Savings and security with PureBallast 3 bulker-fit configurations

Columbia Shipmanagement

Case story

Columbia Shipmanagement is a world-class ship manager and maritime service provider with a proud 40-year history. From offices in Cyprus, Hamburg, Shanghai and Singapore, the company provides technical management and crewing for 250 vessels – including two capesize bulkers that will be the first with Alfa Laval PureBallast 3 bulker-fit configurations.

The Columbia Shipmanagement fleet comprises everything from small chemical tankers to VLCCs, as well as all sizes of container vessels. In addition, it includes bulkers whose operating profile differs from the others. The bulkers load cargo at twice the speed they unload it, which makes a flow-adapted PureBallast 3 bulker-fit configuration ideal for retrofits on the two capesize bulkers.

UV simpler than electrochlorination

Columbia Shipmanagement has had positive experience with PureBallast 3, which is used on four of its German-operated vessels and a number of others in Cyprus and Singapore. Two years have passed since the first of those systems was installed as a retrofit.

“PureBallast 3 was our first experience with retrofitting,” says Christian Obst, Project Manager at Columbia Shipmanagement. “We had some experience with electrochlorination systems from newbuilds, which were handy bulkers of 50,000 DWT. But electrochlorination is actually more complex in terms of installation, operation and service. Based on the experience of installing and operating those systems, we were looking for a better and easier solution for the large capesize bulkers. We came to PureBallast 3.”

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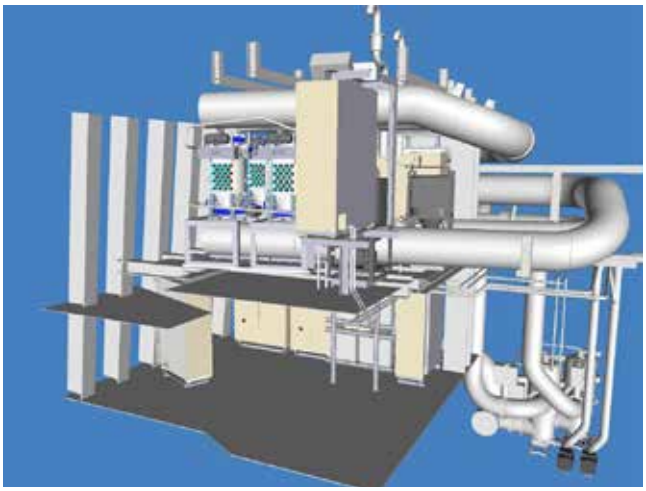
Filter size was a key parameter

In itself, switching from electrochlorination to a UV system like PureBallast 3 makes installation simpler, says Obst. He notes that there are fewer sensors to balance in a UV system, plus savings in piping and installation time. Nonetheless, Columbia Shipmanagement was hoping for more on its capesize bulkers.

"One thing we really considered was the filter installation," Obst explains, noting that a 3000 m^3/h filter is twice a person's height and extremely heavy. "In a retrofit, you can't get a huge, heavy filter onto the vessel. You have to cut the hull, disassemble pipes and make huge foundations, because it's both the weight of the filter and the seawater that's in it."

"We were looking for a different sort of solution to reduce the size of the filter, which we discussed with the Alfa Laval team," Obst continues. "Some suppliers say they have only one offer, but Alfa Laval was more innovative."



Savings in footprint, weight and installation

The solution for the capesize vessels was a PureBallast 3 bulker-fit configuration, which differentiates the ballasting and deballasting flows. This takes cost-effective advantage of the bulkers' operating profile.

"A UV system treats the water twice, both when it comes in and when it goes out," Obst explains. "With the bulker-fit configuration, we could utilize the bulker profile to reduce the needed filter capacity and get a smaller equipment footprint."

Doing this has created savings on many levels, from reducing filter weight by 60% to further simplifying installation. "The diameter and height needed for the filter – everything is reduced," Obst says. "We won't have to cut into the hull, and of course the transportation will be easier. When you have to cut the hull, remove pipes, put pipes back, weld the shell plate and do a vacuum test, it adds steps and cost."

The way forward for bulkers

Obst admits that eleoctrochlorination has generally been the choice for bulkers up to now, especially when it comes to capesize bulkers and other larger sizes. He suspects, however, that the PureBallast 3 bulker-fit configuration has the potential to change this.

"Will it tip the balance in favour of UV? Could be," he says. "Highly likely. Because if you look at the running of these systems, including handling by the crew, a UV system is like a light. You switch it on, then it works. With electrochlorination you have to add salinity if you're operating in fresh water, and you have to calibrate several sensors. You have to monitor the pH, and there are the neutralization agents that have to be measured for total residual oxidants. With UV it's much easier, and the crew already has some understanding and training, because UV systems are known on board from portable water disinfection. You'll see that in the OPEX later on."

Partnership from start to finish

Obst is notably pleased with the design of the retrofits, which will be installed on the two capesize bulkers in March and April 2020, with a third bulker remaining as an option. In addition, he feels satisfied with his choice of partner going forward.

"We're looking to extend the cooperation with Alfa Laval because they're quite innovative. You can sit down with them and solve the issues that arise," Obst says. "That counts nowadays, because there are so many inputs from outside due to changing regulations and demands from owners, pools and the commercial operation of the ships."

Service will be an important part of the partnership as well. "If a ballast water treatment system isn't working, port states may restrict your operations – forcing you to leave cargo behind or detaining the ship until it's fixed," Obst says. "If you can't leave the port because you have to wait for a service technician, the off-hire time, labour and possibly shifting cargo can have a huge cost effect. You can't underestimate the huge service network that Alfa Laval has, and we believe it will be crucial to us in the future."

Obst concludes, "Getting the equipment and bringing it onto the ship is one thing, but as a ship manager we also have to look at the long-term perspective. You need a partner on your side that you can count on."

How to contact Alfa Laval
Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com.

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