60 B7 83 E0 F6 6C.
- Disconnect the COSPAS-SARSAT Decoder.
EXAMPLES OF MEASUREMENTS WITH BT100

(5) GPS Test (Optional)
(a) Make sure that the ELT is coded with a Location Protocol (Preferably Standard Location or National Location Protocol).

(b) Put the ELT outside in horizontal position in a clear area so that the top of the ELT (instruction label) has an unobstructed view of the sky. Do not keep your hand on the GPS antenna side (top of the ELT).

(c) Connect the BNC connector of the ELT front panel to the BT100AVTRIPLE or any equivalent COSPAS-SARSAT beacon tester. CAUTION: SOME BEACON TESTERS MAY REQUIRE THE USE OF AN ATTENUATOR (RISK OF DAMAGE OF THE TEST SET), REFER TO THE APPLICABLE OPERATION MANUAL INCLUDED WITH THE BEACON TESTER.

(d) Switch the ELT to ON.

(e) Wait a few minutes until the position is displayed in the transmitted burst.

(f) Check that the GPS position matches with the real position of the ELT location. Resolution:
   - 4" in Standard Location or National Location Protocol;
   - 4' in User Location Protocol.

(g) Switch the ELT to OFF.

(h) Disconnect the COSPAS-SARSAT beacon tester.

(6) External GPS Data Transmission Test (Optional)

NOTE: For variants J, K, L, M only (INTEGRA ER-N).

(a) External GPS data transmission function shall be tested with both ELT and INTEGRA ARINC e-NAV, P/N S1850581.01.

NOTE: The INTEGRA ARINC e-NAV shall be connected to +28VDC power supply and to an external GPS receiver or simulator. If one of this requirement is not fulfilled, result of self-test will be 3+7.

(b) Refer to ACMM 25-63-52.

(7) Current draw measurement in ARM position

NOTE: Only if battery must be replaced.

Figure 1003 / 25-63-08-991-103-01

TEST MODEL FOR CURRENT MEASUREMENT

Caution: Take care not to damage the pins with the soldering.

![Diagram of current measurement model]

(a) Connect a 50 Ohm load to the “ANT” receptacle on the front panel of the ELT.

(b) Remove the front panel assembly (Refer to SUBTASK 25-63-08-020-001-A01).

(c) Disconnect the battery connector from the electronic PCB A1.

(d) Set up the test model for current measurement (Refer to Figure 1003 / 25-63-08-991-103-A01).

NOTE: For references to set up the test model, Refer to Table 9002 / 25-63-08-992-902-
(e) Connect the 2 pins female plug of the test model to the electronic PCB A1.

(f) Connect S1 to S2 (put a jumper).

(g) Set the ELT to the ARM position:
   - The ELT perform a self-test

(h) Connect a micro-ammeter (range 100 microA).

(i) Disconnect S1 from S2 (remove the jumper)

(j) Measure the maximum current after the self-test procedure:
   - Current must be less than 10 microA.

(k) Set the ELT to the OFF position.

(l) Disconnect the test model from the PCB A1.

(m) Connect the battery connector to the PCB A1.

(n) Re-assemble the front panel assembly to the ELT ().

H. Reset of counters and software control

(1) Connect to PR600.

(2) In case of battery replacement reset the counter to zero.

(3) Read the ELT coding. Check that it is identical to section E. Software control page1003.

I. Labelling

(1) After test completion:

   (a) Record the data already written on the inspection label (except "Inspection Date" and "Next Control").

   (b) Write the data previously recorded in the corresponding fields of new label (1-110) (except "Inspection Date" and "Next Control").

   (c) Fill the "Inspection Date" and "Next Control" fields of the of new label (1-110):
       1 "Inspection Date": today’s date.
       2 "Next Control": date of next control according to regulatory requirements of national aviation authority.

   (d) If it is the first periodic control of the ELT, stuck the new label (1-110) onto the old one.

   (e) If it is not the first periodic control of the ELT, remove the old label and stuck the new label (1-110).
2. FAULT ISOLATION
   
   A. Faults Flowchart
      
      (1) Tests Flowchart

      Figure 1004 / 25-63-08-991-104-01
      Tests Flowchart
TASK 25-63-08-000-801-A01

1. General

   A. Preamble

      NOTE: If the purpose of the disassembly is to replace the battery, a full Testing and Fault isolation must be carried out. Refer to PAGEBLOCK TESTING AND FAULT ISOLATION.

