UNITED KINGDOM

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**CODING AND REGISTRATION OF UK 406 MHz EMERGENCY LOCATOR TRANSMITTERS (ELTs)**

## 1 General

1.1 This Circular has been produced to provide guidance on the options available when coding, and the method of registering, 406 MHz ELTs when installed in UK registered aircraft.

1.2 Registration, in accordance with paragraph 3 of this Circular, should be with the United Kingdom Mission Control Centre at the address below:

United Kingdom Mission Control Centre (UKMCC)
Aeronautical Rescue Co-ordination Centre (ARCC)
Royal Air Force Kinloss
Forres
Morayshire
IV36 3UH

Tel: 01309-678304
Fax: 01309-690717
E-mail: ukmcc@atlas.co.uk

1.3 The UKMCC has issued guidance on the coding, registration and testing of 406 MHz ELTs: this is reproduced below.

1.4 Further information, if required, may be obtained from the Cospas-Sarsat system documents, which are available to be downloaded from their web site at http://www.cospas-sarsat.org or from the UKMCC at the address above. The documents that are felt to be of prime interest are:

(a) G.003 - Introduction to the Cospas-Sarsat System;
(b) G.005 - Guidelines on 406 MHz Beacon Coding, Registration and Type Approval; and
(c) S.007 - Handbook of Regulations on 406 MHz and 121.5 MHz Beacons.

1.5 Until further notice, all new beacons should transmit on the channel of 406.028 MHz as the initial channel of 406.025 MHz has reached capacity. Cospas-Sarsat will notify further channels as the need arises in the future.

## 2 Coding

2.1 Each message sent by a 406 MHz ELT must include the unique identification of the ELT. The complete ELT identification code includes protocol flag, protocol code, country code and identification data.

2.2 The current available coding options that are acceptable to the ARCC are:

| List of Available Coding Options for User Protocols | | |
|---|---|---|
| Application | Identification Data | Protocols |
| ELTs (Aviation) | Unique ELT Serial Number* | Serial User |
| | Aircraft Operator Designator and Serial Number* | Serial User |
| | UK issued 24-bit Mode S Aircraft Address Code *** | Serial User |
| | Aircraft Registration Marking | Aviation User |

2.3 Those models of 406 MHz ELTs capable of transmitting position information obtained from a navigational device such as GPS or the aircraft navigation system require to be coded with one of the following Location Protocols:

| List of Available Coding Options for Location Protocols | | | |
|---|---|---|---|
| Application | Identification Data | Location Data | Protocols |
| ELTs (Aviation) | Unique ELT Serial Number* | 4 minute resolution | User Location |
| | | 4 second resolution | Standard Location |
| | | 15 minute resolution | Standard-Short Location |
| | Aircraft Operator Designator and Serial Number* | 4 minute resolution | User Location |
| | | 4 second resolution | Standard Location |
| | | 15 minute resolution | Standard-Short Location |
| | UK issued*** 24-bit Aircraft Address Code | 4 minute resolution | User Location |
| | | 4 second resolution | Standard Location |
| | | 15 minute resolution | Standard-Short Location |
| | Aircraft Registration Marking | 4 minute resolution | User Location |
| | Serial Number* Assigned by Administration** | 4 second resolution | National Location |
| | | 2 minute resolution | National-Short Location |

(The above definitions are simplified. A full explanation of the coding options may be obtained from the document T.001 Specification for Cospas-Sarsat 406 MHz Distress Beacons - Annex A).

**Note 1:** (*) Serial number means a unique number assigned by an administration or a beacon manufacturer. Assigned serial numbers must provide a unique beacon identification when used with the country code. Serial numbers assigned by a manufacturer must provide a unique beacon identification when used with the Cospas-Sarsat type approval certificate number assigned to that beacon model.

**Note 2:** (**) At present, the UK cannot accept National Location Protocols due to potential confusion with serial numbers assigned to maritime beacons.

**Note 3:** (***) 24-bit Address Codes are issued on request to individual civil aircraft for coding Mode S ATC Transponders and ELTs where required. These are available by e-mailing: a&c@srg.caa.co.uk or by sending a facsimile to: +44 (0)1293-573860. On subsequent transfer of the aircraft to another ICAO member state the 24-bit ATC Transponder/ELT Mode S address code must be replaced by an address code issued by the new State of Registry. 24-bit Address Codes for UK Military aircraft are assigned by Surveillance and Spectrum Management, Directorate of Airspace Policy, CAA House, 45-59 Kingsway, London WC2B 6TE, Tel: 020-7453 6534, Fax: 020-7453 6565.

