澳門特別行政區

行政長官辦公室

第 8/2022 號行政長官批示

行政長官行使《澳門特別行政區基本法》第五十條賦予的職權，並根據經第1/2021號行政法規修改的第14/2004號行政法規《科學技術發展基金》組成部分的《科學技術發展基金章程》第七條第一款至第三款的規定，作出本批示。

一、續任姚偉彬為科學技術發展基金信託委員會成員。

二、本批示自二零二二年一月二十八日起產生效力。

二零二二年一月十八日

行政長官　賀一誠

第 9/2022 號行政長官批示

行政長官行使《澳門特別行政區基本法》第五十條賦予的職權，並根據《澳門廣播電視股份有限公司章程》第十四條第一款及三月二日第13/92/M號法令第二條第一款、第二款及第二十二條的規定，作出本批示。

一、續任馬有恆為澳門廣播電視股份有限公司股東會主席團主席，任期遵照有關章程規定。

二、本批示自二零二二年二月一日起產生效力。

二零二二年一月十八日

行政長官　賀一誠

第 10/2022 號行政長官批示

行政長官行使《澳門特別行政區基本法》第五十條賦予的職權，並根據現行《澳門特別行政區經營中式彩票專營特許合同》第十六條第一款，以及三月二日第13/92/M號法令第二條第一款及第二款和第十五條的規定，作出本批示。

一、委任羅志輝為駐榮興彩票有限公司的政府代表，自二零二二年二月一日起至二零二二年十二月三十一日止。

REGIÃO ADMINISTRATIVA ESPECIAL DE MACAU

GABINETE DO CHEFE DO EXECUTIVO

Despacho do Chefe do Executivo n.º 8/2022

Usando da faculdade conferida pelo artigo 50.º da Lei Básica da Região Administrativa Especial de Macau e nos termos dos n.os 1 a 3 do artigo 7.º dos Estatutos do Fundo para o Desenvolvimento das Ciências e da Tecnologia que fazem parte integrante do Regulamento Administrativo n.º 14/2004 (Fundo para o Desenvolvimento das Ciências e da Tecnologia), com a nova redacção dada pelo Regulamento Administrativo n.º 1/2021, o Chefe do Executivo manda:

1. É renovado o mandato de Iu Vai Pan como membro do Conselho de Curadores do Fundo para o Desenvolvimento das Ciências e da Tecnologia.

2. O presente despacho produz efeitos a partir de 28 de Janeiro de 2022.

18 de Janeiro de 2022.

O Chefe do Executivo, *Ho Iat Seng.*

Despacho do Chefe do Executivo n.º 9/2022

Usando da faculdade conferida pelo artigo 50.º da Lei Básica da Região Administrativa Especial de Macau, nos termos previstos no n.º 1 do artigo 14.º dos Estatutos da TDM — Teledifusão de Macau, S.A. e ao abrigo do disposto nos n.os 1 e 2 do artigo 2.º e do artigo 22.º do Decreto-Lei n.º 13/92/M, de 2 de Março, o Chefe do Executivo manda:

1. É renovada a nomeação de Ma Iao Hang para exercer funções de presidente da Mesa da Assembleia Geral da TDM — Teledifusão de Macau, S.A., pelo prazo fixado nos respectivos Estatutos.

2. O presente despacho produz efeitos a partir de 1 de Fevereiro de 2022.

18 de Janeiro de 2022.

O Chefe do Executivo, *Ho Iat Seng.*

Despacho do Chefe do Executivo n.º 10/2022

Usando da faculdade conferida pelo artigo 50.º da Lei Básica da Região Administrativa Especial de Macau, e nos termos do n.º 1 da cláusula 16.ª do «Contrato de concessão, em regime de exclusivo, da exploração na Região Administrativa Especial de Macau de lotarias chinesas» em vigor, e dos n.os 1 e 2 do artigo 2.º e do artigo 15.º do Decreto-Lei n.º 13/92/M, de 2 de Março, o Chefe do Executivo manda:

1. É nomeado delegado do Governo junto da Sociedade de Lotarias Wing Hing, Limitada, de Lo Chi Fai, a partir de 1 de Fevereiro de 2022 até 31 de Dezembro de 2022.

二、執行上指職務的每月報酬為澳門元六千六百元。

二零二二年一月十九日

行政長官　賀一誠

2. O exercício das funções acima referidas é remunerado pela quantia mensal de 6 600 patacas.

19 de Janeiro de 2022.

O Chefe do Executivo, *Ho Iat Seng.*

第 2/2022 號行政長官公告

鑑於國際海事組織大會於一九九三年十一月四日透過第A.744（18）號決議通過的《散貨船和油輪檢驗期間的強化檢查方案指南》適用於澳門特別行政區；

上述指南陸續經國際海事組織海上安全委員會和《1974年國際海上人命安全公約》締約國政府會議按照公約第VIII（b）條和第XI-1/2條規定作出修正，而這些修正需要一個全面的修訂版本，以確保其規定的有效實施並維持儘可能高的安全水平；

國際海事組織在二零一一年十一月三十日的第二十七屆大會上，透過第A.1049（27）號決議通過了《2011年國際散貨船和油船檢驗期間加強檢驗計劃規則（2011年加強檢驗計劃規則）》（下稱“《2011年加強檢驗計劃規則》”）。該規則於二零一四年一月一日在國際法律秩序上生效，包括對中華人民共和國及其澳門特別行政區生效；

國際海事組織海上安全委員會分別於二零一四年五月二十二日、二零一四年十一月二十一日和二零一六年五月十九日透過第MSC.371（93）號決議、第MSC.381（94）號決議和第MSC.405（96）號決議，通過了對《2011年加強檢驗計劃規則》的修正案。該等修正案分別於二零一六年一月一日、二零一六年七月一日和二零一八年一月一日在國際法律秩序上生效，包括對中華人民共和國及其澳門特別行政區生效；

基於此，行政長官根據第3/1999號法律《法規的公佈與格式》第五條（一）項和第六條第一款的規定，命令公佈：

——國際海事組織大會透過第A.1049（27）號決議通過的《2011年加強檢驗計劃規則》的中文和英文正式文本；

——國際海事組織海上安全委員會透過第MSC.371（93）號決議通過的《2011年加強檢驗計劃規則》修正案的中文和英文正式文本；

——國際海事組織海上安全委員會透過第MSC.381（94）號決議通過的《2011年加強檢驗計劃規則》修正案的中文和英文正式文本；

Aviso do Chefe do Executivo n.º 2/2022

Considerando que as Directrizes relativas ao Programa Reforçado de Inspecções no âmbito das Vistorias a Graneleiros e Petroleiros, adoptadas pela Assembleia da Organização Marítima Internacional (OMI) através da resolução A.744(18) em 4 de Novembro de 1993, são aplicáveis na Região Administrativa Especial de Macau;

Mais considerando que as referidas Directrizes foram objecto de sucessivas emendas pelo Comité de Segurança Marítima da OMI e pela Conferência dos Governos Contratantes da Convenção Internacional para a Salvaguarda da Vida Humana no Mar, 1974, ao abrigo do artigo VIII (b) e da norma XI-1/2 da mesma Convenção, e que tais emendas exigiram uma revisão abrangente a fim de garantir uma aplicação efectiva das suas normas e de assegurar a manutenção de um elevado nível de segurança operacional;

Considerando ainda que, em 30 de Novembro de 2011, na sua 27.ª sessão, a Assembleia da OMI, através da resolução A.1049 (27), adoptou o Código Internacional para o Programa Reforçado de Inspecções no âmbito das Vistorias a Graneleiros e Petroleiros, 2011 (Código ESP 2011), o qual entrou em vigor na ordem jurídica internacional, incluindo a República Popular da China e a sua Região Administrativa Especial de Macau em 1 de Janeiro de 2014;

Considerando igualmente que, em 22 de Maio de 2014, 21 de Novembro de 2014 e 19 de Maio de 2016, o Comité de Segurança Marítima da OMI, através das resoluções MSC.371(93), MSC.381(94) e MSC.405(96) respectivamente, adoptou as emendas ao Código ESP 2011, e que tais emendas entraram em vigor na ordem jurídica internacional, incluindo a República Popular da China e a sua Região Administrativa Especial de Macau, respectivamente em 1 de Janeiro de 2016, 1 de Julho de 2016 e 1 de Janeiro de 2018;

O Chefe do Executivo manda publicar, nos termos da alínea 1) do artigo 5.º e do n.º 1 do artigo 6.º da Lei n.º 3/1999 (Publicação e formulário dos diplomas):

– o Código ESP 2011 adoptado pela Assembleia da OMI através da resolução A.1049(27), nos seus textos autênticos em línguas chinesa e inglesa;

– as emendas ao Código ESP 2011 adoptadas pelo Comité de Segurança Marítima da OMI através da resolução MSC.371(93), nos seus textos autênticos em línguas chinesa e inglesa;

– as emendas ao Código ESP 2011 adoptadas pelo Comité de Segurança Marítima da OMI através da resolução MSC.381(94), nos seus textos autênticos em línguas chinesa e inglesa;

——國際海事組織海上安全委員會透過第MSC.405（96）號決議通過的《2011年加強檢驗計劃規則》修正案的中文和英文正式文本。

二零二二年一月十二日發佈。

行政長官　賀一誠

– as emendas ao Código ESP 2011 adoptadas pelo Comité de Segurança Marítima da OMI através da resolução MSC.405(96), nos seus textos autênticos em línguas chinesa e inglesa.

Promulgado em 12 de Janeiro de 2022.

O Chefe do Executivo, *Ho Iat Seng*.

2011 年國際散貨船和油船檢驗期間加強檢驗計劃規則（2011 年加強檢驗計劃規則）

第 A.1049（27）號決議

2011 年 11 月 30 日通過

大會，

憶及《國際海事組織公約》關於大會在海上安全及防止和控制船舶造成海洋污染的規則和導則方面的職能的第十五條第（十）款，

還憶及大會第 A.744（18）號決議，大會以該決議通過了《散貨船和油船檢驗期間加強檢驗計劃導則》（以下稱“導則”），

注意到《1974 年國際海上人命安全公約》（《安全公約》）（以下稱：“公約”）1994 年締約國政府會議通過的公約第 XI-1/2 條使導則的各項規定根據公約成為強制性要求，

還注意到第 MSC.49（66）、MSC.105（73）、MSC.125（75）、MSC.144（77）、MSC.197（80）、MSC.261（84）號決議和 1997 年公約締約國政府會議第 2 號決議，海上安全委員會和公約締約國政府會議酌情按照公約第 VIII（b）條和第 XI-1/2 條規定，以這些決議通過了導則的各項修正案，

認識到對導則所做的這些修正需要形成一個全面的修訂版本，以確保其規定的有效實施並維持儘可能高的安全水平，

審議了海上安全委員會在其第 89 屆會議上提出的建議，

1. **通過**《2011 年國際散貨船和油船檢驗期間加強檢驗計劃規則》

（《2011 年加強檢驗計劃規則》），其文本載於本決議附件：

2. **請**公約各締約國政府注意，《2011 年加強檢驗計劃規則》將於公約第 XI-1 章的相關修正案生效時即行生效；

3. **要求**本組織秘書長在上述公約第 XI-1 章修正案被通過後，將本決議及其附件中《2011 年加強檢驗計劃規則》文本的核證無誤副本送發公約的所有締約國政府；

4. **還要求**本組織秘書長在上述公約第 XI-1 章修正案被通過後，將本決議及其附件中該規則文本的副本送發非《安全公約》締約國政府的本組織所有會員國；

5. **進一步要求**海上安全委員會不斷審議該規則，並根據使用中所獲得的經驗，在必要時對其進行修正。

附 件

2011 年國際散貨船和油船檢驗期間加強檢驗計劃規則（2011 年加強檢驗計劃規則）

目 錄

附件 A

散貨船檢驗期間加強檢驗計劃規則

A 部分

單舷側結構散貨船檢驗期間加強檢驗計劃規則

1 總則

1.1 適用範圍

1.2 定義

1.3 修理

1.4 驗船師

1.5 厚度側量與近觀檢驗

2 換證檢驗

2.1 總則

2.2 乾塢檢驗

2.3 處所保護

2.4 艙蓋和艙口圍板

2.5 全面和近觀檢驗範圍

2.6 厚度測量範圍

2.7 液艙壓力試驗範圍

2.8 確定符合公約第 XII/12 和 XII/13 條規定後的附加換證檢驗要求

3 年度檢驗
3.1 總則
3.2 船體檢查
3.3 露天甲板、艙蓋和艙口圍板檢查
3.4 貨船檢查
3.5 壓載艙檢查
3.6 按附件 12 的要求對應符合公約第 XII/9.1 條規定的船舶的最前部貨艙附加年度檢驗要求
3.7 確定符合公約第 XII/12 和 XII/13 條規定後的附加年度檢驗要求

4 中間檢驗
4.1 總則
4.2 船齡 5 至 10 年的散貨船
4.3 船齡 10 至 15 年的散貨船
4.4 船齡超過 15 年的散貨船

5 檢驗前準備
5.1 檢驗計劃
5.2 檢驗條件
5.3 結構通道
5.4 檢驗設備
5.5 海上或錨泊檢驗
5.6 檢驗計劃會議

6 船上文件
6.1 總則
6.2 檢驗報告案卷
6.3 支持性文件
6.4 船上文件審核

7 測厚程序
7.1 總則
7.2 測厚公司的認證
7.3 報告

8 檢驗報告和評估
8.1 檢驗報告的評估
8.2 報告

附件
附件 1 換證檢驗時的近觀檢驗要求
附件 2 換證檢驗時的測厚要求
附件 3 船東檢查報告
附件 4A 檢驗計劃
附件 4B 檢驗計劃調查表
附件 5 認證船體結構測厚公司的程序
附件 6 檢驗報告原則
附件 7 狀況評估報告
附件 8 建議的測厚程序
附件 9 結合散貨船加強檢驗計劃的技術評估的導則－船體換證檢驗
附件 10 顯著腐蝕區域的測厚範圍要求
附件 11 第 1 號與第 2 號貨艙之間垂直槽形水密橫艙壁測量導則
附件 12 對應符合公約第 XII/9.1 條的船舶的最前部貨艙附加年度檢驗要求
附件 13 散貨船貨艙蓋繫固裝置強度
附件 14 測厚的程序要求
附件 15 符合第 MSC.168（79）號決議要求的單舷側散貨船舷側肋骨和肘板的測厚導則

B 部分

雙舷側結構散貨船檢驗期間加強檢驗計劃規則

1 總則
1.1 適用範圍
1.2 定義
1.3 修理
1.4 驗船師
1.5 厚度側量與近觀檢驗

2 換證檢驗
2.1 總則
2.2 乾塢檢驗
2.3 處所保護
2.4 艙蓋和艙口圍板
2.5 全面和近觀檢驗範圍
2.6 厚度測量範圍
2.7 液艙壓力試驗範圍
2.8 確定符合公約第 XII/12 和 XII/13 條規定後的附加換證檢驗要求

3 年度檢驗
3.1 總則
3.2 船體檢查
3.3 露天甲板、艙蓋和艙口圍板檢查
3.4 貨船檢查
3.5 壓載艙檢查
3.6 確定符合公約第 XII/12 和 XII/13 條規定後的附加年度檢驗要求

4 中間檢驗
4.1 總則
4.2 船齡 5 至 10 年的雙舷側散貨船
4.3 船齡 10 至 15 年的雙舷側散貨船
4.4 船齡超過 15 年的雙舷側散貨船

5 檢驗前準備
5.1 檢驗計劃
5.2 檢驗條件
5.3 結構通道
5.4 檢驗設備
5.5 海上或錨泊檢驗
5.6 檢驗計劃會議

6 船上文件
6.1 總則
6.2 檢驗報告案卷
6.3 支持性文件
6.4 船上文件審核

7 測厚程序
7.1 總則
7.2 測厚公司的認證
7.3 報告

8 檢驗報告和評估
8.1 檢驗報告的評估
8.2 報告

附件
附件 1 換證檢驗時的近觀檢驗要求
附件 2 換證檢驗時的測厚要求

附件 3 船東檢查報告
附件 4A 檢驗計劃
附件 4B 檢驗計劃調查表
附件 5 認證船體結構測厚公司的程序
附件 6 檢驗報告原則
附件 7 狀況評估報告
附件 8 建議的測厚程序
附件 9 結合雙舷側散貨船加強檢驗計劃的技術評估的導則－船體換證檢驗
附件 10 雙舷側結構散貨船貨物長度區域內顯著腐蝕區域的測厚範圍要求
附件 11 散貨船貨艙蓋繫固裝置強度
附件 12 測厚的程序要求

附件 B

油船檢驗期間加強檢驗計劃規則

A 部分

雙殼油船檢驗期間加強檢驗計劃規則

1 總則
1.1 適用範圍
1.2 定義
1.3 修理
1.4 驗船師
1.5 厚度側量與近觀檢驗

2 換證檢驗
2.1 總則

2.2 乾塢檢驗
2.3 液艙防腐系統
2.4 全面和近觀檢驗範圍
2.5 厚度測量範圍
2.6 液艙壓力試驗範圍

3 年度檢驗
3.1 總則
3.2 船體檢查
3.3 露天甲板檢查
3.4 貨泵艙和管隧（如有）檢查
3.5 壓載艙檢查

4 中間檢驗
4.1 總則
4.2 船齡 5 至 10 年的油船
4.3 船齡 10 至 15 年的油船
4.4 船齡超過 15 年的油船

5 檢驗前準備
5.1 檢驗計劃
5.2 檢驗條件
5.3 結構通道
5.4 檢驗設備
5.5 海上或錨泊檢驗
5.6 檢驗計劃會議

6 船上文件
6.1 總則
6.2 檢驗報告案卷
6.3 支持性文件
6.4 船上文件審核

7 測厚程序
7.1 總則
7.2 測厚公司的認證
7.3 報告

8 檢驗報告和評估
8.1 檢驗報告的評估
8.2 報告

附件
附件 1 雙殼油船換證檢驗時的近觀檢驗最低要求
附件 2 雙殼油船換證檢驗時的測厚最低要求
附件 3 雙殼油船換證檢驗時的液艙試驗最低要求
附件 4 雙殼油船顯著腐蝕區域的測厚範圍要求
附件 5 船東檢查報告
附件 6A 檢驗計劃
附件 6B 檢驗計劃調查表
附件 7 認證船體結構測厚公司的程序
附件 8 檢驗報告原則
附件 9 狀況評估報告
附件 10 建議的雙殼油船測厚程序
附件 11 與油船加強檢驗計劃有關的技術評估的導則
附件 12 油船船體樑總縱強度衡準

B 部分

除雙殼油船外的油船檢驗期間加強檢驗計劃規則

1 總則
1.1 適用範圍

1.2 定義
1.3 修理
1.4 驗船師
1.5 厚度側量與近觀檢驗

2 換證檢驗
2.1 總則
2.2 乾塢檢驗
2.3 液艙防腐系統
2.4 全面和近觀檢驗範圍
2.5 厚度測量範圍
2.6 液艙壓力試驗範圍

3 年度檢驗
3.1 總則
3.2 船體檢查
3.3 露天甲板檢查
3.4 貨泵艙和管隧（如有）檢查
3.5 壓載艙檢查

4 中間檢驗
4.1 總則
4.2 船齡 5 至 10 年的油船
4.3 船齡 10 至 15 年的油船
4.4 船齡超過 15 年的油船

5 檢驗前準備
5.1 檢驗計劃
5.2 檢驗條件
5.3 結構通道
5.4 檢驗設備
5.5 海上或錨泊檢驗

5.6 檢驗計劃會議

6 船上文件

6.1 總則

6.2 檢驗報告案卷

6.3 支持性文件

6.4 船上文件審核

7 測厚程序

7.1 總則

7.2 測厚公司的認證

7.3 報告

8 檢驗報告和評估

8.1 檢驗報告的評估

8.2 報告

附件

附件 1 換證檢驗時的近觀檢驗要求

附件 2 換證檢驗時的測厚要求

附件 3 換證檢驗時的液艙壓力試驗要求

附件 4 顯著腐蝕區域的測厚範圍要求

附件 5 船東檢查報告

附件 6A 檢驗計劃

附件 6B 檢驗計劃調查表

附件 7 認證船體結構測厚公司的程序

附件 8 檢驗報告原則

附件 9 狀況評估報告

附件 10 建議的測厚程序

附件 11 與油船加強檢驗計劃有關的技術評估的導則

附件 12 油船船體樑總縱強度衡準

附件 A

散貨船檢驗期間加強檢驗計劃規則

A 部分

單舷側結構散貨船檢驗期間加強檢驗計劃規則

1 總則

1.1 *適用範圍*

1.1.1 本規則應適用於除附件 A 的 B 部分第 1.2.1 段所界定的雙舷側散貨船以外的所有 500 總噸及以上的自航式散貨船。

1.1.2 本規則應適用於貨物長度區域內的貨船、隔離艙、管隧、空艙和燃油艙以及所有壓載艙處的船體結構和管路系統的檢驗。

1.1.3 本規則包含檢查、測厚和液艙試驗的最小範圍。在發現顯著腐蝕和/或結構缺陷時，應擴大檢驗範圍，並包括必要時進行附加近觀檢驗。

1.1.4 應符合公約第 XII/6.1 條規定的船舶應按附件 11 的要求進行附加厚度測量。

1.1.5 應符合第 MSC.168（79）號決議規定的船舶應按附件 15 的要求進行附加厚度測量。

1.1.6 對於混合貨艙佈置的散貨船，如某些貨艙為單舷側而其他的為雙舷側，則附件 A 的 B 部分要求應適用於雙舷側貨艙及其相關的邊艙。

1.1.7 應在按經修正的 1974 年《安全公約》第 I/10 條規定的檢驗期間進行檢驗。

1.2 *定義*

1.2.1 *散貨船*係指通常在裝貨處所建有單甲板、頂邊艙和底邊艙，且主要用於載運散裝乾貨的船舶，包括兼裝船。

1.2.2 *壓載艙*係指用於海水壓載的液艙，或適用時，對用於裝貨和海水壓載的處所，如已發現顯著腐蝕，將視作壓載艙。

1.2.3 *處所*係指獨立的艙室，包括貨艙、液艙以及鄰接貨艙、甲板和外殼板的隔離艙和空艙。

1.2.4 *全面檢驗*係指用於報告船體結構整體狀況和確定附加近觀檢驗範圍的檢驗。

1.2.5 *近觀檢驗*係指驗船師在近距離目視範圍內（即通常伸手可及處）對結構件細節進行的檢驗。

1.2.6 *橫剖面*係指垂直於船舶中線的船體橫剖面，包括所有板材等縱向構件，以及在甲板、舷側外板、船底板、內底板、底邊艙斜板、縱艙壁和頂邊艙斜底板上的縱骨及縱桁。

1.2.7 *代表性處所*係指能反映相似類型、用途和具有類似防腐蝕系統的其他處所的處所。當選擇代表性處所時，應考慮到其營運和修理史，以及可識別的臨界結構區域和/或可疑區域。

1.2.8 *可疑區域*係指呈現顯著腐蝕和/或驗船師認為易於快速損耗的區域。

1.2.9 *顯著腐蝕*係指通過腐蝕狀況評估表明其腐蝕量超過許用裕量

的 75%但尚處於可接受範圍內的腐蝕程度。對按國際船級社協會共同結構規範建造的船舶，顯著腐蝕係指通過腐蝕狀況評估表明其測量（或測厚）厚度介於 t_{net} + 0.5mm 和 t_{net} 之間的腐蝕程度。

1.2.10 *防腐系統*通常可考慮全硬保護塗層。硬保護塗層通常係指環氧樹脂塗層或同等物。既非軟塗層亦非半硬塗層的其他塗層系統，如按生產廠的技術說明書應用和維護，可考慮作為替代品接受。

1.2.11 *塗層狀況*定義如下：

良好 係指僅有少量點狀鏽斑；

尚好 係指在扶強材的邊緣和焊縫的連接處塗層有局部脫落和/或所檢驗的區域中有超過 20%或更大範圍的輕度鏽蝕，但小於定義“差”的狀況；和

差 係指在檢驗的區域中有超過 20%或更大範圍的塗層普遍剝落，或有 10%或更大範圍的塗層產生硬質鏽皮。

1.2.12 *臨界結構區域*係指從計算中或從本船舶或類似船舶或姐妹船（適用時）的營運歷史中認定並需要進行檢測的、容易發生影響船舶結構整體性的破裂、屈曲或腐蝕的區域。

1.2.13 *貨物長度區域*係指包括貨艙和鄰近區域，含燃油艙、隔離艙、壓載艙和空艙的船舶部分。

1.2.14 *中間檢驗*係指在第二或第三次年度檢驗或其之間進行的檢驗。

1.2.15 *及時徹底修理*係指在檢驗期間完成的並使驗船師滿意的永久性修理，旨在消除需要批註的任何相關船級條件或遺留項目。

1.2.16 *公約*係指經修正的《1974 年國際海上人命安全公約》。

1.2.17 *特殊考慮*（與近觀檢驗和測厚有關）係指進行足夠的近觀檢查和測厚以確定塗層以下結構的實際平均狀況。

1.3 *修理*

1.3.1 任何與超過允許極限的結構蝕耗有關的損壞（包括屈曲、凹槽、脫開或斷裂）或大面積區域的蝕耗超過允許極限，若影響或主管機關認為將影響船舶的結構、水密或風雨密完整性，均應進行及時徹底修理（參見 1.2.15）。應考慮的區域包括：

.1 舷側結構和舷側板；

.2 甲板結構和甲板板；

.3 船底結構和船底板；

.4 內底結構和內底板；

.5 內側結構和內側板；

.6 水密或油密艙壁；

.7 艙口蓋或艙口圍板；和

.8 列於 3.3.10 中的項目。

在不能提供足夠修理設施的區域，主管機關可允許船舶直接駛往某一修理點。這可能要求船舶為該修理航次卸下貨物和/或進行臨時性修理。

1.3.2 此外，在檢驗發現腐蝕或結構缺陷時，如主管機關認為其中之一將影響船舶繼續營運，船舶應在繼續營運前採取補救措施。

1.4 *驗船師*

對 20,000 載重噸及以上的散貨船，應由兩名驗船師聯合執行在其船齡超過 10 年後的第一次計劃的換證檢驗(即第三次換證檢驗)，以及其後的所有換證和中間檢驗。對船齡在 10 年至 15 年之間的 100,000 載重噸及以上的散貨船，應由兩名驗船師執行中間檢驗。如由被認可組織進行檢驗，則這些驗船師應為該被認可組織專職聘用。

1.5 ***厚度測量與近觀檢驗***

在任何檢驗中，即在換證檢驗、中間檢驗、年度檢驗或與這些檢驗範圍相同的其他檢驗中，對需要實施近觀檢驗的結構區域的測厚應與近觀檢驗同時進行。

2 換證檢驗

2.1 ***總則***

2.1.1 換證檢驗可在第四次年度檢驗時開始，並可在其後一年中繼續進行，以在第五個周年日前完成。

2.1.2 檢驗計劃作為換證檢驗準備的一部分，應在換證檢驗前制定。厚度測量不應放在第四次年度檢驗之前進行。

2.1.3 除年度檢驗的要求外，檢驗還應包括足夠範圍的檢查、試驗和核查，以確保船體以及 2.1.5 所要求的相關管路處於合格狀況，並適合貨船構造安全證書新的有效期內其預定的用途，受到適當的維護和操作及到期接受各種定期檢驗。

2.1.4 所有貨艙、壓載艙、管隧、隔離艙和鄰接貨艙的空艙、甲板和外殼板都應進行檢查，這種檢查應輔以 2.6 和 2.7 所要求的厚度測量和試驗，以確保該結構的完整性始終有效。檢查應能足以發現可能存

在的顯著腐蝕、嚴重變形、斷裂、破損或其他結構蝕耗。

2.1.5 上述處所內的所有管系應在工作壓力下進行檢查和操作試驗並使現場驗船師滿意，以確保其密性和狀況保持合格狀態。

2.1.6 改建為空艙的壓載艙的檢驗範圍應結合壓載艙的要求予以特殊考慮。

2.1.7 中間檢驗和換證檢驗二者對處所的檢驗和測厚不應相互替代。

2.2 *乾塢檢驗*

2.2.1 乾塢檢驗應作為換證檢驗的一部分。在證書的五年期內應對船底外部至少進行兩次檢查。在所有情況下，船底檢查的最大間隔期不應超過 36 個月。

2.2.2 對船齡為 15 年及以上的船舶，應在乾塢進行船底外部檢查。對船齡小於 15 年的船舶，其未與換證檢驗一起進行的船底外部檢查，作為替代，可在船舶漂浮狀態下進行檢查。船舶在漂浮狀態下的檢查只有在船況令人滿意並具有合格的設備和合格人員時才能進行。

2.2.3 如乾塢檢驗未與換證檢驗一起完成，或如 2.2.1 中所述的 36 個月的最大間隔期未予滿足，則貨船構造安全證書應停止有效，直至乾塢檢驗完成。

2.2.4 如對貨艙和壓載艙下部的全面檢驗、近觀檢驗和厚度測量（如適用）尚未實施，則應按換證檢驗的適用要求進行。

註：貨艙和壓載艙下部係指輕壓載水線以下的部分。

2.3 *處所保護*

2.3.1 如設有壓載艙防腐系統，應檢查其狀況。對於壓載艙（不包括雙層底艙），如發現硬保護塗層處於 1.2.11 所界定的“差”狀況，且未換新，或已敷設軟塗層或半硬塗層，或從建造之時就未敷設硬保護塗層，則對所述艙應每年進行檢查。如驗船師認為必要，應進行測厚。如在壓載雙層底艙內發現硬保護塗層處於該種狀況，且未換新，或已敷設軟塗層或半硬塗層，或從建造之時就未敷設硬保護塗層，則對所述艙可每年進行檢查。如驗船師認為必要，或存在大面積腐蝕，應進行測厚。

2.3.2 如貨艙內設有硬保護塗層，且塗層處於“良好”狀況，近觀檢驗和厚度測量的範圍可予以特殊考慮。

2.4 ***艙蓋和艙口圍板***

艙蓋和艙口圍板應經受下列檢驗：

2.4.1 除所有艙蓋和艙口圍板外，還應對 3.3 中列出的項目進行徹底檢查。

2.4.2 應檢查所有機械操作的艙蓋是否操作良好，包括：

.1 開啟狀態下的積載和繫固；

.2 關閉狀態下的適配性和密封有效性；和

.3 液壓和動力部件、鋼索、鏈和連動裝置的操作試驗。

2.4.3 應通過沖水試驗或等效方法檢查所有艙蓋的密封裝置的有效性。

2.4.4 對艙蓋、艙口圍板及扶強材應按附件 2 進行厚度測量。

2.5 *全面和近觀檢驗範圍*

2.5.1 在換證檢驗時應對所有液艙和處所進行一次全面檢驗。對貨物長度區域內的燃油艙應進行如下檢驗：

第 1 次換證檢驗 船齡≤5 年	第 2 次換證檢驗 5 年<船齡≤10 年	第 3 次換證檢驗 10 年<船齡≤15 年	第 4 次及以後換證檢驗 船齡＞15 年
無	一個	兩個	半數，至少兩個

註：

1. 本要求適用於整體（結構）類型的液艙。
2. 如檢查中對液艙進行抽查，則每次換證檢驗都應輪流檢查不同的液艙。
3. 尖艙（各種用途）應在每次換證檢驗中進行內部檢查。
4. 在第三次換證檢驗及以後的換證檢驗時，應包括一個位於貨物區域的燃油深艙（如設置）。

2.5.2 在換證檢驗時近觀檢驗的最低要求見附件 1。

2.5.3 驗船師在考慮到檢驗時處所的維護、防腐系統的狀況以及處所具有的結構佈置或構件根據可獲得的資料曾經在類似處所或類似船舶出現過缺陷的同時，可根據需要擴大近觀檢驗的範圍。

2.5.4 對於查明硬保護塗層處於“良好”狀況的處所內區域，按附件 1 要求的近觀檢驗範圍可予以特殊考慮。還參見 2.3.2。

2.6 *厚度測量範圍*

2.6.1 在換證檢驗時厚度測量的最低要求見附件 2。附件 11 提供的附加測厚導則適用於應符合公約第 XII/6.1 條要求的船舶上 1 號和 2 號貨艙之間的垂直槽形水密橫艙壁。對適用於應符合第 MSC.168（79）號決議要求的船舶舷側肋骨和肘板的附加測厚導則，參見 1.1.5

和附件 15。

2.6.2 應進行有代表性的厚度測量，以確定在所有貨艙和壓載艙內的外板肋骨和末端附件的總體和局部腐蝕程度。還應對橫艙壁板進行測厚，以確定其腐蝕程度。如驗船師通過近觀檢查確信無結構尺寸減小且敷設的硬保護塗層保持有效，則厚度測量的範圍可予以特殊考慮。

2.6.3 對 1.2.9 界定的顯著腐蝕區域的擴大厚度測量按附件 10 的規定進行，並可在 5.1 要求的檢驗計劃中作出附加規定。該擴大測厚應在檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。以前檢驗中確定的顯著腐蝕區域應進行測厚。

2.6.4 驗船師可根據需要進一步擴大厚度測量的範圍。

2.6.5 對於查明硬保護塗層處於 1.2.11 所界定的“良好”狀況的液艙內區域，按附件 2 要求的厚度測量範圍可由主管機關予以特殊考慮。

2.6.6 測厚的橫剖面應選擇在懷疑發生最大縮減或經甲板板測厚揭示的最大縮減處。

2.7 *液艙壓力試驗範圍*

2.7.1 所有壓載水艙、深艙以及在貨物長度區域內用於水壓載的貨艙的界限面應進行壓力試驗。對於燃油艙，僅對代表性液艙進行壓力試驗。

2.7.2 驗船師可根據需要擴大液艙試驗的範圍。

2.7.3 對壓載艙的邊界進行試驗的液體壓頭應至空氣管頂部。

2.7.4 對壓載的貨艙的邊界進行試驗的液體壓頭應至艙口頂部附近。

2.7.5 對燃油艙的邊界進行試驗的液體壓頭應至其各種服務狀態下液體可能上升的最高點。基於對燃油艙邊界的外部檢查的滿意結果和對船長關於已按要求進行壓力試驗的滿意結果陳述的確認，燃油艙的液艙密性試驗可予以特殊考慮。

2.7.6 如對雙層底艙和其他非設計用於裝載液體的處所的內部檢查和內底板檢查認為滿意，則可不進行試驗。

2.8 *確定符合公約第 XII/12 和 XII/13 條規定後的附加換證檢驗要求*

2.8.1 對符合公約第 XII/12 條關於貨艙、壓載艙和乾燥處所水位探測器要求的船舶，換證檢驗應包括檢查和測試進水探測系統及其報警裝置。

2.8.2 對符合公約第 XII/13 條關於泵系有效性要求的船舶，換證檢驗應包括檢查和測試用於排放和泵吸位於防撞艙壁前方的壓載艙的壓載水以及任何部位延伸至最前部貨艙前方的乾燥處所的艙底水的設備及其控制裝置。

3 年度檢驗

3.1 *總則*

年度檢驗應由一種檢查組成，其目的是儘實際可行地確保船體、露天甲板、艙蓋、艙口圍板和管路處於合格狀態，還應考慮到營運記錄、壓載艙防腐系統狀況和範圍以及檢驗報告案卷中確定的區域。

3.2 *船體檢查*

3.2.1 凡可見的船殼板及其關閉裝置均應進行檢查。

3.2.2 對水密貫穿件應儘實際可行地進行檢查。

3.3 *露天甲板、艙蓋和艙口圍板檢查*

3.3.1 應確認自上次檢驗以來，艙蓋、圍板及其緊固的密封裝置均無未經批准的變動。

3.3.2 對艙蓋和圍板只有在其關閉和開啟的狀態下均做檢查才能進行全面檢驗，並應包括驗證正常的開啟和關閉操作。因此，每次年度檢驗時，應對船舶前部至少 25%長度內的艙蓋裝置以及至少一個附加裝置進行開啟、關閉和艙蓋向每個方向完全開啟和關閉操作的檢驗，從而能確保在每五年期內對船上所有的艙蓋裝置至少進行一次評估；檢驗包括：

.1 開啟狀態下的積載和繫固；

.2 關閉狀態下的適配性和密封有效性；和

.3 液壓和動力部件、鋼索、鏈和連動裝置的操作試驗。

艙蓋關閉應包括繫固所有周邊裝置，以及十字接頭楔耳或其他繫固設備。應特別注意船舶前部 25%長度內的艙蓋，因為該處波浪載荷通常最大。

3.3.3 如艙蓋操作和繫固有困難，則應由驗船師決定對上述 3.3.2 要求的附加裝置進行操作試驗。

3.3.4 如貨艙艙口繫固系統不能正常操作，則應在主管機關的監督下進行修理。如對艙蓋或圍板進行重大修理，則繫固裝置的強度應予加強並符合附件 13 的要求。

3.3.5 在每次年度檢驗時，應對每一艙蓋裝置的下列項目進行檢驗：

.1 艙蓋板架，包括邊板，以及可在開啟位置進行近觀檢驗（以檢查腐蝕、裂紋或變形）的扶強材附件；

.2 周邊和十字接頭的密封裝置（密封墊狀況和永久變形、兼裝船上柔性密封裝置、帶唇邊的密封墊、壓條、泄水槽和止回閥）；

.3 夾緊裝置、壓條、楔耳（檢查損耗、調整，以及橡膠部件狀況）；

.4 關閉的艙蓋定位裝置（變形和連接件）；

.5 鏈或繩索滑輪；

.6 導向裝置；

.7 導軌和導輪；

.8 制動裝置；

.9 鋼索、傳動鏈、拉伸裝置和絞車副卷筒；

.10 液壓系統、電動安全裝置和連鎖裝置；和

.11 端部和板格間鉸鏈、銷釘和底座（如設有）。

3.3.6 在每次年度檢驗時，應對每一艙口處的圍板以及板、扶強材和肘板的腐蝕、裂紋和變形情況，尤其是圍板頂部，進行檢查，包括近觀檢驗。

3.3.7 如認為必要，可通過對密封壓力部件附加的沖水或噴粉水密試驗證實密封裝置的有效性。

3.3.8 對裝設木質或鋼質箱形的活動艙蓋者，應酌情確認以下項目

處於令人滿意狀況：

.1 木質艙口蓋和活動橫樑，活動橫樑承座或插座及其緊固裝置；

.2 鋼質箱形艙蓋，包括艙口蓋板的近觀檢驗；

.3 防水帆布；

.4 楔耳、壓條和楔子；

.5 艙口緊固壓條及其緊固裝置；

.6 承載座板/樑材和側板的邊緣；

.7 導板和楔子；和

.8 壓條、泄水槽和泄水管（如有）。

3.3.9 應檢查所有燃料艙透氣管上的防火網。

3.3.10 應檢查燃料艙和透氣管系統，包括通風筒。

3.4 ***貨艙檢查***

3.4.1 對船齡 10 至 15 年的散貨船應進行如下檢驗：

.1 對所有貨船的全面檢驗；

.2 對肋骨至少 25%的足夠範圍的近觀檢驗，以確定外板肋骨下部區域的狀況，包括舷側肋骨長度大約三分之一的下部、舷側肋骨末端連接以及前貨艙的鄰接舷側外板。如該程度的檢驗揭示需要採用補救措施時，應擴大檢驗範圍，包括所有外板肋骨、貨艙鄰接舷側外板的近觀檢

驗，以及所有剩餘貨艙足夠範圍的近觀檢驗；

.3 在驗船師認為必要時，或存在大面積腐蝕時，應進行測厚。如測厚結果表明顯著腐蝕，應按附件 10 規定擴大測厚範圍。該擴大的測厚應在年度檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。對以前檢驗中確定的顯著腐蝕區域應進行測厚；

.4 如查明貨艙內硬保護塗層處於“良好”狀況，近觀檢驗和測厚的範圍可予以特殊考慮；和

.5 貨艙內的所有管系和貫穿件，包括舷外管路，應予以檢查。

3.4.2 對船齡超過 15 年的散貨船，應進行如下檢驗：

.1 對所有貨艙的全面檢驗；

.2 對肋骨至少 25%的足夠範圍的近觀檢驗，以確定外板肋骨下部區域的狀況，包括舷側肋骨長度大約三分之一的下部、舷側肋骨末端連接以及前貨艙和另一選擇的貨艙的鄰接舷側外板。如該程度的檢驗揭示需要採用補救措施，應擴大檢驗範圍，包括所有外板肋骨、貨艙鄰接舷側外板的近觀檢驗，以及所有剩餘貨艙足夠範圍的近觀檢驗；

.3 在驗船師認為必要時，或存在大面積腐蝕時，應進行測厚。如測厚結果表明顯著腐蝕，應按附件 10 規定擴大測厚範圍。該擴大的測厚應在年度檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。對以前檢驗中確定的

顯著腐蝕區域應進行測厚；

.4 如查明貨艙內硬保護塗層處於“良好”狀況，近觀檢驗和測厚的範圍可予以特殊考慮；和

.5 貨艙內的所有管系和貫穿件，包括舷外管路，應予以檢查。

3.5 ***壓載艙檢查***

在由於換證檢驗和中間檢驗的結果而有要求時，應對壓載艙進行檢查。在主管機關認為必要時，或存在大面積腐蝕時，應進行測厚。如這些測厚結果表明有顯著腐蝕，則應按附件 10 規定擴大測厚範圍。該擴大的測厚應在檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。對以前檢驗中確定的顯著腐蝕區域進行測厚。

3.6 ***按附件 12 的要求對應符合公約第 XII/9 條規定的船舶的最前部貨艙附加年度檢驗要求***

3.6.1 應符合公約第 XII/9 條規定的船舶係指滿足下列所有條件的船舶：

.1 船長為 150m 及以上的單舷側結構散貨船；

.2 載運密度為 1,780kg/m^3 及以上的固體散裝貨物；

.3 於 1999 年 7 月 1 日以前建造；和

.4 其構造缺乏足夠數量的水密橫艙壁而不能使其在所有裝載工況下承受最前部貨艙的進水，並且不能在公約第 XII/4.4 條規定的令人滿意的平衡狀態下保持飄浮。

3.6.2 按公約第 XII/9 條規定，附件 12 中所列的附加檢驗要求應適用於此類船舶的最前部貨艙。

3.7 ***確定符合公約第 XII/12 和 XII/13 條規定後的附加年度檢驗要求***

3.7.1 對符合公約第 XII/12 條關於貨艙、壓載艙和乾貨處所水位探測器要求的船舶，年度檢驗應包括檢查和隨機測試進水探測系統及其報警裝置。

3.7.2 對符合公約第 XII/13 條關於泵系有效性要求的船舶，年度檢驗應包括檢查和測試用於排放和泵吸位於防撞艙壁前方的壓載艙的壓載水以及任何部位延伸至最前部貨艙前方的乾燥處所艙底水的設備及其控制裝置。

4 中間檢驗

4.1 ***總則***

4.1.1 對年度檢驗要求以外的附加項目，可在第二次或第三次年度檢驗時或其之間進行檢驗。

4.1.2 檢驗範圍依 4.2、4.3 和 4.4 中規定的船齡而定。

4.1.3 中間檢驗和換證檢驗所要求的處所的檢驗和測厚不應相互替代。

4.2 ***船齡 5 至 10 年的散貨船***

4.2.1 *壓載艙*

4.2.1.1 對用於水壓載的艙，應對驗船師選擇的代表性艙進行全面檢

驗。代表性艙的選取，應在考慮到壓載艙的數量和類型的同時，包括首尾尖艙和其他類型的艙。如該全面檢驗表明無可見的結構缺陷，則檢查可限於核實防腐系統處於有效狀態。

4.2.1.2 如在水壓載艙內發現塗層狀況“差”、有腐蝕或其他缺陷，或從建造時起就未敷設硬保護塗層，則檢查應擴大至其他同類型的壓載艙。

4.2.1.3 如在壓載艙（雙層底艙除外）內發現硬保護塗層狀況“差”，且未換新，或已敷設軟塗層或半硬塗層，或從建造時起就未敷設硬保護塗層，則應對所述艙每年進行檢查，並在必要時進行測厚。如在壓載雙層底艙內發現塗層處於此種狀況，且已敷設軟塗層或半硬塗層，或未敷設硬保護塗層，則可對所述艙每年進行檢查。在驗船師認為必要時，或存在大面積腐蝕時，應進行測厚。

4.2.1.4 除上述要求之外，還應對上次換證檢驗中確定的可疑區域進行全面檢查和近觀檢驗。

4.2.2 *貨艙*

4.2.2.1 應對所有貨艙進行全面檢驗，包括對肋骨至少 25%的足夠範圍的近觀檢驗，以確定下列部位的狀況：

.1 前貨艙和另一選擇的貨艙內的肋骨，包括其上下端部附件、鄰接的舷側外板，以及橫艙壁；和

.2 以前檢驗中發現的可疑區域。

4.2.2.2 根據 4.2.2.1 所述的全面檢驗和近觀檢驗結果，在驗船師認為必要時，應擴大該檢驗的範圍，以包括對該貨艙所有舷側肋骨和鄰接

的舷側外板的近觀檢驗，以及所有其餘貨艙足夠範圍的近觀檢驗。

4.2.3 *厚度測量範圍*

4.2.3.1 厚度測量應在足夠範圍內進行，以確定 4.2.2.1 所述的近觀檢驗區域內的總體腐蝕和局部腐蝕程度。在中間檢驗時對測厚的最低要求為在以前檢驗時發現的可疑區域。

4.2.3.2 如驗船師通過近觀檢驗確信無結構縮減，且查明硬保護塗層處於“良好”狀況，近觀檢驗和測厚的範圍可予以特殊考慮。

4.2.3.3 如發現顯著腐蝕，則應按附件 10 的規定擴大測厚範圍。該擴大的測厚應在檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。對以前檢驗中確定的顯著腐蝕區域應進行測厚。

4.3 ***船齡 10 至 15 年的散貨船***

4.3.1 中間檢驗的要求應與 2 和 5.1 要求的前次換證檢驗的範圍相同。但是，除非現場驗船師認為必要，否則不要求進行燃油艙的內部檢查和所有液艙的壓力試驗。

4.3.2 在應用 4.3.1 時，中間檢驗可在第二次年度檢驗時開始，並可在其後一年中繼續進行，以在第三次年度檢驗時完成，替代應用 2.1.1。

4.3.3 在應用 4.31 時，水下檢驗可予以考慮，以替代 2.2 的要求。

4.4 ***船齡超過 15 年的散貨船***

4.4.1 中間檢驗的要求應與 2 和 5.1 要求的前次換證檢驗的範圍相同。但是，除非現場驗船師認為必要，否則不要求進行燃油艙的內部檢查和所有液艙的壓力試驗。

4.4.2 在應用 4.4.1 時，中間檢驗可在第二次年度檢驗時開始，並可在其後一年中繼續進行，以在第三次年度檢驗時完成，替代應用 2.1.1。

4.4.3 在應用 4.4.1 時，乾塢檢驗應作為中間檢驗的一部分。如對貨艙和水壓載艙下部的全面檢驗、近觀檢驗和測厚（如適用）尚未實施，則應按中間檢驗的適用要求進行。

*註：*貨艙和壓載艙下部係指輕壓載水線以下的部分。

5 檢驗前準備

5.1 *檢驗計劃*

5.1.1 船東應與主管機關合作，在以下檢驗的任何部分開始前制定具體的檢驗計劃：

.1 換證檢驗；和

.2 船齡 10 年以上的散貨船的中間檢驗。

檢驗計劃應根據附件 4A 中的資料以書面形式制定。只有在制定檢驗計劃後才能開始進行檢驗。

5.1.1.1 在制定檢驗計劃前，船東應根據附件 4B 中的資料填寫檢驗計劃調查表，並送交主管機關。

5.1.1.2 中間檢驗的檢驗計劃可由經上次換證檢驗所作狀況評估報告補充的檢驗計劃以及隨後的相關檢驗報告組成。制定檢驗計劃應考慮到自上一次換證檢驗後對檢驗要求的任何修正。

5.1.2 在制定檢驗計劃時，應搜集和查閱下列文件，以選擇要進行

檢查的液艙、貨艙、區域和結構件：

.1 檢驗狀況和基本的船舶資料；

.2 6.2 和 6.3 中所述的船上文件；

.3 主結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料；

.4 來自船級社和船東兩方面的有關以前檢驗和檢查報告；

.5 關於船舶貨艙和液艙的使用、典型貨物和其他相關數據的資料；

.6 關於新船防腐等級的資料；和

.7 關於在船舶營運期間的有關維護保養等級的資料。

5.1.3 提交的檢驗計劃應說明並至少符合 2.7 及附件 1 和附件 2 分別對近觀檢驗、厚度測量和液艙試驗的要求，並應至少包括下列相關資料：

.1 基本的船舶資料和概況；

.2 主結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料；

.3 貨艙和液艙圖；

.4 附有塗層的使用、保護和狀況資料的貨艙和液艙明細表；

.5 檢驗條件（如：有關貨艙和液艙清潔、除氣、通風、照明等的資料）；

.6 結構通道的設置和方法；

.7 檢驗設備；

.8 指定進行近觀檢驗的貨艙、液艙和區域（見 2.5）；

.9 指定進行厚度測量的剖面（見 2.6）；

.10 指定進行試驗的液艙（見 2.7）；和

.11 與該船舶有關的損壞經歷。

5.1.4 主管機關應通知船東適合於該船舶的最大限度的可接受結構蝕耗程度。

5.1.5 也可使用附件 9 中的與散貨船加強檢驗計劃有關的技術評估導則。本導則是一套建議的方法，在認為必要和適當時，可由主管機關決定，結合制定所要求的檢驗計劃予以施用。

5.2 檢驗*條件*

5.2.1 船東應為安全地進行檢驗提供必要的設施。

5.2.2 為使現場驗船師能進行檢驗，船東和主管機關之間應商定提供合適和安全的通道。

5.2.3 檢驗計劃調查表中應提供通道細節。

5.2.4 如現場驗船師斷定安全的規定和要求的通道不合適時，不應進行相關處所的檢驗。

5.2.5 應可安全進入貨艙、液艙和處所。貨艙、液艙和處所應予除氣和適當通風。進入液艙、空艙或圍蔽處所前，應確認液艙內部空氣中無危險氣體並含足夠的氧氣。

5.2.6 在準備檢驗、測厚和徹底檢查時，所有處所應進行清掃，包括除去表面所有鬆動的腐蝕積垢。處所應充分清潔，做到無水、無垢、無髒物、無殘油等，以能揭示腐蝕、變形、裂紋、破損或其他結構蝕耗以及塗層狀況。但是，船東已經決定換新的結構區域只需進行清掃和去垢，以確定要換新的區域範圍。

5.2.7 應提供足夠的照明，以能揭示腐蝕、變形、裂紋、破損或其他結構蝕耗以及塗層狀況。

5.2.8 如已敷設軟塗層或半硬塗層，應為驗船師提供安全通道，以使其能驗證塗層的有效性和進行內部結構（可能包括塗層剝落的部分）的狀況評估。如無法提供安全通道，則軟塗層或半硬塗層應予以去除。

5.2.9 船東應指派至少一位對液艙和封閉處所檢查有經驗的人員始終陪伴現場驗船師。此外，由至少兩人組成的有經驗的後備人員應等候在被檢驗的液艙或處所的艙口處。後備組人員應不斷觀察液艙或處所內的工作情況，並應保持救生和撤離設備隨時可用。