   B. Introduction

      (1) This section gives the procedures for the disassembly of the equipment. The components are identified by their “Figure - Item” number in the Illustrated Parts List (Refer to Figure 10001 / 25-63-08-991-010-A01): the first number in brackets is the reference of the Illustrated Parts List figure, the second number in brackets is the number used to find the item in the corresponding figure (example: 1-70 means Figure IPL10001 - Item number 70).

      NOTE: Refer to PAGEBLOCK TESTING AND FAULT ISOLATION to find the condition of the equipment and the possible cause of all operation failures. This is to prevent the full disassembly and assembly of the unit.

   C. Precautions

      CAUTION: BEFORE THE START OF WORK ON THE ELT, MAKE SURE THAT THE FRONT PANEL SWITCH IS SET TO “OFF”.

      IN CASE OF FRONT PANEL DISASSEMBLY, EXCEPT FOR BATTERY REPLACEMENT, THE ELEMENTS TO BE REPLACED TO ENSURE ELTS WATER TIGHTNESS ARE DEFINED IN ANNUAL INSPECTION KIT P/N S1840501-02 (REFER TO PAGE BLOCK REASSEMBLY TOPIC D. ANNUAL INSPECTION KIT PAGE 7001).

      AFTER BATTERY REPLACEMENT, ALWAYS CHECK WATERTIGHTNESS OF ELT AFTER REASSEMBLY (REFER TO SUBTASK 25-63-08-430-003-A01). ELEMENTS INCLUDED IN BATTERY KIT P/N S1840510-01 SHALL BE USED: REFER TO (TASK 25-63-08-970-801-A01) PAGE10013.

   D. Tools, Fixtures and Equipment

      (1) Special Tools, Fixtures Equipment List

         (a) Refer to PAGEBLOCK SPECIAL TOOLS, FIXTURES, EQUIPEMENT AND CONSUMABLES

   E. Consumables

      (1) Consumables List

         (a) Refer to PAGEBLOCK SPECIAL TOOLS, FIXTURES, EQUIPEMENT AND CONSUMABLES
TASK 25-63-08-000-802-A01

2. Disassembly

A. Procedure

SUBTASK 25-63-08-020-001-A01

(1) Removal of Front Panel assembly (1-210)

Refer to Figure 3001 / 25-63-08-991-301-01

(a) Remove the four screws (1-170) and nuts (1-180) that hold the front panel assembly (1-210).

NOTE: Upper part of AP and AP-H versions are equipped with 2 screws (1-171) instead of 1-170).

(b) For AP and AP-H versions remove the mounting (1-90) used to attach the antenna and lanyard. Keep the antenna and lanyard attached to the mounting.

(c) Carefully extract the front panel assembly (1-210) up to reach the battery connector.

NOTE: This will break the seal label (1-150).

(d) Disconnect the battery connector.

(e) Remove the front panel assembly (1-210) from the housing (1-200).

Figure 3001 / 25-63-08-991-301-1

REMOVAL OF FRONT PANEL ASSEMBLY
SUBTASK 25-63-08-020-002-A01

(2) Removal of batteries (1-120)

Refer to Figure 3001 / 25-63-08-991-301-01

CAUTION: NEVER REMOVE THE BATTERY BY PULLING THE WIRES.

(a) Remove the front panel assembly (Refer to SUBTASK 25-63-08-020-001-A01).
(b) Remove the O-ring (1-140) of the front panel assembly (1-210).
(c) Remove the desiccant capsule (1-130) from the foam (1-190).
(d) Remove the battery pack (1-120) from the housing (1-200).

Figure 3002 / 25-63-08-991-302-1
REMOVAL OF BATTERY
TASK 25-63-08-100-801-A01

1. **Cleaning Equipment**
   
   A. **List**
      
      - Lint-free rag.
      - Soft brush.
      - Low-pressure, dry air compressor.

