

Foul release paints save fuel

The most recent fouling release paint of International Paint Ltd. has gained much popularity among merchant vessels. In May of this year the 100th vessel, a bulk carrier, received its Intersleek 900 coating, with the owner's expectation of costs savings through reduced time in dock plus savings in blasting and coatings volumes, in addition to the environmental and performance benefits of the product. CBR talked to Jim Brown, Marketing Development Manager, Worldwide Marine, on recent issues on antifouling paints.

In early 2007, International Paint introduced Intersleek 900, a patented fluoropolymer-based foul release paint. Differing from its predecessor, Intersleek 700, which is a silicone-based biocide free coating, Intersleek 900 further improves the hull surface smoothness, resulting in less friction and in additional fuel savings.

International Paint's analysis predicts fuel and emissions savings, depending on the application and in-service conditions, of 2% when compared to Intersleek 700 and 6% in comparison to biocide-containing SPC self-polishing copolymer antifouling. The analysis considers laboratory-measured hull roughness achieved with the various products and actual hull roughness from ships in service. According to the company, many customers have experienced considerably higher savings than predicted, some well into double figures.

"The three main reasons to paint a ship are to protect against corrosion, to improve aesthetics and to prevent fouling. With today's fuel prices and focus on ship emissions, fouling control is particularly important," Brown said. Over the years, the market has moved from tin-based fouling prevention to copper-based products, and now, to biocide-free foul release paints. International Paint introduced their first foul release paint, Intersleek 700, for scheduled ships in 1999, and has now introduced fluoropolymer-based paints. The idea with these paints is to create a smooth non-stick surface, which prevents the organisms from attaching without the need for biocides. As the foul release products do not polish away, they need not be applied as often as biocide-based paints. With Intersleek 900, the surface has even better resistance against physical damage than Intersleek 700, and being smoother with better foul release properties, hull resistance is further reduced.

Part of Akzo Nobel, the world's biggest coatings manufacturer, International Paint operates 19 manufacturing plants globally and is the biggest marine coating producer. "We did very well in 2007, with double-digit revenue growth for the third year in a row, and we will continue to grow," Brown said. "The main problem in our sector has been the dramatic increase in raw material costs.



Carnival Valor received Intersleek 900 foul release hull coating at the Grand Bahamas Shipyard in January this year.

Over the last three years, for example, the price of copper and zinc has increased by more than 300 percent. This has been a severe test for us." International Paint uses copper, zinc, solvents, and epoxy resins as raw materials. One benefit with the Intersleek products is that they do not use copper, as opposed to the biocidal antifouling and therefore remain unaffected by copper-related cost increases.

In order to prevent fouling, the cruise industry uses either copper-based biocide paints, biocide-free foul release paints based on silicone or fluoropolymers or hard epoxy coatings. "Hard epoxy is not something we would recommend for fouling control. Although it provides barrier protection against corrosion, we believe our copper-based or Intersleek-type products provide better fouling protection," Brown said. He added that fluoropolymer-based foul release products would provide the best solution for cruise ships that operate in high fouling areas, such as the Caribbean, and which are often stationary.

Intersleek 900 works as a self-cleaning foul release paint. It provides a slippery, low-friction surface onto which fouling organisms have diffi-

culty settling. Any that do settle, normally do so only weakly and can usually be easily removed by simple wiping or washing or by the vessel moving through the water at speed. Provided that a vessel is coated with an approved SPC antifouling, it is possible to convert to the new product by applying a layer of Intersleek 717 Link Coat, specially developed for this purpose. This saves a lot of money for the owner, as complete grit blasting and associated waste disposal is not needed.



Jim Brown

Over the years, International Paint has built a track record of some 300 ships using Intersleek 700, including many cruise ships. With Intersleek 900, the company achieved a track record of 100 vessels six times faster than with the previous version. The target for the new product is all ships with a speed of more than ten knots. Today, vessels up to the size of ULCCs, and catamarans with speeds of 40 knots use Intersleek 900.

Many cruise ships opt for foul release

Carnival Cruise Lines has led the way, being the first cruise line to apply Intersleek 900 on its vessels. Intersleek 900 has already been applied to four vessels since late 2007. These are the ms Carnival Victory, ms Carnival Imagination, ms Carnival Legend and ms Carnival Valor, with a further three vessels scheduled for this year. Intersleek 700 was applied on a number of Carnival Cruise Lines' vessels since 2001 and had demonstrated that foul release coatings decreased fuel consumption and improved hull maintenance and also reduced the amount of hazardous wash water and contaminated grit produced during coating repair. Fewer coats and less paint were applied at subsequent drydockings, there were fewer volatile organic compounds released during the painting process and less time was spent in drydock. In evaluating Intersleek 700, it was initially applied on the underwater sides only, but was gradually extended to the flat bottom of the vessels beginning with ms Carnival Ecstasy in 2006. In 2007 Carnival Cruise Lines decided to extend the Intersleek fleet usage to ten vessels and signed a long-term supply agreement with International Paint. Other cruise ships with Intersleek 700 include Costa Cruises' ms Costa Romantica.

The first cruise ship newbuilding to use Intersleek 900 was MSC Cruises' ms MSC Poesia, delivered at the end of March of this year from Aker Yards in France (see CBR 1/2008). On this vessel, an SPC coating was used for fitting out, and the Intersleek 900 was applied on a coating of Intersleek 717 Link Coat. Another cruise ship that has opted for this paint is Royal Caribbean International's ms Independence of the Seas.

"The success of the new product is based on the need to protect the environment combined with the need to save on fuel costs, particularly important with today's high fuel prices," Brown said. With the current developments resulting in the need to further reduce emissions and to increase fuel efficiency, International Paint seems well placed with their products, now and for the future. ■