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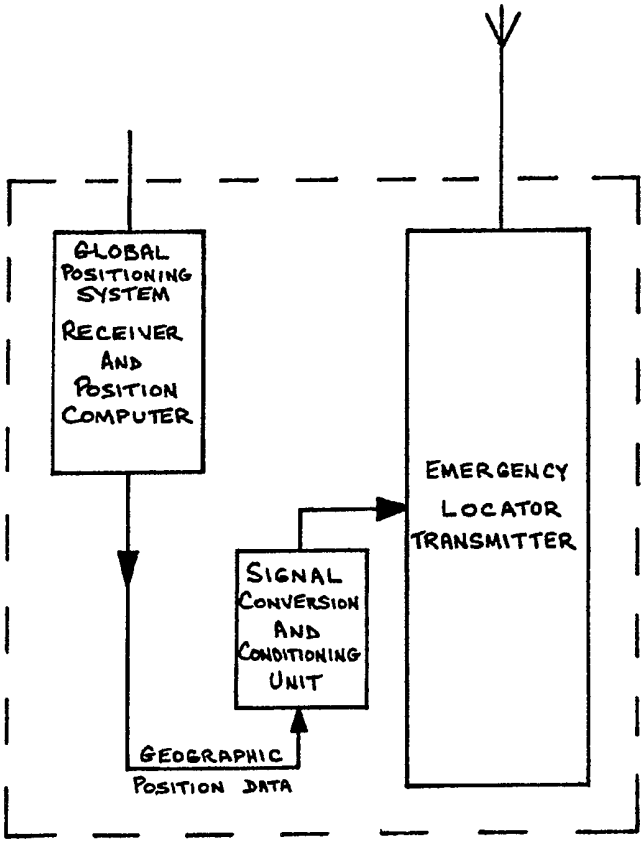
(56) Documents Cited
GB 1518971 A **GB 1484452 A** **EP 0467651 A**
US 4833477 A **US 4547778 A**

(58) Field of Search
UK CL (Edition L) **H4D DAB DBR DPBC , H4L LETD LETXX**
INT CL[5] **G01S**

(54) Emergency locator transmitter

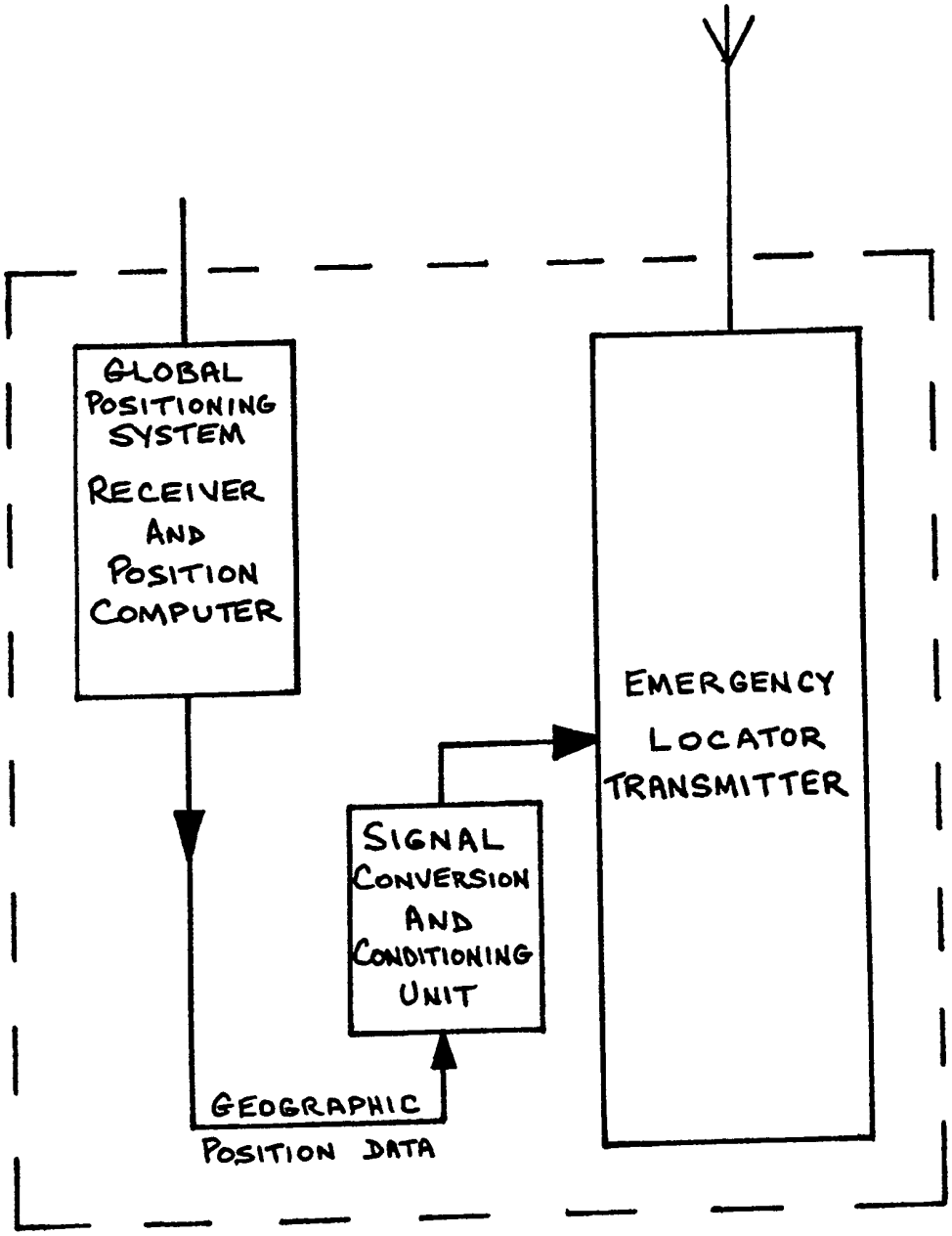
(57) An emergency locator transmitter is combined with a GPS receiver for determining the geographical position of the transmitter. The transmitter transmits radio signals for location and homing purposes which include information on the geographical position of the transmitter.