TASK 25-63-08-110-801-A01

2. **Cleaning Procedure**

   Refer to PAGEBLOCK ASSEMBLY

   A. Plastic Parts
      
      **NOTE:** Refer to Figure 10001 / 25-63-08-991-010-A01.
      
      (1) Clean all plastic parts, the front panel assembly (1-210) and the housing (1-200) (outer faces only) with a rag soaked in soapy water.
      
      (2) Rub the parts with a damp rag and dry them in dry compressed air at low pressure.

   B. Connectors
      
      (1) Clean the connectors with a soft brush or a lint-free rag.
      
      (2) If necessary, blow them with low pressure dry compressed air.
TASK 25-63-08-210 -801-A01
1. General
   A. Precautions
      (1) All the parts must be checked in disassembled and cleaned conditions.
      (2) Do a visual check of all the parts under a strong light.
      (3) If there is doubt about the serviceability of a part, replace the part.

TASK 25-63-08-220-801-A01
2. Visual Inspection
   Refer to PAGEBLOCK DESCRIPTION AND OPERATION
   A. General Inspection
      - Make sure there are no marks of impact, deep scratches or deformation.
      - Make sure that ribs do not show any crack due to an excessive screw tightening.
      - Examine the condition of the connectors.
   B. Special Inspection
      NOTE: Due to the technology used for our ELT and battery pack, any risk of corrosions between
      two battery replacements is unlikely to happen. However, this inspection can be required by
      Civil Aviation Authority.
      (1) Battery pack (1-120)
         CAUTION: DO NOT THROW THE BATTERY AWAY. THERE IS A REQUIREMENT
         FOR A SPECIAL RECYCLING PROCEDURE FOR LITHIUM BATTERIES.
         CHECK LOCAL RULES ON THIS SUBJECT.
         - Remove the battery pack (1-120) from the ELT (Refer to SUBTASK 25-63-08-020-002-A01)
         - Inspect the battery pack:
            The battery pack and connector should be free of corrosion.
            Make sure there is no leakage on the battery (signs of liquid acid).
            - Ensure the battery housing is free of cracks or other visible damage.
            - Verify the battery expiration date and ensure it matches with the expiration date written on
              the inspection label (rear side of ELT, Refer to Figure 10 / 25-63-08-991-020-1).
            - Reinstall the battery pack ()
              NOTE: The battery must be replaced either at expiry date, or if the voltage is too low, or
              in all cases when there are doubts about its operational life.
TASK 25-63-08-400-801-A01

1. **General**

   A. **Preamble**

      **NOTE:** If the battery has been replaced, ensure that a full Testing and Fault isolation is carried out. Refer to PAG EBLOCK TESTING AND FAULT ISOLATION

   B. **Introduction**

      (1) This section gives the procedures for the assembly of the equipment. The components are identified by their “Figure - Item” number in the Illustrated Parts List (IPL).

      (2) Assemble the unit in a clean, dust-free area in accordance with the procedure that follows. Use good standard workshop practices.

      (3) Examine the parts (Refer to PAG EBLOCK CHECK) before you start the assembly.

   C. **Special Instruction**

      **CAUTION:** BEFORE WORK ON THE ELT, MAKE SURE THAT THE FRONT PANEL SWITCH IS SET TO “OFF”.

   D. **Tools, Fixtures and Equipment**

      (1) **Special Tools, Fixtures Equipment List**

      Refer to PAG EBLOCK SPECIAL TOOLS, FIXTURES, EQUIPMENT AND CONSUMABLES.

   E. **Annual Inspection Kit**

      **NOTE:** the parts of the annual inspection kit are also included in the battery kit P/N S1840510-01. For this reason, it is not necessary to use an extra annual inspection kit when a battery kit is used. When a battery kit is used, all the parts must be used excepted two screws and the label EES1923.

