SAVE AROUND THE GLOBE

A SOLO VENDÉE GLOBE YACHTSMAN RESCUED OFF THE COAST OF SOUTH AFRICA THANKS TO HIS COSPAS-SARSAT MARITIME BEACON (EPIRB)

The Vendée Globe is the biggest single-handed, non-stop, and unassisted around-the-world sailing race. On 8 November 2020, 33 competitors set off from the Sables d'Olonne, France, in the 9th annual race, some aboard yachts equipped with the latest generations of foils allowing them to "fly" over the waves at dizzying speeds.

On 30 November 2020, as the first competitors entered the Indian Ocean off South Africa, they encountered particularly extreme sailing conditions.

Kevin Escoffier on PRB during the Vendée Globe © Jean-Marie Liot / Alea #VG2020

French skipper Kevin Escoffier aboard the "PRB" sailed several hundred nautical miles from the Cape of Good Hope when his vessel literally broke apart while cresting a wave at 27 knots. After sending a brief distress message, the racer had no choice but to evacuate what was left of his sailboat and board his life raft, taking his EPIRB with him, which he quickly activated at 13:48 UTC.

As the beacon bore a French country code, the French Mission Control Centre (FMCC) was notified of the initial alert at 13:51 UTC, after its receipt at the European MEOSAR ground station (MEOLUT) in Cyprus. The initial alert included digital data corresponding to the sailboat "PRB" of Kevin Escoffier. Using the SAR payloads of the Galileo constellation, the distress was located in the South African service area. Then, according to the Cospas-Sarsat data distribution plan, the alert was immediately sent to the Maritime Rescue Coordination Centre (MRCC) in Gris-Nez, France, as the national contact point for French maritime

Kevin Escoffier's EPIRB aboard the PRB © https://sport.prb.fr/en-mer/phototheque

beacons around the world and in particular for the beacons which had been assigned for use in the Vendée Globe race. The Australian MCC (AUMCC) as the nodal MCC in charge of the South West Pacific Data Distribution Region, relayed the alert to the South African MCC (ASMCC). At 14:11 UTC, the initial position was confirmed by the French MEOLUT with more information provided by a different set of satellites.

The OPS room of the MRCC Gris-Nez © http://www.cross-grisnez.developpement-durable.gouv.fr / Mediatheque

Upon receiving the distress alert, the MRCC Gris-Nez contacted Vendée Globe race management, which confirmed the alert was associated with a real distress using information initially transmitted by satellite phone.

SAVE AROUND THE GLOBE

Following the international SAR procedures, MRCC Gris-Nez contacted South African Coast Guard, who are responsible for search and rescue in the area. A collaboration between MRCC Gris-Nez, the race management and the MRCC Cape Town was quickly established.

After studying the various means of rescue available in this sparsely visited area, several competitors were diverted to help the sailor in distress. The Meteo-France weather agency predicted the drift of the liferaft and indicated that the recovery was expected to be complex due to force 6 winds and sea state 6.

Thanks to the accurate coordinates transmitted by Cospas-Sarsat, the life raft was found in rough sea conditions by the competitor Jean Le Cam, and Kevin Escoffier was hoisted aboard his fellow competitor's sailboat, safe and sound after a highly-risky recovery manoeuvre, 11 hours after his vessel sank.

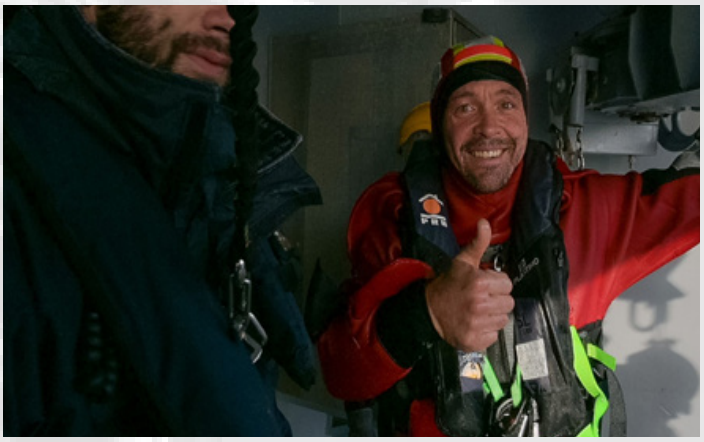
Kevin Escoffier swimming from the sailboat Yes We Cam to the Nivose dinghy © Marine Nationale / Défense #VG2020

A few days later, Kevin Escoffier was taken aboard a French Navy vessel operating in the Indian Ocean, leaving the rescuer Jean Le Cam to continue the race.

This operation is an opportunity to highlight the reliability and accuracy of the Cospas-Sarsat System in its entirety. It also shows the excellent cooperation between all players in the search and rescue chain.

Cospas-Sarsat French Mission Control Center Operator on duty © FMCC - CNES

Cospas-Sarsat's new MEOSAR system, using medium-altitude earth orbiting satellites with SAR payloads aboard the European satellite constellations Galileo, the USA's GPS and the Russian Glonass, was instrumental in the successful conclusion of the SAR operation. The detection and localization performance of the new MEOLUTs, and in particular the French and European MEOLUTs located more than 8,500 km from the theater of operations, promise to offer optimum service to beacon owners.



