# navis®

MACS3 FOR BULK CARRIERS

The transportation of loose bulk goods demands special safety requirements of a loading computer, particularly when the cargo to be transported is hazardous or varies in type.

Thanks to intelligent module collaboration, the bulk-carrier-specific MACS3 loading computer can be used to optimally load and unload varying solid-bulk cargoes with consideration for hatch cover handling and safely transport the cargo. Such solid bulk cargo includes ore, coal, grain, steel coil and logs or cargo falling under the IMSBC code category risk group C like nickel ore, iron ore fines or bauxite.

SAFETY | The high-end onboard MACS3 loading computer not only handles a wide range of calculations related to hydrostatics, intact stability, longitudinal and local strength, it also offers guidance on loading sequences and stowage, ballast-water distribution, stability and grounding scenarios.

CERTIFICATES | The MACS3 is approved by the world's leading classification societies. Both ship crews and planners can rely on the instrument to help them adhere to current IMO regulations, obtain regular updates on dangerous goods, and take early steps to adopt new rules such as the IMO polar code.
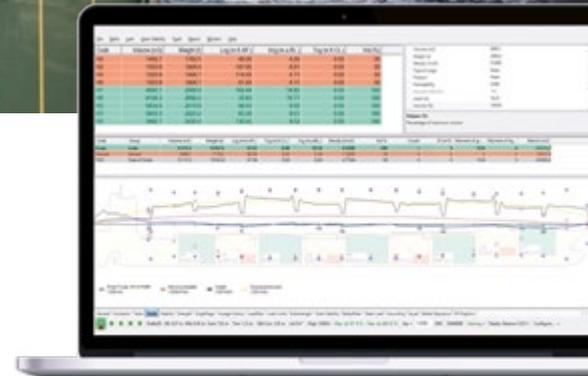
BENEFITS

✓ Approved by all major classification societies in terms of stability, intact and damage strength

✓ Dangerous-goods checks according to IMDG and IMSBC code to identify potential loading conflicts

✓ Simulation of loading/unloading sequences

✓ Two- and three-dimensional images of various vessel and cargo views

✓ Integrated dry-bulk stowage functionality

✓ Compliance with IMO polar code

FEATURES

MACS3 for bulk carriers addresses the special requirements of dry bulk by providing various ship-type-specific modules.

BASIC

✓ **MACS3.net** includes the vessel's graphical tank plans; shows current conditions; optimizes trim, heeling, stability and stress, loading conditions, and calculations; and saves and retrieves loading conditions. It also provides online help, user warning points and an interface to tank automation systems to establish a connection between the tank measuring system and tank levels.

✓ Thanks to an **NMEA interface**, standardized stability and strength of the current loading conditions can be sent to other on-board systems.

✓ **Two-way interface** is available for the hull stress monitoring system HMS to send and receive strength limits and calculated strength analyses.

✓ **Draft survey** including deadload calculation enables a comparison between the initial and final condition of the load.
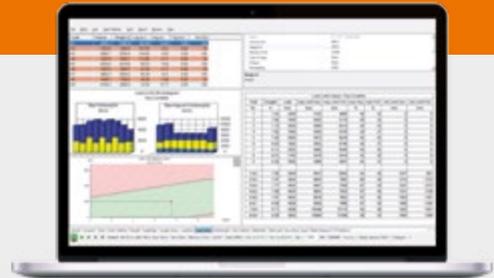
The module Bulklim shows loading limits for holds due to local strength

ADD-ON MODULES

✓ **Bulk strength** calculates longitudinal strength in flooded conditions according to IACS requirements UR Z11, S17 and S25. Each hold is assumed to be damaged. The respective loading situation is checked with regard to strength limit value.

✓ **Grain** examines grain stability in light of the special requirements of the IMO Grain Code. This module includes completion of the "Grain Stability Calculation Form" required when loading bulk grain in the US, Canada and Australia. It also ensures intermediate arrival reports meeting ports' special requirements for safe carriage.

✓ **Loadman** precalculates loading and unloading sequences and simulates loading and discharging operations in time. A loading/unloading plan can be automatically created as a printable PDF file. The optimization of the total cargo distribution is integrated with respect to GM, stability, stress.

✓ **Bulklim** ensures load limits set by classification societies for double-bottom vessels are not exceeded.

✓ **Dangerous goods for bulk carriers** employs IMSBC code, DOC and company-specific rules and includes emergency schedules as well as firefighting and safety plans.

✓ **Mix stow** supports designing, loading and discharging all kinds of general cargo using a 3-D vessel profile that continuously takes into account several loading-condition checks. It also includes a special steel-coil planning tool to manage position and weight of coils as well as dunnage and functions for stowing timber on deck.

✓ **Hatchcover** module allows the cargo hold to be shared by vertical bulkheads and horizontal intermediate-deck paneling.

✓ **Ballastman** provides the means to plan and supervise the process of ballast-water exchange while at the same time ensuring the continual stability and strength of the vessel. The module generates a ballast-water exchange report.
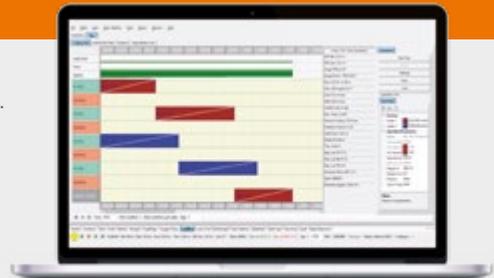
The module Loadman enables planning of loading and unloading sequences in the port

REFERENCES

The onboard loading computer MACS3 is in use on a wide range of container vessels, multipurpose vessels and bulk carriers as well as on tanker vessels, roro vessels and passenger vessels.

Established in 1984, the ship library includes more than 5,000 ship profiles. For the container vessel segment, MACS3 holds a share of approximately 65%.

In addition, maritime collages and universities worldwide teach future nautical officers with the MACS3 loading computer.

If you have any enquiries or would like to set up an appointment with one of our sales representatives, please phone or e-mail us:

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