

# **RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS**

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS

**Rules for the Survey and Construction of Inland Waterway Ships**  
**2015 AMENDMENT NO.2**  
**Guidance for the Survey and Construction of Inland Waterway Ships**  
**2015 AMENDMENT NO.2**

Rule No.70 / Notice No.88      25th December 2015  
Resolved by Technical Committee on 28th July 2015  
Approved by Board of Directors on 14th September 2015

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# **RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS**

**RULES**

## **2015 AMENDMENT NO.2**

Rule No.70            25th December 2015

Resolved by Technical Committee on 28th July 2015

Approved by Board of Directors on 14th September 2015

AMENDMENT TO THE RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS

“Rules for the survey and construction of inland waterway ships” has been partly amended as follows:

Amendment 2-1

## Part 1 GENERAL RULES

### Chapter 1 GENERAL

#### 1.2 Class Notations

##### 1.2.4 Application of Special Survey Scheme

Sub-paragraph -2 has been amended as follows.

~~2 For ships for which surveys based on the preventive maintenance system are carried out on the propeller shaft in accordance with the provisions of 8.1.3, Part 2, the notation of “Propeller Shaft Condition Monitoring System” (abbreviated to PSCM) is affixed to the classification characters of ships whose propeller shafts surveys are carried out based upon the preventive maintenance system specified in the provisions of 8.1.3(1), Part 2.~~

Sub-paragraph -3 has been renumbered to Sub-paragraph -6, and Sub-paragraphs -3 to -5 have been added as follows.

3 The notation “Propeller Shaft Condition Monitoring System • A” (abbreviated as PSCM • A) is affixed to the classification characters of ships whose propeller shafts surveys are carried out based upon the preventive maintenance system specified in the provisions of 8.1.3(2), Part 2.

4 The notation “Alternative Propeller Shaft Survey • Oil” (abbreviated as APSS • O) is affixed to the classification characters of ships having oil lubricated stern tube bearings (excluding those affixed with the notation “PSCM” or “PSCM • A”) whose propeller shaft surveys use the alternative survey methods specified in 1.1.3-1(6)(h), Part 2.

5 The notation of “Alternative Propeller Shaft Survey • Water” (abbreviated as APSS • W) is affixed to the classification characters, of ships having freshwater lubricated stern tube bearings utilising inboard freshwater (excluding those affixed with the notation “PSCM” or “PSCM • A”) whose propeller shaft surveys use the alternative surveys methods specified in 1.1.3-1(6)(h), Part 2.

## Chapter 2 DEFINITIONS

### 2.1 Application and Definitions

#### 2.1.26 Propeller Shaft Kind 1 and Propeller Shaft Kind 2

Sub-paragraph -1 has been amended as follows.

**1** Propeller shaft Kind 1 is a propeller shaft which is effectively protected against corrosion by water (outboard freshwater and inboard freshwater) with a means approved by the Society or which is made of corrosion resistant materials approved by the Society. ~~Of these~~ The shafts which comply with the following (1), (2) or (3) are categorized respectively as ~~in~~ propeller shaft Kind 1A, and propeller shaft Kind 1B or propeller shaft Kind 1W.

- (1) Propeller shaft Kind 1A is a propeller shaft, at the after end, with/without a keyed propeller attachment (hereinafter referred to “keyed connection”), with a keyless propeller attachment (hereinafter referred to “keyless connection”) or with a coupling flange (hereinafter referred to “flanged connection”) at the after end; to which a freshwater- ~~lubricated~~ lubricated stern tube bearing (including shaft bracket bearing for all references to the water lubricated stern tube bearing, hereinafter the same in this Chapter), utilising outboard freshwater, is attached.
- (2) Propeller shaft Kind 1B is a propeller shaft of keyed connection, keyless connection or flanged connection ~~with/without a keyed propeller attachment or with a coupling flange at the after end;~~ to which an oil- lubricated stern tube bearing is attached.
- (3) Propeller shaft Kind 1W is a propeller shaft of keyed connection, keyless connection or flanged connection; to which a freshwater lubricated stern tube bearing, utilising inboard freshwater, is attached.

**2** Propeller shaft Kind 2 is a propeller shaft other than those specified in -1.

#### 2.1.28 Stern Tube Shaft Kind 1 and Stern Tube Shaft Kind 2

Sub-paragraph -1 has been amended as follows.

**1** Stern tube shaft Kind 1 is a stern tube shaft which is effectively protected against corrosion by water with a means approved by the Society or which is made of corrosion resistant materials approved by the Society. ~~Of these~~ These shafts to which are listed in the following (1), (2) or (3) the ~~water lubricated bearing is adopted~~ are categorized respectively as ~~in~~ stern tube shaft Kind 1A and such shafts to which the oil lubricated bearing is adopted are categorized in, stern tube shaft Kind 1B or stern tube shaft Kind 1W:

- (1) Stern tube shafts to which a seawater lubricated stern tube bearing or freshwater lubricated stern tube bearing, utilising outboard freshwater, is adopted;
- (2) Stern tube shafts to which an oil lubricated stern tube bearing is adopted; or
- (3) Stern tube shafts to which a freshwater lubricated stern tube bearing, utilising inboard freshwater, is adopted.

**2** Stern tube shaft Kind 2 is a stern tube shaft other than those specified in -1.

## Part 2 CLASS SURVEYS

### Chapter 1 GENERAL

#### 1.1 Surveys

##### 1.1.3 Intervals of Class Maintenance Surveys

Sub-paragraph -1(6) has been amended as follows.

**1** Periodical Surveys are to be carried out in accordance with the requirements specified in **(1)** through **(6)** below. However, in consideration of the navigating area and operating mode, the intervals of Class Maintenance Surveys may be accordance mutatis mutandis with standards deemed appropriate by the Society.

((1) to (5) are omitted.)