Kevin Escoffier aboard the Nivose © Marine Nationale / Défense #VG2020

COSPAS SARSAT

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PARTICIPATING COUNTRIES AND ORGANIZATIONS

2021

Algeria
Argentina
Australia
Brazil
Canada
Chile
China (P.R. of)
Cyprus
Denmark
Finland
France
Germany
Greece
Hong Kong (China)
India
Indonesia
Italy
ITDC
Japan
Korea (Rep. of)
Malaysia
Netherlands (The)
New Zealand
Nigeria
Norway
Pakistan
Peru
Poland
Qatar
Russia
Saudi Arabia
Serbia
Singapore
South Africa
Spain
Sweden
Switzerland
Thailand
Togo
Tunisia
Turkey
UAE
UK
USA
Vietnam

Total: 45

COSPAS SARSAT

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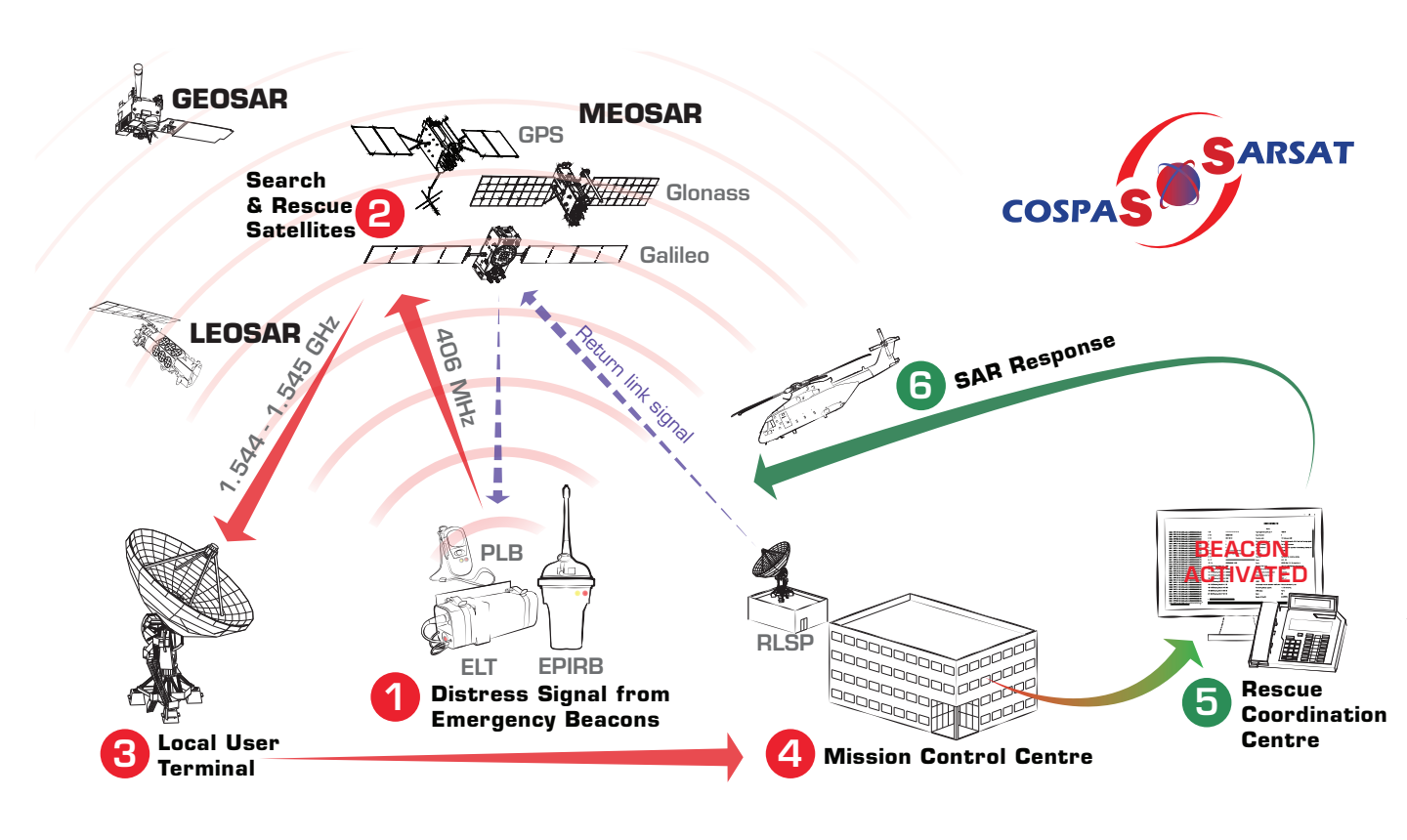
HOW DOES THE COSPAS-SARSAT SYSTEM WORK?



The Cospas-Sarsat System provides distress alert and location information to search and rescue (SAR) services throughout the world for maritime, aviation and land users in distress. The System is comprised of:

- Satellites in low-altitude earth orbit (LEOSAR), geostationary orbit (GEOSAR) and medium altitude earth orbit (MEOSAR) that process and/or relay signals transmitted by distress beacons.
- Ground receiving stations, called “local user terminals” (LUTs), which process the satellite signals to locate the beacon.
- Mission control centres (MCCs) that distribute the distress alert information to SAR authorities.

The Cospas-Sarsat System detects distress beacons that operate at 406 MHz.

