LOADMASTER NEWS

Damage stability calculation by loading computers. Do you comply with Resolution MEPC.248(66)?

Tankers are facing changes in the rules regarding loading computers. As the resolution MEPC.248(66) enters into force each tanker owner has to make sure that all vessels comply with the adopted regulations. Kockum Sonics offer necessary programs and administrative support to ensure that vessels comply with the rules. We are able to make necessary changes in old LOADMASTER programs as well as creating new programs from scratch.

The rules:

In the Marine Environment Protection Committee (MEPC) meeting it was decided to strengthen the rules for tankers regarding damage stability. For quite some time all new tankers have been fitted with a loading computer that can calculate damage stability. However there is also significant proportion of sailing tonnage that either does not have damage stability or has a damage calculation module that is not approved by Class. These vessels are now subject to compliance with the below newly introduced rule.

Resolution MEPC.248(66) was adopted on 4 April, 2014 by the 66th session of the Marine Environment Protection Committee (MEPC 66) of IMO, and it enters into force on 1 January 2016.

Below is an extract of the rules:

All oil tankers shall be fitted with a stability instrument, capable of verifying compliance with intact and damage stability requirements approved by the Administration having regard to the performance standards recommended by the Organization:*

.1 oil tankers constructed before 1 January 2016 shall comply with this regulation at the first scheduled renewal survey of the ship after 1 January 2016 but not later than 1 January 2021;

.2 notwithstanding the requirements of subparagraph .1 a stability instrument fitted on an oil tanker constructed before 1 January 2016 need not be replaced provided it is capable of verifying compliance with intact and damage stability, to the satisfaction of the Administration; and

.3 for the purposes of control under regulation 11, the Administration shall issue a document of approval for the stability instrument.

** Refer to part B, chapter 4, of the International Code on Intact Stability, 2008 (2008 IS Code), as amended; the Guidelines for the Approval of Stability Instruments (MSC.1/Circ.1229), annex, section 4, as amended; and the technical standards defined in part 1 of the Guidelines for verification of damage stability requirements for tankers (MSC.1/Circ.1461).”*

Similar resolutions MSC.369(93), MSC.376(93) and MSC.377(93) were adopted on 22 May, 2014 for chemical tankers and gas tankers.

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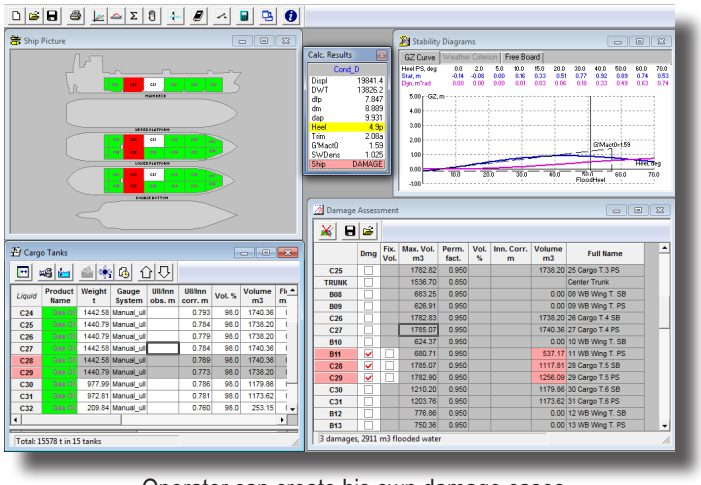
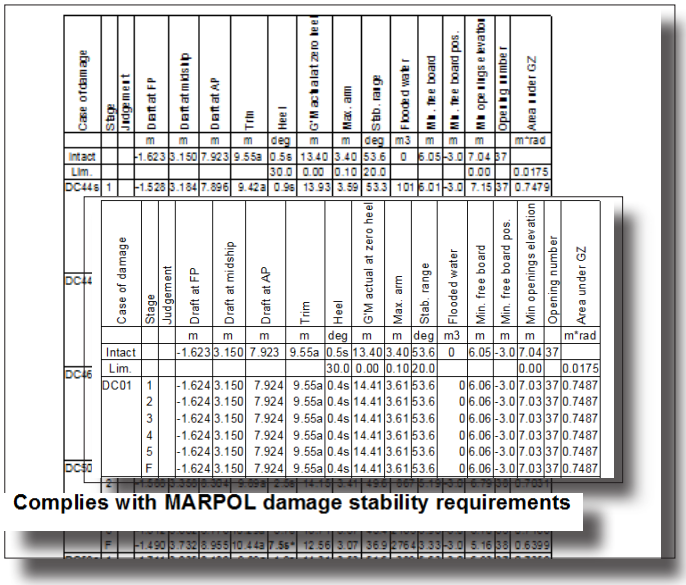


