

## **LOCAL VESSELS ADVISORY COMMITTEE**

### **Alternative Survey Regime for Periodical Survey Requirements of Propeller Shafts and Propellers of Class III Vessels (Category A Steel/GRP Hull with $L \geq 24m$ )**

#### **Purpose**

This paper sets out the proposal of the Marine Department (MD) to provide an alternative survey regime for periodical survey requirements of propeller shafts and propellers of Class III vessels (Category A steel/GRP hull with  $L \geq 24m$ ) to enable vessel owners to carry out maintenance and survey of the relevant items in a more effective manner.

#### **Background**

2. Table 7-2 Periodical Survey (Survey-on-slip) of Chapter II of the “Code of Practice – Safety Standards for Class III Vessels” (Code of Practice) stipulates that periodical surveys of item (B)(5) “Tail Shaft, Propeller, Rudder and Rudder Stock – drawn out for inspection” must be carried out every four years. The industry reflected that the survey requirements failed to match the actual vessel usage. They also opined that the relevant components subject to survey and replacement were usually still in good conditions since the introduction of three-and-a-half-month fish moratorium in the South China Sea in recent years had lowered the utilisation rate of propeller shafts and propellers. They requested MD optimising the survey requirements as they increased the industry financial burden.

#### **Propeller Shafts and Propellers**

3. Item (B)(5) of Table 7-2 of the Code of Practice requires the propeller shaft and propeller to be drawn out for survey. For steel/GRP hull with  $L \geq 24m$ , the survey interval is four years. At present, vessel owners can apply for extension of the survey-on-slip on the fourth anniversary. Provided that the vessel is still in good and satisfactory conditions, or after completion of the survey of related items with conditions attached, an extension can be granted for a period of not exceeding one year. In this regard, the survey of vessel items required to be carried out on the fourth anniversary can also be extended

accordingly.

4. MD has taken into account the views expressed by the industry. After reviewing current survey requirements and by referring to the latest propeller shaft survey method<sup>1</sup> recognised by the International Association of Classification Societies (IACS), it is recommended that the survey interval for fishing vessel's propeller shafts and propellers can make reference to the IACS's latest recognised practice. See *Annex Z* for details.

### **Revision of the Code of Practice in Implementing the Above Proposals and Other Miscellaneous Amendments**

5. The proposed amendments to Chapter II of the Code of Practice are as follows (see *Annex 1*):

- (i) the supplementary notes marked “(\*9)” attached to item (B)(5) under Table 7-2;
- (ii) typo changes made to Note \*2 of the “Guide on Periodical Survey Cycle for Class III Vessel”, in between Table 7-1 and Table 7-2 (for Chinese version only); and
- (iii) the supplementary attachment entitled “Annex Z”.

### **Consultation**

6. MD consulted the Sub-committee on Class III Vessels under this advisory committee in early November 2018 on various amendments to the regime and the Code of Practice<sup>2</sup>.

### **Way Forward**

7. Subject to Members' comments, MD will amend the Code of Practice concerned for implementation of the proposal.

Local Vessels Safety Branch  
Shipping Division  
Marine Department  
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<sup>1</sup>The survey method refers to IACS UR Z21 Surveys of Propeller Shafts and Tube Shafts (Rev.4 Oct 2015) and IACS Rec. 36 Recommended Procedure for the Determination of Contents of Metals and Other Contaminants in Stern Tube Lubricating Oil (Rev.2 Aug 2011).

<sup>2</sup> See Paper No.3/2018 of the meeting.

*Note: The proposed amendments are marked up in red.*

## CHAPTER II

### SURVEY / INSPECTION, ISSUANCE OF CERTIFICATE AND PLAN APPROVAL

#### 1 Survey / Inspection for Issue or Endorsement of Certificate

- 1.1 Any local vessel to which [sections 7\(1\) and \(3\) of Survey Regulation](#) apply when applying for an initial licence is subject to the approval of plans per items (as appropriate according to category and type of vessel) indicated in [Table 5-1](#).
- 1.2 Any local vessel to which [Part 4 of Survey Regulation](#) applies when applying for an initial licence is subject to the initial survey per items (as appropriate according to category and type of vessel) indicated in [Tables 7-1](#) and [7-3](#); and the periodical survey per items indicated in [Tables 7-2](#) and [7-3](#) after its operation [has begun](#).
- 1.3 Any licensed vessel of the above sections 1.1 or 1.2 intended for alteration shall be subject to the approval of plans (if section 1.1 is applicable) and survey relating to the alteration under [section 76\(5\) of the Survey Regulation](#).
- 1.4 Outboard open sampans (P4) and fishing sampans if meeting the requirements prescribed in sections (a) and (b) respectively of [Schedule 2 of the Survey Regulation](#) are exempted from plan approval and survey.
- 1.5 A laid-up vessel (which is granted with a permission for laid-up) shall be subject to surveying when returning to service if the Certificate of Survey previously issued has expired. If the expiry is not exceeding 2 years, the survey shall cover items due in the past 2 years as the vessel was not laid up.
- 1.6 For a vessel having its Certificate of Survey expired for more than 2 year but less than 8 years, the surveys shall follow the quadrennial survey programme prescribed in [Table 7-2](#).
- 1.7 Any vessel having its Certificate of Survey expired for more than 8 years shall be subject to a thorough inspection according to items of [Table 7-1](#). If alterations have been carried out onboard the vessel, the plans relating to the alterations shall be submitted for approval. The survey and plan approval are to comply with the standards applicable to existing vessels, and the subsequent amendments (if any).
- 1.8 When deemed necessary or at his discretion, the attending surveyor/inspector may request any other items to be presented for inspection.
- 1.9 The Director may, on the certificate of ownership of a certificated Class III vessel, make an endorsement to the effect that the certificated vessel may be used with one or more ancillary vessels where each ancillary vessel meeting the following conditions: –
  - (a) belongs to the same owner of the certificated vessel;
  - (b) does not exceed 4 metres in length overall; and
  - (c) is not fitted with an engine.