2020 NOTABLE SAVES

COULD REGULAR EPIRB INSPECTIONS HAVE SAVED THIS VESSEL?

5 LIVES SAVED

On 7 March 2020 at 1750 UTC the Joint Rescue Coordination Centre (JRCC) Victoria in British Columbia, Canada received reports that a fishing vessel was taking on water and needed assistance.

In rough seas and deteriorating weather north of Graham Island off the west coast of Canada, the 70 foot Pacific Pearl vessel found itself with its engine transmission under water and their last pump failing. Struggling to reach port, the 5 crew members began preparing to abandon ship.

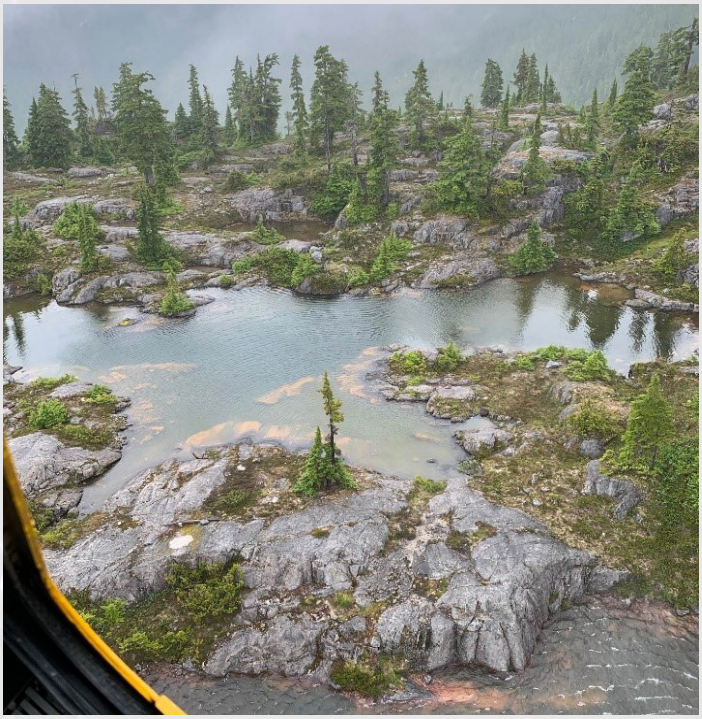
Several vessels hastened to the area to attempt an intercept of the sinking ship, and the crew was asked to activate their EPIRB to assist in pinpointing their location.

The EPIRB switch was thrown, but no signal was broadcast to the Cospas-Sarsat System. After addressing a possible sprung plank on their port bow, the crew discovered that the battery on the EPRIB had an expiry date listed 10 years prior. The beacon was useless to aid them. The Pacific Pearl sank. While the crew was eventually rescued with all members surviving, the potential for loss of life was greatly increased because the EPIRB was neglected and had not received regular maintenance.

Canadian regulations require that all small commercial marine vessels between 15 and 150 gross tonnage must be inspected and certified by Transport Canada every 1 to 4 years, depending on the vessel's commercial use. Any smaller vessel that carries more than 12 passengers must also be inspected and certified.

All owners and operators of 406 MHz beacons must ensure that their beacons receive the manufacturers' recommended maintenance.

Lives depend on it!



ACCURATE POSITION LEADS TO QUICK RESCUE OF WELL-PREPARED HIKER

1 LIFE SAVED

Around noon on 3 August 2020, a distress alert was received by the Canadian Mission Control Centre (CMCC) from a PLB with an encoded GPS position near Butte Lake in Strathcona Provincial Park, British Columbia. The beacon was registered to a well-prepared individual who had left a detailed itinerary while conducting backcountry hiking.

The Joint Rescue Coordination Centre (JRCC) Victoria in British Columbia, Canada, tasked a nearby fixed wing CC-115 Buffalo and a CH-149 Cormorant helicopter already airborne performing a training mission to investigate the distress signal.

The crews described the weather in the search area as "dicey", and the Buffalo was unable to get below cloud to assist. However, the Cormorant helicopter crew stated that the "Cospas-Sarsat position made all the difference" as the position accuracy was very good and got the crew close enough that they could "easily pick up the low wattage 121.5 homing signal which led… straight to him."

The hiker, who had suffered a dislocated shoulder, was located two and a half hours after the initial alert. The patient was extracted and transported to Comox, BC, where an ambulance was waiting.

Cospas-Sarsat provided the only alert in this case.

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2020 NOTABLE SAVES

NZ EPIRB: SIBLINGS SAVED AFTER BOAT SINKS

2 LIVES SAVED

On 2 September 2020, a brother and sister were rescued from a life raft after their 29-foot launch sank off the coast of the Bay of Plenty, New Zealand.

When siblings noticed their boat quickly sinking, they activated their 406 EPIRB.

The first alert from their unregistered Australian EPIRB was received at 1329 UTC. At 1339 UTC, the Rescue Coordination Center of New Zealand (RCCNZ) tasked a rescue helicopter to the beacon's location, 18 miles off the Tauranga coast.

A Coastguard vessel on its maiden voyage was guided to conduct the rescue at 1447 UTC.

The rescue helicopter pilot said the two people did all the right things, "They made their own luck. They were very well prepared. The thing that really aided in their rescue was the EPIRB."

