



Certificate of Approval

Certificate No: CLI/14/224

Issue Date: 27/06/2014

Expiry Date: 30/07/2017

This certificate is issued to: SARC BV

Brinklaan 109-I
1404 GA Bussum
The Netherlands

Program Name: LOCOPIAS

Program ID/Version Number: 26/07/2012

Minimum Hardware Specification: A PC with windows XP or later versions
- 1GB Internal Memory
- Sufficient memory to install LOCOPIAS
- A USB port or CD reader for installation
- Mouse/Keyboard/printer/colour monitor (min res 1024 x 768)

Operating System: Windows

User's Operations Manual ID: CLI/14/224

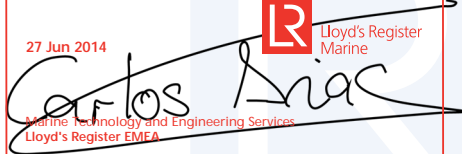
This is to certify that the above Strength, Intact (Type 1) & Damage (Type 2 & 3) Stability calculation program has been examined in accordance with the relevant Classification Rules and the requirements of Statutory Regulations and is approved for the functions stated on the Supplement attached hereto.

Conditions of Certification:

Approval of test conditions will be required together with an installation test for each specific ship.

The supplier is responsible for ensuring that any computer software and hardware is capable of handling date changes without loss of performance or functionality. The capability of the computer software and hardware to handle date changes without loss of performance or functionality has not been demonstrated to Lloyd's Register EMEA.

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

27 Jun 2014

Lloyd's Register Marine
Offshore Technology and Engineering Services
Lloyd's Register EMEA
LR0312.2008

Surveyor to Lloyd's Register EMEA
A Subsidiary Of Lloyd's Register Group Limited

Program Name : LOCOPIAS
 Program Version : 26/07/2012

	INTACT	DAMAGED
<u>Strength Features:</u>		
Shear Forces and Bending Moments	Yes	N/A
Multiple Shear Forces and Bending Moments	No	N/A
Bulkhead Shear Force Correction Factors	No	N/A
Cargo Torque	No	N/A
Multiple Cargo Torque	No	N/A
Longitudinal Strength In Flooded Hold Conditions	No	N/A
Local Double Bottom Strength	No	N/A
<u>Stability Features:</u>		
Program Type:		
Hydrostatic data- Pre-programmed Even Keel, Trimmed or 3D Hullform	3D	3D
Cross curve data- Pre-programmed Even Keel, Trimmed or 3D Hullform	3D	3D
Tank capacity data- Even keel, Trimmed, 3D hullform or 3DI (3D ignoring trim)	3D	3D
Downflooding Data- Even keel angles, Trimmed:angles or 3D points	3D	3D
Intact Stability:		
A749(18) General Criteria check (A167 para. 3.1.2)	Yes	
A749(18) Timber Criteria check (A206 para. 4.1.3)		
Automatic Timber Cargo Water Absorbtion Calculation		
A749(18) Weather Criteria (A562 para. 3.2.2.)	Yes	
Windage Data- Single Table, Variable Table or Direct Area Calculation	D	
Icing - Deadweight item or density on Surface area		
Free Surfaces:		
Pre-defined Maximum values (at zero heel, Even keel or Trimmed)		
Pre-defined Calibrated data (at zero heel, Even keel or Trimmed)	E	
Directly calculated from tank geometry, taking heel into account		
Directly calculated from tank geometry taking heel and trim into account	Yes	Yes
GZ Curve:		
Program calculates ship's overall TCG	Yes	
GZ curve calculations included for any initial heel angle (using GM or GZ)	Yes	GZ
GZ corrected for constant FSM/GGo for all heel angles	Yes	
GZ corrected for FSM/GGo varying with heel (from pre-defined tables)		
GZ directly calculated from 3D hull/tank geometry and floating position	Yes	Yes
Reference displacement - Intact, Intact minus Outflow, full Variable		I
Intermediate Stages assessed (number of stages)		5
Limiting GM/KG Curve:		
Single parameter, pre-programmed (ie. limit versus draught)	Yes	Yes
Two parameter, pre-programmed (ie. see DAD for paramters)	Yes	Yes
Multiple parameter, pre-programmed (ie. see DAD for paramters)		
Combined limit curve option (only where no separate curves exist)	Yes	Yes
Grain Stability:		
Pre-programmed trimmed/partly filled data	Yes	
Pre-programmed trimmed/untrimmed/partly filled data		
Grain stability individual criteria check	Yes	
Pre-programmed allowable heeling moment check		
GZ curve with heeling moment plot shown	Yes	--/--