## 2 Statutory Surveys and Application

- 2.1 Subject to section 2.2 below, officers delegated by the Director are responsible for the statutory plan approval and survey of vessel.
- 2.2 The Director may delegate some or all of the statutory plan approval and surveys of Class III vessel to the Authorized Organization (AO)/Authorized Surveyor (AS)/Recognized Authority (RA)(see definition at Ch. I/3.1) as indicated in the authorization/recognition document. Lists of AS/AO/RA will be promulgated in the Marine Department Notice issued from time to time. The vessel owner or his agent may also apply for plan approval and surveys to be carried out by officers of the Marine Department.
- 2.3 Upon satisfactory completion of statutory surveys or assessment, the following relevant statutory certificates or record document will be issued by the Marine Department as specified in the following table. Annex V-4 also lists the other certificates and documents that a local vessel may require, as appropriate:

No.	CERTIFICATES / RECORDS
(1)	Certificate of Survey
(2)	Exemption Certificate / Permit for alternative material, fitting or equipment (when applicable)

- 2.4 If the vessel owner or his agent wishes the vessel to be surveyed by an AS or AO or RA, he shall provide the Marine Department with an “Engagement Form”:
- prior to the survey - the name of the AS or AO or RA, the place and date of the intended survey; and
  - on completion of the survey - a survey report and a declaration duly signed and issued by the AS or AO or RA. The survey report may be furnished to the attending surveyor during final inspection (item No. E-4 in [Table 7-3](#) refers).

## 3 Validity of Certificates and Endorsement

- 3.1 The expiry date of the certificate or endorsement for vessels of the types no. (1) to (4) in the table “[Guide on Periodical Survey Cycle for Class III Vessel](#)” (hereafter referred as “[guide table](#)”, see [page II-8](#)) shall be determined as follows:

No.	Date of Final Inspection	Expiry Date of Certificate/Endorsement to be issued
(a)	New vessel	FID + 12 months <sup>(*1)</sup>
(b)	Re-commissioned laid-up vessel <sup>(*2)</sup>	FID + 12 months
(c)	Existing vessel	
	(i) within two months before CED	CED + 12 months
	(ii) after CED	FID + 12 months
	(iii) more than two months before CED	FID + 12 months

### Abbreviations

CED = expiry date of existing certificate/endorsement

FID = final inspection date

**Remarks**

- \*1 For a new vessel required to be surveyed on slip (or in dry-dock), the validity of the certificate to be issued should in no case exceed 14 months counted from the last hull bottom survey date or the final inspection date plus 12 months, whichever is earlier.
- \*2 Sections 1.5~1.7 refers.

- 3.2 The validity of Certificate of Survey for vessels of the types no. (5) to (7) listed in the [guide table](#) will normally be 24 months from the date of completion of the survey, or the expiry date of the existing certificates which have not expired on the date of completion of the survey, whichever is later, but in no circumstance be more than 26 months. (Note: The Vessel Owner Declaration shall be made on the first anniversary date of the Certificate of Survey).
- 3.3 For vessels of the type no. (8) listed in [the guide table](#), the validity of Certificate of Survey will normally be, as reference to section 3.2, 36 months in place of 24 months; and 38 months in place of 26 months. (Note: The Vessel Owner Declaration shall be made on the second anniversary date of the Certificate of Survey).

