

Crew Training is Critical in BWMS Commission Testing

By Steve Candito, CEO, Ecochlor

Shipowner's views about the importance of crew training in the use of their new ballast water management systems (BWMS) vary enormously; during some Ecochlor installations we have given training to as little as one seafarer (the Chief Engineer) to as much as the entire crew. I recommend that all crew members who may be involved in the operation of the system attend the training provided by the BWMS manufacturer. At a minimum, the Chief Engineer, First Officer, and Second Engineer should all be able to run the system and assist any other crew members in its operation.

Depending on the owner's choice of BWMS manufacturer, there may be a range of training options (beyond commissioning requirements) that are available for the crews, including hands-on training centers, online tutorials and even portable simulator units.

BWMS that are more complex will obviously require more crew training. This need is especially acute when performance is conditional on understanding the system's limitations in variable water conditions such as salinity, temperature, and turbidity.

For Ecochlor, crew training continues post-commissioning with regular periodic shipboard training after system handover so that new crew members learn the system and existing crew members' knowledge is refreshed. This follow-on training helps to ensure continued safe and reliable operation of the BWMS for years to come. In our experience, the more comprehensive and regular the training that we can offer, the better the operational outcomes: Not only during the installation, but in the long-term operation of the system.

Some shipowners have taken full ad-

vantage of our International Training Center prior to their BWMS installation, which has a complete system set up for classroom and hands-on training. This training commitment by the owner clearly represents an ideal situation for everyone; the crew is better able to assist with the installation and they are more likely to troubleshoot any issues once at sea. Additionally, we have clients that purchase our Ecochlor system simulators so that they have in-house capability to continue crew training at their own facilities.

Biological Efficacy Commission Testing

In the last few years, shipowners have been faced with considerable pressure to prepare their vessels to meet increasingly stringent environmental regulations. The IMO requirement for the biological efficacy commission testing of ballast water management systems (BWM.2/Circ.70) is nearing its mandatory start date in October 2021. With this in mind, Flag Administrations are being encouraged to start implementation of this testing as soon as possible. Once a Member State adopts biological testing as part of the commission process, the crew will be responsible for running a full ballast operation after the manufacturer finishes the BWMS functional test and prior to receiving the system certification.

The biological efficacy test procedure is not dissimilar to the sort of on-board testing that all BWMS have undertaken during their IMO/USCG certification processes. The owner must select an independent contractor to carry out the biological efficacy part of the commission test. In most cases, according to the guidelines set in place by Flag, the

manufacturer may be allowed to be present, but is not permitted to either operate the system or to assist the crew; the crew is required to run the system from uptake to discharge. This requirement further emphasizes the importance of crew training. If crews are not fully familiar with the system and as a consequence fail to run the system properly, it could result in a very expensive test failure. With biological testing costing between \$8,000 - \$10,000, crew training becomes even more critical. It must be completed properly and it certainly cannot be compressed into the last few days of the dry docking.

A typical biological test can add as much as five days to the shipyard period, including any hold time required by the BWMS before discharge. Shipowners need to be aware that they will have to allow for more time in the shipyard for this process, unless they want to take on the less appealing and more expensive alternative of requiring the test team to sail with the vessel. Coordinating this team's travel arrangements between ports, and possibly countries (for example, VISAs and customs clearances), and continuing to pay them during the voyage would be a logistically complicated and costly choice. Mandatory system commission/efficacy testing is coming soon. It carries a cost, both financially and in the time required for its completion. To ensure success a properly planned and executed BWMS installation is needed coupled with comprehensive crew training to facilitate correct system use from the very first time the system is turned on. Shipowners who do not plan their installations effectively, allowing for enough time to adequately train their crews, risk significant time and cost penalties.