

$$C_b = \frac{\text{moulded displacement}(m^3) \text{ at draught } d}{LBd}$$

$$c = 0.9c_n$$

$$c_n = 10.75 - \left( \frac{300-L}{100} \right)^{1.5} \quad \text{for } 130 \text{ m} \leq L \leq 300 \text{ m}$$

$$c_n = 10.75 \quad \text{for } 300 \text{ m} < L < 350 \text{ m}$$

$$c_n = 10.75 - \left( \frac{L-350}{150} \right)^{1.5} \quad \text{for } 350 \text{ m} \leq L \leq 500 \text{ m}$$

$$k = \text{material factor, e.g.:}$$

$k = 1.0$  for mild steel with yield stress of 235 N/mm<sup>2</sup> and over

$k = 0.78$  for high tensile steel with yield stress of 315 N/mm<sup>2</sup> and over

$k = 0.72$  for high tensile steel with yield stress of 355 N/mm<sup>2</sup> and over

2 Scantlings of all continuous longitudinal members of the ship's hull girder based on the section modulus requirement in 1 above are to be maintained within 0.4  $L$  amidships. However, in special cases, based on consideration of type of ship, hull form and loading conditions, the scantlings may be gradually reduced towards the end of 0.4  $L$  part, bearing in mind the desire not to inhibit the ship's loading flexibility.

3 However, the above standard may not be applicable to ships of unusual type or design, e.g., for ships of unusual main proportions and/or weight distributions."

#### 第 57/2015 號行政長官公告

中華人民共和國於一九九九年十二月十三日以照會通知聯合國秘書長，經修訂的《1974年國際海上人命安全公約》自一九九九年十二月二十日起適用於澳門特別行政區；

國際海事組織海上安全委員會於二零零二年五月二十四日透過第MSC.125(75)號決議通過了《散貨船和油輪檢驗期間的強化檢查方案指南》(經修正的第A.744(18)號決議)的修正案，該修正案自二零零四年一月一日起適用於澳門特別行政區；

基於此，行政長官根據澳門特別行政區第3/1999號法律第六條第一款的規定，命令公佈包含上指修正案的MSC.125(75)號決議的中文及英文文本。

二零一五年五月十九日發佈。

代理行政長官 陳海帆

#### Aviso do Chefe do Executivo n.º 57/2015

Considerando que a República Popular da China, por nota datada de 13 de Dezembro de 1999, notificou o Secretário-Geral das Nações Unidas sobre a aplicação da Convenção Internacional para a Salvaguarda da Vida Humana no Mar de 1974, tal como emendada, na Região Administrativa Especial de Macau a partir de 20 de Dezembro de 1999;

Considerando igualmente que, em 24 de Maio de 2002, o Comité de Segurança Marítima da Organização Marítima Internacional, através da resolução MSC.125(75), adoptou emendas às Directrizes relativas ao Programa Reforçado de Inspeções no âmbito das Vistorias a Graneleiros e Petroleiros (resolução A.744(18), tal como emendada), e que tais emendas são aplicáveis na Região Administrativa Especial de Macau desde 1 de Janeiro de 2004;

O Chefe do Executivo manda publicar, nos termos do n.º 1 do artigo 6.º da Lei n.º 3/1999 da Região Administrativa Especial de Macau, a resolução MSC.125(75), que contém as referidas emendas, nos seus textos em línguas chinesa e inglesa.

Promulgado em 19 de Maio de 2015.

A Chefe do Executivo, interina, Chan Hoi Fan.

## 第 MSC.125 (75) 號決議

(2002 年 5 月 24 日通過)

通過《散貨船和油輪檢驗期間的強化檢查方案指南》

(經修正的第 A.744 (18) 號決議) 的修正案

海上安全委員會，

憶及《國際海事組織公約》有關本委員會的職責的第 28 (b) 條，

還憶及大會以第 A.744 (18) 號決議通過了《散貨船和油輪檢驗期間的強化檢查方案指南》，

進一步憶及有關上述指南的修正程序的《1974 年國際海上人命安全公約》(SOLAS)(以下稱為“公約”)第 VIII (b) 條和規則第 XI/2 條，

注意到大會在通過第 A.744 (18) 號決議時，要求海上安全委員會和海洋環境保護委員會根據其應用中取得的經驗，對該指南不斷進行審查和作出必要的更新，

在其第 75 次會議上，審議了按照公約第 VIII (b) (i) 條規定提議和分發的指南的修正案，

1. 按照公約第 VIII (b) (iv) 條，通過了《散貨船和油輪檢驗期間的強化檢查方案指南》的修正案，其條文載於本決議的附件中；

2. 按照公約第 VIII (b) (vi) (2) (bb) 條，決定所述修正案應於 2003 年 7 月 1 日視為已被接受，除非在此日期之前，有三分之一以上的締約國政府或其合計商船隊不少於世界商船隊總噸位 50% 的締約國政府通知反對該修正案；

3. 還請締約國政府注意，按照公約第 VIII (b) (vii) (2) 條，在修正案按照上述第 2 段被接受後，應於 2004 年 1 月 1 日生效；

4. 要求秘書長按照公約第 VIII (b) (v) 條，將本決議和載於附件中的修正案條文的核證副本發送給公約的所有締約國政府；

5. 進一步要求秘書長將本決議及其附件的副本發送給不是公約締約國政府的本組織會員。

## 《散貨船和油輪檢驗期間的強化檢查

### 方案指南》(經修正的第 A.744 (18) 號決議) 的修正案

#### 附件 A

#### 散貨船檢驗期間的強化檢查方案指南

- 1 “目錄” 作如下修改：
  - .1 現有 1.3 的條文以下文代替：

“1.3 修理” ；
  - .2 在現有 3.5 後增加以下新的一項：

“ 3.6 《SOLAS》第 XII/9.1 條規定的船舶的最前貨艙附加年度檢驗要求” ；
  - .3 現有 4 至 4.4 的條文以下文代替：

“4 中期強化檢驗

    - 4.1 綜述
    - 4.2 5 – 10 年船齡的散貨船
    - 4.3 10 – 15 年船齡的散貨船
    - 4.4 15 年以上船齡的散貨船” ；
  - .4 刪去現有 6 和 6.1 的條文，並將 7、8 和 9 重新編號為 6、7 和 8 ；

.5 在附件 8 的附錄 3 後增加下列新的附錄 4 和 5：

“附錄 4 礦砂運輸船－厚度測量和表明縱向和橫向構件的典型橫截面

附錄 5 礦砂運輸船－厚度測量和細節檢驗要求”；

.6 在附件 10 後增加新的附件 11 和 12：

“附件 11 測量第 1 艙和第 2 艙之間垂直波紋橫向水密艙壁的指南

附件 12 《SOLAS》第 XII/9.1 條規定的船舶的最前貨艙附加年度檢驗要求”

2 在現有第 1.2.14 段後增加下述新的第 1.2.15 和 1.2.16 段：

“1.2.15 及時和徹底的修理係指在檢驗時完成的使驗船師滿意的消除強制實施任何相關入級條件必要性的日常性修理。

1.2.16 公約係指經修正的《1974 年國際海上人命安全公約》。”

3 現有第 1.3 節的條文以下文代替：

### “1.3 修理

1.3.1 超過允許極限的耗損引起的任何損壞（包括翹曲、開槽、分離或破裂），或超過允許極限，影響或主管機關認為將影響船舶結構、水密或風雨密完整性的大面積耗損，應予以及時和徹底的修理。需考慮的區域包括：

- .1 船殼邊板肋骨、其邊緣附件或相鄰船殼板；
- .2 甲板結構和甲板板；
- .3 船底結構和船底板；
- .4 水密或油密艙壁；和
- .5 艙口蓋或艙口圍板。

如無足夠修理設施，則主管機關可允許船舶直接駛往某個修理場所。這可能需要為預定的航程進行卸貨和/或臨時修理。

1.3.2 此外，當檢驗結果證實有嚴重的鏽蝕或結構缺陷，主管機關認為其中任一情況都將影響船舶繼續營運的適航性時，則應在船舶繼續營運前實施補救措施。”

4 在第 2.6.1 段後增加下文：

“附件 11 規定了須符合本公約第 XII/6.2 條規定的船舶的第 1 和 2 貨艙之間垂直波紋橫向水密艙壁的額外厚度測量指南。”

5 在現有第 3.5.1 後增加新的第 3.6：

**“3.6 按照附件 12 的要求對本公約第 XII/9.1 條規定的船舶的最前貨艙的附加年度檢驗**

本公約第 XII/9.1 條規定的船舶係指符合下列所有條件的船舶：

- .1 長度在 150 m 及以上的單層邊殼構造的散貨船；
- .2 載運密度在 1,780 kg/m<sup>3</sup> 及以上固體散貨；
- .3 1999 年 7 月 1 日以前建造；和

.4 建有數量不足的橫向水密艙壁而使其能承受在所有裝載條件下最前貨艙的浸水和以本公約第 XII/4.3 條規定的令人滿意的平衡狀態保持漂浮。”

