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‘Crews should receive tailored training for ice shipping, with officers also possessing sufficient experience, supported by procedures to be followed when in ice’
Vladimir Shurpyak, senior principal surveyor with RS

‘I realised that I really wanted to clean up the world’s rivers and oceans, and I started looking at how to do that’
Boud Van Rompay, founder and owner of Hydrex

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‘Private equity is looking for its return in the very short term and the shipowner is looking to the next 20 years…. So it’s as if there’s a woman who wants a marriage for life and there’s a guy who wants a one-night stand’
Mariella Bottiglieri, MD of Giuseppe Bottiglieri of Naples, at ‘Shipping & the Law’ conference in Naples

‘The industry will see many changes and new challenges – new fuels, new technologies, new regulations, and new ship types. We are working hard to help our clients in China to be ready for these changes when they come’
Xue Maogen, LR’s marine manager for Greater China

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‘It has been a privilege to lead Statoil during 10 very exciting years’, when the group strengthened its ‘resource base at the Norwegian continental shelf and internationally’ Statoil’s president and CEO, Helge Lund, who has become BG’s CEO

‘Owners’ expectations of a class society are changing rapidly. The transition from regulator to solutions provider is the need of the hour’
Arun Sharma, chairman and managing director of Indian Register of Shipping

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Practical man of action

Boud Van Rompay reveals to Mike Garside the inspiration behind his journey to underwater repair innovator

> With a string of industry-changing developments to his name, and a world-leading underwater repair business to run, Boud Van Rompay could be excused for consolidation.

Instead, the 65-year-old wants more — and his ideas are getting bigger. The founder and owner of Hydrex, well known in shipping for its Ecospeed hull coating brand, chats with divers, back-office workers, and receptionists as he walks through his Antwerp headquarters.

Backroom staff, he explains, are the unsung stars of Hydrex’s international underwater repair operations — everything from spare bolts to air hoses to cofferdams must be ready to go at a moment’s notice. “Our divers never discover they are missing a vital piece of equipment,” Van Rompay tells IHS Maritime. “It’s the backroom staff who make sure everything goes to plan.”

Hydrex has a solid reputation as a leader in underwater repairs, built on innovations that have changed the industry. “We built the world’s first prefabricated cofferdam for an underwater repair in 1979,” he declares.

“Since then we’ve been continually increasing the range of applications. In 1991 we built a full habitat system to enable the repair of a set of lock doors in Antwerp, and 12 years ago we developed the flexible habitat system for ship repairs. We use that now to repair or replace thrusters, stern tube seals, propellers, and any other underwater gear.

“The latest version gives us a fully enclosed dry habitat for major rudder work without the need to drydock. A lot of our developments have passed into general use, but there are plenty more in the pipeline.”

Van Rompay still likes to live on the edge. In the past few years he has traversed the United States four times by dirt bike and crossed both Australia and Africa, setting distance records. He tells IHS Maritime that this restless spirit is clearly visible in the evolution of his firm. “In the 1970s I had been studying law, but I was more interested in exploration and diving.

“I realised that I really wanted to clean up the world’s rivers and oceans, and I started looking at how to do that. I founded my own ship maintenance and repair business and saw things could be done much better. I had to develop the expertise needed, and that is still what drives me.”

feoulings were cleaned underwater,” he recalls. “It had become obvious that TBT [tributyltin] and other toxic coatings created long-lasting damage. That was how Ecospeed came about. It lasts as long as the hull does, it’s strong enough to withstand full ice conditions, but it can be quickly and safely cleaned because it’s biologically inert. In regular use it gives huge fuel savings.”

Much development work followed. “I knew that the solution had to include glass, but we went through many different ideas before we got the formulation right,” Van Rompay says. “We released it in 1999, and our first contract was a small fleet of Flemish pilot boats. Those boats proved from the start that Ecospeed did what we said it would do.

“We’ve seen Ecospeed hulls come out of the water in extreme ice which had completely stripped their previous coating. The Ecospeed was virtually untouched, even after several seasons. Meantime, cruise ships that use Ecospeed report that they have gained 2–3 kts for the same power output.”

Ecospeed has a hard, slightly dimpled surface. “That was inspired by the development of the bouncing bomb by Barnes Wallis,” Van Rompay reveals.

‘I am interested in innovation that works. And persisting long enough when looking at problems is what pays off’

By the 1980s he had developed techniques and equipment for repairs that had been considered impossible underwater. Hydrex was the first in its sector to create a prefabricated cofferdam for underwater repair, in response to a request to repair a 5m underwater hull gash.