When their boat began sinking, the siblings jumped into their inflatable life raft and activated their emergency beacon, then set a smoke flare when they saw the first helicopter to pinpoint their location for the rescuers.

MICROLIGHT AIRCRAFT LANDING ON A GERMAN MOUNTAIN RUNWAY

1 LIFE SAVED

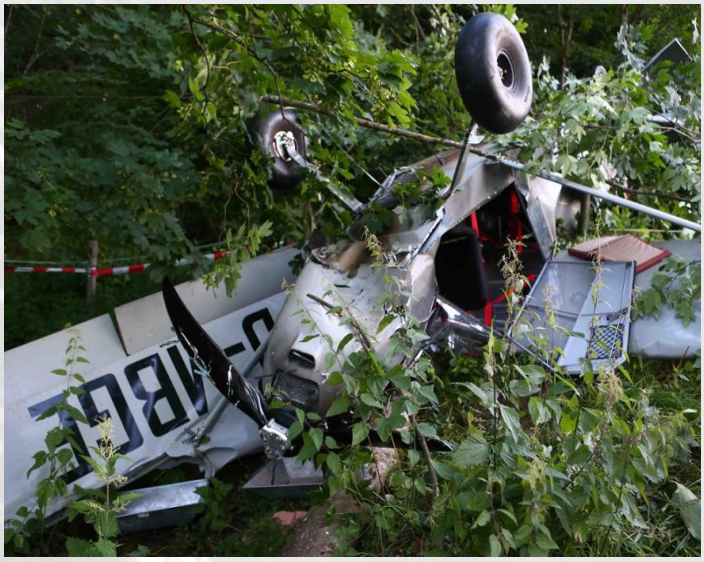
On 12 July 2020, a microlight aircraft pilot attempt to land but crashed upside down in a wooded area close to the small airstrip.

Suffering only from lightly bruises, the pilot was finally able to get out of the airplane; however, as he was unable to efficiently call for assistance, he decided to trigger his personal beacon.

At 1827 UTC, accurate MEOSAR locations were received mere minutes after the crash by the French Mission Control Center for this German PLB, followed less than seven minutes later by a LEOSAR Doppler detection confirming the area.

As the beacon position was located in Germany and the device was correctly registered in the German beacon registry, the alert was promptly distributed to the Aeronautical Rescue Coordination Center (ARCC) in Münster, which launched several search and rescue (SAR) units to investigate in the area.

The SAR responders found the aviator close to the distress location and provided appropriate assistance.



2020 NOTABLE SAVES

© Jean-Nicolas Louis / Gendarmerie

SAVED BY HIS BRAND-NEW BEACON IN THE FRENCH ALPS

1 LIFE SAVED

On 26 June 2020, a solo hiker lost his way in the French Alps and found himself unable to exit a snowy area. After he injured himself sliding on a steep slope, he activated his PLB.

A MEOSAR alert and associated registration data were immediately forwarded by the French Mission Control Center in Toulouse to the Aeronautical Rescue Coordination Center (ARCC) in Lyon, who is primary in charge of inland alerts in France.

The Gendarmerie Mountain Rescue Unit Helicopter of Briançon was tasked and found the person on its second pass over the area, thanks to a MEOSAR position update.

Supported by rescuers and a medical doctor, the hiker was hoisted and evacuated to hospital, suffering from upper limb injuries.

The brand-new beacon, which had been dropped and had ended in a crack between rocks and firns, was not recovered and was left on the spot, transmitting for another 24-hour period.

REGISTERED PLB AND LIGHT TOWER ASSISTS FISHERS

6 LIVES SAVED

Four mariners straddled the hull of their capsized fishing vessel, 9 nautical miles (16 km) east of Cape Henry, Virginia, USA, on 16 August 2020. Two more clung to the Chesapeake Light Tower nearby.

They set off their 406 MHz personal locator beacon and after the signal was received the Coast Guard was able to reach out to the emergency contacts provided in the beacon registration information.

They informed the Coast Guard that the owner had gone fishing with a group of people and gave a description of the boat. A helicopter aircrew that had been training nearby was diverted and a boat crew also made their way to the scene. All six persons were hoisted into the helicopter with no injuries reported.

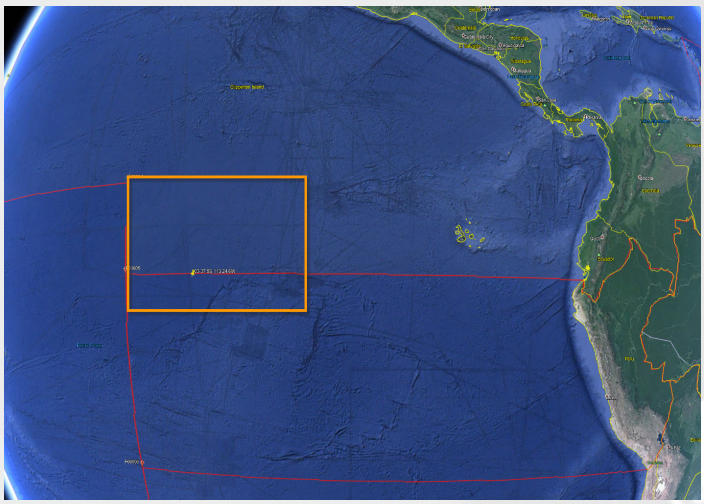
“This case could have turned out quite different if the owner had not bought and registered his device,” noted the Coast Guard watch stander, praising the owner’s use of a 406 MHz PLB.