6 現有第 4 節的條文以下文代替：

#### **“4 中期強化檢驗**

##### **4.1 綜述**

4.1.1 年度檢驗要求以外的項目可以在第二次或第三次年度檢驗時或在這兩次檢驗之間進行檢驗。

4.1.2 檢驗的範圍取決於 4.2、4.3 和 4.4 中規定的船齡。

##### **4.2 5 至 10 年船齡的散貨船**

###### **4.2.1 壓載艙**

4.2.1.1 就用於鹹水壓載的處所而言，應對驗船師挑選的具有代表性的處所進行全面檢驗。如果這些檢查未發現明顯的結構缺陷，則檢查可局限於驗證防護塗層仍然有效。

4.2.1.2 如在鹹水壓載處所發現不良塗層狀況、鏽蝕或其他缺陷，或如自建造時起未使用過防護塗層，則檢查應擴大到同類型的其他壓載處所。

4.2.1.3 在除雙層底艙以外的鹹水壓載處所，如發現防護塗層處於不良狀況並且未予更新，或使用了軟塗層，或如自建造時起未使用過防護塗層，則應視必要以年度間隔對所述艙進行檢查和厚度測量。如在鹹水壓載雙層底艙使用過軟塗層，當發現塗層的此類開裂時，或者如沒有使用過塗層，則應以年度間隔對

所述艙進行檢查。當驗船師認為必要，或如存在大範圍的鏽蝕，則應對這些艙進行厚度測量。

4.2.1.4 除上述要求以外，應對前次定期檢驗時發現的可疑區域進行全面和細節檢驗。

#### 4.2.2 貨艙

4.2.2.1 應對所有貨艙進行全面檢驗，包括足夠範圍（至少 25% 的肋骨）的細節檢驗，以確定下述狀況：

- .1 包括頂部和底部邊緣附件在內的船殼肋骨、相鄰船殼板，和船艙貨艙及另一選定貨艙的橫向艙壁；和
- .2 前次定期檢驗時發現的可疑區域。

4.2.2.2 如驗船師根據 4.2.2.1 中所述的全面和細節檢驗的結果認為有必要，則檢驗應擴大到包括對該貨艙的所有船殼肋骨和相鄰船殼板進行細節檢驗及其餘所有貨艙進行充分範圍的細節檢驗。

#### 4.2.3 厚度測量的範圍

4.2.3.1 厚度測量的範圍應足以確定需進行 4.2.2.1 中所述的細節檢驗的區域的總體和局部鏽蝕程度。中期強化檢驗時的厚度測量最低要求是對前次定期檢驗時發現的可疑區域進行測量。

4.2.3.2 如發現嚴重鏽蝕，則應按附件 10 的要求增加厚度測量的範圍。

4.2.3.3 如經細節檢驗，驗船師確信沒有結構性減薄並且防護塗層（如施用的話）仍然有效，則可免予厚度測量。

4.2.3.4 如認為下面註釋中提及的貨艙的防護塗層處於良好狀態，則主管機關可對細節檢驗和厚度測量的範圍予以特殊考慮。

**註釋：**

在新建造時，除平艙頂部區域和船殼邊肋和托架大約 300 mm 以下底卸式艙斜板以外，所有艙口圍板和艙口蓋的內部和外部表面和所有貨艙的內部表面均應具有按照生產商建議所使用的一層高效防護塗層（環氧塗層或等效物）。在選擇塗層時，船東應適當考慮未來營運中擬運貨物的情況。就現有散貨船而言，如船東選擇對上面提及的貨艙進行塗層或重新塗層，則可考慮細節檢驗和厚度測量檢驗的範圍。在對現有船舶貨艙進行塗層之前，應在驗船師在場的情況下確定船材尺度。

### **4.3 10 至 15 年船齡的散貨船**

#### **4.3.1 壓載艙**

##### **4.3.1.1 對於散貨船：**

所有鹹水壓載艙均應予以檢查。如這些檢查未發現明顯的結構缺陷，則檢查可局限於驗證防護塗層仍然有效。

##### **4.3.1.2 對於礦砂船：**

- .1 所有加強肋骨環 — 在一個壓載邊艙中；
- .2 一個甲板橫截面 — 在其餘所有的壓載邊艙中；
- .3 兩個橫向艙壁 — 在一處壓載邊艙中；

.4 一個橫向艙壁 – 在其餘所有的壓載邊艙中。

4.3.1.3 此外，4.2.1.2 至 4.2.1.4 中的要求也適用。

#### 4.3.2 貨艙

4.3.2.1 應對所有貨艙進行全面檢驗，包括進行足夠範圍（至少 25% 的肋骨）的細節檢驗，以確定下述狀況：

.1 包括頂部和底部邊緣附件在內的船殼肋骨、相鄰船殼板和所有貨艙的橫向艙壁；和

.2 前次定期檢驗時發現的可疑區域。

4.3.2.2 如驗船師根據 4.3.2.1 中所述的全面和細節檢驗的結果認為有必要，則檢驗應擴大到包括對所有貨艙的所有船殼肋骨和相鄰殼板進行細節檢驗。

#### 4.3.3 厚度測量的範圍

4.3.3.1 厚度測量的範圍應足以確定需進行 4.3.2.1 中所述的細節檢驗的區域的總體和局部鏽蝕程度。中期強化檢驗時的厚度測量最低要求是對前次定期檢驗時發現的可疑區域進行測量。

4.3.3.2 此外，4.2.3.2 至 4.2.3.4 中所述的要求也適用。

### 4.4 15 年以上船齡的散貨船

4.4.1 中期強化檢驗的要求應與 2 和 5.1 要求的前次定期檢驗的範圍相同。但是，無需對液艙和用於壓載的貨艙進行壓力測試，除非參加檢驗的驗船師認為有必要。

4.4.2 在應用 4.4.1 時，中期強化檢驗可以從第二次年度檢驗開始，並在續後一年期間繼續進行，以期在第三次年度檢驗時完成，代替對 2.1.1 的應用。”

7 現有第 5.2.2 段的條文以下文代替：

“5.2.2 液艙和處所應為能安全進入，即無有害易燃氣體、具有通風和照明。”

8 刪去第 6 章條文，並對後面的第 7、8 和 9 章相應進行重新編號。

9 在現有第 7.3.1 段（重新編號為第 6.3.1 段）後增加如下新的第 5 小段：

“.5 5.1 所要求的檢驗方案，直至定期檢驗完成。”

10 現有第 8.1 節（重新編號為 7.1 節）的條文以下文代替：

“7.1 綜述

7.1.1 如所要求的厚度測量不是由代表主管機關的認可組織進行的，則應由認可組織的一名驗船師在場。該驗船師應在船上停留至監控該過程所必需的時間為止。

7.1.2 厚度測量公司應參加開始檢驗前召開的檢驗規劃會議。

7.1.3 在所有情況下，厚度測量的範圍應足以代表實際的平均狀況。”

11 附件 2 中的表格修正如下：

.1 在第 2 欄 “5<船齡≤10” 中，現有第 6 項的條文以下文代替：

“6. 根據上述第 2 點所考慮的橫截面上的風和水的列板。”

.2 在第 3 欄 “10<船齡≤15” 中，在末尾增加下述新的第 8 項：

“8. 對須符合公約第 XII/6.2 條規定的船舶，如附件 12 所要求。”

12 在附件 7 中，標題為 “厚度測量摘要” 的表格修正如下：

.1 現有第 1 欄標題的條文由下文代替：

“嚴重鏽蝕的液艙/區域或深度點蝕的區域的位置”

.2 在表格末尾增加下述新的註解：

“3 對於點蝕程度達到或超過 20%，在嚴重鏽蝕區域有耗損或平均點蝕深度達到或超過實際板材厚度的 1/3 的任何船底板，均應予以注意。”

13 在附件 8 “綜述” 中，對附錄清單增加下述新的附錄：

“附錄 4 礦砂運輸船－厚度測量和表明縱向和橫向構件的典型橫截面

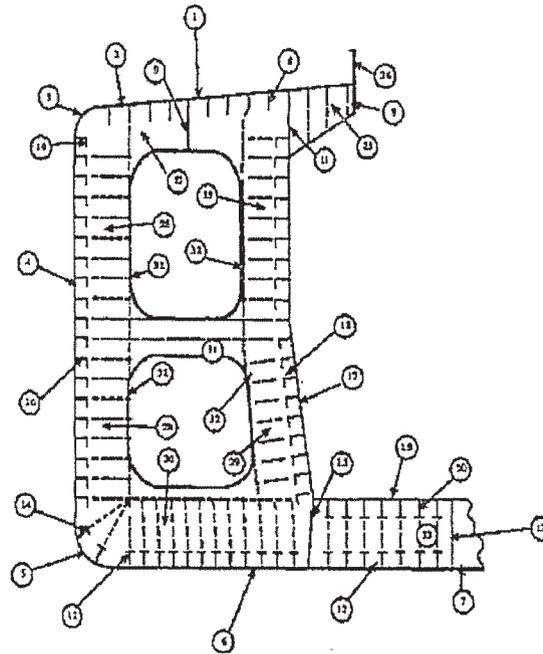
附錄 5 礦砂運輸船－厚度測量和細節檢驗要求”

