

# Breaking the mould

Horrified by the levels of pollution and sediment contamination he saw when he first started work as a commercial diver, Boud Van Rompay founded Hydrex in 1974 with the goal of clean rivers, seas, and oceans. That ambition still drives the company and its founder today

Tony Slinn, correspondent

**B**orn in 1949 in Koningshooikt, a small rural town in the province of Antwerp, Belgium, Boud Van Rompay remains the CEO of Hydrex and is also the founder and CEO of Subsea Industries. Yet, maritime engineering did not figure in his background. His family, including his father, mainly consisted of traditional country doctors, while he went on to study law.

“I abandoned law studies to become a cave diver and explorer and a mountaineer, making breakthroughs in underwater cave exploration.

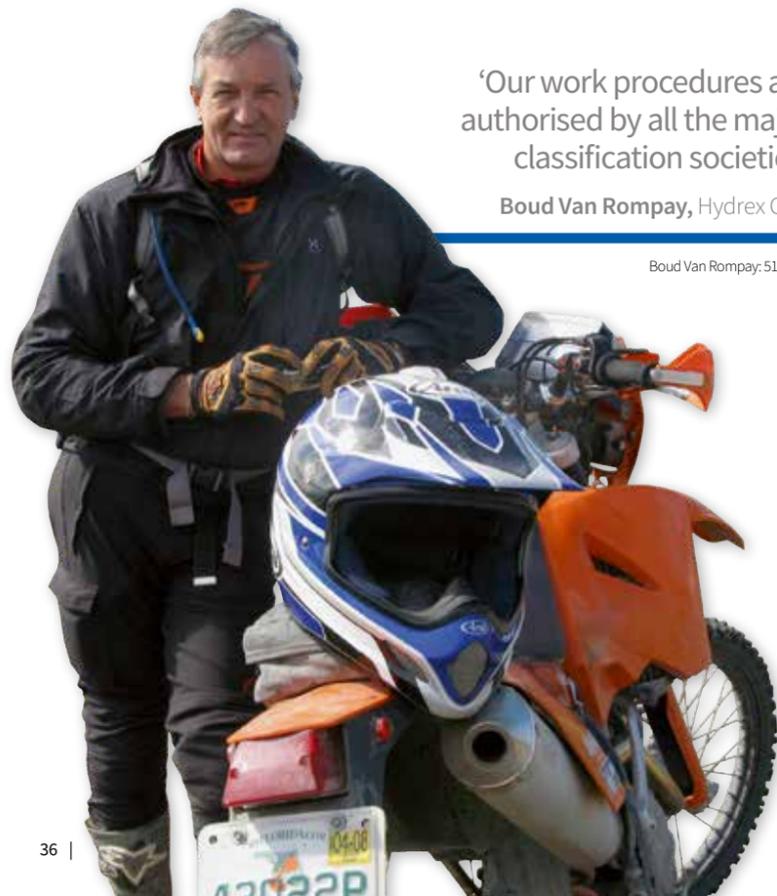
That laid the foundation for a future in underwater technology,” he explained to *DPC*.

His work as a commercial diver in Antwerp involved underwater ship repair and maintenance and brought him face-to-face with those horrific levels of pollution and contamination, which he saw were turning ports into dead

‘Our work procedures are authorised by all the major classification societies’

Boud Van Rompay, Hydrex CEO

Boud Van Rompay: 5116874



zones and creating an unsustainable future for oceans, waterways, and rivers. Aged 25, he founded Hydrex.

“Clean rivers, seas, and oceans: it was, and still is, our purpose,” Van Rompay continued. “The name Hydrex is coined from hydro (water) and expertise. The aim was and is to create maximum expertise with water to attain the goal of clean oceans. It’s a goal that keeps me going and fuels everything I do.”

### Environmental goals

During the past 45 years, Van Rompay’s spirit of investigation and ingenuity has led to a string of inventions, developments, and patents – about 60 of the latter, most of which have resulted in worldwide patents. All of them stick to Hydrex’s founding principles.

“Our aim is to keep ships in business, have them protected with safe-for-marine-life coatings, and avoid drydocking as much as possible where this would cause unnecessary expense and delays,” Van Rompay explained.

A Hydrex patented breakthrough was the development of a prefabricated cofferdam that allowed underwater repairs on ships’ hulls to be classed as permanent. Creating drydock-like conditions around an affected area means divers can work on vessels in port or at anchor.

“It permits normal commercial activities to continue without disruption, eliminating the loss of time and income that drydocking entails, as well as saving the expense of drydocking itself,” Van Rompay noted. “We first used it in 1979 on a vessel called *Lunar Venture*. During the 1990s we started calling them mobdocks – mobile mini-drydock – when they came into general use by our divers.”