**(6) Propeller Shaft and Stern Tube Shaft Surveys**

Ordinary Surveys of propeller shafts and stern tube shafts are to be carried out as specified in the following **(a)** ~~through to (d)~~ **(h)**:

- (a) Ordinary Surveys of Propeller shafts Kind 1 or stern tube shafts Kind 1 (hereinafter referred to as “shafts Kind 1” in this chapter) are to be carried out within 6 *years* from the date of completion of the Classification Survey or the previous Ordinary Survey (survey due date).
- (b) Regardless of **(a)** above, Ordinary Surveys of shafts Kind 1 which have oil-lubricated stern tube bearings (hereinafter referred to as “shafts Kind 1B” in this chapter) may be postponed for no longer than 6 *years* from the date of completion of the Partial Surveys specified in **8.1.2-1** provided that the Partial Survey is carried out at the time prescribed in **(a)** above and that proper maintenance by periodical analysis for lubricating oil has been conducted.
- (c) Regardless of **(a)** above, shafts Kind 1 adopting the preventive maintenance system in accordance with the requirements of **8.1.3**, need not be withdrawn at the Ordinary Surveys. The shafts are to be withdrawn for examination at the times required on the basis of the results of the preventive maintenance.
- (d) Ordinary Surveys of Propeller shafts Kind 2 and stern tube shafts Kind 2 (hereinafter referred to as “shafts Kind 2” in this chapter) are to be carried out as prescribed in **i)** and **ii)**.
  - i) Concurrently with Special Surveys
  - ii) Concurrently with Intermediate SurveysHowever, where the construction of the shaft in the stern tube bearing and shaft bracket corresponds to shafts Kind 1 but the construction of the shaft between the stern tube and the shaft bracket corresponds to shafts Kind 2, the shaft may be surveyed at the intervals prescribed in **(a)**, provided that examination required for the part corresponding to shafts Kind 2 is carried out at the times prescribed in **i)** and **ii)**.
- (e) In applying **(a)** above, for Ordinary Surveys completed within 3 *months* before the survey due date, the survey due date will be regarded as the date of completion of this survey.
- (f) In applying **(b)** above, for Partial Surveys or Confirmatory Surveys completed within 1 month before the survey due date, the survey due date will be regarded as the date of completion of this survey.

- (g) For keyless connection shafts lubricated with water lubricated bearings, two consecutive dismantling and verifications of the shaft cone by means of non-destructive examination (NDE) is not to exceed 18 years. NDE generally refers to the magnetic particle method.
- (h) Regardless of (a) to (g) above, Ordinary Surveys of the propeller shafts and stern tube shafts of ships affixed with the notation “APSS • O” or “APSS • W” are to be carried out as specified separately by the Society.

## 1.2 Specialized Ships, Installations, and Apparatus

Paragraph 1.2.3 has been added as follows.

### **1.2.3 Surveys of Water Jet Propulsion Systems, etc.**

Surveys of water jet propulsion systems and azimuth thrusters are to be carried out as specified separately by the Society.

## 1.3 Definitions

### **1.3.1 Terms**

The definitions of terms which appear in this Part are as specified in the following. Terms not define here are as defined in other parts of the Rules.

Sub-paragraph (9) has been added as follows.

- (9) The terminology used in the application of propeller shaft and stern tube shaft surveys is as specified in the following (a) to (h):
  - (a) “Shafts” mean propeller shafts as specified in the following (b) and stern tube shafts as specified in the following (c).
  - (b) “Propeller shaft” is the part of the propulsion shaft to which the propeller is fitted.
  - (c) “Stern tube shaft” is a shaft placed between the intermediate shaft and propeller shaft, normally arranged within a stern tube or running in open water.
  - (d) “Stern tube” is a tube or pipe fitted in the shell of a ship at the stern (or rear part of the ship), through which passes the stern tube shaft or aftermost section of the propeller shaft. “Stern tube” is the housing of the shaft bearings that sustain the shaft and also accommodates the shaft sealing arrangement.
  - (e) “Stern tube sealing system” means the equipment installed on the inboard extremity and, for oil or freshwater lubricated bearings, at outboard extremity of the stern tube. An “inboard seal” is the device fitted on the fore part of the stern tube that achieves the sealing against the possible leakage of the lubricant media into the ship internal. An “outboard seal” is the device fitted on the aft part of the stern tube that achieves the sealing against the possible sea water ingress and the leakage of the lubricant media.
  - (f) “Oil lubricated” means closed loop oil lubricating systems which use oil to lubricate the bearings and are sealed against the environment by adequate sealing or gland devices.
  - (g) “Freshwater lubricated” means closed loop water lubricating systems which use fresh water to lubricate the bearings and are sealed against the environment by adequate sealing or gland devices.
  - (h) “Water lubricated” means open water lubricating systems where bearings are cooled and lubricated by water (salt or fresh) which are exposed to the environment.

## Chapter 6 DOCKING SURVEYS

### 6.1 Docking Surveys

#### 6.1.2 In-water Surveys

Sub-paragraphs -2 and -3 have been amended as follows.

(-1 is omitted.)

**2** The following plans and documents are to be included as part of a submission to the Society for approval for conducting In-water Surveys, which is to be obtained prior to commencement.

((1) and (2) are omitted.)

(3) Documents showing the procedure which enables the Surveyor to confirm the clearance of the rudder bearing or the condition of the stern tube bearing based on a review of the operating history, the on-board testing or analysis of ~~samp~~led stern ~~lubricating~~ oil or ~~lubricating~~ freshwater ~~sample~~.

Where the bearing is found to be satisfactory, special consideration may be given to the requirements in **-3(1)** or **-3(4)** below.

((4) is omitted.)

**3** Ships intended to be subjected to the In-water Survey are to comply with the following. Where the documents specified in **-2(3)** above are submitted, special consideration may be given to **(1)** or **(4)** below.

((1) and (2) are omitted.)

(3) For water lubricated ~~ing-type~~ stern tube bearings, a means of measuring the clearance between the propeller shafts and their bearings is provided

(4) For oil or freshwater lubricated ~~ing-type~~ stern tube bearings, a suitable means of ascertaining the performance of the stern tube bearings including oil sealing devices is provided

(5) A suitable means of ascertaining the position and identity of each blade of the propellers is provided

((6) and (7) are omitted.)

(-4 is omitted.)

Table 2.6.1 has been amended as follows.

Table 2.6.1 Requirements for Docking Surveys

Items	Examinations
(1 to 3 are omitted.)	
4 After end of stern bush	• The wear down of the bearing is to be measured; or the clearance between the propeller shaft or stern tube shaft and the after bearing of the stern tube or the shaft bracket bearing.
5 Sealing devices for stern tube and shaft bracket bearing	• <u>In the case of oil or freshwater lubricated stern tube bearings,</u> <del>the</del> the efficiency of the oil or freshwater gland is to be checked.
6 Propeller	• Propellers are to be examined. Where a controllable pitch propeller is fitted, the pitch control device is to be examined without dismantling.
(7 to 9 are omitted.)	

## Chapter 8 PROPELLER SHAFT AND STERN TUBE SHAFT SURVEYS

### 8.1 Propeller Shaft and Stern Tube Shaft Surveys

Paragraphs 8.1.1 to 8.1.3 have been amended as follows.