14 在附件 8 的附錄 3 之後增加新的附錄 4 和 5 如下：

“附錄 4

礦砂運輸船

厚度測量和表明縱向和橫向構件的典型橫截面



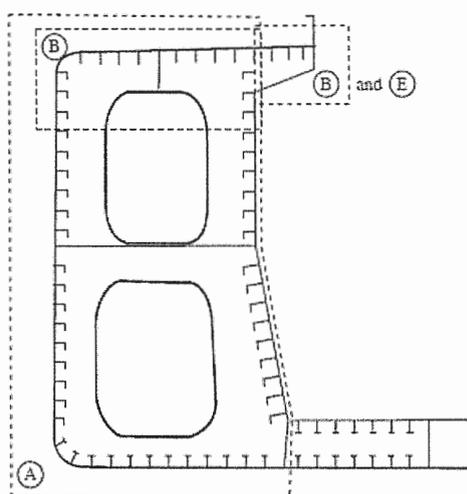
<p>TM2-BC (1) 和 (2) 上的報告</p>	<p>TM3-BC 上的報告</p>	<p>TM4-BC 上的報告</p>
<p>1. 強力甲板板材 2. 縱桁板 3. 船側厚板 4. 船側殼板 5. 舳板 6. 船底外殼板材 7. 龍骨板</p>	<p>8. 甲板縱材 9. 甲板桁材 10. 船側厚板縱材 11. 縱向艙壁頂部列板 12. 艙底縱材 13. 船底桁材 14. 舳部縱材 15. 縱向艙壁下列板 16. 舷側外殼縱材 17. 縱向艙壁板材(剩餘) 18. 縱向艙壁縱材 19. 內底板材 20. 內底縱材</p>	<p>25. 甲板橫向中央液艙 26. 底部橫向中央液艙 27. 甲板橫向翼液艙 28. 舷側外殼垂直桁材 29. 縱向艙壁垂直桁材 30. 底部橫向翼液艙 31. 支柱 32. 橫向桁材面板 33. 雙層底肋板</p>
<p>TM6-BC 上的報告</p> <p>36. 艙口圍板 37. 艙口間甲板材 38. 艙口蓋</p>		

## 附錄 5

### 礦砂運輸船

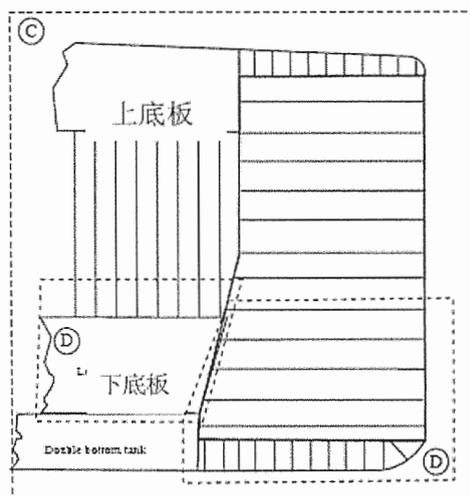
#### 厚度測量和細節檢驗要求

典型橫截面細節檢驗

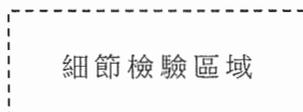


視情在附件 B 的 TM3-T 和  
附件 B 的 TM4-T 上報告的厚度

典型橫向艙壁



在附件 B 的 TM5-T 上報告的厚度  
關於測量範圍和方式的建議案列在附件  
10 中



15 在附件 10 中的標題為“包括交叉板條、主貨艙口、艙蓋、艙口圍板和船舷頂艙在內的甲板結構”的表格中，以下述內容代替標題為“結構構件”欄內的“3. 艙蓋”項相對應的標題為“測量範圍”欄中現有的“a”項內容：

“a. 船側和邊緣圍裙，各 3 處”。

16 在現有附件 10 的條文後，增加下述新的附件 11 和 12：

### “附件 11

#### 測量第 1 艙和第 2 艙之間垂直波紋橫向水密艙壁的指南

1 測量對於確定船舶結構的一般狀況和明確可能的修理和/或加強垂直波紋橫向水密艙壁的範圍，以驗證是否符合本公約第 XII/1.5 條規定的散貨船艙壁和雙層底強度標準是必要的。

2 考慮到本公約第 XII/1.5 條規定的散貨船艙壁和雙層底強度標準中說明的翹曲模型，決定本附件圖 1 和圖 2 所示的關鍵水平面上的厚度減薄程度是至關重要的。

3 應在下述水平面上進行測量。為充分評估每一垂直波紋船材尺度，應對下述所有水平面的每一波紋凸緣、桁材、卸料板和聯接板予以測量。

水平面 (a) 不帶下底板的船舶 (見圖 1)

位置：

- 卸料板線以上約 200 mm 的波紋凸緣的中間寬度；
- 波紋凸緣之間聯接板（如裝有的話）的中部；
- 卸料板中部；
- 卸料板線以上約 200 mm 的波紋桁材的中間寬度。

水平面 (b) 帶下底板的船舶 (見圖 2)

位置：

- 卸料板線以上約 200 mm 的波紋凸緣的中間寬度；
- 波紋凸緣之間聯接板（如安裝的話）的中部；
- 卸料板中部；
- 卸料板線以上約 200 mm 的波紋桁材的中間寬度。