In 1991, Van Rompay designed a large habitat system for lock door rail repair that was fabricated by Hydrex – five major lock repairs were completed. And in 2002, a flexible mobdock was introduced to create a dry working environment around stern tube seal assemblies – as well as in thruster tunnels – using lightweight equipment. Since then this technology has been expanded and can be used on rudders and propellers.

“Hydrex has a long, successful track record of performing complex permanent underwater repairs to thrusters, propellers, rudders, stern tube seals, and damaged or corroded hulls,” Van Rompay pointed out. “We pioneered most of these operations, which once used to require drydocking but can now be carried out with the vessel afloat.”

Hydrex works in close co-operation with customers and any third-party suppliers as to how projects are engineered and carried out.

“It begins with evaluating the feasibility of an underwater repair, continues through design and construction of customised equipment, and leads to successful execution of the repair or replacement and subsequent follow-up,” Van Rompay said.

He added, “Our work procedures are authorised by all the major classification societies and meet the highest



Artist’s impression of Van Rompay’s contained dredging system

Hydrex: 5116833

quality and safety standards. Hydrex is also approved via the VCA safety assurance system and the ISO 9001:2015 quality standards.”

### Subsea Industries

Part of Hydrex work led to seeing the consequences of using biocidal antifouling paint on ships’ hulls.

Van Rompay decided that a non-toxic but economically viable system was needed. Subsea Cleaning Systems, later Subsea Industries, was founded in 1983 specifically to take care of the design, development, and marketing of what has become an evolving line of underwater hull and propeller maintenance equipment, along with a range of non-toxic, hard coating systems. Today, they are marketed as Ecospeed, Ecoshield, Ecolock, Ecofix, and Ecolast, all developed by Van Rompay working with his in-house research and development (R&D) department.

“Research on developing a new, long-lasting, non-toxic method of protecting ships’ hulls began in 1993,” he continued. “Ecospeed came to market in 2002 followed by Ecoshield in 2013, the latter launched to provide permanent protection against cavitation damage for rudders after more than 10 years of strenuous testing.

“In 2014, Ecolock was introduced, a coating system designed to protect offshore vessels. It’s guaranteed for 25 years, but has a much longer expected service life. The latest members of the family are Ecofix, a tested and proven filler, and Ecolast, an ultraviolet-resistant coating that preserves its color while at the same time offering full corrosion and abrasion protection.”

Subsea Industries also offers a range of underwater cleaning systems for various applications on vessels. The most recent project is a method that will allow surfaces of up to 100,000 m<sup>2</sup> to be cleaned per hour without drydocking.

“All types of fouling can be removed very effectively, light slime, as well as thick layers of heavy marine growth,” Van Rompay added. “Available for all types of vessel, the cleaning units can be used effortlessly and safely for extended periods of time. They are easy to manoeuvre and will help clean even the hardest to reach areas.”

He has also translated those years of R&D, subsequent practical application and experience into many white papers – the latest, entitled *On Biofouling*, published in June 2019 – and importantly into a book, *Surface Treated Composites*. It contains a comprehensive description of Subsea Industries’ alternative, non-toxic, cost-effective, and environmentally safe technology for protecting ships’ underwater hulls and keeping them free of biofouling.

“It’s alternative because it takes an opposite vector to the conventional systems of painting ships’ hulls with highly toxic heavy metals and biocides as a means of keeping them clean,” Van Rompay explained. “And it’s better because its standard application not only greatly lowers the environmental impact of shipping, but is also the most economical. The book is essential reading for shipowners, operators, shipyards, naval architects, International Maritime Organization, government officials responsible



Hull repair on a drill ship in the Gulf of Mexico in 2018

for maintaining a sustainable marine environment, navies, and other government-owned and operated fleets – in fact, anyone who has any interest in, or responsibility for, the efficient and ecologically sound operation of ships.”

### What next?

Van Rompay points out pollutants have been leaching from ship hulls for decades, contaminating sediments in and around ports, shipyards, estuaries, and inland waterways. Hydrex has thus come up with a new dredging system. “Patented in Europe and the US and simply called the contained dredging system, we believe the technology will be in huge demand around the world as ports, harbours, lakes, rivers, and canals face the need for environmental dredging. It allows for the removal of contaminated sediments without disturbing the surrounding environment – no turbidity is caused by the dredging operation.”

As this is written, Hydrex is working on river, tidal, and wave energy conversion technology. Prototypes have been successfully tested and are ready for the next phase of development.

Does the boss have any spare time? Well yes. He likes mostly solo rides on an enduro dirtbike in rough terrain and has crossed North and South America, Europe, Australia, and Africa in many directions. He is also a keen photographer and has acquired considerable expertise in art.

He still dives commercially, though these days it is to look at the condition of ship hulls and consider how Hydrex and Subsea Industries can develop new technologies to take care of them.

And even at 70, he rides a bicycle to work every day. [📍](#)