**4 Submission of Plans and Data**

- 4.1 Plans and data shall be submitted according to [Table 5-1 in section 5 below](#) (as marked with "✓"). Additional plans and data will be required when deemed necessary. The required plans and data may be consolidated into one plan (or plans) according to the size of vessel and complexities of the plan.
- 4.2 Except for any vessel classed with a classification society; and otherwise indicated in the table (items marked with ‘MD’), the plans and data may be submitted to any of the AS/AO/RA for approval at the discretion of the vessel owner. For any vessel classed with a classification society, plans and data shall be submitted to the relevant classification society for approval.
- 4.3 For plans and data to be submitted for the Marine Department’s approval, three copies of each shall be submitted of the first vessel of a series and two copies for the subsequent vessels.
- 4.4 One copy of such plans and data approved by AS/AO/RA shall be submitted to the Marine Department for record purposes. Supplementary plans and data may be required should any survey be undertaken by the Marine Department.
- 4.5 Plans of General Arrangement, vessel construction and relevant plans shall be drawn in appropriate scale of legibly quality.

**5 Plans and Data required to be submitted [Survey Regulation, section 9 refers]**

**Table 5-1 Plans and Data**

“✓” means applicable

Table 5-1 No.	Material of Construction & Length (L) of Vessel	Steel: All Lengths; GRP: L ≥15m	GRP: 8m ≤ L <15m (*1)(*2)
	Plans and Data		

Table 5-1 No.	Material of Construction & Length (L) of Vessel Plans and Data	Steel: All Lengths; GRP: L ≥15m	GRP: 8m ≤ L <15m (*1)(*2)
(A)	<b>GENERAL ARRANGEMENT, ACCOMMODATION LAYOUTS AND ESCAPE ROUTES</b>		
(1)	General Arrangement Plan <sup>(*3)</sup>	✓	✓
(B)	<b>SAFETY EQUIPMENT INCLUDING LIFE-SAVING APPLIANCES, FIRE-FIGHTING APPARATUS, LIGHTS, SHAPES AND SOUND SIGNALS ; EMERGENCY CONTROLS, STRUCTURAL FIRE PROTECTION</b>		
(1)	Safety Plan showing arrangement of -	✓	✓
	(a) life saving appliances	✓	✓
	(b) fire fighting apparatus	✓	✓
	(c) structural fire protection arrangement	✓	
	(c) light and sound signals	✓	✓
	(d) means of escape, escape installation and arrangement, etc.	✓	
(2)	Structural Fire Protection Arrangement	✓	
(C)	<b>STABILITY, FREEBOARD CALCULATIONS, ARRANGEMENTS RELATING TO WATERTIGHTNESS, WEATHERTIGHTNESS, BULKHEADS, HATCHWAYS, COAMINGS, SIDE SCUTTLES, AIR VENTS, FREEING PORTS, SCUPPERS, INLETS AND DISCHARGES</b>		
(1)	Lines Plan and Offsets Table (for record purposes)	✓	
(2)	Hydrostatic Curves	✓	
(3)	Cross Curves of Stability	✓	
(4)	Inclining Experiment Report / Simple Inclining Experiment Report	✓	✓
(5)	Stability Information Booklet (after inclining experiment)	✓	✓
(6)	Draft Marks	✓	
(7)	Arrangements relating to Watertightness, Weathertightness, Bulkheads, Hatchways, Coamings, Side Scuttles, Air Vents, Freeing Ports, Scuppers, Inlets and Discharges, etc.	✓	
(D)	<b>STRUCTURES AND SCANTLINGS</b>		
(1)	Midship Sections	✓	✓
(2)	Scantling Calculation	✓	
(3)	Profile, Decks and Bulkheads (incl. Hull and Superstructure decks)	✓	✓
(4)	Shell Expansion	✓	
(5)	Rudder/Kort Nozzle, Rudder Stock, Skeg and Sole Piece	✓	

Table 5-1 No.	Material of Construction & Length (L) of Vessel	Steel: All Lengths; GRP: L ≥15m	GRP: 8m ≤ L <15m (*1)(*2)
	<b>Plans and Data</b>		
<b>(E)</b>	<b>FUEL, MACHINERY, SHAFTING</b>		
(1)	Engine Room Arrangement	✓	
(2)	Propeller Shafting, Stern Tube and Coupling	✓	✓
(3)	Fuel Oil System (incl. tanks, piping)	✓	✓
(4)	Fire-fighting Piping Arrangement (incl. fire main, fixed fire extinguishing system, etc.)	✓	✓
(5)	Bilge Pumping Arrangement	✓	✓
(6)	Compressed Air Piping System (for pressure ≥ 10 bar)	✓	
(7)	Air Receiver (Ch. IIIA/15 refers)	✓	
(8)	Filling, Sounding and Air Vent System	✓	
<b>(F)</b>	<b>ELECTRICAL SYSTEMS (including Emergency Power System)</b>		
(1)	Electrical System Line diagram	✓	✓ (>220V)
(2)	Wiring Diagram of Main Switchboard	✓	
(3)	Layout of Main Switchboard	✓	
(4)	Electrical Arrangement	✓	✓ (>220V)
(5)	Wiring Diagram of Distribution Boxes	✓	
<b>(G)</b>	<b>PREVENTION AND CONTROL OF POLLUTION</b>		
(1)	Prevention of Oil Pollution Installation (Ch. IIIA/19.2 refers)	MD	
(2)	Prevention of Air Pollution Installation (Annex I-10 etc)	MD/AO	
<b>(H)</b>	<b>NAVIGATIONAL AND COMMUNICATION EQUIPMENT</b>		
(1)	Radio Communication equipment and arrangement	✓	✓
<b>(I)</b>	<b>MEASURES AGAINST POTENTIAL HAZARDS TO THE SAFETY OF THE VESSEL AND ANY PERSON OR PROPERTY ON BOARD THE VESSEL</b>		
(1)	Domestic LPG Installation (Annex U-1 refers)	✓	

