

"Muddling through" without gaming ballast water regulations

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An old, but still influential article titled “The Science of Muddling Through” advocates making decisions based on “successive limited comparisons” rather than detailed scientific analyses of all available options. In 1978 this idea, that trial and error can be superior to rigorous analysis, was the basis for Nobel Prize winning economic research on what became known as “bounded rationality”. In recent years “muddling through” has been popularly reincarnated in environmental management circles as “adaptive management.”

So, how should “muddling through” influence the way International Maritime Organization (IMO) ballast water (BW) regulations are implemented? Shipping interests are finally viewing global BW regulations as a near-term reality, and have started raising valid concerns about all the uncertainty associated with the effectiveness of ballast water treatment systems (BWTS), global BWTS supply and installation capacity, standards for Port State Control (PSC) sampling and analysis of BW, and about enforcement protocols and penalty schedules. Shippers are calling for a “trial period” for BW enforcement with “leniency” and “flexibility” and few, if any, penalties imposed on ship operators found not to be in compliance. They are clearly in favor of “muddling through”.

However, there is another side to the story. Economic research that earned Nobel awards in several recent years suggests that when opportunities exist for regulatory muddling, industries routinely “game” the system by overplaying scientific or technical uncertainty, and using legal and political influences to clog the works in order to avoid, delay, or reduce compliance costs. What does this research suggest about implementing BW regulations? For one thing, it suggests that BW regulators and political leaders who are concerned about both shipping and the harm to coastal and ocean ecosystems caused by BW need to be vigilant in distinguishing between valid industry concerns and industry gaming behavior.

This vigilance will be enormously important over the next few years for three reasons. First, the success of ballast water (BW) regulations depends on the success of BWTS markets, and on investments made over the next few years in BWTS supply and installation capacity to allow widespread compliance. Second, these investments will not be made if the cost of complying with BW regulations, which includes the cost of purchasing, installing, maintaining, and using a

certified BWTS, cannot compete with the cost of not complying. Third, if there is a prolonged “trial period” of permissive regulatory muddling where the cost of noncompliance is very low, and is expected to remain low as a result of “gaming” behavior, these investments will not be made. In fact, “gaming” BW regulations may be most successful if it inhibits BWTS markets from developing enough to allow widespread compliance, and creates a situation where it seems unfair to criminalize and penalize noncompliant ship operators.

So, “muddling through” with an initial “trial period” of BW regulations makes sense, but needs to be carefully managed. I suggest a three-step procedure for protecting ship operators, minimizing opportunities for “gaming”, and providing enough regulatory certainty to kick start BWTS markets and give BW regulations a chance to work.

Step 1: To promote improvements in BWTS technologies and markets, prevent locking in old BWTS technologies, and provide some certainty to ship owners, establish a guaranteed multiyear (but not forever) “no muddling” period during which a ship that installs a certified and properly scaled BWTS is exempt from being required to install new “limit of technology” BWTS when they become available. All new ships and all ships with BWTS older than the “no muddling” period, with some special hardship exceptions, should be required to install “limit of technology” BWTS.

Step 2: To provide ship owners with more certainty, clearly define “gross negligence” in terms of what they are expected to know and do with regard to installing and operating a BWTS; and similarly define what should be included in the “implied warranty” that BWTS vendors and installers provide ship owners with respect to shared liabilities for penalties, sanctions and other ship costs associated with violations that result because of BWTS failures. Marine insurers should be engaged to determine what roles third parties can play in helping ship owners reduce and manage BW-related risks and costs; conventional insurers should be engaged to determine what product liability coverage might do the same for BWTS vendors and installers.

Step 3: Even during the “trial period” of BW regulations, there should be strong, not “gentle” enforcement, and clear and meaningful penalties for violations that are a result of gross negligence or willful misconduct, with escalating financial penalties and other sanctions for repeat offenders.

Taking these three steps, or something similar, would make it possible to protect law-abiding ship owners, deter avoidable violations, minimize the potential for the “gaming” of BW regulations, and bolster the development of BWTS technologies and markets on which the success of BW regulations depend.