2020 NOTABLE SAVES

EPIRB INSTRUMENTAL AFTER YACHT STRIKES WHALE

3 LIVES SAVED

On 23 August 2020, an EPIRB was detected 1,932 nautical miles west of northwestern Peru.



It was activated when the 46-foot sailing vessel “One Tree Island” with three people on board struck a whale. The hull suffered a two-foot-long crack and began to take on water.

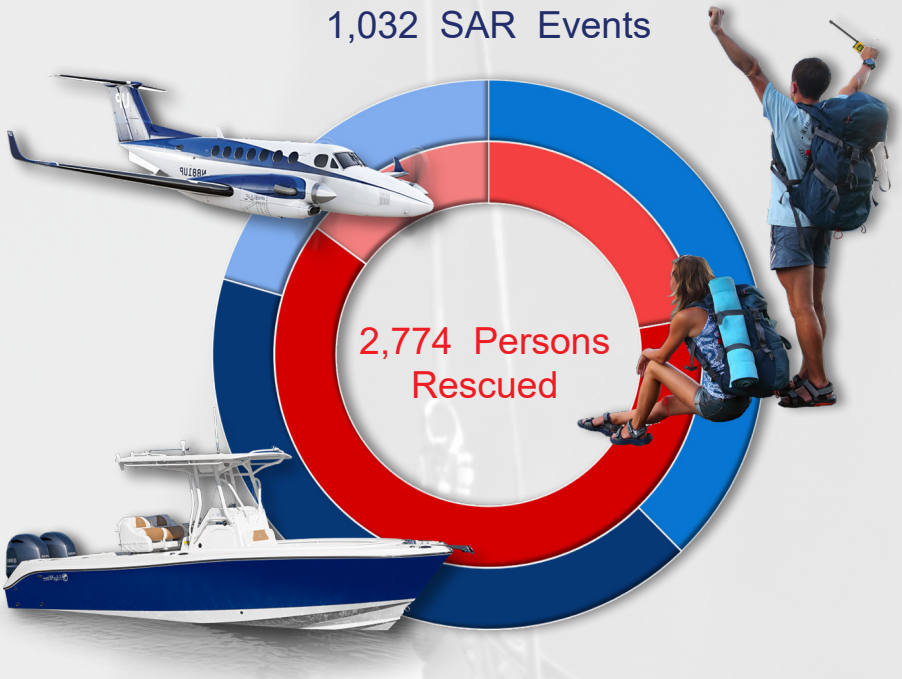
The US Coast Guard received the EPIRB alert, and after concerted efforts to find an asset close to the disabled vessel’s location, were able to contact a nearby Chinese fishing vessel.

The Chinese vessel diverted to the location provided by the EPIRB. Six hours after sending the distress signal, the crew were safely taken aboard the fishing vessel.

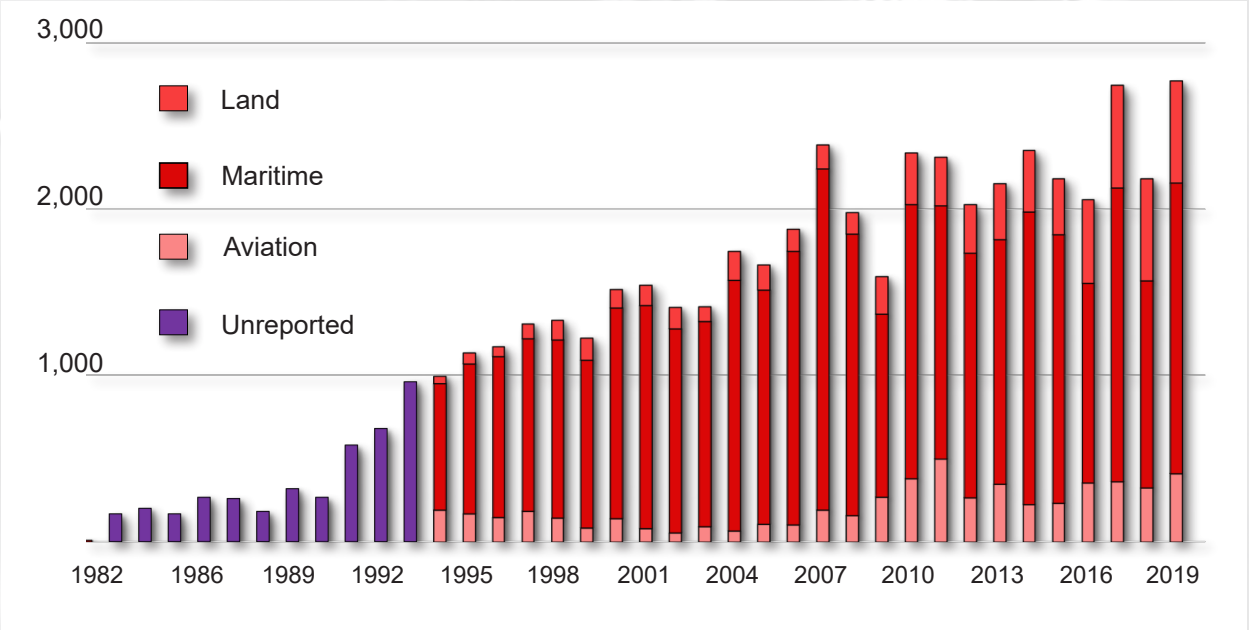
Since the three crew members were New Zealand citizens, the Rescue Coordination Center in New Zealand assumed communications to ensure their repatriation.