#### Remarks in Table 5-1

\*1 Applicable to the first vessel (original design vessel) of an approved series. Information such as the design standards or construction specifications of the hull components and engine equipment shall be produced.

For the second to the eighth sister vessels of a series built in the same workshop, the submission of the certificate of manufacture, construction inspection and test records

issued by the inspected workshop together with photos; and lightship weight confirmation report are suffice.

- \*2 For any new vessel of length not exceeding 10 metres, in lieu of the listed plans above, the vessel owner may submit relevant “simple plans/information” for verification.
- \*3 An amended plan has to be submitted if the arrangement of the vessel is different from the original General Arrangement Plan.

## 6 Plans to be retained onboard

<6.1 Every Class III vessel (excluding wooden fishing vessel and sampan) shall be kept onboard one copy of the plan(s) approved by the relevant authority, person or organization at least with the following information indicated thereon :

- (a) general arrangement of vessel; and
- (b) types and dispositions of life saving appliances, fire-fighting appliances, light, shape, sound signals and radiocommunications equipment (if fitted).

6.2 For every Class III vessel (excluding wooden fishing vessel and fishing sampan) which has been modified or altered in a way that the escape routes or dispositions of life saving appliance or fire-fighting appliances are changed, all plans and documentation carried or displayed on board shall be modified to reflect those changes and approved by the relevant authority, person or organization.

6.3 Stability / loading and unloading information where applicable shall be provided on board. >

## 7 Survey / Inspection Items and Survey / Inspection Programmes

**Table 7-1 Initial Survey**

“✓” means applicable

Table 7-1 No.	Material of Construction & Length (L) of Vessel	Steel: All Lengths; GRP: L ≥15m	GRP: 8m ≤ L <15m (*1)
Survey Item			
<b>(A)</b>	<b>CONSTRUCTION – GENERAL, SHIP STABILITY</b>		
(1)	Draft Marks – verification	✓	✓
(2)	Measurement of Principal Dimensions	✓	✓
(3)	Inclining Experiment	✓	✓
(4)	Lightship Verification	✓	✓(*2)
(5)	Simple Inclining Test		✓(*3)
(6)	Means of Escape in Accommodation Space and Machinery Spaces - inspection	✓	
<b>(B)</b>	<b>FIRE-FIGHTING APPARATUS, STRUCTURAL FIRE PROTECTION, APPLIANCES FOR PREVENTION OF COLLISION</b>		
(1)	CO2 Pipe - inspection, hydraulic test and blowing test	✓	
(2)	Fire Main - inspection and hydraulic test	✓	



Table 7-1 No.	Material of Construction & Length (L) of Vessel Survey Item	Steel: All Lengths; GRP: L ≥15m	GRP: 8m ≤ L <15m (*1)
(3)	Structural Fire Protection (Ch. VI/13 refers) - inspection	✓	
(4)	Position of Navigational Light and its Foundation – verification	✓	
<b>(C)</b>	<b>CONSTRUCTION – HULL; CONDITIONS OF ASSIGNMENT</b>		
(1)	Material Test - Steel Plate/Aluminium Plate <sup>(*4)</sup> /GRP Polyester Resin	✓	✓
(2)	- Propeller Shaft, Coupling, Rudder Stock <sup>(*4)(*5)</sup>	✓	
(3)	Hull Scantlings - verification	✓	✓
(4)	Welding / GRP Lamination and Finishing - inspection	✓	✓
(5)	Below Main Deck W.T. bulkhead and W.T. door fitted thereon - Hose test <sup>(*6)</sup>	✓	
(6)	Structural Tanks - internal inspection	✓	
(7)	- hydraulic test/air test <sup>(*6)</sup>	✓	
(8)	Watertight / Weathertight Appliances - inspection	✓	✓
(9)	- hose test <sup>(*6)</sup>	✓	
<b>(D)</b>	<b>CONSTRUCTION - FUEL, MACHINERY, SHAFTING, ELECTRICAL SYSTEMS</b>		
(1)	Main Engine, Gear Box - Type Approval Certificate <sup>(*5)</sup> inspection	✓	✓
(2)	Generator, Auxiliary Machinery Diesel Engine Certificate <sup>(*7)</sup> - inspection	✓	
(3)	Tail Shafts and Coupling - verification of dimensions	✓	
(4)	- taper bedding test	✓	
(5)	Stern Tube - verification of dimension and hydraulic test	✓	
(6)	Independent Fuel Oil Tanks - internal inspection and hydraulic test <sup>(*6)</sup>	✓	✓
(7)	Verification of No. and Volume of Structural and Independent fuel oil tanks	✓	✓
(8)	Bilge Line - inspection and hydraulic test	✓	
(9)	Sea Suction valve – inspection and hydraulic test	✓	
(10)	Steering System Hydraulic Line - inspection and hydraulic test	✓	
(11)	Fuel Oil Line - inspection and hydraulic test	✓	
(12)	Compressed Air Pipe - hydraulic test (for P > 17.2 bar)	✓	