      (1) **Annual Inspection Kit Content**

      Table 7001 / 25-63-08-992-901 : Annual Inspection Kit Content

<table>
<thead>
<tr>
<th>Part Number</th>
<th>DESIGNATION</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0141822</td>
<td>O-RING</td>
<td>1</td>
</tr>
<tr>
<td>0123831</td>
<td>CAPSULE, DESICCANT</td>
<td>1</td>
</tr>
<tr>
<td>0145234</td>
<td>SCREW, F HEXALOB. M3x16 A4</td>
<td>4</td>
</tr>
<tr>
<td>0146261</td>
<td>SCREW, F HEXALOB. M3x20A4 [only used for AP, AP (ER), AP-H, AP-H (ER)]</td>
<td>2</td>
</tr>
<tr>
<td>0136779</td>
<td>NUT, NYLSTOP M3 A4</td>
<td>4</td>
</tr>
<tr>
<td>0141787</td>
<td>LABEL, SEAL</td>
<td>1</td>
</tr>
<tr>
<td>0145250</td>
<td>LABEL, INSPECTION EES1923 [not used for INTEGRA ELTs]</td>
<td>1</td>
</tr>
<tr>
<td>0145251</td>
<td>LABEL, INSPECTION EES1928</td>
<td>1</td>
</tr>
</tbody>
</table>
(2) Use of the annual inspection kit

**NOTE:** The purpose of the annual inspection kit is to replace the necessary parts when the ELT is opened without battery replacement.

(a) The use of the annual inspection kit is mandatory:
   - If the ELT has to be opened and the screws were damaged during removal, in this case they have to be replaced by screws available in the kit;
   - If the ELT was opened for more than 2 hours, in this case the desiccant capsule shall be replaced.

(b) The use of the annual inspection kit is recommended but not mandatory:
   - If a water tightness test is performed and if the screws are not damaged during removal.

F. Consumables

(1) Consumables List

Refer to PAGEBLOCK SPECIAL TOOLS, FIXTURES, EQUIPEMENT AND CONSUMABLES

G. Installation of Bracket

(1) For the Mounting Bracket: Refer to relevant ACMM.

TASK 25-63-08-400-802-A01

2. Assembly

A. Procedure

SUBTASK 25-63-08-430-001-A01

(1) Installation of battery pack (1-120)

**CAUTION:** ONLY ORIGINAL AND APPROVED BATTERY PACK P/N 0141823 INCLUDED IN BATTERY KIT BAT 200 P/N S1840510-01 CAN BE INSTALLED [SAFT-FRIWO, LITHIUM MANGANESE DIOXIDE, 2 X M20 (D-TYPE) CELLS, REFER TO FIGURE 10 / 25-63-08-991-020-1 FOR BATTERY PACK LABEL].

**NOTE:** When replacing a battery pack, the counters have to be reset to zero (Refer to TASK 25-63-08-700-801-01, Reset of counters and software control) and a watertightness test (Refer to SUBTASK 25-63-08-430-003-A01) performed at the end of the procedure.

(a) Preparation and installation of an inspection label (1-110) for the housing assembly (1-200)

**NOTE:** The battery kit (1-100) is supplied with a new inspection label (1-110). After each replacement of the battery pack (1-120), it is necessary to write all information relating to the replaced battery (PN and expiry date) on this inspection label (1-110).

1 Write the following data on a new inspection label (1-110), Refer to Figure 9 / 25-63-08-991-019-1 in black ink or with a label printer:
   a Fill the field "Battery Type" with the P/N of the new battery,
   b Fill the field "Battery Expiry Date" with the "Expiry" information of the new battery,
   c Fill the field "Inspection Date" with today's date.
   d Fill the field "Next Control" with the date of next mandatory control according to the regulation in effect).
2 Remove the old label from the housing assembly (1-200):

**NOTE:** As the entire Identification / Inspection label is engraved,
- for a first battery replacement, remove the small labels identifying the "Next control" (d), "Battery type" (a) and "Battery expiry date" (b) fields;
- if it is not the first battery replacement, remove the former Inspection label (1-110) from the lower part of the "Identification / Inspection" label.

3 Remove the protection from the new label (1-110).

4 Affix the new label (1-110) on the lower part of the identification / inspection label, in place or above the former label (ELT’s rear panel).

