

Propeller Shaft and Stern Tube Shaft Surveys

Amended Rules and Guidance

Rules for the Survey and Construction of Steel Ships Parts A, B, and D
Rules for High Speed Craft
Rules for the Survey and Construction of Passenger Ships
Rules for the Survey and Construction of Inland Waterway Ships
Guidance for the Classification and Registry of Ships
Guidance for the Survey and Construction of Steel Ships Parts B and D
Guidance for High Speed Craft
Guidance for the Survey and Construction of Inland Waterway Ships

Reason for Amendment

The ClassNK Rules require propeller shafts and stern tube shafts (hereinafter referred to collectively as “shafts”) with seawater or oil lubricated stern tube bearings to be, in principle, subject to shaft drawing out and non-destructive testing on propeller connections at least every 5 years.

The Rules, however, specify that an extension to the aforementioned 5 year requirement of up to a maximum of 10 years can be granted for shafts with oil lubricated stern tube bearings when the shaft in question is verified to be in a good condition through a partial survey carried out 5 years after the last time it was drawn out and examined. The Rules also allow indefinite extensions of the drawing out unless abnormal conditions of propeller shafts are found through the regular monitoring of shafts, such as lubricating oil analysis, etc., for ships which have instituted a preventive maintenance system like the “Propeller Shaft Condition Monitoring System” (PSCM).

IACS decided to conduct a comprehensive review Unified Requirement (UR) Z21(Rev.2), which specifies requirements related to surveys of shafts, in order to allow IACS members to accept survey methods appropriate for the type of shaft condition maintenance program followed by a ship. As a result of this review, IACS adopted UR Z21(Rev.3) in February 2015, which harmonized requirements related to shaft drawing out carried out every 5 years and added requirements related to shaft survey methods based upon the technical knowledge of each IACS member and the surveys of freshwater lubricated bearings in this Unified Requirement.

Accordingly, based upon Unified Requirement Z21(Rev.3), shaft survey requirements, such as those related to the drawing out of shafts, are amended and new survey methods for oil lubricated bearings and freshwater lubricated bearings were added.

Outline of Amendment

The main details of the amendment are as follows:

- (1) Specified definitions for “propeller shaft”, “stern tube shaft”, “stern tube”, etc. to clarify their respective meanings in requirements for shaft surveys.
- (2) Clarified the items to be verified during shaft drawing out surveys.
- (3) Specified that drawing out surveys of propeller shafts may be postponed for ships (excluding those affixed with the notation “PSCM” or “PSCM • A”) with oil lubricated stern tube bearings provided that shafts are regularly monitored using an

alternative survey method, such as lubricating oil analysis. Also specifies that such survey may only be postponed up until the time abnormal conditions of propeller shafts are detected.

- (4) Specified that the notation “Alternative Propeller Shaft Survey • O” (abbreviated as “APSS • O”) is to be affixed to the classification characters of ships applying the alternative survey method specified in (3) above.
- (5) Specified survey method requirements for ships with freshwater lubricated stern tube bearings provided that shafts regularly monitored using an alternative survey method, such as freshwater analysis. Also specifies that the notation “Alternative Propeller Shaft Survey • W” (abbreviated as “APSS • W”) is to be affixed to the classification characters of ships which adopt such a survey method.
- (6) Specified that propeller shafts and stern tube shafts with freshwater lubricated stern tube bearings are to be categorized as propeller shaft Kind 1W and stern tube shaft Kind 1 W, respectively.
- (7) Specified that the maximum intervals between shaft surveys which include non-destructive testing on propeller connections may be up to 15 years for ships having the notation “PSCM” or “PSCM • A” and up to 18 years for inland waterway ships having the said notation.