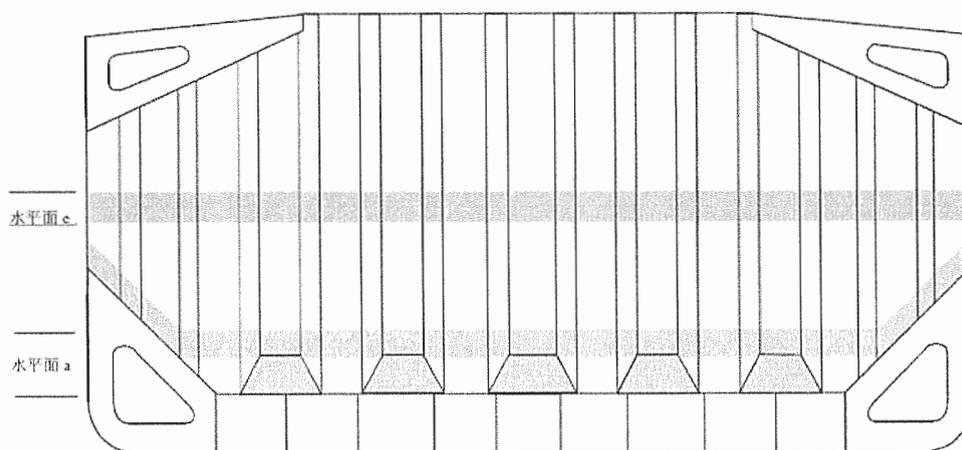
水平面（c） 帶有或不帶下底板的船舶（見圖 1 和圖 2）

位置：

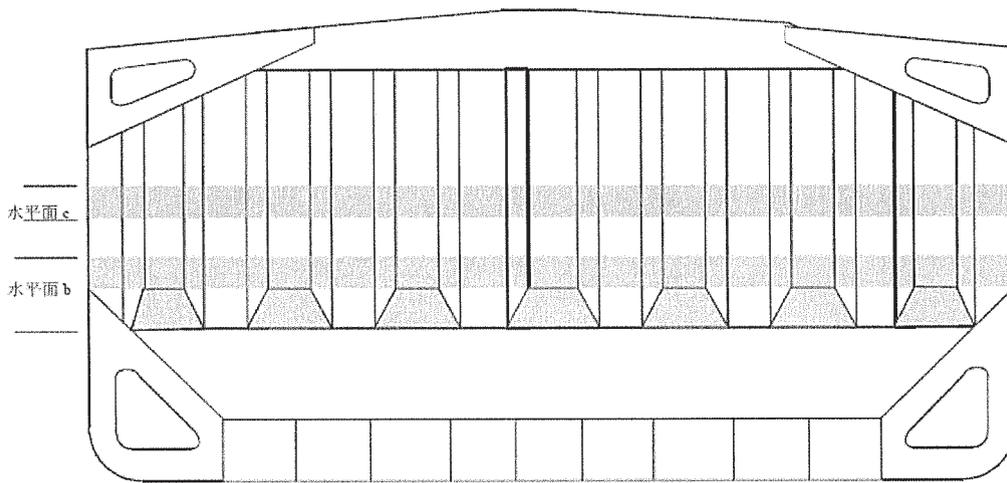
- 在波紋的大約中間高度上的波紋凸緣和桁材的中間寬度。

4 如果橫向水平面的厚度有變化，則應對較薄的底板予以測量。

5 鋼板換新和/或加強應符合本公約第 XII/1.5 條規定的散貨船艙壁和雙層底強度標準。



圖例 1：不帶下底板的船舶



圖例 2：帶有下底板的船舶

## 附件 12

### 《SOLAS》第 XII/9.1 條規定的 船舶的最前貨艙附加年度檢驗要求

#### 1 綜述

對於 5 年以上船齡的散貨船，除本指南第 3 章規定的年度檢驗要求外，年度檢驗還應包括對下述項目的檢查。

#### 2 檢驗範圍

##### 2.1 5 – 15 年船齡的散貨船

2.1.1 應對最前貨艙進行全面檢驗，包括足夠範圍（至少 25% 的肋骨）的細節檢驗，以確定下述狀況：

- .1 包括上邊緣和下邊緣連接件在內的船殼肋板，相鄰船殼板和橫向艙壁；和
- .2 前次定期檢驗時發現的可疑區域。

2.1.2 如果驗船師根據 2.1.1 中所述的全面和細節檢驗的結果認為有必要，則檢驗應擴大到包括對該貨艙的所有船殼肋骨和相鄰船殼板進行細節檢驗。

##### 2.2 15 年以上船齡的散貨船：

2.3 應對最前貨艙進行全面檢驗，包括細節檢驗，以確定下述狀況：

- .1 包括上邊緣和下邊緣連接件在內的所有船殼肋板，相鄰船殼板和橫向艙壁；和
- .2 前次定期檢驗時發現的可疑區域。

### 3 厚度測量範圍

3.1 厚度測量的範圍應足以確定需進行 2.1 和 2.2 中所述的細節檢驗的區域的總體和局部鏽蝕程度。厚度測量最低要求是對前次定期檢驗時發現的可疑區域進行測量。如發現嚴重鏽蝕，則應按附件 10 的要求增加厚度測量的範圍。

3.2 如經細節檢驗，驗船師確信沒有結構性減薄並且防護塗層（如施用的話）仍然有效，則可免予厚度測量。

### 4 特殊考慮

如認為下面註釋中提及的最前貨艙的防護塗層處於良好狀態，則可對細節檢驗和厚度測量的範圍予以特殊考慮。

#### 註釋：

在新建造時，除平艙頂部區域和船殼邊肋和托架大約 300 mm 以下底卸式艙斜板以外，所有艙口圍板和艙口蓋的內部和外部表面和所有貨艙的內部表面均應具有按照生產商建議所使用的一層高效防護塗層（環氧塗層或等效物）。在選擇塗層時，船東應適當考慮未來營運中擬運貨物的情況。

就現有散貨船而言，如船東選擇對上面提及的貨艙進行塗層或重新塗層，則可考慮細節檢驗和厚度測量檢驗的範圍。在對現有船舶貨艙進行塗層之前，應在驗船師在場的情況下確定船材尺度。”

## 附件 B

### 油輪檢驗期間的強化檢驗方案指南

17 “目錄”修改如下：

.1 現有 1.3 的條文以下文代替：

“1.3 修理”

.2 現有 4 至 4.4 的條文以下文代替：

“4 中期強化檢驗

4.1 綜述

4.2 5－10 年船齡的油輪

4.3 10－15 年船齡的油輪

4.4 15 年以上船齡的油輪”

18 在現有第 1.2.12 段後增加下述新的第 1.2.13 段：

“1.2.13 及時和徹底的修理係指在檢驗時完成的使驗船師滿意的消除強制實施相關入級條件必要性的日常修理。”

19 現有第 1.3 節的條文以下文代替：

“1.3 修理

1.3.1 超過允許極限的耗損引起的損壞（包括翹曲、開槽、分離或破裂），或超過允許極限，影響或主管機關認為將影響船舶結構、水密或風雨密完整性的大面積耗損，應予以及時和徹底的修理。需考慮的區域包括：

- .1 船殼邊板肋骨、其邊緣附件或相鄰船殼板；
- .2 甲板結構和甲板板；
- .3 船底結構和船底板；
- .4 水密或油密艙壁；和
- .5 艙口蓋或艙口圍板。

如無足夠修理設施，則主管機關可允許船舶直接駛往某個修理場所。這可能需要為預定的航程進行卸貨和/或臨時修理。

1.3.2 此外，當檢驗結果證實有嚴重鏽蝕或結構缺陷，主管機關認為其中任一情況都將影響船舶繼續營運的適航性時，則應在船舶繼續營運前實施補救措施。”

20 在現有第 2.1.3 段中的“管路”和“處於令人滿意的狀況”間插入“按照 2.1.5 中的要求，”。

21 現有第 2.1.5 段的條文以下文代替：

“2.1.5 甲板上貨物管路，包括原油洗艙（COW）管路，以及上述液艙和處所內的貨物和壓載管路應進行檢查和操作上的工作壓力測試，致使在場的驗船師滿意，以確保緊密性和狀況保持令人滿意。應特別注意貨艙中的壓載管路和壓載水艙及空處的貨物管路，並應在任何情況下均告知驗船師，在船舶修理期間，該管路包括閥門和裝置在何時是打開的，可以進行內部檢查。”

22 現有第 2.3.1 段的條文以下文代替：

“如裝有液貨艙防鏽蝕系統，應對其狀況進行檢查。如發現壓載水艙防護塗層處於不良狀況並且未予更新，或使用了軟塗層，或如自建造時起未使用過防護塗層，則應以年度間隔對有關液艙進行檢查。如驗船師認為有必要，則應進行厚度測量。”

23 現有第 3.5.2 段後增加下述新的段落：

“3.5.3 對於超過 15 年以上船齡的油輪，應對所有與帶有加熱裝置的液貨艙相鄰（即具有共同平面界限）的壓載水艙進行內部檢查。如驗船師認為有必要，則應進行厚度測量；如果這些厚度測量的結果發現嚴重鏽蝕，則應根據附件 4 中的要求增加厚度測量的範圍。主管機關可對在前次中期或定期檢驗中發現塗層處於良好狀況的液艙或處所予以特殊考慮。”

24 現有第 4 至 4.4.2 段的條文以下文代替：

#### “4 中期強化檢驗

##### 4.1 綜述

4.1.1 年度檢驗要求以外的項目可以在第二次或第三次年度檢驗時或在這兩次檢驗之間進行檢驗。

4.1.2 視船齡而定的液貨艙和壓載艙的檢驗範圍在 4.2、4.3 和 4.4 中作了規定。

4.1.3 對於露天甲板，應儘可能對貨物、原油清洗、燃油、壓載、蒸汽和通風管系以及通風桅桿和集管進行檢查。如果根據檢查對管路狀況有任何懷疑，則可要求對管路進行壓力測試或厚度測量或兩者均進行。

## 4.2 5 至 10 年船齡的油輪

4.2.1 4.1.3 的要求適用。

4.2.2 對用於鹹水壓載的液艙，應對驗船師選擇的具有代表性的液艙進行全面檢驗。如此種檢查未發現明顯的結構缺陷，則檢查可局限於驗證防護塗層仍然有效。

4.2.3 如在鹹水壓載艙發現不良塗層狀況、鏽蝕或其他缺陷，或如自建造以來未使用過防護塗層，則檢查應擴大到同類型的其他壓載艙。

4.2.4 如在鹹水壓載艙發現防護塗層處於不良狀況並且未予更新，或使用了軟塗層，或如自建造時起未使用過防護塗層，則應視必要以年度間隔對有關液艙進行檢查和厚度測量。

## 4.3 10 至 15 年船齡的油輪

4.3.1 4.2 的要求適用。

4.3.2 至少應對兩個有代表性的液貨艙進行全面檢驗。

4.3.3 對用於鹹水壓載的液艙，包括貨物/壓載兼用艙，應對所有此類液艙進行全面檢驗。如此種檢驗未發現明顯的結構缺陷，則檢驗可局限於驗證防護塗層仍然有效。

4.3.4 細節檢驗的範圍：

- .1 壓載艙：與前次定期檢驗的範圍相同。
- .2 液貨艙：兩個貨物/壓載兼用艙。檢驗的範圍應基於前次定期檢驗的記錄和液艙以往的修理史。

可按 2.4.3 中所述擴大細節檢驗的範圍。對液艙中塗層處於良好狀態的區域，主管機關可對細節檢驗的範圍予以特殊考慮。

#### 4.3.5 厚度測量的範圍

中期檢驗時的厚度測量最低要求是對上次定期檢驗時發現的可疑區域進行測量。如發現嚴重鏽蝕，則應按附件 4 的要求增加厚度測量的範圍。

### 4.4 15 年以上船齡的油輪

4.4.1 中期檢驗的要求應與 2 和 5.1 中要求的前次定期檢驗的範圍相同。但是無需對液貨艙和壓載艙進行壓力測試，除非參加檢驗的驗船師認為有必要。

4.4.2 在應用 4.4.1 時，中期強化檢驗可以從第二次年度檢驗時開始並在後續一年期間繼續進行，以期在第三次年度檢驗時完成，代替對 2.1.1 的應用。”

25 現有第 5.2.2 段的條文以下文代替：

“5.2.2 液艙和處所應能安全進入，即無有害易燃氣體、具有通風和照明。”

26 在現有 6.3.1 段的第.5 小段後增加新的第.6 小段如下：

“.6 5.1 所要求的檢驗方案，直至定期檢驗完成。”

