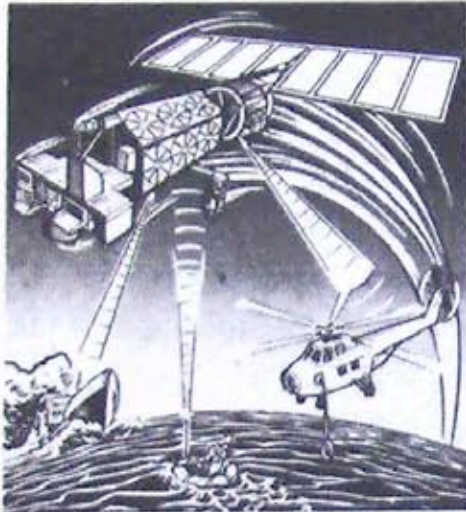


STARBOUND
THE WONDER OF
SPACELIGHT AND ASTRONOMY

by Dr. Eugene F. Mallove



SARSAT

Since the mid-1970's the United States, Canada, France, and the Soviet Union have joined in a cooperative program to develop a search and rescue satellite aided tracking, or SARSAT system. Satellites launched by the different countries will have equipment to detect and help locate standard radio beacons used by mariners and downed aircraft—so-called EPIRB's, or emergency position indicating radio beacons.

A Soviet Cosmos satellite, with the first launched SARSAT electronics and orbiting about 650 miles above Earth, was recently used by Canadian search and rescue forces to locate three seriously injured light aircraft passengers. A Cessna 172 aircraft had crashed on September 9, 1982, in thickly forested northern British Columbia. Ground and air search forces had expended an estimated two-million dollars in an unsuccessful search before SARSAT data from the newly launched satellite was used to find the aviators. Signals from the satellite were processed by Canadian ground receiving stations, and computers estimated the position of the crash site—a projection which proved to be right on target. New space technology saved three lives in this one instance. Millions of dollars of search effort could have been spared had the SARSAT system been fully operational—one more proof that dollars spent for space benefit people on Earth.

The battery-powered beacons, which can be detected by SARSAT and conventional search aircraft, emit low power signals at 121.5 and 243 MHz (million cycles per second) frequency over many days. Some beacons deploy automatically and begin signalling when a ship sinks or an aircraft crashes. Commercial airliners currently listen for and are told to

report these distress beacons, but the system is very inaccurate and inefficient. The much greater coverage of Earth's surface and greater location accuracy provided by a SARSAT system will dramatically increase the chances of finding cases of distress and identifying false alarms. The United States launched its first SARSAT-equipped NOAA satellite in February, 1983. One of these days you may owe your life to a silently orbiting satellite which patiently awaits your call.

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Dr. Mallove encourages readers to send in questions and will occasionally devote a column to them. He lectures on topics involving astronomy and the space program to groups and organizations. He can be reached at 429-7727.

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