#### 8.1.1 Ordinary Surveys

~~At Ordinary Surveys of a propeller and stern tube shafts, the shaft is to be withdrawn for examinations specified in~~ are to be carried out in accordance with **Table 2.8.1**.

#### 8.1.2 Partial Surveys

At Partial Surveys for propeller shafts Kind 1 of oil lubricated stern tube bearings, the examinations specified in the following ~~(1) through (3)~~ are to be carried out.

- (1) ~~A visual examination of the parts of the propeller shafts exposed in the engine room~~ Visual inspection of all accessible parts of the shafting system
- (2) ~~Confirmation that the shaft is not operated in the barred speed range for torsional vibration~~ Verification that the main engines have not been operated within the barred speed range for torsional vibration.
- (3) Examinations specified in ~~42, 4, 6, 5, 69, 912 and 4013~~ in **Table 2.8.1** as well as the following (a) to (d). However, the requirements of ~~42, 5 and 69~~ in **Table 2.8.1** may be omitted for shafts having keyless propeller attachments or coupling flanges at their aft end, if general examinations are proved satisfactory.
  - (a) Checking and recording measurements of the bearing wear down of the propeller shaft or the stern tube shaft at the after bearing of the stern tube
  - (b) Verification that the propeller is free of damages which may cause the propeller to be out of balance
  - (c) Seal liner found to be or placed in a satisfactory condition
  - (d) Verification of the satisfactory conditions of inboard and outboard seals

#### 8.1.3 Preventive Maintenance System

Notwithstanding the requirements in **8.1.1** above, where the ship is equipped with oil lubricated stern tube bearings and appropriate stern tube oil sealing devices as approved by the Society, the survey items of ~~-1, -23, -34, -5, and -57~~ and -8 in **Table 2.8.1** may be replaced with a general examination of the shafting system provided that all condition monitoring data taken according to the approved preventive maintenance system is found to be within permissible limits. The propeller shaft may be examined as a propeller shaft Kind 1B for the remaining requirements except ~~-1, -23, -34, -5, and -57~~ and -8 in **Table 2.8.1**. The examination required by survey item ~~-69~~ in **Table 2.8.1** may be partly dispensed with where deemed appropriate by the Society.

- (1) Based upon Society approved preventive maintenance systems, at least the following (a) through (d) are to be properly monitored and recorded for diagnosing lubricating conditions of shafting systems and performing preventive system maintenance. Moreover, the notation "*Propeller Shaft Condition Monitoring System*" (abbreviated as "*PSCM*") is to be affixed to the classification characters of ships whose preventive maintenance systems are approved by the Society.
  - (a) Lubricating oil sampling and analysis is to be carried out regularly at intervals not exceeding 6 months, with at least the following i) through iv) being analyzed each time:
    - i) Water content
    - ii) Chloride content
    - iii) Content of shaft metal and bearing metal particles



- iv) Oxidation of oil
- (b) Lubricating oil consumption rate
- (c) Bearing temperature
- (d) The values specified in item -4 of **Table 2.8.1**
- (2) Based upon Society approved preventive maintenance systems, at least the following **(a)** ~~through~~ **(e)** are to be properly monitored and recorded for diagnosing lubricating conditions of shafting systems and performing preventive system maintenance. Moreover, the notation “*Propeller Shaft Condition Monitoring System • A*” (abbreviated as “*PSCM • A*”) is to be affixed to the classification characters of ships whose preventive maintenance systems are approved by the Society.
  - (a) Lubricating oil sampling and analysis is to be carried out regularly at intervals not exceeding 6 *months*, with at least the following ~~i) through~~ **iv)** being analyzed each time:
    - i) Water content
    - ii) Chloride content
    - iii) Content of shaft metal and bearing metal particles
    - iv) Oxidation of oil
  - (b) The monthly onboard checking of lubricating oil water content. Such checking, however, may be omitted when the oil sampling and analysis specified in **(a)** above is carried out regularly at intervals not exceeding 3 *months*.
  - (c) Lubricating oil consumption rate
  - (d) Bearing temperature
  - (e) The values specified in -4 of **Table 2.8.1**

Paragraph 8.1.4 has been added as follows.

**8.1.4 Propeller Shaft and Stern Tube Shaft Surveys of Ships Affixed with Notation “APSS • O” or “APSS • W”**

Notwithstanding the requirements in 8.1.1 to 8.1.3 above, propeller shaft and stern tube shaft surveys of ships affixed with the notation “APSS • O” or “APSS • W” are to be carried out as specified separately by the Society.

Table 2.8.1 has been amended as follows.

Table 2.8.1 Ordinary Surveys of Propeller Shaft and Stern Tube Shaft

Items	Examinations
1 <u>Drawing out of the propeller shaft and the stern tube shaft</u> -1) <u>for oil or freshwater lubricated bearings</u> -2) <u>for water lubricated bearings</u>	<u>Drawing the propeller shaft and the stern tube shaft and examining the entire shafts, seals system and bearings</u> <u>Drawing the propeller shaft and the stern tube shaft and examining the entire shaft (including liners, corrosion protection system and stress reducing features, where provided), inboard seal system and bearings</u>
<del>2</del> <u>Propeller connections</u>  <del>1</del> <u>Shafts having keyed propeller connections</u>  <del>2</del> <u>Shafts having keyless propeller connections</u>  <del>3</del> <u>Shafts having coupling flange connections at the after end</u>	<del>The aft shaft taper is to be examined from the end of the cylindrical part of the shaft (or from the aft edge of the liner, if any) for one-third of the length of the shaft taper by an efficient crack detection method. Removing the propeller to expose the forward end of the taper; and performing a non-destructive examination (NDE)<sup>1</sup> by an approved surface crack-detection method all around the shaft in way of the forward portion of the taper section, including the keyway. For shaft provided with liners the NDE is to be extended to the after edge of the liner.</del> <del>The forward portion of the aft shaft taper is to be examined by an efficient crack detection method. Removing the propeller to expose the forward end of the taper; and performing a non-destructive examination (NDE)<sup>1</sup> by an approved surface crack-detection method all around the shaft in way of the forward portion of the taper section. For shaft provided with liners the NDE is to be extended to the after edge of the liner.<sup>2</sup> When the propeller is force fitted to the shaft, it is to be ascertained that the pull-up length is within the upper and lower limits given in 5.3.1-1, Part 7.</del> <del>The flange fillet and coupling bolts are to be examined by an efficient crack detection method. However, the crack detection examination may be dispensed with, provided that the Surveyor is satisfied with the condition after an external examination. Whenever the coupling bolts of any type of flange-connected shaft are removed or the flange radius is made accessible in connection with overhaul, repairs or when deemed necessary by the surveyor, the coupling bolts and flange radius are to be examined by means of an approved surface crack detection method<sup>1</sup>.</del>
<del>3</del> <u>Propeller shaft, stern tube shaft, and coupling bolts</u>	<u>Examination of the sleeves, the fillet of the coupling flange to the intermediate shaft or to the stern tube shaft and the coupling bolts are to be examined with the shaft drawn from the stern tube bearings. However, coupling bolts are to be examined by an efficient crack detection method, in cases where Surveyors, based on the results of external examinations, deem such addition testing to be necessary. In addition, anti-corrosion covers are to be removed for shafts of Kind 2.</u>
<del>4</del> <u>Stern tube bearing</u>	<u>Examination of the stern tube bearings are to be examined.</u>
<del>5</del> <u>After end of stern bush</u> <u>Clearances between the propeller shaft or the stern tube shaft and the after bearing of the stern tube</u>	<u>The clearance between the propeller shaft or the stern tube shaft and the after bearing of the stern tube or the shaft bracket bearing or wear down of the bearing is to be measured. Checking and recording the bearing clearances</u>
6 <u>Propellers</u>	<u>Verification that the propeller is free of damages which may cause the propeller to be out of balance</u>
<del>7</del> <u>Sealing device</u> <u>Stern tube sealing systems</u>	<u>Major parts of the stern tube sealing devices (including shaft bracket sealing devices, if any, hereinafter referred to as the same in this Chapter) are to be opened and examined. Verification of the satisfactory conditions of inboard and outboard seals during the re-installation of the shaft and propeller</u>

