

# NASA TECH BRIEF

## *Marshall Space Flight Center*



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### Aircraft-Crash-Locating Transmitter Features Design Improvements

An improved aircraft crash locator is automatically ejected from an aircraft at the time of a crash, and begins transmitting at emergency radio frequencies monitored by all airports and airport control towers. Among the advantages of the new apparatus are smaller size, simpler design and installation, extended transmitting range and life, greater deployment reliability, and increased crash resistance.

The crash locator transmitter is mounted on the tail of the aircraft in a round, weather-sealed, shock-mounted case held by a shear pin which releases under initial crash impact of 7 to 8 g. The ejected transmitter, which automatically begins transmitting distress signals, is powered by a battery which is kept charged by a trickle charge circuit connected to the aircraft navigational tail light. At the time of the crash, a folded, omnidirectional, whip antenna automatically unwinds from the case and radiates the signal from the transmitter for about 48 hours.

The transmitter is a crystal-controlled oscillator circuit, employing solid state components, capacitively coupled through an rf amplifier stage to an unbalanced multivibrator and the omnidirectional antenna. The circuit is audio-pulsed and adjusted to emit fundamental and second harmonic signals on the two aircraft distress frequencies (121.5 and 243 MHz). Audio pulsing allows the transmitter to have a duty cycle

which is 40 to 50% greater than if it were arranged to transmit a continuous signal.

#### **Note:**

Requests for further information may be directed to:

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#### **Patent status:**

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George C. Marshall Space Flight Center  
Marshall Space Flight Center, Alabama 35812

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