5.2.10 在被檢查的貨艙、液艙或處所內的檢驗人員、甲板上的負責駕駛員和駕駛室（視情況而定）之間應安排通信系統。這些通信設備應在整個檢驗中始終保持工作狀態。

5.3 *結構通道*

5.3.1 對全面檢驗，應提供設施使驗船師能用安全和可行的方法檢查船體結構。

5.3.2 對除貨艙舷側肋骨以外的船體結構的近觀檢驗，應提供驗船師可接受的下列一個或多個通道裝置：

.1 固定腳手架和穿過結構的通道；

.2 臨時腳手架和穿過結構的通道；

.3 升降機和可移動台架；

.4 便攜式梯子；

.5 艇或筏；和

.6 其他等效設施。

5.3.3 對小於 100,000 載重噸的散貨船貨艙舷側肋骨的近觀檢驗，應提供驗船師可接受的下列一個或多個通道裝置：

.1 固定腳手架和穿過結構的通道；

.2 臨時腳手架和穿過結構的通道；

.3 可接受長度不超過 5m 的便攜式梯子用於包括肘板的舷側肋骨下部的檢驗；

.4 液壓臂升降台，如傳統的車載升降台、升降機和可移動台架；

.5 艇或筏，但貨艙的結構容量應足以承受在所有水位的靜力載荷；和

.6 其他等效裝置。

5.3.4 對 100,000 載重噸及以上的散貨船貨艙舷側肋骨的近觀檢驗，不接受使用便攜式梯子，而應提供驗船師可接受的下列一個或多個通道裝置：

船齡 10 年以下船舶的年度檢驗、中間檢驗和第一次換證檢驗：

.1 固定腳手架和穿過結構的通道；

.2 臨時腳手架和穿過結構的通道；

.3 液壓臂升降台，如傳統的車載升降台、升降機和可移動台架；

.4 艇或筏，但貨艙的結構容量應足以承受在所有水位的靜力載荷；和

.5 其他等效裝置。

其後的中間檢驗和換證檢驗：

.1 固定或臨時腳手架和穿過結構的通道，用於貨艙肋骨至少上部的近觀檢驗；

.2 液壓臂升降台，如傳統的車載升降台，用於舷側肋骨的下部和中部的檢驗，作為腳手架的替代方式；

.3 升降機和可移動台架；

.4 艇或筏，但貨艙的結構容量應足以承受在所有水位的靜力載荷；和

.5 其他等效裝置。

5.3.5 儘管有上述要求，對 3.4.1.2 要求的年度檢驗時“對肋骨至少 25%的足夠範圍的近觀檢驗，以確定舷側外板肋骨下部區域的狀況，包括舷側肋骨長度約三分之一的下部、舷側肋骨末端連接以及前貨艙的鄰接舷側外板”和 3.4.2.2 要求的“另一選擇的貨艙”，可接受使

用設有固定梯子上端部的機械裝置的便攜式梯子。

5.4 ***檢驗設備***

5.4.1 通常應使用超聲波檢測設備進行測厚。應按要求向驗船師證明該設備的精度。

5.4.2 如驗船師認為必要，可要求用下列一個或多個裂紋檢測方法：

.1 射線照相設備；

.2 超聲波探傷設備；

.3 磁粉探傷設備；和/或

.4 着色滲透劑。

5.4.3 檢驗期間應有可使用的測爆儀、測氧儀、呼吸器、救生索，攀登帶及其繩索、鈎子和哨笛及其使用說明和指導。應提供安全檢查清單。

5.4.4 應為安全有效進行檢驗提供足夠和安全的照明。

5.4.5 在檢驗期間，應有足夠的防護服（如：安全頭盔、手套、安全靴等）可供使用。

5.5 ***海上或錨泊檢驗***

5.5.1 如驗船師能得到船上人員的必要協助，可接受在海上或錨泊時進行檢驗。檢驗所需的預防措施和程序應符合 5.1、5.2、5.3 和 5.4 中的要求。

5.5.2 在處所內的檢驗人員與在甲板上的負責駕駛員之間應安排通信系統。如使用艇或筏，該系統還應包括負責壓載水泵操作的人員。

5.5.3 只有在驗船師考慮到所提供的安全措施，包括氣象預報和船舶對可預見狀況的反應後表示同意，以及在液艙內水位預期的上升不超過 0.25m 的情況下，方可使用艇或筏對液艙或適用貨艙進行檢驗。

5.5.4 在使用筏或艇進行近觀檢驗時，應符合下列條件：

.1 應僅使用即使一個浮箱破裂仍具有合格的剩餘浮力和穩性的耐用型氣脹式筏或艇；

.2 艇或筏應拴於通道梯上，並另安排一人留守在能清晰看見該艇或筏的通道梯處；

.3 所有參加人員都應有合適的救生衣；

.4 液艙或貨艙內的水面應平靜（在所有可預見的情況下，液艙內預期的水位上升不應超過 0.25m），且水位應固定。任何時候當筏或艇在使用時，水位都不得上升；

.5 液艙、貨艙或處所必須只含有乾淨的壓載水。水面上不允許有任何油層；和

.6 任何時候都不允許水位與最深甲板下腹板面板的距離在 1m 以內，這樣檢驗人員通往艙口的直接逃生通道才不致被隔絕。只有在被檢查的艙壁間距上設有甲板通道人孔並開啟時才能考慮水位超出甲板橫材，這樣才能保證任何時候檢驗人員都可使用逃生通道。其他有效的通往甲板的逃生通道也可予以考慮。

5.5.5 如腹板深度為 1.5m 或以下，筏或艇可允許單獨用於在液艙或處所甲板下的區域的檢查。

5.5.6 如腹板深度超過 1.5m，筏或艇可僅允許單獨用於下列之一的情況：

.1 甲板下結構的塗層處於“良好”狀況，且無鏽蝕的跡象；或

.2 如果在每一間距上設置一個允許安全出入的永久通道。該通道應：

.1 通過每一間距內的垂直梯直接通向甲板，該梯在甲板下約 2m 處設有一個小平台；或

.2 通過在液艙每一端都設有通往甲板的梯子的縱向永久平台通向甲板。該平台應在液艙的全長範圍內佈置在與甲板下結構的筏運檢查所需要的最高水位的相同平面，或其上。為此，與最高水位對應的空餘量應假定在甲板橫框架的跨距中點和液艙長度中點處測量至距甲板板不大於 3m。

如上述條件都不能滿足，則應為甲板下區域的檢驗提供腳手架或其他等效設施。

5.5.7 5.5.5 和 5.5.6 所述的單獨使用筏或艇並不排除在檢驗過程中使用艇或筏在液艙範圍內的移動。

5.6 *檢驗設計會議*

5.6.1 在檢驗之前和檢驗期間，現場驗船師和船上船東代表要做好適當準備，進行密切合作，這是執行安全有效檢驗的重要一環。在船上檢驗期間應定期召開安全會議。

5.6.2 為確保檢驗能安全有效地進行，應在換證和中間檢驗的任何部分開始之前，召開由現場驗船師、現場船東代表、測厚公司測量人員（視情況而定）和船長或由船長或公司指派的具有相應資質的代表參加的檢驗計劃會議，以確定檢驗計劃中預見的所有佈置均已到位（還參見 7.1.2）。

5.6.3 會議中應討論的項目的示意性清單如下：

.1 船舶計劃（即航線、靠碼頭和離碼頭操縱、靠泊時段、貨物和壓載作業等）；

.2 測厚的規定和佈置（即通道、清潔/除垢、照明、通風、人員安全）；

.3 測厚範圍；

.4 認可標準（參見最小厚度表）；

.5 考慮了塗層狀況和可疑區域/顯著腐蝕區域後確定的近觀檢驗和測厚範圍；

.6 測厚的實施；

.7 總體上和發現不均勻腐蝕/點蝕之處的代表性讀數的採集；

.8 繪製出顯著腐蝕區域；和

.9 現場驗船師、測厚公司測量人員以及船東代表之間就發現的相關問題進行溝通。

6 船上文件

6.1 ***總則***

6.1.1 船東應獲取、提供並在船上保存 6.2 和 6.3 規定的文件，隨時供驗船師使用。6.2 中所述的狀況評估報告應包括一份英文譯文。

6.1.2 文件應在船舶的整個營運壽命期間保存在船上。

6.2 ***檢驗報告案卷***

6.2.1 檢驗報告案卷應是船上文件的一個組成部分，包括：

.1 結構檢驗報告（附件 6）；

.2 狀況評估報告（附件 7）；和

.3 測厚報告（附件 8）。

6.2.2 船東及主管機關的辦事處，或經主管機關認可的組織的辦事處，也應備有檢驗報告案卷可供使用。

6.3 ***支持性文件***

船上應備有以下方面的附加文件可供使用：

.1 5.1 要求的檢驗計劃，直至換證檢驗或中間檢驗（如適用）完成；

.2 貨艙和壓載艙主結構圖；

.3 以前修理史；

.4 貨物和壓載史；

.5 船上人員對以下方面的檢查：

.1 總體結構損耗；

.2 艙壁和管路泄漏；

.3 塗層或防腐系統狀況（如有）。報告製作格式如附件 3 所示；和

.6 任何其他有助於識別臨界結構區域和/或需要檢查的可疑區域的資料。

6.4 ***船上文件審核***

檢驗前，驗船師應檢查船上文件資料的完整性及其內容，並以其為檢驗的基礎。

7 測厚程序

7.1 ***總則***

7.1.1 如要求的測厚不是由代表主管機關的被認可組織進行，則應由被認可組織的驗船師在場見證測厚過程。驗船師在船上的時間應視監督該測厚過程的範圍而定。

7.1.2 測厚公司應參加在檢驗開始前舉行的檢驗計劃會議。

7.1.3 要求實施近觀檢驗的區域內的構件測厚應與近觀檢驗同步進行。

7.1.4 在任何情況下，測厚範圍應足以代表實際的平均狀況。

7.1.5 測厚程序要求見附件 14。

7.2 ***測厚公司的認證***

測厚應由主管機關認可的組織根據附件 5 規定的原則予以認證的合格公司進行。

7.3 ***報告***

7.3.1 應編製一份測厚報告並提交給主管機關。該報告應給出測量部位、所測得的厚度以及相應的原始厚度。此外，報告還應說明進行測厚的日期、測量設備的類型、測量人員的姓名及其資質，並由測厚人員簽字。測厚報告應遵循附件 8 建議的測厚程序中規定的原則。

7.3.2 驗船師應審核最終的測厚報告並在封面上會簽。

8 檢驗報告和評估

8.1 ***檢驗報告的評估***

8.1.1 檢驗期間收集的船舶結構狀況的數據和資料應用於評估船舶的可接受性和連續結構完整性。

8.1.2 應由主管機關或經主管機關授權的被認可組織對資料進行分析並予以簽註，其分析的結論應作為狀況評估報告的一部分。

8.2 ***報告***

8.2.1 檢驗報告原則參見附件 6。

8.2.2 當檢驗在不同的檢驗站分別進行時，檢驗的每一部分均應出具報告。其後的現場驗船師在繼續或完成檢驗之前，應可獲得已經檢查和/或試驗項目的清單（壓力試驗、測厚等）以及項目是否已做記錄的說明。

8.2.3 應向船東簽發附件 7 所示的檢驗狀況評估報告以及結果，並應將其留存在船上供以後檢驗時查閱。狀況評估報告應由主管機關或代表主管機關的被認可組織予以簽註。

附件 1

換證檢驗時的近觀檢驗要求

船齡≤5 年	5 年＜船齡≤10 年	10 年＜船齡≤15 年	船齡＞15 年
第 1 次換證檢驗	第 2 次換證檢驗	第 3 次換證檢驗	第 4 次及以後換證檢驗
（A）前貨艙內肋骨的 25%，在有代表性的位置處 （A）其餘貨艙內選擇的肋骨， （B）每種類型的壓載水艙（即頂邊艙和底邊艙）選兩個代表性艙，在每個代表性壓載艙內檢查一個橫向強框架及附連的板和縱骨 （C）兩個選擇的貨艙橫艙壁，包指上下凳的內部結構（如設有） （D）所有貨艙艙口蓋和圍板（板和扶強材）	（A）前貨艙內所有肋骨和其餘每一個貨艙內肋骨的 25%，包括其端部附件及鄰接的外板。 （A）對 100,000 載重噸及以上的散貨船，前貨艙內所有肋骨和每一個其餘的貨艙內肋骨的 50%，包括其端部附件及鄰接的外板 （B）在每個壓載艙內檢查一個橫向強框架及附連的板和縱骨 （B）一個壓載艙內的前、後橫艙壁，包括扶強材系統 （C）所有貨艙的橫艙壁，包括頂凳和底凳的內部結構（如設有） （D）所有貨艙艙口蓋和圍板（板和扶強材） （E）所有貨艙口之間開口線內的所有甲板板及其下方結構	（A）前貨艙及另一個選擇的貨艙的所有肋骨和其餘每一貨艙內肋骨的 50%，包括上、下端部附件及鄰接的外板 （B）壓載水艙內的所有橫艙壁，包括扶強材系統 （B）在每一水壓載艙內的所有橫框架及附連的板和縱骨 以下同第二次換證檢驗的（C）、（D）和（E）	（A）所有貨艙內的所有肋骨，包括上、下端部附件和鄰接的外板 以下同第 3 欄中的（B）至（E）

（A） 貨艙橫向肋骨

（B） 水壓載艙內橫向強框架或水密橫艙壁。

（C） 貨艙橫艙壁板、扶強材和桁材。

（D） 貨艙艙口蓋和圍板。

（E） 貨艙口之間開口線內甲板板。

參見附件 8 的附錄 3 中對應於（A）、（B）、（C）、（D）和（E）區域的示意圖。

還參見附件 15 中應符合第 MSC.168（79）號決議的船舶舷側肋骨區域的示意圖。

註： 橫艙壁的近觀檢驗應在下列四個水平面上進行：

水平面（a） 對無底凳船舶直接在內底板以上、封槽板（如設有）以上和卸貨板以上。

水平面（b） 對有底凳船舶直接在底凳頂板以上及以下和卸貨板以上。

水平面（c） 大約在艙壁高度的一半處。

水平面（d） 直接在上甲板以下和頂邊艙附近及有頂凳船舶的頂凳底板以下或直接在頂邊艙以下。

附件 2

換證檢驗的測厚要求

船齡≤5 年	5 年＜船齡≤10 年	10 年＜船齡≤15 年	船齡＞15 年
1	2	3	4
1　可疑區域	1. 可疑區域 2. 在貨物長度區域內； 貨艙艙口線外的甲板板的兩個橫剖面 3. 按附件 1 經受近觀檢驗的構件的測量點，供總體評定並作記錄腐蝕形式用 4. 上述第 2 點考慮的橫剖面處舷側乾濕交變列板 5. 貨物長度區域外選擇的舷側乾濕交變列板 6. 對適用於應符合第 MSC.168（79）號決議的船舶舷側肋骨及其肘板，參見 1.1.5 和附件 15 的附加測厚導則	1. 可疑區域 2. 在貨物長度區域內： 1. 貨艙艙口線外的每塊甲板板 2. 貨艙艙口線外兩個橫剖面，其中一個應在船中部區域內 3. 按附件 1 經受近觀檢驗的構件的測量點，供總體評定並作記錄腐蝕形式用 4. 貨物長度區域內所有舷側乾濕交變列板 5. 貨物長度區域外選擇的舷側乾濕交變列板 6. 對適用於應符合第 MSC.168(79）號決議的船舶舷側肋骨及其肘板，參見 1.1.5 和附件 15 的附加測厚導則 7. 對應符合公約第 XII/6.1 條規定的船舶，按附件 12 的要求進行	1. 可疑區域 2. 在貨物長度區域內： 1. 貨艙艙口線外的每塊甲板板 2. 貨艙艙口線外三個橫剖面，其中一個應在船中部區域內 3. 每塊船底板 3. 第 3 欄的第 3 點 4. 全長範圍內所有舷側乾濕交變列板 5. 對適用於應符合第 MSC.168（79）號決議的船舶舷側肋骨及其肘板，參見 1.1.5 和附件 15 的附加測厚導則 6. 對應符合公約第 XII/6.1 條規定的船舶，按附件 12 的要求進行

附件 3

船東檢查報告

結構狀況

船名：.....

船東檢查報告—結構狀況

液艙/貨艙號：.....

鋼級： 甲板：..... 舷側：.....

船底：..... 縱艙壁：.....

構件	裂紋	屈曲	腐蝕	塗層狀況	凹蝕	改動/修理	其他
甲板：							
船底：							
舷側：							
舷側肋骨：							
縱艙壁：							
橫艙壁：							

進行修理的原因：

進行的測厚（日期）：

總體結果：

過期檢驗：

船級遺留項目：

意見：

檢查日期：.....

檢查員：.....

簽字：.....

附件 4A

檢驗計劃

基本資料和概況

船名：
IMO 編號：
船旗國：
船籍港：
總噸位：
載重量（公噸）：
垂線間長（m）：
造船廠：
船體號：
被認可組織（RO）：
RO 的船舶標識號：
船舶建造日期：
船東：
測厚公司：

1 序言

1.1 *範圍*

1.1.1 本檢驗計劃包括在本規則中要求的貨物長度區域、貨艙、壓載艙（包括首尾尖艙）內進行全面檢驗、近觀檢驗、測厚和壓力試驗的最小範圍。

1.1.2 檢驗佈置和安全方面應經現場驗船師認可。

1.2 *文件*

按第 6 節的要求，制定檢驗計劃所用的全部文件應在檢驗期

間在船上可供使用。

2 貨艙、液艙和處所的佈置

本部分檢驗計劃應以圖紙或文字形式提供檢驗適用範圍內的貨艙、液艙和處所佈置的資料。

3 貨艙、液艙和處所的一覽表及其使用情況、塗層範圍和防腐保護系統的資料

本部分檢驗計劃應說明與檢驗計劃調查表中提供的船舶貨艙和液艙使用情況、塗層範圍和防腐保護系統資料有關的任何變化（並應予更新）。

4 檢驗條件

本部分檢驗計劃應提供有關的檢驗條件的資料，如：貨艙和液艙清洗、除氣、通風和照明等。

5 結構通道的設置和方法

本部分檢驗計劃應說明與檢驗計劃調查表中提供的結構通道的設置和方法的資料有關的任何變化（並應予更新）。

6 檢驗設備清單

本部分檢驗計劃應確定並列出為進行檢驗和所要求測厚提供的設備。

7 檢驗要求

7.1 全面檢驗

本部分檢驗計劃應確定並列出本船按 2.5.1 應進行全面檢驗

的處所。

7.2 近觀檢驗

本部分檢驗計劃應確定並列出本船按 2.5.2 應進行近觀檢驗的船體結構。

8 確定進行試驗的液艙

本部分檢驗計劃應確定並列出本船按 2.7 應進行液艙試驗的貨艙和液艙。

9 確定測厚的區域和剖面

本部分檢驗計劃應確定並列出按 2.6.1 應進行測厚的區域和剖面。

10 船體結構最小厚度

本部分檢驗計劃應按（a）或（b）詳細規定應進行檢驗的本船船體的最小厚度：

（a）根據本船的船體結構圖所附的損耗裕度表和原始厚度確定；

（b）根據下表確定：

區域或位置	建造時的原始厚度（mm）	最小厚度（mm）	顯著腐蝕厚度（mm）
甲板			
板			
縱骨			
縱桁			
艙口間甲板板			
艙口間甲板扶強材			
船底			
板			
縱骨			
縱桁			
內底			
板			
縱骨			
縱桁			
肋板			
頂邊艙處的船側			
板			
縱骨			
底邊艙處的船側			
板			
縱骨			
液艙處的船側（如適用）			
板			
縱骨			
縱桁			
貨艙處的船側			
板			
舷側肋骨腹板			
舷側肋骨折板			
上肘板腹板			

區域或位置	建造時的原始厚度（mm）	最小厚度（mm）	顯著腐蝕厚度（mm）
上肘板折板			
下肘板腹板			
下肘板折板			
縱艙壁（如適用）			
板			
縱骨（如適用）			
縱桁（如適用）			
橫艙壁			
板			
扶強材（如適用）			
頂凳板			
頂凳扶強材			
底凳板			
底凳扶強材			
頂邊艙內橫向強框架			
板			
折板			
扶強材			
底邊艙內橫向強框架			
板			
折板			
扶強材			
艙口蓋			
板			
扶強材			
艙口圍板			
板			
扶強材			

*註：*檢驗計劃應附有損耗裕度表。

11 測厚公司

本部分檢驗計劃應確定與檢驗計劃調查表提供的測厚公司資料有關的任何變化（如有）。

12 與船舶有關的損壞經歷

本部分檢驗計劃應使用如下表格，提供至少最近三年內，貨艙、壓載艙區域以及貨物長度區域內空艙處的船體損壞細節。對這些損壞區域應進行檢驗。

按本船位置分類的船體損壞

貨艙、液艙或處所編號或區域	可能的原因（如已知）	損壞描述	位置	修理	修理日期

如損壞與設計有關，姐妹船或類似船舶的船體損壞（如有）

貨艙、液艙或處所編號或區域	可能的原因（如已知）	損壞描述	位置	修理	修理日期

13 以前檢驗中確定的顯著腐蝕區域

本部分檢驗計劃應確定並列出以前檢驗中發現的顯著腐蝕區域。

14 臨界結構區域和可疑區域

本部分檢驗計劃應確定並列出臨界結構區域和可疑區域（如有此類信息）。

15 其他相關意見和信息

本部分檢驗計劃應提供與檢驗相關的任何其他意見和信息。

附 錄

附錄 1－圖紙清單

5.1.3.2 要求備有貨艙和壓載艙的主要結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料。本檢驗計劃附錄應確定並列出作為檢驗計劃組成部分的主要結構圖。

附錄 2－檢驗計劃調查表

船東已提交的檢驗計劃調查表（附件 4B）應附於本檢驗計劃後。**附錄 3－其他文件**

本部分檢驗計劃應確定並列出作為本計劃組成部分的任何其他文件。

為符合 5.1.3 要求，由船東配合主管機關制定。

日期：

（經授權的船東代表的姓名和簽字）

日期：

（經授權的主管機關代表的姓名和簽字）

附件 4B

檢驗計劃調查表

1 下述資料將使船東能配合主管機關制定一份符合本規則要求的檢驗計劃。關鍵是船東在填寫本調查表時提供最新的資料。填寫完成後的本調查表應能提供本規則要求的所有資料和材料。

概況

船名：

IMO 編號：

船旗國：

船籍港：

船東：

被認可組織：

被認可組織的船舶標識號：

總噸位：

載重量（公噸）：

建造日期：

關於為近觀檢驗和測厚提供通道的資料

2 船東應在下表中說明通往應進行近觀檢驗和測厚的結構的通道。近觀檢驗係指現場驗船師在近距離目視範圍內(即通常伸手可及)對結構件細節進行的檢驗。

貨艙/液艙號	結構	臨時腳手架	筏	梯子	直接通道	其他方法（請說明）
F.P.	首尖艙					
A.P.	尾尖艙					
貨艙	艙口邊圍板					
	頂邊斜板					
	頂凳板					
	艙口間甲板					
	舷側外板、肋骨和肘板					
	橫艙壁					
	底邊艙板					
	底凳					
	內底					
邊艙	甲板下結構					
	舷側外板和結構					
	斜板和結構					
	腹板和艙壁					
底邊艙	底邊斜板和結構					
	舷側外板和結構					
	船底結構					
	腹板和艙壁					
	雙層底結構					
	頂凳內部結構					
	底凳內部結構					

腐蝕性（如高硫含量）散裝貨物的歷史

船東的檢查

3 船東應填寫類似以下格式的表（下表僅為示例），根據本規則的要求提供至少最近三年內其對貨物長度區域範圍內所有貨艙、壓載艙和空艙的詳細檢查結果。

液艙/貨艙號	防腐（1）	塗層範圍（2）	塗層狀況（3）	結構蝕耗（4）	貨艙和液艙歷史記錄（5）
貨艙					
頂邊艙					
底邊艙					
雙舷側邊艙					
雙層底艙					
頂凳					
底凳					
首尖艙					
尾尖艙					
其他處所					

註：

指明用於油類/壓載的液艙。

1) HC=硬塗層 SC=軟塗層；
SH=半硬塗層 NP=無保護

2) U=上部 M=中部；
L=下部 C=全部

3) G=良好 F=尚好 P=差；
RC=重新敷設（過去 3 年期間）

4) N=無情況記錄； Y=情況記錄，情況說明應附於調查表之後

船東代表姓名：

.....

簽字：.....

日期：.....

5) DR=破損和修理； L=滲漏；
CV=改建（說明應附於調查表之後）

港口國監管檢查報告

列出包含船體相關結構缺陷的港口國監督檢查報告，以及關於糾正缺陷的資料：

安全管理系統

列出有關船體維護的不合格項，包括相關的糾正措施：

經認可測厚公司的名稱和地址：

附件 5

認證船體結構測厚公司的程序

1 適用範圍

本指南適用於對有意從事船體結構測厚的公司的認證。

2 認證程序

提交文件

2.1 應提交下列文件給主管機關認可的組織審批：

.1 公司概況，如組織和管理機構；

.2 公司在船體結構測厚方面的經歷；

.3 技術人員履歷、即技術人員作為測厚操作人員的經歷，對船體結構等的技術知識和經驗。操作人員應具有符合公認的行業無損檢測（NDT）標準的資質；

.4 用於測厚的設備，如超聲波檢測設備及其維護/校正程序；

.5 測厚人員指南；

.6 測厚技術員的培訓計劃；和

.7 按建議的測厚程序（參見附件 8）的測量記錄格式。

公司審核

2.2 在提交的文件經審查合格後，應對公司進行審核，以確認公司按照所提交的文件適當組織和管理，並確認其事實上有能力進行船

體結構測厚工作。

2.3 認證取決於其在船上的測厚操作演示以及出具令人滿意的報告。

3 發證

3.1 在 2.2 所述的公司審核和 2.3 所述的測厚操作演示結果均合格後，主管機關或由主管機關認可的組織應簽發認可證書，同時出具一份關於該公司的測厚操作體系已獲認證的通知。

3.2 對證書的換新/簽註應不超過三年的間隔進行一次，以驗證公司保持原認可條件。

4 對業已認證的測厚操作體系作任何變更的報告

如公司對業已認證的測厚操作體系作任何變更，則應立即向主管機關認可的組織提交變更報告。如經主管機關認可的組織認為必要，應進行重新審核。

5 撤銷證書

如遇下列情況可撤銷證書：

.1 進行了不正確的測量，或報告結果有誤；

.2 驗船師發現公司經認可的測厚操作體系存在任何缺陷；和

.3 公司未能按要求將上述 4 中所述的任何變更報告經主管機關認可的組織。

附件 6

檢驗報告原則

原則上，對應符合本規則要求的散貨船，驗船師應在其船體結構和管路系統的檢驗報告中包括下列與檢驗有關的內容。

1 總則

1.1 在下列情形裏，應形成檢驗報告：

.1 涉及定期船體檢查，即相關的年度、中間和換證檢驗的開始、繼續和/或完成；

.2 已發現結構破損/缺陷時；

.3 已進行修理、換新或改裝時；和

.4 已批註或消除船級條件（遺留項目）時。

1.2 報告應：

.1 提供證據，表明已按適用的要求進行了規定的檢驗；

.2 提供文件，表明檢驗中發現的情況、進行的修理以及批註或消除的船級條件（遺留項目）；

.3 提供檢驗記錄（包括採取的措施），作為可核查文件記錄的組成部分。檢驗報告應置於按要求存放在船上的檢驗報告案卷中；

.4 提供為未來檢驗做計劃的信息；和

.5 提供可用於維護入級規範和須知的素材信息。

1.3 當檢驗在不同的檢驗站分別進行時，應為每一部分檢驗出具報告。其後的現場驗船師在繼續或完成檢驗之前，應可獲得已檢驗項目的清單、相關檢驗結果以及項目是否已做記錄的說明。還應列出已進行的測厚和液艙試驗，供下一位驗船師使用。

2 檢驗範圍

2.1 確定已進行全面檢驗的艙室。

2.2 確定已在每個壓載艙和貨艙內（包括艙蓋和圍板）進行近觀檢驗的位置，以及所使用的通道裝置的資料。

2.3 確定已在每個壓載艙和貨艙內（包括艙蓋和圍板）進行測厚的位置。

註： 確定進行近觀檢驗和測厚的位置應至少包括一份根據定期檢驗的類型和船齡對附件 A 規定的要求範圍相應的各結構構件進行描述的確認書。

如僅要求進行部分檢驗，即 25%的外板肋骨、一個橫向強框架、兩個選擇的貨艙橫艙壁，應使用肋骨號確定每個壓載艙和貨艙內的位置。

2.4 對壓載艙和貨艙內保護塗層處於良好狀況而且已對近觀檢驗和/或測厚的範圍作特殊考慮的區域，應確定要做特殊考慮的結構。

2.5 確定應經受液艙試驗的液艙。

2.6 確定甲板上以及貨艙、壓載艙、管隧、隔離艙和空艙內的如下管路系統：

.1 已進行包括管系及其閥和附件的內部檢查和測厚在內的

相關檢查；和

.2 已進行工作壓力的操作試驗。

3 檢驗結果

3.1 每個相關液艙內保護塗層的類型、範圍和狀況（分為“良好”、“尚好”或“差”），包括確定安裝了陽極的液艙。

3.2 每個相關艙室的結構狀況及以下方面的資料：

.1 確定發現的情況，例如：

.1 腐蝕及對位置、類型和範圍的描述；

.2 顯著腐蝕的區域；

.3 裂紋/裂口及對位置和範圍的描述；

.4 屈曲及對位置和範圍的描述；和

.5 凹痕及對位置和範圍的描述；

.2 確定未發現結構破損/缺陷的艙室。報告可附草圖/照片加以補充；和

.3 測厚報告應由在船上監督測量工作的驗船師核實並簽字。

4 對發現的問題所採取的行動

4.1 每當現場驗船師認為需要進行修理時，應在編號的清單中標出應予修理的每一項目。每當進行修理時，應報告實施的修理的細節，具體提及編號的清單中的相關項目。

4.2 應報告已進行的修理並標明：

.1 艙室；

.2 結構構件；

.3 修理方法（即：換新或改動），包括：

.1 鋼級和尺度（如與原始材料的區別）；

.2 草圖/照片，如適用；

.4 修理範圍；和

.5 無損檢測（NDT）/試驗。

4.3 對在檢驗時未完成的修理，船級條件/遺留項目中應規定該修理的具體完成期限。為向參與修理檢驗的驗船師提供正確和適當的資料，船級條件/遺留項目應足夠詳細，並標明應進行修理的每一項目。對大範圍修理的確定，可參考檢驗報告。

附件 7

狀況評估報告

在換證檢驗完成後簽發

船舶概況

船名：　　船級/主管機關標識號：

前船級/主管機關標識號：

IMO 編號：

船籍港：　　船旗國：

前船旗國：

載重量：　　總噸位：

（公噸）　　本國法定：

國際噸位丈量公約（1969）：

建造日期：　　船級符號：

重大改建日期：

改建類型：　　船東：

前船東：

1　下列檢驗報告和文件業經簽署者審核，並查明合格。

2　檢驗狀況評估附於表 2。

3　換證檢驗已按本規則在……（日期）完成。

狀況評估報告填寫人	姓名 簽字	職務
辦事處	日期	
狀況評估報告填寫人	姓名 簽字	職務
辦事處	日期	

所附的報告和文件：

1）

2）

3）

4）

5）

狀況評估報告目錄

第 1 部分 - 船舶概況	- 見首頁
第 2 部分 - 報告審核	- 檢驗地點和方法
第 3 部分 - 近觀檢驗	- 範圍（液艙/貨艙）
第 4 部分 - 測厚	- 參見測厚報告
	- 測量點一覽表
	- 單獨表格指明顯著腐蝕的處所及相應的：
	- 厚度減小
	- 腐蝕形式
第 5 部分 - 液艙/貨艙防腐系統	- 單獨表格指明：
	- 塗層位置
	- 塗層狀況（如適用）
第 6 部分 - 修理	- 處所/區域標識
第 7 部分 - 船級條件/船旗國要求	
第 8 部分 - 備忘錄	- 可接受的缺陷
	- 未來檢驗時的關注點，如可疑區域
	- 因塗層脫落而擴展的年度/中間檢驗
第 9 部分 - 結論	- 檢驗報告的評估/驗證說明

測厚摘錄

參見測厚報告

顯著腐蝕液艙/區域[1]位置或深度鏽點位置[3]	**厚度減小（%）**	**腐蝕形式[2]**	**備註（如：參考所附草圖）**

註：

1 顯著腐蝕，即允許損耗範圍的 75% - 100%。

2 P＝鏽點

C＝總體腐蝕

3 應註明所有鏽點密度達 20%或以上、損耗為顯著腐蝕範圍或鏽點的平均深度為實際板厚度的 1/3 或以上的船底板。

液艙/貨艙防腐系統

液艙/貨艙號 [1]	液艙/貨艙保護 [2]	塗層狀況 [3]	備註

註：

1 應列出所有壓載艙和貨艙。

2 C＝塗層

NP＝無保護

3 塗層狀況根據以下標準：

“良好” 係指僅有少量點狀鏽斑。

“尚好” 係指在扶強材的邊緣和焊縫的連接處塗層有局部脫落和/或所檢驗的區域中有超過 20%或更大範圍的輕度腐蝕，但小於定義“差”的狀況。

“差” 係指在檢驗的區域中有超過 20%或更大範圍的塗層普遍剝落，或有 10%或更大範圍的塗層產生硬質鏽皮。

如塗層狀況為“差”，應擴大年度檢驗的範圍，這應在狀況評估報告目錄第 8 部分中予以註明。

附件 8

建議的測厚程序

總則

1 本程序應用於記錄附件 A 的 A 部分所要求的厚度測量。

2 附錄 2 規定的報告格式 TM1-BC、TM2-BC(i)、TM2-BC(ii)、TM3-BC、TM4-BC、TM5-BC、TM6-BC、TM7-BC(i)和 TM7-BC(ii)應用於記錄厚度測量，並應說明最大允許減小量。可在附加的文件中說明最大允許減小量。

3 附錄 3 包含有關報告格式和厚度測量要求的圖解和說明。

4 報告格式（如適用）應以結構草圖上所示的數據加以補充。

附錄 1 船舶概況

附錄 2 測厚報告

附錄 3 測厚指導

附錄 1

船舶概況

船名：.....

IMO 編號：.....

船級/主管機關標識號：.....

船籍港：.....

總噸位：.....

載重噸：.....

建造日期：.....

船級社：.....

進行測厚的公司名稱：.....

.....

測厚公司的認證機構：.....

證書號：.....

證書有效期自.....至.....

測厚地點：.....

首次測量日期：.....

最後測量日期：.....

換證檢驗/中間檢驗日期：.....

測厚設備情況：.....

測量者資質：.....

報告編號：.....頁數：.....頁

測量者姓名：.....驗船師姓名：.....

測量者簽字：.....驗船師簽字：.....

公司公章：.....主管機關：.....

公章

附錄 2

測厚報告

所有甲板板、所有船底外板或舷側外板厚度測量報告（TM1-BC）

船名：.....IMO 識別號：.....船級標識號：.....報告編號：.....

列板位置																	
板材位置	編號或符號	原始厚度 (mm)	舯前讀數						舯後讀數						平均減小量		最大允許減小量 (mm)
			測量		減小量 P		減小量 S		測量		減小量 P		減小量 S				
			P	S	mm	%	mm	%	P	S	mm	%	mm	%	P	S	
舯前第 12 塊前																	
第 11 塊																	
第 10 塊																	
第 9 塊																	
第 8 塊																	
第 7 塊																	
第 6 塊																	
第 5 塊																	
第 4 塊																	
第 3 塊																	
第 2 塊																	
第 1 塊																	
船中																	
舯後第 1 塊																	
第 2 塊																	
第 3 塊																	
第 4 塊																	
第 5 塊																	
第 6 塊																	
第 7 塊																	
第 8 塊																	
第 9 塊																	
第 10 塊																	
第 11 塊																	
第 12 塊																	

測量者簽字：.....

註－見下頁

TM1-BC 報告的註釋：

1 本報告應用於記錄下列厚度測量：

.1 貨物長度區域內的所有強力甲板板；

.2 貨物長度區域內的龍骨板、船底外板和舭列板；

.3 貨物長度區域內所有乾濕交變列板的舷側外板；

.4 貨物長度區域外選擇的乾濕交變列板的舷側外板。

2 應清楚示明如下列板位置：

.1 對於強力甲板，示明甲板邊板內列板的編號；

.2 對於船底板，示明龍骨板列板的編號；和

.3 對於舷側外板，示明舷頂列板以下列板在外板展開圖上的編號和字母。

3 僅對開口線外的甲板板列板予以記錄。

4 應對舯前和舯後的所有區域的板進行測厚。

5 所記錄的單點測量應代表多點測量的平均值。

6 最大允許減小量可在附加的文件中說明。

舷側外板和甲板板厚度測量報告（一、兩或三個橫剖面）（TM2-BC(i)）

船名：..... IMO 識別號：..... 船級標識號：..... 報告編號：.....

強力甲板和舷頂列板																													
	第....號肋骨的第一個橫剖圖									第....號肋骨的第二個橫剖圖									第....號肋骨的第三個橫剖圖										
列板位置	編號或符號	原始厚度(mm)	測量		減小量 P		減小量 S		最大允許減小量(mm)	編號或符號	原始厚度(mm)	測量		減小量 P		減小量 S		最大允許減小量(mm)	編號或符號	原始厚度(mm)	測量		減小量 P		減小量 S		最大允許減小量(mm)		
			P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%			
甲板邊板																													
舷內第 1 塊列板																													
第 2 塊																													
第 3 塊																													
第 4 塊																													
第 5 塊																													
第 6 塊																													
第 7 塊																													
第 8 塊																													
第 9 塊																													
第 10 塊																													
第 11 塊																													
第 12 塊																													
第 13 塊																													
第 14 塊																													
中間列板																													
舷頂列板																													
艙頂總數																													

測量者簽字：.....

註－見下頁

TM2-BC（i）報告的註釋：

1 本報告應用於記錄強力甲板板和舷頂列板橫剖面的厚度測量：

貨物長度區域內一個、兩個或三個剖面，包括典型橫剖面圖表（附錄 3）中表明的結構項目（1）、（2）和（3）。

2 僅對開口線外的甲板板予以記錄。

3 頂部區域包括甲板板、甲板邊板和舷頂列板（包括圓形舷緣）。

4 應註明測量的確切肋骨號。

5 所記錄的單點測量應代表多點測量的平均值。

6 最大允許減小量可在附加的文件中說明。

舷側外板和甲板板厚度測量報告（一、兩或三個橫剖面）（TM2-BC(ii)）

船名：..... IMO 識別號：..... 船級標識號：..... 報告編號：.....

舷側外板																													
			第....號肋骨的第一個橫剖圖							第....號肋骨的第二個橫剖圖									第....號肋骨的第三個橫剖圖										
列板位置	編號或符號	原始厚度(mm)	測量		減小量 P		減小量 S		最大允許減小量(mm)	編號或符號	原始厚度(mm)	測量		減小量 P		減小量 S		最大允許減小量(mm)	編號或符號	原始厚度(mm)	測量		減小量 P		減小量 S		最大允許減小量(mm)
			P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%	
舷頂列板下第 1 塊列板																													
第 2 塊																													
第 3 塊																													
第 4 塊																													
第 5 塊																													
第 6 塊																													
第 7 塊																													
第 8 塊																													
第 9 塊																													
第 10 塊																													
第 11 塊																													
第 12 塊																													
第 13 塊																													
第 14 塊																													
第 15 塊																													
第 16 塊																													
第 17 塊																													
第 18 塊																													
第 19 塊																													
第 20 塊																													
龍骨列板																													
艙底總數																													

測量者簽字：.....

註－見下頁

TM2-BC（ii）報告的註釋：

1 本報告應用於記錄橫剖面處舷側外板的厚度測量

貨物長度區域內一個、兩個或三個剖面，包括典型橫剖面圖表（附錄 3）中表明的結構項目（4）、（5）、（6）和（7）。

2 船底區域包括龍骨板、船底板和舭部板。

3 應註明測量的確切肋骨線。

4 所記錄的單點測量應代表多點測量的平均值。

5 最大允許減小量可在附加的文件中說明。

縱向構件厚度測量報告（一、兩或三個橫剖面）（TM3-BC）

船名：..... IMO 識別號：..... 船級標識號：..... 報告編號：.....

結構構件	第…號肋骨的第一個橫剖圖									第…號肋骨的第二個橫剖圖									第…號肋骨的第三個橫剖圖								
	項目編號	原始厚度(mm)	測量		減小量 P		減小量 S		最大允許減小量(mm)	項目編號	原始厚度(mm)	測量		減小量 P		減小量 S		最大允許減小量(mm)	項目編號	原始厚度(mm)	測量		減小量 P		減小量 S		最大允許減小量(mm)
			P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%	

測量者簽字：.....

註－見下頁

TM3-BC 報告的註釋：

1 本報告應用於記錄橫剖面處縱向構件的厚度測量：

貨物長度區域內一個、兩個或三個剖面，包括典型橫剖面圖表（附錄 3）中表明的相應結構項目（8）至（20）。

2 應註明測量的確切肋骨號。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

雙層底、底邊和頂邊水壓載艙橫向結構構件厚度測量報告（TM4-BC）

船名：..... IMO 識別號：..... 船級標識號：..... 報告編號：.....

液艙說明：

結構位置：

結構構件	項目	原始厚度 (mm)	測量		減小量 左舷		減小量 右舷		最大允許減小量 (mm)
			左舷	右舷	mm	%	mm	%	

測量者簽字：.....

註－見下頁

TM4-BC 報告的註釋：

1 本報告應用於記錄橫向構件的厚度測量，包括典型模剖面圖表（附錄 3）中表明的相應結構項目（23）至（25）。

2 測量區域的指導示於附錄 3。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

貨艙橫艙壁厚度測量報告（TM5-BC）

船名：..... IMO 識別號：..... 船級標識號：..... 報告編號：.....

結構位置：						肋骨號：		
結構部件（板材/扶強材）	原始厚度 (mm)	測量		減小量 左舷		減小量 右舷		最大允許減小量 (mm)
		左舷	右舷	mm	%	mm	%	

測量者簽字：.....

註－見下頁

TM5-BC 報告的註釋：

1 本報告應用於記錄貨艙橫艙壁的厚度測量。

2 測量區域的指導示於附錄 3。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

其他結構構件厚度測量報告（TM6-BC）

船名：..... IMO 識別號：..... 船級標識號：..... 報告編號：.....

結構構件：									草圖
結構位置：									
說明	原始厚度 (mm)	測量		減小量 左舷		減小量 右舷		最大允許減小量 (mm)	
		左舷	右舷	mm	%	mm	%		

測量者簽字：

註－見下頁

TM6-BC 報告的註釋：

1 本報告應用於記錄其他結構構件的厚度測量，包括典型模剖面圖表（附錄 3）中表明的相應結構項目（28）、（29）、（30）和（31）。

2 測量區域的指導示於附錄 3。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

貨艙橫向肋骨厚度測量報告（TM7-BC(i)）

船名：..... IMO 識別號：..... 船級標識號：..... 報告編號：.....

貨艙號																											
	上部								中部									下部									
肋骨號	原始厚度 (mm)	測量		減小量 P		減小量 S		最大允許減小量 (mm)	編號或符號	原始厚度 (mm)	測量		減小量 P		減小量 S		最大允許減小量 (mm)	編號或符號	原始厚度 (mm)	測量		減小量 P		減小量 S		最大允許減小量 (mm)
		P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%	

測量者簽字：

註－見下頁

TM7-BC(i)報告的註釋：

1 本報告應用於記錄下列項目的厚度測量：

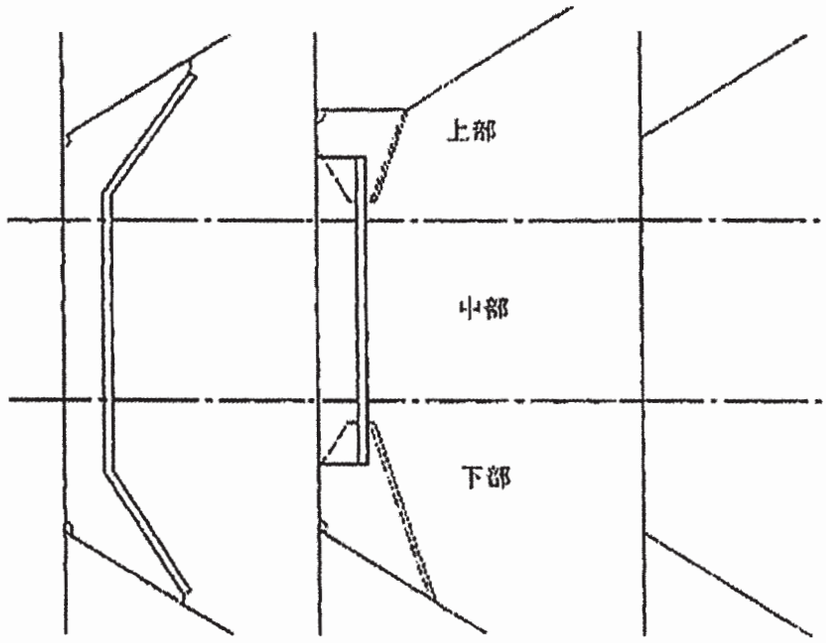
— 貨艙橫向肋骨；和

— 表明縱向和橫向構件的典型橫剖面圖表（附錄 3）中表明的結構項目（34）。

2 測量區域的指導示於附錄 3。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。



貨艙內典型橫向肋骨
測厚區域Ⓐ

貨艙內非典型橫向肋骨
測厚區域Ⓐ

貨艙舷側肋骨厚度測量報告（TM7-BC(ii)）

船名：..... IMO 識別號：..... 船級標識號：..... 報告編號：.....

