

GUEST ARTICLE

from the desk of
Steve Campbell
President
Campbell & Co. Strategies Inc.



Underwater imaging shows ‘what’s really going on’

What is the true state of your port’s underwater infrastructure? Most ports have regular survey programs involving divers going down to check out underwater structures, pilings, bridge supports and pier walls. The problem is that, in often murky conditions, visibility is very poor and divers are forced to feel around blindly, raising survey quality control and safety issues.

According to one underwater commercial diving expert and sonar surveyor, Brian Abbott, owner of Haslett, Mich.-based Nautilus Marine Group International, advanced sonar technologies are helping make this whole process much more productive, allowing port managers to rest easier. (Sonar is short for SOUNd Navigation and Ranging.)

“Sonar is a valuable tool for inventorying the state of a port’s underwater infrastructure that enables you to acoustically ‘see’ the physical condition for the first time,” said Mr. Abbott, who provides an array of diving and surveying services for ports throughout North America. “You then send the divers down to check out specific anomalies you spot on the imagery. It’s a cost-effective and highly productive tool for heading off structural failures that could shut down a pier or cause costly damage.”

Case in point, in Duluth Minn., a ship was docking for the winter when it hit a submerged object underwater and sank. Mr. Abbott used sonar to show that, unbeknownst to port officials, there was a 10-foot-by-10-foot block of concrete resting on the sea floor at dockside. No one had any idea it was there.

In Portland, Ore., city engineering officials charged with maintaining the seawall along the Willamette River had Mr. Abbott use sonar to develop a composite underwater image of the entire wall. They were able to use this to establish a visual baseline record of

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possible weak spots and develop a program of maintenance work.

“What’s valuable is that you can go back down in a couple of years and take similar images,” Mr. Abbott said, “then compare over time to see the changes when you need to prioritize your always-tight maintenance and capital budgets.”

At the Port of Montréal, geomatics engineers have used sonar to conduct a survey of the port’s underwater infrastructure. The goal was to establish a baseline not only for maintenance plans but also for future infrastructure expansion.

The current economic situation, wherein global trade and port activity have slowed, provides breathing room for ports to take stock and prepare the foundations for future expansion as the upgraded Panama Canal and other developments impact trade flows and create new port opportunities. Federal stimulus funding is now available at least for the next few years to upgrade and enhance vital public port infrastructure. Ports can use sonar to uncover problems to allow maintenance departments to prioritize five- and 10-year work programs. The sonar images can also be used as confirming visual evidence when requesting capital funding for repair and expansion.

Ultimately, sonar shows port managers what’s really going on with port underwater infrastructure and helps them make better decisions – probably the best benefit of all. 📷

Mr. Campbell, a public relations practitioner based in Vancouver, British Columbia, writes on behalf of Kongsberg Mesotech Ltd., one of the world’s leading suppliers of sonar for civilian and naval port applications. (Brian Abbott is no relation to Paul Scott Abbott, editor of AAPA Seaports Magazine.)



Sonar images combine with above-water photography to highlight infrastructure features of the harbor seawall along the Willamette River in Portland, Ore.