



**MINISTRY OF TRANSPORT AND COMMUNICATIONS**  
**DEPARTMENT OF MARINE ADMINISTRATION**

**No-363/421, Corner of Merchant & Theinbyu Road,  
Botataung Township, Yangon, Myanmar**

E-mail: [dgdma.mm@gmail.com](mailto:dgdma.mm@gmail.com); [dma.myan@gmail.com](mailto:dma.myan@gmail.com)

Tel: 095 -1- 397640

P.O.Box: 194

Fax: 095 -1- 397641

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**Directive (28/2017)**

**National Standard for Maximum Wear Down of Stern Tube and Rudder Bushes in Service**

Applicable to: Ship owners, Recognized Organizations, Shipping Companies, Flag State Surveyors

1. The Department of Marine Administration circulated this directive in the exercise of the power of Section 294(B), paragraph (b) of Myanmar Merchant Shipping Act.
2. Pursuant to the provision of Section 213(A) of Myanmar Merchant Shipping Act and the International Convention for the Safety of Life at Sea, 1974, the Department of Marine Administration shall employ National Standard for Maximum Wear Down of Stern Tube and Rudder Bushes in Service of Myanmar vessels engaged on International Voyages.
3. The purpose of this directive is to ensure National standard for stern tube and rudder bushes in service of Myanmar vessels engaged on International Voyage to be complied with the requirements of the International Convention for the Safety of Life at Sea, 1974 as amended.

Maung Maung Oo

Director General

Department of Marine Administration

# National Standard for Maximum Wear down of Stern Tube and Rudder Bushes in Service

## 1. Scope

1.1 This national standard is established by Department of Marine Administration of the Government of the Republic of the Union of Myanmar, under the provision International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended for the Myanmar ships engaged on international voyage.

## 2. Purpose

2.1 The purpose of this National Standard is to provide the guidelines for maximum wear down of stern tube and rudder bushes during survey of chain cables links in service.

## 3. Maximum Allowable Stern Tube Shaft Clearance

3.1 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.

a) Clearance for water lubricated bearings:

Propeller shaft diameter d(mm)	Clearance (mm)
$d \leq 230$	6.0
$230 < d \leq 305$	8.0
$d > 305$	9.5

b) Wear down for oil lubricated bearings:

0.3 mm, but factors such as the characteristic of the lubricating oil, the temperature fluctuation history of the lubricating oil or bearing material are to be taken into account

## 4. Maximum Allowable Rudder Pintle Clearance

4.1 Renewal limits are based upon diameter without exceeding the following limits:

- |                       |   |     |    |
|-----------------------|---|-----|----|
| a) Spade type rudders | : | 6.0 | mm |
| b) Other rudders      | : | 7.5 | mm |

## 5. Rudder Bearing Clearances

5.1 With metal bearings, clearances should not be less than  $d_b / 1000 + 1.0$  [mm] on the diameter. If non-metallic bearing material is applied, the bearing clearance is to be specially determined considering the material's swelling and thermal expansion properties. This clearance in no way is to be taken less than 1.5 mm on bearing diameter.