FIGURE 1



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FIGURE 1


GLOBAL POSITIONING SYSTEM RECEIVER AND POSITION COMPUTER
EMERGENCY LOCATOR TRANSMITTER
SIGNAL CONVERSION AND CONDITIONING UNIT
GEOGRAPHIC POSITION DATA

EMERGENCY LOCATOR TRANSMITTER

This invention relates to emergency locator transmitters. These devices are widely used, but not exclusively, in the aviation and marine environments. They are also described by a variety of terms such as Emergency Locator Beacons, Radio Distress Beacons or Personal Locator Beacons. For the purpose of this invention, the term emergency locator transmitter (ELT) will be used to cover all applications.

The essential feature of an ELT is that it is a radio transmitter which is activated in case of an emergency. It transmits a radio signal on one or more frequencies reserved for emergency use only. The transmissions act as a beacon enabling search and rescue services to locate the transmitter. For a variety of reasons the transmissions have only a limited range. It is therefore necessary to know the approximate position of the beacon before a detailed search can be made to pinpoint its exact location. This difficulty is increasingly being overcome by the use of suitable receivers in satellites. The information received from one or more satellites then has to be processed by ground stations to determine an approximate position, prior to making a detailed search. This can take a significant time and the approximate location can cover a very large area. The ELT may transmit for only a relatively short period.

According to this invention, there is provided an emergency locator transmitter in combination with means for determining the geographical position of the transmitter, which transmits radio signals for location and homing purposes and includes in the transmitted radio signals information on the geographical position of the transmitter.

Preferably the said means for determining the geographical position of the transmitter is by means of a satellite based navigation system. Such a satellite based navigation system, known as the Global Positioning System (GPS), enables ground-based receivers to determine the geographical position of the receiver with great accuracy. The components within such a receiver which enable this calculation to be made could be incorporated in an ELT without a significant increase in the size or weight of the ELT. Figure 1 illustrates the essential components of such a system.

Position information could be transmitted on first activation of the ELT. Thereafter it could be transmitted intermittently. This could be achieved automatically or by manual control. Because of the accuracy of the information transmitted, the periods of transmission could be reduced to extend the overall period of operation on the limited battery power available. A variety of methods for using this position information and ways of transmitting it by the ELT can be envisaged. They are not central to the basic claims of this invention.

CLAIMS

1. An emergency locator transmitter, in combination with a means for determining the geographical position of the transmitter, which transmits radio signals for location and homing purposes and includes in the transmitted radio signals information on the geographical position of the transmitter.

2. A transmitter according to Claim 1 wherein the said means for determining the geographical position of the transmitter is by means of a satellite based navigation system.

...aminer's report to the Comptroller under Section 17 (The Search Report)

GB 9220676.2

Relevant Technical fields

(i) UK Cl (Edition L) H4D (DAB, DPBC, DBR), H4L (LETD, LETXX)

(ii) Int Cl (Edition 5) G01S

Databases (see over)

(i) UK Patent Office

(ii)

Search Examiner

DR E P PLUMMER

Date of Search

5 JANUARY 1993

Documents considered relevant following a search in respect of claims 1, 2

Category (see over)	Identity of document and relevant passages		Relevant to claim(s)
X	GB 1518971	whole document	1
X	GB 1484452	whole document	1
X	EP 0467651 A	whole document, but note in particular column 1 lines 29 to 32	1, 2
X	US 4833477	whole document	1, 2
X	US 4547778	whole document	1

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

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