DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **A-12032**

This is to certify that the
Loading Computer System

with type designation(s)
Autoload Version 6.0

Manufactured by
Coast Design Norway AS
FORNEBU, **Norway**

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, **2010-10-08**
for **Det Norske Veritas AS**

This Certificate is valid until
2012-06-30

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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.3.1and IMO Res. A.749, Ch. 3.2 ("Weather criteria").

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

Approval conditions:

1. The loading computer is considered as supplementary to the approved loading manual, stability booklet and grain loading booklet onboard with repect 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 doumentation:
Previous version 5.0.1

Stored Characteristic Data
Test loading Conditions
Program description
User manual

Limitation

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