Table 7-1 No.	Material of Construction & Length (L) of Vessel	Steel: All Lengths; GRP: L $\geq$ 15m	GRP: 8m $\leq$ L <15m (*1)
	Survey Item		
(13)	Air Receiver - verification of wall thickness/ dimensions	✓	
(14)	- hydraulic test (*6)	✓	
(15)	Electrical Wiring/installation - inspection	✓	
(E)	<b>PREVENTION AND CONTROL OF POLLUTION</b>		
(1)	Prevention of Oil Pollution Installation (MD/AO) - Inspection	✓	
(2)	- hydraulic test of independent bilge water / sludge holding tank	✓	

### Remarks in Table 7-1

- \*1 Except otherwise indicated, the listed items are applicable to the first vessel (original design vessel) of an approved series of  $8m \leq L < 15m$ . The workshop and relating facilities shall be inspected by the Marine Department.
- For the second to the eighth sister vessels of a series built in the same workshop, the submission of the certificate of manufacture, construction inspection and test records issued by the inspected workshop together with photos are suffice.
- \*2 Applicable to the second to eighth of a series of eight sister vessels of  $10m \leq L < 15m$ .
- \*3 Applicable to a new vessel of length not exceeding 10 metres and only operating in Hong Kong waters.
- \*4 In lieu of the material test, a mill sheet issued/endorsed by a classification society is acceptable.
- \*5 Ch. IIIA/9 and IIIA/17.4 refer.
- \*6 Annexes M/3 and 4 refer. The hose test for door fitted on watertight bulkhead may be replaced by a chalk test if a prototype test (with pressure corresponding at least to the head required for the intended location) has been carried out and certificated.
- \*7 Ch. IIIA/7.1 refers. For new vessels only: (i) a maker certificate for petrol engine; and (ii) approved certificates / information and document issued by the diesel engine maker or classification societies as required in Ch. IIIA or IIIB and Annex I-10 of this Code or MARPOL Annex VI.

### Guide on Periodical Survey Cycle for Class III Vessel (“guide table”)

No.	Material of Construction	Vessel Length (L)(metres)	Vessel Owner Declaration (*1)	Yearly Interval of Survey on Slip (*2) (Table 7-2 refers)	Interval of Survey Afloat (Table 7-3 refers)
(1)	Steel	$L \geq 24$	-	2	Annual
(2)	Steel	$L < 24$	-	3	Annual
(3)	GRP	$L \geq 24$	-	2	Annual
(4)	GRP	$15 \leq L < 24$	-	3	Annual
(5)	GRP	$8 \leq L < 15$	Annual	-	2

No.	Material of Construction	Vessel Length (L)(metres)	Vessel Owner Declaration (*1)	Yearly Interval of Survey on Slip (*2) (Table 7-2 refers)	Interval of Survey Afloat (Table 7-3 refers)
(6)	GRP	L < 8	Annual	-	2
(7)	Wood	L ≥ 8	Annual	-	2
(8)	Wood	L < 8	Annual	-	3

### Remarks

\*1 Vessel Owner Declaration: The vessel owner shall inspect and declare the safety and equipment of his vessel within two months before the 1st / 2nd anniversary date of the Certificate of Survey, and produce a “Declaration of Safety and Equipment for Class II B or III B Vessels” (which is appended to [MDN 26/2007](#) and can be downloaded at URL: <http://www.mardep.gov.hk/en/notices/pdf/mdn07026.pdf>)

\*2 The vessel owner can apply to extend the date of survey-on-slip during the annual survey. Provided that the vessel is still in good and satisfactory conditions, or after completion of the survey of related items with conditions attached, an extension can be granted for a period of not exceeding one year. In this regard, the survey of vessel items required to be carried out on the fourth anniversary can also be extended accordingly.

