HURL: A Unique Diving Operation at Risk Real-Time Enviro Monitoring with BiotaTools AS

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Interview
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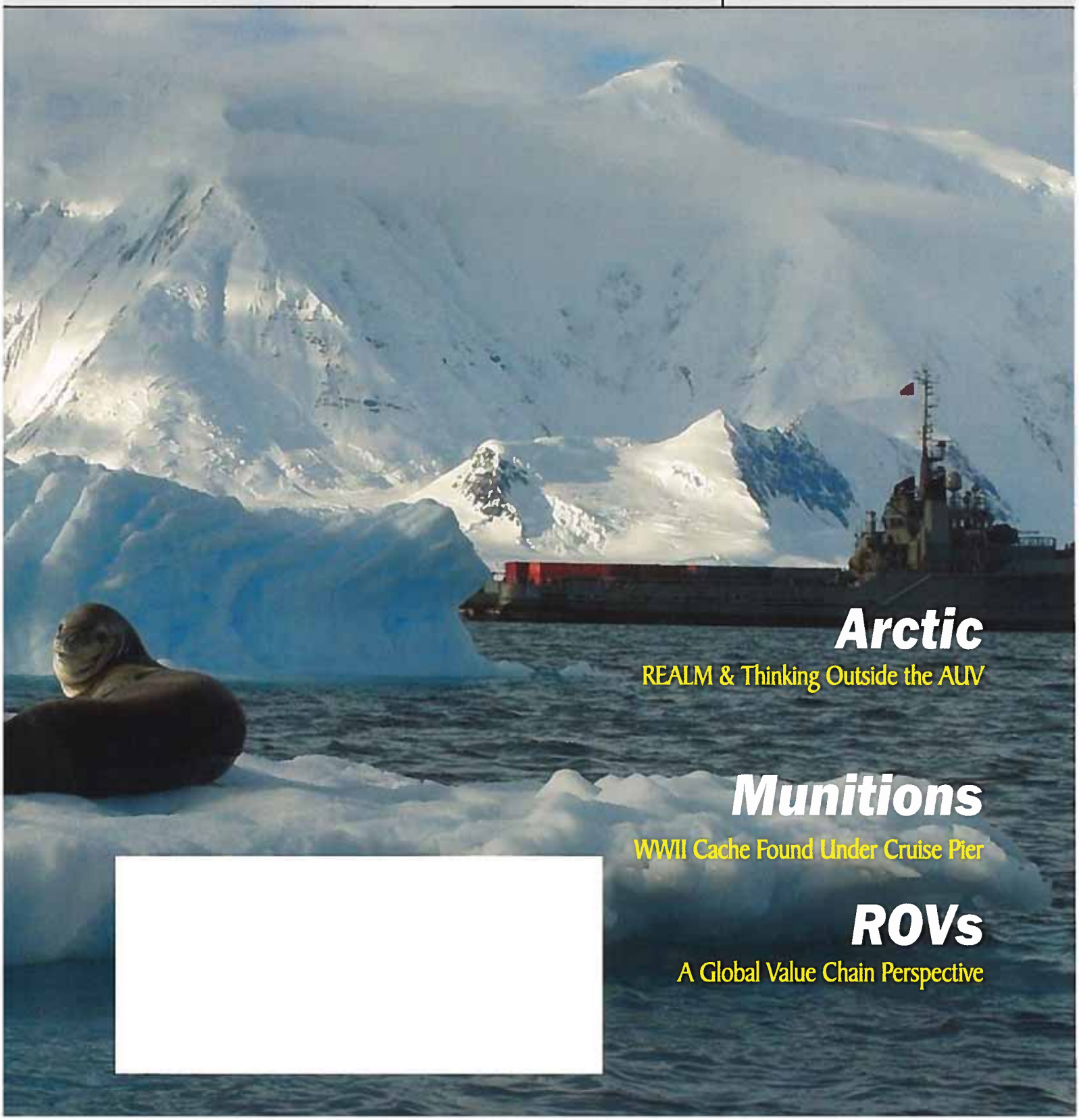

Arctic
REALM & Thinking Outside the AUV

Munitions
WWII Cache Found Under Cruise Pier

ROVs
A Global Value Chain Perspective

Smart ROV Tools
Guard the Environment

Project at a Glance

Problem: Checking for residual fuel in a 70-year-old wreck while minimizing environmental risk

Solution: Unique ROV-mounted sampling system

www.gdiving.com/

Checking for residual fuel in a 70 year-old sunken wreck without opening the tanks and risking an environmental catastrophe needed a clever solution. The answer came from Global Diving and Salvage which created a unique sampling system mounted on a Saab Seaeye Cougar XT ROV and can penetrate a sealed container and extract a sample without creating a leak point.

Global was contracted by the United States Coast Guard to determine if oil was present aboard the S.S. Montebello, a tanker torpedoed in 1941 off the coast of California.

During the investigations Global fitted-out the Cougar with a range of tools to perform 3D modeling, sonar inspection, thickness gauging, a backscatter investigation, the physical sampling of the ship's fuel tanks and sediment sampling of the general area.

To prepare for the assessment, Global first had to clean off areas of the surface, which meant removing more than 70 years of debris. For this process they used the Cougar's power and tooling capability to clear the tank with a wire wheel and barnacle buster fitted to the manipulator arms.

A Tracerco neutron backscatter system was used to help determine the likelihood of oil in the wreck's cargo holds. This backscatter tool is a non-invasive contents-sensing device, something like an x-ray that emits neutron particles capable of passing through insulation material and carbon steel to determine the presence of content. It was mounted on a skid attached to the ROV and integrated with the vehicle's control package. The ROV's powerful and responsive thrusters held the system steady whilst the backscatter operation was carried out.

Due to depth of water - 275m (900 ft.) - and the potential risk of leakage of the tank contents, the development of Global's unique sampling tool system to extract a sample was paramount to the success of the operation. The innovative feature meant that when the hole was drilled through the tank and a sample taken, the hole was then sealed – all in one leak-proof operation without fittings or valves.

The success of this procedure required the reliability and capability of the Cougar's hydraulic tooling package; for once the sampling operation is underway, a breakdown or glitch can be disastrous. It was essential that the sampling system was held steady by the ROV's responsive power and suction cups while the sample was taken and the surface sealed. The happy outcome of the mission was to discover that no oil was present in the wreck and that it offers no threat to the ecological environment.

Global's unique sampling tool system with suction cups fitted to the Cougar.

Global's ROV control cabin.