



## How ready is your tanker to comply with the new damage regulations?

In the 66<sup>th</sup> session of the Marine Environment Protection Committee (MEPC 66) of IMO, the amendments to MARPOL Annex I Ch.4 and the IBC/BCH Code regarding the compliance of the oil tankers to damage stability regulations were agreed. The Resolution (MEPC.248[66]) which was adopted on April 2014 entered into force on 1<sup>st</sup> January 2016. Similar resolutions (MSC.369[93] and MSC.377[93]) were adopted on May 2014 for tankers carrying dangerous chemicals and liquefied gases.

New requirements for on-board stability instruments applicable to tankers carrying any type of cargo and it will be effective from 1st January 2016. According to the new rules:

All tankers should be fitted with a stability instrument, capable of verifying compliance with intact and damage stability requirements, approved by the Administration.

The new requirement is retroactive and applies to both new and existing ships as follows:

- Ships constructed on or after 1st January 2016 – at delivery
- Ships constructed before 1st January 2016 – at the first renewal survey on or after 1st January 2016, but no later than 1st January 2021

**Stability Requirements.** Ships in operations have some aboard documentations to confirm the compliance with appropriate and applicable stability requirements. These documents which should be approved by the administration can be called Stability Information Booklets (SIB). The SIB is usually prepared at the time of construction and provides limited information about some standard and possible loading conditions. Although the Administration may waive the requirements of regulation for some tankers which are on a dedicated service, with a limited number of permutations of loading such that all anticipated conditions have been approved in the stability information booklet; as a matter of fact, a ship may face to operate much different loading conditions and it cannot be expected that these booklets will be able to include all the possible loading conditions. Furthermore, for ships carrying liquid cargoes, even a small change in the filling level of the tank or the density of the liquid, can have significant impact on whether compliance is maintained. The only way to make it possible to check all the loading conditions that a vessel may operate is a computerized instrument onboard.

**A Loading Computer** is an onboard computer based system for calculation and control of the actual loading conditions for compliance with the applicable stability and strength requirements. It does not mean a loading computer is an alternative to the Approved Stability Information Booklet. It is a supplement that allows the user to instantly calculate and control of every loading condition that a ship may operate in her lifecycle. According to the International Association of Classification Societies (IACS) there are three types of calculations performed by stability software are acceptable depending upon a vessel's stability requirements. Type-I Software calculating intact stability only (for vessels not required to meet a damage stability criterion), Type-II Software calculating intact stability and checking damage stability on basis of a limit curve (e.g. for vessels applicable to SOLAS Part B-1 damage stability calculations, etc.) or previously approved loading conditions and Type-III Software calculating intact stability and damage stability by direct application of preprogrammed damage cases for each loading condition (for tankers etc.).

**AydenLoad** is a new generation ship loading and cargo management software. The Direct Calculation Algorithm of AydenLoad uses the 3D model of the vessel as basis for the calculations. By using the full geometrical definitions of the vessel as the basis for computation, the precise status for condition is being simulated. Additional features based have been developed for a flawless load planning and condition handling. It is the Type-III Software and compliant with the IACS UR L5 requirements for approved onboard Loading Computers that makes it capable of verifying compliance with intact and damage stability requirements for all types of vessels. AydenLoad has been developed to meet the demands of ship owners and ship operators. It is equipped and optimized with all the essential tools for usage of the onboard crew so it does not only ensure that your vessel is compliant with the applicable requirements, it will also provide you to maximize the cargo without compromising safety. Therefore with AydenLoad, you will be in possession of a powerful and versatile cargo planning and stability program that will remain up-to-date at all times.

## Ayden Marine - your solution partner with specialized staff and support

**Note:** As a result of the new rules entered into force on January 1, 2016, it is the responsibility of ship owners or ship operators to ensure that their vessels are compliant within the due date. The situation for vessels built on or after January 1, 2016 are quite clear (should be compliant at delivery) while the situation for existing vessels may seem a little more complicated. Many ship owners or operators do not have a clear idea of where the ships are in terms of compliance with the requirements. However, it is known that many tankers operate without any Loading Computer or without a Loading Computer that is capable of verifying compliance with the new regulations. While the implementation for existing ships is based on survey date, it should be noted that the process is time-consuming, such as the customization of the software for your vessel and approval by the administration. **Ayden Marine** is proposing to work with you to ensure that this process goes smoothly. We offer the necessary and sufficient solution to both new and existing vessels in terms of compliance with these regulations with our entire crew of the naval architects and marine engineers (including ones who has expertise on international regulations due to their role in the past for stability approval departments of the classification societies). Please do not hesitate to contact us for more detailed information.