Operator can create his own damage cases



Damage survey

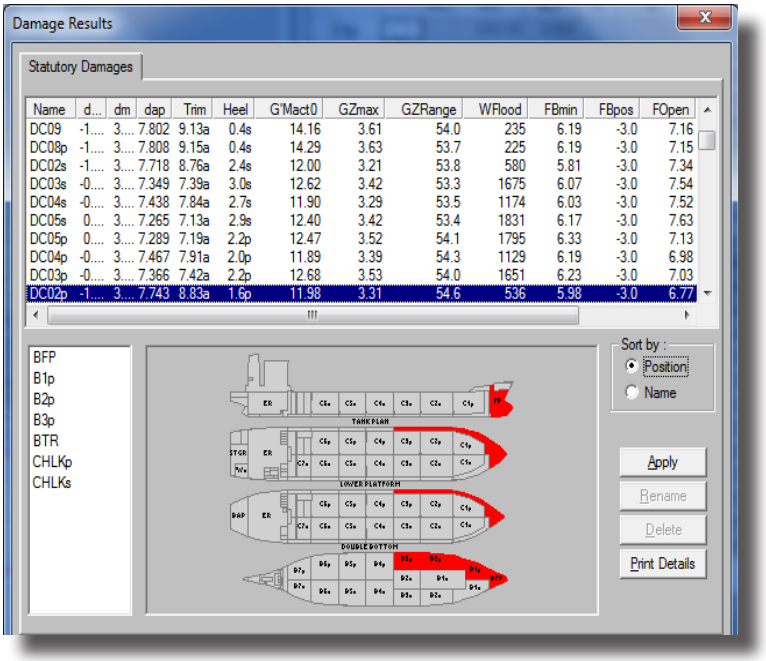
By the click of a mouse, damage stability calculations are executed almost instantly and any previously user defined damage cases are also calculated. The damage calculation is applied to any intact condition, real or theoretical. A summary of the calculation results is presented clearly on screen and the program's powerful functionality allows any of the cases to be selected for a detailed study, with the survey report generated for on-screen presentation as well as hard copy, thus making IACS UR L5 (TYPE 3) reporting extremely simple. The operationally focused reports are extended to include Class requirements governing intermediate stages of flooding as well as the five worst damage cases that are presented separately. The user will also be visually alerted if the present condition is not evaluated against the required damage scenarios as required.

Damage generator

Kockum Sonics has a unique analysis tool for the damage criterion. The outcome will be a list of 100–300 damage cases that are required to fully test a departure condition in accordance with MARPOL, IBC and IGC codes.
As per today's requirements from some IACS members it is not enough just to enter the predefined damage cases that are presented in the vessel's damage stability booklet. Therefore the loading computer has been extended to include damage cases that incorporate a complete survey of the intact condition in accordance with MARPOL, IBC or IGC.

3-D calculation method

For the vessel's outermost compartments the volume in a damaged tank will be dependent upon vessel's water line. Any changes in the vessel's floating position will impact the content of water in the tanks. For compartments that are not directly damaged and are partially filled, the volume of water in theses compartments remains unchanged when the vessel's heel changes. LOADMASTER calculates damage stability using the Lost Buoyancy Method. A 3-D description of the hull and it's compartments is used in order to find vessel equilibrium. The calculation is in accordance with The International Association of Classification Societies, IACS UR L5 (Type 3). LOADMASTER therefore calculates trim and stability corresponding to the final stage of flooding, in addition five (5) intermediate stages of flooding and displays them within the damage report.



Damage consultant

By using the Loadmaster damage generator, Kockum Sonics can offer support on damage analysis in accordance with MARPOL, IBC or IGC Codes. Consequently Kockum Sonics' damage generator can provide the Owner with new damage manual potentials, an addendum for an existing damage manual and a tool to assist in the analysis of damage implications in cases where the ship's structure is to be, or has been modified.

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