TAKE THE SEARCH OUT OF SEARCH AND RESCUE

HOW NASA IS IMPROVING FINDING PEOPLE IN DISTRESS

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Search and Rescue
Deputy Mission Manager
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RESCUED IN 2018

53 PEOPLE RESCUED SINCE JANUARY IN THE UNITED STATES

340 RESCUED WORLDWIDE SINCE 1982

43,000+
NASA’S ROLE
in search and rescue
THE POWER OF MEOSAR

our new system

Near instantaneous beacon detection and location, globally, at all times

Advanced location process using time and frequency measurements of beacon signal to triangulate its location

Mitigates terrain blockage due to multiple look angles from multiple moving satellites

Robust space segment, well maintained and highly redundant

Simple space segment repeater allows for development of higher performance beacon signal
THE SPACE SEGMENT
SAR/GPS
THE GROUND SEGMENT
THE BEACON SEGMENT
NEW SECOND GENERATION BEACONS EQUAL:

- Better accuracy
- More data transmitted
- Higher performance
SECOND GEN BEACONS

Capitalize on MEOSAR space segment and improve system performance

- Detection probability, location accuracy and system capacity
- First burst location
- Intelligent transmitting
- Collaborate with manufacturers to obtain the most competitive end product
- Return Link Service: automatic acknowledgment, where return link message sent automatically when location of alert has been confirmed
- Cancellation function
NASA'S ANGEL BEACONS

NASA astronauts will be ANGEL’s first users
OPEN WATER TESTING WITH THE UNITED STATES COAST GUARD
OUTDOOR POOL TESTING
THE KEY TO SURVIVING A PLANE CRASH... is to have the right equipment, installed properly.
What is an ELT?

EMERGENCY LOCATOR TRANSMITTER

SWITCH
ON
OFF
ARM

FOR AVIATION EMERGENCY USE ONLY
UNLICENSED OPERATION UNLAWFUL
OPERATION IN VIOLATION OF FCC
RULES SUBJECT TO FINE OR LICENSE
REVOCATION
VIBRATION TESTING
DROP TESTING
FIRE TESTING
Case 10 - Swept Wing Cruise into soil April 7, 2016
Time = 0
FOR FURTHER INFORMATION...

ESC - Search and Rescue
https://esc.gsfc.nasa.gov/sar

SARSAT-NOAA
https://www.sarsat.noaa.gov/

COSPAS-SARSAT
https://www.cospas-sarsat.int/en/

Emergency Locator Transmitter Survivability & Reliability Study 2017
https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20170002586.pdf