**Table 7-2 Periodical Survey (Survey-on-slip)**

“✓” means applicable

Table 7-2 No.	Survey Item	Material of Construction and Vessel Length (L)	Steel / GRP: L ≥ 24m		Steel: L<24m, GRP:15≤L<24m	
		Survey Intervals (*1)(*2)	2	4	3	6
(A)	<b>CONSTRUCTION – HULL</b>					
(1)	Hull - external (incl. ship bottom) inspection		✓		✓	
(2)	- internal (incl. oil, water tanks and void spaces) inspection (*3)			✓		✓
(3)	- gauging thickness of deck, shell and bulkhead plating (*3)(*4)			✓		✓
(4)	Sea Suctions, Discharging Valves - stripped down inspection			✓		✓
(B)	<b>CONSTRUCTION - FUEL, MACHINERY, SHAFTING, ELECTRICAL SYSTEMS</b>					
(1)	Main Engine and Gear Box - stripped down for inspection (*5)(*6)			✓		✓
			(by engine workshop) (*7)			
(2)	Generator engine - stripped down for inspection		✓		✓	
			(by engine workshop) (*7)			
(3)	Air Receiver (P<17.2 bar) - hydraulic test (*3)			✓		✓
(4)	Air Receiver (P≥17.2 bar) - hydraulic test (*3)		✓		✓	
(5)	Tail Shaft (*9), Propeller (*9), Rudder and Rudder Stock (*3) – drawn out for inspection			✓(*9)	✓	

Table 7-2 No.	Survey Item	Material of Construction and Vessel Length (L)	Steel / GRP: L ≥ 24m		Steel: L < 24m, GRP: 15 ≤ L < 24m	
			2	4	3	6
(6)	50% Independent Fuel Oil Tank –hydraulic test <sup>(*4)</sup>		✓		✓	
(C)	<b>PREVENTION AND CONTROL OF POLLUTION</b>					
(1)	Oil Pollution Prevention Installation - vessel with HKOPP certificate		(*8)			
(2)	- vessel without HKOPP certificate: hydraulic test of independent bilge water/sludge holding tank			✓		✓

**Remarks in Table 7-2**

- \*1 Survey Intervals: “2” means such item (marked as “✓”) is subject to surveying biennially and “4” refers to quadrennially. The periodical survey shall be carried out in subsequent order; i.e. a 1st year survey shall be followed by a 2-yearly survey, a 3rd year survey shall be followed by a 4-yearly survey, etc. Refer to “[Guide Table](#)” for applicable types of vessels.
- \*2 If the hull and machinery installation of a classed vessel are inspected by a surveyor of classification society, the inspection reports/certificates issued by classification society shall be submitted for record purposes.
- \*3 For guidance on machinery and hull wear/tear or corrosion tolerance limits and other inspection items, Annex M refers.
- \*4 Applicable to vessels of age exceeding 8 years.
- \*5 For a brand new gear box, the strip down inspection shall begin from the fourth anniversary of the gear box is in service.
- \*6 The vessel owner may follow the schedule of the engine manufacturer and through the guidance of the engine repairing workshop to carry out repairing and maintenance.
- \*7 An inspection record issued by the engine workshop shall be submitted for reference.
- \*8 For the renewal of HKOPP certificates, the oil pollution prevention installation shall be stripped down for inspection. The independent bilge water holding/sludge tank shall be hydraulic tested.
- \*9 The vessel owner may arrange the periodical survey and extension survey in accordance with the requirements of Annex Z, “Alternative Survey Regime for Periodic Survey Requirements of Propeller Shafts and Propellers of Class III Vessels (Category A Steel/GRP Hull with L ≥ 24m)”. If the results of the extension survey are satisfactory, the interval between the “Propeller Shaft – drawn out for inspection” can be extended for a period not exceeding 4 years.

**Table 7-3 Final Inspection<sup>(\*1)</sup>**

“✓” means applicable

Table 7-3 No.	Survey Item <sup>(*2)</sup>	Material of Construction & Vessel Length (L)	Steel:	Wood:
			All Lengths, GRP: L ≥ 15m	All Lengths, GRP: L < 15m
(A)	<b>LIFE-SAVING APPLIANCES, FIRE-FIGHTING APPARATUS, APPLIANCES FOR PREVENTION OF COLLISION</b>			

