INTERNATIONAL

Water Power & DAM CONSTRUCTION

OCTOBER 2011

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Tools of the trade

Developments in underwater inspection

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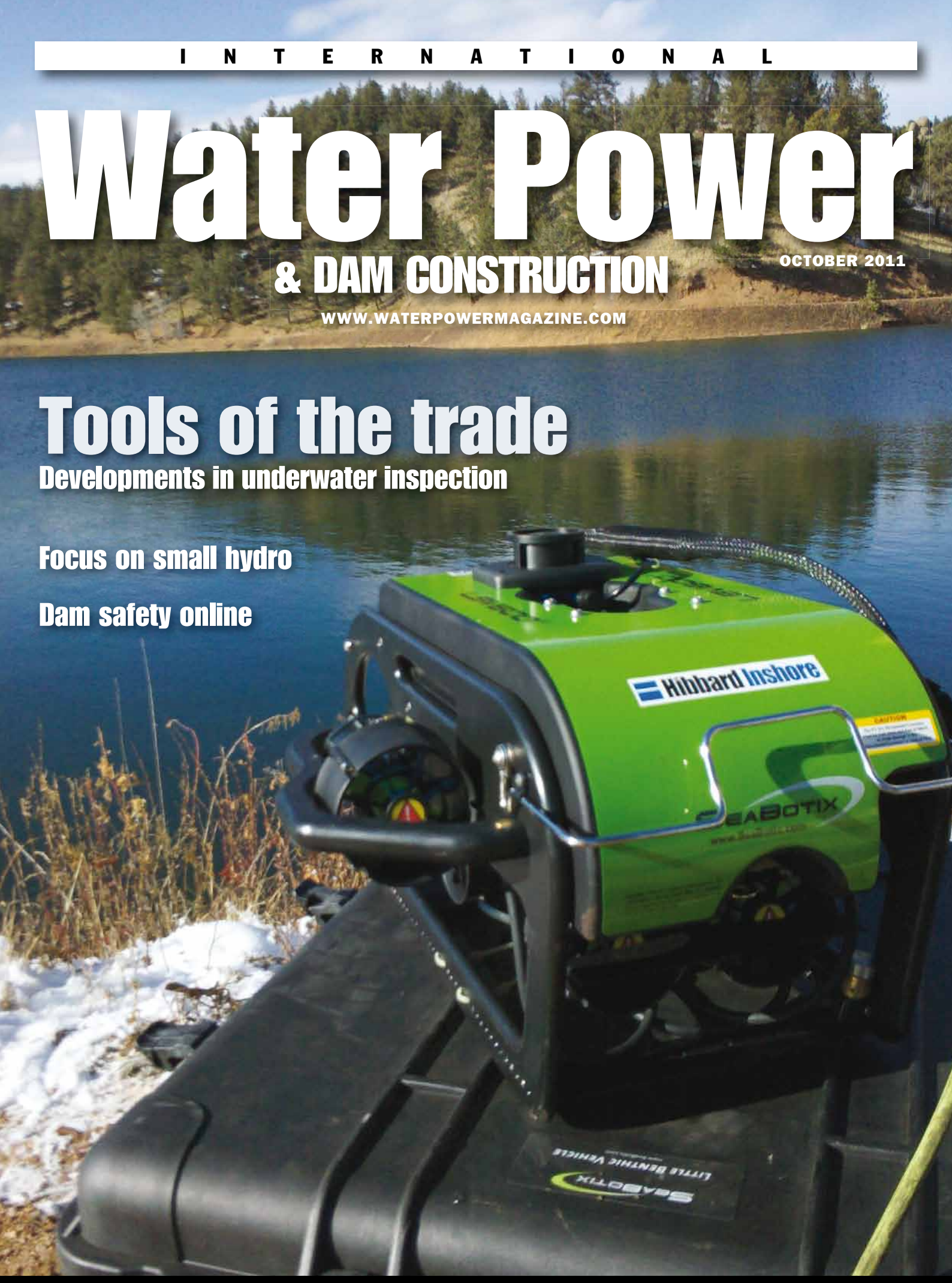

Serving the hydro industry for 62 years

Inspection tools

A range of new products have been developed to ensure efficient underwater inspections at hydroelectric and dam projects. Below you will find details on some of the latest releases.

Long range tunnel inspection

Hibbard Inshore is pleased to announce four major advances to address the inspection of long range tunnels. Because its customers have continued to seek alternatives to dewatering their long tunnels, the underwater services company says it has continued to engineer and upgrade its fleet of Remotely Operated Vehicles (ROV) to provide cost effective alternatives to provide the data needed to make maintenance and capital decisions.

The four options Hibbard Inshore has added to address long range tunnels are scaled for both distance and power to allow the equipment to fit specific project needs. Two of these options are traditional swimming ROVs modified to address distance needs, one is an extremely long range Hybrid Autonomous Underwater Vehicle (AUV/ROV), and the last is a large, robotic crawling vehicle for dry inspection where walkthroughs are deemed unsafe. All of these options are air shippable to any spot in the world. In addition to having high power to weight ratios, all of the vehicles can provide real-time data from multiple sensors and cameras during the inspections allowing engineers or owners present to help direct the inspections to be as thorough as possible.

The first system announced by the company is a Long Range, Deep Rated Seabotix LBV. This vehicle is small in form to fit into small access points, is 600m depth rated, and Hibbard Inshore has upgraded its capabilities to make runs of up to 2km from a single access point. This vehicle can be fit with multiple types of sonar including both imaging and dimensioning units, ultrasonic thickness sensors, and both low-light monochrome and color cameras.

Hibbard Inshore's second long tunnel system is a Long Range Sub-Atlantic Navajo. This vehicle is also small in form. In addition to inspection, the Long Range Navajo can carry vehicle based tooling and increased sensor payloads to a range of 5km. The Navajo is described as being easily capable of providing 3D tunnel mapping or running many sensor packages concurrently, says the company.

In addition to these two ROV systems, Hibbard Inshore has recently added a third swimming option to its long range fleet – the Saab Hybrid AUV/ROV. This vehicle is unique in that it is the first of its kind outfitted for extremely long range tunnel inspections. The vehicle can run in either AUV mode or ROV mode meaning that it can follow a pre-programmed route or take real-time control commands from an operator. With the power of an AUV and the control of an ROV, this vehicle can perform tunnel inspections out to 20+ km while supplying real-time data. It is able to stop and hover like a traditional ROV and can carry the

Left: The Hibbard LBV 600
Below: The Hibbard Long Tunnel AUV remotely operated vehicle

largest payload of Hibbard's long range vehicles. It can also operate in flows that typical tunnel inspection ROVs cannot negotiate. The AUV/ROV also has the unique capability to swim home should its tether be compromised during an inspection.

Finally, in addition to these fully flooded tunnel solutions, Hibbard Inshore can provide 3D laser and video inspections of large diameter, dry tunnels up to 3.2km in length utilizing a long range crawling vehicle.

This vehicle is much larger than a typical sewer inspection crawler and can negotiate larger debris as a result. The lighting, cameras, and 3D laser system are capable of imaging and precise dimensioning in tunnels 10m in diameter and larger.

Further details on the systems included here can be found on the company website at:

http://hibbardinshore.com

Above: The Hibbard Long Range Navajo photographed with crew

Above: The Hibbard Long Range Crawler