

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-13152

This is to certify that the
Loading Computer System

with type designation(s)
Autoload Version 6.0

Manufactured by
Autoship Systems Corporation
VANCOUVER BRITISH COLUMBIA, Canada

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

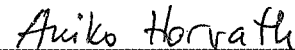
Application
Type approved for calculation and control of loading conditions with respect to requirements for
Control of Shear Force and Bending Moments against Limit Curves * Intact, and Damage Stability

Høvik, 2013-02-07
for Det Norske Veritas AS

This Certificate is valid until
2014-06-30

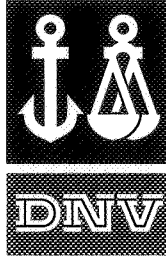

Inge Seglem
Head of Section

DNV local office:
Stability


Aniko Horvath
Surveyor

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.



Certificate No.: A-13152
File No.: 780.90
Job Id.: 262.1-014984-1

Product description

Available Options of Software:

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

Hull Strength:

1. Calculation of still water shear force and bending moment, and control against limit values.

Stability:

1. Calculation of draught, trim and metacentric height (GM).
2. Check of compliance with intact stability criteria according to:
 - DNV +1A1 IMO Res. A.749(18), Ch.3.1 and IMO Res. A.749, Ch. 3.2 ("Weather criteria"). or 2008 IS Code Part A Ch 2.2, 2.3 and Part B Ch.2.4.5.
3. Calculation and control of loading conditions with respect to **Damage Stability** criteria according to MARPOL 73/78, Regulation 28, IMO IBC Code Ch.2 and IMO IGC Code Ch.2 for Tankers, and IMO Res.A469(XII) for supply offshore vessels, and SPS Code Res.A.534(13) Ch.2
4. DNV Class Notation Crane Vessel: DNV Rules for Ships Pt.5 Ch.7 Sec.7D:

Approval conditions:

1. The loading computer is considered as supplementary to the approved loading manual, stability booklet and grain loading booklet onboard with respect to longitudinal strength.
2. Specific approval and certification is required for each vessel at which the program is installed. Documentation to be submitted for approval is listed in DNV Rules for Ships Pt.6 Ch.9. The identification of software will be recorded in the certificate.
3. The program is either to be installed on one approved hardware (type approved or case-by-case approved), or it is to be installed on two nominated computers. If two nominated computers are available, approval of hardware may be waived, but both the two nominated computers are subject to certification. In case of not approved hardware, there will then be two nominated computers available in case of failure of one.

Type Approval documentation

The type approval is based on the following test ships and documentation:

Previous version 5.0.1

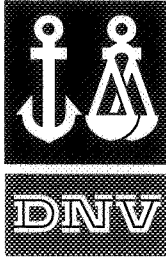
- DNV Test Vessel No.1
- DNV Test Vessel No.2

Autoload version 6.0

"Far Symphony" IdD24797
"Far Splendor" ID24772

"Skandi Emerald" ID28764 Direct damage calculation
"Deosund" ID22878 SPS Code, Res.A.534(13) Ch.2

DNV Class notation "Crane vessel"



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"Seven Borealis" ID28191
"Brave Tern" ID30677 (Crane operation, free floating)

Stored Characteristic Data
Test loading Conditions
Program description
User manual

Limitation

The type approval is valid only for the calculation results. I.e. the type approval is a confirmation that the software is able to give correct results provided that the stored characteristic data of the vessel and the user's input is correct

Certificate retention/renewal 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

END OF CERTIFICATE