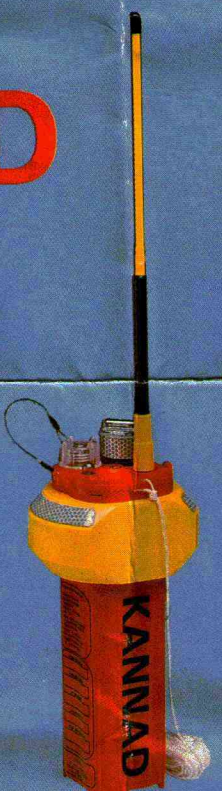
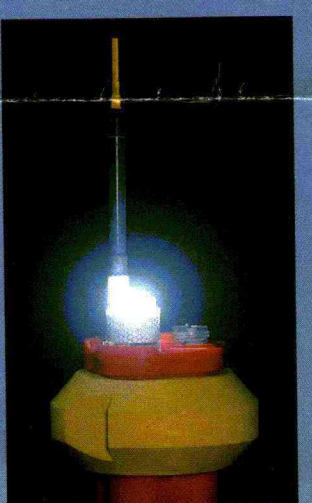
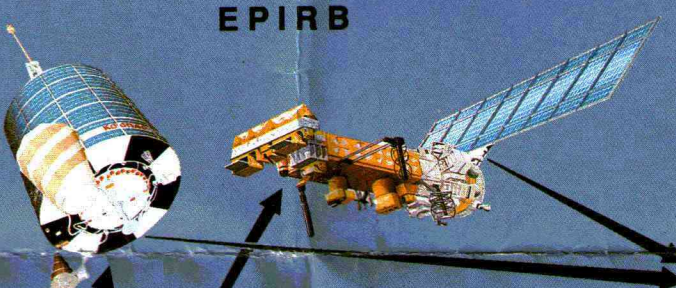
KANNAD 406 S



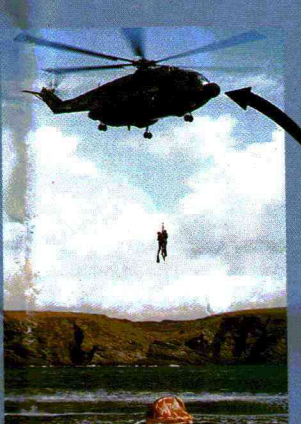


SATELLITE EMERGENCY POSITION INDICATING RADIOBEACON
EPIRB



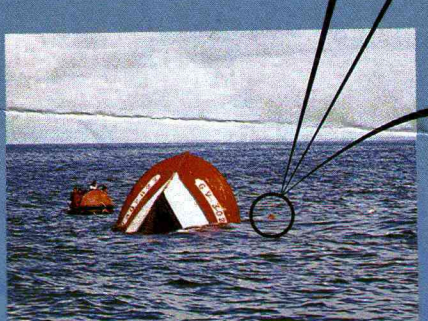
COSPAS – SARSAT SYSTEM

L.U.T.
GROUND STATION



S.A.R.
SEARCH AND RESCUE OPERATION

M.C.C.
MISSION CONTROL CENTRE



KANNAD 406
EPIRB

SOCIÉTÉ D'ÉTUDES ET DE RÉALISATION DE PROTECTION ÉLECTRONIQUE INFORMATIQUE ÉLECTRONIQUE SÉCURITÉ MARITIME
SERPE - IESM Z.I. des Cinq Chemins - 56520 GUIDEL - FRANCE TEL. 97 02 49 80 / 97 02 49 49 - FAX 97 65 00 20 - TELEX 950535

COSPAS SARSAT SYSTEM

The KANNAD 406 S survival satellite Emergency Position Indicating Radiobeacon (EPIRB) complies with COSPAS SARSAT specifications.

It provides :

- Quick identification. Each beacon has its own signature.
- Positioning within one nautical mile with an average waiting time, depending on latitude of :
  - 1 hr at mid latitudes
  - 2 hrs 30 in equatorial regions,

  anywhere in the world thanks to the global coverage of the COSPAS-SARSAT satellites.

Further more the 406 wave band is a dedicated international distress frequency and no message other than a distress signal can be transmitted on this frequency.

406 MHz Epirbs have been developed to replace 121,5 / 243 MHz Epirbs because of their poor performance and the numerous false alarms they cause. Some of the reasons are :

- No identification (the Epirb is not coded)
- No satellite storage (the message is lost if the satellite is not in line of sight with a ground station)
- Because of the high rate of false alarms, the message is checked before being responded to which loses precious time
- The position given is inaccurate (15 to 20 nautical miles)
- The satellite coverage is extremely limited (around 10 %) as opposed to global coverage for 406 MHz Epirbs.