貨艙號：							舷側：											（左舷/右舷）						
	A 區						B 區						C 區						D 區					
肋骨號	原始厚度	t_{REN}	t_{COAT}	t_M	減小量		原始厚度	t_{REN}	t_{COAT}	t_M	減小量		原始厚度	t_{REN}	t_{COAT}	t_M	減小量		原始厚度	t_{REN}	t_{COAT}	t_M	減小量	
	(mm)	mm	mm	mm	mm	%	(mm)	mm	mm	mm	mm	%	(mm)	mm	mm	mm	mm	%	(mm)	mm	mm	mm	mm	%

測量者簽字：

TM7-BC(ii)報告的註釋：

1 本報告應用於記錄適用第 MSC.168（79）號決議的貨艙橫向肋骨的厚度測量。

2 測量區域的指導示於附件 15。

3 應使用下列符號：

t_M = 測得的厚度（mm）；

t_{REN} = 按第 MSC.168（79）號決議附件 2 中 2.1.2 要求換新的厚度；

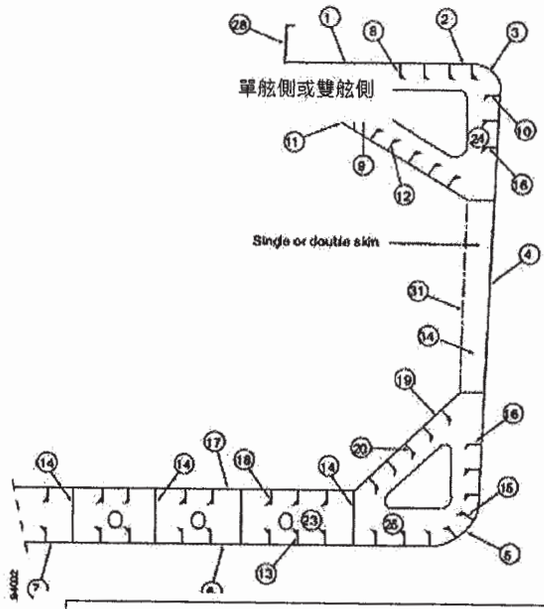
t_{COAT} = 0.75 *（按第 MSC.168（79）號決議附件 1 第 3 段對肋板以及第 4 段對上下肘板要求的厚度（mm））。

4 最大允許減小量可在附加的文件中說明。

附錄 3

測厚指導

表明縱向和橫向構件的典型橫剖面



TM2-BC 測量報告
(1) 強力甲板板
(2) 甲板邊板
(3) 舷頂列板
(4) 舷側板
(5) 舭板
(6) 船底外板
(7) 龍骨板

TM3-BC 測量報告	
(8) 甲板縱骨	(16) 舷側縱骨
(9) 甲板縱桁	(17) 內底板
(10) 舷頂列板縱骨	(18) 內底縱骨
(11) 頂邊艙斜板	(19) 底邊艙斜板
(12) 頂邊艙斜板縱骨	(20) 底邊艙斜板縱骨
(13) 艙底縱骨	(21)
(14) 艙底縱桁	(22)
(15) 舭縱骨	

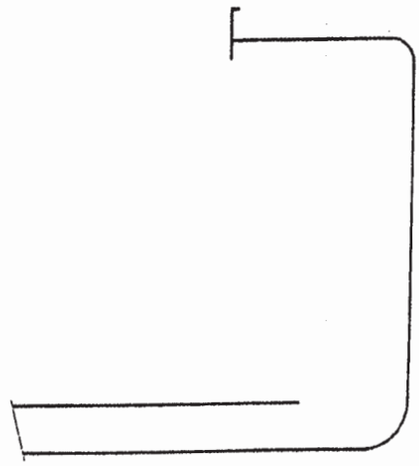
TM4-BC 測量報告
(23) 雙層底艙肋板
(24) 頂邊艙橫材
(25) 底邊艙橫材
(26)
(27)

TM6-BC 測量報告
(28) 艙口圍板
(29) 艙口間甲板板
(30) 艙口蓋
(31) 內艙壁板
(32)
(33)

TM7-BC 測量報告
(34) 貨艙肋骨或隔板

橫剖面輪廓

（用於典型橫剖面不適用的縱向和橫向構件）



TM2-BC 測量報告
(1) 強力甲板板
(2) 甲板邊板
(3) 舷頂列板
(4) 舷側板
(5) 舭板
(6) 船底外板
(7) 龍骨板

TM3-BC 測量報告	
(8) 甲板縱骨	(16) 舷側縱骨
(9) 甲板縱桁	(17) 內底板
(10) 舷頂列板縱骨	(18) 內底縱骨
(11) 頂邊艙斜板	(19) 底邊艙斜板
(12) 頂邊艙斜板縱骨	(20) 底邊艙斜板縱骨
(13) 艙底縱骨	(21)
(14) 艙底縱桁	(22)
(15) 舭縱骨	

TM4-BC 測量報告
(23) 雙層底艙肋板
(24) 頂邊艙橫材
(25) 底邊艙橫材
(26)
(27)

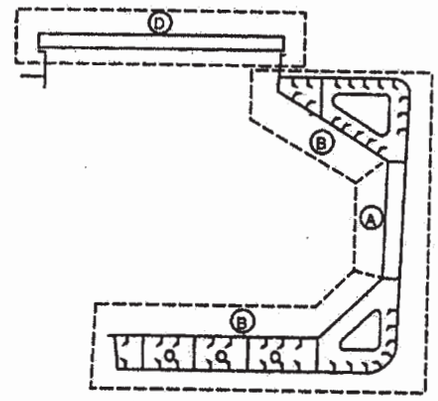
TM6-BC 測量報告
(28) 艙口圍板
(29) 艙口間甲板板
(30) 艙口蓋
(31)
(32)
(33)

TM7-BC 測量報告
(34) 貨艙肋骨或隔板

近觀檢驗和厚度測量區域

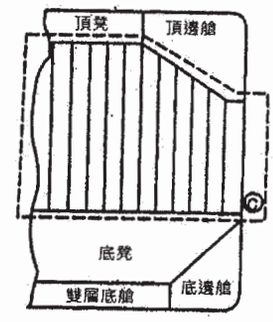
（與近觀檢驗要求相關的貨艙肋骨、結構構件和橫艙壁的厚度測量典型區域）

典型橫剖面
Ⓐ、Ⓑ 和 Ⓓ 區域



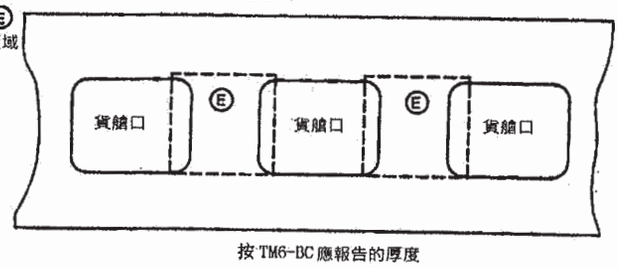
按 TM3-BC，TM4-BC，TM6-BC 和 TM7-BC 中適合者應報告的厚度

貨艙橫艙壁
Ⓒ 區域



按 TM5-BC 應報告的厚度

貨艙口間開口線內的甲板板典型區域
Ⓔ 區域



按 TM6-BC 應報告的厚度

附件 9

結合散貨船加強檢驗計劃的技術評估的導則-船體換證檢驗

1 引言

本導則包含與技術評估有關的資料和建議，可結合散貨船加強換證檢驗的計劃加以使用。如 5.1.5 所示，本導則是一套建議的方法，在認為必要和適當時，可由主管機關決定，結合制定所要求的檢驗計劃予以施用。

2 目的和原則

2.1 *目的*

本導則所述的技術評估的宗旨是幫助確定臨界結構區域、指定可疑區域，並把注意力放在那些極易發生損耗或損壞、或表明有損耗或損壞史的結構件或結構件區域。該資料可能有助於指定要進行測厚、近觀檢驗和液艙試驗的位置、區域、貨艙和液艙。

臨界結構區域係指已從計算中確定需進行檢測的區域或已從該船或類似船舶或姐妹船（如有）的營運史中確定易於出現損壞船舶結構完整性的裂紋、屈曲或腐蝕的區域。

2.2 *最低要求*

本導則不可用於降低 A 部分附件 1 和 2 以及 2.7 中分別對近觀檢驗、測厚和液艙試驗的要求，這些要求在任何情況下都應作為最低要求予以遵守。

2.3 ***時限***

如同檢驗計劃的其他方面一樣，本導則所述的技術評估應由船東或經營人配合主管機關在換證檢驗開始之前完成，即在開始檢驗之前且通常在到期檢驗完成日期前至少 12 至 15 個月。

2.4 ***應予考慮的方面***

2.4.1 特定船舶下列方面的技術評估可作為指定檢驗貨艙、液艙和區域的基礎，這些技術評估可包括對相關可能蝕耗的風險進行定量或定性評估：

.1 設計特徵，如不同結構組件的應力等級、設計細節和高強度鋼的使用範圍；

.2 與特定船舶及類似船舶（如有）的腐蝕、裂紋、屈曲、凹陷和修理有關的過去史；和

.3 與所載貨物種類、液艙保護、以及貨艙和液艙的塗層（如有）狀況有關的資料。

2.4.2 對各種結構件和區域易損壞或易蝕耗的相關風險的技術評估，應根據諸如參考資料 3 所列的經認可原則和慣例進行評判和確定。

3 技術評估

3.1 ***總則***

3.1.1 有三種基本類型的可能缺陷，它們可能成為與檢驗計劃有關的技術評估對象，即腐蝕、裂紋和屈曲。碰撞損壞通常不包含在檢驗計劃中，因為凹陷通常在備忘錄中註明且由驗船師作為常規情況進行

處理。

3.1.2 結合檢驗計劃過程開展的技術評估，原則上應按圖 1 的圖解形式表示，該圖表示如何結合檢驗計劃程序進行技術評估。該方法的依據是對基本上與下列有關的知識和經驗的一種風險評估：

.1 設計；和

.2 腐蝕。

3.1.3 應考慮設計中容易因振動、高應力或疲勞造成屈曲或裂紋的有關結構細節。

3.1.4 腐蝕與老化過程有關，並且與新船防腐系統的質量和營運中的後續維護密不可分。腐蝕也可導致裂紋和/或屈曲。

3.2 *方法*

3.2.1 *設計細節*

3.2.1.1 本船舶和類似船舶（如有）的損壞經歷，是計劃過程中使用的主要資料來源。此外，還應包括從設計圖紙中選擇的結構細節。

3.2.1.2 應考慮的典型損壞經歷由以下兩方面構成：

.1 裂紋的數量、範圍、位置和發生次數；和

.2 屈曲位置。

3.2.1.3 該資料可在檢驗報告和/或包括船東自查結果的船東案卷中找到。這些缺陷應予以分析、註明並標記在草圖上。

3.2.1.4 此外，還應利用一般經驗。例如，圖 2 表明根據經驗得出的容易受到結構性損壞的散貨船典型位置。而且，還應參照參考資料 3，

其中包括各種散貨船結構細節的典型損壞和所建議的修理方法目錄。

3.2.1.5 在使用此種圖表時，應一道審核主要結構圖紙，以便比對實際結構，並尋找容易受損壞的相似細節。見圖 3 中的舉例。

3.2.1.6 除使用上述圖表外，審核主要結構圖紙應包括核查已出現過裂紋的典型設計細節。造成損壞的因素應予以仔細考慮。

3.2.1.7 高強度鋼（HTS）的使用是一個重要因素。在使用普通低碳鋼時有着良好營運史的構件，在使用高強度鋼及其較高相關應力時，可能更易受損。甲板和船底結構的縱向材料使用高強度鋼的經驗普遍和總體上較好。在其他受到較高動應力的部位如舷側結構，使用高強度鋼的經驗則不那麼令人鼓舞。

3.2.1.8 在這一方面，根據相關方法對典型和重要的組件及構件的應力計算可能證明有用，並應予以考慮。

3.2.1.9 所選擇的在該過程中確定的結構區域應予以記錄，並標記在將要納入檢驗計劃的結構圖上。

3.2.2 *腐蝕*

3.2.2.1 為評估相關的腐蝕風險，通常應考慮以下資料：

.1 液艙、貨艙和處所的使用狀況；

.2 塗層狀況；

.3 掃艙程序；

.4 以前腐蝕損壞；

.5 貨艙用作壓載艙的時間；

.6 貨艙和壓載艙的腐蝕風險；和

.7 鄰近加熱燃油艙的壓載艙位置。

3.2.2.2 參考資料 2 以典型狀況圖給出明確實例，其可用於判定和描述塗層狀況。

3.2.2.3 對於散貨船，應基於參考資料 3 進行評估，同時基於船齡以及為制定檢驗計劃而收集的資料得出的船舶狀況的相關資料。

3.2.2.4 應列出各種貨艙、液艙和處所，相應指明腐蝕風險。

3.2.3 近觀檢驗和測厚的位置

3.2.3.1 根據腐蝕風險表和設計經驗的評估，可指定初次近觀檢驗和測厚（剖面）的位置。

3.2.3.2 通常應指定已判定具備最大腐蝕風險的貨艙、液艙和處所內的測厚剖面。

3.2.3.3 最初應根據最大腐蝕風險指定進行近觀檢驗的液艙、貨艙和處所，並應始終包括壓載艙。選擇的原則是隨船齡的增長或在資料缺乏或不可靠時增大範圍。

參考資料

1 油船結構合作論壇（TSCF），“油船結構檢查和狀況評估指導手冊，1986”。

2 油船結構合作論壇(TSCF)，“油船結構狀況評估和維護，1992”。

3 國際船級社協會（IACS），“散貨船：船體結構檢驗、評估和修理導則，2007”。

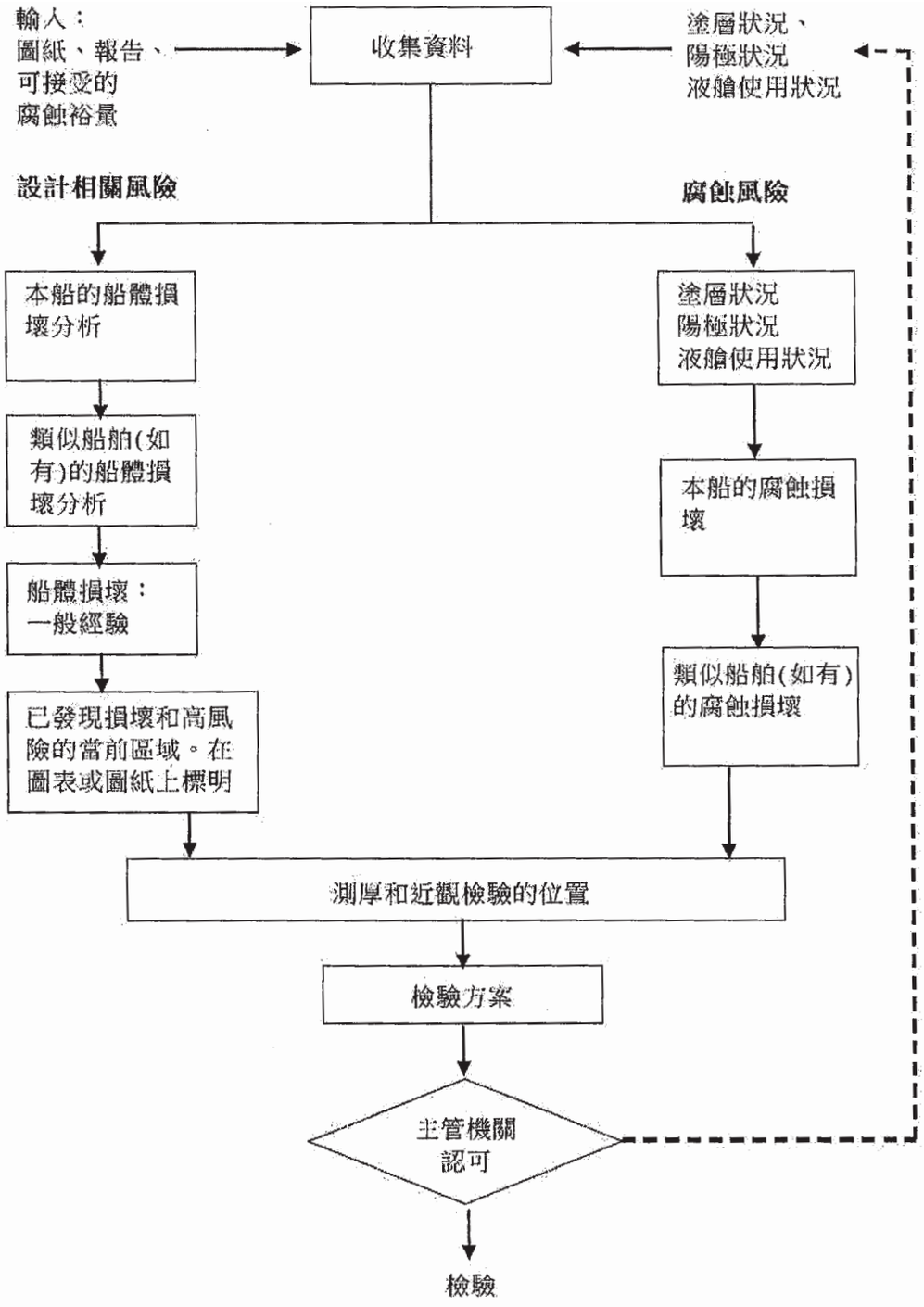


圖1-技術評估和檢驗計劃過程

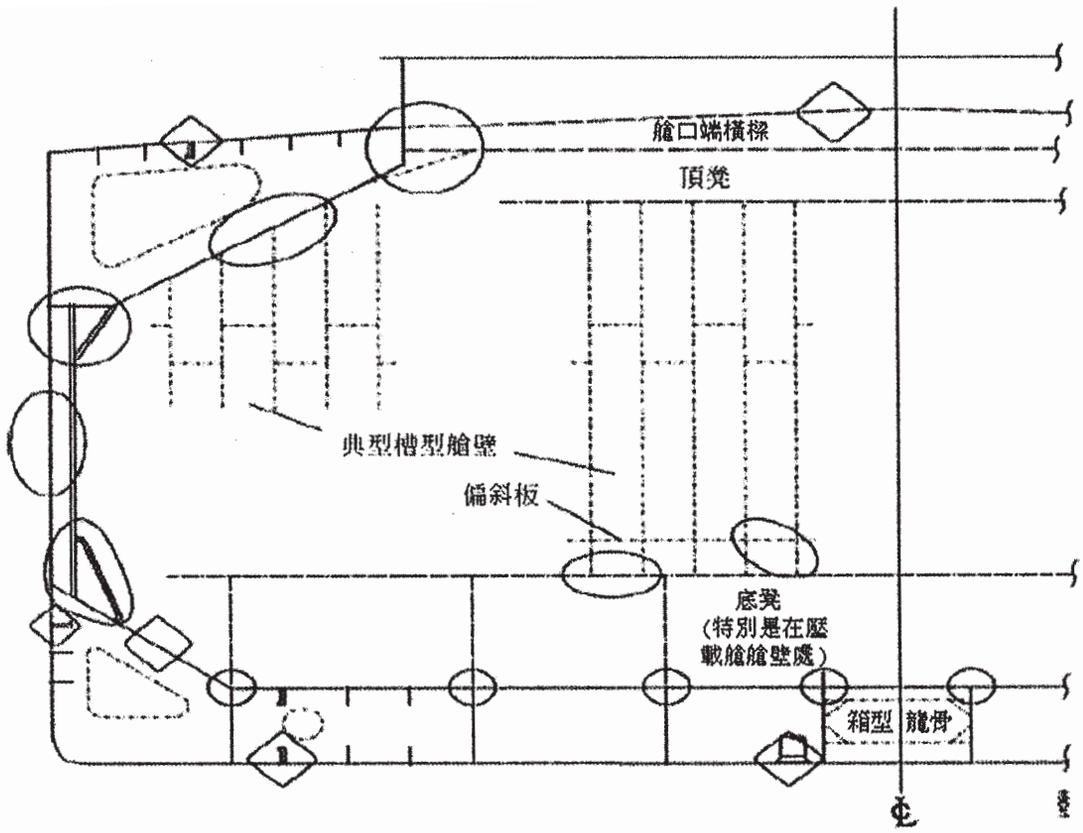
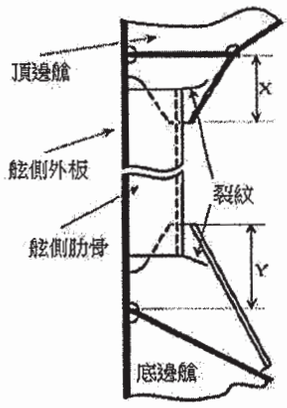


圖2-容易受到結構損壞或腐蝕的典型位置

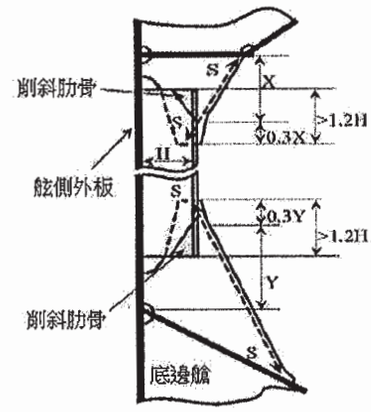
散貨船	船體結構檢驗、評估和修理導則	
第 1 部分	貨艙區域	示例序號
區域 3	貨艙舷側結構	1-a
損壞細節	肋骨端部肘板裂紋	

損壞示意圖



分離式肘板構造

修理示意圖



S = 削斜端

損壞原因註解：

1. 該類型的損壞由應力集中造成。

修理註解：

1. 對於小裂紋，可以鏟成 V 形坡口、打磨、進行無損探傷檢查並重新焊接。
2. 對於較大/明顯的裂紋，應考慮切割並局部/全部肋骨肘板換新。如進行肘板換新，肋骨端可以削斜以達到軟化的目的。
3. 為謹慎起見，在肘板的界面處，應把軟趾與底邊艙板結構綜合考慮。
4. 應注意在延伸的肘板臂長處的邊艙結構，即安裝與肘板相符的加強件。

圖 3 – 典型損壞和修理示例（根據參考資料 3 複製）

附件 10

顯著腐蝕區域的測厚範圍要求

散貨船貨物區域內換證檢驗

舷側外板

結構件	測量範圍	測量形式
1 船底板和舷側外板	a 可疑的板及其鄰接的四塊板	a 縱骨之間的每個板格作五點形測量
	b 在液艙和貨艙處要測量的細節見其他表	
2 船底/舷側縱骨	在可疑區域處最少三根縱骨	在縱骨腹板同一橫截線上測三個點，在折板上測三個點

貨艙內橫艙壁

結構件	測量範圍	測量形式
1. 底凳	a 與內底板的連接焊縫 25mm 以內的橫向範圍	a 在 1m 長的扶強材間作五點形測量
	b 與底凳頂板的連接焊縫 25mm 以內的橫向範圍	b 同上
2. 橫艙壁	a 大約在中間高度處的橫向範圍	a 在約 $1m^2$ 板面上作五點形測量
	b 在鄰近上甲板或頂凳底板（對設有頂凳的船舶）以下的橫向範圍	b 在約 $1m^2$ 板面上作五點形測量

甲板結構，包括橫向甲板條、主貨艙口、艙口蓋、艙口圍板和頂邊艙

結構件	測量範圍	測量形式
1 橫向甲板條	可疑的橫向甲板條	在 1m 長的甲板下扶強材之間作五點形測量
2 甲板下扶強材	a 橫向構件	a 在每端和跨距中點作五點形測量
	b 縱向構件	b 在腹板和折板上作五點形測量
3 艙口蓋	a 側板和端板（即裙板），每塊板上三個位置	a 在每個位置上作五點形測量
	d 縱向三條帶：向舷外兩列和中心線處一列	b 每條帶測量五個點
4 艙口圍板	圍板的每邊和每端：下部 1/3 處一條帶，上部 2/3 處一條帶	每條帶（即邊圍板或端圍板）測量五個點
5 頂邊壓載水艙	a 水密橫艙壁： i 艙壁下部 1/3 ii 艙壁上部 2/3 iii 扶強材	 i 在 1m² 板面上作五點形測量 ii 在 1m² 板面上作五點形測量 iii 在 1m 長度上作五點形測量
	b 兩個代表性制蕩橫艙壁： i 艙壁下部 1/3 ii 艙壁上部 2/3 iii 扶強材	 i 在 1m² 板面上作五點形測量 ii 在 1m² 板面上作五點形測量 iii 在 1m 長度上作五點形測量
	c 三處代表性的強肋骨之間的斜板： i 艙的下部 1/3 位置處 ii 艙的上部 2/3 位置處	 i 在 1m² 板面上作五點形測量 ii 在 1m² 板面上作五點形測量
	d 可疑的縱骨和鄰接縱骨	d 在 1m 長腹板和折板上各作五點形測量
6 主甲板板	可疑的板和鄰接的四塊板	在 1m² 板面上作五點形測量
7 主甲板縱骨	測量的板處至少三根縱骨	在 1m 長腹板和折板上各作五點形測量
8 強肋骨/橫向構件	可疑的板	在 1m² 板面上作五點形測量

雙層底和底邊艙結構

結構件	測量範圍	測量形式
1 內底/雙層底板	可疑的板及其所有鄰接的板	在 1m 長縱骨之間的每一個板格作五點形測量
2 內底/雙層底縱骨	所測量板處的三根縱骨	在縱骨腹板同一橫截線上測量三個點，縱骨折板上測量三個點
3 縱桁或橫向肋板	可疑的板	在約 $1m^2$ 板面上作五點形測量
4 水密艙壁（水密肋板）	a 艙下部的 1/3	a 在 $1m^2$ 板面上作五點形測量
	b 艙上部的 2/3	b 每隔一塊板在 $1m^2$ 板面上作五點形測量
5 強框架	可疑的板	在 $1m^2$ 板面上作五點形測量
6 船底/舷側縱骨	可疑區域處至少三根縱骨	在腹板同一橫截線上測量三個點，折板上測量三個點

貨艙

結構件	測量範圍	測量形式
1 舷側肋骨	可疑的肋骨和每根鄰接的肋骨	a 在每端和跨距中點，腹板和折板各作五點形測量
		b 在外板和底邊艙斜板的焊縫 25mm 以內作五點形測量

附件 11

第 1 號和第 2 號貨艙之間垂直槽形水密橫艙壁測量導則

1 為證實符合公約第 XII/1.7 條界定的散貨船艙壁和雙層底強度標準，有必要進行測量，以確認結構的一般狀況和垂直槽形水密橫艙壁可能修理和/或加強的範圍。

2 考慮到由公約第 XII/1.7 條界定的散貨船艙壁和雙層底強度標準中規定的屈曲模式，在進行艙壁強度評估時，關鍵是確定本附則圖 1 和圖 2 所示的臨界位置處減小的板厚。

3 應在下述水平面進行測量。為了充分評估各個垂直槽形艙壁，應測量在下面給定的每一水平面內每一槽形面板、腹板、卸貨板和封槽板。

水平面（a） 無底凳的船舶（見圖 1）：

位置：

- 卸貨板線以上約 200mm 槽形面板寬度中央；
- 槽形面板之間的封槽板的中央，如設有；
- 卸貨板中央；
- 卸貨板線以上約 200mm 槽形腹板寬度中央。

水平面（b） 有底凳的船舶（見圖 2）：

位置：

- 卸貨板線以上約 200mm 槽形面板寬度中央；

- 槽形面板之間的封槽板的中央，如設有；

- 卸貨板中央；

- 卸貨板線以上約 200mm 槽形腹板寬度中央。

水平面（c） 有底凳或無底凳的船舶（見圖 1 和圖 2）：

位置：

- 約在槽形高度－半處的槽形面板和腹板寬度中央。

4 如在這些水平面內板厚有變化，則應對較薄的板作測量。

5 鋼板換新和/或加強應符合公約第 XII/1.7 條界定的散貨船艙壁和雙層底強度標準。

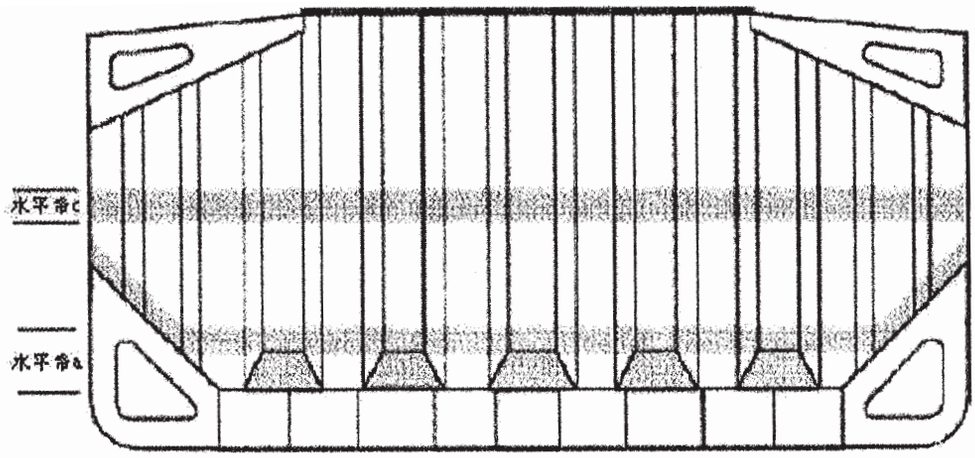


圖 1 – 無底凳的船舶

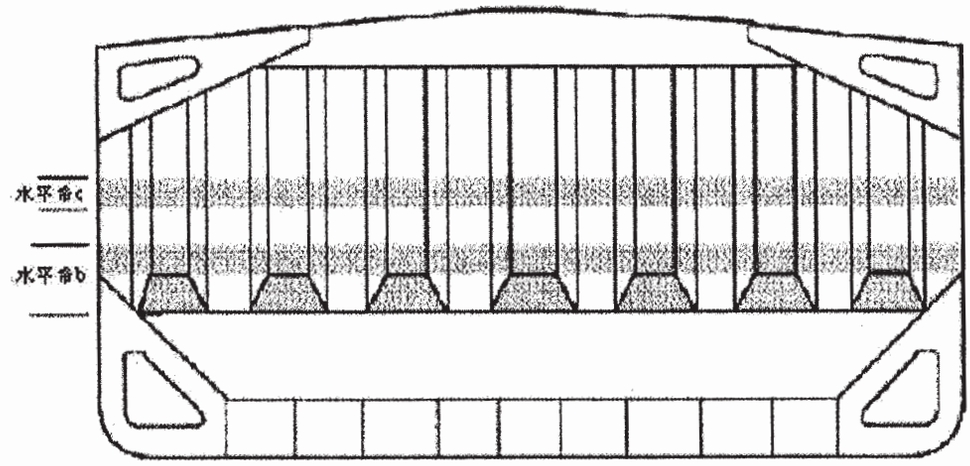


圖 2 – 有底凳的船舶

附件 12

對應符合本公約第 XII/9 條的船舶的最前部貨艙附加年度檢驗要求

1 總則

對 5 年以上船齡的散貨船，除本規則第 3 章規定的年度檢驗要求外，年度檢驗還應包括對下列項目的檢查。

2 檢驗範圍

2.1 *船齡為 5 年至 15 年的散貨船*

2.1.1 應對最前部貨艙進行全面檢驗，包括足夠範圍（至少對 25% 的肋骨）的近觀檢驗，以確認下列狀況：

.1 舷側肋骨，包括其上、下端部附件、鄰接的外板及橫艙壁；和

.2 以前換證檢驗所發現的可疑區域。

2.1.2 根據上述 2.1.1 進行全面和近觀檢驗的結果，如驗船師認為必要，近觀檢驗範圍應擴大至該貨艙所有的舷側肋骨和鄰接的外板。

2.2 *船齡為 15 年以上的散貨船*

應對最前部貨艙進行全面檢驗，包括近觀檢驗，以確認下列狀況：

.1 所有舷側肋骨，包括其上、下端部附件、鄰接的外板及

橫艙壁；和

.2 以前換證檢驗所發現的可疑區域。

3 厚度測量範圍

3.1 應在足夠範圍內進行測厚，以確認以上 2.1 和 2.2 中所述的近觀檢驗區普遍腐蝕和局部腐蝕的程度。最低測厚要求是對以前換證檢驗所發現的可疑區域進行測厚。如發現顯著腐蝕，應按附件 10 的要求擴大測厚範圍。

3.2 如驗船師對近觀檢驗結果滿意，即結構沒有減薄且保護塗層（如有時）仍保持有效，則可免予測厚。

4 特殊考慮

如發現下述註釋提到的最前部貨艙內的保護塗層處於良好狀況，則近觀檢驗和測厚範圍可予以特殊考慮。

註釋：

對於現有散貨船，當船東對上述貨艙選擇敷設塗層或重新敷設塗層時，可考慮近觀檢驗和測厚檢驗的範圍。對現有船舶的貨艙敷設塗層前，應在驗船師在場情況下確定構件尺寸。

附件 13

散貨船貨艙蓋繫固裝置強度

1 繫固裝置

繫固裝置的強度應符合下列要求：

.1 應通過在圍板和艙蓋結構上適當間隔的裝置（螺栓、楔或類似裝置）對艙蓋板格進行繫固。確定布置和間距時，應根據艙蓋的類型和尺寸以及繫固裝置間的艙蓋邊緣剛度，充分考慮到風雨密的有效性。

.2 每一繫固裝置的淨橫剖面積不應小於：

$A = 1.4\ a/f\ (\mathrm{cm}^2)$

式中：

a = 繫固裝置間距，不得小於 2m；

f = $(\sigma_\gamma\ /235)^e$；

σ_γ = 規定的用鋼最小上屈服應力，$\mathrm{N/mm}^2$，不得大於臨界抗拉強度的 70%；

e = 0.75，對 $\sigma_\gamma > 235$

1.0，對 $\sigma_\gamma \leq 235$。

對於面積超過 $5\mathrm{m}^2$ 的艙口，頂桿或螺栓的淨直徑應不小於 19mm。

.3 在艙蓋、圍板和十字接頭之間，應通過繫固裝置保持足

以達到風雨密性的密封條壓力。對壓力大於 5 N/mm 的密封條，橫剖面積應按直接比例增加。應規定密封條壓力。

.4 蓋板邊緣的剛度應足以保持繫固裝置間足夠的密封壓力。邊緣構件的慣性力矩，l，不應小於：

$$l = 6\,pa^4\ (\mathrm{cm}^4)$$

式中：

p = 密封條壓力，N/mm，至少 5 N/mm

a = 繫固裝置間距，m。

.5 繫固裝置結構應可靠並緊密地與艙口圍板、甲板或艙蓋連接。每個蓋板上的單點繫固裝置應具有基本相同的剛度特性。

.6 如安裝了桿子羊角，則應有彈性墊圈或減振器。

.7 如採用液壓羊角，則應有良好的設備確保在液壓系統失效時羊角仍被機械固定在關閉位置。

2 制動器

2.1 應通過制動器對第 1 號和第 2 號艙口蓋進行有效繫固，以防止壓力為 175 kN/m^2 時產生的橫向力。

2.2 應通過制動器對第 2 號艙口蓋進行有效繫固，以防止壓力為 175 kN/m^2 時產生的對前端的縱向力。

2.3 應通過制動器對第 1 號艙口蓋進行有效繫固，以防止壓力為

230 kN/m² 時產生的對前端的縱向力。如安裝了首樓，該壓力可降至 175 kN/m²。

2.4 在制動器及其支撐結構，以及在制動器焊喉處計算的等效應力不應超過許可值 $0.8\sigma_y$。

3 材料和焊接

如安裝符合本附件的制動器或繫固裝置，其包括焊條在內的製造材料應使主管機關滿意。

附件 14

測厚的程序要求

1 總則

船體結構檢驗所要求的測厚，如果不是由船級社自身進行，則應被驗船師見證。驗船師登輪應被記錄。這同樣適用於航行中進行的測厚。

2 檢驗會議

2.1 在換證或中間檢驗開始前，應召開由現場驗船師、現場船東代表和測厚公司代表和船長或由船長或公司指派的具有相應資質的代表參加的會議，以確保檢驗和測厚能夠安全且有效地在船上實施。

2.2 在會議上，應就以下事項對與測厚操作人員及船東代表的交流溝通達成一致：

.1 定期的測厚報告；和

.2 如果發現如下問題，立即通知驗船師：

.1 過度的和/或大面積腐蝕或重要的點蝕/凹槽；和

.2 結構缺陷，如屈曲、斷裂和變形的結構；

.3 脫開的和/或洞穿的結構；和

.4 焊縫的腐蝕。

2.3 檢驗報告應表明會議召開的時間、地點和參加人員（驗船師、船東代表和測厚公司代表的姓名）。

3 對船上測厚過程的監督

3.1 在全面檢驗船上代表性處所後，驗船師應決定測厚的最終範圍和位置。

3.2 如果船東希望在全面檢驗之前開始測厚，驗船師應建議：在全面檢驗過程中，計劃的測厚範圍和位置要受到確認。根據結果，驗船師可要求進行附加測厚。

3.3 驗船師應選擇所取證讀數可代表該區域的平均結構狀況的位置，以此指導測量操作。

3.4 主要用於評估會影響船體樑強度的腐蝕程度的測厚應以系統的方式進行，以使所有要求的縱向構件得到測量。

3.5 如果測厚表明顯著腐蝕或損耗超過允許的減小量，驗船師應指定進行附加測厚之處，以便劃清顯著腐蝕區域，並確認需維修/換新的構件。

3.6 需要進行近觀檢驗的區域的結構測厚，應與近觀檢驗同時進行。

4 審核和驗證

4.1 測厚完成後，驗船師應確認不需要進一步測量或指明需要附加的測量。

4.2 如本導則允許經驗船師特殊考慮後減小測厚範圍，對該特殊考慮應酌情報告。

4.3 如果已進行部分測厚，應報告剩下的測厚範圍，以供下一位驗船師使用。

附件 15

符合第 MSC.168（79）號決議要求的單舷側散貨船舷側肋骨和肘板的測厚導則

1 總則

為驗證符合第 MSC.168（79）號決議的要求，應進行厚度測量，以決定結構的總體狀況和確定對舷側肋骨及肘板的腹板和折板可能作鋼構件換新或採取其他措施的範圍。

2 舷側肋骨和肘板的區域

2.1 就鋼構件換新、噴砂處理和塗層而言，應確定 A、B、C 和 D 四個區域，如圖 1 所示。

2.2 A 和 B 區域應視為最關鍵的區域。

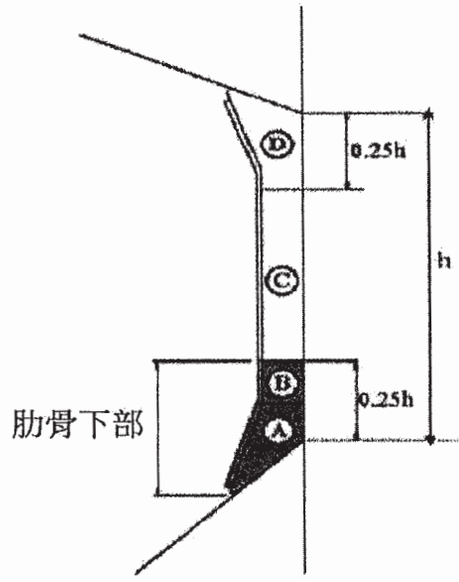


圖1 - 舷側肋骨和肘板的區域

3 點腐蝕和接縫腐蝕

3.1 鏽斑能形成各式各樣的形狀，其中一些應在評估之前予以磨平。

3.2 點腐蝕可以在塗層氣泡下發現，故鼓泡的塗層應在檢查之前鏟除。

3.3 測量點腐蝕或接縫腐蝕的剩餘厚度，一般用超聲波傳感器（一般 10mm 直徑）是不夠的，應使用一種袖珍傳感器（3-5mm 直徑）。測厚公司應使用鏽斑規測量點腐蝕或縫隙腐蝕的深度，並計算剩餘厚度。

基於面積的評估

3.4 這是第 MSC.168（79）號決議附件 2 的第 2.5 段規定的方法，並基於根據圖 2 確定的密度。

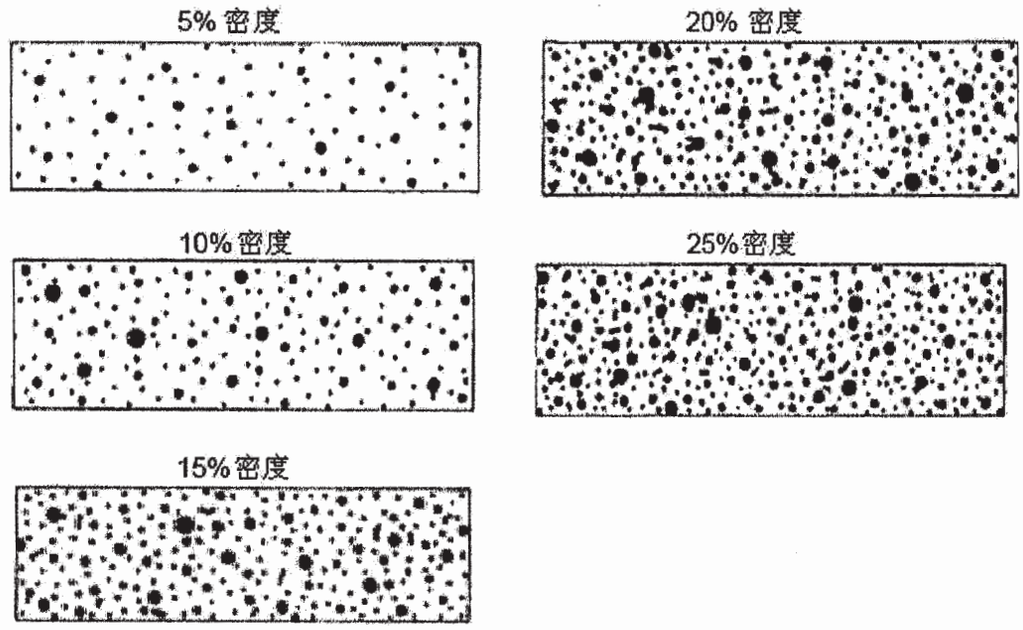


圖 2 – 點腐蝕密度圖表 (密度 5%-25%)

3.5 如在一個區域內點腐蝕密度大於 15%（見圖 2），則應進行測厚，以決定點腐蝕的程度。15%僅指在板一面的點腐蝕或接縫腐蝕。

3.6 假使上述界定的點腐蝕很明顯（超過 15%），則在點腐蝕最多部位，應將 300mm 直徑或更大的區域（或如在附連舷側肋骨的肋骨折板或舷側外板、底邊艙斜板或頂邊艙斜板上，這樣的區域不切實際，一個相當的長方形）清潔出白（裸金屬），且在清潔區域內 5 個最深點腐蝕處測厚。至少這些點腐蝕的任何一點均應作測厚並作記錄。

3.7 任何點腐蝕或接縫腐蝕的可接受最小剩餘厚度應為：

.1 對在貨艙邊肋骨腹板和折板的點腐蝕或接縫腐蝕，建造厚度的 75%。

.2 對在附連貨艙邊肋骨的舷側板、底邊艙和頂邊艙斜板的點腐蝕或接縫腐蝕，在其每側達 30 mm 的寬度上，建造厚度的 70%。

4 測厚方法

4.1 測量的邊肋骨數目，應與船齡相對應的換證檢驗或中間檢驗所測數目相等。應按如下規定對每一區域作代表性測量。

4.2 如結構件相對於建造厚度未呈現厚度減小，並且發現塗層仍在“如新”的狀態（即無塗層脫落或無鏽），則主管機關或經主管機關認可的組織可對測厚範圍予以特殊考慮。

4.3 當發現測厚讀數接近臨界值時，測量的貨艙肋骨數應予增加。

4.4 如應對某一貨艙內個別肋骨按照第 MSC.168（79）號決議進行換新或採取其他措施，則該貨艙內所有肋骨應予測厚。

4.5 散貨船舷側肋骨可使用各種構造方式。有些舷側肋骨有面板（T 型剖面），有些舷側肋骨有折板，有些舷側肋骨有球緣板。就測厚而言，使用面板和折板型材應認為是相似的，腹板和面板或腹板和折板兩者都應進行測量。如使用球緣板，則應用通常的方法測量球緣板的腹板，如有要求，其剖面模數應予特殊考慮。

A、B 和 D 區域的測量

腹板

4.6 對 A、B 和 D 區域的測厚形式應用五點形，見圖 3。五點形是在腹板的高度和垂直方向上與高度同樣的長度面積內測五點。測厚報告應反映平均讀數。

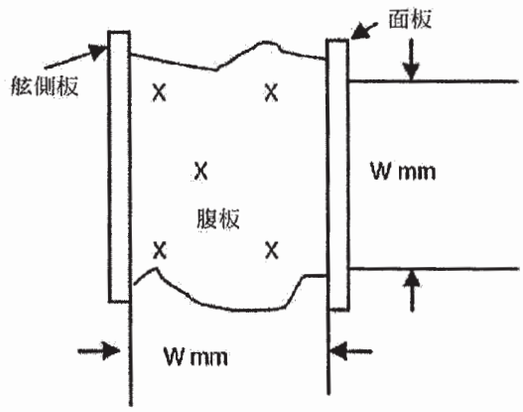


圖 3 - 腹板上典型的五點形

C 區域的測厚

腹板

4.7 根據 C 區域處腹板的狀況，腹板可在 C 區域長度上測量三個點的讀數，並取其平均值。該平均值應與允許的厚度比較。如腹板已普遍腐蝕，則應擴大至如上述的五點形。

剖面 a）和剖面 b）（折板和舷側板）的測厚

4.8 當下肘板長度或深度不滿足第 MSC.168（79）號決議附件 1 的要求時，應對剖面 a）和剖面 b）進行測厚，以計算第 MSC.168（79）號決議附件 2 中第 3.4 段要求的實際剖面模數（見圖 4）。在剖面 a）和剖面 b）處肋骨的每一邊（即前和後）的折板上至少應測取 2 個點的讀數。

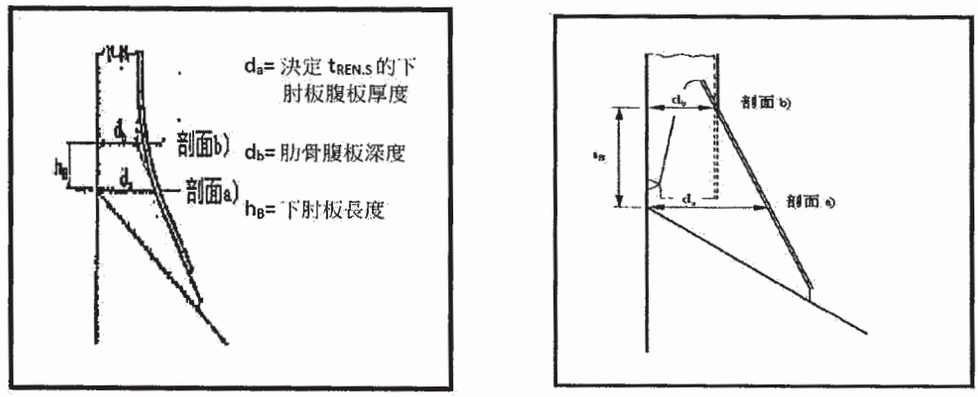


圖4 - 剖面 a)和剖面 b)

5 貨艙舷側肋骨測厚報告

見附件 8 附錄 2 中表 TM7-BC(ii)。

參考文件

國際船級社協會藍皮書：統一要求 UR Z10.2（Rev.27 2009）— 散貨船船體檢驗，附件 V。

第 MSC.168（79）號決議 — 單舷側結構散貨船舷側結构標準和衡準。

B 部分

雙舷側結構散貨船檢驗期間加強檢查計劃規則

1 總則

1.1 適用範圍

1.1.1 本規則應適用於所有 500 總噸及以上的雙舷側結構自航式散貨船。

1.1.2 本規則應適用於貨物長度區域內的貨艙、隔離艙、管隧、空艙和燃油艙，以及所有壓載艙處的船體結構和管路系統的檢驗。

1.1.3 本規則包含檢查、測厚和液艙試驗的範圍。如發現顯著腐蝕和/或結構缺陷時，應擴大檢驗範圍，並包括必要時進行附加近觀檢驗。

1.1.4 對於混合貨艙布置的散貨船，如某些貨艙為單舷側而其他的為雙舷側，則附件 A 的 A 部分要求應適用於單舷側貨艙。

1.1.5 應在公約第 I/10 條規定的檢驗期間進行檢驗。

1.2 *定義*

1.2.1 *雙舷側散貨船*係指通常在裝貨處所建有單甲板、頂邊艙和底邊艙，且主要用於載運散裝乾貨的船舶，包括礦砂船和兼裝船，其所有貨艙採用雙舷側板圍閉作為邊界（而不論邊艙的寬度如何）。

1.2.2 *壓載艙*係指僅僅用於海水壓載的液艙，或適用時，對用於裝貨和海水壓載的處所，如在其艙內已發現顯著腐蝕，將視作壓載艙。

就檢驗而言，兩舷邊艙即使與頂邊艙或底邊艙連接，也應視作一個獨立液艙。

1.2.3 *處所*係指獨立的艙室，包括貨艙、液艙以及鄰接貨艙、甲板和外殼板的隔離艙和空艙。

1.2.4 *全面檢驗*係指用於報告船體結構整體狀況和確定進行附加近觀檢驗範圍的檢驗。

1.2.5 *近觀檢驗*係指驗船師在近距離目視範圍內（即通常伸手可及）對結構件細節進行的檢驗。

1.2.6 *橫剖面*係指垂直於船舶中線的船體橫剖面，包括所有板材等縱向構件，以及在甲板、舷側外板、船底板、內底板、底邊艙斜板、內側板、頂邊艙斜板以及縱艙壁上的縱骨和縱桁。

1.2.7 *代表性處所*係指能反映相似類型、用途和具有類似防腐蝕系統的其他處所的處所。當選擇代表性處所時，應考慮到其營運和修理史，以及可識別的臨界結構區域和/或可疑區域。

1.2.8 *可疑區域*係指呈現顯著腐蝕和/或驗船師認為易於快速損耗的區域。

1.2.9 *顯著腐蝕*係指通過腐蝕狀況評估表明其腐蝕量超過許用裕量的 75%但尚處於可接受範圍內的腐蝕程度。對按國際船級社協會共同結構規範建造的船舶，顯著腐蝕係指通過腐蝕狀況評估表明其測量（或測厚）厚度介於 t_{net} + 0.5mm 和 t_{net} 之間的腐蝕程度。

1.2.10 *防腐系統*通常可考慮全硬保護塗層。硬保護塗層通常係指環氧樹脂塗層或同等物。既非軟塗層亦非半硬塗層的其他塗層系統，如

按生產廠的技術說明書應用和維護，可考慮作為替代品接受。

1.2.11 *塗層狀況*定義如下：

良好 係指僅有少量點狀鏽斑；

尚好 係指在扶強材的邊緣和焊縫的連接處塗層有局部脫落和/或所檢驗的區域中有超過20%或更大範圍的輕度鏽蝕，但小於定義“差”的狀況；

差 係指在檢驗的區域中有超過 20%或更大範圍的塗層普遍剝落，或有 10%或更大範圍的塗層產生硬質鏽皮。

1.2.12 *臨界結構區域*係指從計算中或從本船舶或類似船舶或姐妹船（適用時）的營運歷史中認定並需要進行檢測的、容易發生影響船舶結構整體性的破裂、屈曲或腐蝕的區域。

1.2.13 *貨物長度區域*係指包括所有貨艙和鄰近區域，含燃油艙、隔離艙、壓載艙和空艙的船舶部分。

1.2.14 *中間檢驗*係指在第二或第三次年度檢驗或其之間進行的檢驗。

1.2.15 *及時徹底修理*係指在檢驗期間完成的並使驗船師滿意的永久性修理，旨在消除需要批註的任何相關船級條件或遺留項目。

1.2.16 *公約*係指經修正的《1974 年國際海上人命安全公約》。

1.2.17 *特殊考慮*（與近觀檢驗和測厚有關）係指進行足夠的近觀檢查和測厚以確定塗層以下結構的實際平均狀況。

1.3 *修理*

1.3.1 任何與超過允許極限的結構蝕耗有關的損壞（包括屈曲、凹槽、脫開或斷裂）或大面積區域的蝕耗超過允許極限，若影響或主管機關認為將影響船舶的結構、水密或風雨密完整性，均應進行及時徹底修理（參見 1.2.15）。應考慮的區域包括：

.1 舷側結構和舷側板；

.2 甲板結構和甲板板；

.3 船底結構和船底板；

.4 內底結構和內底板

.5 內側結構和內側板

.6 水密或油密艙壁；

.7 艙蓋或艙口圍板；和

.8 列於 3.3.10 中的項目。

在不能提供足夠修理設施的區域，主管機關可允許船舶直接駛往某一修理點。這可能要求船舶為該修理航次卸下貨物和/或進行臨時性修理。

1.3.2 此外，在檢驗發現腐蝕或結構缺陷時，如主管機關認為其中之一將影響船舶繼續營運，船舶應在繼續營運前採取補救措施。

1.4 *驗船師*

對 20,000 載重噸及以上的散貨船，應由兩名驗船師聯合執行在其船齡超過 10 年後的第一次計劃的換證檢驗（即第三次換證檢驗），以及其後的所有換證和中間檢驗。如由被認可組織進行檢驗，

則這些驗船師應為該被認可組織專職聘用的。

1.5 ***厚度測量與近觀檢驗***

在任何檢驗中，即在換證檢驗、中間檢驗、年度檢驗或與這些檢驗範圍相同的其他檢驗中，對需要實施近觀檢驗的結構區域的測厚應與近觀檢驗同時進行。

2 換證檢驗

2.1 ***總則***

2.1.1 換證檢驗可在第四次年度檢驗時開始，並可在其後一年中繼續進行，以在第五個周年日前完成。

2.1.2 檢驗計劃作為換證檢驗準備的一部分，應在換證檢驗前制定。厚度測量不應放在第四次年度檢驗之前進行。

2.1.3 除年度檢驗的要求外，檢驗還應包括足夠範圍的檢查、試驗和核查，以確保船體以及 2.1.5 所要求的相關管路處於合格狀況，並適合貨船構造安全證書新的有效期內其預定的用途，受到適當維護和操作及到期接受各種定期檢驗。

2.1.4 所有貨艙、壓載艙，包括雙層底艙和兩舷邊艙、管隧、隔離艙和鄰接貨艙的空艙、甲板和外殼板都應進行檢查，這種檢查應輔以 2.6 和 2.7 要求的厚度測量和試驗，以確保該結構的完整性保持有效。檢查應能足以發現可能存在的顯著腐蝕、嚴重變形、斷裂、破損或其他結構蝕耗。

2.1.5 上述處所內的所有管系應在工作壓力下進行檢查和操作試驗並使現場驗船師滿意，以確保其密性和狀況保持合格狀態。

2.1.6 改建為空艙的壓載艙的檢驗範圍應結合壓載艙的要求予以特殊考慮。

2.1.7 中間檢驗和換證檢驗二者對處所的檢驗和測厚不應相互替代。

2.2 *乾塢檢驗*

2.2.1 乾塢檢驗應作為換證檢驗的一部分。在證書的五年期內應對船底外部至少進行兩次檢查。在所有情況下，船底檢查的最大間隔期不應超過 36 個月。

2.2.2 對船齡為 15 年及以上的船舶，應在乾塢進行船底外部檢查。對船齡小於 15 年的船舶，其未與換證檢驗一起進行的船底外部檢查，作為替代，可在船舶漂浮狀態下進行檢查。船舶在漂浮狀態下的檢查只有在船況令人滿意並具有合適的設備和合格人員時才能進行。

2.2.3 如乾塢檢驗未與換證檢驗期間的加強檢驗一起完成，或如 2.2.1 中所述的 36 個月的最大間隔期未予滿足，則貨船構造安全證書應停止有效，直至乾塢檢驗完成。

2.2.4 如對貨艙和壓載艙下部的全面檢驗、近觀檢驗和厚度測量（如適用）尚未實施，則應按換證檢驗的適用要求進行。

*註：*貨艙和壓載艙下部係指輕壓載水線以下的部分。

2.3 *處所保護*

2.3.1 如設有壓載艙防腐系統，應檢查其狀況。對於壓載艙（不包括雙層底艙），如發現硬保護塗層處於 1.2.11 所界定的“差”狀況，且未換新，或已敷設軟塗層或半硬塗層，或從建造之時就未敷設硬保

護塗層，則對所述艙應每年進行檢查。如驗船師認為必要，應進行測厚。如在壓載雙層底艙內發現硬保護塗層處於該種狀況，且未換新，或已敷設軟塗層或半硬塗層，或從建造之時就未敷設硬保護塗層，則對所述艙可每年進行檢查。如驗船師認為必要，或存在大面積腐蝕，應進行測厚。

2.3.2 如貨艙內設有硬保護塗層，且塗層處於“良好”狀況，近觀檢驗和厚度測量的範圍可予以特殊考慮。

2.4 ***艙蓋和艙口圍板***

艙蓋和艙口圍板應經受下列檢驗：

2.4.1 除所有艙蓋和艙口圍板外，還應對 3.3 中列出的項目進行徹底檢查。

2.4.2 應檢查所有機械操作的艙蓋是否操作良好，包括：

.1 開啟狀態下的堆裝和繫固；

.2 關閉狀態下的適配性和密封有效性；和

.3 液壓和動力部件、鋼索、鏈和連動裝置的操作試驗。

2.4.3 應通過沖水試驗或等效方法檢查所有艙蓋的密封裝置的有效性。

2.4.4 對艙蓋、艙口圍板及扶強材應按附件 2 進行厚度測量。

2.5 ***全面和近觀檢驗範圍***

2.5.1 在換證檢驗時應對所有液艙和處所進行一次全面檢驗。對貨物長度區域內的燃油艙應進行如下檢驗：

第 1 次換證檢驗 船齡≤5 年	**第 2 次換證檢驗** 5 年＜船齡≤10 年	**第 3 次換證檢驗** 10 年＜船齡≤15 年	**第 4 次及以後換證檢驗** 船齡＞15 年
無	1 個	2 個	半數，至少 2 個

註：

1. 本要求適用於整體（結構）類型的液艙。
2. 如檢查中對液艙進行抽查，則每次換證檢驗都應輪流檢查不同的液艙。
3. 尖艙（各種用途）應在每次換證檢驗中進行內部檢查。
4. 在第 3 次換證檢驗及以後的換證檢驗時，應包括一個位於貨物區域的燃油深艙（如設置）。

2.5.2 關於換證檢驗時近觀檢驗的最低要求可分別參見附件 1 附錄 1 對雙舷側散貨船（不包括礦砂船）和附件 1 附錄 2 對礦砂船的要求。

2.5.3 驗船師在考慮到檢驗時處所的維護、防腐系統的狀況以及處所具有的結構布置或構件根據可獲得的資料曾經在類似處所或類似船舶出現過缺陷的同時，可根據需要擴大近觀檢驗的範圍。

2.5.4 對於查明硬保護塗層處於“良好”狀況的處所內區域，按附件 1 要求的近觀檢驗範圍可予以特殊考慮（還參見 2.3.2）。

2.6 *厚度測量範圍*

2.6.1 換證檢驗時厚度測量的最低要求參見附件 2。

2.6.2 應進行有代表性的厚度測量，以確定在所有壓載艙內的橫向強肋骨的總體和局部腐蝕程度。還應對橫艙壁板進行測厚，以確定其腐蝕程度。如驗船師通過近觀檢驗確信無結構尺寸減小且敷設的硬保護塗層保持有效，則厚度測量的範圍可予以特殊考慮。

2.6.3 對 1.2.9 界定的顯著腐蝕區域的擴大厚度測量按附件 10 的規定進行，並可在 5.1 要求的檢驗計劃中作出附加規定。該擴大測厚應在檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。以前檢驗中確定的顯著腐蝕區域應進行測厚。