Figure 7001 / 25-63-08-991-701-1

**BATTERY AND INSPECTION LABEL FILLING**

---

**Label affixed on battery pack**

- **P/N:** 0141823
- **AMDT:** X
- **S/N:** XXXX
- **Tested by:** XXX
- **C.DOM:** MM-AAAA
- **DOM:** MM-AAAA
- **Expiry:** XX-20XX
- **P/N:** Xxxxxx
  
  **Identification**
  
  **Inspection label (1-110) of battery kit**

  - **Identification Date:**
  - **Type:**
  - **Battery:**
  - **Expiry Date:**

  **Housing**

  **Identification**

  **Inspection label**
(b) Protecting the battery pack

NOTE: A foam (1-160) is supplied with the battery kit (1-100). This foam, composed of four leaves attached together and covered by adhesive, is used to protect the battery pack when installed in the housing. This foam must be stuck around the battery pack (1-120).

1. Remove the adhesive from the foam.
2. Position the foam as to put the wire of the battery through the rectangular notch of the foam.
3. Fold and stick the first leaf of the foam (at the right of the notch) on the right side of the battery pack.
4. Stick the second leaf of the foam onto the front of the battery pack.
5. Fold and stick the third part of the foam onto the left part of the battery pack.
6. Fold and stick the fourth part of the foam onto the rear of the battery pack. This leaf must also cover the end of the first leaf on the right side of the battery pack.

Figure 7002 / 25-63-08-991-702-1
PROTECTING THE BATTERY PACK
(c) Installation of Battery Pack BT1

**NOTE:** Ensure that all parts (front panel, housing and O-ring are clean and dust-free).

1. Install the battery pack (1-120) into the housing (1-200).
2. Insert the new desiccant capsule (1-130) supplied with the kit into the hole of the foam (1-190) stuck on the front panel.
   **NOTE:** Install cardboard side of capsule towards PCB, plastic side towards lower part of the housing.
3. Clean the groove of front panel with dry compressed air (to remove dust).
4. Put the new O-ring (1-140) supplied with the battery kit (1-100) into the groove of the front panel (1-210).
5. Install the front panel assembly (1-210): Refer to SUBTASK 25-63-08-430-002-A01.

Figure 7003 / 25-63-08-991-703-1
FRONT PANEL ASSEMBLY, INSTALLATION
SUBTASK 25-63-08-430-002-A01

(2) Installation of front panel assembly (1-210)

Refer to Figure 7003 / 25-63-08-991-703-A01

(a) Connect the connector of the battery pack (1-120) to the electronic PCB of the front panel assembly (1-210).

(b) Insert the front panel assembly (1-210) into the slides of the housing (1-200) and slide it into the housing **taking care not to pinch the wires of the battery pack**.

(c) For AP and AP-H versions install the mounting (1-90) used to attach the antenna and lanyard. The antenna and lanyard must already be attached when installing the mounting. **NOTE:** The antenna thread (1-50) must be on the BNC antenna connector side, the lanyard (1-30) must on the DIN12 connector side ()

(d) Screw the front panel assembly (1-210) to the housing (1-200) with the 4 screws (1-170) and nuts (1-180). **Torque to 0.9 newton.meter ± 0.1 (7.97 pound force inch ±0.89).**

**NOTE:** For AP and AP-H versions, use the 2 screws (1-171) to fix the upper part of the front panel assembly.

(e) Affix a new seal label (1-150) onto the upper side of the front panel assembly and the housing.

Figure 7004 / 25-63-08-991-704-1
FRONT PANEL ASSEMBLY, INSTALLATION
SUBTASK 25-63-08-430-003-A01

(3) Check of ELT watertightness

CAUTION: IF AN ELECTRICAL HEATING SOURCE IS USED TO WARM THE BATH, ITS POWER SUPPLY MUST BE SWITCHED-OFF WHILE HANDLING THE ELT IN THE BATH.

NOTE: Not mandatory if annual inspection kit is used.

(a) Bring the water of a bath to a temperature of 55 degrees Celsius ± 5 degrees.
(b) Wholly immerse the ELT in the bath.
(c) Let immersed 5 minutes:
   - check that no bubble rises.
(d) Remove the ELT from the bath and dry it with compressed air.

SUBTASK 25-63-08-430-004-A01

(4) Operating tests.

(a) Perform the ELT Operating Tests procedure described in - Refer to PAGEBLOCK TESTING AND FAULT ISOLATION (E. ELT Operating Tests) except for § (6) Current draw measurement in ARM position.

NOTE: DO NOT PERFORM § (6) CURRENT DRAW MEASUREMENT IN ARM POSITION WHICH REQUIRES A RE-OPENING OF THE ELT.

