



Certificate of General Approval

This is to certify that the undernoted Loading Computer Software has been examined in accordance with the relevant Classification Rules and Procedures, and the applicable Statutory Regulations and is approved for the functions stated below and detailed on the Supplement attached hereto.

Company	Kockum Sonics AB
Address	Box 1035, Malmö, 212 10, Sweden
Software Name	Loadmaster
Software ID/Version Number	X5
Minimum Hardware Specifications	Processor: Pentium or higher, RAM: 16 MB or more, Monitor Resolution: 800x 600
Operating System	Windows 98, NT, 2000, XP, Windows Vista or Windows 7,8 & 10
User's Operations Manual ID	--
Approved Functions	<input checked="" type="checkbox"/> Strength <input checked="" type="checkbox"/> IACS UR L 5 Type 1 - Intact Stability <input checked="" type="checkbox"/> IACS UR L 5 Type 2 - Damage Stability (Limiting Curves) <input checked="" type="checkbox"/> IACS UR L 5 Type 3 - Damage Stability (Direct Calculatlions) <input type="checkbox"/> IACS UR L 5 Type 4 - Damage Stability (Safe Return to Port)
Strength Design Appraisal Document	LDS/HULL/9981251 & MTES/HULL/24648119 & UKITSO/HULL/43515677
Stability Design Appraisal Document	LDSS/STAT/WP1971258

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Ship Structure - Principal Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register group

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Supplement

Strength Features

Bulkhead Shear Force Correction Factors – Ship rules	Yes
Bulkhead Shear Force Correction Factors - CSR Before 1st July 2015	Yes
Bulkhead Shear Force Correction Factors - CSR From 1st July 2015	Yes
Permissible Cargo Torque	Single
Strength With Any Single Hold Flooded (URS17)	Yes
Local Double Bottom Strength (URS1A)	Yes
Permissible Shear Forces and Bending moments	Single

Intact Stability Features

Hydrostatic Data	3D Hullform
Tank capacity Data	Even keel (pre-programmed)
Cross curve Data	3D Hullform
Down-flooding Data	3D Points
General Criteria Check	Intact Stability Code, as amended - MSC267(85)
Weather Criteria	Intact Stability Code, as amended - MSC267(85)
Windage Data	Direct area calculation
Timber Criteria Check	Intact Stability Code, as amended - MSC267(85)
Timber Cargo Water Absorption	Automatic
Ice Accumulation	No
Inland Waterways (ADN) (1)	No
Free Surface Moment calculation	Calibrated values - Even keel (pre-programmed)
GZ Curve Calculation	Corrected by the maximum upright inertia for all heeling angles; Corrected by the actual upright inertia distributed by sine
Free Surface Select Options for Each Tank	No
Grain Stability	Trimmed and partly filled data (pre-programmed); Trimmed, untrimmed and partly filled data (pre-programmed); Allowable grain heeling moments check (pre-programmed); Grain stability criteria direct calculation and check
Limiting KG/GM Curves	Multiple parameters (see Design Appraisal Document)

Damage Stability Features

Limiting KG/GM Curves	Multiple parameters (see Design Appraisal Document); Combined intact and damage limit curve option
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(1) Type C Tank Ships, Tank Width > 0.7B

(2) Applicable to Type 3 functionality only



Supplement

Direct Calculations

Pre-programmed damage cases; Five intermediate flooding stages (2); Intact minus outflow reference displacement (2)

Operational Information for Safe Return to Port

No

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