2.6.4 驗船師可根據需要進一步擴大厚度測量的範圍。

2.6.5 對於查明硬保護塗層處於 1.2.11 所界定的“良好”狀況的液艙內區域，按附件 2 要求的厚度測量範圍可由主管機關予以特殊考慮。

2.6.6 測厚的橫剖面應選擇在懷疑發生最大縮減或經甲板板測厚揭示的最大縮減處。

2.7 ***液艙壓力試驗範圍***

2.7.1 所有壓載艙、深艙以及在貨物長度區域內用於水壓載的貨艙的界限面應進行壓力試驗。對於燃油艙，僅對代表性液艙進行壓力試驗。

2.7.2 驗船師可根據需要擴大液艙試驗的範圍。

2.7.3 對壓載艙的邊界進行試驗的液體壓頭應至空氣管頂部。

2.7.4 對壓載的貨艙的邊界進行試驗的液體壓頭應至艙口頂部附近。

2.7.5 對燃油艙的邊界進行試驗的液體壓頭應至其各種服務狀態下液體可能上升的最高點。基於對燃油艙邊界的外部檢查的滿意結果和對船長關於已按要求進行壓力試驗的滿意結果陳述的確認，燃油艙的液艙密性試驗可予以特殊考慮。

2.7.6 如對雙層底艙和其他非設計用於裝載液體的處所的內部檢查和內底板檢查認為滿意，則可不進行試驗。

2.8 *確定符合公約第 XII/12 和 XII/13 條規定後的附加換證檢驗要求*

2.8.1 對符合公約第 XII/12 條關於貨艙、壓載艙和乾燥處所水位探測器要求的船舶，換證檢驗應包括檢查和測試進水探測系統及其報警裝置。

2.8.2 對符合公約第 XII/13 條泵系有效性要求的船舶，換證檢驗應包括檢查和測試用於排放和泵吸位於防撞艙壁前方的壓載艙的壓載水以及任何部位延伸至最前部貨艙前方的乾燥處所的艙底水的設備，及其控制裝置。

3 年度檢驗

3.1 *總則*

年度檢驗應由旨在盡實際可行地確保船體、露天甲板、艙蓋、艙口圍板和管路處於合格狀態的檢查所構成，並應考慮到營運記錄、壓載艙防腐系統狀況和範圍以及檢驗報告案卷中確定的區域。

3.2 *船體檢查*

3.2.1 凡可見的船殼板及其關閉裝置均應進行檢查。

3.2.2 對水密貫穿件應盡實際可行進行檢查。

3.3 *露天甲板、艙蓋和艙口圍板檢查*

3.3.1 應確認自上次檢驗以來，艙蓋、圍板及其緊固和密封裝置，

均無未經批准的變動。

3.3.2 對艙蓋和圍板的全面檢驗只有通過在開啟和關閉狀態下的檢驗方有可能，並應包括驗證正常的開啟和關閉操作。因此，每次年度檢驗時，應對船舶前部 25%長度內的艙蓋裝置以及至少一個附加裝置進行開啟、關閉和艙蓋向每個方向完全開啟和關閉操作的檢驗，從而能確保在每五年期內對船上所有的艙蓋裝置至少進行一次評估；檢驗包括：

.1 開啟狀態下的堆裝和繫固；

.2 關閉狀態下的適配性和密封有效性；和

.3 液壓和動力部件、鋼索、鏈和連動裝置的操作試驗。

艙蓋關閉應包括繫固所有周邊裝置，以及十字接頭楔耳或其他繫固設備。應特別注意船舶前部 25%長度內的艙蓋，因為該處波浪載荷通常最大。

3.3.3 如艙蓋操作和繫固有困難，則應由驗船師決定對上述 3.3.2 要求的附加裝置進行操作試驗。

3.3.4 如貨艙繫固系統不能正常操作，則應在主管機關的監督下進行修理。如對艙蓋或圍板進行重大修理，則繫固裝置的強度應予以加強並符合附件 11 的要求。

3.3.5 在每次年度檢驗時，應對每一艙蓋裝置的下列項目進行檢驗：

.1 艙蓋板架，包括邊板，以及可在開啟位置進行近觀檢驗（以檢查腐蝕、裂紋或變形）的扶強材附件；

.2 周邊和十字接頭的密封裝置（密封墊狀況和永久變形、

兼裝船上柔性密封裝置、帶唇邊的密封墊、壓條、泄水槽和止回閥）；

.3 夾緊裝置、壓條、楔耳（檢查損耗、調整，以及橡膠部件狀況）；

.4 關閉的艙蓋定位裝置（變形和連接件）；

.5 鏈或繩索滑輪；

.6 導向裝置；

.7 導軌和導輪；

.8 制動裝置；

.9 鋼索、傳動鏈、拉伸裝置和絞車副捲筒；

.10 液壓系統、電動安全裝置和連鎖裝置；和

.11 端部和板格間鉸鏈、銷釘和底座（如設有）。

3.3.6 在每次年度檢驗時，應對每一艙口處的圍板以及板、扶強材和肘板的腐蝕、裂紋和變形情況，尤其是圍板頂部，進行檢查，包括近觀檢驗。

3.3.7 如認為必要，可通過對密封壓力部件附加的沖水或墨粉水密試驗證實密封裝置的有效性。

3.3.8 對裝設木質或鋼質箱形的活動艙蓋者，應確認以下項目處於令人滿意狀況：

.1 木質艙口蓋和活動橫樑，活動橫樑承座或插座及其緊固裝置；

.2 鋼質箱形艙蓋，包括艙口蓋板的近觀檢驗；

.3 防水帆布；

.4 楔耳、壓條和楔子；

.5 艙口緊固壓條及其緊固裝置；

.6 承載座板/樑材和側板的邊緣；

.7 導板和楔子；和

.8 壓條、泄水槽和泄水管（如有）。

3.3.9 應檢查所有燃料艙透氣管上的防火網。

3.3.10 應檢查燃料艙和透氣管系統，包括通風筒。

3.4 ***貨艙檢查***

3.4.1 對船齡 10 至 15 年的雙舷側散貨船應進行如下檢驗：

.1 對兩個選擇的貨艙的全面檢驗；

.2 在驗船師認為必要時，或存在大面積腐蝕時，應進行測厚。如測厚結果表明顯著腐蝕，應按附件 10 的規定擴大測厚範圍。該擴大的測厚應在檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。以前檢驗中確定的顯著腐蝕區域應進行測厚；和

.3 貨艙內的所有管系和貫穿件，包括舷外管路，應予以檢查。

3.4.2 對船齡超過 15 年的雙舷側散貨船應進行如下檢驗：

.1 對所有貨艙的全面檢驗；

.2 在驗船師認為必要時，或存在大面積腐蝕時，應進行測厚。如測厚結果表明顯著腐蝕，應按附件 10 規定擴大測厚範圍。該擴大的測厚應在檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。以前檢驗中確定的顯著腐蝕區域應進行測厚；和

.3 貨艙內的所有管系和貫穿件，包括舷外管路，應予以檢查。

3.5 ***壓載艙檢查***

在由於換證檢驗和中間檢驗的結果而有要求時，應對壓載艙進行檢查。在驗船師認為必要時，或存在大面積腐蝕時，應進行測厚。如測厚結果表明有顯著腐蝕，則應按附件 10 的規定擴大測厚範圍。該擴大的測厚應在檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。以前檢驗中確定的顯著腐蝕區域應進行測厚。

3.6 ***確定符合公約第 XII/12 和 XII/13 條規定後的附加年度檢驗要求***

3.6.1 對符合公約第 XII/12 條關於貨艙、壓載艙和乾燥處所水位探測器要求的船舶，年度檢驗應包括檢查和隨機測試進水探測系統及其報警裝置。

3.6.2 對符合公約第 XII/13 條關於泵系有效性要求的船舶，年度檢驗應包括檢查和測試用於排放和泵吸位於防撞艙壁前方的壓載艙的壓載水以及任何部位延伸至最前部貨艙前方的乾燥處所艙底水的設備及其控制裝置。

4 中間檢驗

4.1 *總則*

4.1.1 對年度檢驗要求以外的附加項目，可在第二次或第三次年度檢驗時或其之間進行檢驗。

4.1.2 檢驗範圍依 4.2、4.3 和 4.4 中規定的船齡而定。

4.1.3 中間檢驗和換證檢驗所要求的處所的檢驗和測厚不應相互替代。

4.2 *船齡 5 至 10 年的雙舷側散貨船*

4.2.1 *壓載艙*

4.2.1.1 對用於水壓載的艙，驗船師應選擇代表性艙進行全面檢驗。代表性艙的選取，應在考慮到壓載艙的數量和類型的同時，包括艏艉尖艙和其他類型的艙。如該全面檢驗表明無可見的結構缺陷，則檢查可限於核實防腐系統處於有效狀態。

4.2.1.2 如在水壓載艙內發現塗層狀況“差”、腐蝕或其他缺陷，或從建造時起就未敷設硬保護塗層，則檢查應擴大至其他同類型的壓載艙。

4.2.1.3 如在壓載艙（雙層底艙除外）內發現硬保護塗層狀況“差”，且未換新，或已敷設軟塗層或半硬塗層，或從建造時起就未敷設硬保護塗層，則應對所述艙每年進行檢查，並在必要時進行測厚。如在壓載雙層底艙內發現硬保護塗層處於此種狀況，且已敷設軟塗層或半硬塗層，或未敷設硬保護塗層，則可對所述艙每年進行檢查。在驗船師認為必要時，或存在大面積腐蝕時，應進行測厚。

4.2.1.4 除上述要求之外，還應對上次換證檢驗中確定的可疑區域進行全面檢驗和近觀檢驗。

4.2.2 *貨艙*

4.2.2.1 應對所有貨艙進行全面檢驗。

4.2.2.2 根據 4.2.2.1 所述的全面檢驗結果，在驗船師認為必要時，該檢驗應擴大至包括對驗船師選擇的貨艙結構區域的近觀檢驗。

4.2.3 *厚度測量範圍*

4.2.3.1 厚度測量應在足夠範圍內進行，以確定根據 4.2.2.2 的要求和按 4.2.1.4 的規定應做近觀檢驗的區域內的總體和局部腐蝕程度。

4.2.3.2 如驗船師通過近觀檢驗確信無結構縮減，且查明硬保護塗層處於“良好”狀況，近觀檢驗和測厚的範圍可予以特殊考慮。

4.2.3.3 如發現顯著腐蝕，則應按附件 10 的規定擴大測厚範圍。該擴大的測厚應在檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。以前檢驗中確定的顯著腐蝕區域應進行測厚。

4.2.3.4 如查明貨艙內硬保護塗層處於“良好”狀況，近觀檢驗和測厚的範圍可予以特殊考慮。

4.3 *船齡 10 至 15 年的雙舷側散貨船*

4.3.1 中間檢驗的要求應與 2 和 5.1 要求的上次換證檢驗的範圍相同。但是，除非現場驗船師認為必要，否則不要求進行燃油艙的內部檢查和所有液艙的壓力試驗。

4.3.2 在應用 4.3.1 時，中間檢驗可在第二次年度檢驗時開始，並可

在其後一年中繼續進行，以在第三次年度檢驗時完成，替代應用2.1.1。

4.3.3 在應用4.3.1時，水下檢驗可予以考慮，以替代2.2的要求。

4.4 ***船齡超過15年的雙舷側散貨船***

4.4.1 中間檢驗的要求應與2和5.1要求的上次換證檢驗的範圍相同。但是，除非現場驗船師認為必要，否則不要求進行燃油艙的內部檢查和所有液艙的壓力試驗。

4.4.2 在應用4.4.1時，中間檢驗可在第二次年度檢驗時開始，並可在其後一年中繼續進行，以在第三次年度檢驗時完成，替代應用2.1.1。

4.4.3 在應用4.4.1時，乾塢檢驗應作為中間檢驗的一部分。如對貨艙和水壓載艙下部的全面檢驗、近觀檢驗和測厚（如適用）尚未實施，則應按中間檢驗的適用要求進行。

*註：*貨艙和壓載艙下部係指輕壓載水線以下的部分。

5 檢驗前準備

5.1 ***檢驗計劃***

5.1.1 船東應與主管機關合作，在以下檢驗的任何部分開始前制定具體的檢驗計劃：

.1 換證檢驗；和

.2 船齡10年以上的雙舷側散貨船的中間檢驗。

檢驗計劃應根據附件 4A 中的資料以書面形式制定。只有在

制定檢驗計劃後才能開始進行檢驗。

5.1.1.1 在制定檢驗計劃前，船東應根據附件 4B 中的資料填寫檢驗計劃調查表，並送交主管機關。

5.1.1.2 中間檢驗的檢驗計劃可由經上次換證檢驗所作狀況評估報告補充的檢驗計劃以及隨後的相關檢驗報告組成。

5.1.1.3 制定檢驗計劃應考慮自上一次換證檢驗後對檢驗要求的任何修改。

5.1.2 在制定檢驗計劃時，應搜集和查閱下列文件用以選擇要進行檢查的液艙、貨艙、區域和結構件：

.1 檢驗狀況和基本的船舶資料；

.2 6.2 和 6.3 中所述的船上文件；

.3 主結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料；

.4 來自船級社和船東兩方面的有關上次檢驗和檢查報告；

.5 關於船舶貨艙和液艙的使用、典型貨物和其他相關數據的資料；

.6 關於新船防腐等級的資料；和

.7 關於在船舶營運時有關的維護保養等級的資料。

5.1.3 提交的檢驗計劃應說明並至少符合附件 1 和附件 2 及 2.7 分別對近觀檢驗、厚度測量和液艙試驗的要求，並應至少包括下列相關資料：

.1 基本的船舶資料和概況；

.2 主結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料；

.3 貨艙和液艙圖；

.4 附有塗層的使用、保護和狀況資料的貨艙和液艙明細表；

.5 檢驗條件（如：有關貨艙和液艙清潔、除氣、通風、照明等的資料）；

.6 通道的設置和方法；

.7 檢驗設備；

.8 指定進行近觀檢驗的貨艙、液艙和區域（見 2.5）；

.9 指定進行厚度測量的剖面（見 2.6）；

.10 指定進行試驗的液艙（見 2.7）；和

.11 與該船舶有關的損壞經歷。

5.1.4 主管機關應通知船東適合於該船舶的最大限度的可接受結構蝕耗程度。

5.1.5 也可使用附件 9 中的與雙舷側散貨船加強檢驗計劃有關的技術評估導則。本導則是一套建議的方法，在認為必要和適當時，可由主管機關決定，結合制定所要求的檢驗計劃予以施用。

5.2 ***檢驗條件***

5.2.1 船東應為安全地進行檢驗提供必要的設施。

5.2.2 為使現場驗船師能進行檢驗，船東和主管機關應商定合適和安全的通道設施。

5.2.3 檢驗計劃調查表中應提供通道設施細節。

5.2.4 在現場驗船師斷定安全的規定和要求的通道不合適時，不應進行相關處所的檢驗。

5.2.5 應可安全進入貨艙、液艙和處所。貨艙、液艙和處所應予以除氣和適當通風。進入液艙、空艙或圍蔽處所前，應確認液艙內部空氣中無危險氣體並含足夠的氧氣。

5.2.6 在準備檢驗、測厚和徹底檢查時，所有處所應進行清掃，包括除去表面所有鬆動的腐蝕積垢。處所應充分清潔，做到無水、無垢、無髒物、無殘油等，以能揭示腐蝕、變形、裂紋、破損或其他結構蝕耗以及塗層狀況。但是，船東已經決定換新的結構區域只需進行清掃和去垢，以確定要換新的區域範圍。

5.2.7 應提供足夠的照明，以能揭示腐蝕、變形、裂紋、破損或其他結構蝕耗以及塗層狀況。

5.2.8 如已敷設軟塗層或半硬塗層，應為驗船師提供安全通道，以使其能驗證塗層的有效性和進行內部結構（可能包括塗層剝落的部分）的狀況評估。如無法提供安全通道，則軟塗層或半硬塗層應予以去除。

5.2.9 船東應指派至少一位對液艙和封閉處所檢查有經驗的人員始終陪伴現場驗船師。此外，由至少兩人組成的有經驗的後備人員應等候在被檢驗的液艙或處所的艙口處。後備組人員應不斷觀察液艙或處所內的工作情況，並應保持救生和撤離設備隨時可用。

5.2.10 在被檢查的貨艙、液艙或處所內的檢驗人員、甲板上的負責駕駛員和駕駛室（視情況而定）之間應安排通信系統。這些通信設備應在整個檢驗中始終保持工作狀態。

5.3 ***結構通道***

5.3.1 對全面檢驗，應提供設施使驗船師能用安全和可行的方法檢查船體結構。

5.3.2 對近觀檢驗，應提供驗船師可接受的下列一個或多個通道裝置：

.1 固定腳手架和穿過結構的通道；

.2 臨時腳手架和穿過結構的通道；

.3 升降機和可移動台架；

.4 可攜式梯子；

.5 艇或筏；和

.6 其他等效設施。

5.4 ***檢驗設備***

5.4.1 通常應使用超聲波檢測設備進行測厚。應按要求向驗船師證明該設備的精度。

5.4.2 如驗船師認為必要，可要求用下列一個或多個裂紋檢測方法：

.1 射線照相設備；

.2 超聲波探傷設備；

.3 磁粉探傷設備；和

.4 着色滲透劑。

5.4.3 檢驗期間應有可使用的測爆儀、測氧儀、呼吸器、救生索，攀登帶及其繩索、鉤子和哨笛及其使用說明和指導。應提供安全檢查清單。

5.4.4 應為安全有效地進行檢驗提供足夠和安全的照明。

5.4.5 在檢驗期間，應有足夠的防護服（如：安全頭盔、手套、安全靴等）可供使用。

5.5 ***海上或錨泊檢驗***

5.5.1 如驗船師能得到船上人員的必要協助，可接受在海上或錨泊時進行檢驗。檢驗所需的預防措施和程序應符合 5.1、5.2、5.3 和 5.4 中的要求。

5.5.2 在被檢查的處所內的檢驗人員與在甲板上的負責駕駛員之間應布置通信系統。如使用艇或筏，該系統還應包括負責壓載水泵操作的人員。

5.5.3 只有在驗船師考慮到所提供的安全措施，包括氣象預報和船舶對可預見狀況的反應後表示同意，以及在液艙內水位預期的上升不超過 0.25m 的情況下，方可使用艇或筏對液艙或適用貨艙進行檢驗。

5.5.4 在使用筏或艇進行近觀檢驗時，應符合下列條件：

.1 應僅使用即使一個浮箱破裂仍具有合格的剩餘浮力和穩性的耐用型氣脹式筏或艇；

.2 艇或筏應拴於通道梯上，並另安排一人留守在能清晰看見該艇或筏的通道梯處；

.3 所有參加人員都應有合適的救生衣；

.4 液艙或貨艙內的水面應平靜（在所有可預見的情況下，液艙內預期的水位上升不應超過 0.25m），且水位應固定。任何時候當筏或艇在使用時，水位都不得上升；

.5 液艙、貨艙或處所必須只含有乾淨的壓載水。水面上不允許有任何油層；和

.6 任何時候都不允許水位與最深甲板下腹板面板的距離在 1m 以內，這樣檢驗人員通往艙口的直接逃生通道才不致被隔絕。只有在被檢查的艙壁間距上設有甲板通道人孔並開啟時才能考慮水位超出甲板橫材，這樣才能保證任何時候檢驗人員都可使用逃生通道。其他有效的通往甲板的逃生通道也可予以考慮。

5.5.5 如腹板深度為 1.5m 或以下，筏或艇可允許單獨用於在液艙或處所甲板下的區域的檢查。

5.5.6 如腹板深度超過 1.5m，筏或艇可僅允許單獨用於下列之一的情況：

.1 甲板下結構的塗層處於“良好”狀況，且無鏽蝕的跡象；或

.2 如果在每一間距上設置一個允許安全進出的永久通道。該通道應：

.1 通過每一間距內的垂直梯直接通向甲板，該梯在甲板下約 2m 處設有一個小平台；或

.2 通過在液艙每一端都設有通往甲板的梯子的縱向永久平台通向甲板。該平台應在液艙的全長範圍內布置在與甲板下結構的筏運檢查所需要的最高水位的相同平面，或其上。為此，與最高水位對應的空餘量應假定在甲板橫框架的跨距中點和液艙長度中點處測量至距甲板板不大於 3m。

如上述條件都不能滿足，則應為甲板下區域的檢驗提供腳手架或其他等效裝置。

5.5.7 5.5.5 和 5.5.6 所述的單獨使用筏或艇並不排除在檢驗過程中使用艇或筏在液艙範圍內的移動。

5.6 *檢驗計劃會議*

5.6.1 在檢驗之前和檢驗期間，現場驗船師和船上船東代表要做好適當準備，進行密切合作，這是執行安全有效檢驗的重要一環。在船上檢驗期間應定期召開安全會議。

5.6.2 為確保檢驗能安全有效地進行，應在換證和中間檢驗的任何部分開始之前，召開由現場驗船師、現場船東代表、測厚公司測量人員（視情況而定）和船長或由船長或公司指派的具有相應資質的代表參加的檢驗計劃會議，以確定檢驗計劃中預見的所有布置均已到位（還參見 7.1.2）。

5.6.3 會議中應討論的項目的示意性清單如下：

.1 船舶計劃（即航線、靠碼頭和離碼頭操縱、靠泊時段、貨物和壓載作業等）；

.2 測厚的規定和布置（即通道、清潔/除垢、照明、通風、人員安全）；

.3 測厚範圍；

.4 認可標準（參見最小厚度表）；

.5 考慮了塗層狀況和可疑區域/顯著腐蝕區域後確定的近觀檢驗和測厚範圍；

.6 測厚的實施；

.7 總體上和發現不均勻腐蝕/點蝕之處的代表性讀數的採集；

.8 繪製出顯著腐蝕區域；和

.9 現場驗船師、測厚公司測量人員以及船東代表之間就發現的相關問題進行溝通。

6 船上文件

6.1 *總則*

6.1.1 船東應獲取、提供並在船上保存 6.2 和 6.3 規定的文件，隨時供驗船師使用。6.2 中所述的狀況評估報告應包括一份英文譯文。

6.1.2 文件應在船舶的整個營運壽命期間保存在船上。

6.2 *檢驗報告案卷*

6.2.1 檢驗報告案卷應是船上文件的一個組成部分，包括：

.1 結構檢驗報告（附件 6）；

.2 狀況評估報告（附件 7）；和

.3 測厚報告（附件 8）。

6.2.2 船東及主管機關的辦事處，或經主管機關認可的組織的辦事處，也應備有檢驗報告案卷可供使用。

6.3 ***支持性文件***

6.3.1 船上應備有以下方面的附加文件可供使用：

.1 5.1 要求的檢驗計劃，直至換證檢驗或中間檢驗（如適用）完成；

.2 貨艙和壓載艙主結構圖；

.3 以前修理史；

.4 貨物和壓載史；

.5 船上人員對以下方面的檢查：

.1 總體結構損耗；

.2 艙壁和管路泄漏；和

.3 塗層或防腐系統狀況（如有）。報告製作格式如附件 3 所示；和

.6 任何其他有助於識別臨界結構區域和/或需要檢查的可疑區域的資料。

6.4 ***船上文件審核***

檢驗前，驗船師應檢查船上文件資料的完整性及其內容，並將其作為檢驗的基礎。

7 測厚程序

7.1 ***總則***

7.1.1 如要求的測厚不是由代表主管機關的被認可組織進行，則應由被認可組織的驗船師在場見證測厚過程。驗船師在船上的時間應視監督該測厚過程的範圍而定。

7.1.2 測厚公司應參加在檢驗開始前舉行的檢驗計劃會議。

7.1.3 結構測厚所處位置如需進行近觀檢驗，則此種測厚應與近觀檢驗同時進行。

7.1.4 在任何情況下，測厚範圍應足以代表實際的平均狀況。

7.1.5 測厚程序要求見附件 12。

7.2 ***測厚公司的認證***

測厚應由主管機關認可的組織根據附件 5 規定的原則予以認證的合格公司進行。

7.3 報告

7.3.1 應編制一份測厚報告並提交給主管機關。該報告應給出測量部位、所測得的厚度以及相應的原始厚度。此外，報告還應說明進行測厚的日期、測量設備的類型、測量人員的姓名及其資質，並由測厚人員簽字。測厚報告應遵循附件 8 建議的測厚程序中規定的原則。

7.3.2 驗船師應審核最終的測厚報告並在封面上會簽。

8 檢驗報告和評估

8.1 *檢驗報告的評估*

8.1.1 檢驗期間收集的船舶結構狀況的數據和資料應用於評估船舶的可接受性和連續結構完整性。

8.1.2 應由主管機關或經主管機關授權的被認可組織對資料進行分析並予以簽註，其分析的結論應作為狀況評估報告的一部分。

8.2 *報告*

8.2.1 檢驗報告原則見附件 6。

8.2.2 當檢驗在不同的檢驗站分別進行時，檢驗的每一部分均應出具報告。其後的現場驗船師在繼續或完成檢驗之前，應可獲得已經檢查和/或試驗項目的清單（壓力試驗、測厚等）以及項目是否已做記錄的說明。

8.2.3 應向船東簽發附件 7 所示的檢驗狀況評估報告以及結果，並應將其留存在船上供以後檢驗時查閱。狀況評估報告應由主管機關或代表主管機關的被認可組織予以簽註。

附件 1

換證檢驗時的近觀檢驗要求

附錄 1 - 雙舷側散貨船換證檢驗時的近觀檢驗最低要求，不包括礦砂船

船齡≤5 年	5 年＜船齡≤10 年	10 年＜船齡≤15 年	船齡＞15 年
第 1 次換證檢驗	**第 2 次換證檢驗**	**第 3 次換證檢驗**	**第 4 次換證檢驗**
每種類型兩個代表性水壓載艙內各一個橫向強框架及附連的板和縱骨。這包括任何一側的最前部頂邊艙和雙舷側水壓載艙。（A） 兩個選擇的貨艙橫艙壁，包括頂凳、底凳的內部結構（當設有）。（C） 所有貨艙艙口蓋和艙口圍板（板和扶強材）。（D）	在每個水壓載艙內的一個橫向強框架及附連的板和縱骨（如適用）。（A） 在一個包括頂邊艙、底邊艙和雙舷側壓載艙的橫剖面內的前後橫艙壁，包括其扶強材系統。（A） 最前面的雙舷側艙內普通橫向框架肋骨的 25%。（B） 每個貨艙內一道橫艙壁，包括頂凳、底凳的內部結構（如設有）。（C） 所有貨艙艙口蓋和艙口圍板（板和扶強材）。（D） 所有貨艙口之間，貨艙開口邊線內的所有甲板板和甲板下結構。（E）	在每個水壓載艙內所有橫向強框架及附連的板和縱骨（如適用）。（A） 在每一水壓載艙內的所有橫艙壁，包括其扶強材系統。（A） 所有的雙舷側艙內普通橫向框架肋骨的 25%。（B） 所有貨艙橫艙壁，包括頂凳、底凳的內部結構（如設有）。（C） 所有貨艙艙口蓋和艙口圍板（板和扶強材）。（D） 所有貨艙口之間，貨艙開口邊線內的所有甲板板和甲板下結構。（E）	在每個水壓載艙內所有橫向強框架及附連的板和縱骨（如適用）。（A） 在每一水壓載艙內的所有橫艙壁，包括其扶強材系統。（A） 所有雙舷側艙內的所有普通橫向框架肋骨。（B） 以下與第 3 欄的（C）-（E）相同

（A）、（B）、（C）、（D）和（E）是近觀檢查和測厚區域（見附件 8 附錄 3 草圖）

（A） 頂邊艙、底邊艙和雙舷側壓載艙內的橫向強框架或水密橫艙壁。艏艉尖艙內的橫向強框架係指一個完整的橫向環狀強框架，包括鄰接

的結構件。

（B） 雙舷側艙內的普通橫向框架肋骨。

（C） 貨艙橫艙壁、板、扶強材和縱桁。

（D） 貨艙艙口蓋和艙口圍板。

（E） 貨艙口之間貨艙開口邊線內甲板板和甲板下結構。

註： 橫艙壁近觀檢驗應在以下四個水平面進行：

水平面（a）： 對無底凳船直接在內底板以上、封槽板（如設有）以上和卸貨板以上。

水平面（b）： 對有底凳船直接在底凳頂板以上及以下和卸貨板以上。

水平面（c）： 大約在艙壁高度的一半處。

水平面（d）： 直接在上甲板以下和頂邊艙附近及有頂凳船的頂凳底板以下或直接在頂邊艙以下。

附錄 2

礦砂船換證檢驗時的近觀檢驗最低要求

船齡＜5 年	5 年＜船齡≤10 年	船齡＞10 年
第 1 次換證檢驗	**第 2 次換證檢驗**	**第 3 次及以後換證檢驗**
一個完整的強肋骨環，包括鄰近的邊壓載艙構件。（A） 一道橫艙壁下部，包括縱桁材系統和鄰近的一個壓載艙構件。（A）	所有完整的強肋骨環，包括鄰近的一個邊壓載艙構件。（A） 一根甲板橫樑，包括臨近的每一剩餘壓載艙內甲板構件。（A） 完整的前和後橫艙壁，包括縱桁材系統和鄰近的一個邊壓載艙構件。（A） 一道橫艙壁下部，包括縱桁材系統和鄰近的剩餘壓載艙構件。（A）	所有完整的強肋骨環，包括鄰近的每一個壓載艙構件。（A） 所有完整的橫艙壁，包括縱桁材系統和鄰近的每一個壓載艙構件。（A） 一道完整的強肋骨環，包括鄰近的每一個邊空艙構件。（A） 如主管機關或經主管機關認可的組織認為必要，附加空艙的強肋骨環。（A）
兩道選擇的貨艙橫艙壁，包括頂凳和底凳（如設置）的內部構件。（C）	每個貨艙的一道橫艙壁，包括頂凳和底凳（如設置）的內部構件。（C）	所有貨艙的橫艙壁，包括頂凳和底凳（如設置）的內部構件。（C）
所有貨艙蓋和艙口圍（板和加強筋）。（D）	所有貨艙蓋和艙口圍板（板和加強筋）。（D）	所有貨艙蓋和艙口圍（板和加強筋）。（D）
	所有甲板板和貨艙口之間艙口開口線以內的甲板下構件。（E）	所有甲板板和貨艙口之間艙口開口線以內的甲板下構件。（E）

（A）、（C）、（D）和（E）是近觀檢驗和測厚的區域（見附件 8 附錄 3 草圖）

（A） 邊壓載艙和空艙內的橫向強肋骨或水密橫艙壁。艏艉尖艙內的橫向強肋骨，係指一個完整的橫強肋骨環，包括鄰接構件；

（C） 貨艙橫艙壁板、扶強材和縱桁；

（D） 貨艙艙口蓋和艙口圍板；

（E） 貨艙口之間貨艙開口邊線以內甲板板和甲板下結構。

註： 橫艙壁近觀檢驗應在以下四個水平面進行：

水平面（a）： 對無底凳船直接在內底板以上、封槽板（如設有）以上和卸貨板以上；

水平面（b）： 對有底凳船直接在底凳頂板以上及以下和卸貨板以上；

水平面（c）： 大約在艙壁高度的一半處；

水平面（d）： 直接在上甲板以下和頂邊艙附近及有頂凳船的頂凳底板以下或直接在頂邊艙以下。

附件 2

換證檢驗時的測厚要求

船齡≤5 年	5 年＜船齡≤10 年	10 年＜船齡≤15 年	船齡＞15 年
第 1 次換證檢驗	**第 2 次換證檢驗**	**第 3 次換證檢驗**	**第 4 次換證檢驗**
1 可疑區域	1 可疑區域 2 在貨物長度區域內： 貨艙艙口線外的甲板板的兩個橫剖面 3 按附件 1 經受近觀檢驗的構件的測量點，供總體評定並作記錄腐蝕形式用 4 上述第 2 點考慮的橫剖面處舷側乾濕交變列板 5 貨物長度區域外選擇的舷側乾濕交變列板	1 可疑區域 2 在貨物長度區域內： .1 貨艙艙口線外的每塊甲板板 .2 貨艙艙口線外兩個橫剖面，其中一個在船中部區域內 3 按附件 1 經受近觀檢驗的構件的測量點，供總體評定並作記錄腐蝕形式用 4 貨物長度區域內所有舷側乾濕交變列板 5 貨物長度區域外選擇的舷側乾濕交換列板	1 可疑區域 2 在貨物長度區域內： .1 貨艙艙口線外的每一塊甲板板 .2 貨艙艙口線外三個橫剖面，其中一個在船中部區域內 .3 每塊船底板 3 第 3 欄的第 3 點 4 全長範圍內所有舷側乾濕交變列板

附件 3

船東檢查報告

結構狀況

船名：.....						
船東檢查報告-結構狀況						
液艙/貨艙號：.....						
鋼級： 甲板：..... 舷側：.....						
船底：..... 縱艙壁：.....						
構件	裂紋	屈曲	腐蝕	塗層狀況	鏽點	改動/修理	其他
甲板：							
船底：							
舷側：							
舷側肋骨：							
縱艙壁：							
橫艙壁：							
進行修理的原因：							
進行的測厚（日期）：							
總體結果：							
過期檢驗：							
船級遺留項目：							
意見：							
檢查日期：.....							
檢查員：.....							
簽字：.....							

附件 4A

檢驗計劃

基本資料和概況

船名：
IMO編號：
船旗國：
船籍港：
總噸位：
載重量（公噸）：
垂線間長度（m）：
造船廠：
船體號：
被認可組織（RO）：
RO的船舶標識號：
船舶建造日期：
船東：
測厚公司：

1 序言

1.1 *範圍*

1.1.1 本檢驗計劃包括在本規則中要求的貨物長度區域、貨艙、壓載艙（包括艏艉尖艙）內進行全面檢驗、近觀檢驗、測厚和壓力試驗的最小範圍。

1.1.2 檢驗布置和安全方面應經現場驗船師認可。

1.2 *文件*

按第 6 節的要求，制定檢驗計劃所用的全部文件應在檢驗期間在船上可供使用。

2 貨艙、液艙和處所的布置

本部分檢驗計劃應以圖紙或文字形式提供檢驗適用範圍內的貨艙、液艙和處所布置的資料。

3 貨艙、液艙和處所的一覽表及其使用情況、塗層範圍和防腐系統的資料

本部分檢驗計劃應說明與檢驗計劃調查表中提供的船舶貨艙和液艙使用情況、塗層範圍和防腐系統資料有關的任何變化（並更新資料）。

4 檢驗條件

本部分檢驗計劃應提供有關的檢驗條件的資料，如：貨艙和液艙清洗、除氣、通風和照明等。

5 結構通道的設置和方法

本部分檢驗計劃應指明與檢驗計劃調查表中提供的結構通道的設置和方法的資料有關的任何變化（並更新資料）。

6 檢驗設備清單

本部分檢驗計劃應確定並列出為進行檢驗和所要求測厚提供的設備。

7 檢驗要求

7.1 *全面檢驗*

本部分檢驗計劃應確定並列出本船按 2.5.1 應進行全面檢驗的處所。

7.2 *近觀檢驗*

本部分檢驗計劃應確定並列出本船按 2.5.2 應進行近觀檢驗的船體結構。

8 確定進行試驗的液艙

本部分檢驗計劃應確定並列出本船按 2.7 應進行試驗的貨艙和液艙。

9 確定測厚的區域和剖面

本部分檢驗計劃應確定並列出按 2.6.1 應測厚的區域和剖面。

10 船體結構最小厚度

本部分檢驗計劃應按.1 或.2 詳細規定應進行檢驗的本船船體的最小厚度：

.1 按本船的船體結構圖，按所附的損耗裕度表和原始厚度確定；

.2 在以下表中列出：

區域或位置	**建造的原始厚度（mm）**	**最小厚度（mm）**	**顯著腐蝕厚度（mm）**
甲板			
板			
縱骨			
縱桁			
橫跨甲板板			
橫跨甲板扶強材			
船底			
板			
縱骨			
縱桁			
內底			
板			
縱骨			
縱桁			
肋板			
頂邊艙處的船舷			

區域或位置	**建造的原始厚度（mm）**	**最小厚度（mm）**	**顯著腐蝕厚度（mm）**
板			
縱骨			
底邊艙處的船舷			
板			
縱骨			
雙殼液艙處的船舷（如適用）			
板			
縱骨或普通橫向肋骨			
縱桁			
縱艙壁內側（如適用）			
板			
縱骨（如適用）			
縱骨或普通橫向肋骨			
縱桁（如適用）			
橫艙壁			
板			
扶強材（如適用）			
頂凳板			
頂凳扶強材			
底凳板			
底凳扶強材			
頂邊艙內橫向強肋骨			
板			
折板			
扶強材			
底邊艙內橫向強肋骨			
板			
折板			
扶強材			
雙舷側艙內橫向強肋骨			
板			

區域或位置	建造的原始厚度（mm）	最小厚度（mm）	顯著腐蝕厚度（mm）
折板			
扶強材			
艙口蓋			
板			
扶強材			
艙口圍板			
板			
扶強材			

*註：*本檢驗計劃應附有損耗裕度表。

11 測厚公司

本部分檢驗計劃應指明與檢驗計劃調查表提供的測厚公司資料有關的任何變化（如有）。

12 與船舶有關的損壞經歷

本部分檢驗計劃應使用如下表格，提供至少最近三年內，貨艙、壓載艙區域以及貨物長度區域內空艙處的船體損壞細節。對這些損壞應進行檢驗。

該船按位置分類的船體損壞

貨艙、液艙或處所編號或區域	可能的原因（如已知）	損壞說明	位置	修理	修理日期

如損壞與設計有關，姐妹船或類似船舶的船體損壞（如有）

貨艙、液艙或處所編號或區域	可能的原因（如已知）	損壞說明	位置	修理	修理日期

13 以前檢驗中確定的顯著腐蝕區域

本部分檢驗計劃應確定以前檢驗中發現的顯著腐蝕區域並列出清單。

14 臨界結構區域和可疑區域

如有資料，本部分檢驗計劃應確定臨界結構區域和可疑區域並列出清單。

15 其他相關意見和資料

本部分檢驗計劃應提供與檢驗相關的任何其他意見和資料。

附錄

附錄 1 – 圖紙清單

5.1.3.2 要求備有貨艙和壓載艙的主要結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料。本檢驗計劃附錄應確定並列出作為本檢驗計劃組成部分的主要結構圖。

附錄 2 – 檢驗計劃調查表

船東已提交的檢驗計劃調查表（附件 4B）應附於本檢驗計劃後。

附錄 3 – 其他文件

本部分檢驗計劃應確定並列出作為本計劃組成部分的任何其他文件。

為符合 5.1.3，由船東配合主管機關制定。

日期：

（經授權的船東代表的姓名和簽字）

日期：

（經授權的主管機關代表的姓名和簽字）

附件 4B

檢驗計劃調查表

1 下述資料能使船東配合主管機關制定一份符合本規則要求的檢驗計劃。關鍵是船東在填寫本調查表時提供最新的資料。填寫完成的本調查表應提供本規則要求的所有信息和資料。

概況

船名：

IMO 編號：

船旗國：

船籍港：

船東：

被認可組織（RO）：

RO 的船舶標識號：

總噸位：

載重量（公噸）：

船舶建造日期：

為近觀檢驗和測厚檢查而提供通道裝置的資料

2 船東應在下表中說明通往應進行近觀檢驗和測厚的結構的通道。近觀檢驗係指現場驗船師在近距離目視範圍內（即通常伸手可及）對結構件細節進行的檢驗。

貨艙/液艙號	結構	臨時腳手架	筏	梯子	直接通道	其他方式（請說明）
F.P.	艏尖艙					
A.P.	艉尖艙					
貨艙	艙邊圍板					
	頂邊斜板					
	頂凳板					
	橫跨甲板					
	兩舷邊艙板					
	橫艙壁					
	底邊艙板					
	底凳板					
	艙頂					
頂邊艙	甲板下結構					
	舷側和結構					
	斜邊板和結構					
	腹板和艙壁					
底邊艙	底邊斜板和結構					
	舷側和結構					
	底部結構					
	腹板和艙壁					
雙舷側液艙	舷側和結構					
	內殼和結構					
	腹板和艙壁					
	雙層底結構					
	頂凳內部結構					
	底凳內部結構					
礦砂船邊艙	甲板下結構					
	舷側和結構					
	舷側垂直桁材和結構					
	縱艙壁和結構					
	縱艙壁桁材和結構					
	底板和結構					
	橫撐材/縱桁					

腐蝕性（如高硫含量）散裝貨物歷史記錄

船東的檢查

3 船東應填寫類似以下格式的表（下表僅為示例），根據本規則的要求提供至少最近三年內其對貨物長度區域範圍內所有貨艙、壓載艙和空艙的詳細檢查結果。

液艙/貨艙號	防腐（1）	塗層範圍（2）	塗層狀況（3）	結構蝕耗（4）	貨艙和液艙歷史記錄（5）
貨艙					
頂邊艙					
底邊艙					
雙舷側液艙					
雙層底艙					
頂凳					
底凳					
邊艙（礦砂船）					
艏尖艙					
艉尖艙					
其他處所					

註：

指明用於油類/壓載的液艙。

1） HC=硬塗層；SC=軟塗層；
SH=半硬塗層；NP=無保護

2） U=上部；M=中部
L=下部；C=全部

3） G=良好；F=尚好；P=差；

船東代表姓名：
……
簽字：……
日期：……

RC=重新敷設（過去三年中）

4） N =無情況記錄；Y=有情況記錄，

情況說明應附於調查表之後

5） DR=破損和修理；L=滲漏；

CV=改建（說明應附於調查表之後）

港口國監督檢查報告

列出包含船體相關結構缺陷的港口國監督檢查報告，以及關於糾正缺陷的資料：

安全管理系統

列出有關船體維護的不合格項，包括相關的糾正措施：

經認可測厚公司的名稱和地址：

附件 5

認證船體結構測厚公司的程序

1 適用範圍

本指南適用於對有意從事船體結構測厚的公司的認證。

2 認證程序

提交文件

2.1 應提交下列文件給主管機關認可的組織審批：

.1 公司概況，如組織和管理機構；

.2 公司在船體結構測厚方面的經歷；

.3 技術人員履歷、即技術人員作為測厚操作人員的經歷，對船體結構等的技術了解和經驗。操作者應具有符合公認的工業無損檢測（NDT）標準的資質；

.4 用於測厚的設備，如超聲波檢測設備及其維護和校正程序；

.5 測厚人員指南；

.6 測厚技術員的培訓計劃；

.7 按建議的測厚程序（見附件 8）的測量記錄格式。

公司審核

2.2 在提交的文件經審核合格後，應對公司進行審核，以確認公

司按照所提交的文件進行適當組織和管理，並確認其事實上有能力進行船舶的船體結構測厚工作。

2.3 發證取決於其在船上的測厚操作演示以及出具令人滿意的報告。

3 發證

3.1 在 2.2 所述的公司審核和 2.3 所述的測厚操作演示結果均合格後，主管機關或由主管機關認可的組織應簽發認可證書，同時出具一份關於該公司的測厚操作體系已獲認證的通知。

3.2 對該證書的換新/簽註應不超過三年的間隔期進行一次，以驗證公司保持原認可條件。

4 對業已認證的測厚操作體系作任何變更的報告

如公司對業已認證的測厚操作體系作任何變更，則應立即向主管機關認可的組織提交變更報告。如經主管機關認可的組織認為必要，應進行重新審核。

5 證書撤消

如遇下列情況可撤消證書：

.1 進行了不正確的測量，或測量報告有誤；

.2 驗船師發現公司經認可的測厚操作體系中存在任何缺陷；和

.3 公司未能按要求將上述 4 中所述的任何變更報告經主管機關認可的組織。

附件 6

檢驗報告原則

原則上，對應符合本規則要求的散貨船，驗船師應在其船體結構和管路系統的檢驗報告中包括下列內容。

1 總則

1.1 在下列情形裏，應形成檢驗報告：

.1 涉及定期船體檢驗，即相關的年度、中間和換證檢驗的開始、繼續和/或完成；

.2 已發現結構破損/缺陷時；

.3 已進行修理、換新或改建時；和

.4 已批註或消除船級條件（遺留項目）時。

1.2 報告應：

.1 提供證據，表明已按適用的要求進行了規定的檢驗；

.2 提供文件，表明檢驗中發現的情況、進行的修理以及批註或消除的船級條件（遺留項目）；

.3 提供檢驗記錄（包括採取的措施），作為可核查文件記錄的組成部分。檢驗報告應置於按要求存放在船上的檢驗報告案卷中；

.4 提供為以後的檢驗做計劃的信息；和

.5 提供可用於維護入級規範和須知的素材信息。

1.3 當檢驗在不同的檢驗站分別進行時，應為每一部分檢驗出具報告。其後的現場驗船師在繼續或完成檢驗之前，應可獲得已檢驗項目的清單、相關檢驗結果以及項目是否已做記錄的說明。還應列出已進行的測厚和液艙試驗，共下一位驗船師使用。

2 檢驗範圍

2.1 確定已進行全面檢驗的艙室。

2.2 確定已在每個壓載艙和貨艙內（包括艙蓋和圍板）進行近觀檢驗的位置，以及所使用的通道裝置的資料。

2.3 確定已在每個壓載艙和貨艙內（包括艙蓋和圍板）進行測厚的位置。

註： 確定進行近觀檢驗和測厚的位置應至少包括一份根據定期檢驗的類型和船齡對附件 A 規定的要求範圍的各結構件進行描述的確認書。

如只需進行部分檢驗，即一個橫向強框架、兩個選擇的貨艙橫艙壁時，應使用肋骨號確定每個壓載艙和貨艙內的位置。

2.4 對壓載艙和貨艙內保護塗層處於良好狀況而且已對近觀檢驗和/或測厚範圍作特殊考慮的區域，應確定經特殊考慮的結構。

2.5 確定應經受液艙試驗的液艙。

2.6 確定甲板上以及貨艙、壓載艙、管隧、隔離艙和空艙內的如下管路系統：

.1 已進行的包括管系及其閥和附件的內部檢驗和測厚在內的相關檢查；和

.2 已進行的工作壓力的操作試驗。

3 檢驗結果

3.1 每個液艙內保護塗層的有關類型、範圍和狀況（“良好”、“尚好”或“差”）。

3.2 每個艙室的結構狀況以及以下相關資料：

.1 確定發現的問題，例如：

.1 腐蝕及對位置、類型和範圍的描述；

.2 顯著腐蝕的區域；

.3 裂紋/裂口及對位置和範圍的描述；

.4 屈曲及對位置和範圍的描述；和

.5 凹痕及對位置和範圍的描述；

.2 確定為發現結構破損/缺陷的艙室。報告可附草圖/照片加以補充；和

.3 測厚報告應由在船上監督測量工作的驗船師核實並簽字。

4 對發現的問題所採取的行動

4.1 每當現場驗船師認為需要進行修理時，應在編號的清單中標出應予修理的每一項目。每當進行修理時，應報告實施的修理的細節，具體提及編號的清單中的相關項目。

4.2 應報告已進行的修理並標明：

.1 艙室；

.2 結構構件；

.3 修理方法（即：換新或改動），包括：

.1 鋼級和尺度（如與原始材料的區別）；

.2 草圖/照片，如適用；

.4 修理範圍；和

.5 無損檢測（NDT）/試驗。

4.3 對在檢驗時未完成的修理，船級條件/遺留項目中應規定該修理的具體完成期限。為向參與修理檢驗的驗船師提供正確和適當的資料，船級條件/遺留項目應足夠詳細，並標明應進行修理的每一項目。對大範圍修理的確定，可參考檢驗報告。

附件 7

狀況評估報告

在換證檢驗完成後簽發

船舶概況

船名：　　船級/主管機關標識號：

前船級/主管機關標識號：

IMO 編號：

船籍港：　　船旗國：

前船旗國：

載重量：　　總噸位：

（公噸）　　本國法定：

國際噸位丈量公約（1969）：

建造日期：　　船級符號：

重大改建日期：

改建類型：　　船東：

前船東：

1　下列檢驗報告和文件已經簽署者審核，並查明合格。

2　檢驗狀況評估附於表 2。

3　換證檢驗已按本規則在.....（日期）完成。

狀況評估報告填寫人	姓名 簽字	職務
辦事處	日期	
狀況評估報告填寫人	姓名 簽字	職務
辦事處	日期	

所附的報告和文件：

1）

2）

3）

4）

5）

6）

狀況評估報告目錄

第 1 部分 - 船舶概況： - 見首頁

第 2 部分 - 報告審核： - 檢驗地點和方法

第 3 部分 - 近觀檢驗： - 範圍（液艙/貨艙）

第 4 部分 - 測厚： - 參見測厚報告

- 測量點一覽表

- 單獨表格指明顯著腐蝕的處所及相應的：

  - 厚度減小

  - 腐蝕形式

第 5 部分 - 液艙防腐系統： - 單獨表格指明：

  - 塗層位置

  - 塗層狀況（如適用）

第 6 部分 - 修理： - 處所/區域標識

第 7 部分 - 船級條件/船旗國要求：

第 8 部分 - 備忘錄： - 可接受的缺陷

- 未來檢驗時的關注點，如可疑區域

- 因塗層脫落而擴大的年度/中間檢驗

第 9 部分 - 結論： - 檢驗報告的評估/驗證說明

測厚摘錄

參見測厚報告：

顯著腐蝕液艙/區域[1]位置或深度鏽點位置[3]	厚度減小（%）	腐蝕形式[2]	備註：（如參考所附草圖）

註：

1 顯著腐蝕，即允許損耗範圍的 75% - 100%。

2 P = 鏽點

C = 總體腐蝕

3 應註明所有鏽點密度達 20%或以上、損耗為顯著腐蝕範圍或鏽點的平均深度為實際板厚度的 1/3 或以上的船底板。

液艙/貨艙防腐系統

液艙/貨艙號[1]	液艙/貨艙防腐系統[2]	塗層狀況[3]	備註

註：

1 應列出所有壓載艙和貨艙。

2 C = 塗層 NP = 無保護

3 塗層狀況根據以下標準：

“良好”係指僅有少量點狀鏽斑。

“尚好”係指在扶強材的邊緣和焊縫的連接處塗層有局部脫落和/或所檢驗的區域中有超過 20%或更大範圍的輕度鏽蝕，但小於定義“差”的狀況。

“差” 係指在檢驗的區域中有超過 20%或更大範圍的塗層普遍剝落，或有 10%或更大範圍的塗層產生硬質鏽皮。

如塗層狀況為“差”，應擴大年度檢驗的範圍，這應在狀況評估報告第 8 部分中予以註明。

附件 8

建議的測厚程序

1 本程序應用於記錄附件 A 的 B 部分要求的厚度測量。

2 應酌情使用測厚單格式 TM1-DSBC、TM2-DSBC(i)、TM2-DSBC(ii)、TM3-DSBC、TM4-DSBC、TM5-DSBC 和 TM6-DSBC（附錄 2）記錄厚度測量。應說明最大允許減小量。可在附加的文件中說明最大允許減小量。

3 附錄 3 是有關報告格式和厚度測量程序的圖解和說明。

附錄 1

測厚報告船舶概況

船名： ……

IMO 編號： ……

船級/主管機關標識號： ……

船籍港： ……

總噸位： ……

載重噸： ……

建造日期： ……

船級社： ……

進行測厚的公司名稱： ……

……

測厚公司的認證機構： ……

證書號： ……

證書有效期自……至……

測厚地點： ……

首次測量日期： ……

最後測量日期： ……

換證檢驗/中間檢驗日期： ……

測厚設備情況： ……

測量者資質： ……

報告編號： …… 頁數 ……頁

測量者姓名： …… 驗船師姓名： ……

測量者簽字： …… 驗船師簽字： ……

公司公章: …… 主管機關： ……

公章

附錄 2

所有甲板板、所有船底外板和舷側外板厚度測量報告*（TM1-DSBC）

船名：.....船級標識號：.....報告編號：..... IMO 編號：.....

