

Developments in ballast water sampling and testing

It is an eventful time for those involved in ballast water management, with new standards being announced and innovative test kits simplifying the process, writes Paul Gunton

Port states encourage testing using portable kits

As part of IMO's experience-building phase of implementing its Ballast Water Management Convention (BWMC), ships visiting some ports are being subjected to ballast water checks, although no action is being taken in the event of a deficiency being found.

Marine Propulsion is aware of one state that is conducting these tests, Saudi Arabia, and another that is exploring doing so, Canada. But up to six more are understood to be conducting tests.

Canada's Great Lakes Laboratory for Fisheries

and Aquatic Sciences, in Burlington, Ontario, is assessing a number of kits, although exact details have not been made public. French test kit maker aqua-tools revealed in March that its B-Qua equipment had been added to the programme.

The Canadian laboratory plans to carry out ballast water sampling and testing on up to 20 ships during 2018, to assess which tool or tools might provide the best rapid assessment of ballast water compliance, aqua-tools said.

Aqua-tools is also involved in testing

programmes in Saudi Arabia. It supplied the first of 30 of its Rapid ATP ballast water monitoring systems last August to Swiss testing and certification organisation, SGS Group, which has agreements to inspect and monitor treated ballast waters of vessels arriving in certain countries.

SGS Group global business development manager Vladimiro Bonamin said that SGS was one of four inspection companies to have been approved as ballast water test providers to the shipping community. "Ships are now obligated, by local regulations, to sample and perform the indicative test while de-ballasting in Saudi Aramco-controlled ports, using

one of the four approved companies," he said.

Another company providing testing services in Saudi Arabia is Global Strategic Alliance (GSA), which uses Chelsea Technologies' FastBallast portable ballast water analyser.

In an exclusive interview with *Marine Propulsion*, GSA co-founders Adnan Bahamdein and Rajeev Ramachandran stressed that the tests it is conducting are indicative tests and are not the equivalent of a full port state control check. "There are no penalties," Mr Bahamdein said, but all failures are reported to Saudi Aramco. "No vessel that has failed has ever failed again," he added.

Tests needed to bring older BWMSs into use



Ankrone Water Services began testing a BWMS installation on a large container ship in May (Credit: Ankrone Water Services)

As implementation dates approach under IMO's Ballast Water Management Convention (BWMC), it is important for shipowners to carry out recommissioning tests for equipment that has not been used for some time, believes Ankrone Water Services' chief scientific officer Claudia Dreszer.

She was speaking to *Marine Propulsion* soon after presenting a paper at a two-day Ballast Water Workshop organised by the German Shipowners Association (VDR) at the end of May, where she said that many ships are gradually starting to use both new and old systems. "It is useful to run a performance check to know if the system is working or not," she said.

Although the company was only set up in March this year, Dr Dreszer and her chief executive Erik Köster have several years ▶

► of experience of conducting onboard testing and she expects to see a growing demand for recommissioning tests in the months ahead.

The company also carries out type-approval testing. In May it carried out the first of a series of sampling tests on a 10,000+ TEU container ship newbuilding at the start of six months of checks on a UV ballast water management system (BWMS) in different water conditions. At the time of *Marine Propulsion's* conversation in early June, testing work was also scheduled on a larger container ship of about 14,000 TEU and a smaller one.

From her experience of working with onboard staff, she had told the VDR seminar about some of the challenges she had encountered, which included BWMS and other components not being compliant and installation problems.

She also highlighted crew training as a challenge to successful implementation, telling delegates that some crew see BWMSs as “just another burden on [their] already full schedule”. Speaking to *Marine Propulsion* she said that it is “important that the crew is involved in the whole process” so that they know how the whole treatment system works. It is time-consuming to get them involved in such a complex system, she said, “but in the end it is very helpful for everyone”.

Compliance improves, but sampling standards needed

Sample tests show that compliance with ballast water management standards has improved in recent years, according to SGS Group global business development manager Vladimiro Bonamin. Speaking in September 2017. Mr Bonamin said that, based on several hundred sampling events worldwide over a number of years, more than 90% had been compliant with the relevant standards. But over the previous 12 months, he said, compliance had been “very, very close to 100%”.

Mr Bonamin was addressing the International BWM Technology and Standardization Forum, organised by the Shipbuilding Information Center of China (SICC) and BIMCO, where he told delegates that most of these tests had been carried out for shipowners or manufacturers seeking information about their systems' performance, although about 150 of them were carried out to issue official test reports.

His experience spanned both IMO and the US, divided almost entirely between electrochlorination- and UV-based systems. Other technologies were “very rare” he said. **MP**

Standard due on sampling ports

A standard that will define a standard sampling port design was due to be published in June, as this issue of *Marine Propulsion* went to press. In a submission to the fifth meeting of IMO's Sub-Committee on Pollution Prevention and Response (PPR 5) in February, the International Organization for Standardization

(known as ISO) said that the revision of Part 1 of its standard 11711-1, which addresses ballast water discharge sample ports, was “in the final stages of development.” An opportunity to submit comments on ISO's draft expired on 12 March.

This first part of the standard provides guidance on the materials, design and installation of permanent shipboard fitting, ISO's submission to PPR 5 said. It also provides guidance on the configuration, tolerances and dimensions of these ports. Parts 2 and 3 of the standard are being developed to address ballast water sample collection and ballast water analysis, respectively.

It is ISO's Technical Committee No 8 (TC8) that addresses ships and marine technology and a working group, No 12 (WG 12), was set up in 2016 to focus specifically on aquatic nuisance species and take on TC8's work on BWM.

Speaking in September 2017, WG 12's convenor, environmental protection specialist at the US Department of Transportation's Maritime Administration Carolyn Junemann told the International BWM Technology and Standardization Forum, organised by the Shipbuilding Information Center of China (SICC) and BIMCO, that further standards are being developed. These include one that will establish specifications for electrochlorination systems. That topic has since been taken on by the Chinese BWMS manufacturer SunRui, with backing from a number of international experts.

Other companies involved in ISO's work include French test-kit manufacturer aqua-tools, which is working alongside French standardisation organisation Association Française de Normalisation; Desmi Oceanguard, which is involved in a project to develop a standard for CFD scaling of UV-based BWMSs, and UniBallast, which is part of a working group establishing requirements for a ballast water transfer connection flange.



Carolyn Junemann (Marad): ISO's WG 12 addresses “all matters arising from non-indigenous or invasive species and aquatic nuisances” (Credit: Riviera Maritime Media)