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# DET NORSKE VERITAS

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## TYPE APPROVAL CERTIFICATE

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CERTIFICATE NO. A-10449  
This Certificate consists of 3 pages

*This is to certify that the*  
**Loading Computer System**  
*with type designation(s)*  
**"Cargomax for Windows" Version: 1.XX**

*Manufactured by*  
**Herbert Software Solutions, Inc.**  
ALAMEDA, CA 94501 6466, United States

*is found to comply with*  
Det Norske Veritas' Rules for Classification of Ships and Det Norske Veritas' Offshore Standards

*Application*  
Type approved for calculation and control of loading conditions with respect to requirements for:

- Control of Shear Force and Bending Moments against Limit Curves \* Intact and Damage Stability

*Place and date*  
Høvik, 2007-09-06  
for DET NORSKE VERITAS AS

Anne V. Hartmann  
*Head of Section*

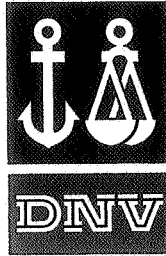
*This Certificate is valid until*  
2009-12-31

*Local Office*  
DNV San Francisco

Aniko Horvath  
*Surveyor*

**Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.**

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: A-10449  
File No.: 780.90

## Product description

### Available Options of the Software:

Based on the stored characteristic data and the stored 3D model of the vessel and loading data given by the user, the following functions are performed on board monohull vessels:

#### Hull Strength:

1. Calculation of stillwater shear force and bending moments, and control against limit values.

#### Stability:

1. Calculation of draft, trim, righting levers(GZ) and metacentric height(GM)
2. Check of compliance with stability limit curves.
3. Calculation and control of loading condition with respect to :

**Intact stability:** IMO Res. A.749(18) Ch. 3.1.

**Damage Stability:** IMO IBC Code, Ch. 2 MARPOL 74/78 Reg.28, IMO IGC Code Ch.2

## Application/Limitation

1. The loading computer is considered as supplementary to the approved stability booklets and loading manual onboard.
2. Specific approval and certification is required for each vessel at which the program is installed. For each approval documentation as described in DNV Rules for Ships Pt.6 Ch.9 is to be submitted.
3. The loading computer is to be installed on type approved hardware or it is to be installed on two nominated computers. See DNV Rules for Ships Pt.6 Ch.9
4. A certificate will be issued for the specific vessel. The identification numbers of the software will be recorded in the certificate.
5. The type approval is valid provided that no changes are made to the strength and/or stability calculation routines.



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### **Type Approval documentation**

The approval is based on the following documentation from the selected test ships –

- Ankerløkken Verft Bno. 9 "M/T Stolt Victor" Id.No. 10431,
- Ankerløkken Verft Bno. 10 "M/T Stolt Viking" Id.No. 10432,
- Danyard B.No. 730, "M/T Stolt Innovation" Id.No. 18500
- Jiangnan Shipyard B.No. 2214, "Feral St. Laurent" Id.No. 18597

- Test Conditions
- Basic Data
- User's manual
- Program Description

Type approval is given based on a review and acceptance of design, calculation methods and documented test results for the above vessels.

### **Certificate retention survey**

The scope of the retention/renewal survey is to verify that the conditions stipulated for the type approval is complied with and that no alterations are made to the product or software design.

The main elements of the survey to be dealt with:

- Ensure that documentation for the type approval is available.
- Ensure that the type approved software complies with the referenced documents and specifications.
- Review of possible changes in design and performance of the type approved software version.
- Ensure traceability between manufacturer's product marking and the DNV Type Approval Certificate.

**END OF CERTIFICATE**