TASK 25-63-08-400-803-A01

3. Replacement of Labels

A. Procedure

CAUTION: MARKINGS OF ORIGINAL ELTS ARE DIRECTLY ENGRAVED ONTO THE HOUSING OR FRONT PANEL. THESE MARKINGS CANNOT BE REMOVED. WHEN PERFORMING A CONTROL, REPLACING A BATTERY, RE-PROGRAMMING THE ELT FOR THE FIRST TIME, A NEW LABEL HAS TO BE AFFIXED ONTO THE ORIGINAL MARKING. REMOVING A LABEL IS TO BE DONE ONLY IF A LABEL HAS ALREADY BEEN AFFIXED DURING A PREVIOUS CONTROL, BATTERY REPLACEMENT OR RE-PROGRAMMING.

(1) Check that the new label has all the correct indications and especially the modification index corresponding to the state of the unit. If necessary, complete the reference number by adding the modification index.
(2) Mark the new label with the same serial number as the old one.
(3) Using tweezers or a scalpel, remove the old label (See CAUTION above), taking care not to damage the support protection.
(4) Using a clean, lint-free cloth soaked in alcohol, clean the area where the label is to be fixed so as to eliminate all traces of grease or dust and to remove the traces of adhesive left by the old label.
(5) Remove the paper protecting the back of the new label.
(6) Affix the new label in the correct position. Make sure that it is in position before applying pressure. Press lightly to adhere.
SPECIAL TOOLS, FIXTURES, EQUIPMENT AND CONSUMABLES

TASK 25-63-08-940-801-A01

1. **General**
   A. **Scope**
      (1) This pageblock gives the tools, fixtures, equipment and consumables that are necessary for operations on the equipment (with their recommended suppliers).

TASK 25-63-08-940-802-A01

2. **Tools, Fixtures and Equipment**
   A. **Standard Tools, Fixtures and Equipment.**
      NOTE: You can use alternative equipment from other suppliers if they have equivalent properties.

      **Table 9001 / 25-63-08-992-901 : Standard Tools**

<table>
<thead>
<tr>
<th>DESIGNATION</th>
<th>Characteristics</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR600 programming equipment</td>
<td>P/N 1201570, Orolia</td>
<td>X</td>
</tr>
<tr>
<td>COSPAS SARSAT tester</td>
<td>BT100AVTRIPLE Orolia P/N 0140956, or AEROFLEX IFR 4000 opt1, or equivalent&lt;sup&gt;(2)&lt;/sup&gt;</td>
<td>X</td>
</tr>
<tr>
<td>Microammeter</td>
<td>COMMERCIALLY AVAILABLE</td>
<td>X</td>
</tr>
<tr>
<td>Load 50 Ohm BNC 1 Watt</td>
<td>COMMERCIALLY AVAILABLE</td>
<td>X</td>
</tr>
<tr>
<td>6.5V DC POWER SUPPLY</td>
<td>COMMERCIALLY AVAILABLE</td>
<td>X</td>
</tr>
<tr>
<td>Torque-limiting screwdriver</td>
<td>COMMERCIALLY AVAILABLE</td>
<td>X</td>
</tr>
<tr>
<td>T10 bit for Torx® head screws (hexalobular internal driving screws)</td>
<td>COMMERCIALLY AVAILABLE</td>
<td>X</td>
</tr>
</tbody>
</table>

**NOTE:** (1) The meanings of the numbers in the USE column are as follow:
   1: TESTING, 3: DISASSEMBLY, 4: CLEANING, 5: CHECK, 6: REPAIR, 7: ASSEMBLY.

**NOTE:** (2) Cospas Sarsat tester equivalent properties
   - Capable of measuring power and frequencies of 121.5 and 406.037 MHz
   - Capable of decoding a COSPAS-SARSAT digital message
3. Consumables

NOTE: Equivalent substitutes can be used.
(1) List of Consumables (Refer to Table 9002 / 25-63-08-992-902-A01).