27 現有第 7.1.1 段的條文以下文代替：

“7.1.1 如所要求的厚度測量不是由代表主管機關的認可組織進行的，則應有認可組織的一名驗船師在場。該驗船師應在船上停留至監控該過程所必需的時間為止。

7.1.2 厚度測量公司應參加檢驗前召開的檢驗規劃會議。

7.1.3 在所有情況下，厚度測量的範圍應足以代表實際的平均狀況。”

28 附件 9 修正如下：

.1 在標題為“狀況評估報告的內容”的狀況評估報告的現有第 3 部分後插入新的第 4 部分：

“第 4 部分—貨物、壓載管系：— 已檢查  
— 已操作測試”

而現有 4 至 9 部分重新編號為 5 至 10 部分；

.2 標題為“厚度測量摘要”的表格修正如下：

.1 現有第 1 欄的標題由下文代替：

“嚴重鏽蝕的液艙/區域或深度點蝕的區域的位置”

.2 在表格末尾增加下述新的註釋：

“3 對於點蝕程度達到或超過 20%，在嚴重鏽蝕區域有耗損或平均點蝕深度達到或超過實際板材厚度 1/3 的任何船底板，均應予以注意。”

29 在附件 11 中，現有第 3.1 條的條文的第 4 句以下文代替：

“方法基本上是根據有關設計和鏽蝕的知識和經驗做風險評估。”

**RESOLUTION MSC.125(75)**  
**(adopted on 24 May 2002)**

**ADOPTION OF AMENDMENTS TO THE GUIDELINES ON THE ENHANCED  
PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND  
OIL TANKERS (RESOLUTION A.744(18), AS AMENDED)**

THE MARITIME SAFETY COMMITTEE,

RECALLING article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.744(18) by which the Assembly adopted the Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers,

RECALLING FURTHER article VIII(b) and regulation XI/2 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as “the Convention”) concerning the procedure for amending the aforementioned Guidelines,

NOTING that the Assembly, when adopting resolution A.744(18), requested the Maritime Safety Committee and the Marine Environment Protection Committee to keep the Guidelines under review and update them as necessary, in the light of experience gained in their application,

HAVING CONSIDERED, at its seventy-fifth session, amendments to the Guidelines proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2003, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;
3. INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2004 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

**AMENDMENTS TO THE GUIDELINES ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS (RESOLUTION A.744(18), AS AMENDED)**

**ANNEX A**

**GUIDELINES ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS**

- 1 The “Contents” are amended as follows:
  - .1 the existing text of 1.3 is replaced by the following:

"1.3 Repairs";
  - .2 the following new item is added after the existing 3.5:

"3.6 Additional annual survey requirements for the foremost cargo hold of ships subject to SOLAS regulation XII/9.1";
  - .3 the existing text of 4 to 4.4 is replaced by the following:

"4 INTERMEDIATE ENHANCED SURVEY  
4.1 General  
4.2 Bulk carriers 5-10 years of age  
4.3 Bulk carriers 10-15 years of age  
4.4 Bulk carriers exceeding 15 years of age";
  - .4 the existing text of 6 and 6.1 is deleted and 7, 8 and 9 are renumbered as 6, 7 and 8;
  - .5 the following new appendices 4 and 5 are added in annex 8 after appendix 3:

"Appendix 4 Ore carriers - Thickness measurement and typical transverse section indicating longitudinal and transverse members  
Appendix 5 Ore carriers - Thickness measurement and close-up survey requirements";
  - .6 the following new annexes 11 and 12 are added after annex 10:

"Annex 11 Guidelines for the gauging of the vertically corrugated transverse watertight bulkhead between holds Nos.1 and 2  
Annex 12 Additional annual survey requirements for the foremost cargo hold of ships subject to SOLAS regulation XII/9.1"

2 The following new paragraphs 1.2.15 and 1.2.16 are added after the existing paragraph 1.2.14:

“1.2.15 A *prompt and thorough repair* is a permanent repair completed at the time of survey to the satisfaction of the surveyor, therein removing the need for the imposition of any associated condition of classification.

1.2.16 *Convention* means the International Convention for the Safety of Life at Sea, 1974, as amended.”

3 The existing text of section 1.3 is replaced by the following:

### **"1.3 Repairs**

1.3.1 Any damage in association with wastage over the allowable limits (including buckling, grooving, detachment or fracture), or extensive areas of wastage over the allowable limits, which affects or, in the opinion of the Administration, will affect the ship's structural, watertight or weathertight integrity, should be promptly and thoroughly repaired. Areas to be considered include:

- .1 side shell frames, their end attachments or adjacent shell plating;
- .2 deck structure and deck plating;
- .3 bottom structure and bottom plating;
- .4 watertight or oiltight bulkheads, and
- .5 hatch covers or hatch coamings.

Where adequate repair facilities are not available, the Administration may allow the ship to proceed directly to a repair facility. This may require discharging the cargo and/or temporary repairs for the intended voyage.

1.3.2 Additionally, when a survey results in the identification of significant corrosion or structural defects, either of which, in the opinion of the Administration, will impair the ship's fitness for continued service, remedial measures should be implemented before the ship continues in service.”

4 The following text is added at the end of paragraph 2.6.1:

"Annex 11 provides additional thickness measurement guidelines applicable to the vertically corrugated transverse watertight bulkhead between cargo hold Nos.1 and 2 on ships subject to compliance with regulation XII/6.2 of the Convention."

5 The following new paragraph 3.6 is added after the existing paragraph 3.5.1:

### **"3.6 Additional annual survey of the foremost cargo hold of ships subject to regulation XII/9.1 of the Convention in accordance with the requirements of annex 12**

Ships subject to regulation XII/9.1 of the Convention are those meeting all of the following conditions:

- .1 bulk carriers of 150 m in length and upwards of single side skin construction;
- .2 carrying solid bulk cargoes having a density of 1,780 kg/m<sup>3</sup> and above;
- .3 constructed before 1 July 1999; and
- .4 constructed with an insufficient number of transverse watertight bulkheads to enable them to withstand flooding of the foremost cargo hold in all loading conditions and remain afloat in a satisfactory condition of equilibrium as specified in regulation XII/4.3 of the Convention.”

6 The existing text of section 4 is replaced by the following:

#### **"4 INTERMEDIATE ENHANCED SURVEY**

##### **4.1 General**

4.1.1 Items that are additional to the requirements of the annual survey may be surveyed either at the second or third annual survey or between these surveys.

4.1.2 The extent of survey is dependent upon the age of the ship as specified in 4.2, 4.3 and 4.4.

##### **4.2 Bulk carriers of 5 to 10 years of age**

###### **4.2.1 Ballast tanks**

4.2.1.1 For spaces used for salt water ballast, an overall survey of representative spaces selected by the surveyor should be carried out. If such inspections reveal no visible structural defects, the examination may be limited to a verification that the protective coating remains efficient.

4.2.1.2 Where POOR coating condition, corrosion or other defects are found in salt water ballast spaces or where protective coating was not applied from the time of construction, the examination should be extended to other ballast spaces of the same type.

4.2.1.3 In salt water ballast spaces other than double bottom tanks, where a protective coating is found in POOR condition and it is not renewed, or where soft coating has been applied, or where a protective coating was not applied from the time of construction, the tanks in question should be examined and thickness measurements carried out as considered necessary at annual intervals. When such breakdown of coating is found in salt water ballast double bottom tanks, where a soft coating has been applied, or where a coating has not been applied, the tanks in question should be examined at annual intervals. When considered necessary by the surveyor, or where extensive corrosion exists, thickness measurements should be carried out.

4.2.1.4 In addition to the requirements above, areas found to be suspect areas at the previous periodical survey should be overall and close-up surveyed.

#### 4.2.2 Cargo holds

4.2.2.1 An overall survey of all cargo holds, including close-up survey of sufficient extent, minimum 25% of frames, should be carried out to establish the condition of:

- .1 shell frames including their upper and lower end attachments, adjacent shell plating, and transverse bulkheads in the forward cargo hold and one other selected cargo hold; and
- .2 areas found to be suspect areas at the previous periodical survey.

4.2.2.2 Where considered necessary by the surveyor as a result of the overall and close-up survey as described in 4.2.2.1, the survey should be extended to include a close-up survey of all of the shell frames and adjacent shell plating of that cargo hold as well as a close-up survey of sufficient extent of all remaining cargo holds.

#### 4.2.3 Extent of thickness measurement

4.2.3.1 Thickness measurement should be carried out to an extent sufficient to determine both general and local corrosion levels at areas subject to close-up survey as described in 4.2.2.1. The minimum requirement for thickness measurements at the intermediate enhanced survey are areas found to be suspect areas at the previous periodical survey.

4.2.3.2 Where substantial corrosion is found, the extent of thickness measurements should be increased in accordance with the requirements of annex 10.

4.2.3.3 The thickness measurement may be dispensed with provided the surveyor is satisfied by the close-up survey, that there is no structural diminution and the protective coating, where applied, remains effective.

4.2.3.4 Where the protective coating in cargo holds, as referred to in the explanatory note below, is found to be in GOOD condition, the extent of close-up surveys and thickness measurements may be specially considered by the Administration.