列板位置																	
板材位置	編號或符號	原始厚度 mm	舯前讀數						舯後讀數						平均減小量 %		
			測量		減小量 P		減小量 S		測量		減小量 P		減小量 S				
			P	S	mm	%	mm	%	P	S	mm	%	mm	%	P	S	mm
舯前第 12 塊																	
第 11 塊																	
第 10 塊																	
第 9 塊																	
第 8 塊																	
第 7 塊																	
第 6 塊																	
第 5 塊																	
第 4 塊																	
第 3 塊																	
第 2 塊																	
第 1 塊																	
舯後第 1 塊																	
第 2 塊																	
第 3 塊																	
第 4 塊																	
第 5 塊																	
第 6 塊																	
第 7 塊																	
第 8 塊																	
第 9 塊																	
第 10 塊																	
第 11 塊																	
第 12 塊																	

測量者簽字：.....

註 – 見下頁

* 不適用者劃去

TM1-DSBC 報告的註釋

1 本報告應用於記錄下列厚度測量：

.1 貨物長度區域內的所有強力甲板板；

.2 貨物長度區域內的所有龍骨板、船底外板和舭列板；

.3 貨物長度區域外的舷側外板，包括選擇的乾濕交變列板；和

.4 貨物長度區域內的所有乾濕交變列板。

2 應清楚示明如下列板位置：

.1 對於強力甲板，示明甲板邊板內列板的編號；

.2 對於船底板，示明龍骨板外列板的編號；和

.3 對於舷側外板，示明舷頂列板以下列板在外板展開圖上的編號和字母。

3 僅對開口線外的甲板板列板予以記錄。

4 應對舯前和舯後的所有區域的板進行測厚；如有板橫跨壓載艙/貨艙邊界，則應記錄在各類型液艙的板區域分別測得的值。

5 所記錄的單點測量應代表多點測量的平均值。

6 最大允許減小量可在附加的文件中說明。

橫剖面處舷側外板和甲板板厚度測量報告（一、兩或三個橫剖面）

（TM2-DSBC（i））

船名：.....船級標識號：.....報告編號：..... IMO 編號：.....

強力甲板和舷頂列板																													
	第.....號肋骨的第一個橫剖面									第.....號肋骨的第二個橫剖面										第.....號肋骨的第三個橫剖面									
列板位置	編號或符號	原始厚度	最大允許減小量	測量		減小量 P		減小量 S		編號或符號	原始厚度	最大允許減小量	測量		減小量 P		減小量 S		編號或符號	原始厚度	最大允許減小量	測量		減小量 P		減小量 S			
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		
甲板邊板																													
舷內第 1 塊列板																													
第 2 塊																													
第 3 塊																													
第 4 塊																													
第 5 塊																													
第 6 塊																													
第 7 塊																													
第 8 塊																													
第 9 塊																													
第 10 塊																													
第 11 塊																													
第 12 塊																													
第 13 塊																													
第 14 塊																													
中間列板																													
舷頂列板																													
舷頂總數																													

測量者簽字：.....

註 – 見下頁

TM2-DSBC（i）報告的註釋

1 本報告應用於記錄以下的厚度測量：

強力甲板板和舷頂列板橫剖面

貨物長度區域內一個、兩個或三個剖面包括典型橫剖面圖表（附錄3）中的結構項目（1）、（2）和（3）。

2 僅對艙口開口線外的甲板板列板予以記錄。

3 頂部區域包括甲板板、甲板邊板和舷頂列板（包括圓形舷緣）。

4 應註明測量的確切肋骨號。

5 所記錄的單點測量應代表多點測量的平均值。

6 最大允許減小量可在附加的文件中說明。

橫剖面處舷側外板和甲板板厚度測量報告（一、兩或三個橫剖面）

（TM2-DSBC（ii））

船名：.....船級標識號：.....報告編號：..... IMO 編號：.....

外板																													
	第 號肋骨的第一個橫剖面									第 號肋骨的第二個橫剖面										第 號肋骨的第三個橫剖面									
列板位置	編號或符號	原始厚度	最大允許減小量	測量		減小量 P		減小量 S		編號或符號	原始厚度	最大允許減小量	測量		減小量 P		減小量 S		編號或符號	原始厚度	最大允許減小量	測量		減小量 P		減小量 S			
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		
舷頂列板下第 1 塊列板																													
第 2 塊																													
第 3 塊																													
第 4 塊																													
第 5 塊																													
第 6 塊																													
第 7 塊																													
第 8 塊																													
第 9 塊																													
第 10 塊																													
第 11 塊																													
第 12 塊																													
第 13 塊																													
第 14 塊																													
第 15 塊																													
第 16 塊																													
第 17 塊																													
第 18 塊																													
第 19 塊																													
第 20 塊																													
龍骨列板																													
船底總數																													

測量者簽字：.....

註 – 見下頁

TM2-DSBC（ii）報告的註釋

1 本報告應用於記錄以下的厚度測量：

舷側外板橫剖面

貨物長度區域內一個、兩個或三個剖面包括典型橫剖面圖表附錄 3 中的結構項目（3）、（4）、（5）和（6）。

2 船底區域包括龍骨板、船底板和舭部板。

3 應註明測量的確切肋骨號。

4 所記錄的單點測量應代表多點測量的平均值。

5 最大允許減小量可在附加的文件中說明。

橫剖面處縱向構件厚度測量報告（一、兩或三個橫剖面）

（TM3-DSBC）

船名：.....船級標識號：.....報告編號：..... IMO 編號：.....

	第.....號肋骨的第一個橫剖面									第.....號肋骨的第二個橫剖面									第.....號肋骨的第三個橫剖面								
結構件	項目編號	原始厚度	最大允許減小量	測量		減小量 P		減小量 S		項目編號	原始厚度	最大允許減小量	測量		減小量 P		減小量 S		項目編號	原始厚度	最大允許減小量	測量		減小量 P		減小量 S	
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%

測量者簽字：.....

註 – 見下頁

TM3-DSBC 報告的註釋

1 本報告應用於記錄以下的厚度測量：

橫剖面處縱向構件

貨物長度區域內兩個或三個剖面包括典型橫剖面圖表附錄 3 中的結構項目（10）至（25）。

2 應註明測量的確切肋骨號。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

雙層底、底邊和頂邊水壓載艙處橫向結構件厚度測量報告（TM4-DSBC）

船名：.....船級標識號：.....報告編號：..... IMO 編號：.....

液艙狀態										
結構位置										
結構件	項目	原始厚度	最大允許減小量	測量		減小量 P		減小量 S		
		mm	mm	P	S	mm	%	mm	%	

測量者簽字：.....

註 – 見下頁

TM4-DSBC 報告的註釋

1 本報告應用於記錄：

橫向構件的厚度測量，包括附錄 3 所列典型橫剖面圖上的相關結構項目（30）至（34）。

2 測量區域的指導參見附錄 3。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

貨艙內水密橫艙壁厚度測量報告（TM5-DSBC）

船名：.....船級標識號：.....報告編號：..... IMO 編號：.....

結構位置								
結構組件（板/扶強材）								
	原始厚度	最大允許減小量	測量		減小量 P		減小量 S	
	mm	mm	P	S	mm	%	mm	%

測量者簽字：.....

註 – 見下頁

TM5-DSBC 報告的註釋

1 本報告應用於記錄：

貨艙內水密橫艙壁的厚度測量。

2 測量區域的指導參見附錄 3。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

其他結構件厚度測量報告（TM6-DSBC）

船名：.....船級標識號：.....報告編號：..... IMO 編號：.....

結構件									草圖
結構位置									
狀態	原始厚度	最大允許減小量	測量		減小量 P		減小量 S		
	mm	mm	P	S	mm	%	mm	%	

測量者簽字：.....

註 – 見下頁

TM6-DSBC 報告的註釋

1 本報告應用於記錄：

其他結構件的厚度測量，包括附錄 3 表明的典型橫剖面圖表中的相關結構裂痕（40）、（41）和（42）。

2 測量區域的指導參見附錄 3。

3 所記錄的單點測量應代表多點測量的平均值。

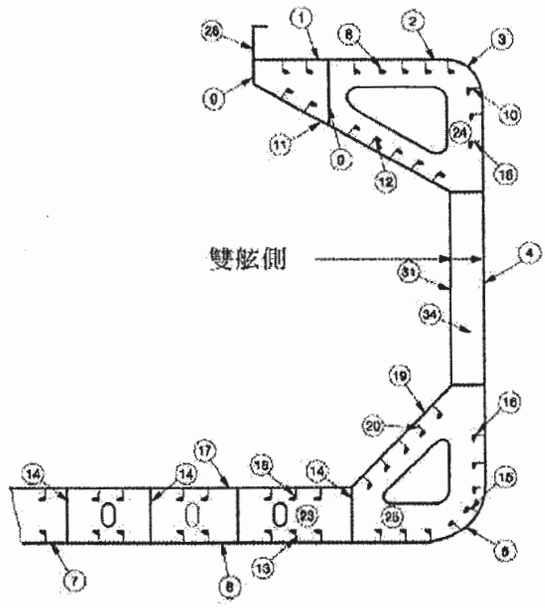
4 最大允許減小量可在附加的文件中說明。

附錄 3

厚度測量-雙舷側結構船舶

厚度測量-雙舷側散貨船

雙舷側散貨船表明縱向和橫向構件的典型橫剖面



TM2-DSBC(i)和(ii)的報告
(1) 強力甲板板
(2) 甲板邊板
(3) 舷頂列板
(4) 舷側板
(5) 舭板
(6) 船底外板
(7) 龍骨板

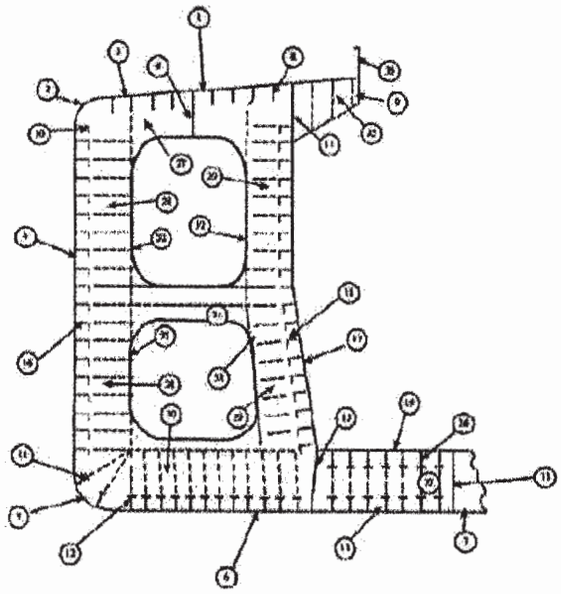
TM3-DSBC 的報告	
(8) 甲板縱骨	(16) 舷側縱骨（如有）
(9) 甲板縱桁	(17) 內底板
(10) 舷頂列板縱骨	(18) 內底縱骨
(11) 頂邊艙斜板	(19) 底邊艙斜板
(12) 頂邊艙斜板縱骨	(20) 底邊艙斜板縱骨
(13) 船底縱骨	(31) 內側板
(14) 舭縱縱桁	- 內側縱骨（如有）
(15) 舭縱骨	- 邊壓載艙水平桁

TM4-DSBC 測量報告
(23) 雙層底艙肋板
(25) 底邊艙橫材
(34) 橫向強肋骨
- 頂邊艙橫材

TM6-DSBC 測量報告
(28) 艙口圍板
- 艙口間甲板板
- 艙口蓋

厚度測量 － 礦砂船

礦砂船表明縱向和橫向構件的典型橫剖面



TM2-DSBC(i)和(ii)的報告
(1) 強力甲板板
(2) 甲板邊板
(3) 舷頂列板
(4) 舷側板
(5) 舭板
(6) 船底外板
(7) 龍骨板

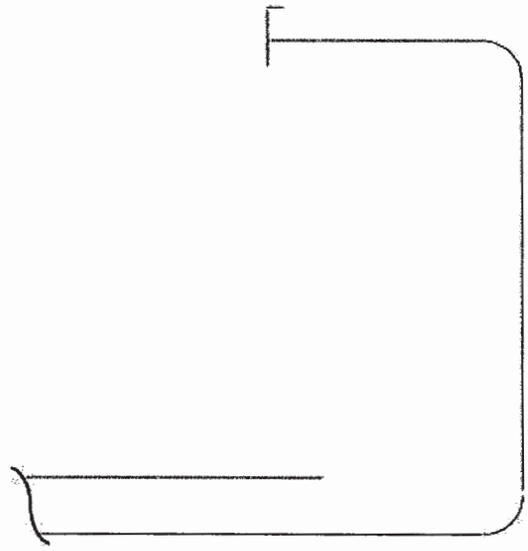
TM3-DSBC 的報告
(8) 甲板縱骨
(9) 甲板縱桁
(10) 舷頂列板縱骨
(11) 縱向艙壁頂列板
(12) 船底縱骨
(13) 船底縱桁
(14) 舭縱骨
(15) 縱向艙壁底列板
(16) 舷側縱骨
(17) 縱向艙壁板（剩餘部分）
(18) 縱向艙壁縱骨
(19) 內底板
(20) 內底縱骨
(21)
(22)
(23)
(24)

TM4-BC 測量報告
(25) 甲板橫材中央倉
(26) 肋板中央倉
(27) 甲板橫材邊艙
(28) 舷側垂直桁材
(29) 縱向艙垂直桁材
(30) 肋板邊艙
(31) 支撐
(32) 桁材面板
(33) 雙層底肋板
(34)
(35)

TM6-BC 測量報告
(36) 艙口圍板
(37) 艙口間甲板板
(38) 艙口蓋
(39)
(40)

厚度測量 – 雙舷側散貨船

橫剖面概要：本表可用於典型橫剖面不適用的船舶。



TM2-DSBC(i)和(ii)報告
(1) 強力甲板板
(2) 甲板邊板
(3) 舷頂列板
(4) 舷側板
(5) 舭板
(6) 船底外板
(7) 龍骨板

TM3-DSBC報告	
(8) 甲板縱骨	(16) 舷側縱骨
(9) 甲板縱桁	(17) 縱向艙壁板（剩餘部分）
(10) 舷頂列板縱骨	(18) 縱向艙壁縱骨
(11) 縱向艙壁頂列板	(19) 內底板
(12) 船底縱骨	(20) 內底縱骨
(13) 船底縱桁	(31) 內側板
(14) 舭縱骨	- 內側縱骨（如有）
(15) 縱向艙壁底列板	- 邊壓載艙水平桁

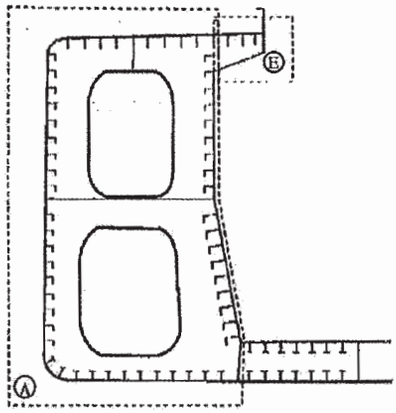
TM4-DSBC測量報告
(23) 雙層底艙肋板
(25) 邊艙橫材
(34) 橫向強肋骨
- 頂邊艙橫材

TM6-DSBC測量報告
(28) 艙口圍板
- 艙口間甲板板
- 艙口蓋

厚度測量 – 礦砂船

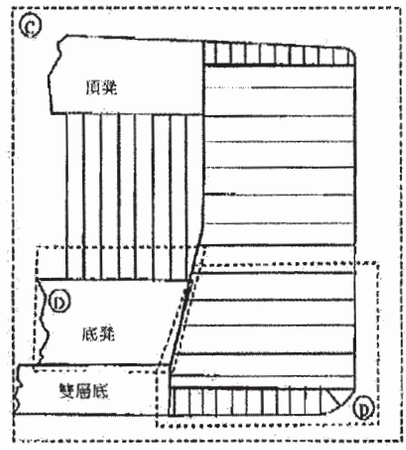
應進行近觀檢驗和厚度測量的區域-B 部分附件 1 界定的區域（A）、（C）、（D）和（E）- 應酌情在 TM3-DSBC、TM4-DSBC、TM5-DSBC 和 TM6-DSBC 中報告的厚度

典型橫剖面近觀檢驗



應酌情在 TM3-DSBC 和 TM4-DSBC 中報告的厚度

典型橫艙壁



應在 TM5-DSBC 中報告的厚度

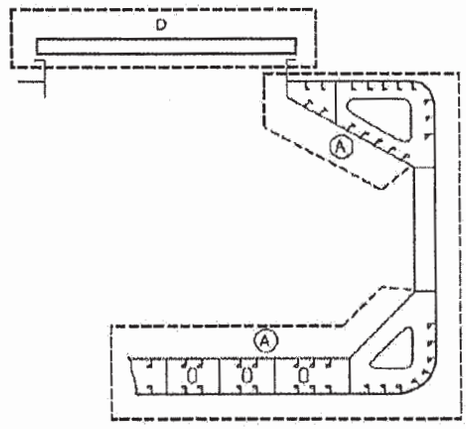
近觀檢驗區域

厚度測量–雙舷側散貨船

應進行近觀檢驗和厚度測量的區域-B 部分附件 1 界定的區域（A）至（E）- 應酌情在 TM3-DSBC、TM4-DSBC、TM5-DSBC 和 TM6-DSBC 中報告的厚度。

典型橫剖面

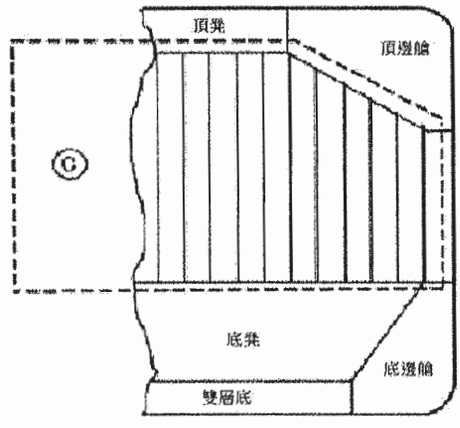
區域(A)和(D)



應酌情在 TM3-DSBC、TM4-DSBC 和 TM6-DSBC 中報告的厚度

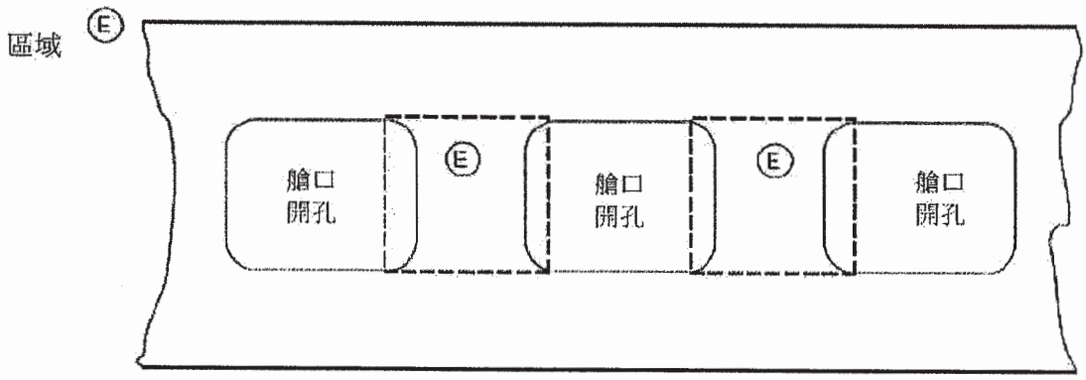
貨艙，橫艙壁

區域(C)



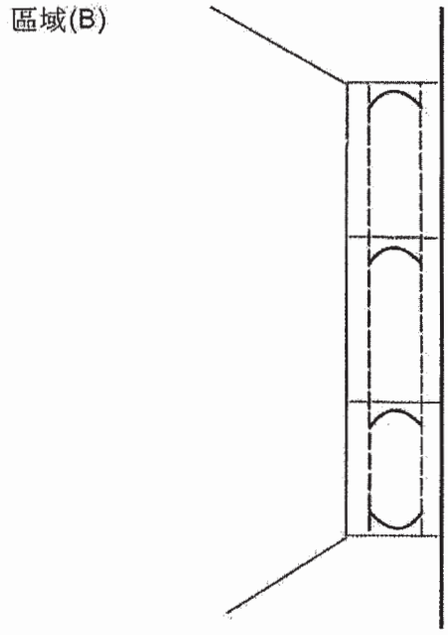
應在 TM5-DSBC 中報告的厚度

貨艙口之間貨艙開口連線以內甲板和甲板下結構典型區域



應在 TM1-DSBC 中報告的厚度

雙舷側艙室的普通橫向肋骨



應在 TM4-DSBC 中報告的厚度

附件 9

結合雙弦側散貨船加強檢驗計劃的技術評估的導則 – 船體換證檢驗

1 引言

本導則包含與技術評估有關的資料和建議，可結合雙舷側散貨船加強換證檢驗的計劃加以使用。如 5.1.5 所述，本導則是一套建議的方法，在認為必要和適當時，可由主管機關決定，結合制定所要求的檢驗計劃予以施用。

2 目的和原則

2.1 *目的*

2.1.1 本導則所述的技術評估的宗旨是幫助確定臨界結構區域、指定可疑區域，並把注意力放在那些極易發生損耗或損壞、或表明有損耗或損壞史的結構件或結構件區域。該資料可用於指定要進行測厚、近觀檢驗和液艙試驗的位置、區域、貨艙和液艙。

2.1.2 臨界結構區域係指已從計算中確定需進行檢測的區域或已從該船或類似船舶或姐妹船（如有）的營運史中確定易於出現損壞船舶結構完整性的裂紋、屈曲或腐蝕的區域。

2.2 *最低要求*

但是，本導則不可用於降低 B 部分附件 1 和 2 以及 2.7 中分別對測厚、近觀檢驗和液艙試驗的要求，這些要求在任何情況下都應作為最低要求予以遵守。

2.3 *時限*

如同檢驗計劃的其他方面一樣，本導則所述的技術評估應由船東或經營人配合主管機關，在換證檢驗開始之前完成，即在開始檢驗之前且通常在到期檢驗完成日期前至少 12 至 15 個月。

2.4 *應予考慮的方面*

2.4.1 特定船舶下列方面的技術評估可作為指定檢驗貨艙、液艙和區域的基礎，這些技術評估可包括對相關可能蝕耗的風險進行定量或定性評估：

.1 設計特徵，如不同結構組件的應力等級、設計細節和高強度鋼的使用範圍；

.2 與特定船舶及類似船舶（如有）的腐蝕、裂紋、屈曲、凹陷和修理有關的過去史；和

.3 與所載貨物類型、貨油/壓載的不同貨艙/液艙的使用、貨艙和液艙保護和塗層（如有）狀況有關的資料。

2.4.2 對各種結構件和區域易損壞或易蝕耗的相關風險的技術評估，應根據諸如參考資料 2、3 和 4 所列的經認可原則和慣例進行評判和確定。

3 技術評估

3.1 *一般要求*

3.1.1 有三種基本形式的可能缺陷，它們可能成為與檢驗計劃有關的技術評估對象，即腐蝕、裂紋和屈曲。碰撞損壞通常不包含在檢驗計劃中，因為凹陷通常在備忘錄中註明且由驗船師作為常規情況進行

處理。

3.1.2 結合檢驗計劃過程開展的技術評估，原則上應按圖 1 的圖解形式表示。

該方法的依據是對基本上與下列有關的知識和經驗的一種風險評估：

.1 設計；和

.2 腐蝕。

3.1.3 應考慮設計中容易因振動、高應力或疲勞造成屈曲或裂紋的有關結構細節。

3.1.4 腐蝕與老化過程有關，並且與新船防腐系統的質量和營運中的後續維護密不可分。腐蝕也可導致裂紋和/或屈曲。

3.2 *方法*

3.2.1 *設計細節*

3.2.1.1 本船及姐妹船和/或類似船舶（如有）的損壞經歷，是計劃過程中使用的主要資料來源。此外，還應包括從設計圖紙中選擇的結構細節。

3.2.1.2 應考慮的典型損壞經歷由以下兩方面構成：

.1 裂紋的數量、範圍、位置和發生次數；和

.2 屈曲位置。

3.2.1.3 該資料可在檢驗報告和/或船東檔案中包括船東自查結果中找到。這些缺陷應予以分析、註明並標記在草圖上。

3.2.1.4 此外，還應利用常規經驗。例如，應參照參考資料 2，其中包括單舷側散貨船結構細節的典型損壞和提出的修理方法目錄。還應參照參考資料 3，其中包括雙殼油船結構細節的典型損壞和提出的修理方法目錄，在一定程度上與雙舷側散貨船的結構細節相似。這些圖表應與主要圖紙的查閱一併使用，以比較實際結構並查找有可能易受損壞的類似細節。特別是，參考資料 3 的第 3 章涉及針對雙殼油船的各個方面，如應力集中部位、建造時未對中、腐蝕趨勢、疲勞因素和需特別注意的區域，而參考資料 3 的第 4 章涉及從雙殼（化學品船、OBO 船、礦砂/油船、氣體運輸船）結構缺陷獲得的經驗，這些都應在制定檢驗計劃時予以考慮。

3.2.1.5 除使用上述圖表外，審核主要結構圖紙還應包括核查已出現過裂紋的典型設計細節。造成損壞的因素應予以仔細考慮。

3.2.1.6 高強度鋼（HTS）的使用是一個重要因素。在使用普通低碳鋼時有着良好營運史的構件，在使用高強度鋼及其較高相關應力時，可能更易受損。甲板和船底結構的縱向材料使用高強度鋼的經驗普遍和總體上較好。在其他受到較高動應力的部位，如舷側結構，使用高強度鋼的經驗則不那麼令人鼓舞。

3.2.1.7 在這一方面，根據相關方法對典型和重要的組件及構件的應力計算可能證明有用，並應予以考慮。

3.2.1.8 所選擇的在該過程中確定的結構區域應予以記錄，並標記在將要納入檢驗計劃的結構圖上。

3.2.2 *腐蝕*

3.2.2.1 為評估相關的腐蝕風險，通常應考慮以下資料：

.1 液艙、貨艙和處所的使用狀況；

.2 塗層狀況；

.3 掃艙程序；

.4 以前腐蝕損壞；

.5 貨艙用作壓載艙的時間；

.6 貨艙和壓載艙的腐蝕風險；和

.7 鄰近加熱燃油艙的壓載艙位置。

3.2.2.2 參考資料 4 以典型狀況圖給出明確實例，其可用於判定和描述塗層狀況。

3.2.2.3 腐蝕風險的評估應基於參考資料 2 和 4 中一切適用於雙舷側結構的信息，同時基於為制定檢驗計劃而收集的資料得出的船舶狀況和船齡的相關資料。應列出各種貨艙、液艙和處所相應指明的腐蝕風險。

3.2.3 *近觀檢驗和測厚的位置*

3.2.3.1 根據腐蝕風險表和設計經驗的評估，可指定初次近觀檢驗和測厚（區域和剖面）的位置。

3.2.3.2 通常應指定已判定具備最大腐蝕風險的貨艙、液艙和處所內的測厚剖面。

3.2.3.3 最初應根據最大腐蝕風險指定進行近觀檢驗的液艙、貨艙和處所，並應始終包括壓載艙。選擇的原則應隨船齡的增長或在資料缺乏或不可靠時而增大範圍。

參考資料：

1 國際船級社協會（IACS），“統一要求 Z10.5，雙舷側散貨船船體檢驗”。

2 國際船級社協會（IACS），“散貨船：船體結構檢驗、評估和修理導則，2007 年 1 月”。

3 油船結構合作論壇（TSCF），“雙殼油船結構檢查和維護導則，1995”。

4 油船結構合作論壇（TSCF），“油船結構指導手冊，1997”。

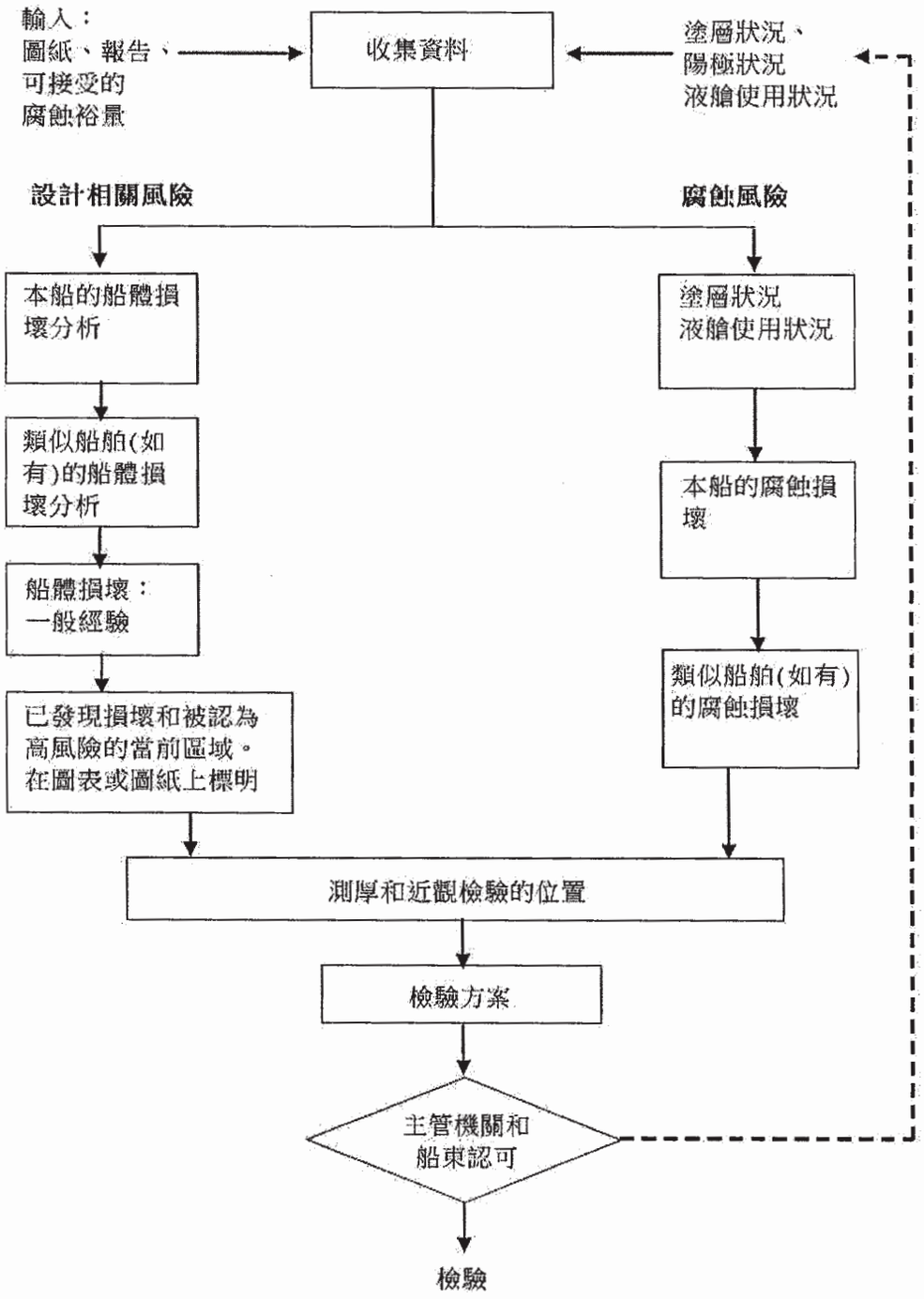


圖 1 – 技術評估和檢驗計劃過程

附件 10

雙舷側結構散貨船貨物長度區域內顯著腐蝕區域的測厚範圍要求

表 1 - 船底、內底和底邊艙結構

結構件	測量範圍	測量形式
船底板、內底板和底邊艙斜板	雙層底艙全艙寬，至少三個強肋骨間距，包括後艙壁至強肋板間距 測量所有吸口的周圍和下面	在縱骨和肋板之間的每個板格上作五點形測量
船底板、內底板和底邊艙斜板縱骨	在測量底板的每個強肋骨間距內，至少三根縱骨	在縱骨折板同一橫截線上測量三點，在縱骨腹板垂直方向上測量三點
船底縱桁，包括水密縱桁	在前、後水密肋板處和各艙中心處	桁材板同一垂線上單個測量，在每一個板格扶強材之間測一點；或每一處至少測三點
船底肋板，包括水密肋板	在測量底板的強肋骨間距內，三塊肋板，在肋板兩端和中部測量	在 $2m^2$ 的面積上作五點形測量
底邊艙的橫向環狀強框架	在測量底板的強肋骨間距內，三塊肋板	在 $1m^2$ 的板上作五點形測量 折板上單個測量
底邊艙水密橫艙壁或制蕩艙壁	– 艙壁下部 1/3	$1m^2$ 的板上作五點形測量
	– 艙壁上部 2/3	$2m^2$ 的板上作五點形測量
	– 扶強材（至少三根）	腹板，跨距內作五點形測量（在每端橫截線上測兩點，跨距中點測一點）。對折板，在每端和跨距中點單個測量
板格扶強材	如適用	單個測量

表 2 - 甲板結構，包括橫向甲板條、主貨艙口、艙口蓋、艙口圍板和頂邊艙

結構件	測量範圍	測量形式
橫向甲板條	可疑的橫向甲板條	在 1m 長的甲板下扶強材之間作五點形測量
甲板下扶強材	橫向構件 縱向構件	在跨距兩端和中點作五點形測量 在腹板和折板上各作五點形測量
艙口蓋	每側板和每端板（即裙板）上各三個位置 縱向三條帶：向舷外兩列，中心線處一列	每個位置作五點形測量 每條帶測量五個點
艙口圍板	圍板的每邊和每端：下部 1/3 處一條帶，上部 2/3 處一條帶	每條帶（即邊圍板或端圍板）測量五個點

結構件	測量範圍	測量形式
頂邊壓載水艙	a）水密橫艙壁： - 艙壁下部 1/3 - 艙壁上部 2/3 - 扶強材	在 1m² 板面上作五點形測量 在 1m² 板面上作五點形測量 在 1m 長度上作五點形測量
頂邊壓載水艙	b）兩個代表性制蕩橫艙壁： - 艙壁下部 1/3 - 艙壁上部 2/3 - 扶強材	在 1m² 板面上作五點形測量 在 1m² 板面上作五點形測量 在 1m 長度上作五點形測量
頂邊壓載水艙	c）三處代表性的強肋骨間距內的斜板： - 艙下部 1/3 - 艙上部 2/3	在 1m² 板面上作五點形測量 在 1m² 板面上作五點形測量
頂邊壓載水艙	d）可疑的縱骨和鄰接縱骨	在 1m 長的腹板和折板上各作五點形測量
主甲板板	可疑的板和鄰接的四塊板	在 1m² 板面上作五點形測量
主甲板縱骨	可疑的板	在 1m 長的腹板和折板上各作五點形測量
強肋骨/橫向構件	可疑的板	在 1m² 板面上作五點形測量

表 3 - 雙舷側散貨船的雙舷側處所（包括礦砂船空邊艙）結構

結構件	測量範圍	測量形式
舷側外板和內殼板： -頂列板和水平桁材處列板 -所有其他列板	- （沿艙長）至少三個強肋骨間距內每對肋骨/縱骨之間的板 - 在相同三個強肋骨間距內，每第三對縱骨之間的板	- 單個測量 - 單個測量
舷側外板和內殼板在下列位置上的肋骨/縱骨： -頂列板 -所有其他列板	- 在相同三個強肋骨間距內的每根肋骨/縱骨 - 在相同三個強肋骨間距內每第三根肋骨/縱骨	- 腹板同一橫截線上測三點，折板上測一點 - 腹板同一橫截線上測三點，折板上測一點
肋骨/縱骨： -肘板	在相同三個強肋骨間距內艙的頂部、中部和底部至少三處	在肘板上作五點形測量
垂直桁材和橫艙壁： -水平桁材處列板 -其他列板	- 至少兩個垂直桁材和兩道橫艙壁 - 至少兩個垂直桁材和兩道橫艙壁	- 約 2m² 面積上作五點形測量 - 每對垂直扶強材之間測兩點
水平桁材	至少三個強肋骨間距內每根桁材的板	每對縱桁扶強材之間測兩點
板格扶強材	如適用	單個測量

表 4 - 貨艙內橫艙壁

結構件	測量範圍	測量形式
底凳（如設有時）	- 與內底板的連接焊縫處 25mm 以內的橫帶 - 與底凳頂板的連接焊縫處 25mm 以內的橫帶	- 在 1m 長扶強材之間作五點形測量 - 在 1m 長扶強材之間作五點形測量
橫艙壁	- 在約半高處的橫帶 - 在鄰近上甲板或頂凳底板以下（對設有頂凳的船）的部分艙壁的橫帶	- 在 $1m^2$ 板面上作五點形測量 - 在 $1m^2$ 板面上作五點形測量

附件 11

散貨船貨艙蓋繫固裝置強度

1 繫固裝置

繫固裝置的強度應符合下列要求：

.1 應通過在圍板和艙蓋結構上適當間隔的裝置（螺栓、楔或類似裝置）對艙蓋板格進行繫固。確定布置和間距時，應根據艙蓋的類型和尺寸以及繫固裝置間的艙蓋邊緣剛度，充分考慮到風雨密的有效性。

.2 每一繫固裝置的淨橫剖面積不應小於：

$A = 1.4a/f\ (cm^2)$

式中：

a = 繫固裝置間距，不得小於 2m

$f = (\sigma_Y/235)^e$

σ_Y = 規定的用鋼最小上屈服應力，N/mm^2，不得大於臨界抗拉強度的 70%

e = 0.75，對 $\sigma_Y > 235$

= 1.0，對 $\sigma_Y \leq 235$

對於面積超過 5 m^2 的艙口，頂桿或螺栓的淨直徑應不小於 19mm。

.3 在艙蓋、圍板和十字接頭之間，應通過繫固裝置保持足

以達到風雨密性的密封條壓力。對壓力大於 5 N/mm 的密封條，橫剖面積應按直接比例增加。應規定密封條壓力。

.4 蓋板邊緣的剛度應足以保持繫固裝置間足夠的密封壓力。邊緣構件的慣性力矩 I 不應小於：

$I = 6\,pa^4$（cm^4）

式中：

p = 密封條壓力，N/mm，至少 5 N/mm

a = 繫固裝置間距，m

.5 繫固裝置結構應可靠並緊密地與艙口圍板、甲板或艙蓋連接。每個蓋板上的單點繫固裝置應具有基本相同的剛度特性。

.6 如安裝了桿子羊角，則應有彈性墊圈或減振器。

.7 如採用液壓羊角，則應有良好的設備確保在液壓系統失效時羊角仍被機械固定在關閉位置。

2 制動器

2.1 應通過制動器對 1 號和 2 號艙口蓋進行有效繫固，以防止壓力為 175 kN/m^2 時產生的橫向力。

2.2 應通過制動器對 2 號艙口蓋進行有效繫固，以防止壓力為 175 kN/m^2 時對前端的縱向力。

2.3 應通過制動器對 1 號艙口蓋進行有效繫固，以防止壓力為 230

kN/m^2時對前端的縱向力。如安裝了首樓，該壓力可降至 175 kN/m^2。

2.4 在制動器及其支撐結構，以及在制動器焊喉處計算的等效應力不應超過許可值 $0.8\sigma_Y$。

3 材料和焊接

如安裝符合本附件的制動器或繫固裝置，其包括焊條在內的製造材料應使主管機關滿意。

附件 12

測厚的程序要求

1 總則

船體結構檢驗所要求的測厚，如果不是由船級社自身進行，則應被驗船師見證。驗船師登輪應被記錄。這同樣適用於航行中進行的測厚。

2 檢驗會議

2.1 在換證或中間檢驗開始前，應召開由現場驗船師、現場船東代表和測厚公司代表參加的會議，以確保檢驗和測厚能夠安全且有效地在船上實施。

2.2 在會議上，應就以下事項對與測厚操作人員及船東代表的交流溝通達成一致：

.1 定期的測厚報告；和

.2 如果發現如下問題，立即通知驗船師：

.1 過度的和/或大面積腐蝕或重要的點蝕/凹槽；和

.2 結構缺陷，如屈曲、斷裂和變形的結構；

.3 脫開的和/或洞穿的結構；和

.4 焊縫的腐蝕。

2.3 檢驗報告應寫明會議召開的時間、地點和參加人員（驗船師、船東代表和測厚公司代表的姓名）。

3 對船上測厚過程的監督

3.1 在全面檢驗船上代表性處所後，驗船師應決定測厚的最終範圍和位置。

3.2 如果船東希望在全面檢驗之前開始測厚，驗船師應建議：在全面檢驗過程中，計劃的測厚範圍和位置要受到確認。根據情況，驗船師可要求進行附加測厚。

3.3 驗船師應選擇所取證讀數可代表該區域的平均結構狀況的位置，以此指導測量操作。

3.4 主要用於評估會影響船體梁強度的腐蝕程度的測厚應以系統的方式進行，以使所有要求的縱向構件得到測量。

3.5 如果測厚表明顯著腐蝕或損耗超過允許的減小量，驗船師應指定進行附加測厚之處，以便描述顯著腐蝕區域的情況，並確認需維修/換新的構件。

3.6 需要進行近觀檢驗的區域的結構測厚，應與近觀檢驗同時進行。

4 審核和驗證

4.1 測厚完成後，驗船師應確認不需要進一步測量或指明需要附加的測量。

4.2 如果經驗船師特殊考慮後，本導則允許縮小測厚範圍，應相應地報告特殊考慮。

4.3 如果已進行部分測厚，應報告剩下的測厚範圍，以供下一位驗船師使用。

附件 B

油船檢驗期間加強檢驗計劃規則

A 部分

雙殼油船檢驗期間加強檢驗計劃規則

1 總則

1.1 適用範圍

1.1.1 本規則應適用於所有 500 總噸及以上的自航式雙殼油船。

1.1.2 本規則應適用於貨物區域內的貨油艙、泵艙、隔離艙、管隧和空艙以及所有壓載艙處的船體結構和管路系統的檢驗。

1.1.3 本規則包含檢查、測厚和液艙試驗的最小範圍。在發現顯著腐蝕和/或結構缺陷時，應擴大檢驗範圍，並包括必要時進行附加近觀檢驗。

1.1.4 應在公約第 I/10 條規定的檢驗期間進行檢驗。

1.2 定義

1.2.1 *雙殼油船*係指主要用於運輸散裝油類的船舶，其貨油艙受雙層船殼的保護，該雙層船殼覆蓋貨物區域的全長，包括用於裝載壓載水的雙側邊艙和雙層底處所或空艙。

1.2.2 *壓載艙*係指僅用於海水壓載的液艙。

1.2.3 *貨油/壓載兼用艙*，如在本規則提及，係指作為船舶運營的常

規部分，用於運載貨油或壓載水並被視作壓載艙的液艙。對於按照《防污公約》第 I/18.3 條規定僅在例外情況下可以裝載壓載水的貨油艙，應視作貨油艙。

1.2.4 *全面檢驗*係指用於報告船體結構整體狀況和確定附加近觀檢驗範圍的檢驗。

1.2.5 *近觀檢驗*係指驗船師在近距離目視範圍內（即通常伸手可及處）對結構件細節進行的檢驗。

1.2.6 *橫剖面*係指垂直於船舶中線的船體橫剖面，包括所有板材等縱向構件，以及在甲板、舷側外板、船底板、內底板和縱艙壁上的縱骨及縱桁。

1.2.7 *代表性液艙*係指能反映相似類型和用途並具有類似防腐蝕系統的其他液艙。在選擇代表性液艙時，應考慮到其營運和修理史，以及可識別的臨界結構區域和/或可疑區域。

1.2.8 *可疑區域*係指呈現顯著腐蝕和/或驗船師認為易於快速損耗的區域。

1.2.9 *顯著腐蝕*係指通過腐蝕狀況評估表明其腐蝕量超過許用裕量的 75%但尚處於可接受範圍內的腐蝕程度。對按國際船級社協會共同結構規範建造的船舶，顯著腐蝕係指通過腐蝕狀況評估表明其測量（或測厚）厚度介於 t_{net} + 0.5mm 和 t_{net} 之間的腐蝕程度。

1.2.10 *防腐系統*通常可考慮全硬保護塗層。硬保護塗層通常係指環氧樹脂塗層或同等物。既非軟塗層亦非半硬塗層的其他塗層系統，如按生產廠的技術說明書應用和維護，可考慮作為替代品接受。

1.2.11 *塗層狀況*定義如下：

“良好”係指僅有少量點狀鏽斑；

“尚好”係指在扶強材的邊緣和焊縫的連接處塗層有局部脫落和/或所檢驗的區域中有超過 20%或更大範圍的輕度鏽蝕，但小於定義“差”的狀況；和

“差”係指在檢驗的區域中有超過 20%或更大範圍的塗層普遍剝落，或有 10%或更大範圍的塗層產生硬質鏽皮。

1.2.12 *臨界結構區域*係指從計算中或從該船舶或類似船舶或姐妹船的營運歷史中認定並需要進行檢驗的、容易發生影響船舶結構整體性的破裂、屈曲或腐蝕的區域。

1.2.13 *貨物區域*係指船上包含貨油艙、污油艙和貨油/壓載泵艙、相鄰貨油艙的隔離空艙、壓載艙和空艙處所的部分，以及前述處所上方的船舶這一部分的整個長度和寬度範圍內的甲板區域。

1.2.14 *中間檢驗*係指在第 2 或第 3 次年度檢驗進行的檢驗。

1.2.15 *及時徹底修理*係指在檢驗期間完成的並使驗船師滿意的永久性修理，旨在消除需要批註的任何相關船級條件或遺留項目。

1.2.16 *特殊考慮*（與近觀檢驗和測厚有關）係指進行了足夠的近觀檢查和測厚以確定塗層以下結構的實際平均狀況。

1.3 *修理*

1.3.1 任何與超過允許極限的結構蝕耗有關的損壞（包括屈曲、凹槽、脫開或斷裂）或大面積區域的蝕耗超過允許極限，若影響或主管

機關認為將影響船舶的結構、水密或風雨密完整性，均應進行及時徹底修理（參見 1.2.15）。應考慮的區域包括：

.1 船底結構和船底板；

.2 舷側結構和舷側板；

.3 甲板結構和甲板板；

.4 水密或油密艙壁；和

.5 艙口蓋或艙口圍板，如設有。

在不能提供足夠修理設施的區域，主管機關可允許船舶直接駛往某一修理點。這可能要求船舶為該修理航次卸下貨物和/或進行臨時性修理。

1.3.2 此外，在檢驗發現腐蝕或結構缺陷時，只要主管機關認為其中之一將影響船舶繼續營運，船舶應在繼續營運前採取補救措施。

1.4 ***驗船師***

對 20,000 載重噸及以上的液貨船，應由兩名驗船師聯合執行在其船齡超過 10 年後的第一次計劃的換證檢驗（即第三次換證檢驗），以及其後的所有換證和中間檢驗。如由被認可組織進行檢驗，則這些驗船師應為該被認可組織專職聘用的。

1.5 ***厚度測量與近觀檢驗***

在任何檢驗中，即在換證檢驗、中間檢驗、年度檢驗或與這些檢驗範圍相同的其他檢驗中，對需要實施近觀檢驗的結構區域的測厚應與近觀檢驗同時進行。

2 換證檢驗

2.1 *總則*

2.1.1 換證檢驗可在第四次年度檢驗時開始，並可在其後一年中繼續進行，以在第五個周年日前完成。

2.1.2 檢驗計劃作為換證檢驗準備的一部分，應在換證檢驗前制定。厚度測量不應放在第四次年度檢驗之前進行。

2.1.3 除年度檢驗的要求外，檢驗還應包括足夠範圍的檢查、試驗和核查，以確保船體以及 2.1.5 所要求的相關管路處於合格狀況，並適合貨船構造安全證書新的有效期內其預定的用途，受到適當的維護和操作及到期接受各種定期檢驗。

2.1.4 所有貨油艙、壓載艙和雙殼處所內的任何其他液艙、泵艙、管隧、隔離艙和鄰接貨油艙的空艙、甲板和外殼板都應進行檢查，這種檢查應輔以 2.5 和 2.6 所要求的厚度測量和試驗，以確保該結構的完整性保持有效。該檢查的目的旨在發現可能存在的顯著腐蝕、嚴重變形、斷裂、破損或其他結構蝕耗。

2.1.5 甲板上的貨油管路，包括原油洗艙（COW）管路，以及上述液艙和處所內的貨油管路和壓載管路應予以檢查，並在現場驗船師認為滿意的工作壓力下進行操作試驗，以確保其密性和狀況保持合格狀態。應特別注意貨油艙內的壓載管路和壓載艙及空艙內的貨物管路情況，在修理期間當該管路（包括閥和附件）處於開啟狀態並可進行內部檢查時，應隨時通知驗船師。

2.2 *乾塢檢驗*

2.2.1 乾塢檢驗應作為換證檢驗的一部分。在構造安全證書的五年期內應對船底外部至少進行兩次檢查。在所有情況下，船底檢查的最大間隔期不應超過 36 個月。

2.2.2 對船齡為 15 年及以上的船舶，應在乾塢進行船底外部檢查。對船齡小於 15 年的船舶，其未與換證檢驗一起進行的船底外部檢查，作為替代，可在船舶漂浮狀態下進行檢查。船舶在漂浮狀態下的檢查只有在船況令人滿意並具有合適的設備和合格人員時才能進行。

2.2.3 如乾塢檢驗未與換證檢驗一起完成，或如 2.2.1 中所述的 36 個月的最大間隔期未予滿足，則貨船構造安全證書應停止有效，直至乾塢檢驗完成。

2.2.4 如對貨油艙和壓載艙下部的全面檢驗、近觀檢驗和厚度測量（如適用）尚未實施，則應按換證檢驗的適用要求進行。

*註：*貨油艙和壓載艙下部係指輕壓載水線以下的部分。

2.3 ***液艙防腐系統***

如設有貨油艙防腐系統，應檢查其狀況。如存在下列情況之一，應在隨後每年檢查壓載艙：

.1 從建造之時就未敷設硬保護塗層；或

.2 已敷設軟塗層或半硬塗層；或

.3 在艙內發現顯著腐蝕，或；

.4 發現硬保護塗層未達到“良好”狀況，且該塗層未進行令驗船師滿意的修補。

如驗船師認為必要，應進行測厚。

2.4 ***全面和近觀檢驗範圍***

2.4.1 在換證檢驗時應對所有液艙和處所進行一次全面檢驗。應檢查以前檢驗中確定的可疑區域。

2.4.2 在換證檢驗時近觀檢驗的最低要求見附件 1。

2.4.3 驗船師在考慮到檢驗時液艙的維護、防腐系統的狀況以及下列情況的同時，可根據需要擴大近觀檢驗的範圍：

.1 尤其是根據可獲得的資料其結構布置或構件曾在類似液艙中或類似船舶上出現過缺陷的液艙；和

.2 具有與主管機關認可的防腐系統相關的尺度減小結構的液艙。

2.4.4 對於查明硬保護塗層處於 1.2.11 界定的“良好”狀況的液艙內區域，主管機關可對按附件 1 要求的近觀檢驗範圍予以特殊考慮。

2.5 ***厚度測量範圍***

2.5.1 在換證檢驗時厚度測量的最低要求見附件 2。

2.5.2 顯著腐蝕的區域擴大的厚度測量按附件 4 的規定進行，並可在 5.1 要求的檢驗計劃中作出附加規定。該擴大的測厚應在檢驗完成之前進行。以前檢驗中確定的可疑區域應進行測厚。

2.5.3 驗船師可根據需要進一步擴大厚度測量的範圍。

2.5.4 對於查明硬保護塗層處於 1.2.11 所界定的“良好”狀況的液艙內區域，按附件 2 要求的厚度測量範圍可由主管機關予以特殊考

慮。

2.5.5 測厚的橫剖面應選擇在懷疑發生最大縮減或經甲板板測厚揭示的最大縮減處。

2.5.6 如需要測量兩個或三個橫剖面，則至少應有一個橫剖面位於船中 0.5L 範圍內的壓載艙。對於船長 130m 及以上（船長定義參見現行《國際載重線公約》）且船齡在 10 年以上的油船，如需要按 8.2 要求進行總縱強度的評估，測厚的取樣方式見附件 12 的規定。

