

Defence

Experience, Dedication, Vision



PERRY SLINGSBY SYSTEMS

 A MEMBER OF THE TRITON GROUP



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Product Development History

Perry Slingsby Systems is the world's leading supplier of underwater vehicles. The Company has built over 400 manned and unmanned systems, including rescue submersibles and ROVs with special purpose tooling. It has also supplied launch-and-recovery handling systems, emergency life support pods, and thru-water communication systems for the military submarine rescue market.

Beginning with the pioneering development of manned submersibles for the offshore oil industry in the 1970s, Perry Slingsby Systems expanded into submarine rescue with the LR-class submersible. The eminently capable LR5, manufactured in 1978, remains in service today with the Royal Navy. In 1995, the first enhanced LR5K system was delivered to the Republic of Korea Navy. The first SR-class submersible was delivered in 2007. The SR design incorporates new and innovative design features that will allow the vehicle to serve NATO and its Submarine Rescue Service for the next 25 years or more.

Perry Slingsby Systems has continued to develop the LR-class submersible and has introduced the new SR class, two of the most advanced, free-swimming rescue vehicles available today.

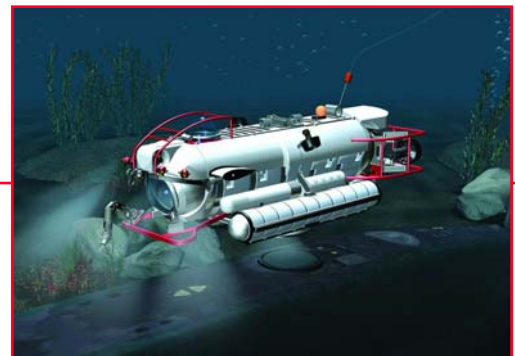
The Company's quality management protocols are ISO9001:2000 certified. Its design and manufacture of manned vehicle systems meets the rules and regulations of relevant statutory and regulatory authorities, including Lloyd's Register of Shipping and The American Bureau of Shipping "Rules and Regulations" for the construction of, and classification of, submersibles.

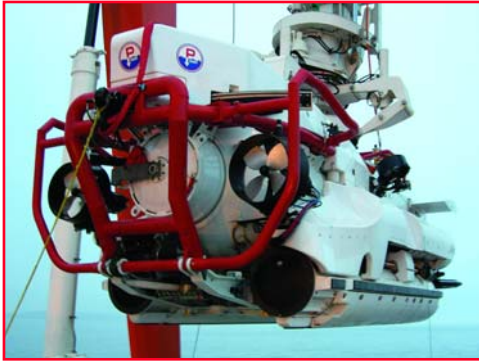


LR-Class Rescue Submersible

The LR-class submersible has proven itself over many years of operations to be the most effective submarine rescue system in the world, and has successfully participated in numerous "live" submarine exercises in all conditions.

- Can transfer rescued crew directly to decompression facilities aboard the rescue mothership at pressures of up to 5 barg
- Powered by battery cells, recharged between dives, with sufficient energy to recover the entire crew from the largest military submarines
- Propelled by direct-drive electric thrusters, with hydraulic propulsion for close maneuvering and emergency backup
- Able to operate independently of the mothership once launched, the mothership does not have to hold station during the rescue mission
- Rescue is effected via a transfer "skirt" that is pumped dry after the rescue vehicle docks with the submarine
- Can carry out rescues from submarines resting at angles of up to 60° to vertical, in both pitch and roll





SR Class (NATO) Submarine Rescue Vehicle

- Recently completed NATO SRV undergoing sea acceptance testing
- The NATO SRV will replace the LR5, which itself was originally designed and built by PSSL, and which has 29 years of service
- The SRV incorporates the ability to perform Diverless Recovery of the vehicle in higher sea states
- The NATO SRV design is fully classified and certified to Lloyd's Register Standards
- The SRV includes the latest battery technology which gives twice the power for half the weight of lead-acid

Handling Systems

Both the LR and SR-class rescue submersibles are part of complete rescue systems, with efficient handling systems for launching and recovering the vehicles in high sea states.

- Fully automated A-frame and winch systems permit continuous operations in severe weather conditions
- Designed for air transportation and rapid assembly on deck
- Incorporates a vehicle transport and alignment system for simple connection to the mothership decompression facilities



Emergency Life Support (ELSS) Delivery

The integrated ELSS delivery system is designed to sustain life on board the submarine until rescue arrives, provide vital initial survey data, and prepare the scene for the rescue intervention. The ELSS pod is NATO standard equipment.

- Includes Triton®SP ROV system for location, survey, debris clearance, and ELSS pod posting
- Designed for rapid deployment to the accident scene; certified by the Royal Air Force for transport by air in a C17 Globe Master
- Operates in currents of up to 4 knots
- Fitted with specialist tooling, including robotic manipulator arms and cable cutter, a water jetting tool for sand and silt removal, and a radiation monitor
- Can be fitted with an ELSS pod delivery skid that delivers the life-support pods in batches to save time and increase survival outcome



Thru-Water Communications

Perry Slingsby Systems' underwater telephones are in operation with many of the world's navies.

- Designed to operate from surface stations or submarine platforms
- Battery-powered A046 unit is used on modern submarines, rescue vehicles, rescue motherships, and airborne search-and-rescue units



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Outline Vehicle Specifications



SR CLASS



LR CLASS

General

Typical Depth Rating (m)	610	500
Internal Pressure (bar g.)	5.0	5.0
Rescue Capacity	16 persons max. (excl. crew)	19 persons max. (excl. crew)
Crew	Pilot and Co-pilot	Pilot and Co-pilot

Vehicle Size & Weight

Width (mm)	3,400	3,200
Length (mm)	8,700	9,600
Height (mm)	3,490	3,400
Vehicle Weight (kg)	30,000	28,000

Pressure Hull

Proof Test Pressure	1.4 x Max. Operating Depth	1.4 x Max. Operating Depth
Hatches	5	5
Viewpoints	Acrylic main viewport; conning tower and in hatches	Acrylic main viewport; conning tower and in hatches

Power & Speed

Power Supply	ZEBRA Batteries	ZEBRA Batteries
Max. Forward Speed	3.8 knots	3 knots

Life Support

Normal	12 hours (18 persons)	13 hours (21 persons)
Emergency	96 hours (18 persons)	96 hours (21 persons)

Submarine Transfer

Transfer Skirt	Fixed with optional wedge	Fixed with optional wedge
Max. Angle for Rescue	60 degrees	60 degrees

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