



The 46-metre RAPide-class shallow draught tug 'HB Hydra'

2013 has been a significant year in the history of naval architect Robert Allan Ltd. After 78 years and three generations of family ownership, the company evolved into an employee-owned business beginning in 2008.

"Following the change in ownership structure, this year marked the addition of a new group of twelve owners to the original group of ten," the Canadian design firm told *Work Boat World*. "This has enhanced the sense of pride and work ethic that we seek to infuse in all aspects of our design and consulting work."

2013 also saw Robert Allan Ltd cement its position as a tour de force of tug design, with new RAmports, RAstar and Rampage-class tugs going into markets as diverse as Western Australia, Thailand, China, Colombia, the United States, Canada, Turkey, Hong Kong and Papua New Guinea.

"This year there has also been considerable research and development into the next generation of tugs," continued the company. "Advanced designs are underway for new RotorTugs, RAVEs and various LNG and hybrid powered permutations."

2013: A year of innovation

Several recent major projects stand out as examples of the firm's innovative design and engineering this year. The

first is a series of eight pusher tugs and 144 barges to transport iron ore on the Paraguay/Parana river system in South America. More than three million tonnes per annum will eventually be transported 2,500km from the Vale mine in Corumba, Brazil, to trans-shipment ports near Buenos Aires. The pusher tugs have a heavy-fuel-powered diesel-electric propulsion system driving triple Z-drives. The first of these boats is currently undergoing builder's trials at Uzmar Shipyard in Turkey, and will be delivered via heavy lift ship in early 2014. The barges are being built in China and the first group of 32 has recently been delivered, also by heavy lift ship.

The second significant project is the 94-metre Australian scientific research vessel 'Investigator' for the Commonwealth Scientific and Industrial Research Organisation (CSIRO). Designed in collaboration with US-based research institute Alion Science and Technology of Alexandria and built at Sembawang Shipyard in Singapore the vessel has been designed to operate in waters from the tropical north coast of Australia to the Antarctic. It is fitted with a full range of scientific laboratories and oceanographic sampling equipment and it maintains a minimal underwater-radiated noise profile.

"We believe the design innovations found in the 'Investigator' and the South American tug-and-barge projects have been a consistent hallmark of the company since its early days," continued Robert Allan Ltd. "While it is difficult to develop innovation, which depends entirely on the individual skills and imagination of the design team, we have always fostered an open, collaborative office environment and challenge our engineers to constantly improve on past designs."

"Projects like the Rio Parana project described earlier are a naval architect's dream – taking a fundamental transportation requirement and then developing a unique solution in the face of myriad constraints and challenges. And then to see it take shape and enter service – It doesn't get any better in terms of job satisfaction."

Innovation through engineering

But the innovation does not stop with the blueprints and general arrangements. Significant quantities of engineering work underpin all Robert Allan Ltd design efforts. "The classification society BV has recently given 'Approval in Principle' to our in-house CFD (Computational Fluid Dynamics) method of escort tug performance prediction," said the design house.

"This will allow significant savings in time and money, as previously approved methods involved model testing and/or full scale testing of escort tugs. In addition, Class NK has granted type approval for our RAmports 3000 design. This is expected to be the first of many as we work with other classification societies to streamline the entire plan approval process."

With 2013 a strong year for the top-performing design house, Robert Allan Ltd is looking forward to a strong start in 2014. The firm is constantly refining its well-proved existing design portfolio and is continually seeking to tackle unusual and innovative projects worldwide.

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The 31-metre Advanced Voith Tractor-class (AVT) tug 'Cabo de la Vela'