2.6 *液艙壓力試驗範圍*

2.6.1 在換證檢驗時液艙壓力試驗的最低要求見附件 3。

2.6.2 驗船師可根據需要擴大液艙壓力試驗的範圍。

2.6.3 對壓載艙邊界進行試驗的液體壓頭應至空氣管頂部。

2.6.4 對貨油艙邊界進行的試驗應至其各種服務狀態下液體可能上升的最高點。

2.6.5 如對雙層底艙和其他非設計用於裝載液體的處所的內部檢查和內底板檢查認為滿意，則可不進行試驗。

3 年度檢驗

3.1 *總則*

年度檢驗應由旨在盡實際可行地確保船體和管路處於合格狀態的檢查所構成，還應考慮到營運記錄、壓載艙防腐系統狀況和範圍以及檢驗報告案卷中確定的區域。

3.2 *船體檢查*

3.2.1 船殼板及其關閉裝置，但凡可見，均應予以檢查。

3.2.2 對水密貫穿件應盡實際可行地進行檢查。

3.3 *露天甲板檢查*

3.3.1 檢查貨油艙開口，包括墊圈、艙蓋板、艙口圍板和防火網。

3.3.2 檢查貨油艙壓力/真空閥和防火網。

3.3.3 檢查所有燃料艙透氣管上的防火網。

3.3.4 檢查貨油、原油洗艙、燃料艙和透氣管系，包括透氣桅和集管。

3.4 ***貨泵艙和管隧（如有）檢查***

3.4.1 檢查所有泵艙艙壁是否有漏油或裂紋的痕跡，特別是泵艙艙壁的所有貫穿件密封布置。

3.4.2 檢查所有管系和管隧的狀況。

3.5 ***壓載艙檢查***

3.5.1 如由於換證檢驗和中間檢驗的結果而有要求，應對壓載艙進行檢查。在主管機關認為必要或發現大量腐蝕時，應進行測厚。

3.5.2 如發現 1.2.9 界定的顯著腐蝕，則應按附件 4 的要求增加測厚範圍。該擴大的測厚應在檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。以前檢驗中確定的顯著腐蝕區域應進行測厚。

4 中間檢驗

4.1 ***總則***

4.1.1 對年度檢驗要求以外的附加項目，可在第二次或第三次年度檢驗時或其之間進行檢驗。

4.1.2 貨油艙和壓載艙的檢驗範圍取決於船齡，見 4.2、4.3 和 4.4 的規定。

4.1.3 應儘可能檢查露天甲板上的貨油管系、原油洗艙管系、燃油管系、壓載管系、蒸汽管系和透氣管系統以及透氣桅和集管。如檢查後對管系狀況有懷疑，可要求對該管系進行壓力試驗或（和）測厚。

4.1.4 中間檢驗和換證檢驗所要求的處所的檢驗和測厚不應相互替代。

4.2 ***船齡 5 至 10 年的油船***

4.2.1 4.1.3 的要求適用。

4.2.2 對用於海水壓載的液艙，驗船師應選擇代表性液艙進行全面檢驗。如果該檢驗表明無可見的結構缺陷，則檢查可限於確認保護塗層處於“良好”狀況。

4.2.3 如存在下列情況之一，應在隨後的每年檢查壓載艙：

.1 從建造之時就未敷設硬保護塗層；或

.2 已敷設軟塗層或半硬塗層；或

.3 在艙內發現顯著腐蝕；或

.4 發現硬保護塗層未達到“良好”狀況，且該塗層未進行令驗船師滿意的修補。

4.3 ***船齡 10 至 15 年的油船***

4.3.1 中間檢驗的要求應與 2 和 5.1 要求的上次換證檢驗的範圍相同。但是，除非主管機關認為必要，可不要求進行貨油艙和壓載艙的壓力試驗和 8.1.2 規定的油船船體樑總縱強度評估。

4.3.2 在應用 4.3.1 時，中間檢驗可在第二次年度檢驗時開始，並可在其後一年中繼續進行，以在第三次年度檢驗時完成，替代應用 2.1.1。

4.3.3 在應用 4.3.1 時，水下檢驗可予以考慮，以替代 2.2 的要求。

4.4 ***船齡超過 15 年的油船***

4.4.1 中間檢驗的要求應與 2 和 5.1 要求的上次換證檢驗的範圍相同。但是，除非主管機關認為必要，可不要求進行貨油艙和壓載艙的壓力試驗和 8.1.2 規定的油船船體樑總縱強度評估。

4.4.2 在應用 4.4.1 時，中間檢驗可在第二次年度檢驗時開始，並可在其後一年中繼續進行，以在第三次年度檢驗時完成，替代應用 2.1.1。

4.4.3 在應用 4.4.1 時，乾塢檢驗應作為中間檢驗的一部分。如對貨油艙和水壓載艙下部的全面檢驗、近觀檢驗和測厚（如適用）尚未實施，則應按中間檢驗的適用要求進行。

註：貨油艙和壓載艙下部係指輕壓載水線以下的部分。

5 檢驗前準備

5.1 ***檢驗計劃***

5.1.1 船東應與主管機關或經主管機關認可的組織合作，在以下檢驗的任何部分開始前制定具體的檢驗計劃：

.1 換證檢驗；和

.2 船齡 10 年以上的油船的中間檢驗。

中間檢驗的檢驗計劃可由經上次換證檢驗所作狀況評估報告補充的檢驗計劃以及隨後的相關檢驗報告組成。制定檢驗計劃應考慮自上一次換證檢驗後對檢驗要求的任何修改通報。檢驗計劃應根據附件 6A 中的資料以書面形式制定。只有在制定檢驗計劃後才能開始進行檢驗。

5.1.1.1 在制定檢驗計劃前，船東應根據附件 6B 中的資料填寫檢驗計劃調查表，並送交主管機關。

5.1.2 在制定檢驗計劃時，應搜集和查閱下列文件用以選擇要進行檢查的液艙、區域和結構件：

.1 檢驗現狀和基本的船舶資料；

.2 6.2 和 6.3 中所述的船上文件；

.3 貨油艙和壓載艙主結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料；

.4 按附件 9 要求的狀況評估報告；

.5 以前相關的破損和修理記錄；

.6 來自被認可組織和船東兩方面的以前的相關檢驗和檢查報告；

.7 過去三年的貨物和壓載記錄，包括加熱狀態下的貨物運輸；

.8 惰性氣體裝置和液艙清潔程序詳細資料；

.9 自船舶建造以來對貨油艙和壓載艙進行改建或改裝的資料和其他相關數據；

.10 塗層和防腐系統（如有）的說明和記錄，包括陽極和以前的入級說明；

.11 過去三年中船東人員對結構總體損耗、液艙邊界和管路滲漏以及塗層防腐系統（如有）的狀況進行的檢查，包括陽極。見附件 5 中的報告指南；

.12 營運期間有關的維護保養等級的資料，包括涉及船體缺陷的港口國監督檢查報告、與船體維護有關的安全管理系統不合格項（包括相關的糾正措施）；和

.13 任何有助於確定可疑和臨界結構區域的其他信息。

5.1.3 提交的檢驗計劃應說明並至少符合 2.6 及附件 1、附件 2 和附件 3 分別對近觀檢驗、厚度測量和液艙試驗的要求，並應至少包括下列相關資料：

.1 基本的船舶資料和概況；

.2 貨油艙和壓載艙主結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料；

.3 液艙圖；

.4 附有塗層的使用、防腐蝕系統和狀況資料的液艙明細表；

.5 檢驗條件（如：有關液艙清潔、除氣、通風、照明等的資

料）；

.6 結構通道的設置和方法；

.7 檢驗設備；

.8 確定進行近觀檢驗的液艙和區域（見 2.4）；

.9 確定進行測厚的區域和剖面（見 2.5）；

.10 確定進行液艙試驗的艙（見 2.6）；

.11 確定測厚公司；

.12 與該船舶有關的損壞經歷；和

.13 臨界結構區域和可疑區域，如相關。

5.1.4 主管機關將通知船東適合於該船舶的可接受的最大限度結構蝕耗程度。

5.1.5 也可使用附件 11 中與液貨船加強檢驗計劃有關的技術評估導則。該導則是一套建議的方法，在認為必要和適當時，可由主管機關決定，結合制定所要求的檢驗計劃予以施用。

5.2 *檢驗條件*

5.2.1 船東應為安全進行檢驗提供必要的設施。

5.2.1.1 為使現場驗船師能進行檢驗，船東和主管機關應商定合適和安全的通道裝置。

5.2.1.2 檢驗計劃調查表中應提供通道細節。

5.2.1.3 如現場驗船師斷定安全的規定和要求的通道不合適時，不應

進行相關處所的檢驗。

5.2.2 應可安全進入液艙和處所。液艙和處所應予除氣和適當通風。進入液艙、空艙或圍蔽處所前，應確認液艙內部空氣中無危險氣體並含足夠的氧氣。

5.2.3 在準備檢驗和測厚時，為徹底檢查，所有處所應進行清掃，包括除去表面所有鬆動的腐蝕積垢。處所應充分清潔，做到無水、無垢、無髒物、無殘油等，以能揭示腐蝕、變形、裂紋、破損或其他結構蝕耗以及塗層狀況。但是，船東已經決定換新的結構區域只需進行清掃和去垢，以確定要換新的區域範圍。

5.2.4 應提供足夠的照明，以能揭示腐蝕、變形、裂紋、破損或其他結構蝕耗以及塗層狀況。

5.2.5 如已敷設軟塗層或半硬塗層，應為驗船師提供安全通道，以使其能驗證塗層的有效性和進行內部結構（可能包括塗層剝落的部分）的狀況評估。如無法提供安全通道，則軟塗層或半硬塗層應予以去除。

5.2.6 船東應指派至少一位對液艙和封閉處所檢查有經驗的人員始終陪伴現場驗船師。此外，由至少兩人組成的有經驗的後備人員應等候在被檢驗的液艙或處所的艙口處。後備組人員應不斷觀察液艙或處所內的工作情況，並應保持救生和撤離設備隨時可用。

5.2.7 在被檢查的液艙或處所內的檢驗人員或甲板上的負責駕駛員和駕駛室（視情況而定）之間應安排通信系統。這些通信設備應在整個檢驗中始終保持工作狀態。

5.3 *結構通道*

5.3.1 對全面檢驗，應提供裝置使驗船師能用安全和可行的方法檢查船體結構。

5.3.2 對近觀檢驗，應提供驗船師可接受的下列一個或多個通道裝置：

.1 固定腳手架和穿過結構的通道；

.2 臨時腳手架和穿過結構的通道；

.3 升降機和可移動台架；

.4 艇或筏；

.5 便攜式梯子；和

.6 其他等效裝置。

5.4 ***檢驗設備***

5.4.1 通常應使用超聲波檢測設備進行測厚。應按要求向驗船師證明該設備的精度。

5.4.2 如驗船師認為必要，可要求用下列一個或多個裂紋檢測方法：

.1 射線照相設備；

.2 超聲波探傷設備；

.3 磁粉探傷設備；

.4 着色滲透劑；和

.5 其他等效手段。

5.4.3 檢驗期間應有可使用的測爆儀、測氧儀、呼吸器、救生索，攀

登帶及其繩索、鉤子和哨笛及其使用說明和指導。應提供安全檢查清單。

5.4.4 應為安全有效地進行檢驗提供足夠和安全的照明。

5.4.5 在檢驗期間，應有足夠的防護服（如：安全頭盔、手套、安全靴等）可供使用。

5.5 ***海上或錨泊檢驗***

5.5.1 如驗船師能得到船上人員的必要協助，可接受在海上或錨泊時進行檢驗。檢驗所需的預防措施和程序應符合 5.1、5.2、5.3 和 5.4 中的要求。

5.5.2 在液艙內的檢驗人員與在甲板上的負責駕駛員之間應安排通信系統。如使用艇或筏，該系統還應包括負責壓載水泵操作的人員。

5.5.3 只有在驗船師考慮到所提供的安全措施，包括氣象預報和船舶對可預見狀況的反應後表示同意，以及在液艙內水位預期的上升不超過 0.25m 的情況下，方可使用艇或筏對液艙進行檢驗。

5.5.4 在使用筏或艇進行近觀檢驗時，應符合下列條件：

.1 應僅使用即使一個浮箱破裂仍具有合格的剩餘浮力和穩性的耐用型氣脹式筏或艇；

.2 艇或筏應拴於通道梯上，並另安排一人留守在能清晰看見該艇或筏的通道梯處；

.3 所有參加人員都應有合適的救生衣；

.4 液艙內的水面應平靜（在所有可預見的情況下，液艙內

預期的水位上升不應超過 0.25m），且水位應固定。任何時候當筏或艇在使用時，水位都不得上升；

.5 液艙或處所必須只存有乾淨的壓載水。水面上不允許有任何油層；

.6 任何時候都不允許水位與最深甲板下腹板面板的距離在 1m 以內，這樣檢驗人員通往艙口的直接逃生通道才不致被隔絕。只有在被檢查的艙壁間距上設有甲板通道人孔並開啟時才能考慮水位超出甲板橫材，這樣才能保證任何時候檢驗人員都可使用逃生通道。其他有效的通往甲板的逃生通道也可予以考慮；和

.7 如果液艙（或處所）共用一個透氣系統或惰性氣體系統，使用艇或筏的液艙則應予以隔絕，以防止氣體從其他液艙（或處所）傳入。

5.5.5 如腹板深度為 1.5m 或以下，筏或艇可允許單獨用於在液艙或處所甲板下的區域的檢查。

5.5.6 如腹板深度超過 1.5m，筏或艇可僅允許單獨用於下列之一的情況：

.1 甲板下結構的塗層處於“良好”狀況，且無鏽蝕的跡象；或

.2 如果在每一間距上設置一個允許安全出入的永久通道。該通道應：

.1 通過每一間距內的垂直梯直接通向甲板，該梯在甲

板下約 2m 處設有一個小平台；或

.2 通過在液艙每一端都設有通往甲板的梯子的縱向永久平台通向甲板。該平台應在液艙的全長範圍內布置在與甲板下結構的筏運檢查所需要的最高水位的相同平面，或其上。為此，最高水位之上的空餘量應假定在甲板橫框架的跨距中點和液艙長度中點處測量至距甲板板不大於 3m（見圖 1）。

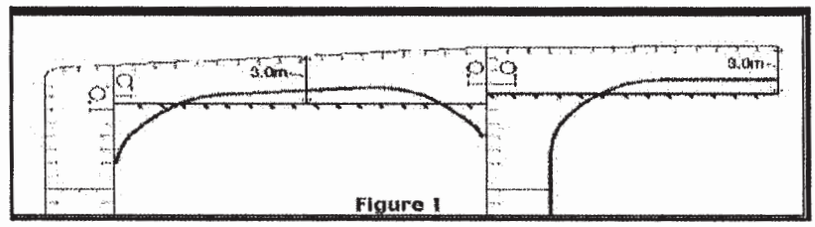


圖 1

如上述條件都不能滿足，則應為甲板下區域的檢驗提供腳手架或其他等效設施。

5.5.7 5.5.5 和 5.5.6 所述的單獨使用筏或艇並不排除在檢驗過程中使用艇或筏在液艙範圍內的移動。

5.6 *檢驗計劃會議*

5.6.1 在檢驗之前和檢驗期間，現場驗船師和船上船東代表要做好適當準備，進行密切合作，這是執行安全有效檢驗的重要一環。在船上檢驗期間應定期召開安全會議。

5.6.2 為確保檢驗能安全有效地進行，應在換證和中間檢驗的任何部分開始之前，召開由現場驗船師、現場船東代表、測厚公司測量人員（視情況而定）和船長或由船長或公司指派的具有相應資質的代表

參加的檢驗計劃會議，以確定檢驗計劃中預見的所有布置均已到位。

5.6.3 會議中應討論的項目的示意性清單如下：

.1 船舶計劃（即航線、靠碼頭和離碼頭操縱、靠泊時段、貨物和壓載作業等）；

.2 測厚的規定和布置（即通道、清潔/除垢、照明、通風、人員安全）；

.3 測厚範圍；

.4 認可標準（參見最小厚度表）；

.5 考慮了塗層狀況和可疑區域/顯著腐蝕區域後確定的近觀檢驗和測厚範圍；

.6 測厚的實施；

.7 總體上和發現不均勻腐蝕/點蝕之處的代表性讀數的採集；

.8 繪製出顯著腐蝕區域；和

.9 現場驗船師、測厚公司測量人員以及船東代表之間就發現的相關問題進行溝通。

6 船上文件

6.1 *總則*

6.1.1 船東應獲取、提供並在船上保存 6.2 和 6.3 規定的文件，隨時供驗船師使用。6.2 中所述的狀況評估報告應包括一份英文譯文。

6.1.2 文件應在船舶的整個營運壽命期間保存在船上。

6.2 ***檢驗報告案卷***

6.2.1 檢驗報告案卷應是船上文件的一個組成部分，包括：

.1 結構檢驗報告（附件 8）；

.2 狀況評估報告（附件 9）；和

.3 測厚報告（附件 10）。

6.2.2 船東及主管機關的辦事處，或經主管機關認可的組織的辦事處，也應備有檢驗報告案卷可供使用。

6.3 ***支持性文件***

船上應備有下列附加文件可供使用：

.1 5.1 要求的檢驗計劃，直至換證檢驗或中間檢驗（如適用）完成；

.2 貨油艙和壓載艙主結構圖；

.3 以前修理史；

.4 貨物和壓載史；

.5 惰性氣體設備的使用範圍和洗艙程序；

.6 船上人員對以下方面的檢查：

.1 總體的結構損耗狀況；

.2 艙壁和管路泄漏；

.3 塗層或防腐系統狀況（如有）；和

.7 任何其他有助於識別臨界結構區域和/或需要檢查的可疑區域的資料。

6.4 船上文件審核

檢驗前，驗船師應檢查船上文件資料的完整性及其內容，並以其為檢驗的基礎。

7 測厚程序

7.1 *總則*

7.1.1 如要求的測厚不是由代表主管機關的被認可組織進行，則應由被認可組織的驗船師在場見證測厚過程。驗船師在船上的時間應視監督該測厚過程的範圍而定。

7.1.2 測厚公司應參加在檢驗開始前舉行的檢驗計劃會議。

7.1.3 要求實施近觀檢驗的區域內的構件測厚應與近觀檢驗同步進行。

7.1.4 在任何情況下，測厚範圍應足以代表實際的平均狀況。

7.2 *測厚公司的認證*

測厚應由主管機關認可的組織根據附件 7 規定的原則予以認證的合格公司進行。

7.3 *報告*

7.3.1 應編製一份測厚報告並提交給主管機關。該報告應給出測量部位、所測得的厚度以及相應的原始厚度。此外，報告還應說明進行

測厚的日期、測量設備的類型、測量人員的姓名及其資質，並由測厚人員簽字。測厚報告應遵循附件 10 建議的測厚程序中規定的原則。

7.3.2 驗船師應審核最終的測厚報告並在封面上會簽。

8 檢驗報告和評估

8.1 *檢驗報告的評估*

8.1.1 檢驗期間收集的船舶結構狀況的數據和資料應用於評估船舶的可接受性和連續結構完整性。

8.1.2 對（現行《國際載重線公約》中界定的）船長 130m 及以上的油船，在其達到 10 年船齡後所進行的構造安全換新檢驗期間，應按附件 12 中規定的油船船體樑總縱強度衡準，利用測得的、換新的和加強的相應結構件厚度，對船舶的總縱強度作出評估。

8.1.3 應由主管機關或經主管機關授權的被認可組織對資料進行分析並予以簽註，其分析的結論應作為狀況評估報告的一部分。

8.1.4 如根據初始評估的結果對結構件進行了換新或加強，則 8.1.2 中要求的船舶總縱強度的最終評估結果應作為狀況評估報告的一部分。

8.2 *報告*

8.2.1 檢驗報告原則參見附件 8。

8.2.2 當檢驗在不同的檢驗站分別進行時，檢驗的每一部分均應出具報告。其後的現場驗船師在繼續或完成檢驗之前，應可獲得已經檢查和/或試驗項目的清單（壓力試驗、測厚等）以及項目是否已做記錄的說明。

8.2.3 應向船東簽發附件 9 所示的檢驗狀況評估報告以及結果，並應將其留存船上供以後檢驗時查閱。狀況評估報告應由主管機關或經主管機關授權的被認可組織予以簽註。

附件 1

雙殼油船換證檢驗時的近觀檢驗最低要求

船齡≤5 年	5 年＜船齡≤10 年	10 年＜船齡≤15 年	船齡＞15 年
第 1 次換證檢驗	**第 2 次換證檢驗**	**第 3 次換證檢驗**	**第 4 次及以後換證檢驗**
一個完整壓載艙內的一根強肋骨（1）*（見註 1）*	一個完整壓載艙內的所有強肋骨（1）*（見註 1）* 其餘每個壓載艙內的一根強肋骨的折角區域和其上部（約 5m）（6）	所有壓載艙內的所有強肋骨（1）	同 3 欄中的船舶 主管機關認為必要的附加橫向區域
一個貨油艙內的一根甲板強橫樑（2）	兩個貨油艙內的一根甲板強橫樑（2）	一個貨油艙內的所有強肋骨（7），包括甲板強橫樑和橫撐材（如設置）。 其餘每個貨油艙內的一根強肋骨（7），包括甲板強橫樑和橫撐材（如設置） 所有貨油艙（3）和壓載艙（4）內的所有橫艙壁	
一個完整壓載艙內的一道橫艙壁（4）*（見註 1）*	每個完整壓載艙內的一道橫艙壁（4）*（見註 1）*		
一個中央貨油艙內的一道橫艙壁（5） 一個貨油邊艙內的一道橫艙壁（5）（*見註 2）*	兩個中央貨油艙內的一道橫艙壁（5） 一個貨油邊艙內的一道橫艙壁（5）（*見註 2）*		

註：

（1）、（2）、（3）、（4）、（5）、（6）和（7）為近觀檢驗和厚度測量的區域（見附件 10 附錄 3）。

（1） 壓載艙內的強肋骨係指邊艙內的垂直桁材，底邊艙內的桁材、雙層底艙內的肋板和雙甲板艙內（如設置）的甲板強橫樑，包括鄰接構件。艏尖艙和艉尖艙內的強肋骨係指 1 個完整的橫向環形強框架，包括鄰接構件。

（2） 甲板強橫樑，包括鄰接甲板構件（或在液艙甲板上的外部結構，如適用）。

（3） 貨油艙內的完整橫艙壁，包括桁材系統、鄰接構件（例如縱艙壁）和上下凳（如設置）的內部構件。

（4） 壓載艙內的完整橫艙壁，包括桁材系統和鄰接構件，例如縱艙壁、雙層底艙內的桁材、內底板、底邊艙舷側、連接肘板。

（5） 貨油艙內橫艙壁的下部，包括桁材系統、鄰接構件（例如縱艙壁）和底凳（如設置）的內部構件。

（6） 船體折角區域及其上部（約 5m），包括鄰接構件。船體折角區域係指底邊艙斜板與內殼艙壁及與內底板連接處 2m 範圍的強肋骨區域。

（7） 貨油艙內的強肋骨係指甲板強橫樑、縱艙壁的垂直桁材和撐杆（如設置）包括鄰接構件。

註 1： 完整壓載艙係指雙層底艙加上雙舷側邊艙加上雙甲板艙（視情況而定），即使它們是分開的，也是如此。

註 2： 如不設置縱中油艙（例如設中縱艙壁），邊貨油艙內的橫艙壁應予檢驗。

附件 2

雙殼油船換證檢驗時的測厚最低要求

船齡≤5 年	5 年＜船齡≤10 年	10 年＜船齡≤15 年	船齡＞15 年
1	2	3	4
貨物區域內全船寬的一個甲板板剖面	貨物區域內： - 每塊甲板板 - 一個橫剖面	貨物區域內： - 每塊甲板板 - 兩個橫剖面（1） - 所有舷側乾濕交變列板	貨物區域內： - 每塊甲板板 - 三個橫剖面（1） - 每塊船底板
	貨物區域以外選擇的舷側乾濕交變列板	貨物區域以外選擇的舷側乾濕交變列板	全長範圍內所有舷側乾濕交變列板
按附件 1 應進行近觀檢驗的結構件的測量點，供總體評定並作腐蝕形式記錄	按附件 1 應進行近觀檢驗的結構件的測量點，供總體評定並作腐蝕形式記錄	按附件 1 應進行近觀檢驗的結構件的測量點，供總體評定並作腐蝕形式記錄	按附件 1 應進行近觀檢驗的結構件的測量點，供總體評定並作腐蝕形式記錄
可疑區域	可疑區域	可疑區域	可疑區域
（1）：在船中 0.5L 區域內應至少有一個剖面。			

附件 3

雙殼油船換證檢驗時的液艙試驗最低要求

船齡≤5 年	船齡＞5 年	船齡＞10 年
1	2	3
所有壓載艙邊界	所有壓載艙邊界	所有壓載艙邊界
面對壓載艙、空艙、管隧、代表性燃油艙、泵艙或隔離艙的貨油艙邊界	面對壓載艙、空艙、管隧、代表性燃油艙、泵艙或隔離艙的貨油艙邊界	面對壓載艙、空艙、管隧、代表性燃油艙、泵艙或隔離艙的貨油艙邊界
	構成分隔貨物邊界的所有貨油艙艙壁	其餘所有的貨油艙艙壁

附件 4/表 1

雙殼油船顯著腐蝕區域的測厚範圍要求

雙殼油船換證檢驗

船底、內底和底邊艙結構		
結構件	**測量範圍**	**測量形式**
船底板、內底板和底邊艙的斜板	雙層底艙內全艙寬，至少三個強肋骨間距，包括後艙壁至強肋板間距。 在所有吸口的周圍和下面測量	在縱骨與肋板之間的每個板格內作五點形測量
船底板、內底板和底邊艙斜板上的縱骨	在被測厚船底板範圍的每個強肋骨間距的範圍內，至少三根縱骨	在縱骨折板同一橫截線上測三點，在腹板垂直方向上測三點
船底縱桁，包括水密縱桁	在前、後水密肋板處和各艙中心處	在桁材上的每一個板格扶強材之間測一點，各單點位於同一垂直線上，或至少測三點。
船底肋板，包括水密肋板	在被測厚的船底板的強肋骨間距範圍內，三塊肋板，在其兩端和中部測量	在 $2m^2$ 的面積內作五點形測量
底邊艙的橫向環狀強框架	在被測厚的船底板的強肋骨間距的範圍內，三塊肋板	在 $1m^2$ 的板上作五點形測量，折板上單點測量
底邊艙的水密橫艙壁或制蕩艙壁	- 艙壁下部的 1/3	在 $1m^2$ 的板上作五點形測量
	- 艙壁上部的 2/3	在 $2m^2$ 的板上作五點形測量
	- 扶強材(至少三根)	對腹板，跨長內作五點形測量（在每端橫截線上測各兩點，中央測一點）；對折板，在每一端和跨長中點單點測量
板格扶強材	如適用	單點測量

附件 4/表 2

雙殼油船顯著腐蝕區域的測厚範圍要求

在貨艙長度區域內雙殼油船換證檢驗

甲板結構		
結構件	**測量範圍**	**測量形式**
甲板板	橫跨貨油艙的兩條帶	每條帶上的每塊板上至少測三點
甲板縱骨	在至少有一根縱骨的兩條帶中的每一條帶內，每第三根縱骨	腹板垂直方向上測三點和折板（如設置）測兩點
甲板縱桁和肘板（通常僅用於貨油艙）	在前、後橫艙壁肘板趾端處和各艙中心處	在腹板上的每一個板格扶強材之間測一點，各單點位於同一垂直線上，或至少測三點。 在折板的橫截線上測兩點，在縱桁/艙壁肘板上作五點形測量
甲板強橫樑	至少在兩個強橫樑，在其跨距的兩端和中點測量	在 $1m^2$ 的區域內作五點形測量，折板上單個點測量
在邊壓載艙內（自甲板起 2m）垂直桁材和橫艙壁	至少兩個垂直桁材和兩個橫艙壁	在 $1m^2$ 的區域內作五點形測量
板格扶強材	如適用	單點測量

附件 4/表 3

雙殼油船顯著腐蝕區域的測厚範圍要求

在貨艙長度區域內的雙殼油船換證檢驗

邊壓載艙結構		
結構件	**測量範圍**	**測量形式**
舷側外板和縱艙壁板： - 頂列板和水平桁材處列板 - 所有其他列板	（沿艙長）至少三個強肋骨間距內，每對縱骨之間的板 在相同的三個強肋骨間距內，每第三對縱骨之間的板	單個測量 單個測量
舷側外板和縱艙壁上的縱骨在： - 頂列板處 - 所有其他列板處	在相同的三個強肋骨間距內，每根縱骨 在相同的三個強肋骨間距內，每第三根縱骨	腹板的同一橫截線上測三點和折板上測一點 腹板的同一橫截線上測三點和折板上測一點
縱骨肘板	在相同三個強肋骨間距內，艙頂部、中部和底部至少三處	在肘板上作五點形測量
垂直桁材和橫艙壁（艙頂區域除外）： - 水平桁材處列板 - 其他列板	至少兩個垂直桁材和兩個橫艙壁 至少兩個垂直桁材和兩個橫艙壁	約 $2m^2$ 面積內作五點形測量 每對垂直扶強材之間測兩點
水平桁材	至少三個強肋骨間距內，每根縱桁的板	每對縱桁扶強材之間測兩點
板格扶強材	如適用	單點測量

附件 4/表 4

雙殼油船顯著腐蝕區域的測厚範圍要求

在貨艙長度區域內的雙殼油船換證檢驗

貨油艙內的縱艙壁		
結構件	**測量範圍**	**測量形式**
頂列板和底列板以及橫艙壁上水平縱桁處的列板	至少三個強肋骨間距內每對縱骨之間的板	單個點測量
所有其他列板	在相同的三個強肋骨間距內每第三對縱骨之間的板	單個點測量
頂列板和底列板上的縱骨	在相同的三個強肋骨間距內每根縱骨	在腹板同一橫截線上測三點和折板上測一點
所有其他縱骨	在相同的三個強肋骨間距內每第三根縱骨	在腹板同一橫截線上測三點和折板上測一點
縱骨 肘板	在相同的三個強肋骨間距內，艙頂部、中部和底部至少三處	在肘板區域範圍內作五點形測量
強肋骨和橫撐材	三塊腹板，每塊腹板上至少測三個部位，包括與橫撐材連接處	約 $2m^2$ 面積內強肋骨作五點形測量，和強肋骨和橫撐材折板上單點測量
下端肘板（在強肋骨相對的一側）	至少三塊肘板	約 $2m^2$ 面積內肘板作五點形測量，和肘板折板上單點測量

附件 4/表 5

雙殼油船顯著腐蝕區域的測厚範圍要求

在貨艙長度區域內的雙殼油船換證檢驗

貨油艙內橫向水密艙壁和制蕩艙壁		
結構件	**測量範圍**	**測量形式**
頂凳和底凳（如設置）	與內底板/甲板板焊接處 25mm 範圍內的橫帶 與頂凳底板和底凳頂板焊接處 25mm 範圍內的橫帶	在 1m 長度內扶強材之間作五點形測量
頂列板和底列板以及水平縱桁處的列板	在艙寬約 1/4、1/2 和 3/4 的三個位置處，一對扶強材之間的板	在 1m 長度內扶強材之間作五點形測量
所有其他列板	在中間部位，一對扶強材之間的板	單點測量
槽形艙壁列板	在平面板板格中心處和斜面板（折板）裝配連接處，用於每一結構尺寸改變處的板	在約 $1m^2$ 板上作五點形測量
扶強材	至少三根典型的扶強材	對腹板，與肘板連接之間的跨長內作五點形測量（每個肘板連接處的腹板同一橫截線上測兩點，跨長中點測一點） 對折板，每個肘板趾端和跨長中點單點測量
肘板	艙頂部、中部和底部至少三處	在肘板區域範圍內作五點形測量
水平桁材	所有桁材在其兩端和中部測量	在 $1m^2$ 面積範圍內作五點形測量，和肘板趾端附近和折板上單點測量

附件 5

船東檢查報告

結構狀況

船名：.....							
液艙號：.....							
鋼級： 甲板：..... 舷側：.....							
船底：..... 縱艙壁：.....							
構件	裂紋	屈曲	腐蝕	塗層狀況	凹蝕	改動/修理	其他
甲板：							
船底：							
舷側：							
縱艙壁：							
橫艙壁：							
進行修理的原因： 進行的測厚（日期）： 總體結果： 過期檢驗： 船級遺留項目： 意見：							
檢查日期：.....							
檢查員：.....							
簽字：.....							

附件 6A

檢驗計劃

基本資料和概況

船名：
IMO編號：
船旗國：
船籍港：
總噸位：
載重量（公噸）：
垂線間長（m）：
造船廠：
船體號：
被認可組織（RO）：
RO的船舶標識號：
交船日期：
船東：
測厚公司：

1 序言

1.1 *範圍*

1.1.1 本檢驗計劃包括在本規則中要求的貨物區域、壓載艙（包括艏艉尖艙）內進行全面檢驗、近觀檢驗、測厚和壓力試驗的最小範圍。

1.1.2 檢驗布置和安全方面應經現場驗船師認可。

1.2 *文件*

按第 6 節的要求，制定檢驗計劃所用的全部文件應在檢驗期間在船上可供使用。

2 液艙和處所的布置

本部分檢驗計劃應以圖紙或文字形式提供檢驗適用範圍內的液艙和

處所布置的資料。

3 液艙和處所的一覽表及其使用情況、塗層範圍和防腐保護系統的資料

本部分檢驗計劃應說明與檢驗計劃調查表中提供的船舶液艙使用情況、塗層範圍和防腐保護系統資料有關的任何變化（並應予更新）。

4 檢驗條件

本部分檢驗計劃應提供有關的檢驗條件的資料，如：貨艙和液艙清洗、除氣、通風和照明等。

5 結構通道的設置和方法

本部分檢驗計劃應說明與檢驗計劃調查表中提供的結構通道的設置和方法資料有關的任何變化（並應予更新）。

6 檢驗設備清單

本部分檢驗計劃應確定並列出可用於檢驗和所要求測厚的設備。

7 檢驗要求

7.1 *全面檢驗*

本部分檢驗計劃應確定並列出本船按 2.4.1 應進行全面檢驗的處所。

7.2 *近觀檢驗*

本部分檢驗計劃應確定並列出本船按 2.4.2 應進行近觀檢驗的船體結構。

8 確定進行試驗的液艙

本部分檢驗計劃應確定並列出本船按 2.6 應進行液艙試驗的液艙。

9 確定測厚的區域和剖面

本部分檢驗計劃應確定並列出按 2.5.1 應進行測厚的區域和剖面。

10 船體結構最小厚度

本部分檢驗計劃應規定受本規則約束的本船船體最小厚度（說明按（a）或最好是（b），如有此類信息）：

（a）根據該船的船體結構圖所附的損耗裕度表和原始厚度確定；

（b）在以下表中給出：

區域或位置	建造時的原始厚度（mm）	最小厚度（mm）	顯著腐蝕厚度（mm）
甲板			
板			
縱骨			
縱桁			
船底			
板			
縱骨			
縱桁			
船側			
板			
縱骨			
縱桁			
縱艙壁			
板			
縱骨			
縱桁			
內底			
板			
縱骨			
縱桁			

區域或位置	建造時的原始厚度（mm）	最小厚度（mm）	顯著腐蝕厚度（mm）
橫艙壁			
板			
扶強材			
橫向強框架、肋板和縱桁			
板			
折板			
扶強材			
橫撐材			
折板			
腹板			

*註：*本檢驗計劃應附有損耗裕度表。

11 測厚公司

本部分檢驗計劃應確定與檢驗計劃調查表提供的測厚公司資料有關的任何變化（如有）。

12 船舶有關的損壞經歷

本部分檢驗計劃應使用下表提供船舶至少最近三年內貨物區域範圍內的貨油艙、壓載艙和空艙處的船體損壞細節。對這些損壞區域應進行檢驗。

按本船位置分類的船體損壞

液艙或處所編號或區域	可能的原因（如已知）	損壞描述	位置	修理	修理日期

如損壞與設計有關，姐妹船或類似船舶的船體損壞（如有）

液艙或處所編號或區域	可能的原因（如已知）	損壞描述	位置	修理	修理日期

13 以前檢驗中確定的顯著腐蝕區域

本部分檢驗計劃應確定並列出以前檢驗中發現的顯著腐蝕區域。

14 臨界結構區域和可疑區域

本部分檢驗計劃應確定並列出臨界結構區域和可疑區域（如有此類信息）。

15 其他相關意見和信息

本部分檢驗計劃應提供與檢驗相關的任何其他意見和信息。

附錄

附錄 1 – 圖紙清單

5.1.3.2 要求備有貨油艙和壓載艙的主要結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料。本檢驗計劃附錄應確定並列出作為檢驗計劃組成部分的主要結構圖。

附錄 2 – 檢驗計劃調查表

船東已提交的檢驗計劃調查表（附件 6B）應附於本檢驗計劃後。

附錄 3 – 其他文件

本部分檢驗計劃應確定並列出作為本計劃組成部分的任何其他文件。

為符合 5.1.3 要求，船東配合主管機關制定。

日期：

（經授權的船東代表的姓名和簽字）

日期：

（經授權的主管機關代表的姓名和簽字）

附件 6B

檢驗計劃調查表

下述資料將使船東能配合主管機關制定一份符合本規則要求的檢驗計劃。關鍵是船東在填寫本調查表時提供最新的資料。填寫完成後的本調查表應能提供本決議要求的所有資料和材料。

概況

船名：

IMO 編號：

船旗國：

船籍港：

船東：

被認可組織（RO）：

總噸位：

載重量（公噸）：

交船日期：

關於為近觀檢驗和測厚提供通道的資料

船東應在下表中說明通往應進行近觀檢驗和測厚的結構的通道。近觀檢驗係指現場驗船師在近距離目視範圍內（即通常伸手可及）對結構件細節進行的檢驗。

液艙號	結構	C（貨物）/ B（壓載）	臨時腳手架	筏	梯子	直接通道	其他方法（請說明）
F.P.	艏尖艙						
A.P.	艉尖艙						
邊艙	甲板下						
	舷側						
	底部橫材						
	縱骨						
	橫材						
中艙	甲板下						
	底部橫材						
	橫材						

過去三年中含 H_2S 貨物或加熱貨物的記錄，連同貨物是否經加熱的說明，以及物質安全數據單（MSDS）（如有）

船東的檢查

船東應填寫類似以下格式的表（下表僅為示例），提供至少最近三年內其對貨物區域範圍內所有貨油艙、壓載艙和空艙的詳細檢查結果，包括尖艙。

液艙號	防腐（1）	塗層範圍（2）	塗層狀況（3）	結構蝕耗（4）	液艙破損歷史記錄（5）
中央貨油艙					
邊貨油艙					
污油艙					
壓載艙					
艏尖艙					
艉尖艙					
其他處所					

註：

指明用於油類/壓載的液艙。

1） HC=硬塗層；SC=軟塗層；
A=陽極；NP=無保護

2） U=上部；M=中部；
L=下部；C=全部

3） G=良好；F=尚好；P=差；
RC=重新敷設（過去三年中）

4） N =無情況記錄；Y=情況記錄，

船東代表姓名：
……
簽字：……
日期：……

情況的說明應附於調查表之後

5） DR=破損和修理；L=滲漏

CV=改建（說明應附於調查表之後）

港口國監管檢查報告

列出港口國監督檢查報告，包括船體相關結構缺陷以及相應的糾正措施的信息：

安全管理系統

列出有關船體維護的不符合項，包括相關的糾正措施：

認可的測厚公司名稱和地址：

附件 7

認證船體結構測厚公司的程序

1 適用範圍

本指南適用於對有意從事船體結構測厚的公司的認證。

2 認證程序

提交文件

2.1 應提交下列文件給主管機關認可的組織審批：

.1 公司概況，如組織和管理機構；

.2 公司在船體結構測厚方面的經歷；

.3 技術人員履歷、即技術人員作為測厚操作人員的經歷，對船體結構等等的技術知識和經驗。操作人員應具有符合公認的行業無損檢測（NDT）標準的資質；

.4 用於測厚的設備，如超聲波試驗機及其維護/校正程序；

.5 測厚人員指導手冊；

.6 測厚技術員的培訓計劃；和

.7 按建議的測厚程序（參見附件 10）的測量記錄格式。建議的雙殼油船厚度測量程序列於附件 2。

公司審核

2.2 在提交的文件經審查合格後，應對公司進行審核，以確認公司按所提交的文件適當組織和管理，並確認其事實上有能力進行船體

結構的測厚工作。

2.3 認證取決於其在船上的測厚操作演示以及出具令人滿意的報告。

3 發證

3.1 在 2.2 所述的公司審核和 2.3 所述的測厚操作演示結果均合格後，主管機關或由主管機關認可的組織應簽發認可證書，同時出具一份關於該公司的測厚操作體系已獲認證的通知。

3.2 對證書的換新/簽註應以不超過三年的間隔期進行一次，以驗證公司保持原認可條件。

4 對已認證的測厚操作體系作任何變更的報告

如公司對業已認證的測厚操作體系作任何變更，應立即向主管機關認可的組織提交變更報告。如經主管機關認可的組織認為必要，應重新審核。

5 撤銷證書

如遇下列情況可撤銷證書：

.1 進行了不正確的測量，或報告結果錯誤；

.2 驗船師發現公司認可的測厚操作體系存在任何缺陷；和

.3 公司未能按要求將上述 4 中所述的任何變更報告經主管機關認可的組織。

附件 8

檢驗報告原則

原則上，對應符合本規則要求的油船，驗船師應在其船體結構和管路系統的檢驗報告中包括下列與檢驗有關的內容。

1 總則

1.1 在下列情形裏，應形成檢驗報告：

.1 涉及定期船體檢驗，即相關的年度、中間和換證檢驗的開始、繼續和/或完成；

.2 已發現結構破損/缺陷時；

.3 已進行修理、換新或改裝時；和

.4 已批註或消除船級條件（遺留項目）時。

1.2 報告應：

.1 提供證據，表明已按適用的要求進行了規定的檢驗；

.2 提供文件，表明檢驗中發現的情況、進行的修理以及批註或消除的船級條件（遺留項目）；

.3 提供檢驗記錄（包括採取的措施），作為可核查文件記錄的組成部分。檢驗報告應置於需存放在船上的檢驗報告案卷中；

.4 提供為未來檢驗作計劃的信息；和

.5 提供可用於維護入級規範和須知的素材信息。

1.3 當檢驗在不同的檢驗站分別進行時，應為每一部分檢驗出具報告。其後的現場驗船師在繼續或完成檢驗之前，應可獲得已檢驗項目的清單、相關的檢驗結果以及項目是否已做記錄的說明。還應列出已進行的測厚和液艙試驗，供下一位驗船師使用。

2 檢驗範圍

2.1 確定已進行全面檢驗的艙室。

2.2 確定已在每個液艙內進行近觀檢驗的位置，以及所使用的通道裝置的資料。

2.3 確定已在每個液艙內進行測厚的位置。

註： 確定進行近觀檢驗和測厚的位置應至少包括一份根據定期檢驗的類型和船齡對附件 B 規定的要求範圍相應的各結構構件進行描述的確認書。

如僅要求進行部分檢驗，即一個橫向環形強框架/一根甲板強橫樑，應使用肋骨號確定每個壓載艙和貨艙內的位置。

2.4 對液艙內保護塗層處於良好狀況而且已對近觀檢驗和（或）測厚的範圍作特殊考慮的區域，應確定經特殊考慮的結構。

2.5 確定應經受液艙試驗的液艙。

2.6 確定甲板上的如下管路系統，包括原油洗艙（COW）管路以及貨油艙和壓載艙、管隧、隔離艙和空艙內的壓載管系：

.1 已進行包括管系及其閥和附件的內部檢查和測厚在內的相關檢查；和

.2 已進行工作壓力的操作試驗。

3 檢驗結果

3.1 每個相關液艙內保護塗層的類型、範圍和狀況（分為“良好”、“尚好”或“差”），包括確定安裝了陽極的液艙。

3.2 每個相關艙室的結構狀況及以下方面的資料：

.1 確定發現的問題，例如：

.1 腐蝕及對位置、類型和範圍的描述；

.2 顯著腐蝕的區域；

.3 裂紋/裂口及對位置和範圍的描述；

.4 屈曲及對位置和範圍的描述；和

.5 凹痕及對位置和範圍的描述。

.2 確定未發現結構破損/缺陷的艙室。報告可附草圖/照片加以補充。

.3 測厚報告應由在船上監督測量過程的驗船師驗證並簽字。

.4 船長為 130m 及以上且船齡 10 年以上的油船的船體樑總縱強度評估結果。應包括下列相關內容：

.1 測得的甲板和底部折板的橫剖面面積及其建造面積；

.2 甲板和底部折板的橫剖面面積減小量；和

.3 已進行的換新或加強的相關詳細情況（見 4.2）。

4 對發現的問題所採取的行動

4.1 每當現場驗船師認為需要進行修理時，應在編號的清單中標出應予修理的每一項目。每當進行修理時，應報告實施的修理的詳節，具體提及編號的清單中的相關項目。

4.2 應報告已進行的修理並標明：

.1 艙室；

.2 結構構件；

.3 修理方法（即：換新或改動），包括：

.1 鋼級和尺度（如與原始材料的區別）；

.2 草圖/照片，如適用；

.4 修理範圍；和

.5 無損檢測（NDT）。

4.3 對在檢驗時未完成的修理，船級條件/遺留項目中應規定該修理的具體完成期限。為向參與修理檢驗的驗船師提供正確和適當的資料，船級條件/遺留項目應足夠詳細，並標明應進行修理的每一項目。對大範圍修理的確定，可參考檢驗報告。

附件 9

狀況評估報告

在換證檢驗完成後簽發

船舶概況

船名：

船級/主管機關標識號：

前船級/主管機關標識號：

IMO 編號：

船籍港：

船旗國：

前船旗國：

載重量：

總噸位：

（公噸）

本國法定：

國際噸位丈量公約（1969）：

建造日期：

船級符號：

重大改建日期：

改建類型：

船東：

前船東：

1 下列檢驗報告和文件已經簽署者審核，並查明合格。

2 檢驗狀況評估附於表 2。

3 換證檢驗已按本規則在.....（日期）完成。

狀況評估報告填寫人	姓名 簽字	職務
辦事處	日期	
狀況評估報告填寫人	姓名 簽字	職務
辦事處	日期	

所附的報告和文件：

1）

2）

3）

4）

5）

6）

狀況評估報告目錄

第 1 部分 - 船舶概況 - 見首頁

第 2 部分 - 報告審核 - 檢驗地點和方法

第 3 部分 - 近觀檢驗 - 範圍（液艙）

第 4 部分 - 貨物和壓載管系 - 已檢查

- 已試驗操作

第 5 部分 - 測厚 - 參見測厚報告

- 測量點一覽表

- 單獨表格指明顯著腐蝕的處所及相應的：

  - 厚度減小

  - 腐蝕形式

第 6 部分 - 液艙防腐系統 - 單獨表格指明：

  - 塗層位置/陽極

  - 塗層狀況（如適用）

第 7 部分 - 修理 - 液艙/區域標識

第 8 部分 - 船級條件/船旗國要求

第 9 部分 - 備忘錄 - 可接受的缺陷

- 未來檢驗時的關注點，如可疑區域

- 因塗層脫落而擴大的年度/中間檢驗

第 10 部分 - 船舶總縱強度評估結果

（對船長 130 m 及以上且

10 年以上船齡的油船）

第 11 部分 - 結論 - 檢驗報告的評估/驗證說明

測厚摘錄

參見測厚報告：

顯著腐蝕液艙/區域[1]位置或深度鏽點位置[3]	**厚度減小（%）**	**腐蝕形式[2]**	**備註：（如：參考所附草圖）**

註：

1 顯著腐蝕，即允許損耗範圍的 75% - 100%。

2 P = 鏽點

C = 總體腐蝕

3 應註明所有鏽點密度達 20%或以上、損耗為顯著腐蝕範圍或鏽點的平均深度為實際板厚度的 1/3 或以上的船底板。

液艙防腐系統

液艙號 [1]	液艙防腐蝕系統 [2]	塗層狀況 [3]	備註

註：

1 應列出所有分隔的壓載艙和貨油/壓載兼用艙。

2 C = 塗層

NP = 無保護

3 塗層狀況根據以下標準：

“良好”係指僅有少量點狀鏽斑；

“尚好”係指在扶強材的邊緣和焊縫的連接處塗層有局部脫落和/或所檢驗的區域中有超過 20%或更大範圍的輕度鏽蝕，但小於定義“差”的狀況；

“差” 係指在檢驗的區域中有超過 20%或更大範圍的塗層普遍剝落，或有 10%或更大範圍的塗層產生硬質鏽皮。

如塗層狀況未達到“良好”，應擴大年度檢驗的範圍，這應在狀況評估報告目錄第 9 部分中予以註明。

船長 130m 及以上且 10 年以上船齡的油船船體樑總縱強度的評估結果

（在下列 1、2、3 節中，只需填寫其中適用的一節）

1 本節適用於無論何時建造的船舶：在對已達到 10 年船齡的船舶進行最近一次“貨船構造安全證書”或“貨船安全證書”的換證檢驗（SC 換證檢驗）期間，酌情通過測量、換新或加強的結構件厚度，已對船體樑甲板處（甲板板和甲板縱骨）和船底處（船底板和船底縱骨）的橫剖面面積進行了計算，

發現橫剖面面積減少未超出原建造面積的 10%，如下表所列：

表 1 – 船體樑折板的橫剖面面積

		測量值	建造值	減小量
橫剖面 1	甲板折板	cm^2	cm^2	cm^2(%)
	底部折板	cm^2	cm^2	cm^2(%)
橫剖面 2	甲板折板	cm^2	cm^2	cm^2(%)
	底部折板	cm^2	cm^2	cm^2(%)
橫剖面 3	甲板折板	cm^2	cm^2	cm^2(%)
	底部折板	cm^2	cm^2	cm^2(%)

2 本節適用於 2002 年 7 月 1 日或以後建造的船舶：按附件 12 中 2.2.1.1 的規定，在對已達到 10 年船齡的船舶進行最近一次 SC 換證檢驗期間，酌情通過測量、換新或加強的結構件厚度，已對船體樑橫剖面模數進行了計算，並考慮到本組織通過的建議案，發現其在主管機關確定的極限折減值範圍之內，如下表所列：

表 2 – 船體樑的橫剖面模數

		$Z_{act}(cm^3)^1$	$Z_{req}(cm^3)^2$	備註
橫剖面 1	上甲板			
	船底			
橫剖面 2	上甲板			
	船底			
橫剖面 3	上甲板			
	船底			

註：

1 Z_{act} 係指按附件 12 中 2.2.1.1 的規定，在 SC 換證檢驗期間，通過測量、換新或加強的結構件厚度所計算出的船體樑實際橫剖面模數。

2 Z_{req} 係指按附件 12 中 2.2.1.1 的規定所計算出的船舶總縱彎曲強度的極限折減值。

Z_{act} 的計算表應附於本報告之後。

3 本節適用於 2002 年 7 月 1 日以前建造的船舶：按附件 12 中 2.2.1.2 的規定，在對已達到 10 年船齡的船舶進行最近一次 SC 換證檢驗期間，酌情通過測量、換新或加強的結構件厚度，已對船體樑橫剖面模數進行了計算，發現其符合主管機關或經認可的船級社要求的衡準，且 Z_{act} 不小於附件 12 附錄 2 中規定的 Z_{mc}（見下列註 2 定義），如下表所列。

闡述主管機關或經認可的船級社要求的營運船舶船體樑最小剖面模數的認可衡準。

表 3 – 船體樑的橫剖面模數

		$Z_{act}(cm^3)^1$	$Z_{mc}(cm^3)^2$	備註
橫剖面 1	上甲板			
	船底			
橫剖面 2	上甲板			
	船底			
橫剖面 3	上甲板			
	船底			

註：

1 如表 2 註 1 的定義。

2 Z_{mc} 係指按附件 12 中 2.2.1.2 規定計算出的最小剖面模數的極限值。

附件 10

建議的雙殼油船測厚程序

總則

1 本程序應用於記錄附件 2 和 4 所要求的厚度測量。

2 附錄 2 規定的報告格式 TM1-DHT、TM2-DHT(i)、TM2-DHT(ii)、TM3-DHT、TM4-DHT、TM5-DHT 和 TM6-DHT 應用於記錄厚度測量，並應說明最大允許減小量。可在附加的文件中說明最大允許減小量。

3 附錄 3 包含有關報告格式和厚度測量要求的圖解和說明。

4 報告格式（如適用）應以結構草圖上所示的數據加以補充。

附錄 1

船舶概況

船名：.....

IMO 編號：.....

船級主管機關標識號：.....

船籍港：.....

總噸位：.....

載重噸：.....

建造日期：.....

船級社：.....

