TYPE APPROVAL CERTIFICATE

For a 406 Megahertz Distress Beacon for use with the Cospas-Sarsat Satellite System

Certificate Number: 184

Manufacturer: McMurdo Ltd., United Kingdom

Beacon Type: PLB

Beacon Models: Fastfind, Fastfind Plus

Additional Model Names: FASTFIND MAX, FASTFIND MAX G

Test Laboratory: TUV Product Service Ltd., Fareham, United Kingdom

Date of Test: August – December 2007

Details of the beacon features and battery type are provided overleaf.

The Cospas-Sarsat Council hereby certifies that the 406 MHz Distress Beacon Model identified above is compatible with the Cospas-Sarsat System as defined in documents:

C/S T.001 Specification for Cospas-Sarsat 406 MHz Distress Beacon
Issue 3 – Rev. 7, November 2005

C/S T.007 Cospas-Sarsat 406 MHz Distress Beacon Type Approval Standard
Issue 4 – Rev. 1, October 2006

Date of the Original TAC 184 Issued to Signature Industries Ltd.: **5 February 2008**
Date of TAC 184 Re-issue to McMurdo Ltd.: **18 November 2009**

D. Levesque
Head of Cospas-Sarsat Secretariat

NOTE, HOWEVER:

1. This certificate does not authorize the operation or sale of any 406 MHz distress beacon. Such authorization may require type acceptance by national administrations in countries where the beacon will be distributed, and may also be subject to national licensing requirements.

2. This certificate is intended only as a formal notification to the above identified manufacturer that the Cospas-Sarsat Council has determined, on the basis of test data of a beacon submitted by the manufacturer, that 406 MHz distress beacons of the type identified herein meet the standards for use with the Cospas-Sarsat System.

3. Although the manufacturer has formally stated that all beacons identified with the above model name(s) will meet the Cospas-Sarsat specification referenced above, this certificate is not a warranty and Cospas-Sarsat hereby expressly disclaims any and all liability arising out of or in connection with the issuance, use or misuse of the certificate.

4. This certificate is subject to revocation by the Cospas-Sarsat Council should the beacon type for which it is issued cease to meet the Cospas-Sarsat specification. A new certificate may be issued after satisfactory corrective action has been taken and correct performance demonstrated in accordance with the Cospas-Sarsat Type Approval Standard.

5. Cospas-Sarsat type approval testing requirements only address the electrical performance of the beacon at 406 MHz. Conformance of the beacon to operational and environmental requirements is the responsibility of national administrations.

Certificate Number: 184 Dated: 18 November 2009

Operating temperature range: -20°C to +55°C

Battery Details: Energiser L91, Lithium-Iron Disulphide (Li-FeS_2, 7xAA-cells)

Operating Lifetime: 48 hours

Transmit Frequency: 406.037 MHz

Beacon Model Features:

- Internal Navigation device (GPS) produced by u-Blox, model "TIM-4P" [(1)];
- 121.5 MHz auxiliary radio locating device (power 40 mW, duty cycle – 99%);
- Messages of long[(1)] and short[(2)] format;
- Integrated antenna;
- Self-test mode with one burst of 520 ms[(1)] or 440 ms[(2)]; and
- Beacons were tested only in PLB configurations, corresponding to beacon operation while on ground and above ground.

Approved Beacon Message Protocols: Beacon is approved for encoding with the message protocols indicated with "Yes" and black text below:

USER PROTOCOLS		USER-LOCATION PROTOCOLS		LOCATION PROTOCOLS	
Yes	**Maritime with MMSI [(2)]**	**Yes**	**Maritime with MMSI [(1)]**	**Yes**	**Standard Location: EPIRB with MMSI [(1)]**
Yes	**Maritime with Radio Call Sign [(2)]**	**Yes**	**Maritime with Radio Call Sign [(1)]**	**Yes**	**Standard Location: EPIRB with Serial Number[(1)]**
No	EPIRB Float Free with Serial Number	No	EPIRB Float Free with Serial Number	No	Standard Location: ELT with 24-bit Address
Yes	**EPIRB Non Float Free with Serial Number [(2)]**	**Yes**	**EPIRB Non Float Free with Serial Number [(1)]**	No	Standard Location: ELT with Aircraft Operator Designator
Yes	**Radio Call Sign [(2)]**	No	Radio Call Sign	No	Standard Location: ELT with Serial Number
No	Aviation	No	Aviation	**Yes**	**Standard Location: PLB with Serial Number [(1)]**
No	ELT with Serial Number	No	ELT with Serial Number	**Yes**	**National Location: EPIRB[(1)]**
No	ELT with Aircraft Operator and Serial Number**	No	ELT with Aircraft Operator and Serial Number	No	National Location: ELT
No	ELT with Aircraft 24-bit Address	No	ELT with Aircraft 24-bit Address	**Yes**	**National Location: PLB [(1)]**
Yes	**PLB with Serial Number [(2)]**	**Yes**	**PLB with Serial Number [(1)]**		
No	National (Short Format Message)				
No	National (Long Format Message)				

Notes: (1) Applicable only to Fastfind Plus and FASTFIND MAX G;
(2) Applicable only to Fastfind and FASTFIND MAX.