Table 2.8.1 Ordinary Surveys of Propeller Shaft and Stern Tube Shaft (continued)

Items	Examinations
8 For oil lubricated or freshwater lubricated bearings, wear down of the propeller shaft or the stern tube shaft at the after bearing of the stern tube	Recording the bearing wear down measurements (after re-installation)
<del>6</del> 9 Propeller boss surfaces in contact with the propeller shaft taper	<del>The propeller boss bore in way of the propeller shaft taper section is to be examined.</del> Examination of the propeller boss surfaces
<del>7</del> 10 Controllable pitch propeller connections	Examination of <del>the</del> the pitch control gear and working parts <del>are to be examined and</del> as well as, by an efficient crack detection method, the propeller blade fixing bolts <del>are to be examined by an efficient crack detection method.</del>
<del>8</del> 11 Water lubrication lines	Where water- lubricated stern tube bearings are adopted, the <del>river</del> water piping for lubrication is to be examined.
<del>9</del> 12 Low oil level alarms of the lubricating oil or lubricating freshwater tanks, lubricating oil or lubricating freshwater temperature measuring devices, <del>Oil or</del> oil or freshwater lubrication lines as well as lubricating oil or lubricating freshwater circulation pumps, etc.	Where oil- or freshwater lubricated stern tube bearings are adopted, examination of the systems for verifying whether of stern tube bearings are being maintained in good working condition <del>the low oil level alarms of the lubricating oil tanks, oil temperature measuring devices and oil circulation pumps are to be examined.</del>
<del>13</del> 0 Lubricating <del>ion</del> oil or lubricating freshwater	Where oil- or freshwater lubricated stern tube bearings are adopted, examination of the lubricating oil or lubricating freshwater record book <del>is to be examined.</del>

(Notes)

- 1 NDE or approved surface crack detection method generally refers to the magnetic particle method.
- 2 For shafts with water lubricated bearings, it is recommended that the survey specified in 1.1.3-1(6)(g) also be carried out in cases where the next survey due date is less than 18 years after the date of completion of the previous survey specified in 1.1.3-1(6)(g).

## Part 7 MACHINERY INSTALLATIONS

### Chapter 4 SHAFTINGS

#### 4.2 Materials, Construction and Strength

##### 4.2.7 Corrosion Protection of Propeller Shafts and Stern Tube Shafts

Sub-paragraph -1 has been amended as follows.

1 Propeller shafts Kind 1 and stern tube shafts Kind 1 are to be effectively protected against corrosion by water (outboard freshwater and inboard freshwater. The same is referred to hereinafter in this Chapter) with ~~one of~~ the means specified ~~below in the following~~ **(1) to (3)**, as applicable.

- (1) ~~To~~ effectively protect the propeller shafts and stern tube shafts against any contact with water by the means approved by the Society.
- (2) ~~To~~ use *KSUSF316*, *KSUSF316L*, *KSUS316-SU* or *KSUS316L-SU* specified in **Part K of the Rules for the Survey and Construction of Steel Ships** for shafts.
- (3) ~~To~~ use corrosion resistant materials approved by the Society other than those specified in **(2)** above.

2 Effective means are to be provided to prevent water from having access to the part between the aft end of propeller shaft sleeve or the aft end of the aftermost stern tube bearing and the propeller boss.

3 Spaces between the propeller cap or propeller boss and the propeller shaft are to be filled up with tallow, or provided with other effective means to protect the shaft against corrosion by water.

##### 4.2.10 Stern Tube Bearings and Shaft Bracket Bearings

Sub-paragraph -1 has been amended as follows.

1 The aftermost stern tube bearing or shaft bracket bearing which supports the weight of propeller is to comply with the following requirements **(1)**, **(2)** and **(3)**:

- (1) In the case of water- lubricated bearings of lignumvitae.
  - (a) The bearing length is not to be less than ~~four~~ 4 ~~times~~ the required diameter of the propeller shaft given by the formula in **4.2.4-1** or **-2**, or ~~three~~ 3 ~~times~~ the actual shaft diameter, whichever is greater.
  - (b) Adequate means are to be provided to supply ample amount of clean water for lubrication and cooling.
- (2) In the case of oil- lubricated bearings of white metal.
  - (a) The length of the bearing is not to be less than ~~2-times~~ twice the required diameter of the propeller shaft given by the formulae in either **4.2.4-1** or **-2**, or 1.5 *times* the actual diameter, whichever is greater. However, where special consideration is given on the construction and arrangement in accordance with provisions specified elsewhere and specially approved by the Society, the length of the bearing may be fairly shorter than that specified above.
  - (b) The stern tube is to be always filled with oil. Adequate means are to be provided to measure the temperature of oil in the stern tube.
  - (c) In cases where a gravity tank supplying lubricating oil to the stern tube bearing is fitted, it

is to be located above the designed maximum load line and provided with a low level alarm device. However, in cases where the lubricating system is designed to be used under the condition that the static oil pressure of the gravity tank is lower than the water pressure, the tank is not required to be above the designed maximum load line.