#### **Explanatory note:**

At the time of new construction, all internal and external surfaces of hatch coamings and hatch covers, and all internal surfaces of the cargo holds, excluding the flat tank top areas and the hopper tanks sloping plating approximately 300 mm below the side shell frame and brackets, should have an efficient protective coating (epoxy coating or equivalent) applied in accordance with the manufacturer's recommendation. In the selection of coating, due consideration should be given by the owner to intended cargo conditions expected in service. For existing bulk carriers, where owners may elect to coat or recoat cargo holds as noted above, consideration may be given to the extent of the close-up and thickness measurement surveys. Prior to the coating of cargo holds of existing ships, scantlings should be ascertained in the presence of a surveyor.

### **4.3 Bulk carriers 10 - 15 years of age**

#### **4.3.1 Ballast tanks**

##### **4.3.1.1 For bulk carriers:**

All salt water ballast tanks should be examined. If such inspections reveal no visible structural defects, the examination may be limited to a verification that the protective coating remains efficient.

##### **4.3.1.2 For ore carriers:**

- .1 all web frame rings - in one ballast wing tank;
- .2 one deck transverse - in each of the remaining ballast wing tanks;
- .3 both transverse bulkheads - in one ballast wing tank;
- .4 one transverse bulkhead - in each remaining ballast wing tank.

4.3.1.3 In addition, the requirements described in 4.2.1.2 to 4.2.1.4 apply.

#### **4.3.2 Cargo holds**

4.3.2.1 An overall survey of all cargo holds, including close-up survey of sufficient extent, minimum 25% of frames, should be carried out to establish the condition of:

- .1 shell frames including their upper and lower end attachments, adjacent shell plating, and transverse bulkheads of all cargo holds; and
- .2 areas found to be suspect areas at the previous periodical survey.

4.3.2.2 Where considered necessary by the surveyor as a result of the overall and close-up survey as described in 4.3.2.1, the survey should be extended to include a close-up survey of all of the shell frames and adjacent plating of all cargo holds.

#### **4.3.3 Extent of thickness measurement**

4.3.3.1 Thickness measurement should be carried out to an extent sufficient to determine both general and local corrosion levels at areas subject to close-up survey as described in 4.3.2.1. The minimum requirement for thickness measurements at the intermediate enhanced survey are areas found to be suspect areas at the previous periodical survey.

4.3.3.2 In addition, the requirements described in 4.2.3.2 to 4.2.3.4 apply.

### **4.4 Bulk carriers exceeding 15 years of age**

4.4.1 The requirements of the intermediate enhanced survey should be to the same extent as the previous periodical survey required in 2 and 5.1. However, pressure testing of tanks and cargo holds used for ballast is not required unless deemed necessary by the attending surveyor.

4.4.2 In application of 4.4.1, the intermediate enhanced survey may be commenced at the second annual survey and be progressed during the succeeding year with a view to completion at the third annual survey in lieu of the application of 2.1.1."

7 The existing text of paragraph 5.2.2 is replaced by the following:

"5.2.2 Tanks and spaces should be safe for access, i.e. gas-freed, ventilated, and illuminated."

8 The text of chapter 6 is deleted and the following chapters 7, 8 and 9 are renumbered accordingly.

9 The following new subparagraph 5 is added at the end of existing paragraph 7.3.1 (renumbered paragraph 6.3.1):

".5 survey programme as required by 5.1 until such time as the periodical survey has been completed."

10 The existing text of section 8.1 (renumbered section 7.1) is replaced by the following:

"7.1 General

7.1.1 The required thickness measurements, if not carried out by the recognised organization acting on behalf of the Administration, should be witnessed by a surveyor of the recognised organization. The surveyor should be on board to the extent necessary to control the process.

7.1.2 The thickness measurement company should be part of the survey planning meeting to be held prior to commencing the survey.

7.1.3 In all cases the extend of the thickness measurements should be sufficient as to represent the actual average condition."

11 The table in annex 2 is amended as follows:

.1 In the second column "5<AGE≤ 10", the existing text of item 6 is replaced by the following:

"6. Wind and water strikes in way of transverse sections considered under point 2 above."

.2 In the third column "10<AGE≤ 15", the following new item 8 is added at the end:

"8. As required by annex 12 for ships subject to compliance with regulation XII/6.2 of the Convention."

12 In annex 7, the table headed "Extract of thickness measurements" is amended as follows:

.1 The existing text of the heading of the first column is replaced by the following:

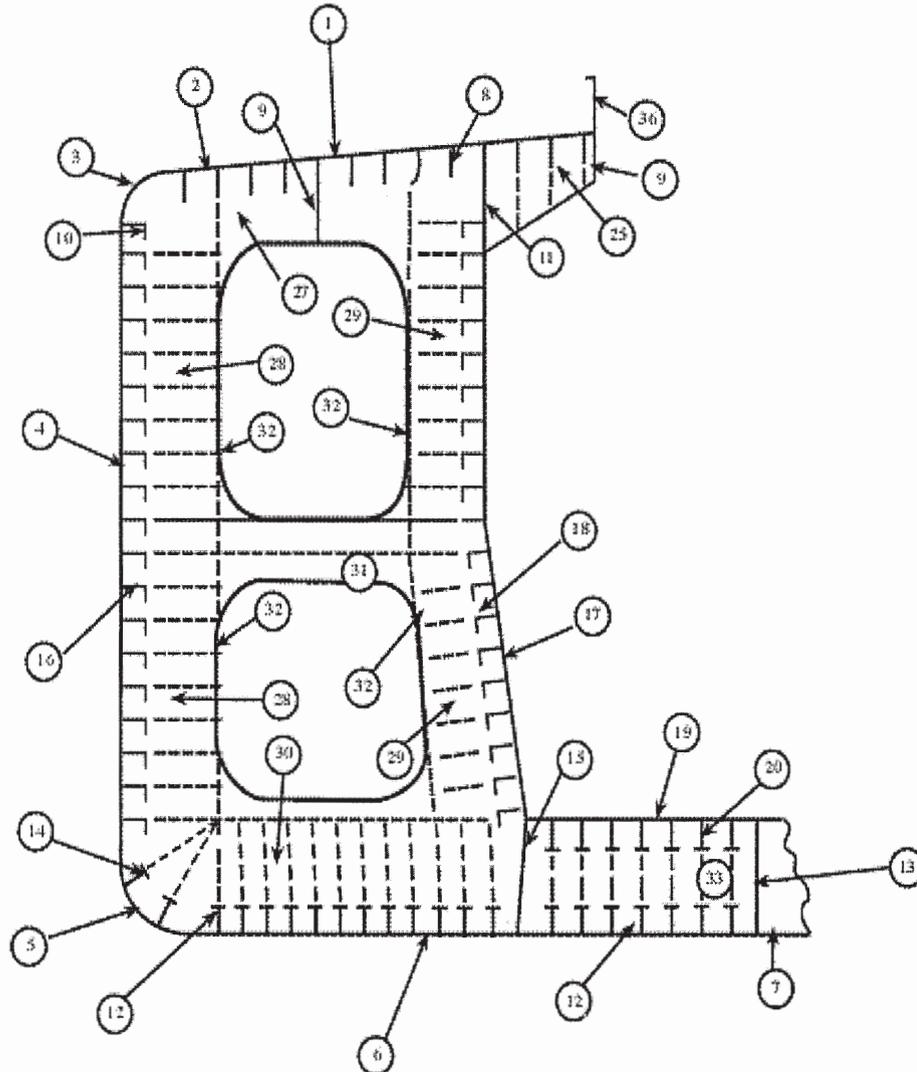
"Position of substantially corroded tanks/areas or areas with deep pitting"

- .2 The following new note is added at the end of the table:
- "3 Any bottom plating with a pitting intensity of 20% or more, with wastage in the substantial corrosion range or having an average depth of pitting of 1/3 or more of actual plate thickness should be noted."
- 13 In annex 8, General, the following new appendices are added to the list of appendices:
- “Appendix 4 Ore carriers – Thickness measurement and typical transverse section indicating longitudinal and transverse members
- Appendix 5 Ore carriers – Thickness measurements and close-up survey requirements”
- 14 In annex 8, the following new appendices 4 and 5 are added after appendix 3:

“Appendix 4

Ore carriers

Thickness measurement and typical transverse section indicating longitudinal and transverse members



Report on TM2-BC (1) and (2)	
1.	Strength deck plating
2.	Stringer plate
3.	Sheerstrake
4.	Side shell plating
5.	Bilge plating
6.	Bottom shell plating
7.	Keel plate

Report on TM6-BC	
36.	Hatch coamings
37.	Deck plating between hatches
38.	Hatch covers

Report on TM3-BC	
8.	Deck longitudinals
9.	Deck girders
10.	Sheerstrake longitudinals
11.	Longitudinal bulkhead top strake
12.	Bottom longitudinals
13.	Bottom girders
14.	Bilge longitudinals
15.	Longitudinal bulkhead lower strake
16.	Side shell longitudinals
17.	Longitudinal bulkhead plating (remainder)
18.	Longitudinal bulkhead longitudinals
19.	Inner bottom plating
20.	Inner bottom longitudinals