KANNAD 406 S SURVIVAL TYPE

The KANNAD 406 S is housed in a small thermoformed A.S.A. (Acrylonitrile Styrene Acrylic) case that can be used as a compact storage container and easily bulkhead mounted. The survival type is only activated manually.

Weight : 2,350 kg - Dimensions : 398 x 160 x 116 mm (beacon and case).

Thanks to its reduced size and weight, the Kannad 406 S is ideal for small fishing vessels that do not have to carry a float free type model on board, yachts, life rafts, etc …

The Kannad is also available as a float free type model (Kannad 406 FH) which is ejected and automatically activated at a depth of less than 4 metres to transmit your distress signal (position and identity).

FRANCE U.S.A. CANADA USSR

The only Epirb to be simultaneously type approved by the 4 founding members of COSPAS/SARSAT programme amongst many other type approvals world-wide.

GENERAL CHARACTERISTICS

- Temperature range : - 20° C + 55° C (Class II)
  - 40° C + 55° C (Class I)
- Storage temperature : - 40° C + 70° C
- Batteries : lithium Li SO Cl2
  - High energy
  - To be replaced every 4 years
- Operating life :
  - 48 hours mini at - 20° C (Class II)
  - 48 hours mini at - 40° C (Class I)
  - up to 100 hours at + 20° C
- Housing made of orange polycarbonate with a high resistance against shocks
- Watertight at 1 bar
- Dimensions : Ø 150 x 370 mm (antenna not deployed)
- Weight : 1,75 kg
- Battery test

UK DOT TYPE APPROVAL N° KM 240

TECHNICAL SPECIFICATIONS

406 MHz SATELLITE TRANSMISSION

- Frequency : 406,025 MHz ± 0.002 MHz
- Frequency stability
  - — Short term : ≤ 0.002 parts/million
  - — Medium term :
    - Mean slope : ≤ 0.001 parts / 10^6 / minute
    - Residual noise : ≤ 0.003 parts / 10^6
- UHF power output : 5 W ± 2 dB
- Phase modulation : 1.1 ± 0.1 radians peak
- Repetition period : 50 secs ± 5 %
- Transmission time : 440 m sec ± 1 %
- Coded digital message

121,5 MHz HOMING TRANSMISSION

- Frequency : 121,5 MHz
- Frequency tolerance : 50 parts/million
- Output power : 75 mW
- Modulation : 3K20A3N
- Continuous duty cycle : 33 % - 55 %
- Continuous transmission
- Complies with the new ICAO recommendations

MANUFACTURER :
SERPE - IESM ® FRANCE
Zone Industrielle des Cinq Chemins
56520 GUIDEL - FRANCE - ✆ 97 02 49 80
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INFORMATIQUE ELECTRONIQUE SÉCURITÉ MARITIME

INSPECTION AND OPERATION BOOKLET

SATELLITE EMERGENCY POSITION INDICATING RADIO BEACON

KANNAD 406 S
SURVIVAL TYPE
Class 2
ETS Type 300.066

COSPAS SARSAT

EMERGENCY INSTRUCTIONS

1 - Open container.

2 - Remove beacon from container.

3 - Deploy antenna.

4 - Unscrew transparent cap.

5 - Put switch in "*ON*" position.

6 - Screw transparent cap back on.

7 - After a few seconds, red lamp on cover flashes every 1/2 seconds during 50 seconds and then strobelight and red lamp flash.

8 - During 406 MHz transmission strobelight stops flashing and red lamp flashes to send distress message to Cospas-Sarsat satellites.

INDEX

DESCRIPTION OF THE COSPAS-SARSAT SYSTEM

COSPAS-SARSAT is a global distress warning system operating on an exclusive frequency (406,025 Mhz) used to determine the vessel position, transmit its identification and alert the Search And Rescue Services (S.A.R.).

It consists of :

- Seven satellites on 100 minute polar orbits
- 23 Local User Terminals (LUT's)
- Mission and Rescue Control Centers (MRCC's)
- Satellite emergency position indicating radio beacons (EPIRB's).

When operating, the beacon transmits a 0,44 second long message carrying the vessel identification code or serial number every 50 seconds. This message which is kept in the receiving satellite memory is retransmitted when the satellite is in view of a L.U.T.

After data processing, the L.U.T. receives the identity and the position of the Vessel to an accuracy of one nautical mile. This information is then transmitted to the MRCC.

The beacon simultaneously transmits a continuous signal on the aeronautic 121,5 MHz frequency. This frequency makes rescue operations easier through a "Homing" procedure.

KANNAD 406 EPIRBs GENERAL

The "KANNAD 406" Satellite Emergency Position Indicating Radio Beacon is a unique breakthrough in SEARCH and RESCUE operations. It can be quickly positioned and identified to within 1 nautical mile.

Thanks to the satellite global coverage, your emergency signal can be picked up anywhere, no matter how remote.