- (d) The lubricating oil is to be cooled by submerging the stern tube in the water of the after peak tank or by some other suitable means.
- (3) In cases where bearing materials other than **(1)** and **(2)** above are intended to be used, the materials, construction and arrangement are to be approved by the Society. The length of these bearings is to comply with the following requirements in **(a)** and **(b)**:
  - (a) In the case of oil- lubricated bearing of synthetic materials;  
For bearings of synthetic rubber, reinforced resin or plastics materials which are approved for use as oil- lubricated stern tube bearings, the length of the bearing is to be not less than ~~2-times~~twice the required diameter of the propeller shaft given by the formulae in either **4.2.4-1** or **-2**, or 1.5 *times* the actual diameter, whichever is greater. However, for bearings having a construction and arrangement specially approved by the Society, the length of the bearing may be fairly shorter than that specified above.
  - (b) In the case of water- lubricated bearings of synthetic materials;  
For bearings of synthetic materials which are approved for use as water- lubricated stern tube bearings such as rubber or plastics, the length of the bearing is to be not less than 4 *times* the required diameter of the propeller shaft given by the formulae in either **4.2.4-1** or **-2**, or 3 *times* the actual diameter, whichever is greater. However, for bearings having a construction and arrangement specially approved by the Society, the length of the bearing may be fairly shorter than that specified above.

(-2 is omitted.)

### 4.3 Tests

#### 4.3.2 Tests after Installation on Board

Sub-paragraph -1 has been amended as follows.

**1** The sealing devices specified in **4.2.10-2** are to be tested for leakage under ~~working~~lubricating oil or lubricating freshwater supply pressure after installation on board.

**2** For the main propulsion shafting (excluding those of waterjet propulsion systems or azimuth thrusters), confirmation tests relating to shaft alignment are to be carried out.

#### EFFECTIVE DATE AND APPLICATION (Amendment 2-1)

1. The effective date of the amendments is 1 January 2016.
2. Notwithstanding the amendments to the Rules, the current requirements may apply to ships other than ships the delivery of which is on or after 1 January 2016 (hereinafter, referred to as “existing ships”) until the first propeller shaft and stern tube shaft survey scheduled on or after 1 January 2016.
3. Notwithstanding the provision of preceding **2.**, the amendments to the Rules may apply to existing ships upon request by the owner.

## Part 2 CLASS SURVEYS

### Chapter 1 GENERAL

#### 1.4 Preparation for Surveys and Miscellaneous

Paragraph 1.4.6 has been added as follows.

##### **1.4.6 Firms Engaged in Surveys, Measurements and Maintenance**

**1** Unless otherwise specified, third parties engaged in thickness measurements, in-water surveys by divers or remote operated vehicles, or tightness testing of closing appliances such as hatches, doors, etc., with ultrasonic equipment are to be firms deemed appropriate by the Society.

**2** Unless otherwise specified, third parties engaged in surveys and maintenance of fixed fire extinguishing systems, portable fire extinguishers, self-contained breathing apparatuses, emergency escape breathing devices or fire detection and alarm systems are to be firms deemed appropriate by the Society.

#### EFFECTIVE DATE AND APPLICATION (Amendment 2-2)

1. The effective date of the amendments is 1 January 2016.
2. Notwithstanding the amendments to the Rules, the current requirements may apply to manufacturing works and service suppliers approved by the Society before 1 January 2016 until 31 December 2018 or the expiry date of their certificate, whichever comes first.

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# **GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS**

**GUIDANCE**

**2015 AMENDMENT NO.2**

Notice No.88      25th December 2015  
Resolved by Technical Committee on 28th July 2015

AMENDMENT TO THE GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF  
INLAND WATERWAY SHIPS

“Guidance for the survey and construction of inland waterway ships” has been partly amended as follows:

Amendment 2-1

## Part 2 CLASS SURVEYS

### Chapter 1 GENERAL

#### 1.1 Surveys

##### 1.1.3 Intervals of Class Maintenance Surveys

Sub-paragraph -7(3)(c) has been amended as follows.

(-1 to -6 are omitted.)

7 For ships navigating in the Parana River Basin and the Paraguay River Basin, etc., “**HIDROVIA Parana - Paraguay**” may be applied as the “standards deemed appropriate by the Society”. Intervals of Periodical Survey may, in principal, be treated as follows where such standards are applied mutatis mutandis. However, the extent and contents of Periodical Surveys and Planned Machinery Surveys are to comply with this Rules in accordance with the age of the ship.

#### (3) Special Surveys

Special Surveys are to be carried out as specified in **(a)** through **(c)** below.

- (a) For self-propelled ships and manned non-propelled ships, Special Surveys are to be carried out within 3 *months* before the date not exceeding 6 *years* from the date of completion of the Classification Survey or the previous Special Survey. However, when the previous Special Survey was completed within 3 *months* before the expiry date of the previous certificate, Special Surveys are to be carried out within 3 *months* before the date not exceeding 6 *years* from the expiry date of the previous certificate.
- (b) For unmanned ships, Special Surveys are to be carried out within 3 *months* before the date not exceeding 8 *years* from the date of completion of the Classification Survey or the previous Special Survey. However, when the previous Special Survey was completed within 3 *months* before the expiry date of the previous certificate, Special Surveys are to be carried out within 3 *months* before the date not exceeding 8 *years* from the expiry date of the previous certificate.
- (c) Notwithstanding the requirement in **(b)** above, for unmanned ships other than ships carrying flammable liquid cargos, liquefied gases or dangerous chemicals in bulk, the first Special Survey is to be carried out within the following i) and ii), whichever is later:
  - i) 3 months before the date not exceeding 10 years from the date of completion of construction of the ship
  - ii) 3 months before the date not exceeding ~~10~~ 8 years from the date of completion of the Classification Survey



((4) to (7) are omitted)

#### EFFECTIVE DATE AND APPLICATION (Amendment 2-1)

1. The effective date of the amendments is 25 December 2015.

## **Part 1 GENERAL RULES**

### **Chapter 1 GENERAL**

#### **1.2 Class Notations**

Paragraph 1.2.4 has been amended as follows.

##### **1.2.4 Application of Special Survey Scheme**

For ships for which surveys are to be carried out in accordance with “*HIDROVIA Parana - Paraguay*” as the “standards deemed appropriate by the Society” specified in **1.2.4-6, Part 2 of the Rules**, the notation of “*HIDROVIA*” is affixed to the Classification Characters.

