

CHALLENGE: MASS RESCUE AT SEA

Mass rescue operations (MRO) at sea are search and rescue (SAR) operations characterized by the need to provide immediate assistance to large numbers of persons in distress in a situation that exceeds the capabilities normally available to SAR authorities. Response to a mass rescue scenario offshore, typically beyond helicopter range or in a remote area far from response infrastructure, will challenge SAR authorities. Mass rescue scenarios include high-capacity passenger ships but also extend to transoceanic passenger flights.

Timely response is likely to mitigate potential loss of life. MRO options in offshore scenarios are limited to surface response, which could take anywhere from hours to days depending on an incident's location or the potential for response by fixed-wing aircraft, which have limited capability to contribute to an emergency response to an offshore MRO event.

Mass rescue scenarios are low-probability, high-consequence events. These incidents are considered low probability because passenger vessels and aircraft are equipped with redundant safety features that have—to a large extent—prevented MRO scenarios. MRO events are, however, high-consequence events and thus demand conscientious investment of time and effort in advance planning to mitigate loss of life.

SOLUTION: MASS RESCUE FLOTATION DEVICES

The United States government is dedicated to enhancing life-saving technologies and capabilities. Accordingly, the United States Coast Guard (USCG) and the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) are partnering to develop a Mass Rescue Device.

The desired end product will be a nonstandard innovative, large-capacity, ultralightweight floating device that could be deployed from air and surface assets during MROs. The device should be durable enough to be safely handled, transported, and deployed by crewmembers aboard USCG aircraft or vessels with minimal risk (e.g., inadvertent activation). The purpose of a large-capacity floating device is

solely to keep survivors out of the water during an MRO. The government will consider scalable designs in which more than one device can be linked/tethered together to meet or surpass the requirements that are submitted by industry or other partners.

The desired large-capacity floating device will differ from existing off-the-shelf USCG safety-of-life, at-sea-compliant "life saving devices" by its lighter weight, increased portability, and limited functionality (e.g., keeping people out of the water for a limited time, but without survival supplies or equipment).

S&T COLLABORATION TO MOVE FORWARD

Developing an MRO resource is a collaboration between the DHS S&T Small Business Innovation Research (SBIR) Office and USCG. SBIR released a solicitation seeking proposals for MRO prototypes and provided seed funding for the finalists.



IMPACT TO MASS RESCUE

The end product will be capable of holding up to 100 survivors out of the water during long-term rescue operation, lowering their risk of injury from exposure. With a new mass rescue device, the USCG will ensure more survivors are rescued during SAR operations. The ability to deploy the MRO from any Coast Guard asset will allow this new capability the widest possible adoption.

PARTNERS/PERFORMERS

- USCG
- Viking Life-Saving Equipment, Miami, FL
- Moonprint Solutions, Dover, DE
- Crown Hydrodynamics, San Juan, PR