Table 9002 / 25-63-08-992-902 : Consumables

<table>
<thead>
<tr>
<th>DESIGNATION</th>
<th>CODE</th>
<th>SUPPLIERS TRADE NAME AND ADDRESS</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIN FEMALE SVH-21T-P1.1 JST</td>
<td></td>
<td>JST FRANCE S.A.S. Z.I. Vitry Marolles B.P. 23 51301 Vitry le Français FRANCE</td>
<td>X</td>
</tr>
<tr>
<td>LINT-FREE RAG</td>
<td></td>
<td>COMMERCIALY AVAILABLE</td>
<td>X</td>
</tr>
<tr>
<td>SOFT BRUSH</td>
<td></td>
<td>COMMERCIALY AVAILABLE</td>
<td>X</td>
</tr>
</tbody>
</table>

NOTE: The meanings of the numbers in the USE column are as follow:
1: TESTING, 3: DISASSEMBLY, 4: CLEANING, 5: CHECK, 6: REPAIR, 7: ASSEMBLY.
1. Introduction

A. General

(1) This ILLUSTRATED PARTS LIST (IPL) is prepared to ATA Specification 2200 (iSpec2200). It is divided as follows:
- INTRO: Introduction
- OPL: Optional Parts List
- VCL: Vendor Code List
- EDI: Equipment Designator Index
- NI: Numerical Index (in alphanumeric order)
- Detailed Parts List.

B. Function and Use

(1) The IPL contains a list of all the components used in the equipment. Its function is to help the procurement of parts and subassemblies. The parts given in the IPL must be procured by the Part Numbers and from the manufacturers given in the Parts List. If not, the warranty can be cancelled.

(2) It is possible to identify parts as follows:
(a) From the Manufacturer's Part Number

1. Find the related Part Number in the Numerical Index (alpha and num). The columns to the right give the figure and item number of the part in the Detailed Parts List.

(b) From the Equipment Designator (for electronic components)

1. Find the equipment designator of the component on the Electrical Diagram. Then refer to the EDI to find:
   - The figure and item number of the component in the Detailed Parts List.
   - In some cases, there is an individual EDI for each PCB. In this case, the EDI has a GEO LOC column which shows the geographical location of the component on the figure (in relation to terminal 1 of the component).

(c) If the Part Number or Equipment Designator of the Part are not known

1. Look for the figure which shows the part and its item number. Then refer to the Detailed Parts List to find its Part Number.

C. How to use the Detailed Parts List

(1) The Detailed Parts List contains one or more figures which show the main assemblies of the equipment. Details of the parts are given on the opposite and subsequent pages.

(2) The list is divided into these columns:
- 1st column: Figure Item - Figure and Item number
- 2nd column: Part Number - Manufacturer's Part Number
- 3rd column: Airline Stock Number
- 4th column: Nomenclature
- 5th column: Effectivity Code
- 6th column: Units per assy - Quantity for the next higher assembly.
(3) Details of the columns:

(a) Figure and Item Number

- The figure number is given on the first line at the top of each page. Each item in the parts list which has a part number also has an item number. If there is a dash in front of an item number, the item is not shown on the figure. A letter before the item number refers to the figure which shows a variant of the related part. A letter after the item number identifies a variant of the part.

(b) Part Number

- Each assembly, subassembly and detail part has a manufacturer's Part Number (if it is shown on the figures or not). If the Part Number has more than 15 characters, the data in this column is given for identification only. The full manufacturer's Part Number is given in the NOMENCLATURE column, after the indication “ORDER OVERLGLTH MPN...”. It is followed by the FSCM (Federal Supply Code for Manufacturer).

(c) Airline Stock Number

- This column is for airline use.

(d) Nomenclature

- The NOMENCLATURE column gives the names of the assemblies and parts. The indication “ATTACHING PARTS” shows the parts which attach an assembly or part. These attaching parts are given directly below the assembly or part they attach. The next line has three asterisks, the first of which is directly below the item which is attached.

- A Vendor Code is given for all the items which do not have a prime manufacturer's Part Number. This Vendor Code is given at the right of the NOMENCLATURE column. The addresses and codes of Vendors are given in the VENDOR CODE LIST.

- If a part can come from a range of possible parts, the indication "SEL FROM" is given below the part. The indication "ESDS" is given in the NOMENCLATURE column for electronic components which are sensitive to electrostatic discharges.