WE SAVE LIVES

2019



STEADY GROWTH AND EXPONENTIAL SUCCESS



Since September 1982, the Cospas-Sarsat System has provided assistance in rescuing at least 51,512 persons in 15,563 SAR events.

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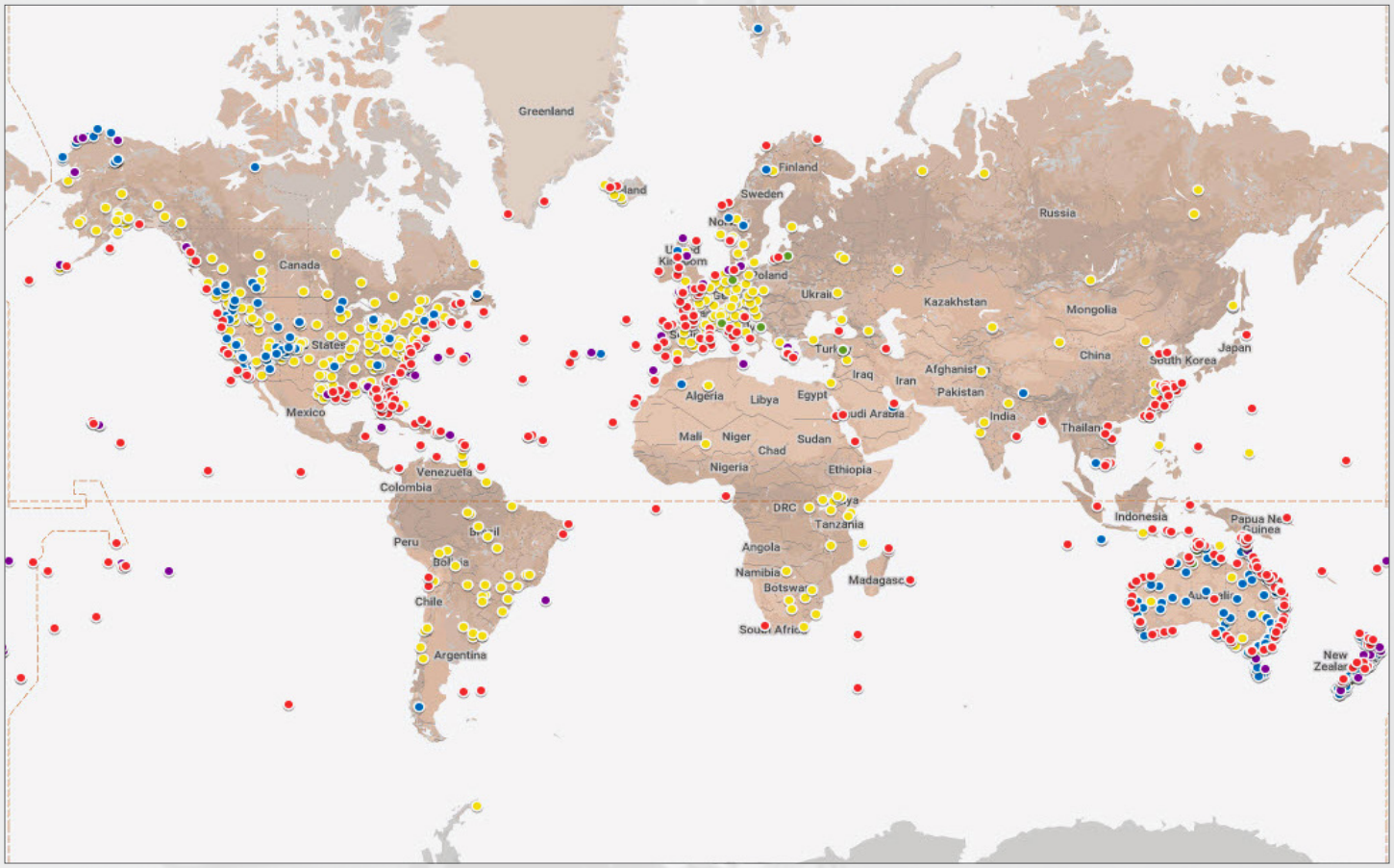
WE SAVE LIVES

2019 SAR EVENTS

LEGEND: Yellow (ELTs), Red (EPIRBs), Blue (Land PLBs), Green (Aviation PLBs), Purple (Maritime PLBs).



SAR OPERATIONS (Year 2019)

From January to December 2019, the Cospas-Sarsat System provided assistance in rescuing 2,774 persons in 1,032 SAR events.

Type of Distress	SAR Events	Persons Rescued
Aviation	212	411
Maritime	431	1,747
Land	389	616
TOTAL	**1,032**	**2,774**

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ABOUT US

Life-saving technology is all around us, whether it is the latest tools and techniques in a hospital, or safety features in modern automobiles. Sometimes these technologies are little known, or a bit complex to readily understand. But they nonetheless SAVE LIVES!

