

Search and Rescue Satellites Help save Lives

Story by Jordan St. John, CG-09223

A combination of some quick thinking and an Emergency Position-Indicating Radio Beacon helped save Tom and Stanna Galbraith on April 11 when their 35-foot catamaran, Paradox, capsized.

The couple were sailing from Honduras to the West coast of Florida when a squall increased the wind speed from 11 knots to 48 knots, capsizing them.

Tom and his wife took shelter for the night in the overturned hull where tools, wetsuits and other essential gear were available. Among the items was the 406 MHz EPIRB, which used the Cospas-Sarsat satellites to relay Paradox's location to search and rescue authorities.

Tom, realizing the EPIRB's signal probably wasn't being received by the satellites as the EPIRB was still inside the hull and the antenna was lost, used a hammer to make a hole in the bottom of the hull and floated the EPIRB in the water. The EPIRB's signal was then received by the satellite and relayed to Coast Guard Eighth District in New Orleans.

The Rescue Coordination Center immediately called the emergency contact number. When the Coast Guard realized the Gailbraiths were not in port, Coast Guard Seventh District in Miami, was notified and immediately coordinated an initial search with an Air Station Miami HU-25C Falcon and then launched an Air Station Clearwater, Fla., C-130 equipped with the newly installed 406 MHz direction-finding equipment.

The C-130 quickly located the EPIRB's position, finding the overturned catamaran approximately 170 miles southwest of Tampa, Fla. An Air Station Clearwater HH-60 Jayhawk helicopter arrived onscene and hoisted the couple to safety. Neither Tom nor Stanna had suffered any injuries after spending the night in their overturned catamaran.

This year marks the 25th Anniversary of the first satellite launch and operational use of Cospas-Sarsat by SAR agencies. The International Cospas-Sarsat Program has been instrumental in saving over 22,000 lives worldwide since

the 1980s.

As technology advances, more rescues are possible, translating into more lives saved. A major challenge now is to educate all beacon users of the phase-out of the older style distress beacons. 121.5 MHz, classes A, B and S, EPIRBs became prohibited for use on Jan. 1. On Feb. 1, 2009, the Cospas-Sarsat system will no longer process 121.5/243 MHz signals.

"406 MHz beacons have superior performance capabilities over 121.5 MHz beacons," said Lt. Cmdr. Kathy Niles, from the Coast Guard Office of SAR. "They transmit a much stronger signal, are more accurate, are traceable and are verifiable because of each beacon's unique identification encoded and registration data required to be provided by the owner."

When a person is in distress, their beacon transmits a digital 406 MHz signal to the Cospas-Sarsat system.

The signal is then relayed to a ground station which processes the signal and computes an accurate location for the beacon using Doppler technology. The United States Mission Control Center, operated by NOAA in Maryland, combines this information with other satellite detections, determines who is in distress based on the information decoded from the digital signal and then generates an alert message.

This alert is transmitted to the appropriate RCC based on the beacon's geographic location or identification.

For rescue personnel, especially Coast Guard air crews and boat crews that have to venture out in treacherous weather conditions at sea, the accuracy of information provided by the 406 MHz beacons make a big difference.

"If we can verify a SARSAT beacon alert and give our responding personnel more accurate information, we can help reduce some of the risk they face on every mission" said Capt. Chris Hall, chief of the Coast Guard Office of SAR. 

COSPAS-SARSAT System Overview