進行測厚的公司名稱：.....

.....

測厚公司的認證機構：.....

證書號：.....

證書有效期自：.....至.....

測厚地點：.....

首次測量日期：.....

最後測量日期：.....

換證檢驗/中間檢驗日期：.....

測厚設備情況：.....

測量者資質：.....

報告編號：..... 頁數：.....頁

測量者姓名：..... 驗船師姓名：.....

測量者簽字：..... 驗船師簽字：.....

公司公章：..... 主管機關：.....

公章

附錄 2

所有甲板板、所有船底板或舷側外板厚度測量報告*（TM1-DHT）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

列板位置																	
板材位置	編號或符號	原始厚度（mm）	舯前讀數						舯後讀數						平均減小量		
			測量		減小量 P		減小量 S		測量		減小量 P		減小量 S				
			P	S	mm	%	mm	%	P	S	mm	%	mm	%	P	S	mm
舯前第 12 塊																	
第 11 塊																	
第 10 塊																	
第 9 塊																	
第 8 塊																	
第 7 塊																	
第 6 塊																	
第 5 塊																	
第 4 塊																	
第 3 塊																	
第 2 塊																	
第 1 塊																	
船中																	
舯後第 1 塊																	
第 2 塊																	
第 3 塊																	
第 4 塊																	
第 5 塊																	
第 6 塊																	
第 7 塊																	
第 8 塊																	
第 9 塊																	
第 10 塊																	
第 11 塊																	
第 12 塊																	

測量者簽字：.....

註 – 見下頁

* 不適用者劃去。

TM1-DHT 報告的註釋：

1 本報告應用於記錄下列厚度測量：

.1 貨物區域內的所有強力甲板板；

.2 貨物區域內的所有龍骨板、船底外板和舭列板；

.3 貨物區域外包括選擇的乾濕交變列板的舷側外板；

.4 貨物區域內的所有乾濕交變列板。

2 應清楚示明如下列板位置：

.1 對於強力甲板，示明甲板邊板內列板的編號；

.2 對於船底板，示明龍骨板外列板的編號；和

.3 對於舷側外板，示明舷頂列板以下列板在外板展開圖上的編號和字母。

3 應對舯前和舯後的所有區域的板進行測厚，如有板橫跨壓載艙/貨油艙邊界，則應記錄在各類型液艙的板區域分別測得的值。

4 所記錄的單點測量應代表多點測量的平均值。

5 最大允許減小量可在附加的文件中說明。

舷側外板和甲板板厚度測量報告（一、兩或三個橫剖面）（TM2-DHT（i））

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

強力甲板和舷頂列板																														
			第.....號肋骨的第一個橫剖圖							第.....號肋骨的第二個橫剖圖										第.....號肋骨的第三個橫剖圖										
列板位置	編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S					
				P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%				
甲板邊板																														
舷內第 1 塊列板																														
第 2 塊																														
第 3 塊																														
第 4 塊																														
第 5 塊																														
第 6 塊																														
第 7 塊																														
第 8 塊																														
第 9 塊																														
第 10 塊																														
第 11 塊																														
第 12 塊																														
第 13 塊																														
第 14 塊																														
中間列板																														
舷頂列板																														
艙頂總數																														

測量者簽字：.....

註 – 見下頁

TM2-DHT（i）報告的註釋：

1 本報告應用於記錄強力甲板板和舷頂列板橫剖面的厚度測量：

貨物區域內一個、兩個或三個剖面，包括附錄 3 中典型橫剖面圖表表明的結構項目（0）、（1）和（2）。

2 頂部區域包括甲板板、甲板邊板和舷頂列板（包括圓形舷緣）。

3 應註明測量的確切肋骨號。

4 所記錄的單點測量應代表多點測量的平均值。

5 最大允許減小量可在附加的文件中說明。

舷側外板和甲板板厚度測量報告（一、兩或三個橫剖面）（TM2-DHT（ii））

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

舷側外板																													
			第.....號肋骨的第一個橫剖圖							第.....號肋骨的第二個橫剖圖										第.....號肋骨的第三個橫剖圖									
列板位置	編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S				
				P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%			
舷頂列板下第 1 塊列板																													
第 2 塊																													
第 3 塊																													
第 4 塊																													
第 5 塊																													
第 6 塊																													
第 7 塊																													
第 8 塊																													
第 9 塊																													
第 10 塊																													
第 11 塊																													
第 12 塊																													
第 13 塊																													
第 14 塊																													
第 15 塊																													
第 16 塊																													
第 17 塊																													
第 18 塊																													
第 19 塊																													
第 20 塊																													
龍骨列板																													
艙底總數																													

測量者簽字：.....

註 – 見下頁

TM2-DHT（ii）報告的註釋：

1 本報告應用於記錄橫剖面處舷側外板的厚度測量：

貨物區域內一個、兩個或三個剖面，包括附錄 3 中典型橫剖面圖表表明的結構項目（3）、（4）、（5）和（6）。

2 船底區域包括龍骨板、船底板和舭部板。

3 應註明測量的確切肋骨號。

4 所記錄的單點測量應代表多點測量的平均值。

5 最大允許減小量可在附加的文件中說明。

縱向構件厚度測量報告（一、二或三個橫剖面）（TM3-DHT）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

結構構件	第.....號肋骨的第一個橫剖圖									第.....號肋骨的第二個橫剖圖									第.....號肋骨的第三個橫剖圖								
	項目編號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		項目編號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		項目編號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S	
				P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%

測量者簽字：.....

註 – 見下頁

TM3-DHT 報告的註釋：

1 本報告應用於記錄橫剖面處縱向構件的厚度測量：

貨物區域內一個、兩個或三個剖面，包括附錄 3 中典型橫剖面圖表表明的相應結構項目（10）至（29）。

2 應註明測量的確切肋骨號。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可所加附文件中說明。

橫向結構構件厚度測量報告（貨油艙長度範圍內的貨油和壓載水艙）（TM4-DHT）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

液艙說明：

結構位置：

結構構件	項目	原始厚度	最大允許減小量	測量		減小量 P		減小量 S	
		mm	mm	P	S	mm	%	mm	%

測量者簽字：.....

註 – 見下頁

TM4-DHT 報告的註釋：

1 本報告應用於記錄橫向構件的厚度測量，包括附錄 3 中典型橫剖面圖表表明的相應結構項目（30）至（36）。

2 測量區域的指導參見附錄 3。所記錄的單點測量應代表多點測量的平均值。

3 最大允許減小量可在附加的文件中說明。

水密/油密橫艙壁厚度測量報告（貨油艙或貨艙處所內）（TM5-DHT）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

液艙/貨艙狀態								
結構位置：肋骨號：								
結構部件 (板材/扶強材)	原始厚度	最大允許減小量	測量		減小量 P		減小量 S	
	mm	mm	P	S	mm	%	mm	%

測量者簽字：.....

註 – 見下頁

TM5-DHT 報告的註釋：

1 本報告應用於記錄水密/油密橫艙壁的厚度測量。

2 測量區域的指導參見附錄 3。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

其他結構構件厚度測量報告（TM6-DHT）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

結構構件是：

結構位置：

草圖

說明	原始厚度 (mm)	最大允許減小量	測量		減小量 P		減小量 S	
		mm	P	S	mm	%	mm	%

測量者簽字：.....

註 – 見下頁

TM6-DHT 報告的註釋

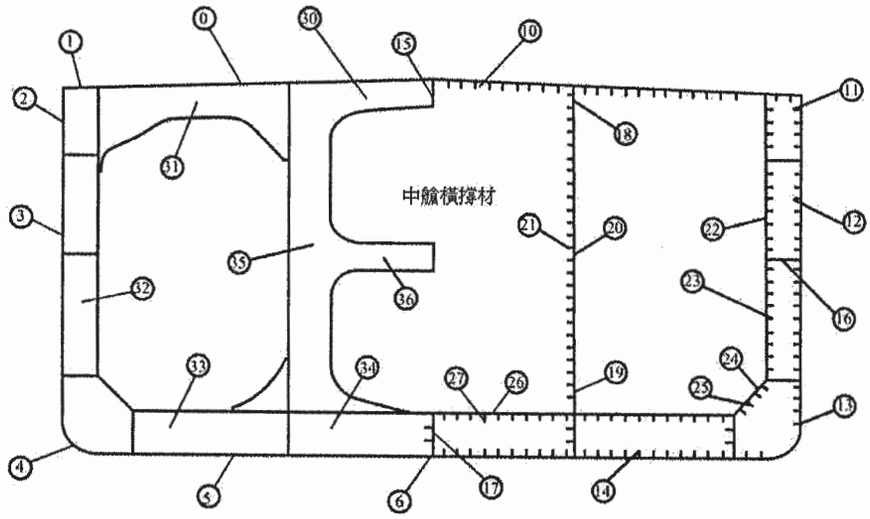
1 本報告應用於記錄其他結構件的厚度測量。

2 所記錄的單點測量應代表多點測量的平均值。

3 最大允許減小量可在附加的文件中說明。

附錄 3

厚度測量 – 雙殼油船



TM2-DHT（i）和(ii)測量報告
⓪ 強力甲板板
① 甲板邊板
② 舷頂列板
③ 舷側板
④ 舭板
⑤ 船底外板
⑥ 龍骨板

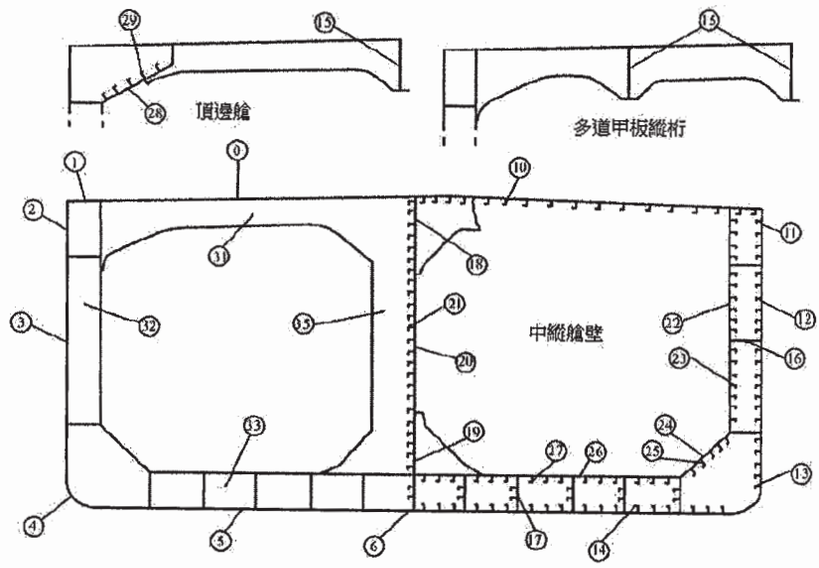
TM3-DHT測量報告	
⑩ 甲板縱骨	⑳ 縱向艙壁板（剩餘部分）
⑪ 舷頂列板縱骨	㉑ 縱向艙壁縱骨
⑫ 舷側縱骨	㉒ 內側板
⑬ 舭縱骨	㉓ 內側縱骨
⑭ 船底縱骨	㉔ 底邊艙板
⑮ 甲板縱桁	㉕ 底邊艙縱骨
⑯ 邊壓載艙水平桁材	㉖ 內底板
⑰ 船底縱桁	㉗ 內底縱骨
⑱ 縱向艙壁頂列板	㉘ 頂邊艙板
⑲ 縱向艙壁底列板	㉙ 頂邊艙縱骨

TM4-DHT 測量報告
㉚ 甲板橫材 – 中央艙
㉛ 甲板橫材 – 邊艙
㉜ 邊壓載艙垂直桁材
㉝ 雙層底板 – 邊艙
㉞ 雙層底板 – 中央艙
㉟ 縱向艙壁垂直桁材
㊱ 橫撐材

150,000載重噸以上的雙殼油船表明縱向和橫向構件的典型橫剖面

厚度測量 - 雙殼油船

150,000 載重噸及以下的雙殼油船表明縱向和橫向構件的典型橫剖面



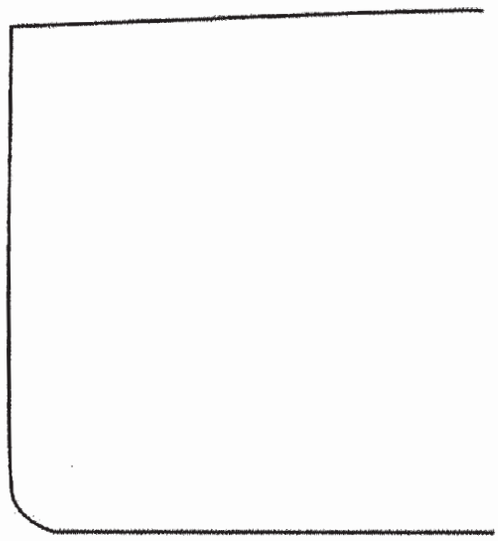
TM2-DHT（i）和（ii）報告
⓪ 強力甲板板
① 甲板邊板
② 舷頂列板
③ 舷側板
④ 舭板
⑤ 船底外板
⑥ 龍骨板

TM3-DHT報告	
⑩ 甲板縱骨	⑳ 縱向艙壁板（剩餘部分）
⑪ 舷頂列板縱骨	㉑ 縱向艙壁縱骨
⑫ 舷側縱骨	㉒ 內側板
⑬ 舭縱骨	㉓ 內側縱骨
⑭ 船底縱骨	㉔ 底邊艙板
⑮ 甲板縱桁	㉕ 底邊艙縱骨
⑯ 邊壓載艙水平桁材	㉖ 內底板
⑰ 船底縱桁	㉗ 內底縱骨
⑱ 縱向艙壁頂列板	㉘ 頂邊艙板
⑲ 縱向艙壁底列板	㉙ 頂邊艙縱骨

TM4-DHT報告
㉚ 甲板橫材 — 中央艙
㉛ 甲板橫材 — 邊艙
㉜ 邊壓載艙垂直桁材
㉝ 雙層底板 — 邊艙
㉞ 雙層底板 — 中央艙
㉟ 縱向艙壁垂直桁材
㊱ 橫撐材

厚度測量 - 雙殼油船

橫剖面輪廓。對不適用典型橫剖面的船舶，可使用本表。



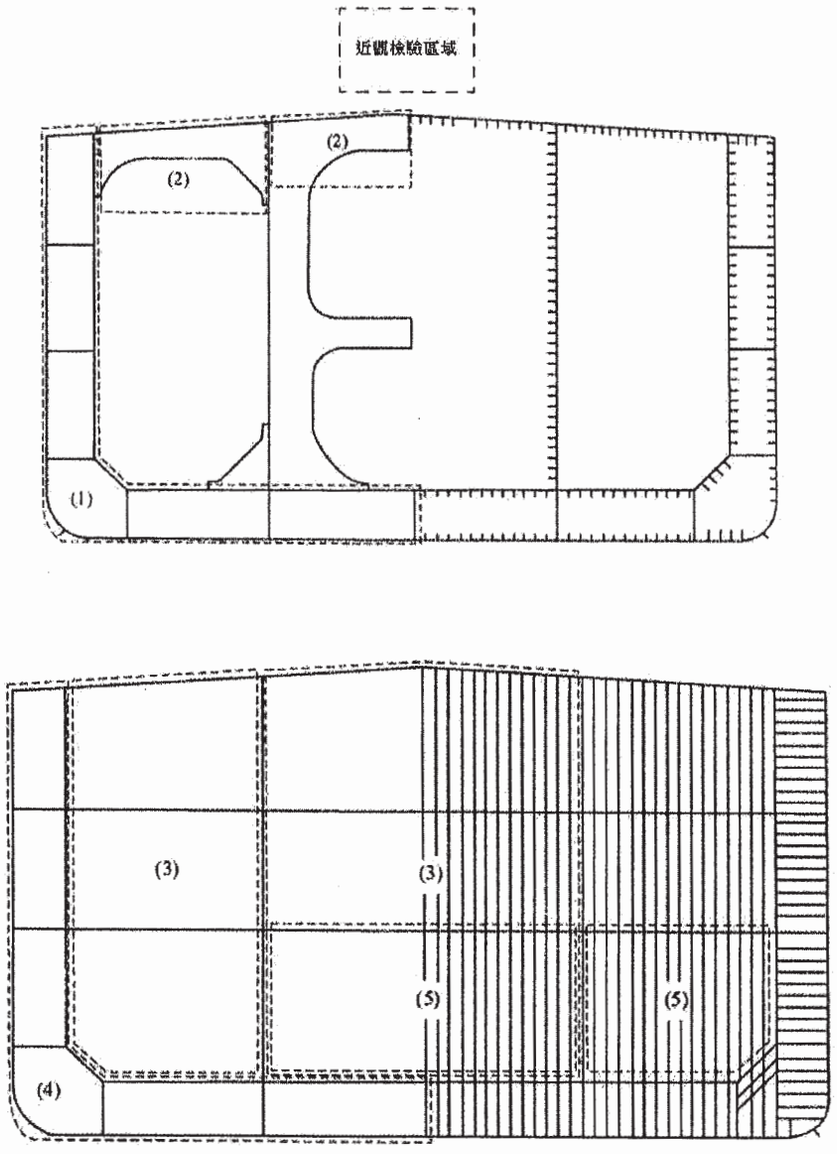
TM2-DHT（i）和（ii）報告
⓪ 強力甲板板
① 甲板邊板
② 舷頂列板
③ 舷側板
④ 舭板
⑤ 船底外板
⑥ 龍骨板

TM3-DHT報告	
⑩ 甲板縱骨	⑳ 縱向艙壁板（剩餘部分）
⑪ 舷頂列板縱骨	㉑ 縱向艙壁縱骨
⑫ 舷側縱骨	㉒ 內側板
⑬ 舭縱骨	㉓ 內側縱骨
⑭ 船底縱骨	㉔ 底邊艙板
⑮ 甲板縱桁	㉕ 底邊艙縱骨
⑯ 邊壓載艙水平桁材	㉖ 內底板
⑰ 船底縱桁	㉗ 內底縱骨
⑱ 縱向艙壁頂列板	㉘ 頂邊艙板
⑲ 縱向艙壁底列板	㉙ 頂邊艙縱骨

TM4-DHT報告
㉚ 甲板橫材 — 中央艙
㉛ 甲板橫材 — 邊艙
㉜ 邊壓載艙垂直桁材
㉝ 雙層底板 — 邊艙
㉞ 雙層底板 — 中央艙
㉟ 縱向艙壁垂直桁材
㊱ 橫撐材

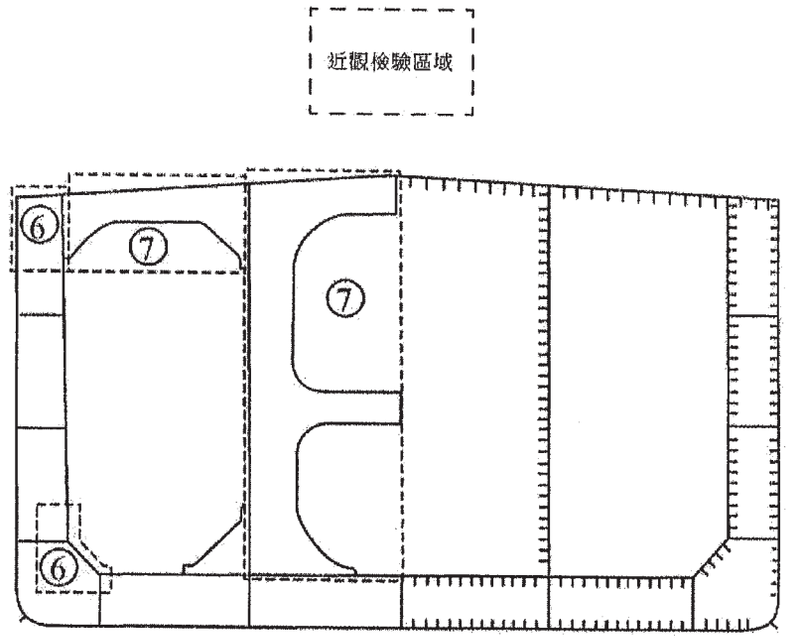
厚度測量 - 雙殼油船

應進行近觀檢驗和測厚的區域 – 附則 1 中界定的（1）至（5）區域 – 應在相應的 TM3-DHT、TM4-DHT 和 TM5-DHT 中報告的厚度。



厚度測量 - 雙殼油船

應進行近觀檢驗和測厚的區域 – 附則 1 中界定的（6）至（7）區域 – 應在相應的 TM3-DHT 和 TM4-DHT 中報告的厚度。



附件 11

與油船加強檢驗計劃有關的技術評估導則

換證檢驗

1 引言

本導則包含與技術評估有關的資料和建議，可結合油船換證檢驗的計劃加以使用。如 5.1.5 所示，本導則是一套建議的方法，在認為必要和適當時，可由主管機關決定，結合制定所要求的檢驗計劃予以施用。

2 目的和原則

2.1 *目的*

本導則所述的技術評估應有助於確定臨界結構區域、指定可疑區域，並把注意力放在那些極易發生損耗或損壞、或表明有損耗或損壞史的結構件或結構件區域。該資料可能有助於指定要進行測厚、近觀檢驗和液艙試驗的位置、區域和液艙。

2.2 *最低要求*

本導則不可用於降低附件 1、2 和 3 中分別對近觀檢驗、測厚和液艙試驗的要求，這些要求在任何情況下都應作為最低要求予以遵守。

2.3 *時限*

如同檢驗計劃的其他方面一樣，本導則所述的技術評估應由船東或經營人配合主管機關，在換證檢驗開始之前完成，即在開始檢

驗之前且通常在到期檢驗完成之日前至少 12 至 15 個月。

2.4 *應予考慮的方面*

特定船舶下列方面的技術評估可作為指定檢驗液艙和區域的基礎，這些技術評估可包括對相關可能蝕耗的風險進行定量或定性評估：

.1 設計特徵，如不同結構組件的應力等級、設計細節和高強度鋼（HTS）的使用範圍；

.2 與特定船舶及類似船舶（如有）的腐蝕、裂紋、屈曲、凹陷和修理有關的過去史；和

.3 與所載貨物類型、貨油/壓載的不同液艙的使用、液艙保護以及塗層（如有）狀況有關的資料。

對各種結構件和區域易損壞或易蝕耗的相關風險的技術評估，應根據諸如參考資料 1 和 2 所列的經認可原則和慣例進行評判和確定。

3 技術評估

3.1 *總則*

3.1.1 有三種基本類型的可能缺陷，它們可能成為與檢驗計劃有關的技術評估對象，即腐蝕、裂紋和屈曲。碰撞損壞通常不包含在檢驗計劃中，因為凹陷通常在備忘錄中註明且由驗船師作為常規情況進行處理。

3.1.2 結合檢驗計劃過程開展的技術評估，原則上應按圖 1 的圖解形式表示，該圖表示如何結合檢驗計劃程序進行技術評估。該方法的

依據是對基本上與設計和腐蝕有關的知識和經驗的一種風險評估。

3.1.3 應考慮到設計中有關容易因振動、高應力或疲勞造成屈曲或裂紋的結構細節。

3.1.4 腐蝕與老化過程有關，並且與新船防腐系統的質量和營運中的後續維護密不可分。腐蝕也可導致裂紋和/或屈曲。

3.2 *方法*

3.2.1 *設計細節*

3.2.1.1 本船及姐妹船和/或類似船舶（如有）的損壞經歷，是計劃過程中使用的主要資料來源。此外，還應包括從設計圖紙中選擇的結構細節。應考慮的典型損壞經歷包括：

.1 裂紋的數量、範圍、位置和發生次數；和

.2 屈曲位置。

3.2.1.2 該資料可在檢驗報告和/或船東檔案中包括船東自查結果中找到。這些缺陷應予以分析、註明並標記在草圖上。

3.2.1.3 此外，還應利用一般經驗。例如，應參照參考資料 1，其中包括各種油船結構細節的典型損壞和所建議的修理方法目錄。

3.2.1.4 在使用此種圖表時，應一道審核主要結構圖紙，以比對實際結構，並查找易受損壞的相似細節。圖 2 所示是一個實例。特別是，參考資料 1 的第 3 章涉及針對雙殼油船的各個方面，如應力集中部位、建造時未對中、腐蝕趨勢、疲勞因素和需特別關注的區域，這些都應在制定檢驗計劃時予以考慮。

3.2.1.5 除使用上述圖表外，審核主要結構圖紙還應包括校核已出現過裂紋的典型設計細節。應仔細考慮造成損壞的因素。

3.2.1.6 高強度鋼（HTS）的使用是一個重要因素。在使用普通低碳鋼時有着良好營運史的構件，在使用高強度鋼及其較高相關應力時，可能更易受損。甲板和船底結構的縱向材料使用高強度鋼的經驗普遍和總體上較好。在其他受到較高動應力的部位如舷側結構，使用高強度鋼的經驗則不那麼令人鼓舞。

3.2.1.7 在這一方面，根據相關方法對典型和重要的組件及構件的應力計算可能證明有用，並應予以考慮。

3.2.1.8 所選擇的在該過程中確定的結構區域應予以記錄，並標記在將要納入檢驗計劃的結構圖上。

3.2.2 *腐蝕*

3.2.2.1 為評估相關的腐蝕風險，通常應考慮以下資料：

.1 液艙和處所的使用狀況；

.2 塗層狀況；

.3 陽極狀況；

.4 掃艙程序；

.5 以前腐蝕損壞；

.6 貨油艙用作壓載艙的時間；

.7 腐蝕風險方案（見參考資料 2，表 2.1）；和

.8 加熱液艙的位置。

3.2.2.2 參考資料 2 以典型狀況圖給出明確實例，其可用於判定和描述塗層狀況。

3.2.2.3 腐蝕風險的評估應基於參考資料 2，以及船齡和為制定檢驗計劃而收集的資料推測出的船舶狀況的相關資料。

3.2.2.4 應列出各種液艙和處所相應指明的腐蝕風險。應特別注意雙殼油船極易受腐蝕的區域。為此，應考慮參考資料 1 的 3.4（腐蝕趨勢）中專門針對雙殼油船腐蝕方面的表述。

3.2.3 *近觀檢驗和測厚的位置*

3.2.3.1 根據腐蝕風險表和設計經驗的評估，可指定初次近觀檢驗和測厚（剖面）的位置。

3.2.3.2 通常應指定已判定具備最大腐蝕風險的液艙和處所內的測厚剖面。

3.2.3.3 最初應根據最大腐蝕風險指定進行近觀檢驗的液艙和處所，並應始終包括壓載艙。選擇的原則是隨船齡的增長或在資料缺乏或不可靠時增大範圍。

參考資料

1 油船結構合作論壇（TSCF），“雙殼油船結構檢查和維護導則，1995”。

2 油船結構合作論壇（TSCF），“油船結構指導手冊，1997”。

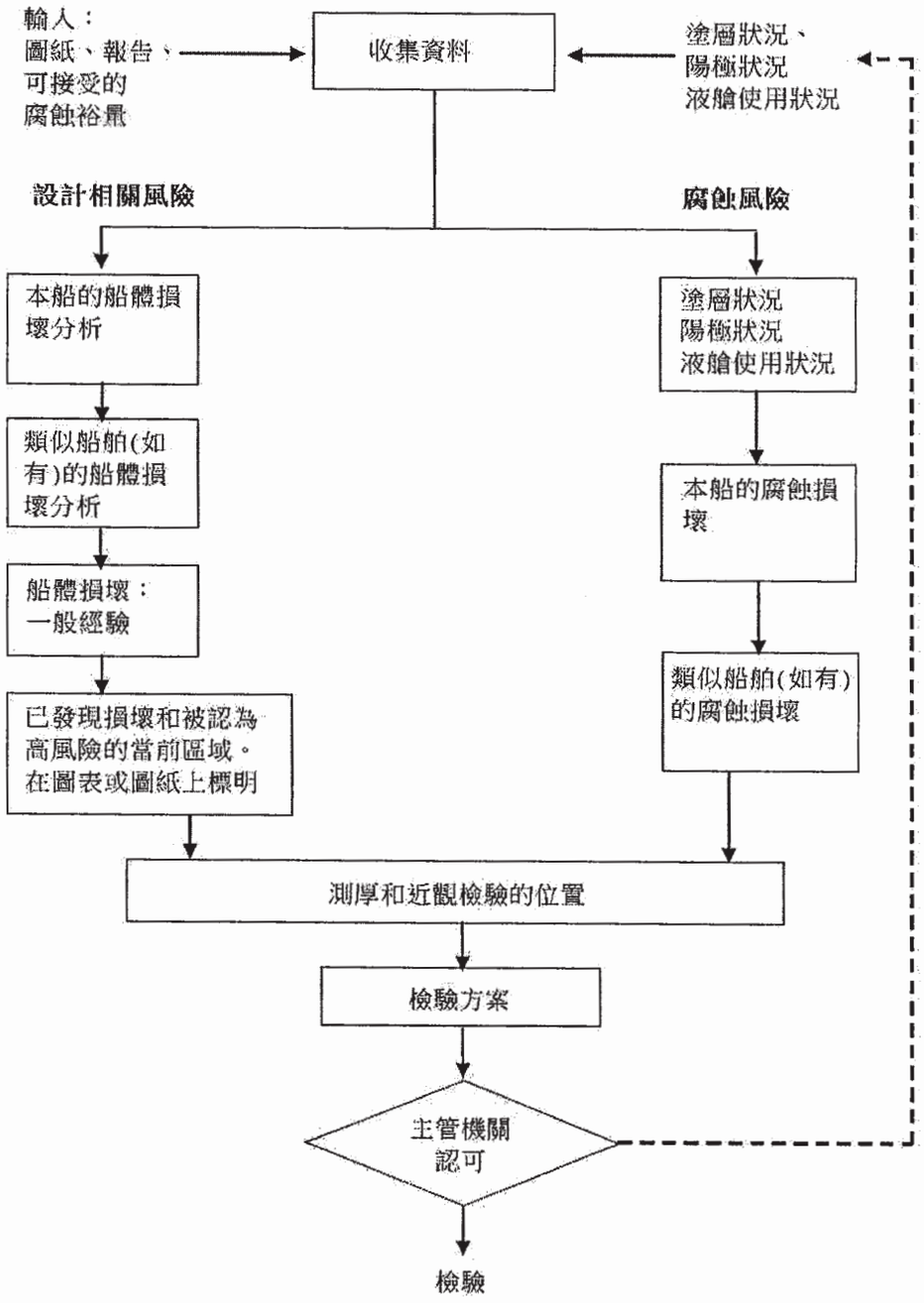
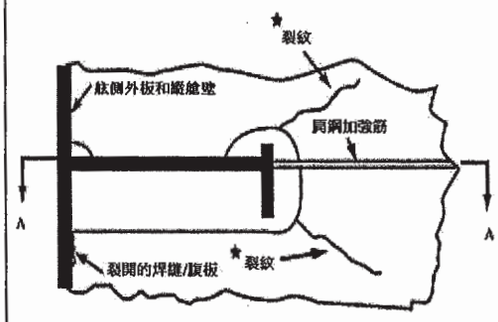
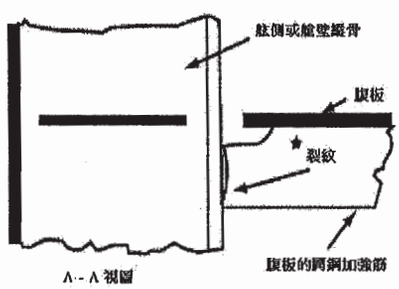


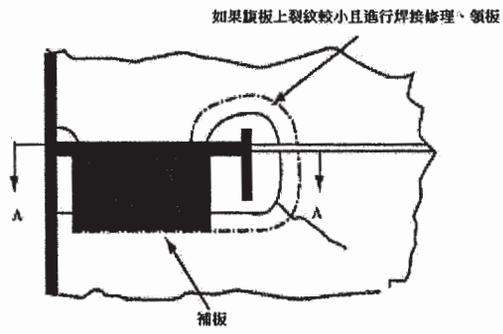
圖 1 – 技術評估和檢驗計劃過程

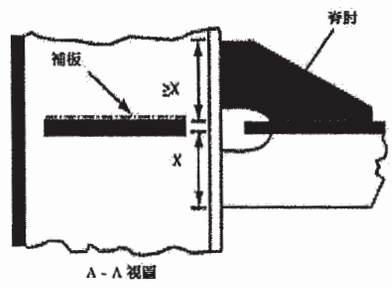
位置： 縱骨與橫框架的連接 例1： 縱向扶強材連接切口處腹板和扁鋼裂紋	
典型損壞	建議修理





註：可能出現一處或多處裂紋





腹板扁鋼割換並部分換新或予以焊補

造成損壞的因素：

1. 扁鋼扶強材的不對稱連接導致疲勞載荷下扶強材根部處產生高應力。
2. 縱骨與腹板的連接面積不足。
3. 板厚周邊包焊處的焊縫有缺陷。
4. 應力集中區域有高度局部腐蝕，如扁鋼扶強材連接處、縱骨切口處角隅，以及腹板與船體連接切口處。
5. 橫向腹板處應力集中。
6. 動力波浪載荷/船舶運動。

圖1	油船結構合作論壇 主題：結構細節的目錄	圖1

圖2 – 典型損壞和修理示例 （ 根據參考資料2複製 ）

附件 12

油船船體樑總縱強度衡準

1 總則

1.1 本衡準應按 8.1.2 要求，用於船體樑總縱強度的評估。

1.2 為使所評估的船舶總縱強度能被承認為有效，縱向內部構件和船體外板之間的角焊縫應處於良好狀況，以保持船體外板與縱向內部構件的完整性。

2 總縱強度的評估

對船長 130m 及以上且船齡在 10 年以上的油船，應在“貨船構造安全證書”或“貨船安全證書”的換證檢驗（SC 換證檢驗）期間，酌情以測得、換新或加強的結構件厚度為基礎，按本附件的要求對船體樑總縱強度進行評估。船體樑總縱強度的狀況評估應根據附錄 3 中規定的方法確定。

2.1 *甲板和底部折板船體樑橫剖面面積的計算*

2.1.1 應在 SC 換證檢驗期間，酌情利用測得、換新或加強的結構件厚度，對甲板折板（甲板板和甲板縱骨）以及底部折板（船底板和船底縱骨）船體樑的橫剖面面積進行計算。

2.1.2 如甲板或底部折板的橫剖面面積減小量超過其各自的建造面積（即船舶建造時的原始剖面面積）的 10%，則應採取下列任一措施：

.1 對甲板或底部折板進行換新或加強，以使實際剖面面積不小於建造面積的 90%；或

.2 在 SC 換證檢驗期間，酌情利用測得、換新或加強的結構件厚度，應用附錄 1 中規定的計算方法計算船體樑的橫剖面的實際剖面模數（Z_{act}）。

2.2 *船體樑橫剖面模數的要求*

2.2.1 根據 2.1.2.2 計算的船體樑橫剖面實際剖面模數應根據適用情況符合下列任一要求：

.1 對於 2002 年 7 月 1 日或以後建造的船舶，根據 2.1.2.2 計算的船體樑橫剖面實際剖面模數 Z_{act} 應不小於主管機關確定的減小極限值，同時考慮到本組織通過的建議案；或

.2 對於 2002 年 7 月 1 日以前建造的船舶，只要 Z_{act} 在任何情況下不小於附錄 2 中規定的最小剖面模數的減小極限值，則根據 2.1.2.2 要求計算的船體樑橫剖面實際剖面模數 Z_{act} 應符合主管機關或認可的船級社要求的營運船舶最小剖面模數衡準。

附錄 1

船體樑船中剖面的剖面模數計算衡準

1 在計算船體樑橫剖面模數時，應考慮到所有縱向連續強力構件的剖面積。

2 對較大開口，即長度超過 2.5m 或寬度超過 1.2m 以及採用扇形焊接的扇形孔，應始終在剖面模數計算中扣除其剖面面積。

3 對較小開口（人孔、減輕孔、焊縫處的單個扇形孔等），只要其寬度或陰影區寬度在一個橫剖面上的總和所減小的甲板或船底剖面模數不超過 3%，且縱骨和縱向桁材上減輕孔、流水孔和焊縫處單個扇形孔的高度不超過腹板高度的 25%（但對扇形孔深度最大不超過 75mm），則不必扣除其剖面面積。

4 較小開口寬度總和在一個橫剖面上小於船底或甲板區域的 $0.06(B-\Sigma b)$（B=船寬，Σb=較大開口的總寬度），可視作等同於上述剖面模數的減小。

5 投影區域將通過畫兩條為 30°角的切線獲得。

6 甲板剖面模數與舷側型甲板線有關。

7 船底剖面模數與基線有關。

8 如得到縱艙壁或高腹板桁材的有效支持，連續凸形甲板和連續縱向艙口圍板應包含在縱向構件剖面面積中。甲板剖面模數應通過慣性力矩除以下列距離求得，但此距離應大於到舷側甲板邊線的距離：

$$y_1 = y\left(0.9+0.2\frac{x}{B}\right)$$

式中：

y = 中和軸至連續強力構件頂點的距離；

x = 連續強力構件頂點至船體中心線的距離；

x 和 y 應在 y_t 最大值處測量。

9 多艙口間的縱桁將通過特殊計算予以考慮。

附錄 2

營運船舶最小總縱強度的減小極限值

1 營運油船的最小剖面模數（Z_{mc}）的減小極限值由下列公式得到：

$$Z_{mc} = cL^2 B (C_b + 0.7)k \ (\text{cm}^3)$$

式中：

L = 船長。L 係指在夏季載重線上首柱前緣至舵柱後緣，或如無承舵柱時至舵桿中心的距離，m。L 應不小於夏季載重線總長的 96%，且不必大於 97%。對於特殊船艉和船艏布置的船舶，L 可予以特殊考慮。

B = 最大型寬，m。

C_b = 基於 L 和 B 及相應於夏季載重線吃水 d 的型方形係數。C_b 應取不小於 0.6。

$$C_b = \frac{d \text{ 吃水的型排水量}(\text{m}^3)}{LBd}$$

$$c = 0.9c_n$$

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

$$c_n = 10.75 \text{，對 } 300 \text{ m} \leq L \leq 350 \text{ m}$$

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

k = 材料係數，如：

k = 1.0，對屈服應力為 235 N/mm² 及以上的低碳鋼；

k = 0.78，對屈服應力為 315 N/mm² 及以上的高強度鋼；

k = 0.72，對屈服應力為 355 N/mm² 及以上的高強度鋼。

2 上述 1 中基於剖面模數要求的船體樑所有縱向連續構件尺寸應保持在船中 0.4*L* 範圍內。但在特殊情況下，考慮到船舶種類、船型和裝載條件，該尺寸可向船中 0.4*L* 區域的兩端逐漸減小，但不應影響船舶的裝載適應性。

3 但是，上述標準可能不適用於特殊船型或特殊設計的船舶，如特殊主要比例和/或重量分布的船舶。

附錄 3

總縱強度評估和修理方法的測厚取樣方法

1 總縱強度評估範圍

如果船體樑長度包含了壓載艙和貨油艙，總縱強度評估應在船中 0.4*L* 範圍內；如果鄰近的壓載艙和貨油艙延伸至船中 0.4*L* 之外，總縱強度評估應在船中 0.5*L* 範圍內。

2 厚度測量的取樣方法

2.1 按照第 2.5 節的要求，應選擇橫剖面以對儘可能多的腐蝕環境中的不同液艙進行厚度測量，例如與裝有加熱盤管的貨油艙同處一個共同界面的壓載艙、其他壓載艙、允許注入海水的貨油艙和其他貨油艙。如有，應選擇與裝有加熱盤管的貨油艙同處一個共同界面的壓載艙和允許注入海水的油艙。

2.2 應按照附件 2 對橫剖面的最低數量進行取樣。橫剖面應位於懷疑會產生，或從 2.3 規定的甲板板和船底板測量中已發現的，最大厚度縮減的區域，並應在已進行局部換新或加強的區域之外。

2.3 在貨物區域內應按照附件 2 的要求測量的每塊甲板板和（或）船底板上，應至少測量兩個點。

2.4 在按照附件 2 的要求測量的每個橫剖面的甲板和船底的 0.1*D*（*D* 為船舶型深）範圍內，應在腹板和面板上測量每根縱骨和縱桁，並應在縱骨之間測量每塊板的一個點。

2.5 對於除 2.4 規定的按照附件 2 的要求在每個橫剖面處進行測量者外

的縱向構件，應在腹板和面板上測量每根縱骨和縱桁，並在每塊列板的每塊板上至少測量一個點。

2.6 每一構件的厚度應通過每一構件上橫剖面處所有測量值的平均值來確定。

3 總縱強度不足時的附加測量

3.1 如果按照本附件中的總縱強度要求，發現一個或一個以上的橫剖面有缺陷，應增加進行厚度測量的橫剖面數量以使船中 0.5*L* 區域內的每個液艙均已取樣。對部分在 0.5*L* 區域內但延伸至 0.5*L* 區域外的液艙處所也應進行取樣。

3.2 在每個修理區域前部的一個橫剖面和每個修理區域後部的一個橫剖面上也應進行附加的厚度測量，該厚度測量的範圍應足以確保鄰近修理剖面的區域也符合本規則的要求。

4 有效的修理方法

4.1 為滿足本附件要求而進行的換新或加強應符合 4.2。

4.2 經換新或加強的結構件的最小連續長度應不小於該處主要構件間距的兩倍。此外，更換的構件（板、扶強材、樑腹板和折板等）前部和後部的每個連接件對接處的厚度減小應不在顯著腐蝕範圍（相關的每一特定構件允許縮減量的 75%）以內。如果對接處的厚度差超過較小厚度的 15%，應採取厚度平穩過渡。

4.3 涉及設置覆板或改變結構件的替代修理方法應經特殊考慮。在考慮設置覆板時，應限於下列情況：

.1 恢復和/或增加總縱強度；

.2 應加強的甲板或船底板的厚度減小應不在顯著腐蝕範圍（相關甲板板的允許縮減量的 75%）以內；

.3 定位和布置，包括覆板的終止應按照主管機關認可的標準進行；

.4 覆板連續至船中整個 0.5*L* 的長度範圍；和

.5 對接焊中採用連續填角焊和全焊透焊縫，並根據覆板的長度採用塞焊。採用的焊接工藝應令主管機關滿意。

4.4 考慮到抗皺折力和縱向構件和外板之間的焊接狀況，鄰近更換區域且與安裝的覆板相連的現有結構應能承受施加的載荷。

B 部分

除雙殼油船外的油船檢驗期間加強檢驗計劃規則

1 總則

1.1 *適用範圍*

1.1.1 本規則應適用於附件 B 的 A 部分中 1.2.1 所界定的、所有除雙殼油船外的 500 總噸及以上的自航式油船。

1.1.2 本規則應適用於貨物區域內的貨油艙、泵艙、隔離艙、管隧和空艙以及所有壓載艙處的船體結構和管路系統的檢驗。

1.1.3 本規則包含檢查、測厚和液艙壓力試驗的最小範圍。在發現顯著腐蝕和/或結構缺陷時，應擴大檢驗範圍，並包括必要時進行附加近觀檢驗。

1.1.4 應在公約第 I/10 條規定的檢驗期間進行檢驗。

1.2 *定義*

1.2.1 *壓載艙*係指僅用於海水壓載的液艙。

1.2.2 *貨油/壓載兼用艙*：如在本規則提及，係指作為船舶運營的常規部分，用於運載貨油或壓載水並被視作壓載艙的液艙。對於按照《防污公約》第 I/18.3 條規定僅在例外情況下可以裝載壓載水的貨油艙，應視作貨油艙。

1.2.3 *全面檢驗*係指用於報告船體結構整體狀況和確定附加近觀檢驗範圍的檢驗。

1.2.4 *近觀檢驗*係指驗船師在近距離目視範圍內（即通常伸手可及）對結構件細節進行的檢驗。

1.2.5 *橫剖面*係指垂直於船舶中線的船體橫剖面，包括所有板材等縱向構件，以及在甲板、舷側外板、船底板、內底板以及縱艙壁上的縱骨和縱桁。

1.2.6 *代表性*液艙係指能反映相似類型和用途並具有類似防腐蝕系統的其他液艙。當選擇代表性液艙時，應考慮到其營運和修理史，以及可識別的臨界結構區域和/或可疑區域。

1.2.7 *可疑區域*係指呈現顯著腐蝕和/或驗船師認為易於快速損耗的區域。

1.2.8 *顯著腐蝕*係指通過腐蝕狀況評估表明其腐蝕量超過許用裕量的 75%但尚處於可接受範圍內的腐蝕程度。

1.2.9 *防腐系統*通常可考慮全硬保護塗層。硬保護塗層通常係指環氧樹脂塗層或同等物。既非軟塗層亦非半硬塗層的其他塗層系統，如按生產廠的技術說明書進行敷設和維護，可考慮作為替代品接受。

1.2.10 *塗層狀況*定義如下：

“良好” 係指僅有少量點狀鏽斑；

“尚好” 係指在扶強材的邊緣和焊縫的連接處塗層有局部脫落和/或所檢驗的區域中有超過 20%或更大範圍的輕度鏽蝕，但小於定義“差”的狀況；

“差” 係指在檢驗的區域中有超過 20%或更大範圍的塗層普遍剝落，或有 10%或更大範圍的塗層產生硬質鏽

皮。

1.2.11 *臨界結構區域*係指從計算中或從該船舶或類似船舶或姐妹船的營運歷史中認定並需要進行檢測的、容易發生影響船舶結構整體性的破裂、屈曲或腐蝕的區域。

1.2.12 *貨物區域*係指船上包含貨油艙、污油艙和貨油/壓載泵艙、相鄰貨油艙的隔離空艙、壓載艙和空艙處所的部分，以及前述處所上方的船舶這一部分的整個長度和寬度範圍內的甲板區域。

1.2.13 *中間檢驗*係指在第二或第三次年度檢驗進行的檢驗。

1.2.14 *及時徹底修理*係指在檢驗期間完成的並使驗船師滿意的永久性修理，旨在消除需要批註的任何相關船級條件或遺留項目。

1.2.15 *特殊考慮*（與近觀檢驗和測厚有關）係指進行足夠的近觀檢查和測厚以確定塗層以下結構的實際平均狀況。

1.3 *修理*

1.3.1 任何與超過允許極限的結構蝕耗有關的損壞（包括屈曲、凹槽、脫開或斷裂）或大面積區域的蝕耗超過允許極限，若影響或主管機關認為將影響船舶的結構、水密或風雨密完整性，均應進行及時徹底修理。應考慮的區域包括：

.1 舷側肋骨，其端部附件或鄰接的舷側外板；

.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 艙蓋和艙口圍板，如安裝在兼裝船上。

在不能提供足夠修理設施的區域，主管機關可允許船舶直接駛往某一修理點。這可能要求船舶為該修理航次卸下貨物和/或進行臨時性修理。

1.3.2 此外，在檢驗發現腐蝕或結構缺陷時，只要主管機關認為其中之一將影響船舶繼續營運，船舶應在繼續營運前採取補救措施。

1.4 驗船師

對 20,000 載重噸及以上的油船，應由兩名驗船師聯合執行在其船齡超過 10 年後的第一次計劃的換證檢驗（即第三次換證檢驗），以及其後的所有換證和中間檢驗。如由被認可組織進行檢驗，則這些驗船師應為該被認可組織專職聘用的。

1.5 *厚度測量與近觀檢驗*

在任何檢驗中，即在換證檢驗、中間檢驗、年度檢驗或與這些檢驗範圍相同的其他檢驗中，對需要實施近觀檢驗的結構區域的測厚應與近觀檢驗同時進行。

2 換證檢驗

2.1 *總則*

2.1.1 換證檢驗可在第四次年度檢驗時開始，並可在其後一年中繼續進行，以在第五個周年日前完成。

2.1.2 檢驗計劃作為換證檢驗準備的一部分，應在換證檢驗前制定。厚度測量不應放在第四次年度檢驗之前進行。

2.1.3 除年度檢驗的要求外，檢驗還應包括足夠範圍的檢查、試驗和核查，以確保船體以及 2.1.5 所要求的相關管路處於合格狀況，並適合貨船構造安全證書新的有效期內其預定的用途，同時應進行適當的維護作業及到期接受各種定期檢驗。

2.1.4 所有貨油艙、壓載艙和貨物區域內構成船體結構的任何其他液艙、泵艙、管隧、隔離艙和鄰接貨油艙的空艙、甲板和外板都應進行檢查，這種檢查應輔以 2.5 和 2.6 所要求的厚度測量和試驗，以確保該結構的完整性保持有效。該檢查的目的旨在發現可能存在的顯著腐蝕、嚴重變形、斷裂、破損或其他結構蝕耗。

2.1.5 甲板上的貨油管路，包括原油洗艙（COW）管路，以及上述液艙和處所內的貨油管路和壓載管路應予以檢查，並在現場驗船師認為滿意的工作壓力下進行操作試驗，以確保其密性和狀況保持合格狀態。應特別注意貨油艙內的壓載管路和壓載艙及空艙內的貨物管路情況，在修理期間當該管路（包括閥和附件）處於開啟狀態並可進行內部檢查時，應隨時通知驗船師。

2.1.6 對兼裝壓載/貨油艙的檢驗範圍，應根據以前的壓載記錄和提供的防腐系統予以評估。

2.2 *乾塢檢驗*

2.2.1 乾塢檢驗應作為換證檢驗的一部分。在貨船構造安全證書的五年期內應對船底外部至少進行兩次檢查。在所有情況下，船底檢查的最大間隔期不應超過 36 個月。

2.2.2 對船齡為 15 年及以上的船舶，應在乾塢進行船底外部檢查。對船齡小於 15 年的船舶，其未與換證檢驗一起進行的船底外部檢查，

作為替代，可在船舶漂浮狀態下進行檢查。船舶在漂浮狀態下的檢查只有在船況令人滿意並具有合適的設備和合格人員時才能進行。

2.2.3 如乾塢檢驗未與換證檢驗一起完成，或如 2.2.1 中所述的 36 個月的最大間隔期未予滿足，則貨船構造安全證書應停止有效，直至乾塢檢驗完成。

2.2.4 如對貨油艙和壓載艙下部的全面檢驗、近觀檢驗和厚度測量（如適用）尚未實施，則應按換證檢驗的適用要求進行。

*註：*貨油艙和壓載艙下部係指輕壓載水線以下的部分。

2.3 ***液艙防腐系統***

如設有貨油艙防腐系統，應檢查其狀況。如存在下列情況之一，應在隨後每年檢查壓載艙：

.1 從建造之時就未敷設硬保護塗層；或

.2 已敷設軟塗層或半硬塗層；或

.3 在艙內發現顯著腐蝕，或；

.4 發現硬保護塗層未達到“良好”狀況，且該塗層未進行令驗船師滿意的修補。如驗船師認為必要，應進行測厚。

2.4 ***全面和近觀檢驗範圍***

2.4.1 在換證檢驗時應對所有液艙和處所進行一次全面檢驗。應檢查以前檢驗中確定的可疑區域。

2.4.2 在換證檢驗時近觀檢驗的最低要求見附件 1。

2.4.3 驗船師在考慮到檢驗時液艙的維護、防腐系統的狀況以及下

列情況的同時，可根據需要擴大近觀檢驗的範圍：

.1 尤其是根據可獲得的資料其結構布置或構件曾在類似液艙中或類似船舶上出現過缺陷的液艙；和

.2 具有與主管機關認可的防腐系統相關的尺度減小結構的液艙。

2.4.4 對於查明硬保護塗層處於 1.2.10 界定的“良好”狀況的液艙內區域，主管機關可對按附件 1 要求的近觀檢驗範圍予以特殊考慮。

2.5 ***厚度測量範圍***

2.5.1 在換證檢驗時厚度測量的最低要求見附件 2。

2.5.2 顯著腐蝕的區域擴大的厚度測量按附件 4 的規定進行，並可在 5.1 要求的檢驗計劃中作出附加規定。該擴大的測厚應在檢驗完成之前進行。以前檢驗中確定的可疑區域應進行測厚。

2.5.3 驗船師可根據需要進一步擴大厚度測量的範圍。

2.5.4 對於查明硬保護塗層處於 1.2.10 所界定的“良好”狀況的液艙內區域，按附件 2 要求的厚度測量範圍可由主管機關予以特殊考慮。

2.5.5 測厚的橫剖面應選擇在懷疑發生最大縮減或經甲板板測厚揭示的最大縮減處。

2.5.6 如需要測量兩個或三個橫剖面，則至少應有一個橫剖面位於船中 0.5*L* 範圍內的壓載艙。對於船長 130m 及以上（船長定義參見現行《國際載重線公約》）且船齡在 10 年以上的油船，如需要按 8.1.2 進行總縱強度的評估，測厚的取樣方式見附件 12 的規定。

