VAYU on–the–spot report

Rubin Design Bureau at Army 2024

Nestled along the banks of the iconic Neva River in the historic city of St. Petersburg, the Rubin Design Bureau stands as a pillar of Russian maritime engineering excellence. It has been at the forefront of designing state–of–the–art submarines for more than 120 years now. Since its establishment in 1900, the company proudly flaunts its portfolio of serving the Russian and several allies around the world.

On the right, Mr. Andrei Baranov, Deputy CEO for Foreign Economic Activities, Rubin during a press conference at Army 2024

This year at the grand International Military Technical Forum "Army 2024", Rubin unveiled a great range of products in both civilian and military applications to cater to the needs in maritime domain.

Firstly, the Amur 950 submarine with Vertical Launchers. This is equipped with a Vertical Launch System, is a small attack submarine capable of launching cruise missiles (including BrahMos) in salvos to neutralise enemy defences and strategic positions. With low noise and advanced sonar for enhanced reconnaissance and covert operations, it is ideal for missions up to 1,000 miles offshore. The submarine boasts a 30 day endurance, a top submerged speed of 20 knots and operates with a crew of 19 people only. With a displacement of around 1,000 tons, the Amur 950 serves as an excellent base platform for manoeuvrability submarines, thanks to Rubin's advanced design solutions. While the submarine is powered by a diesel–electric powerplant, it also offers an option to integrate Air Independent Propulsion (AIP), in case the customer prefers it.

The Argus–D leads Russia's range of Autonomous Underwater Vehicles (AUVs) as the first with a detachable payload. It offers a payload space of up to 2 meters long, 0.55 meters wide, and 0.5 meters high, allowing the attachment of various scientific instruments, such as seismic sensors or environmental monitors. The AUV can deploy these instruments on the ocean floor to collect data on acoustic signatures or biological activity.

Operating independently of a manned ship, the Argus–D has a 20 hour endurance at 3 knots, with a top speed of 6 knots and a diving depth of up to 3 kilometres. The 8.9 meter long, 5.5 ton vehicle is equipped with an obstacle avoidance system and can be transported in a standard 40 foot container. Its open architecture allows for interoperability with other systems and easy customisation to meet customer needs, with accessible sub–systems for fast maintenance.

The WHALE 3000 is a work–class Remotely Operated Vehicle (ROV) designed for complex underwater tasks. It can retrieve equipment from the surface and install it at target locations. Equipped with two manipulators and interchangeable grippers, WHALE can perform various operations, such as assembling components, laying cables, and maintaining oil and gas systems. It operates with high automation, maintaining depth and tracking autonomously.

With the ability to cut, weld, clean and install vacuum anchors, WHALE is essential for underwater construction, pipeline maintenance and rescue missions. Its high definition cameras and powerful LED lights ensure precise work even in total darkness. WHALE operates at depths of up to 3 kilometres and can assist in scientific research by collecting samples from the ocean floor. Measuring about 3 meters long, 1.8 meters wide, and over 2 meters tall, WHALE is lightweight at 5 tons, thanks to its composite materials, and can be transported in a standard 20 foot container. Designed using 3D modelling, its production process is streamlined and efficient.

And last but not least, to replenish the above AUVs, the Octavis can be deployed. The Octavis station is designed to support AUV operations by providing a docking point where AUVs can recharge, undergo maintenance checks