2.4 At present the Country Code used for UK Aviation ELTs must be 232. Application is being made for an additional code to be used in coding UK Aviation ELTs to eliminate the confliction with maritime beacons.

## 3 Registration

3.1 All 406 MHz ELTs should be registered with the UKMCC, even if not fitted to an aircraft. Many ELTs are inadvertently activated when in storage or transit, and these false alerts invariably result in SAR action if the owner cannot be identified and questioned.

3.2 It is of extreme importance that a 24-hour telephone contact number is provided when registering ELTs and that the UKMCC should be informed subsequently if the owner and/or contact number are changed. A copy of the form to be used when registering ELTs is shown at Annexe A to this Circular.

## 4 Testing

4.1 A 406 MHz ELT should be designed to perform a short self-test. The self-test transmission may consist of a short duration emission of a single burst. If the beacon transmits in the self-test mode, the signal must have a frame synchronisation pattern of 011010000 to ensure that the satellite or ground equipment will not process this test transmission. This eliminates the risk of a false alert being generated by the self-test burst. Unless prior co-ordination has been accomplished in accordance with Cospas-Sarsat document C/S A.004 'Cospas-Sarsat System Exercising', no other test transmissions are permitted when using a beacon coded with an 'operational' protocol, as any such test could generate a false alert. In addition, self-test transmissions must be kept to a minimum as they interfere with 'real' 406 MHz distress alerts.

## 5 Further Information

5.1 A point of contact at the Safety Regulation Group for further information on ELT matters, **for operators of UK registered aircraft**, is:

Mr E Golden
Civil Aviation Authority
Safety Regulation Group
1W Aviation House
Gatwick Airport South
West Sussex RH6 0YR
Tel: 01293-573539
Fax: 01293-573991
E-mail: ed.golden@srg.caa.co.uk

This Circular is issued for information, guidance and necessary action.

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**ANNEXE A**

**UNITED KINGDOM**
**406 MHz EMERGENCY LOCATOR TRANSMITTER (ELT) REGISTRATION FORM**

**Please e-mail, fax or post the completed form to:**
UK ELT Database, UKMCC, ARCC, RAF Kinloss, Forres, IV36 3UH, United Kingdom.
Telephone: +44 (0)1309-678304 Fax: +44 (0)1309-690717 E-mail: ukmcc@atlas.co.uk

**BEACON DETAILS:**
Insert the unique 15 Character Hexadecimal ELT Identification Code in the boxes below.
(If it is a location protocol ELT, the default 15 digit code is required i.e. not containing position information).

**Tick appropriate box:**
☐ New ELT Registration
☐ Change of Coding
☐ Change of Information or Ownership

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

Complete **ONLY ONE** of the four boxes below, according to the coding of the ELT:

| | |
|---|---|
| Unique Serial No. of ELT: | Aircraft Operator Designator and Operator's Serial No: |
| Aircraft Registration Mark: | UK-Allocated 24-Bit Aircraft Address: |

ELT Manufacturer: _____ Model No: _____ Battery Expiry Date: _____

**AIRCRAFT DETAILS** (Not required if nominated 24-Hour Emergency Contact can provide full details):

| Aircraft Manufacturer and Type: | Max POB: | Aircraft Registration Mark: | Principal Airport: |
|---|---|---|---|
| | | | |

**ELT OWNER / OPERATOR INFORMATION:**

| | |
|---|---|
| Owner's Name: | |
| Address: | |
| Postcode: | Country: |
| Telephone: Home: | Work: |
| Facsimile: Home: | Work: |

PRIMARY 24-HOUR POINT OF CONTACT **(MANDATORY)**

Name:

Telephone: Home: Work:

ALTERNATE 24-HOUR POINT OF CONTACT

Name:

Telephone: Home: Work:

SECOND ALTERNATE 24-HOUR POINT OF CONTACT

Name:

Telephone: Home: Work:

**REMARKS/FURTHER INFORMATION**

ELT REGISTRY USE ONLY

UKMCC REF No:

Created By:

Date:

Notes:

☐ Tick here if this ELT is a replacement for a previously registered ELT.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

If so, enter the 15-Hex Identifier of the old ELT here and give details of how it has been disposed of in the Remarks/Further Information box.

**Data Protection Act 1998.**
**The information provided on this form will be used only for assisting in the saving of life. None of the details provided will be passed to any third party other than those concerned with distress alert processing, search and rescue operations and those in the UK responsible for the maintenance of distress beacon registry records.**