Table 7-3 No.	Material of Construction & Vessel Length (L) Survey Item <sup>(*2)</sup>	Steel: All Lengths, GRP: L ≥15m	Wood: All Lengths, GRP: L <15m
(1)	Life Saving Appliances - inspection and function test <sup>(*10)</sup>	✓	✓
(2)	Fire Fighting apparatus (incl. emergency fire pump, etc.) - inspection and function test	✓	✓
(3)	Navigation Lights and Sound Signals - inspection and function test	✓	✓
(4)	Fire Drill, Abandon Ship Drill <sup>(*8)</sup>	✓	
<b>(B)</b>	<b>CONSTRUCTION – HULL, CONDITIONS OF ASSIGNMENT</b>		
(1)	Hull External (above waterline part) - General inspection (not required if an on-slip hull survey is carried out during the year)	✓	✓
(2)	Watertight / Weathertight Closing Appliances (incl. door, ventilator, air pipe, etc.) - inspection	✓	
(3)	Permanent ballast - confirmation of amount and position <sup>(*7)</sup>	✓	✓
(4)	Machinery Space (incl. Fuel Oil Installation) - General inspection (a) protection from injury of personnel (b) prevention of fire hazard (c) prevention of oil pollution hazard	✓	✓
(5)	Principal Dimensions, Engine and major machinery particulars - verification	✓	✓
<b>(C)</b>	<b>CONSTRUCTION - FUEL, MACHINERY, SHAFTING, ELECTRICAL SYSTEMS</b>		
(1)	Main Engines, Generator Engines, Steering Gears - running test	✓	✓
(2)	Unattended Machinery Space Installation (Ch. IIIA/18 and IIIB/13 refer) - function test	✓	
(3)	Air Receiver Safety Valves - function test	✓	✓
(4)	Bilge and Oily Water Pumping System - function test	✓	✓
(5)	Electrical Circuit - earthing test	✓	✓
(6)	- insulation resistance test <sup>(*4)</sup>	✓	
(7)	- Main circuit breaker function test <sup>(*5)</sup>	✓	
(8)	Location of emergency source of electrical power shall be outside machinery space and above waterline – verification <sup>(*6)</sup>	✓	
(9)	Meters on Switchboard - function test	✓	
<b>(D)</b>	<b>PREVENTION AND CONTROL OF POLLUTION</b>		
(1)	Air Emission Assessment <sup>(*3)</sup>	✓	
(2)	Prevention of Oil Pollution Installation - function test	✓	
<b>(E)</b>	<b>NAVIGATIONAL, COMMUNICATION EQUIPMENT AND OTHERS</b>		

Table 7-3 No.	Material of Construction & Vessel Length (L) Survey Item <sup>(*2)</sup>	Steel: All Lengths, GRP: L ≥15m	Wood: All Lengths, GRP: L <15m
(1)	Radio Communication Equipment	✓	✓
(2)	Verifying Certificates of Competency of Master and Engineer (if the manoeuvring test is required)	✓	✓
(3)	Plans and data required to be retained onboard (section 6.1 refers) - confirmation of numbers and contents	✓	✓ <sup>(*9)</sup>
(4)	Survey report issued by AS/AO/RA - verification	✓	✓
(5)	Inspection of remedial deficiency items in Initial / Periodical Survey	✓	✓
(6)	Domestic L.P.G. Installation - inspection	✓	

### Remarks in Table 7-3

- \*1 For intervals of final inspection of different types of vessels, the [Guide Table](#) refers.
- \*2 Where practicable, the listed items may be presented for inspection prior to the final inspection.
- \*3 Air emission requirements to be conducted as per Annex I-10.
- \*4 The electrical system insulation test (which needs to be carried out two weeks before the final inspection) reports issued by an EMSD registered electrical worker (REW) or registered electrical contractor (REC), in place of insulation tests conducted by MD staff or authorized survey personnel, are also acceptable. The insulation test report should contain all necessary information. Insulation test reports issued by the authorized survey personnel are acceptable.
- \*5 Applicable to any vessel fitted with an A.C. generator of each capacity exceeding 50 kW.
- \*6 Applicable only to a vessel which is still a new vessel when the reference to “the commencement date of the Survey Regulation” in the definition of “new vessel” under Ch. I/3.1 is substituted by “29 November 2014”.
- \*7 In addition to the visual inspection, the Vessel Owner Declaration on the amount and disposition of the ballast weights should be furnished to the Marine Department for record purposes.
- \*8 Applicable to vessels plying beyond Hong Kong waters.
- \*9 Excluding wooden fishing vessel and sampan.
- \*10 Random checks on lifejackets are to be conducted according to the following proportions:

Statutorily Required No. of Lifejackets	Random Check
1-10	100%
11-100	10 pieces

The number must be 100% confirmed.

**Alternative Survey Regime for Periodical Survey Requirements  
of Propeller Shafts and Propellers of Class III Vessels  
(Category A Steel/GRP Hull with  $L \geq 24m$ )**

## 1 Definition

### 1.1 Service records

Service records are regularly recorded data showing in-service conditions of the shaft(s) and may include, as applicable, lubricating oil temperature, bearing temperature and oil consumption records (for oil lubricated bearings).

### 1.2 Oil sample examination

An oil sample examination is a visual examination of the stern tube lubricating oil taken in presence of the surveyor with a focus on water contamination.

### 1.3 Lubricating oil analysis

Lubricating oil analysis should be carried out at regular intervals not exceeding twelve (12) months taking into account of the table below with suggestions of the upper limits of metal and water content values: *(extracted from the International Association of Classification Societies (IACS) Rec. 36 "Recommended procedure for the determination of contents of metals and other contaminants in stern tube lubricating oil)*

Contaminants	Content Values	Contaminants	Content Values
Water	1%	Nickel	10 ppm
Chromium	10 ppm	Silicon	40 ppm
Copper	50 ppm	Tin	10 ppm
Iron	30 ppm	Magnesium	30 ppm
Lead	10 ppm	Sodium	80 ppm
Chloride content in water	70 ppm (ingress of salt water)		

### 1.4 Keyed connection

Keyed connection is the forced coupling methodology between the shaft and the propeller with a key and keyway achieved through the interference fit of the propeller boss on the shaft tapered end.