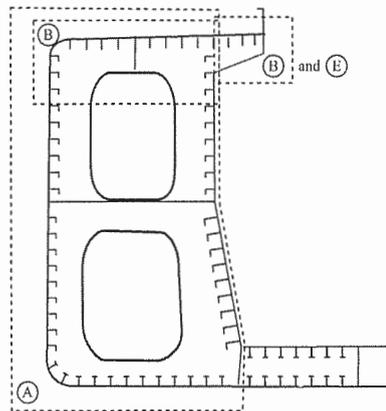
Report on TM4-BC	
25.	Deck transverse centre tank
26.	Bottom transverse centre tank
27.	Deck transverse wing tank
28.	Side shell vertical web
29.	Longitudinal bulk-head vertical web
30.	Bottom transverse wing tank
31.	Struts
32.	Transverse web face plate
33.	D.b. floors

## Appendix 5

### Ore carriers

#### Thickness measurement and close-up survey requirements

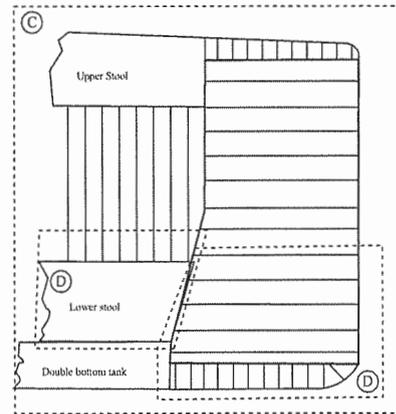
Typical transverse section close-up survey



Thickness to be reported on  
TM3-T of Annex B and TM4-T of Annex B  
as appropriate

Close-up survey  
area

Typical transverse bulkhead



Thickness to be reported on TM5-T of Annex B

Recommendations for the extent and pattern of gaugings  
are indicated in Annex 10.

15 In annex 10, in the table headed "Deck structure including cross strips, main cargo hatchways, hatch covers, coamings and top side tanks", the existing text of item "a", in the column headed "Extent of measurement", across from the entry "3. Hatch covers" in the column headed "Structural members" is replaced by the following:

"a. Side and end skirts, each 3 locations".

16 The following new annexes 11 and 12 are added after existing annex 10:

#### “ANNEX 11

#### **GUIDELINES FOR THE GAUGING OF THE VERTICALLY CORRUGATED TRANSVERSE WATERTIGHT BULKHEAD BETWEEN HOLDS Nos.1 AND 2**

1 Gauging is necessary to determine the general condition of the structure and to define the extent of possible repairs and/or reinforcements of the vertically corrugated transverse watertight bulkhead for verification of the compliance with the Bulk carrier bulkhead and double bottom strength standards, defined in regulation XII/1.5 of the Convention.

2 Taking into account the buckling model specified in the Bulk carrier bulkhead and double bottom strength standards, defined in regulation XII/1.5 of the Convention, in the evaluation of strength of the bulkhead, it is essential to determine the thickness diminution at the critical levels shown in figures 1 and 2 of this annex.

3 The gauging should be carried out at the levels as described below. To adequately assess the scantlings of each individual vertical corrugation, each corrugation flange, web, shedder plate and gusset plate within each of the levels given below should be gauged.

Level (a) Ships without lower stool (see figure 1):

Locations:

- The mid-breadth of the corrugation flanges at approximately 200 mm above the line of shedder plates;
- The middle of gusset plates between corrugation flanges, where fitted;
- The middle of the shedder plates;
- The mid-breadth of the corrugation webs at approximately 200 mm above the line of shedder plates.

Level (b) Ships with lower stool (see figure 2):

Locations:

- The mid-breadth of the corrugation flanges at approximately 200 mm above the line of shedder plates;
- The middle of gusset plates between corrugation flanges, where fitted;
- The middle of the shedder plates;
- The mid-breadth of the corrugation webs at approximately 200 mm above the line of shedder plates.

Level (c) Ships with or without lower stool (see figures 1 and 2):

Locations:

- The mid-breadth of the corrugation flanges and webs at about the mid-height of the corrugation.

4 Where the thickness changes within the horizontal levels, the thinner plate should be gauged.

5 Steel renewal and/or reinforcement should comply with the Bulk carrier bulkhead and double bottom strength standards, defined in regulation XII/1.5 of the Convention.

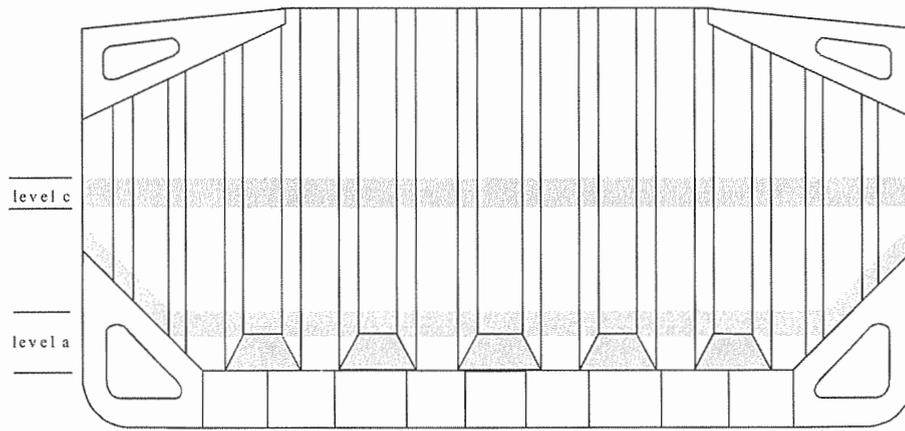


Figure 1. Ships without lower stool

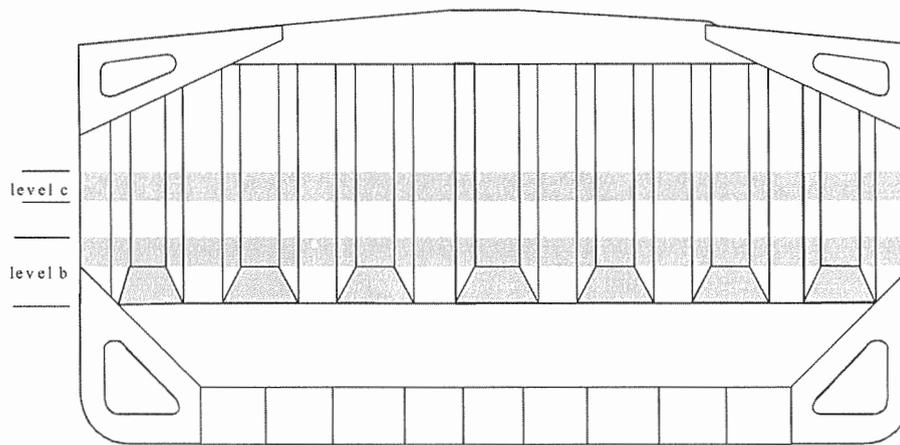


Figure 2. Ships with lower stool

## ANNEX 12

**ADDITIONAL ANNUAL SURVEY REQUIREMENTS FOR THE FOREMOST CARGO HOLD OF SHIPS SUBJECT TO SOLAS REGULATION XII/9.1****1 General**

In the case of bulk carriers over 5 years of age, the annual survey should include, in addition to the requirements of the annual surveys prescribed in chapter 3 of the present Guidelines, an examination of the following items.

**2 Extent of survey**

2.1 For bulk carriers of 5 - 15 years of age:

2.1.1 An overall survey of the foremost cargo hold, including close-up survey of sufficient extent, minimum 25% of frames, should be carried out to establish the condition of:

- .1 shell frames including their upper and lower end attachments, adjacent shell plating, and transverse bulkheads; and
- .2 areas found to be suspect areas at the previous periodical survey.

2.1.2 Where considered necessary by the surveyor as a result of the overall and close-up survey as described in 2.1.1 above, the survey should be extended to include a close-up survey of all of the shell frames and adjacent shell plating of the cargo hold.

2.2 For bulk carriers exceeding 15 years of age:

An overall survey of the foremost cargo hold, including close-up survey should be carried out to establish the condition of:

- .1 all shell frames including their upper and lower end attachments, adjacent shell plating, and transverse bulkheads; and
- .2 areas found to be suspect areas at the previous periodical survey.

**3 Extent of thickness measurement**

3.1 Thickness measurement should be carried out to an extent sufficient to determine both general and local corrosion levels at areas subject to close-up survey, as described in 2.1 and 2.2. The minimum requirement for thickness measurements are areas found to be suspect areas at the previous periodical survey. Where substantial corrosion is found, the extent of thickness measurements should be increased with the requirements of annex 10.

3.2 The thickness measurement may be dispensed with provided the surveyor is satisfied by the close-up survey, there is no structural diminution and the protective coating, where applied, remains effective.

#### 4 Special consideration

Where the protective coating, as referred to in the explanatory note below, in the foremost cargo hold is found to be in GOOD condition, the extent of close-up surveys and thickness measurements may be specially considered.