(e) Effectivity Code

- The Effectivity Code is a letter which shows the interchangeability of the parts on a figure, as shown below:

<table>
<thead>
<tr>
<th>FIGURE ITEM</th>
<th>PART NUMBER</th>
<th>AIRLINE STOCK NO.</th>
<th>NOMENCLATURE</th>
<th>EFF. CODE</th>
<th>UN PER ASSY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- 1A</td>
<td>B490AAM0101</td>
<td>UNIT</td>
<td>UNIT</td>
<td></td>
<td>RF</td>
</tr>
<tr>
<td>- 1B</td>
<td>B490AAM0202</td>
<td>UNIT</td>
<td>UNIT</td>
<td></td>
<td>RF</td>
</tr>
<tr>
<td>- 1C</td>
<td>B490AAM0303</td>
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<td>RF</td>
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<td>- 1D</td>
<td>B490AAM0404</td>
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<td></td>
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<td>20A</td>
<td>F2345670</td>
<td>.SUBASSY</td>
<td>1A</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
The detail part with item number 10A can only be installed in the unit with item number 1A.
- The detail part with item number 10B can be installed in units 1A, 1B and 1C.
- The detail part with item number 10C can only be installed in unit 1D.
- The subassembly with item number 20A can only be installed in unit 1A.
- The subassembly with item number 20B can be installed in units 1A, 1B and 1C.
- The subassemblies with item numbers 20C and 20D and their attaching parts 30A can be installed in all the units with item number 1. Thus, they do not have an effectivity code.
- The detail part with item number 40A can only be installed in the subassembly with item number 20A.
- The detail part with item number 40B can be installed in subassemblies 20A, and 20B.
- The detail part with item number 40C can be installed in subassemblies 20A, 20B and 20C.
- The detail part with item number 40D can only be installed in subassembly 20D.

(f) Units per Assy

1 The UNITS PER ASSY column shows the number of parts necessary for the next higher assembly. For some assemblies or parts, the number is replaced by the letters RF (for Reference) and AR (As Required).
D. Abbreviations used in the Detailed Parts List

(1) List of abbreviations

AR : As Required
AMDMNT : Amendment
DET : Detail
EFF : Effectivity
ESDS : Electrostatic Discharge Sensitive
NHA : Next Higher Assembly
NP : Not Procurable
OPT : Optional
ORDER OVERLGTH MPN : Order Overlength Manufacturer's Part Number
POST SB : Post Service Bulletin
PRE SB : Pre Service Bulletin
R : Revised
RF : For Reference
SEL FROM : Select From
SUPSD BY : Superseded By
SUPSDS : Supersedes
## VENDOR CODE LIST

<table>
<thead>
<tr>
<th>CODE</th>
<th>VENDOR'S ADDRESS</th>
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</thead>
<tbody>
<tr>
<td>VFFDI</td>
<td>FDI (FERRÉ DISTRIBUTION INDUSTRIELLE) 2 RUE FREBARDIERE 35510 CESSON SEVIGNE FRANCE</td>
</tr>
<tr>
<td>VFAU27</td>
<td>Orolia S.A.S ZI DES CINQ CHEMINS CS10028 56520 GUIDELE FRANCE</td>
</tr>
</tbody>
</table>
## EQUIPMENT DESIGNATOR INDEX

(TASK 25-63-08-960-801-A01)

<table>
<thead>
<tr>
<th>EQUIPMT DESIG</th>
<th>GEO LOC</th>
<th>FIGURE</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT1</td>
<td></td>
<td></td>
<td>120A</td>
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</tbody>
</table>
## NUMERICAL INDEX

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>AIRLINE STOCK NO.</th>
<th>FIGURE</th>
<th>ITEM</th>
<th>TLA REQ</th>
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(25-63-08-950-010-A01)
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TASK 25-63-08-550-801-A01

1. Storage
   A. General
      (1) General
         (a) Ensure that the switch is in the OFF position.
         (b) Put the ELT in its transport package, taking all necessary steps to protect it from any possible impact.
         (c) On the package, affix a label giving the following indications:
            • manufacturer company name;
            • equipment name;
            • equipment part number;
            • equipment serial number;
            • date of next servicing;
            • date of delivery.