### 1.5 Keyless connection

Keyless connection is the forced coupling methodology between the shaft and the propeller without a key achieved through the interference fit of the propeller boss on the shaft tapered end.

### 1.6 Propeller shaft and bearing clearance

The clearance limits between propeller shaft and bearing are tabulated below: *(extracted from paragraph 8.2 of Annex M of the Code of Practice – Safety Standards for Class III Vessels)*

Propeller Shaft Diameter (mm)	Bearing Material	Lignum Viatae, Layered Rubber	White Metal Alloy		Cast Rubber
	Clearance Limit (mm)		Oil Lubricated	Water Lubricated	
< 100		4.0	1.50	2.0	3.5
10~< 150		4.4	1.65	2.2	4.4
150~< 200		4.8	1.80	2.4	4.8
200~< 250		5.2	1.95	2.6	-

## 2 Periodical survey requirement for oil lubricated propeller shaft

2.1 Drawing out the shaft and examining the entire shaft, seals system and bearings.

2.2 For keyed and keyless connections:

2.2.1 Removing the propeller to expose the forward end of the taper of the shaft.

2.2.2 Performing a non-destructive examination (NDE) by an approved surface crack-detection method all around the shaft in way of the forward portion of the taper section, including the key way (if fitted). For shaft provided with liners the NDE shall extend to the after edge of the liner.

2.3 Checking and recording the bearing clearances.

2.4 Verification that the propeller is free of damages which may cause the propeller to be out of balance.

2.5 Verification of the satisfactory conditions of inboard and outboard seals during re-installation of the shaft and propeller.



- 2.6 Recording the bearing wear-down measurements (after re-installation).
- 3 Survey requirements for extending oil lubricated propeller shaft survey not exceeding 4 years**
- 3.1 For keyed and keyless connections:
  - 3.1.1 Removing the propeller to expose the forward end of the taper of the shaft; and
  - 3.1.2 Performing a non-destructive examination (NDE) by an approved surface crack-detection method all around the shaft in way of the forward portion of the taper section, including the key way (if fitted).
- 3.2 Checking and recording the bearing wear-down by means of measurements or methods accepted by the Marine Department.
- 3.3 Visual inspection of all accessible parts of the shafting system.
- 3.4 Verification that the propeller is free of damages which may cause the propeller to be out of balance.
- 3.5 Seal liner found to be or placed in a satisfactory condition. Replacement of any components must be recorded.
- 3.6 Verification of the satisfactory re-installation of the propeller including verification of satisfactory conditions of inboard and outboard seals.
- 3.7 Pre-requisites to be satisfactorily verified in order to apply for an extension not exceeding four years:
  - 3.7.1 Review of the previous wear-down measurements and/or clearance readings;
  - 3.7.2 Review of service records;
  - 3.7.3 Review of test records of lubricating oil analysis;
  - 3.7.4 Oil sample examination;
  - 3.7.5 Verification of no reported repairs by grinding or welding of shaft and/or propeller; and
  - 3.7.6 The vessel owner is required to submit a declaration to declare that the propeller shaft system is maintained in good working

condition.

- 3.8 The following matters must be noted for the requirements of propeller shaft system lubricating oil analysis:
- 3.8.1 The analysis of the lubricating oil shall be carried out by an institution accepted by MD (including the institutions recognized by the State, the Recognized Authorities or the Classification Societies recognized by MD) within a period not exceeding twelve months. Vessel owners must note that the metal and water content of the lubricating oil should not exceed the recommended limits in the table attached to Section 1.3;
  - 3.8.2 Vessel owners shall properly keep the lubricating oil analysis report and submit it to the inspecting officer during the annual survey to verify the condition of the propeller shaft system; and
  - 3.8.3 If the lubricating oil of the propeller shaft system is to be replaced, the vessel owner shall make a detailed record (including the causes, quantity, date and follow-up of the replacement of the lubricating oil), and submit it to the inspecting office at the time of the survey to verify the condition of the propeller shaft system.
- 3.9 For keyed and keyless connections, the interval between two consecutive surveys may be extended after the execution of the extension survey with satisfactory results. The extension is up to a maximum of four years and no further extension can be granted. Before the expiration of the extension, the vessel owner shall arrange for a propeller shaft survey on slipway.
- 3.10 For vessels which have applied to extend the survey-on-slip on the fourth anniversary and obtained the grant for extending the periodical survey for “propeller shaft – drawn out for inspection” to not exceeding one year, no further extension will be granted. Instead, before the expiration of the extension, the vessel owner shall arrange for a propeller shaft survey on slipway.
- 3.11 If the propeller shaft system is abnormal, the vessel owner shall arrange for inspection and repairing as soon as possible, and put it on record.

**【 End 】**