##### **Explanatory note:**

At the time of new construction, all internal and external surfaces of hatch coamings and hatch covers, and all internal surfaces of the cargo holds, excluding the flat tank top areas and the hopper tanks sloping sloping plating approximately 300 mm below the side shell frame and brackets, should have an efficient protective coating (epoxy coating or equivalent) applied in accordance with the manufacturer's recommendation. In the selection of coating due consideration should be given by the owner to intended cargo conditions expected in service.

For existing bulk carriers, where owners may elect to coat or recoat cargo holds as noted above, consideration may be given to the extent of the close-up and thickness measurement surveys. Prior to the coating of cargo holds of existing ships, scantlings should be ascertained in the presence of a surveyor."

### ANNEX B

#### GUIDELINES ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS

- 17 The "Contents" are amended as follows:
- .1 The existing text of 1.3 is replaced by the following:
    - "1.3 Repairs"
  - .2 The existing text of 4 to 4.4 is replaced by the following:
    - "4 INTERMEDIATE ENHANCED SURVEY
      - 4.1 General
      - 4.2 Oil tankers 5-10 years of age
      - 4.3 Oil tankers 10-15 years of age
      - 4.4 Oil tankers exceeding 15 years of age"
- 18 The following new paragraphs 1.2.13 is added after the existing paragraph 1.2.12:
- "1.2.13 A *prompt and thorough repair* is a permanent repair completed at the time of survey to the satisfaction of the surveyor, therein removing the need for the imposition of any associated condition of classification."

19 The existing text of section 1.3 is replaced by the following:

### **"1.3 Repairs**

1.3.1 Any damage in association with wastage over the allowable limits (including buckling, grooving, detachment or fracture), or extensive areas of wastage over the allowable limits, which affects or, in the opinion of the Administration, will affect the ship's structural, watertight or weathertight integrity, should be promptly and thoroughly repaired. Areas to be considered include:

- .1 side shell frames, their end attachments or adjacent shell plating;
- .2 deck structure and deck plating;
- .3 bottom structure and bottom plating;
- .4 watertight or oiltight bulkheads; and
- .5 hatch covers or hatch coamings.

Where adequate repair facilities are not available, the Administration may allow the ship to proceed directly to a repair facility. This may require discharging the cargo and/or temporary repairs for the intended voyage.

1.3.2 Additionally, when a survey results in the identification of significant corrosion or structural defects, either of which, in the opinion of the Administration, will impair the ship's fitness for continued service, remedial measures should be implemented before the ship continues in service."

20 In existing paragraph 2.1.3 the words “, as required in 2.1.5,” are inserted between the words “piping” and “is in a satisfactory condition”.

21 The existing text of paragraph 2.1.5 is replaced by the following:

"2.1.5 Cargo piping on deck, including crude oil washing (COW) piping, and cargo and ballast piping within the above tanks and spaces should be examined and operationally tested to working pressure to attending surveyor's satisfaction to ensure that tightness and condition remain satisfactory. Special attention should be given to any ballast piping in cargo tanks and cargo piping in ballast tanks and void spaces, and surveyors should be advised on all occasions when this piping, including valves and fittings, are open during repair periods and can be examined internally."

22 The existing text of paragraph 2.3.1 is replaced by the following:

"Where provided, the condition of the corrosion prevention system of cargo tanks should be examined. A ballast tank where a protective coating is found in POOR condition and it is not renewed, or where soft coating has been applied, or where a protective coating has not been applied from the time of construction, the tank in question should be examined at annual intervals. Thickness measurements should be carried out as deemed necessary by the surveyor."

- 23 The following new paragraph is added after the end of the existing paragraph 3.5.2:

"3.5.3. For oil tankers exceeding 15 years of age, all ballast tanks adjacent to (i.e. with a common plane boundary) a cargo tank with any means of heating should be examined internally. When considered necessary by the surveyor, thickness measurements should be carried out and if the results of these thickness measurements indicate that substantial corrosion is found, the extent of thickness measurements should be increased in accordance with the requirements of annex 4. Tanks or areas where coating was found to be in GOOD condition at the previous intermediate or periodical survey may be specially considered by the Administration."

- 24 The existing text of paragraphs 4 to 4.4.2 is replaced by the following:

#### **"4 INTERMEDIATE ENHANCED SURVEY**

##### **4.1 General**

4.1.1 Items that are additional to the requirements of the annual survey may be surveyed either at the second or third annual survey or between these surveys.

4.1.2 The survey extent of cargo and ballast tanks dependent on the age of the ship is specified in 4.2, 4.3 and 4.4.

4.1.3 For weather decks, an examination as far as applicable of cargo, crude oil washing, bunker, ballast, steam and vent piping systems as well as vent masts and headers. If upon examination there is any doubt as to the condition of the piping, the piping may be required to be pressure tested, thickness measured or both.

##### **4.2 Oil tankers of 5 to 10 years of age**

4.2.1 The requirements of 4.1.3 apply.

4.2.2 For tanks used for salt water ballast, an overall survey of representative tanks selected by the surveyor should be carried out. If such inspections reveal no visible structural defects, the examination may be limited to a verification that the protective coating remains efficient.

4.2.3 Where POOR coating condition, corrosion or other defects are found in salt water ballast tanks or where a protective coating was not applied from the time of construction, the examination should be extended to other ballast tanks of the same type.

4.2.4 In salt water ballast tanks where a protective coating is found in POOR condition and it is not renewed, or where soft coating has been applied, or where a protective coating was not applied from the time of construction, the tanks in question should be examined and thickness measurements carried out as considered necessary at annual intervals.

##### **4.3 Oil tankers of 10 to 15 years of age**

4.3.1 The requirements of 4.2 apply.

4.3.2 An overall survey of at least two representative cargo tanks should be carried out.

4.3.3 For tanks used for salt water ballast including combined cargo/ballast tanks, an overall survey of all such tanks should be carried out. If such survey reveals no visible structural defects, the survey may be limited to a verification that the protective coatings remain efficient.

4.3.4 Extent of close up survey:

- .1 Ballast tanks: To the same extent as previous periodical survey.
- .2 Cargo tanks: Two combined cargo/ballast tanks. The extent of survey should be based on the record of the previous periodical survey, and repair history of the tanks.

The extent of close-up surveys may be extended as stated in 2.4.3. For areas in tanks where coatings are found to be in GOOD condition, the extent of the close-up surveys may be specially considered by the Administration.

4.3.5 Extent of thickness measurement

The minimum requirements for thickness measurements at the intermediate survey are areas found to be suspect areas at the previous periodical survey. Where substantial corrosion is found, the extent of the thickness measurements should be increased in accordance with the requirements of annex 4.

#### **4.4 Oil tankers exceeding 15 years of age**

4.4.1 The requirements of the intermediate survey should be to the same extent as the previous periodical survey as required in 2 and 5.1. However, pressure testing of cargo and ballast tanks is not required unless deemed necessary by the attending surveyor.

4.4.2 In application of 4.4.1, the intermediate enhanced survey may be commenced at the second annual survey and be progressed during the succeeding year with a view to completion at the third annual survey in lieu of the application of 2.1.1.”

25 The existing text of paragraph 5.2.2 is replaced by the following:

"5.2.2 Tanks and spaces should be safe for access, i.e. gas-freed, ventilated and illuminated."

26 The following new subparagraph .6 is added after subparagraph .5 of existing paragraph 6.3.1:

".6 survey programme as required by 5.1 until such time as the periodical survey has been completed,".

27 The existing text of paragraph 7.1.1 is replaced by the following:

"7.1.1 The required thickness measurements, if not carried out by the recognised organization acting on behalf of the Administration, should be witnessed by a surveyor of the recognised organization. The surveyor should be on board to the extent necessary to control the process.

7.1.2 The thickness measurement company should be part of the survey planning meeting to be held prior to commencing the survey.

7.1.3 In all cases the extend of the thickness measurements should be sufficient as to represent the actual average condition."

28 Annex 9 is amended as follows:

.1 In the Condition evaluation report under the heading "Contents of condition evaluation report" after the existing Part 3, the following new Part 4 is inserted:

"Part 4 - Cargo and ballast piping system: - Examined  
- Operationally tested"

and the existing parts 4 to 9 are renumbered as parts 5 to 10;

.2 The table headed "Extract of thickness measurements" is amended as follows:

.1 The existing text of the heading of the first column is replaced by the following:

"Position of substantially corroded tanks/areas or areas with deep pitting"

.2 The following new note is added at the end of the table:

"3 Any bottom plating with a pitting intensity of 20% or more, with wastage in the substantial corrosion range or having an average depth of pitting of 1/3 or more of actual plate thickness should be noted."

29 In annex 11, the fourth sentence of the existing paragraph 3.1 is replaced by the following:

"The approach is basically an evaluation of the risk based on the knowledge and experience related to design and corrosion."

二零一五年五月二十一日於行政長官辦公室

辦公室代主任 盧麗卿

Gabinete do Chefe do Executivo, aos 21 de Maio de 2015. —  
A Chefe do Gabinete, substituta, *Lo Lai Heng*.



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