Such is the International Cospas-Sarsat Programme. Although having a somewhat awkward name, and not always being well known, WE SAVE LIVES! In fact, as of 2019, **we have helped to save more than 50,000 people in about 15,000 search-and-rescue (SAR) events.** And this is an undercount, because Cospas-Sarsat statistics include only cases where a reliable "after action" report has been prepared and submitted through reporting channels to the Cospas-Sarsat Secretariat, the administrative arm of the Programme located in Montréal, Québec, Canada.

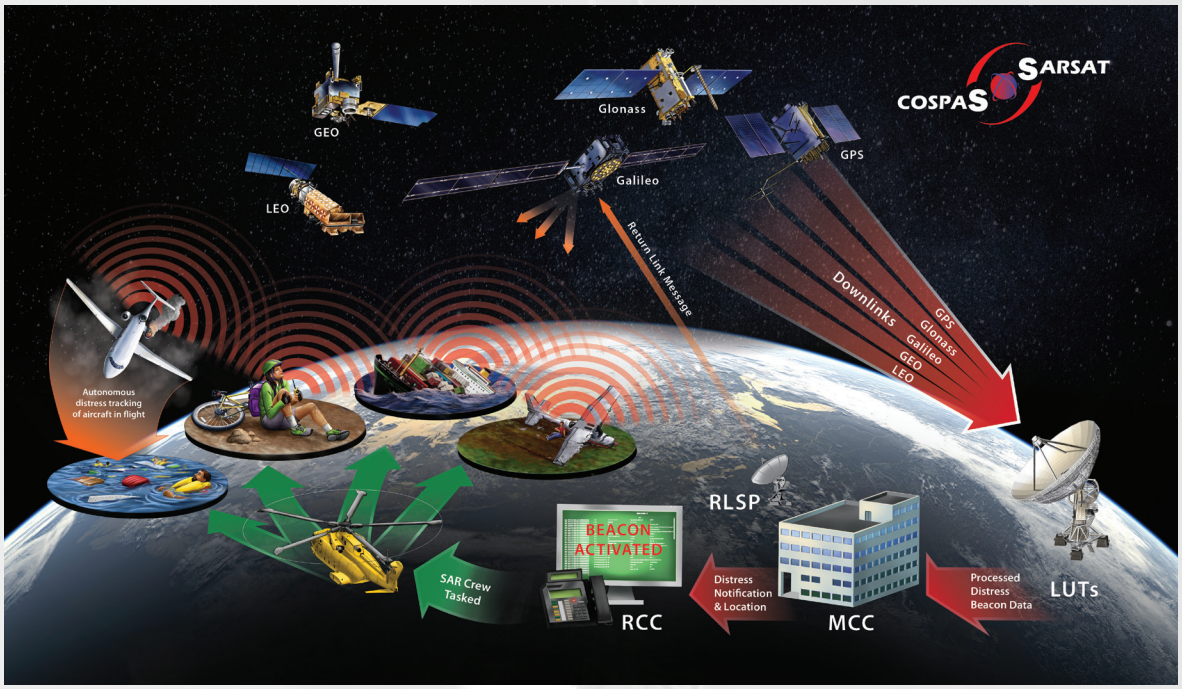
How does Cospas-Sarsat do it? Forty-five countries and agencies have joined together in unprecedented cooperation to build and launch SAR receivers into space and to operate satellite ground stations to listen for signals from compatible distress beacons anywhere on Earth. The distress alerts received from beacons are relayed to a government agency that can take action for rescue, as well as the "home" country of the beacon.

Cospas-Sarsat compatible distress beacons are all around you, though you probably don't notice them. They are in the cockpits of airplanes, and in aircraft survival rafts. They are on almost every ship traversing international waters, and often on the lifejackets of crew. They are on many pleasure craft, in some cases as a matter of obligation by a national government. They can be in the backpacks of hikers, climbers and snowmobilers in remote areas, who know that a Cospas-Sarsat beacon may be the only way to summon help in a life-threatening emergency.

Compatible beacons (those that operate at 406 MHz), made by dozens of different manufacturers, can be purchased from many types of vendors: retail stores, on-line and/or as original equipment on an aircraft or vessel. Cospas-Sarsat itself does not make or sell beacons, though we review independent laboratory testing of all beacon models to ensure that they meet our rigorous specifications.

Originally conceived by Canada, France, the former Soviet Union (succeeded in the Programme by the Russian Federation) and the United States, they and the other 41 participating States and agencies have dedicated themselves to the humanitarian service of detecting and distributing these life-saving distress alerts free of charge to any of the over 200 countries and territories on Earth.

ABOUT US



If you have read this far, you might be interested in a few more details.

The Cospas-Sarsat receivers in space generally are “secondary” payloads placed by several governments and intergovernmental agencies aboard weather and navigation satellites. There are more than 50 of them. Shared platforms in space help to keep the costs low.

Most of the participating States and agencies install and operate on the ground at their own expense, receiving antennas to capture the distress signals relayed by the satellites. These ground stations, or “local user terminals”, not only receive the distress message (and any beacon location data that might be encoded in the message), they also are connected to powerful computers that can locate a beacon based on the characteristics of the received signal. Cospas-Sarsat is unique in being able to accurately locate an activated distress beacon both from location information that is reported by certain kinds of beacons, and well as independently from the signal characteristics.