KANNAD 406 meets requirements for COSPAS-SARSAT satellite EPIRBs.

KANNAD 406 operates with two transmitters :

- a UHF band 406,025 MHz frequency to position and identify the signal through the COSPAS-SARSAT satellites ;
- a VHF band 121,5 MHz aeronautical distress frequency to facilitate the final search by the "Homing" procedure.

KANNAD 406 can be used on board vessels of any size with the following advantages :

- Easy storage (even in small sized areas)
- Easy handling in the critical phase of an emergency due to its ergonomic shape
- Easy and safe operation.

KANNAD 406 beacon is made of safety orange injected polycarbonate, highly resistant to shocks. Its bright light flashing indicates good operating order.

The survival version is supplied in a thermoformed ASA* case.

KANNAD 406 is buoyant in operation and watertight at 1 bar (over 33 feet of water) and has been designed to be towed from a liferaft.

Note : * A.S.A. Acrylonitrile Styrene Acrylic

RECOMMENDATIONS
KANNAD 406 S - Survival type

- Beacon should be installed on board with easy access to the screw in case of an emergency.

- The beacon is sturdy and protected by its container, but nevertheless great care should be taken during storage and installation.

- Beacon should be stored inside its container.

- Keep it away from high temperatures (motor ...).

IMPORTANT NOTICE

In the case where the beacon has been activated but the vessel and its crew are no longer in danger, it is very important not to disarm the beacon until the SAR services have been informed by whatever means possible that the distress situation is over.

Beacon activation initiates a world-wide COSPAS-SARSAT alert with rapid deployment of costly rescue operations and turning off the beacon too early could cause great disruption to SAR operations which may already have begun.

OPERATION PROCEDURE
KANNAD 406 S - Survival type - Class 2

OPERATING PRINCIPLE :

1 - Open container.

2 - Remove beacon from container.

3 - Deploy antenna.

4 - Unscrew transparent cap.

5 - Put switch in "*ON*" position.

6 - Screw transparent cap back on.

7 - After a few seconds, red lamp on cover flashes every 1/2 seconds during 50 seconds and then strobelight and red lamp flash.

8 - During 406 MHz transmission strobelight stops flashing and red lamp flashes to send distress message to Cospas-Sarsat satellites.

KANNAD 406 is a transmitter fitted with an omnidirectionnal antenna. To get the best link beacon to satellite, place beacon in an open area with antenna upright or throw it into water using a tether line.

1 - SELF TEST

Beacon should be tested once every six months by the end user.

Warning :

— Press test button.

— After 5 seconds, beacon operates a self test to check battery voltage and 406 MHz power.

— If red light flashes regularly every 1/2 seconds, the beacon operates correctly.

— Test stops automatically after 50 seconds.

— If red light flashes in an irregular fashion, one of the two parameters controlled (battery voltage or 406 MHz power) is defective.

Repeat 3 times to confirm defect before contacting agent.

A defective test do not mean beacon does not work.

..... /7

TEST PROCEDURE
KANNAD 406 S - Survival type - Class 2

2 - EVERY 2 YEARS

We recommend that servicing should be performed by a recommanded agent who will check the beacon completely, and check the watertightness. Work will be carried out on a charge basis for parts and labour, as it is not included in our warranty.

3 - EVERY 4 YEARS

Test performed by recommended agent.

The battery pack must be replaced and the beacon operation checked thoroughly. Work will be carried out on a charge basis for parts and labour, as it is not included in our warranty.
The operation described in the 2 year test will also be performed.

Warning :

The battery replacement must be performed only by a recommended agent who will dispose of it.

- Do not open beacon.
- Do not charge battery.
- Do not throw in fire.
- Do not expose to temperature over 70° C.
- Do not short circuit.

If the beacon is used for other than EPIRB testing, the batteries must be changed irrespective of duration of transmission.

Advisory :

Please contact your airline for guidance if you intend to utilize air transport for an EPIRB c/w lithium battery pack.

HOW TO KEEP THE INSPECTION AND OPERATIONAL BOOKLET AND REGISTRATION CARD

1 - This booklet must follow the Radio Beacon in all its successive assignments.

2 - It must be kept on board with the other safety documents and be shown on request to the Maritime Authorities.

3 - On termination of each periodic inspection carried out by the service station and authorized by the manufacturer, this booklet must be completed in and signed.

4 - After any periodic or unexpected inspection, the booklet has to be signed by the Maritime Authorities.

5 - In case of a new assignment of the radio beacon or change of Vessel's name or owner, advise the Department of Transport (for the U.K.) or relevant Registration Services and the manufacturer's authorized agent so that maintenance may be continued.

REGISTRATION : (where applicable)

The code programmed into the EPIRB and imprinted on the registration card will not be changed during the life of the unit. It is very important that the registration details held by the SAR authorities are up-to-date.

