

Oceanographic Systems Laboratory, WHOI: REMUS 6000

Deep Ocean, Large Area Search/Survey

For information on the Search for Air France Flight 447 using REMUS 6000, please visit these links:

<http://www.whoi.edu/main/faq-malaysia-airlines-flight-370>

<http://www.whoi.edu/main/topic/airfrance-flight447>

Driven under the same technology that made REMUS-100 a leading force in AUV technology, REMUS-6000 was created, with support from ONR and the Naval Oceanographic Office, to go to deeper depths and longer mission duration. Loaded with an 11 kWh rechargeable Li-ion battery pack, REMUS-6000 can swim in its standard configuration up to 22 hours at speeds up to 4 knots (2.06 m/s). The standard configuration consists of an ADCP, CTD, sidescan sonar and a High-Resolution digital still camera.

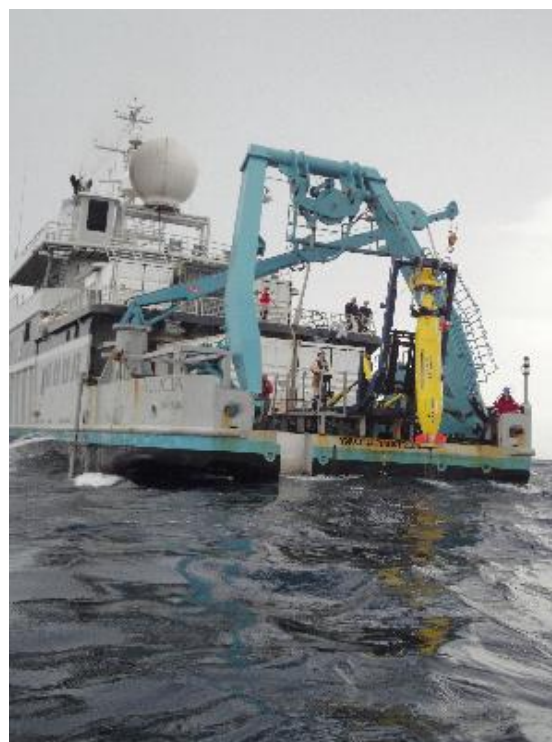
REMUS-6000 is the vehicle of choice for deep-sea ocean mapping and surveying in difficult terrain. The terrain-following algorithms allow REMUS to climb and dive steep terrain, while still collecting high resolution bathymetric data. REMUS-6000 is the AUV that found the lost Air France Flight 447 in over 4000 meters of water. It has also been used to discover new deep water coral reefs and to search for Amelia Earhart's plane.

Launch and Recovery System (LARS)

The REMUS Launch and Recovery System has made over 1000 successful launch and recoveries to date. Due to the vehicle's larger size, this self-contained system has been engineered here at WHOI in the OSL. It enables the L & R of the vehicle in sea states up to those created by the Beaufort Scale 5 winds.

It requires only one operator and, therefore, does away with the need to use tag lines eliminating extra people on deck and creating a safer working environment.

LARS is installed on the stern of a ship. For launch, the LARS has a built-in A-frame, which tilts the cradle up and over, while leaving the vehicle hanging by its nose well clear of the fantail. The cradle supports the vehicle during A-frame rotation, stabilizing the vehicle until it is a safe distance from the stern. The docking head provides damping to reduce swing in heavy seas. The vehicle is then lowered into the water, tail first, while the ship is making approximately 1-2 knots forward way (this allows the vehicle to stay well clear of the ships screws). All systems are given one final checkout before release. When ready, the vehicle is commanded to release its tow-line and begin its mission.



[Enlarge Image](#)

REMUS-6000 in its launch and recovery system aboard the Alucia during the search for Air France's Flight 447 (WHOI)

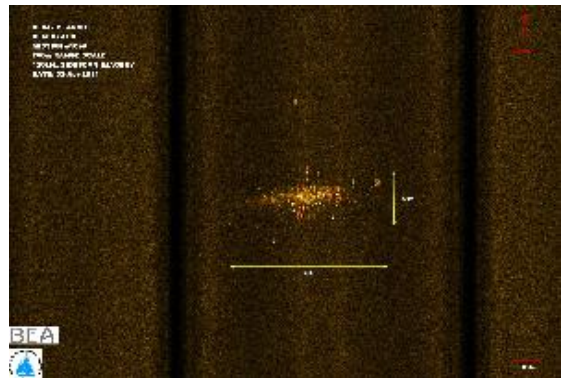


Launch and recovery system.



[Enlarge Image](#)

2 WI REMUS-6000 vehicles operated by OSL of WHOI, along with a GEOMAR vehicle are squeezed into two control vans while they wait to be deployed. This was during the search for Air France's lost Airbus in 2010. (OSL)



[Enlarge Image](#)

sidescan sonar images obtained by REMUS-6000 during the search for Air France Flight 447. (WHOI, BEA)

Related Multimedia

How REMUS works

WHOI, OSL

» [View Video \(Quicktime\)](#)

Imaging capabilities example: Discoveries over 3,500 meters depth



[REMUS-6000 camera image](#)

Image taken by the onboard camera system of REMUS-6000 and taken during the search for Flight 447.

[Still camera image](#)



Fig A. 5 meter altitude electronic still camera image, with 200 W-S strobe illumination

[900 kHz, 30 meter range scale sonar image](#)

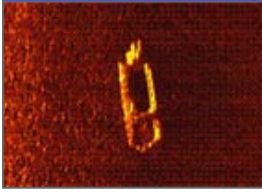


Fig. B 900 kHz, 30 meter range scale sonar image of sunken boat in 3,500 meters acquired with the REMUS-6000 (SAMS) vehicle.

[Photo mosaic](#)

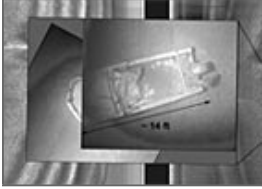


Photo mosaic of sunken motor boat.

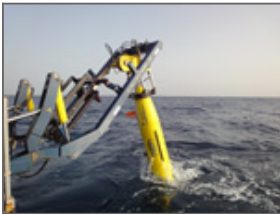
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[Launch of REMUS 6000](#)



Watch a short clip of the REMUS 6000 deployment

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Frequently Asked Questions:

<http://www.whoi.edu/main/faq-malaysia-airlines-flight-370>

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