The States and agencies with ground stations share among one another the data received from an activated beacon by means of routing computers (and human operators) called mission control centers (MCCs). This ensures that the alert gets to an MCC that can further relay the information to the search-and-rescue point of contact closest to the emergency, as well as to the “home” country of the beacon.

These operational relationships are shown in the diagram above.

Cospas-Sarsat not only dramatically improves the chances of persons in distress being rescued but also, because a beacon normally can be located with good accuracy, it makes more efficient use of government resources that otherwise might be spent on needless searching, while reducing the time that rescuers might be at risk when searching in dangerous environments.

It is through this extraordinary cooperation among governments around the world that Cospas-Sarsat is able to detect, locate and act on a distress alert sent by a Cospas-Sarsat compatible beacon. This is the way that COSPAS-SARSAT SAVES LIVES.

NOTES FROM THE CHAIR

A FEW WORDS FROM THE COUNCIL CHAIR

MICHAEL DONALD
Canada
2020 Council Chair

My foremost reflection as I write this message is my sincere hope that each of you and your families remain healthy during the ongoing global COVID-19 pandemic.

It is an understatement to say that the world has changed since our last information bulletin. Primarily, the declaration of the pandemic has required all of us to rethink our way of life and our way of doing business. This was no different for the Programme as the effects of the pandemic became immediately apparent.

Consequently, the Programme convened its 63rd Council session virtually, by email correspondence and teleconference. In addition to deciding on the necessary document changes to progress the Programme's priorities, Council also had to consider and decide on a meeting continuity plan in the face of the pandemic. The meeting took many weeks to organize, conduct and conclude and I am grateful to my colleagues in Council and the Secretariat for their flexibility and patience in making it a success.

The Council's discussions included the acknowledgement that the Programme would not only have to adapt to a virtual platform in the short and perhaps medium term, but would also have to adjust its planned timelines for meetings and milestones. Accordingly, this would require Programme meeting agendas to be very precise and limited. In short, it will take more time and effort to address fewer items. That said, this situation is temporary, and we look forward to when we're able to meet face-to-face again and return to our regularly scheduled programming.

Despite the pandemic and the many obstacles it presents, I'm proud that the Programme has the alacrity to work through adversity and has found the provisional means to continue with its humanitarian work. This is possible because of all of you, the Participants and the Secretariat.

On a personal note, my tenure as Chairman has come to an end, a role in which it was my pleasure to serve. I thank all of you for your support during some of the Programme's more interesting times. With that, I welcome Mr. Bruno Chazal of France as our next Chairman of Council.

NOTES FROM THE HEAD OF SECRETARIAT

A FEW WORDS FROM THE HEAD OF SECRETARIAT

STEVEN LETT
Head of Secretariat

In this most exceptional time of the COVID-19 pandemic, let me extend to everyone my best wishes for good health for you, your family and your loved ones. As we eagerly look towards 2021 bringing vaccines with the prospect of an end to the misery and a new beginning to normal life, it is worth reflecting on what 2020 has taught us.

We all have learned a lot about ourselves; what and who are important to us, and what are our own strengths and weaknesses. But we also have learned a lot about Cospas-Sarsat as an organization and global search-and-rescue in general. And I can join the Council Chair in noting that we can be proud of what we have learned.

In 2020 the Programme was scheduled to have 26 days of in-person meetings. But, as we know, it only was possible to hold the five-day EWG-2/2020 in person in February 2020. All other work had to be converted to videoconference. And this is where the resiliency of the Programme demonstrated itself. The Participants and Secretariat in 2020 organized and executed 27 days of experts working group meetings that, in particular, led to recommendations for the commissioning of ten LUT earth stations and/or antennas, significantly progressed work on commissioning of mission control centres for MEOSAR processing, and advanced the deployment and capabilities of the return link service and ELT(DT)s.

In addition to the work of the experts working groups, the closed meeting of the Council met by videoconference for five days, leading to the approval of urgent System-document changes and, as noted by the Council Chair, decisions to make necessary adjustments for the pandemic environment. Among the greatest achievements, the Programme conducted the thirty-fourth meeting of the Joint Committee over a period of three weeks, successfully covering a workload similar to the busiest of Joint Committee meetings, with virtually no technical interruptions. Added to the other meetings, this totaled 44 days of largely unplanned videoconferences. Additionally, countless additional days of informal correspondence working group videoconferences ensured that no critical work was left behind. Because of the challenges of setting meeting times to accommodate times zones around the world, our colleagues in the East Asia and Pacific regions joined many of these meetings at hours deep into the night. For their dedication and indulgence, we are deeply grateful.

The ingenuity and flexibility of Programme Participants, affiliated organizations, the Council leadership, the meeting chairs, and the Secretariat were shining examples of how work critical to progressing the life-saving advances of MEOSAR, second-generation beacons, emergency-locator transmitters for tracking of aircraft in distress, and the return link service could be significantly advanced under the most extraordinary and difficult of circumstances.

Likewise, it is essential to note how the Programme Participants kept their crucial operational contributions to the Programme in full working order during the pandemic, with successful maintenance of LUTs, watch-standing at mission control centres and delivery of distress messages to those who could take action to rescue persons in peril.

In these worst of times, Cospas-Sarsat pulled together in the best of ways to effectively execute its humanitarian mission.

For that, everyone can be very proud!