## Part 2 CLASS SURVEYS

### Chapter 1 GENERAL

#### 1.1 Surveys

##### 1.1.3 Intervals of Class Maintenance Surveys

Sub-paragraph -3 has been amended as follows.

3 The timing (survey due date) of Ordinary Surveys of propeller shafts Kind 1 and stern tube shafts Kind 1 specified in 1.1.3-1(6)(a), Part 2 of the Rules may be extended subject to the carrying out of Occasional Surveys in accordance with the following (1) to (4): postponed until the date of the next Docking Survey only for the purpose of merging the two dates. However, an Occasional Survey is to be carried out on the following requirements, and the examined parts are to be in good condition. Also, this postponement is not to exceed 6 months for shafts Kind 1A, and 12 months for shafts Kind 1B.

(1) For oil lubricated bearings, the following (a) to (c) are to apply:

(a) The survey due date may be extended for up to 1 year in cases where, after the execution of a survey consisting of the following i) to viii), examined parts are proven to be in good condition. In this case, only one more “one-year extension” may be granted.

i) Verification of no reported repairs by grinding or welding of shaft and/or propeller;

ii) Confirmation from the chief engineer that the shafting arrangement is in good working condition;

~~(1iii) Propeller shafts exposed in the engine room are to be visually examined~~ Visual inspection of all accessible parts of the shafting system;

~~(2iv) The records of the wear/tear/clearance at the after end of the stern tube bearing (or the after end of the shaft bracket bearing, if any) are to be examined.~~ Review of the previous recordings of the wear/tear and/or clearance between the shaft and the bearing;

~~(3v) Verification of maintenance records of~~ Confirmation is to be made that the stern tube sealing devices are in good condition through the examination of maintenance records;

~~(4vi) Verification~~ Confirmation is to be made that the main engines have not been operated within outside the barred speed range for torsional vibration;

vii) Verification that the propeller is free of damages which may cause the propeller to be out of balance; and

~~(5viii) Carrying out the Examinations specified in items 8, 9, 12 and 10, 13 of~~ Table 2.8.1, Part 2 of the Rules are to be carried out.

(b) The survey due date may be extended for up to 3 months in cases where, after the execution of a survey consisting of the following i) and ii), examined parts are proven to be in good condition.

i) The verifications and examinations, etc. specified in the preceding (a)i) to iv) as well as vi) and viii); and

ii) Verification of the effectiveness of the inboard seal.

(c) The surveys specified in the preceding (a) and (b) may be carried out sequentially; the survey due date, however, may be extended for only 1 year.

- (2) For freshwater lubricated bearings, the following (a) to (c) are to apply:
- (a) The survey due date may be extended for up to 1 year in cases where, after the execution of a survey consisting of the following i) to v), examined parts are proven to be in good condition. In this case, only one more “one-year extension” may be granted.
    - i) The review specified in the preceding (1)(a)iv);
    - ii) Review of service records, regularly recorded data showing in-service conditions of the shaft(s), which may include water flow, water temperature, salinity, pH, make-up water and water pressure;
    - iii) Review of test records of freshwater sample tests carried out in accordance with the following 1) to 4). After the review, freshwater sample tests are to be carried out in accordance with the following (b) to (d) in the presence of a surveyor.
      - 1) Freshwater sample tests are to be carried out at regular intervals, in principle, not exceeding six months.
      - 2) Freshwater sample tests are to include, as parameter, chlorides content, pH value, and presence of bearing particles or other particles (only for laboratory analysis, not required for tests carried out in presence of the surveyor).
      - 3) Samples are to be taken under service conditions and are to be representative of the water circulating within the stern tube.
      - 4) Analysis results are to be retained on board and made available to the surveyor.
    - iv) The verifications and examinations, etc. specified in the preceding (1)(a)i) to iii), vii) as well as viii); and
    - v) Verification of the effectiveness of the inboard seal and outboard seals
  - (b) The survey due date may be extended for up to 3 month in cases where, after the execution of a survey consisting of the following i) and ii), examined parts are proven to be in good condition.
    - i) The verifications and examinations, etc. specified in the preceding (a)i) to iv); and
    - ii) Verification of the effectiveness of the inboard seal.
  - (c) The surveys specified in the preceding (a) and (b) may be carried out sequentially; the survey due date, however, may only be extended for a maximum of 1 year.
- (3) For water lubricated bearings, the following (a) to (c) are to apply:
- (a) The survey due date may be extended for up to 1 year in cases where, after the execution of a survey consisting of the following i) to viii), examined parts are proven to be in good condition.
    - i) Review of the previous recording of clearances between the shaft and its bearings;
    - ii) Confirmation from the chief engineer that the shafting arrangement is in good working condition after the execution of a survey consisting of the following 1) and 2);
      - 1) Review of service records, regularly recorded data showing in-service conditions of the shaft(s); and
      - 2) Verification of no reported repairs by grinding or welding of shaft and/or propeller.
    - iii) Visual inspection of all accessible parts of the shafting system;
    - iv) Verification that the propeller is free of damages which may cause the propeller to be out of balance;
    - v) Checking and recording the clearances of bearing between the shaft and its bearings;
    - vi) Verification of the effectiveness of the inboard seal;
    - vii) Examination of the lubrication water piping in the case of shafts with seawater lubricated stern tube bearings or stern tube bearings utilising outboard fresh water; and;

- viii) Verification that the main engines have not been operated within the barred speed range for torsional vibration;
- (b) The survey due date may be extended for up to 3 *month* in cases where, after the execution of the verifications and examinations, etc. specified in the preceding (a)i) to iv) as well as vi) to viii), examined parts are proven to be in good condition.
- (c) The surveys specified in the preceding (a) and (b) may be carried out sequentially; the survey due date, however, may only be extended for a maximum of 1 *year*.
- (4) Occasional Surveys are, in principle, to be carried out within 1 *month* of the survey due date (including extended due dates). If the Occasional Survey is carried out more than 1 *month* prior to the survey due date, then the period of extension counts from the date on which the Occasional Survey was completed.

Sub-paragraph -5 has been amended as follows.

**5** The postponement of the Ordinary Surveys of propeller shafts Kind 1 and stern tube shafts Kind 1 facilitated by the Occasional Survey specified in -3 above or the Partial Survey specified in **1.1.3-1(6)(b), Part 2 of the Rules**, are not to exceed ~~be beyond~~ the following ~~longest terms~~:

- (1) ~~67 years and 6 months~~ for shafts Kind 1A
- (2) 12 *years* for shafts Kind 1B
- (3) 8 *years* for shafts Kind 1W

Sub-paragraph -7 has been renumbered to Sub-paragraph -9, and Sub-paragraphs -7 and -8 have been added as follows.