“It just seemed the obvious way to proceed,” he comments. “We developed new ways of repairing propellers and how to do perfect underwater welding. We designed high-performance underwater cleaning machines, complete with power generators, specialised umbilicals, and tools.”

In 1993 Van Rompay’s group started work on a glass-flake hull coating system to replace toxic anti-feoulings.

“I saw what happened when these anti-

“He discovered that a golf ball would travel much faster and farther on the water than a smooth sphere.”

“We saw in our own tests that this dimpled surface is more efficient underwater as well. The Ecospeed application process includes conditioning it in the water to produce the right surface profile and texture.”

“We achieve less frictional resistance than most anti-feoulings, so fuel penalties are reduced, and one application of two coats lasts as long as...”
It’s the backroom staff who make sure everything goes to plan’

Boud Van Rompay decision-maker

www.sea-web.com/insight

the ship. Silicon and anti-fouling coatings suffer degradation over time, but Ecospread actually improves with repeated cleanings. 

Ecoshield, a variation of the Ecospread formula, recently won a Seatrade award for innovation in prevention of cavitation damage on rudders and underwater gear.

Van Rompay’s biggest idea, however, may be yet to come: “I am interested in innovation that works. And persisting long enough when looking at problems is what pays off."

The group is developing a contained underwater dredging system enabling removal of heavily polluted sediment without redistributing toxic waste.

“The system gives a huge efficiency improvement as there is no need to transport extra water up to the surface along with the in-situ sediment,” he explains.

Even more intriguing is a revolutionary tidal and river system for generating power. With some patents still pending, Van Rompay is reticent on details, but does reveal: “Most efforts so far rely on turbine-style blades, which have poor efficiency for this application and require a lot of maintenance. I am approaching the problem from an opposite direction.

“The first scale models and prototypes will be working soon,” he predicts, “though I’m open to partnerships to bring this forward. The beauty of the design is that there is no size limit, so once proven we can generate large amounts of clean energy unsubsidised.”

*= mike.garside@fastmail.net

Boud Van Rompay

Key decision:

Leaving law school to start Hydrex, the underwater repair company that also develops systems to help clean rivers, seas, and oceans

Born: Antwerp, 1949

Current position:

CEO of Hydrex and Subsea Industries, developers of Ecospread hull coating and Ecoshield cavitation damage protection

Career:

1986: Founded Subsea Industries to begin developing hard non-toxic hull coating
1974: Founded Hydrex
1971–74: Commercial diver
1969–70: Explorer, cave diver, and mountaineer

Achievements and awards:

2014: Seatrade award for innovation in developing Ecoshield cavitation damage prevention coating
2013: Panellist on biofouling at World Ocean Council Sustainable Ocean Summit
2012: Ecospread wins National Energy Globe Award for sustainability; published Surface Treated Composites White Book
2012: Prototyping of a contained dredging system (patented in 2010)
1998: Release of Ecospread, a durable and non-toxic glass-flake hull coating system
1996: Began first use of large cofferdams for thruster change-outs and repairs, giving drydock-like conditions with the ship still afloat
1991: Developed large habitat advances for lock-door rail repair
1986: Developed underwater cleaning, repair, and maintenance innovation
1979: Developed first pre-fabricated cofferdams for underwater repair

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Practical man of action

Boud Van Rompuy reveals the inspiration behind his journey to underwater repair innovator

By the 1980s he had developed techniques and equipment for repairs that had been considered impossible underwater. He recalls, "I discovered that a golf ball would travel much faster and farther on the water than a smooth sphere. I saw in our own tests that this dimpled surface is more efficient underwater as well. The scupped application process includes conditioning it in the water to produce the right surface profile and texture. We achieve less frictional resistance than even anti-fouling, so that even in rough seas, the ship is not affected by the water."

The innovation for prevention of corrosion damage on ships and underwater structures was born. Van Rompuy's biggest claim, however, may be yet to come. "I am interested in innovation that reduces and prevents long enough when looking at problems is what pays off," he says. "The group is developing a comprehensive underwater draping system enabling renewal of heavily polluted sediment without redistributing toxic waste. The team is looking at improving existing systems to serve the needs of improving pollution, reducing the risk of transport extra work up to the surface along with the radioactive material." Even more intriguing is a revolutionary fluid and system for generating power. With some patents still pending, Van Rompuy is silent on the subject. However, "I am working on the efficient, highly damped surface. That was inspired by the development of the bollard bump by Barnes Wallis," Van Rompuy reveals. "I am interested in innovation that works."

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