Upon purchase of the KANNAD 406 MHz EPIRB, the end-user should complete the registration card and mail it to the Department of Transport (for the U.K.) or relevant Registration Services. If no acknowledgement is received within a month, the user should contact the Registration Section of the Maritime Authorities.

**** WARNING ****

*** THIS TRANSMITTER IS AUTHORIZED FOR USE ONLY DURING SITUATIONS OF GRAVE AND IMMINENT DANGER ***

— If the beacon transmits other than in an emergency (test lamp flashing), INFORM THE LOCAL SAR SERVICES of the false alarm to cancel the research operations and stop it immediately.

— In the event of a distress, the presence of the 406 MHz beacon on board must not in any way change normal abandonment procedures even if the distress message is transmitted via the COSPAS-SARSAT system.

It is unlawful to transmit a distress signal unless an emergency exists. Turning this unit on initiates a signal on the international distress frequencies.

Any unjustified alert will involve penalties.

❖❖❖❖❖❖❖

KANNAD 406
TECHNICAL SPECIFICATIONS

- Temperature range : -20° C +55° C
- Storage temperature : -40° C +65° C
- Batteries lithium chloride Li SO Cl 2 :
  - High energy - To be replaced every 4 years.
- Operating life : 48 hours mini at -20° C or 100 hours at +20° C
- Housing made of orange valox with a high resistance against shocks
- Watertight at 1 bar
- Dimensions : Ø 150/370 mm (antenna not deployed)
- Weight : 1,75 kg
- Strobe light : 0,75 candela flashing 20 times per minute
- Battery test

406 MHz SATELLITE TRANSMISSION

- Frequency : 406,025 MHz ± 0.002 MHz
- Frequency stability :

— Short term : ≤ 0.002 parts / million

— Medium term : - Mean slope : ≤ 0.001 part / 10^6 / minute
- Residual noise : ≤ 0.003 parts / 10^6

- UHF power output : 5 W ± 2 dB
- Phase modulation : 1.1 ± 0.1 radians peak
- Repetition period : 50 secs ± 5 %
- Transmission time : 440 m sec ± 1 %
- Coded digital message

121,5 MHz HOMING TRANSMISSION

- Frequency : 121,5 MHz
- Frequency tolerance : 50 parts/million
- Output power : 75 mW -2 +3 dB
- Modulation : 3K20A3N
- Modulation duty cycle : 50 %
- Continuous transmission
- Complies with the new ICAO recommendations

BATTERY PACK

Reference : IESM 4LSH 20 SER.

PRE-DELIVERY INSPECTION LOG :

☒ Battery (to be replaced every 4 years) : .....

Batch date : .....

Replacement date : FEV. 2003

☒ Housing inspection : .....

☒ Watertight verification : .....

☒ Silicagel bags : .....

☒ 121,5 MHz transmission : .....

☒ 406 MHz transmission : .....

☒ General operation : .....

First installation date : .....

.....

NEXT INSPECTION DUE ON : FEV. 2001

.....

INSPECTION SERVICE : .....

.....

Date : 24 AOUT 1998

Signature and stamp

SERPE-IESM

Contrôle Qualité

PERIODIC INSPECTION LOG

❑ Battery :

Batch date : .....

Replacement date : .....

❑ Housing inspection : .....

❑ Watertight verification : .....

❑ Silicagel bags : .....

❑ 121,5 MHz transmission : .....

❑ 406 MHz transmission : .....

❑ Frequency adjustment : .....

❑ General operation : .....

NEXT INSPECTION DUE ON :

.....

Remarks : .....

.....

NSPECTION SERVICE : .....

.....

)ate : .....

ignature et Stamp

BEACON LOCATION LOG

VESSEL NAME : .....

RADIO CALL SIGN / MMSI
or SERIAL N° : .... UK 9259/25501 .....

PORT OF REGISTRY : .....

INSTALLATION DATE : .....

REMOVAL DATE : .....

INSPECTION STAMP
Date, Signature

VESSEL NAME : .....

RADIO CALL SIGN / MMSI
or SERIAL N° : .....

PORT OF REGISTRY : .....

INSTALLATION DATE : .....

REMOVAL DATE : .....

INSPECTION STAMP
Date, Signature

NOTES

Distributed by :

Ocean Safety Ltd.
Centurion Ind. Park
Bitterne Road West
Southampton SO18 1UB
Tel: 01703 333334

Manufacturer : **SERPE / IESM**
Z.I. des Cinq Chemins - 56520 GUIDEL - FRANCE
Phone : +33 (0) 2 97 02 49 80 - Fax : +33 (0) 2 97 65 00 20
Telex : 950.535

Model : **KANNAD 406 S**
Survival type - ETS 300.066

Type Approval N° :

Serial number : 330889
or
~~Radio call sign~~ :
or
MMSI : 257744610.