**7** With respect to the “non-destructive examination (*NDE*)” specified in **1.1.3-1(6)(g), Part 2 of the Rules**, the survey due date may be extended for up to 3 *months* in cases where, after the execution of an Occasional Survey consisting of the following (1) to (7), examined parts are proven to be in good condition.

- (1) Review of the previous recording of clearance between the shaft and its bearings;
- (2) Confirmation from the chief engineer that the shafting arrangement is in good working condition after the execution of the review and verification specified in the following (a) and (b):
  - (a) Review of service records, regularly recorded data showing in-service conditions of the shaft(s); and
  - (b) Verification of no reported repairs by grinding or welding of shaft and/or propeller.
- (3) Visual inspection of all accessible parts of the shafting system;
- (4) Verification that the propeller is free of damages which may cause the propeller to be out of balance;
- (5) Verification of the effectiveness of the inboard seal;
- (6) Examination of the lubrication water piping in the case of shafts with seawater lubricated stern tube bearings or stern tube bearings utilising outboard fresh water; and
- (7) Verification that the main engines have not been operated within the barred speed range for torsional vibration.

**8** The wording “as specified separately by the Society” in **1.1.3-1(6)(h), Part 2 of the Rules** means that surveys are to be carried out in accordance with **Annex B1.1.3-7 “Alternative Propeller Shaft Survey Methods”, Part B of the Guidance for the Survey and Construction of Steel Ships.**

Section 1.2 has been added as follows.

## **1.2 Specialized Ships, Installations, and Apparatus**

### **1.2.3 Surveys of Water Jet Propulsion Systems, etc.**

With respect to the wording “specified separately by the Society” in 1.2.3, Part 2 of the Rules, reference is to be made to Annex D1.1.3-1 “Guidance for the Survey and Construction of Waterjet Propulsion Systems”, Part D of the Guidance for the Survey and Construction of Steel Ships for water jet propulsion systems and Annex D1.1.3-3 “Guidance for the Survey and Construction of Azimuth Thrusters”, Part D of the Guidance for the Survey and Construction of Steel Ships for azimuth thrusters.

## **Chapter 8 PROPELLER SHAFT AND STERN TUBE SHAFT SURVEYS**

### **8.1 Propeller Shaft and Stern Tube Shaft Surveys**

#### **8.1.1 Ordinary Surveys**

Sub-paragraph -2(3) has been added as follows.

**2** When the clearance and/or wear down at the aft end of the stern tube or the shaft bracket bearing exceed the value given below, the bearing is to be replaced or repaired.

(1) Clearance for water lubricated bearings:

Propeller shaft diameter,  $d$  (mm): Clearance (mm)

$d \leq 230$ : 6.0

$230 < d \leq 305$ : 8.0

$305 < d$ : 9.5

(2) Wear down for oil lubricated bearings:

As a rule, 0.3 mm, but factors such as the characteristics of the lubricating oil, the temperature fluctuation history of the lubricating oil or bearing material are to be taken into account.

(3) Weardown for freshwater lubricated bearings:

Weardown value used as reference for repairs specified by the manufacturer.

#### **8.1.3 Preventive Maintenance System**

Sub-paragraphs -4 and -5 have been amended as follows.

**4** The wording “properly monitored” in **8.1.3(1), Part B2 of the Rules** as it pertains to “bearing temperature” ~~means~~ is to be achieved by either of the following monitoring and measuring recording devices ~~is to be provided for measuring the temperature of the metal at the aft end bottoms of stern tubes:~~

(1) Two or more temperature sensors embedded into the metal

(2) An embedded temperature sensor which can be replaced from inside the ship and a spare

temperature sensor.

In such cases, replacement by the spare sensor is to be demonstrated according to the procedures submitted beforehand.

5 The wording “properly monitored” in **8.1.3(2), Part 2 of the Rules** as it pertains to “bearing temperature” ~~means that is to be achieved by~~ at least one device ~~is to be~~ provided for measuring the temperature of the metal at the aft end bottoms of stern tubes.

Paragraph 8.1.4 has been added as follows.

**8.1.4 Propeller Shaft and Stern Tube Shaft Surveys of Ships Affixed with Notation “APSS · O” or “APSS · W”**

The wording “specified separately by the Society” specified in **8.1.4, Part 2 of the Rules** means that the surveys are to be carried out in accordance with **Annex B1.1.3-7 “Alternative Propeller Shaft Survey Methods”, Part B of the Guidance for the Survey and Construction of Steel Ships**. In applying said Annex, the reference to “**7.3.1-1, Part D of the Rules for the Survey and Construction of Steel Ships**” specified in note 2 of **Tables 2.1 and 2.2 of the Annex** is to be replaced by the reference to “**5.3.1-1, Part 7 of the Rules for the Survey and Construction of Inland Waterway Ships**”, as well as the references to “**Table B8.1.3-1, Part B of the Guidance**” specified in **2.1.3(1)(b)** and **2.2.1-2(2) of the Annex** and “**Table B8.1, Part B of the Rules**” are to be replaced respectively by the references to “**Table 2.8.1.3-1, Part 2 of the Guidance**” and “**Table 2.8.1, Part 2 of the Rules**”.

Table 2.8.1.3-1 has been amended as follows.

Table 2.8.1.3-1 Approval procedure of preventive maintenance system for oil lubricated propeller shafts

Item	Procedures
(Omitted)	
5. After Approval	<p>(-1 to -3 are omitted.)</p> <p>-4 The ship is to <del>undergo</del> be subject to the <del>examinations</del> applicable survey items specified in <b>Table 2.8.1, Part 2 of the Rules</b> (excluding survey items <del>1, 2, 3, 4, 5, 7 and 8</del> for parts covered by the preventive maintenance system) <u>as well as checking and recording the measurements of bearing wear</u>down of the propeller shaft or the stern tube shaft at the after bearing of the stern tube, <u>visual inspection of all accessible parts of the shafting system, seal liner found to be or placed in a satisfactory condition and verification of the satisfactory condition of inboard and outboard seals</u> at the propeller shaft surveys in accordance with <b>1.1.3-1(6)(a), Part 2 of the Rules</b>. However, for propeller shafts with keyless propeller attachments or having coupling flanges at the aft end, survey items <del>4, 6 and 7</del> <u>2, 6 and 10</u> in <b>Table 2.8.1, Part 2 of the Rules</b> may be extended<sup>1</sup> until the earlier date of the following (1) or (2). <del>In cases where survey items 2, 9 and 10 specified in Table 2.8.1, Part 2 of the Rules are carried out, verification of the satisfactory re-installation of the propeller including verification of the satisfactory condition of inboard and outboard seals is to be carried out.</del></p> <p>(1) The date when the propeller shaft is withdrawn for an examination due to some reason such as an abnormality being found by the analysis of monitoring parameters</p> <p>(2) The date <del>six</del> 18 years after the propeller shaft survey (<del>excluding</del> <u>including</u> survey items <del>4, 6 and 7</del> <u>2, 6 and 10</u> in <b>Table 2.8.1, Part 2 of the Rules</b>) was completed</p>
(Omitted)	

