



STANDARD FOR CERTIFICATION

No. 2.9

Type Approval Programme No. 10-706.70 - 1

MACHINERY PLANNED MAINTENANCE SYSTEM (MPMS)

APRIL 2009

DET NORSKE VERITAS

Veritasveien 1, NO-1322 Høvik, Norway Tel.: +47 67 57 99 00 Fax: +47 67 57 99 11

FOREWORD

DET NORSKE VERITAS (DNV) is an autonomous and independent foundation with the objectives of safeguarding life, property and the environment, at sea and onshore. DNV undertakes classification, certification, and other verification and consultancy services relating to quality of ships, offshore units and installations, and onshore industries worldwide, and carries out research in relation to these functions.

Standards for Certification

Standards for Certification (previously Certification Notes) are publications that contain principles, acceptance criteria and practical information related to the Society's consideration of objects, personnel, organisations, services and operations. Standards for Certification also apply as the basis for the issue of certificates and/or declarations that may not necessarily be related to classification.

A list of Standards for Certification is found in the latest edition of Pt.0 Ch.1 of the "Rules for Classification of Ships" and the "Rules for Classification of High Speed, Light Craft and Naval Surface Craft".

The list of Standards for Certification is also included in the current "Classification Services – Publications" issued by the Society, which is available on request. All publications may be ordered from the Society's Web site <http://webshop.dnv.com/global/>.

The Society reserves the exclusive right to interpret, decide equivalence or make exemptions to this Standard for Certification.

This issue supersedes Type Approval Programme No. 10-706.70-1 of January 2004.

Main changes

- "Machinery" is added to "Planned Maintenance System", i.e. "Machinery Planned Maintenance System".
- Made clear that the Survey Arrangement MPMS is given based on successful initial survey, not just by use of a Type Approved MPMS software.
- Require a complete test database that contains a specific amount of data from a vessel (e.g. DNV Machinery Codes) in order to make the test more realistic.

Comments may be sent by e-mail to rules@dnv.com

Comprehensive information about DNV and the Society's services is found at the Web site <http://www.dnv.com>

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1. Abbreviations and definitions

DNV	:	DET NORSE VERITAS
MPMS	:	Machinery Planned Maintenance System
C/E	:	Chief Engineer
Product	:	A product is in this context defined as a computer based Machinery Planned Maintenance System.

2. Scope

Type Approval is a procedure for certifying that the design of a product is in conformity with a set of predetermined requirements.

Type Approval of Machinery Planned Maintenance Systems (MPMS) will simplify the MPMS approval process for both the companies and the system suppliers.

The Type Approval will only cover computerised planned maintenance systems.

When a company purchases a Type Approved planned maintenance system, the company's obligations and privileges are described in DNV Rules for Classification of Ships, Pt.7 Ch.1 Sec. 8C.

It should be noted that even if a MPMS has been Type Approved by DNV, this does not guarantee that the system implemented on-board a vessel is working as required according to the DNV rules. It is up to the managers to implement the system on-board and hence a manager approval is required for the use of the system on vessels on survey arrangement MPMS.

For general information about Type Approval system in DNV, see:

- Standard for Certification No 1.2 "Type Approval".

3. Conformity Assessment of Design of Product Type

The requirements are based on:

- Rules for Classification of Ships.

3.1 Procedure

The Type Approval procedure consists of the following elements:

- documentation evaluation
- system evaluation
- issuance of Type Approval certificate.

3.2 Documentation to be submitted

The following documentation is to be submitted:

- 1) A functional description, including examples of all the work processes for the daily use of the system.
- 2) Operation manual describing the functional requirements stated in 3.3.
- 3) Software package with a complete test-database for a vessel. This database shall contain as a minimum:
 - class related components
 - class jobs
 - non-class related components
 - non-class jobs
 - samples of job descriptions
 - reports (see 3.3).

- 4) Specification of hardware requirements
- 5) Specification of training courses and user support.
- 6) A user manual for the planned maintenance system, containing a separate chapter how to handle the DNV's requirements for MPMS periodical surveys.

3.3 Functional requirements

The MPMS shall comply with the following functional requirements:

- The MPMS shall be able to identify class related components with an alphanumeric code and it shall be possible to search on these codes.
- The MPMS shall be able to produce lists of the following:
 - class jobs/ main overhaul jobs carried out over a specific period of time. This list/report shall at least include DNV code, component name, job name, job interval, date carried out and job history
 - class components included in the system
 - unplanned maintenance
 - overdue jobs
 - maintenance history for a specific component.
- The maintenance intervals shall be based on maker's recommendations.
- All print outs from the system shall be especially identified with the system name and version number. This shall not be editable for the user of the system.
- The MPMS shall be able to identify automation/instrumentation components and jobs (E0/ECO).
- All main overhaul jobs on class related components shall be identified as class related jobs in the MPMS.
- The MPMS shall be able to handle circulating components that are re-used in different positions (e.g. cylinder cover, piston etc.). The maintenance history shall follow both the component and the position.
- All changes in the system related to class shall be logged. I.e change of maintenance intervals, job descriptions, etc.
- Postponed and overdue jobs shall be especially identified.
- The MPMS shall be able to identify corrective/unplanned jobs.
- The MPMS shall support functions for continuous improvement of the maintenance plan based on the maintenance history. This includes, but is not limited to that all corrective actions in the system shall be identified as corrective and searchable.
- The MPMS shall be able to limit the access rights in the system, protected by passwords.
- The MPMS shall support enabling/disabling of data fields dependant of the user logged in to the system.

3.4 Requirements to identification of product type

The identification is to be carried out in such a way that it is visible, legible and indelible throughout the anticipated life of the product, and that the identification can be traced back to the Type Approval certificate.

Software version number shall be displayed.

All printouts from the system shall be traceable to the specific type identification including system name and software number.

3.5 Elements of Type Approval

3.5.1 Documentation evaluation

The documentation evaluation is carried out to assess that the system is in conformity with given documentation requirements stated in 3.2 and functional requirements stated in 3.3.

3.5.2 System evaluation

In order to verify that all the system requirements are complied with, the DNV Høvik shall be provided with the relevant software, supplied with a database which makes it possible to verify the requirements in 3.2 and 3.3.

3.6 Issuance of Type Approval certificate

When the documentation evaluation and system evaluation are successfully completed, a Type Approval certificate will be issued to the supplier.

The certificate is given a validity period of 4 years.

3.6.1 Renewal of Type Approval certificates

At least three months before the period of validity expires, the supplier has to apply for renewal of the certificate, stating the changes in the product (system).

If there has been any major change in the relevant rule requirements during the validity period of the Type Approval certificate a new system evaluation and testing may be required. This also applies if there have been any changes to the software affecting class. The holder of the Type Approval certificate is obliged to inform the Society of any such changes.

A part of the scope of renewal will be to collect experience of the product since the Issuance of the Type Approval certificate/last renewal.

The following documentation is to be submitted at renewal of Type Approval certificate:

- copy of all release notes since Type Approval/last renewal
- a new updated user manual for the system
- a new updated software package including a complete test database for a vessel.