(Note)

<sup>1</sup> The carrying out of survey items 2, 9 and 10 specified in **Table 2.8.1, Part 2 of the Rules** is recommended in cases where the next survey due date will be earlier than 18 years after the date of completion of the previous survey which included the survey items 2, 9 and 10 specified in **Table 2.8.1, Part 2 of the Rules**.

## EFFECTIVE DATE AND APPLICATION (Amendment 2-2)

1. The effective date of the amendments is 1 January 2016.
2. Notwithstanding the amendments to the Guidance, the current requirements may apply to ships other than ships the delivery of which is on or after 1 January 2016 (hereinafter, referred to as “existing ships”) until the first propeller shaft and stern tube shaft survey scheduled on or after 1 January 2016.
3. Notwithstanding the provision of preceding 2., the amendments to the Guidance may apply to existing ships upon request by the owner.



## Part 2 CLASS SURVEYS

### Chapter 1 GENERAL

#### 1.4 Preparation for Surveys and Miscellaneous

Paragraph 1.4.6 has been added as follows.

##### **1.4.6 Firms Engaged in Surveys, Measurements and Maintenance**

**1** The wording “firm deemed appropriate by the Society” in **1.4.6-1, Part 2 of the Rules** refers to firms complying with the requirements of **Chapter 2, 3 or 8, Part 3 of the Rules for Approval of Manufacturers and Service Suppliers** and approved by the Society.

**2** The wording “firm deemed appropriate by the Society” in **1.4.6-2 and -3, Part 2 of the Rules** refers to any of the following: firms complying with the requirements of **Chapter 6, Part 3 of the Rules for Approval of Manufacturers and Service Suppliers** and approved by the Society; firms approved by the Administration; firms approved by duly authorized organizations acting on behalf of the Administration; or firms approved by other organizations which are acceptable to the Administration.

#### EFFECTIVE DATE AND APPLICATION (Amendment 2-3)

1. The effective date of the amendments is 1 January 2016.
2. Notwithstanding the amendments to the Guidance, the current requirements may apply to manufacturing works and service suppliers approved by the Society before 1 January 2016 until 31 December 2018 or the expiry date of their certificate, whichever comes first.

## Part 8 ELECTRICAL INSTALLATIONS

### Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN

#### 2.1 General

##### 2.1.3 Construction, Materials, Installations, etc.

Table 8.2.1.3-7 has been amended as follows.

Table 8.2.1.3-7 Electrical Installations Permitted in Paint Lockers and Their Adjacent Areas

Areas		Permitted electrical installations	
(a)	Paint lockers	(1)	Certified safe type equipment specified below at least with respect to gasses and vapours of group <i>IIB</i> and of temperature class <i>T3</i> as well as their associated cables -intrinsic safety type ( <i>Exi</i> ) -flameproof type ( <i>Exd</i> ) -pressurized type ( <i>Exp</i> ) -increased safety type ( <i>Exe</i> )
(b)	Inlet and exhaust ventilation ducts		
(d)	Areas on open decks within 3m of exhaust mechanical ventilation openings		
		(2)	Through run cables
		(3)	Non-sparking type ventilation fans complying with <b>3.5.5-1(2), Part 9</b> . <u>Protection screens of not more than 13mm square mesh are to be fitted in the inlet and outlet ventilation openings of the ducts fitted with such fans on the open deck.</u>
(Omitted)			

#### 2.11 Accumulator Batteries

##### 2.11.5 Ventilation

Sub-paragraph -4 has been amended as follows.

4 The ventilation fans which ~~is~~ “are to be constructed and to be made of such materials so as to render any sparking impossible in the event of impellers touching fan casings” specified in **2.11.5-3, Part 8 of the Rules** means those ~~non-sparking type~~ ventilation fans complying with the requirements given in ~~3.5.4-3~~ **3.5.5-1(2), Part 9 of the Rules**.

Paragraph 2.11.6 has been amended as follows.

##### 2.11.6 Electrical Installations

Explosion-protected electrical equipment ~~grouped into~~ certified as Explosion Class *d3* and Ignition Group *G1* or higher as specified in ~~Technical Recommendation issued by, National Institute of Industrial Safety Independent Administrative Institution in Japan~~ the Recommended Practices for Explosion-Protected Electrical Installations in General Industries (NIIS-TR-NO.39 (2006)) issued by National Institute of Industrial Safety in Japan, may be treated as equivalent to

those grouped into Apparatus Group *IIC* and Temperature Class *T1* or higher as specified in *IEC 60079*.

## Chapter 5 BARGES

### 5.9 Tank Barges

#### 5.9.4 Electrical Installations in Hazardous Areas

Sub-paragraph -3 has been amended as follows.

**3** The wording “it is to be confirmed that such equipment is safe to use in explosive gas atmospheres” in **5.9.4-2, Part 8 of the Rules** means the following:

In the case of tank barges which carry only crude or product oil, explosion-protected electrical equipment complying with the requirements given in **2.16, Part 8 of the Rules** and ~~grouped into~~ certified as Apparatus Group *IIA*, Temperature Class *T3* or higher as specified in *IEC 60079-0* or Explosion Class *d1*, Ignition Group *G3* or higher as specified in the ~~Technical Recommendation issued by the National Institute of Industrial Safety, Independent Administrative Institution in Japan~~ Recommended Practices for Explosion-Protected Electrical Installations in General Industries (NIIS-TR-NO.39 (2006)) issued by National Institute of Industrial Safety in Japan and approved by the Society in accordance with those requirements given in **1.2.1-4, Part 8 of the Rules** or their equivalent thereto, or any types of equipment which may not cause the ignition of any gases or vapours from cargoes

#### EFFECTIVE DATE AND APPLICATION (Amendment 2-4)

1. The effective date of the amendments is 1 January 2016.
2. Notwithstanding the amendments to the Guidance, the current requirements may apply to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date.  
(Note) The term “*a similar stage of construction*” means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is the less.