2.6 ***液艙壓力試驗範圍***

2.6.1 在換證檢驗期時液艙壓力試驗的最低要求見附件 3。

2.6.2 驗船師可根據需要擴大液艙壓力試驗的範圍。

2.6.3 對壓載艙邊界進行試驗的液體壓頭應至空氣管頂部。

2.6.4 對貨油艙邊界進行的試驗應至其各種服務狀態下液體可能上升的最高點。

3 年度檢驗

3.1 ***總則***

年度檢驗應由旨在盡實際可行確保船體和管路處於合格狀態的檢查所構成，還應考慮到營運記錄、壓載艙防腐系統狀況和範圍以及檢驗報告案卷中確定的區域。

3.2 ***船體檢查***

3.2.1 凡可見的船殼板及其關閉裝置均應進行檢查。

3.2.2 對水密貫穿件應盡實際可行地進行檢查。

3.3 ***露天甲板檢查***

3.3.1 檢查貨油艙開口，包括墊圈、艙蓋板、艙口圍板和防火網。

3.3.2 檢查貨油艙壓力/真空閥和防火網。

3.3.3 檢查所有燃料艙透氣管上的防火網。

3.3.4 檢查貨油、原油洗艙、燃料艙和透氣管系，包括透氣桅和集管。

3.4 *貨泵艙和管隧（如設有）檢查*

3.4.1 檢查所有泵艙艙壁是否有漏油或裂紋的痕跡，特別是泵艙艙壁的所有貫穿件密封布置。

3.4.2 檢查所有管系和管隧的狀況。

3.5 *壓載艙檢查*

3.5.1 如由於換證檢驗和中間檢驗的結果而有要求，應對壓載艙進行檢查。在主管機關認為必要或發現大量腐蝕時，應進行測厚。

3.5.2 如發現 1.2.8 界定的顯著腐蝕，則應按附件 4 的要求增加測厚範圍。該擴大的測厚應在檢驗完成之前進行。應檢查以前檢驗中確定的可疑區域。以前檢驗中確定的顯著腐蝕區域應進行測厚。

4 中間檢驗

4.1 *總則*

4.1.1 對年度檢驗要求以外的附加項目，可在第二次或第三次年度檢驗時或其之間進行檢驗。

4.1.2 貨油艙和壓載艙的檢驗範圍取決於船齡，見 4.2、4.3 和 4.4 的規定。

4.1.3 應儘可能檢查露天甲板上的貨油管系、原油洗艙管系、燃油管系、壓載管系、蒸汽管系和透氣管系統以及透氣桅和集管。如檢查後對管系狀況有懷疑，可要求對該管系進行壓力試驗或（和）測厚。

4.1.4 中間檢驗和換證檢驗所要求的處所的檢驗和測厚不應相互替代。

4.2 ***船齡 5 至 10 年的油船***

4.2.1 4.1.3 的要求適用。

4.2.2 應檢查所有壓載艙。在主管機關認為必要時，應進行測厚和試驗，以確保該結構的完整性保持有效。

4.2.3 如存在下列情況之一，應在隨後的每年檢查壓載艙：

.1 從建造之時就未敷設硬保護塗層；或

.2 已敷設軟塗層或半硬塗層；或

.3 在艙內發現顯著腐蝕，或；

.4 發現硬保護塗層未達到“良好”的狀況，且該塗層未進行令驗船師滿意的修補。

4.2.4 除上述要求之外，還應對上次檢驗中確定的可疑區域進行檢查。

4.3 ***船齡 10 至 15 年的油船***

4.3.1 中間檢驗的要求應與 2 和 5.1 要求的上次換證檢驗的範圍相同。但是，除非主管機關認為必要，可不要求進行貨油艙和壓載艙的壓力試驗和 8.1.2 規定油船船體樑總縱強度評估。

4.3.2 在應用 4.3.1 時，中間檢驗可在第二次年度檢驗時開始，並可在其後一年中繼續進行，以在第三次年度檢驗時完成，替代應用 2.1.1。

4.3.3 在應用 4.3.1 時，水下檢驗可予以考慮，以替代 2.2 的要求。

4.4 ***船齡超過 15 年的油船***

4.4.1 中間檢驗的要求應與 2 和 5.1 要求的上次換證檢驗的範圍相同。但是，除非主管機關認為必要，可不要求進行貨油艙和壓載艙的壓力試驗和 8.1.2 規定的油船船體樑總縱強度評估。

4.4.2 在應用 4.4.1 時，中間檢驗可在第二次年度檢驗時開始，並可在其後一年中繼續進行，以在第三次年度檢驗時完成，替代應用 2.1.1。

4.4.3 在應用 4.4.1 時，乾塢檢驗應作為中間檢驗的一部分。如對貨油艙和水壓載艙下部的全面檢驗、近觀檢驗和測厚（如適用）尚未實施，則應按中間檢驗的適用要求進行。

*註：*貨油艙和壓載艙下部係指輕壓載水線以下的部分。

5 檢驗前準備

5.1 *檢驗計劃*

5.1.1 船東應與主管機關或經主管機關認可的組織合作，在以下檢驗的任何部分開始前制定具體的檢驗計劃：

.1 換證檢驗；和

.2 船齡 10 年以上的油船的中間檢驗。

中間檢驗的檢驗計劃可由經上次換證檢驗所作狀況評估報告補充的檢驗計劃以及隨後的相關檢驗報告組成。制定檢驗計劃應考慮自上一次換證檢驗後對檢驗要求的任何修正。檢驗計劃應根據附件 6A 中的資料以書面形式制定。只有在制定檢驗計劃後才能開始進行檢驗。

5.1.1.1 在制定檢驗計劃前，船東應根據附件 6B 中的資料填寫檢驗

計劃調查表，並送交主管機關。

5.1.2 在制定檢驗計劃時，應搜集和查閱下列文件用以選擇要進行檢查的液艙、區域和結構件：

.1 檢驗現狀和基本的船舶資料；

.2 6.2 和 6.3 中所述的船上文件；

.3 貨油艙和壓載艙主結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料；

.4 按附件 9 要求的狀況評估報告；

.5 以前相關的破損和修理記錄；

.6 來自被認可組織和船東兩方面的以前相關的檢驗和檢查報告；

.7 過去三年的貨物和壓載記錄，包括加熱狀態下的貨物運輸；

.8 惰性氣體裝置和液艙清潔程序詳細資料；

.9 自船舶建造以來對貨油艙和壓載艙進行改建或改裝的資料和其他相關數據；

.10 塗層和防腐系統（如有）的說明和記錄，包括陽極和以前的入級說明；

.11 過去三年中船東對結構總體損耗、液艙邊界和管路滲漏以及塗層和包括陽極在內的防腐系統（如有）狀況進行的檢查。見附件 5 中的報告指南；

.12 營運期間有關的維護保養等級的資料，包括含船體相關缺陷的港口國監督檢查報告、安全管理系統與船體保養有關的不合格項，包括相關的糾正措施；和

.13 任何有助於確定可疑和臨界結構區域的其他信息。

5.1.3 提交的檢驗計劃應說明並至少符合 2.6 及附件 1、附件 2 和附件 3 分別對近觀檢驗、厚度測量和液艙試驗的要求，並應至少包括下列相關資料：

.1 基本的船舶資料和概況；

.2 貨油艙和壓載艙主結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料；

.3 液艙圖；

.4 附有塗層的使用、防腐蝕系統和狀況資料的液艙明細表；

.5 檢驗條件（如：有關液艙清潔、除氣、通風、照明等的資料）；

.6 結構通道的設置和方法；

.7 檢驗設備；

.8 確定進行近觀檢驗的液艙和區域（見 2.4）；

.9 確定進行測厚的區域和剖面（見 2.5）；

.10 確定進行液艙試驗的艙（見 2.6）；

.11 確定測厚公司；

.12 與該船舶有關的損壞經歷。

.13 臨界結構區域和可疑區域，如相關。

5.1.4 主管機關將通知船東適合於該船舶的可接受的最大限度結構蝕耗。

5.1.5 也可使用附件 11 中與液貨船加強檢驗計劃有關的技術評估導則。該導則是一套建議的方法，在認為必要和適當時，可由主管機關決定，結合制定所要求的檢驗計劃予以施用。

5.2 ***檢驗條件***

5.2.1 船東應為安全進行檢驗提供必要的設施。

5.2.1.1 為使現場驗船師能進行檢驗，船東和主管機關應商定合適和安全的通道裝置。

5.2.1.2 檢驗計劃調查表中應提供通道細節。

5.2.1.3 如現場驗船師斷定安全的設置和要求的通道不合適，不應進行相關處所的檢驗。

5.2.2 應可安全進入液艙和處所。液艙和處所應予除氣和適當通風。進入液艙、空艙或圍蔽處所前，應確認液艙內部空氣中無危險氣體並含足夠的氧氣。

5.2.3 在準備檢驗和測厚時，為徹底檢查，所有處所應進行清掃，包括除去表面所有鬆動的腐蝕積垢。處所應充分清潔，做到無水、無垢、無髒物、無殘油等，以能揭示腐蝕、變形、裂紋、破損或其他結構蝕耗以及塗層狀況。但是，船東已經決定換新的結構區域只需進行清掃和去垢，以確定要換新的區域範圍。

5.2.4 應提供足夠的照明，以能揭示腐蝕、變形、裂紋、破損或其他結構蝕耗以及塗層狀況。

5.2.5 如已敷設軟塗層或半硬塗層，應為驗船師提供安全通道，以使其能驗證塗層的有效性和進行內部結構（可能包括塗層剝落的部分）的狀況評估。如無法提供安全通道，則軟塗層或半硬塗層應予以去除。

5.2.6 船東應指派至少一位對液艙和封閉處所檢查有經驗的人員始終陪伴現場驗船師。此外，由至少兩人組成的有經驗的後備人員應等候在被檢驗的液艙或處所的艙口處。後備組人員應不斷觀察液艙或處所內的工作情況，並應保持救生和撤離設備隨時可用。

5.2.7 在被檢查的液艙或處所內的檢驗人員、甲板上的負責駕駛員和駕駛室（視情況而定）之間應安排通信系統。這些通信設備應在整個檢驗中始終保持工作狀態。

5.3 ***結構通道***

5.3.1 對全面檢驗，應提供設施使驗船師能用安全和可行的方法檢查船體結構。

5.3.2 對近觀檢驗，應提供驗船師可接受的下列一個或多個通道裝置：

.1 固定腳手架和穿過結構的通道；

.2 臨時腳手架和穿過結構的通道；

.3 升降機和可移動台架；

.4 艇或筏；

.5 便攜式梯子；和/或

.6 其他等效設施。

5.4 ***檢驗設備***

5.4.1 通常應使用超聲波檢測設備進行測厚。應按要求向驗船師證明該設備的精度。

5.4.2 如驗船師認為必要，可要求用下列一個或多個裂紋檢測方法：

.1 射線照相設備；

.2 超聲波探傷設備；

.3 磁粉探傷設備；

.4 着色滲透劑；和/或

.5 其他等效手段。

5.4.3 檢驗期間應有可使用的測爆儀、測氧儀、呼吸器、救生索，攀登帶及其繩索、鉤子和哨笛及其使用說明和指導。應提供安全檢查清單。

5.4.4 應為安全有效地進行檢驗提供足夠和安全的照明。

5.4.5 在檢驗期間，應有足夠的防護服（如：安全頭盔、手套、安全靴等）可供使用。

5.5 ***海上或錨泊檢驗***

5.5.1 如驗船師能得到船上人員的必要協助，可接受在海上或錨泊時進行檢驗。檢驗所需的預防措施和程序應符合 5.1、5.2、5.3 和 5.4

中的要求。

5.5.2 在液艙內的檢驗人員與在甲板上的負責駕駛員之間應布置通信系統。如使用艇或筏，該系統還應包括負責壓載水泵操作的人員。

5.5.3 只有在驗船師考慮到所提供的安全措施，包括氣象預報和船舶對可預見狀況的反應並表示同意，以及在液艙內水位預期的上升不超過 0.25m 的情況下，方可使用艇或筏對液艙進行檢驗。

5.5.4 在使用筏或艇進行近觀檢驗時，應符合下列條件：

.1 應僅使用即使一個浮箱破裂仍具有合格的剩餘浮力和穩性的耐用型氣脹式筏或艇；

.2 艇或筏應拴於通道梯上，並另安排一人留守在能清晰看見該艇或筏的通道梯處；

.3 所有參加人員都應有合適的救生衣；

.4 液艙內的水面應平靜（在所有可預見的情況下，液艙內預期的水位上升不應超過 0.25m），且水位應固定。任何時候當筏或艇在使用時，水位都不得上升；

.5 液艙或處所必須只含有乾淨的壓載水。水面上不允許有任何油層；

.6 任何時候都不允許水位與最深甲板下腹板面板的距離在 1m 以內，這樣檢驗人員通往艙口的直接逃生通道才不致被隔絕。只有在被檢查的艙壁間距上設有甲板通道人孔並開啟時才能考慮水位超出甲板橫材，這樣才能保證任何時候檢驗人員都可使用逃生通道。其他有效的通往甲

板的逃生通道也可予以考慮；和

.7 如果液艙（或處所）共用一個透氣系統或惰性氣體系統，使用艇或筏的液艙應予以隔絕，以防止氣體從其他液艙（或處所）傳入。

5.5.5 如腹板深度為 1.5m 或以下，筏或艇可允許單獨用於在液艙或處所甲板下的區域的檢查。

5.5.6 如腹板深度超過 1.5m，筏或艇可僅允許單獨用於下列之一的情況：

.1 甲板下結構的塗層處於“良好”狀況，且無鏽蝕的跡象；或

.2 如果在每一間距上設置一個允許安全進出的永久通道。該通道應：

.1 通過垂直梯直接通向甲板，該梯在甲板下約 2m 處設有一個小平台；和

.2 通過在液艙每一端都設有通往甲板的梯子的縱向永久平台通向甲板。該平台應在液艙的全長範圍內布置在與甲板下結構的筏運檢查所需要的最高水位的相同平面，或其上。為此，最高水位之上的空餘量應假定在甲板橫框架的跨距中點和液艙長度中點處測量至距甲板板不大於 3m（參見圖 1）。

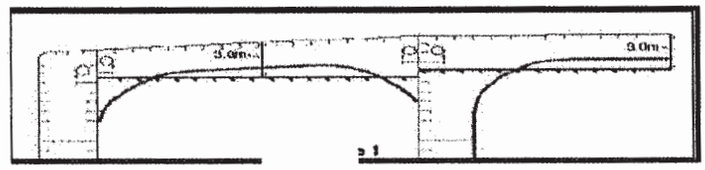


圖 1

如上述條件都不能滿足，則應為甲板下區域的檢驗提供腳手架或其他等效設施。

5.5.7　5.5.5 和 5.5.6 所述的單獨使用筏或艇並不排除在檢驗過程中使用艇或筏在液艙範圍內的移動。

5.6　*檢驗計劃會議*

5.6.1　在檢驗之前和檢驗期間，現場驗船師和船上船東代表要做好適當準備，進行密切合作，這是執行安全有效檢驗的重要一環。在船上檢驗期間應定期召開安全會議。

5.6.2　為確保檢驗能安全有效地進行，應在換證和中間檢驗的任何部分開始之前，召開由現場驗船師、現場船東代表、測厚公司測量人員（視情況而定）和船長或由船長或公司指派的具有相應資質的代表參加的檢驗計劃會議，以確定檢驗計劃中預見的所有布置均已到位。

5.6.3　會議中應討論的項目的示意性清單如下：

.1　船舶計劃（即航線、靠碼頭和離碼頭操縱、靠泊時段、貨物和壓載作業等）；

.2　測厚的規定和布置（即通道、清潔/除垢、照明、通風、人員安全）；

.3　測厚範圍；

.4 認可標準（參見最小厚度表）；

.5 考慮了塗層狀況和可疑區域/顯著腐蝕區域後確定的近觀檢驗和測厚範圍；

.6 測厚的實施；

.7 總體上和發現不均勻腐蝕/點蝕之處的代表性讀數的採集；

.8 繪製出顯著腐蝕區域；和

.9 現場驗船師、測厚公司測量人員以及船東代表之間就發現的相關問題進行溝通。

6 船上文件

6.1 *總則*

6.1.1 船東應獲取、提供並在船上保存 6.2 和 6.3 規定的文件，隨時供驗船師使用。6.2 中所述的狀況評估報告應包括一份英文譯文。

6.1.2 文件應在船舶的整個營運壽命期間保存在船上。

6.2 *檢驗報告案卷*

6.2.1 檢驗報告案卷應是船上文件的一個組成部分，包括：

.1 結構檢驗報告（附件 8）；

.2 狀況評估報告（附件 9）；和

.3 測厚報告（附件 10）。

6.2.2 船東及主管機關的辦事處，或經主管機關認可的組織的辦事

處，也應備有檢驗報告案卷可供使用。

6.3 ***支持性文件***

船上應備有下列附加文件可供使用：

.1 貨油艙和壓載艙主結構圖；

.2 以前修理史；

.3 貨物和壓載史；

.4 惰性氣體設備的使用範圍和洗艙程序；

.5 船上人員對以下方面檢查：

.1 總體的結構損耗狀況；

.2 艙壁和管路泄漏；和

.3 塗層或防腐系統狀況（如有）。報告製作格式如附件 5 所示；和

.6 5.1 要求的檢驗計劃，直至換證檢驗（如適用）完成；和

.7 任何其他有助於識別臨界結構區域和/或需要檢查的可疑區域的資料。

6.4 ***船上文件審核***

檢驗前，驗船師應檢查船上文件資料的完整性及其內容，並以其為檢驗的基礎。

7 測厚程序

7.1 ***總則***

7.1.1 如要求的測厚不是由代表主管機關的被認可組織進行，則應由被認可組織的驗船師在場見證測厚過程。驗船師在船上的時間應視需要監督該測厚過程的範圍而定。

7.1.2 測厚公司應參加在檢驗開始前舉行的檢驗計劃會議。

7.1.3 要求實施近觀檢驗的區域內的構件測厚應與近觀檢驗同步進行。

7.1.4 在任何情況下，測厚範圍應足以代表實際的平均狀況。

7.2 ***測厚公司的認證***

測厚應由主管機關認可的組織根據附件 7 規定的原則予以認證的合格公司進行。

7.3 ***報告***

7.3.1 應編製一份測厚報告並提交給主管機關。該報告應給出測量部位、所測得的厚度以及相應的原始厚度。此外，報告還應說明進行測厚的日期、測量設備的類型、測量人員的姓名及其資質，並由測厚人員簽字。測厚報告應遵循附件 10 建議的測厚程序中規定的原則。

7.3.2 驗船師應審核最終的測厚報告並在封面上會簽。

8 檢驗報告和評估

8.1 ***檢驗報告的評估***

8.1.1 檢驗期間收集的船舶結構狀況的數據和資料應用於評估船舶的可接受性和連續結構完整性。

8.1.2 對（現行《國際載重線公約》中界定的）船長 130m 及以上的

油船，在其達到 10 年船齡後所進行的構造安全換新檢驗期間，應按附件 12 中規定的油船船體樑總縱強度衡準，利用測得的、換新的和加強的相應結構件厚度，對船舶的總縱強度作出評估。

8.1.3 應由主管機關或經主管機關授權的被認可組織對資料進行分析並予以簽註，其分析的結論應作為狀況評估報告的一部分。

8.1.4 如根據初始評估的結果對結構件進行了換新或加強，則 8.1.2 中要求的船舶總縱強度的最終評估結果應作為狀況評估報告的一部分。

8.2 *報告*

8.2.1 檢驗報告原則參見附件 8。

8.2.2 當檢驗在不同的檢驗站分別進行時，檢驗的每一部分均應出具報告。其後的現場驗船師在繼續或完成檢驗之前，應可獲得已經檢查和/或試驗項目的清單（壓力試驗、測厚等）以及項目是否已做記錄的說明。

8.2.3 應向船東簽發附件 9 所示的檢驗狀況評估報告以及結果，並應將其留存在船上供以後檢驗時查閱。狀況評估報告應由主管機關或經主管機關授權的被認可組織予以簽註。

附件 1

換證檢驗時的近觀檢驗要求

船齡≤5 年	5 年＜船齡≤10 年	10 年＜船齡≤15 年	船齡＞15 年
第 1 次換證檢驗	**第 2 次換證檢驗**	**第 3 次換證檢驗**	**第 4 次及以後換證檢驗**
(A) 一個完整的橫向環狀框架-在一個壓載邊艙內(如設置)或者一個主要用於水壓載的貨油邊艙內 (B) 一根甲板強橫樑-在一個貨油艙內 (D) 一道橫艙壁-在一個壓載艙內 (D) 一道橫艙壁-在一個貨油邊艙內 (D) 一道橫艙壁-在一個中央貨油艙內	(A) 所有完整的橫向環狀框架-在一個壓載邊艙內(如設置)或者一個主要用於水壓載的貨油邊艙內 (B) 一根甲板強橫樑-在每一個餘下的壓載艙內(如設置) (B) 一根甲板強橫樑-在一個貨油邊艙內 (B) 一根甲板強橫樑-在兩個中央貨油艙內 (C) 兩個橫向艙壁-在一個壓載邊艙內(如設置)或者一個主要用於水壓載的貨油邊艙內 (D) 一道橫艙壁-在每一個餘下的壓載艙內 (D) 一道橫艙壁-在一個貨油邊艙內 (D) 一道橫艙壁-在兩個中央貨油艙內	(A) 所有完整橫向環狀框架-在所有壓載艙內 (A) 所有完整橫向環狀框架-在一個貨油邊艙內 (A) 所有環狀框架中至少 30%-在餘下的每個貨油邊艙內(見註 1) (C) 所有橫艙壁-在所有貨油艙和壓載艙內 (E) 甲板和底部橫材至少 30%，包括鄰接的結構件-在每一個中央貨油艙內(見註 1) (F) 主管機關認為必要之處	與第 3 欄中的船舶相同；如主管機關認為必要，包括附加的橫向構件

註 1：

30%應圓整到下一位完整的整數。

（A） 完整的橫向環狀框架，包括相鄰的結構構件。

（B） 甲板強橫樑，包括相鄰的結構構件。

（C） 完整的橫向艙壁，包括縱桁系統及相鄰構件。

（D） 橫艙壁下部，包括縱桁系統及相鄰結構構件。

（E） 甲板及船底橫框架，包括相鄰的結構構件。

（F） 附加的完整橫向環狀框架。

附件 2

換證檢驗時的測厚要求

船齡≤5 年	5 年＜船齡≤10 年	10 年＜船齡≤15 年	船齡＞15 年
1	2	3	4
1 貨物區域內全船寬的一個甲板板剖面(在一個壓載艙處，如設置；或一個主要用於水壓載的貨油艙內) 2 按附件 1 應進行近觀檢驗的結構件的測量點，供總體評定並作腐蝕形式記錄 3 可疑區域	1 貨物區域內： .1 每塊甲板板 .2 一個橫剖面 2 按附件 1 應進行近觀檢驗的結構件的測量點，供總體評定並作腐蝕形式記錄 3 可疑區域 4 貨物區域以外選擇的舷側乾濕交變列板	1 貨物區域內： .1 每塊甲板板 .2 兩個橫剖面 .3 所有舷側乾濕交變列板 2 按附件 1 應進行近觀檢驗的結構件的測量點，供總體評定並作腐蝕形式記錄 3 可疑區域 4 貨物區域以外選擇的舷側乾濕交變列板	1 貨物區域內： .1 每塊甲板板 .2 三個橫剖面 .3 每塊船底板 2 按附件 1 應進行近觀檢驗的結構件的測量點，供總體評定並作腐蝕形式記錄 3 可疑區域 4 全長範圍內所有舷側乾濕交變列板

附件 3

換證檢驗時的液艙壓力試驗要求

船齡≤5 年	船齡＞5 年		
1	2		
1 面對壓載艙、空艙、管隧、燃油艙、泵艙或隔離艙的貨油艙邊界 2 所有壓載艙邊界	1 所有壓載艙邊界 2 所有貨油艙艙壁		

附件 4

顯著腐蝕區域的測厚範圍要求

貨物區域內的換證檢驗

船底結構

結構件	測量範圍	測量形式
1 船底板	至少為三個強肋骨間距（包括後艙壁至強肋板間距）長的全艙寬底板； 測量所有吸口的周圍和下面的底板	在縱骨和橫桁之間的每一板格上作五點形測量
2 船底縱骨	在被測厚的船底板每一個強肋骨間距內，至少取三根縱骨	在縱骨折板同一橫截線上測量三個點，在腹板垂直方向上測三個點
3 底部縱桁和肘板	在前、後橫艙壁肘板趾端處和各艙中點處	在腹板上的每一個板格扶強材之間測量一個點，各單點位於同一垂直線上，或腹板上至少測量三個點。在面板的同一橫截線上測量兩個點，在縱桁/艙壁肘板上作五點形測量
4 底部強框架（腹板）	在測量的船底板格範圍內的各強肋骨間距中，三個底強橫框架腹板的兩端和中點	在 $2m^2$ 面積上作五點形測量，在面板上作單個測量
5 板格扶強材	如設有	單個測量

甲板結構

結構件	測量範圍	測量形式
1 甲板板	全艙寬的兩條帶	每條帶上的每塊板至少測量三個點
2 甲板縱骨	在每兩個強肋骨間距中，至少各取三根縱骨	腹板上沿其垂線上測量三個點，在折板上（如設有）測量兩個點
3 甲板縱桁和肘板	在前、後橫艙壁肘板趾端處和各艙中點處	在腹板上的每一個板格扶強材之間測量一個點，各單點位於同一垂直線上，或腹板上至少測量三個點。 在面板的同一橫截線上測量兩個點，在縱桁/艙壁肘板上作五點形測量
4 甲板強橫樑	至少在兩個強橫樑，在其跨距的兩端和中點測量	在約 $2m^2$ 面積上作五點形測量，在面板上作單個測量
5 板格扶強材	如適用	單個測量

外板和縱艙壁

結構件	測量範圍	測量形式
1 頂列板和底列板及桁材平台處的列板	至少三個強肋骨間距的範圍內，每對縱骨之間的板	單點測量
2 所有其他列板	在相同的三個強肋骨間距的範圍內，每第三對縱骨間的板	單點測量
3 頂列板和底列板上的縱骨	在相同的三個強肋骨間距的範圍內，每根縱骨	在腹板的橫截線上，腹板上測量三個點，折板上測量一個點
4 所有其他板列上的縱骨	在相同的三個強肋骨間距的範圍內，每第三根縱骨	在腹板的橫截線上，腹板上測量三個點，折板上測量一個點
5 縱骨—肘板	在相同的三個強肋骨間距的範圍內，在艙的上部、中部和底部至少取三根縱骨—肘板	在肘板上作五點形測量
6 強肋骨和橫撐材	三塊腹板，每塊腹板上至少測量三個部位，包括橫撐材連接處	在約 2m² 面積內作五點形測量，在強肋骨和橫撐材面板上作單點測量

橫艙壁和止蕩艙壁

結構件	測量範圍	測量形式
1 頂列板和底列板及桁材平台處的列板	在約 1/4、1/2 和 3/4 艙寬處，一對扶強材之間的板	在 1m 長的扶強材間作五點形測量
2 所有其他列板	在中間部位，一對扶強材之間的板	單點測量
3 槽形艙壁列板	在平面板板格的中心處和在斜折板或裝配連接處，用於每個結構尺寸改變處的板	在約 1m² 面積上作五點形測量
4 扶強材	至少取三根典型扶強材	腹板：肘板連接之間的全跨長內作五點形測量（在每個肘板連接處腹板同一橫截線上測兩點，跨中點測一點）。 折板：每塊肘板趾端和跨長的中點作單點測量
5 肘板	在艙的頂部、中部和底部	至少取三塊在肘板上作五點形測量
6 高腹板和桁材	在肘板趾端和跨長中點測量	腹板：在約 1m² 面積上作五點形測量，在面板的橫截線上測量三個點
7 桁材平台	所有桁材在其兩端和中部測量	在 1m² 面積上作五點形測量再在肘板趾端附近和面板上作單個測量

附件 5

船東檢查報告

結構狀況

船名：.....

船東檢查報告 – 結構狀況

液艙/貨艙號：.....

鋼級： 甲板：..... 舷側：.....

船底：..... 縱艙壁：.....

構件	裂紋 屈曲 腐蝕 塗層狀況 凹蝕 改動/修理 其他
甲板：	
船底：	
舷側：	
縱艙壁：	
橫艙壁：	

進行修理的原因：

進行的測厚（日期）：

總體結果：

過期檢驗：

船級遺留項目：

意見：

檢查日期：.....

檢查員：.....

簽字：.....

附件 6A

檢驗計劃

基本資料和概況

船名：
IMO編號：
船旗國：
船籍港：
總噸位：
載重量（公噸）：
垂線間長（m）：
造船廠：
船號：
被認可組織（RO）：
RO的船舶標識號：
交船日期：
船東：
測厚公司：

1 序言

1.1 *範圍*

1.1.1 本檢驗計劃包括在本規則中要求的貨物區域、壓載艙（包括艏艉尖艙）內進行全面檢驗、近觀檢驗、測厚和壓力試驗的最小範圍。

1.1.2 檢驗布置和安全方面應經現場驗船師認可。

1.2 *文件*

按第 6 節的要求，制定檢驗計劃所用的全部文件應在檢驗期間在船上可供使用。

2 貨艙、液艙和處所的布置

本部分檢驗計劃應以圖紙或文字形式提供檢驗適用範圍內的液艙和

處所布置的資料。

3 液艙和處所的一覽表及其使用情況、塗層範圍和防腐系統的資料

本部分檢驗計劃應說明與檢驗計劃調查表中提供的船舶液艙使用情況、塗層範圍和防腐系統資料有關的任何變化（並應作更新）。

4 檢驗條件

本部分檢驗計劃應提供有關的檢驗條件的資料，如：貨艙和液艙清洗、除氣、通風和照明等。

5 結構通道的設置和方法

本部分檢驗計劃應說明與檢驗計劃調查表中提供的結構通道的設置和方法資料有關的任何變化（並應作更新）。

6 檢驗設備清單

本部分檢驗計劃應確定並列出可用於檢驗和所要求測厚的設備。

7 檢驗要求

7.1 *全面檢驗*

本部分檢驗計劃應確定並列出本船按 2.4.1 應進行全面檢驗的處所。

7.2 *近觀檢驗*

本部分檢驗計劃應確定並列出本船按 2.4.2 應進行近觀檢驗的船體結構。

8 確定進行液艙試驗的液艙

本部分檢驗計劃應確定並列出本船按 2.6 應進行液艙試驗的液艙。

9 確定測厚的區域和剖面

本部分檢驗計劃應確定並列出按 2.5.1 應測厚的區域和剖面。

10 船體結構最小厚度

本部分檢驗計劃應規定受本規則約束的該船船體最小厚度（說明按（a）或最好是（b），如有此類信息）：

（a）根據本船的船體結構圖所附的損耗裕度表和原始厚度確定；

（b）在以下表中給出：

區域或位置	建造時的原始厚度（mm）	最小厚度（mm）	顯著腐蝕厚度（mm）
甲板			
板			
縱骨			
縱桁			
船底			
板			
縱骨			
縱桁			
船側			
板			
縱骨			
縱桁			
縱艙壁			
板			
縱骨			
縱桁			
內底			
板			
縱骨			
縱桁			

區域或位置	建造的原始厚度（mm）	最小厚度（mm）	顯著腐蝕厚度（mm）
橫艙壁			
板			
扶強材			
橫向強框架、肋板和縱桁			
板			
折板			
扶強材			
橫撐材			
折板			
腹板			

*註：*本檢驗計劃應附有損耗裕度表。

11 測厚公司

本部分檢驗計劃應確定與檢驗計劃調查表提供的測厚公司資料有關的任何變化（如有）。

12 與船舶有關的損壞經歷

本部分檢驗計劃應使用下表提供船舶至少最近三年內貨物長度區域範圍內的貨油艙、壓載艙和空艙處的船體損壞細節。對這些損壞區域應進行檢驗。

該船按位置分類的船體損壞

液艙或處所編號或區域	可能的原因（如已知）	損壞說明	位置	修理	修理日期

如損壞與設計有關，姐妹船或類似船舶的船體損壞（如可得到）

液艙或處所編號或區域	可能的原因（如已知）	損壞說明	位置	修理	修理日期

13 以前檢驗中確定的顯著腐蝕區域

本部分檢驗計劃應確定並列出以前檢驗中發現的顯著腐蝕區域。

14 臨界結構區域和可疑區域

本部分檢驗計劃應確定並列出臨界結構區域和可疑區域（如有此類信息）。

15 其他相關意見和信息

本部分檢驗計劃應提供與檢驗相關的任何其他意見和信息。

附錄

附錄 1 – 圖紙清單

5.1.3.2 要求備有貨油艙和壓載艙的主要結構圖（尺寸圖），包括有關使用高強度鋼（HTS）的資料。本檢驗計劃附錄應確定並列出作為本檢驗計劃組成部分的主要結構圖。

附錄 2 – 檢驗計劃調查表

船東已提交的檢驗計劃調查表（附件 6B）應附於本檢驗計劃後。

附錄 3 – 其他文件

本部分檢驗計劃應確定並列出作為本計劃組成部分的任何其他文件。

為符合 5.1.3，船東配合主管機關制定。

日期：

（經授權的船東代表的姓名和簽字）

日期：

（經授權的主管機關代表的姓名和簽字）

附件 6B

檢驗計劃調查表

下述資料將使船東能配合主管機關制定一份符合本規則要求的檢驗計劃。關鍵是船東在填寫本調查表時提供最新的資料。填寫完成後的本調查表應能提供本決議要求的所有資料和材料。

概況

船名：

IMO 編號：

船旗國：

船籍港：

船東：

被認可組織（RO）：

總噸位：

載重量（公噸）：

交船日期：

關於為近觀檢驗和測厚提供通道的資料

船東應在下表中說明通往應進行近觀檢驗和測厚的結構的通道。近觀檢驗係指現場驗船師在近距離目視範圍內（即通常伸手可及）對結構件細節進行的檢驗。

液艙號	結構	C（貨物）/ B（壓載）	臨時腳手架	筏	梯子	直接通道	其他方法（請說明）
F.P.	艏尖艙						
A.P.	艉尖艙						
邊艙	甲板下						
	舷側						
	底部橫材						
	縱骨						
	橫材						
中艙	甲板下						
	底部橫材						
	橫材						

過去三年中含 H_2S 貨物或加熱貨物的記錄，連同貨物是否經加熱的說明，以及物質安全數據單（MSDS）（如有）

船東的檢查

船東應填寫類似以下格式的表（下表僅為示例），提供至少最近三年內其對貨物區域範圍內所有貨油艙、壓載艙和空艙的詳細檢查結果，包括尖艙。

液艙號	防腐（1）	塗層範圍（2）	塗層狀況（3）	結構蝕耗（4）	液艙破損歷史記錄（5）
中央貨油艙					
邊貨油艙					
污油水艙					
壓載艙					
艏尖艙					
艉尖艙					
其他處所					

註：

指明用於油類/壓載的液艙。

1） HC = 硬塗層；SC = 軟塗層；
A = 陽極；NP = 無保護

2） U = 上部；M = 中部
L = 下部；C = 全部

3） G = 良好；F = 尚好；P = 差；
RC = 重新敷設（過去三年中）

4） N = 無情況記錄；Y = 有情況記錄，情況的說明應附於調查表之後

船東代表簽名：

.....

簽字：.....

日期：.....

5） DR = 破損和修理；L = 滲漏；
CV = 改建（說明應附於調查表之後）

港口國監管檢查報告

列出港口國監督檢查報告，包括船體相關結構缺陷以及相應的糾正措施的信息：

安全管理系統

列出有關船體維護的不符合項，包括相關的糾正措施：

認可的測厚公司名稱和地址：

附件 7

認證船體結構測厚公司的程序

1 適用範圍

本指南適用於對有意從事船體結構測厚的公司的認證。

2 認證程序

提交文件

2.1 應提交下列文件給主管機關認可的組織審批：

.1 公司概況，如組織和管理機構；

.2 公司在船體結構測厚方面的經歷；

.3 技術人員履歷、即技術人員作為測厚操作人員的經歷，對船體結構等等的技術知識和經驗。操作者應具有符合公認的工業無損檢測（NDT）標準的資質；

.4 用於測厚的設備，如超聲波檢測設備及其維護和校正程序；

.5 測厚人員操作指南；

.6 測厚技術員的培訓計劃；和

.7 按建議的厚度測量程序（見附件 10）的測量記錄格式。

公司審核

2.2 在提交的文件經審核合格後，應對公司進行審核，以確認公司按所提交的文件適當組織和管理，並確認其事實上有能力進行船體

結構測厚工作。

2.3 發證取決於其在船上的測厚操作演示以及出具令人滿意的報告。

3 發證

3.1 在 2.2 所述的公司審核和 2.3 所述的測厚操作演示結果均合格後，主管機關或由主管機關認可的組織應簽發認可證書，同時出具一份關於該公司的測厚操作體系已獲認證的通知。

3.2 對證書的換新/簽註應以不超過三年的間隔期進行一次，以驗證公司保持原認可條件。

4 對業已認證的測厚操作體系作任何變更的報告

如公司對業已認證的測厚操作體系作任何變更，則應立即向主管機關認可的組織提交變更報告。如經主管機關認可的組織認為必要，應重新審核。

5 撤消證書

如遇下列情況可撤消證書：

.1 進行了不正確的測量，或測量報告有誤；

.2 驗船師發現公司經認可的測厚操作體系中存在任何缺陷；和

.3 公司未能按要求將上述 4 中所述的任何變更報告經主管機關認可的組織。

附件 8

檢驗報告原則

原則上，對應符合本規則要求的油船，驗船師應在其船體結構和管路系統的檢驗報告中包括下列內容。

1 總則

1.1 在下列情形裏，應形成檢驗報告：

.1 涉及定期船體檢驗，即相關的年度、中間和換證檢驗的開始、繼續和/或完成；

.2 已發現結構破損/缺陷時；

.3 已進行修理、換新或改建時；和

.4 已批註或消除船級條件（遺留項目）時。

1.2 報告應：

.1 提供證據，表明已按適用的要求進行了規定的檢驗；

.2 提供文件，表明檢驗中發現的情況、進行的修理以及批註或消除的船級條件（遺留項目）；

.3 提供檢驗記錄（包括採取的措施），作為可核查文件記錄的組成部分。檢驗報告應置於需存放在船上的檢驗報告案卷中；

.4 提供為以後的檢驗做計劃的信息；和

.5 提供可用於維護入級規範和須知的素材信息。

1.3 當檢驗分為在不同的檢驗站進行時，應為每一部分檢驗出具報告。其後的現場驗船師在繼續或完成檢驗之前，應可獲得已檢驗項目的清單、相關的檢驗結果以及項目是否已做記錄的說明。還應列出已進行的測厚和液艙試驗，供下一位驗船師使用。

2 檢驗範圍

2.1 確定已進行全面檢驗的艙室。

2.2 確定已在每個液艙進行近觀檢驗的位置，以及所使用的通道裝置的資料。

2.3 確定已在每個液艙進行測厚的位置。

註： 確定進行近觀檢驗和測厚的位置應至少包括一份根據定期檢驗的類型和船齡，對附件 B 規定的要求範圍相應的各結構構件進行描述的確認書。

如僅要求進行部分檢驗，即一個橫向環形強框架/一根甲板強橫樑，應使用肋骨號確定每個壓載艙和貨艙內的位置。

2.4 對液艙內保護塗層處於良好狀況而且已對近觀檢驗和/或測厚範圍作特殊考慮的區域，應確定經特殊考慮的結構。

2.5 確定應經受液艙試驗的液艙。

2.6 確定甲板上的如下管路系統，包括原油洗艙（COW）管路以及貨油艙和壓載艙、管隧、隔離艙和空艙內的壓載管系：

.1 已進行包括管系及其閥和附件的內部檢查和測厚在內的相關檢查；和

.2 已進行工作壓力的操作試驗。

3 檢驗結果

3.1 每個液艙內保護塗層的類型、範圍和狀況（“良好”、“尚好”或“差”），包括確定安裝了陽極的液艙。

3.2 每個艙室的結構狀況及以下方面的資料：

.1 確定發現的問題，例如：

.1 腐蝕及對位置、類型和範圍的描述；

.2 顯著腐蝕的區域；

.3 裂紋/裂口及對位置和範圍的描述；

.4 屈曲及對位置和範圍的描述；和

.5 凹痕及對位置和範圍的描述。

.2 確定無結構破損/缺陷的艙室。報告後可附草圖/照片加以補充；

.3 測厚應由在船上監督測量過程的驗船師驗證並簽字。

.4 船長為 130m 及以上且船齡 10 年以上的油船的船體樑總縱強度評估結果。應包括下列相關內容：

.1 測得的甲板和底部折板的橫剖面面積及其建造面積；

.2 甲板和底部折板的橫剖面面積減小量；和

.3 已進行的換新或加強的相關詳細情況（見 4.2）。

4 對發現的問題所採取的行動

4.1 每當現場驗船師認為需要進行修理時，應在編號的清單中標出應予修理的每一項目。每當進行修理時，應報告實施的修理的細節，具體提及編號的清單中的相關項目。

4.2 應報告已進行的修理並標明：

.1 艙室；

.2 結構件；

.3 修理方法（即：換新或改動），包括：

.3.1 鋼級和尺度（如與原始材料的區別）；

.3.2 草圖/照片，如適用；

.4 修理範圍；和

.5 無損檢測（NDT）。

4.3 對在檢驗時未完成的修理，船級條件/遺留項目中應規定該修理的具體完成期限。為向參與修理檢驗的驗船師提供正確和適當的資料，船級條件/遺留項目應足夠詳細，並標出應進行修理的每一項目。為確定大範圍的修理，可參閱檢驗報告。

附件 9

狀況評估報告

在換證檢驗完成後簽發

船舶概況

船名：　　船級/主管機關標識號：

前船級/主管機關標識號：

IMO 編號：

船籍港：　　船旗國：

前船旗國：

載重量：　　總噸位：

（公噸）　　本國法定：

國際噸位丈量公約（1969）：

建造日期：　　船級符號：

重大改建日期：

改建類型：　　船東：

前船東：

1　下列檢驗報告和文件已經簽署者審核，並查明合格。

2　檢驗狀況評估附於表 2。

3　換證檢驗已按本規則在.....（日期）完成。

狀況評估報告填寫人	姓名 簽字	職務
辦事處	日期	
狀況評估報告填寫人	姓名 簽字	職務
辦事處	日期	

所附的報告和文件：

1）

2）

3）

4）

5）

6）

狀況評估報告目錄

第 1 部分 - 船舶概況	- 見首頁
第 2 部分 - 報告審核	- 檢驗地點和方法
第 3 部分 - 近觀檢驗	- 範圍（液艙）
第 4 部分 - 貨物和壓載管系	- 已檢查
	- 試驗操作
第 5 部分 - 測厚	- 參見測厚報告
	- 測量點一覽表
	- 單獨表格指明顯著腐蝕的處所及相應的：
	- 厚度減小
	- 腐蝕形式
第 6 部分 - 液艙防腐系統	- 單獨表格指明：
	- 塗層位置/陽極
	- 塗層狀況（如適用）

第 7 部分 - 修理 - 液艙/區域標識

第 8 部分 - 船級條件/船旗國要求

第 9 部分 - 備忘錄 - 可接受的缺陷

- 未來檢驗時的關注點，如可疑區域

- 因塗層脫落而擴大的年度/中間檢驗

第 10 部分 - 船舶總縱強度評估結果

（對船長 130m 及以上且

10 年以上船齡的油船）

第 11 部分 - 結論 - 檢驗報告的評估/驗證說明

測厚摘錄

參見測厚報告：

顯著腐蝕液艙/區域[1]位置或深度鏽點位置[3]	**厚度減小（%）**	**腐蝕形式[2]**	**備註（如：參考所附草圖）**

註：

1 顯著腐蝕，即允許損耗範圍的 75% - 100%。

2 P = 鏽點

C = 總體腐蝕

3 應註明所有鏽點密度達 20%或以上、損耗為顯著腐蝕範圍或鏽點的平均深度為實際板厚度的 1/3 或以上的船底板。

液艙防腐系統

液艙號 [1]	液艙防腐蝕系統 [2]	塗層狀況 [3]	備註

註：

1 應列出所有分隔的壓載艙和貨油/壓載兼用艙。

2 C = 塗層

NP = 無保護

3 塗層狀況根據以下標準：

“良好”係指僅有少量點狀鏽斑；

“尚好”係指在扶強材的邊緣和焊縫的連接處塗層有局部脫落和/或所檢驗的區域中有超過 20%或更大範圍的輕度鏽蝕，但小於定義“差”的狀況；

“差” 係指在檢驗的區域中有超過 20%或更大範圍的塗層普遍剝落，或有 10%或更大範圍的塗層產生硬質鏽皮。

如塗層狀況未達到“良好”，應擴大年度檢驗的範圍，這應在狀況評估報告目錄第 9 部分中予以註明。

船長 130m 及以上且 10 年以上船齡的油船船體樑總縱強度的評估結果

（在下列 1、2、3 節中，只需填寫其中適用的一節）

1 本節適用於無論何時建造的船舶：在對已達到 10 年船齡的船舶進行最近一次“貨船構造安全證書”或“貨船安全證書”的換證檢驗（SC 換證檢驗）期間，酌情通過測量、換新或加強的結構件厚度，已對船體樑甲板處（甲板板和甲板縱骨）和船底處（船底板和船底縱骨）的橫剖面面積進行了計算，

發現橫剖面面積減小未超出原建造面積的 10%，如下表所列：

表 1 – 船體樑折板的橫剖面面積

		測量值	建造值	減小量
橫剖面 1	甲板折板	cm^2	cm^2	cm^2(%)
	底部折板	cm^2	cm^2	cm^2(%)
橫剖面 2	甲板折板	cm^2	cm^2	cm^2(%)
	底部折板	cm^2	cm^2	cm^2(%)
橫剖面 3	甲板折板	cm^2	cm^2	cm^2(%)
	底部折板	cm^2	cm^2	cm^2(%)

2 本節適用於 2002 年 7 月 1 日或以後建造的船舶：按附件 12 中 2.2.1.1 的規定，在對已達到 10 年船齡的船舶進行最近一次 SC 換證檢驗期間，酌情通過測量、換新或加強的結構件厚度，已對船體樑橫剖面模數進行了計算，並考慮到本組織通過的建議案，發現其在主管機關確定的極限折減值範圍之內，如下表所列：

表 2 – 船體樑的橫剖面模數

		$Z_{act}(cm^3)$[1]	$Z_{req}(cm^3)$[2]	備註
橫剖面 1	上甲板			
	船底			
橫剖面 2	上甲板			
	船底			
橫剖面 3	上甲板			
	船底			

註：

1 Z_{act} 係指按附件 12 中 2.2.1.1 的規定，在 SC 換證檢驗期間，通過測量、換新或加強的結構件厚度所計算出的船體樑實際橫剖面模數。

2 Z_{req} 係指按附件 12 中 2.2.1.1 的規定所計算出的船舶總縱彎曲強度的極限折減值。

Z_{act} 的計算表應附於本報告之後。

3 本節適用於 2002 年 7 月 1 日以前建造的船舶：按附件 12 中 2.2.1.2

的規定，在對已達到 10 年船齡的船舶進行最近一次 SC 換證檢驗期間，酌情通過測量、換新或加強的結構件厚度，已對船體樑橫剖面模數進行了計算，發現其符合主管機關或認可的船級社要求的衡準，且 Z_{act} 不小於附件 12 附錄 2 中規定的 Z_{mc}（見下列 2 定義），如下表所列。

闡述主管機關或經認可的船級社要求的營運船舶船體樑最小剖面模數的認可衡準。

表 3 – 船體樑的橫剖面模數

		$Z_{act}(cm^3)^1$	$Z_{mc}(cm^3)^2$	備註
橫剖面 1	上甲板			
	船底			
橫剖面 2	上甲板			
	船底			
橫剖面 3	上甲板			
	船底			

註：

1 見表 2 註 1 定義。

2 Z_{mc} 係指按附件 12 中 2.2.1.2 規定計算出的最小剖面模數的極限值。

附件 10

建議的測厚程序

總則

1 本程序應用於記錄附件 2 和 4 所要求的厚度測量。

2 附錄 2 規定的報告格式 TM1-T、TM2-T(i)、TM2-T(ii)、TM3-T、TM4-T、TM5-T 和 TM6-T 應用於記錄厚度測量，並應說明最大允許減小量。可在附加的文件中說明最大允許減小量。

3 附錄 3 包含有關報告格式和厚度測量要求的圖解和說明。

4 報告格式（如適用）應以結構草圖上所示的數據加以補充。

附錄 1

船舶概況

船名： ……

IMO 編號： ……

船級主管/機關標識號： ……

船籍港： ……

總噸位： ……

載重噸： ……

建造日期： ……

船級社： ……

進行測厚的公司名稱： ……

……

測厚公司的認證機構： ……

證書號： ……

證書有效期自： ……至……

測厚地點： ……

首次測量日期： ……

最後測量日期： ……

換證檢驗/中間檢驗日期： ……

測厚設備情況： ……

測量者資質： ……

報告編號： …… 頁數： ……頁

測量者姓名： …… 驗船師姓名： ……

測量者簽字： …… 驗船師簽字： ……

公司公章: …… 主管機關： ……

公章

附錄 2

所有甲板板、所有船底外板或舷側外板厚度測量報告（TM1-T）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

列板位置																	
板材位置	編號或符號	原始厚度 (mm)	舯前讀數						舯後讀數						平均減小量 %		
			測量		減小量 P		減小量 S		測量		減小量 P		減小量 S				
			P	S	mm	%	mm	%	P	S	mm	%	mm	%	P	S	mm
舯前第 12 塊																	
第 11 塊																	
第 10 塊																	
第 9 塊																	
第 8 塊																	
第 7 塊																	
第 6 塊																	
第 5 塊																	
第 4 塊																	
第 3 塊																	
第 2 塊																	
第 1 塊																	
船中																	
舯後第 1 塊																	
第 2 塊																	
第 3 塊																	
第 4 塊																	
第 5 塊																	
第 6 塊																	
第 7 塊																	
第 8 塊																	
第 9 塊																	
第 10 塊																	
第 11 塊																	
第 12 塊																	

測量者簽字：.....

註 – 見下頁

TM1-T 報告的註釋：

1 本報告應用於記錄下列厚度測量：

.1 貨物區域內的所有強力甲板板；

.2 貨物區域內的所有龍骨板、船底外板和舭列板；

.3 貨物區域外包括選擇的乾濕交變列板的舷側外板；

.4 貨物區域內的所有乾濕交變列板。

2 應清楚示明如下列板位置：

.1 對於強力甲板，示明甲板邊板內列板的編號；

.2 對於船底板，示明龍骨板外列板的編號；和

.3 對於舷側外板，示明舷頂列板以下列板在外板展開圖上的編號和字母。

3 對於油船，所有甲板板列板均應記錄，對於礦油/油船，僅對開口線外的甲板板列板予以記錄。

4 應對舯前和舯後的所有區域的板進行測厚，如有板橫跨壓載艙/貨油艙邊界，則應記錄在各類型液艙的板區域分別測得的值。

5 所記錄的單點測量應代表多點測量的平均值。

6 最大允許減小量可在附加的文件中說明。

外板和甲板板厚度測量報告（一、兩或三個橫剖面）（TM2-T(i)）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

強力甲板和舷頂列板																													
	第.....號肋骨的第一個橫剖圖									第.....號肋骨的第二個橫剖圖										第.....號肋骨的第三個橫剖圖									
列板位置	編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S				
				P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%		
甲板邊板																													
舷內第 1 塊列板																													
第 2 塊																													
第 3 塊																													
第 4 塊																													
第 5 塊																													
第 6 塊																													
第 7 塊																													
第 8 塊																													
第 9 塊																													
第 10 塊																													
第 11 塊																													
第 12 塊																													
第 13 塊																													
第 14 塊																													
中間列板																													
舷頂列板																													
艙頂總數																													

測量者簽字：.....

註 – 見下頁

TM2-T(i)報告的註釋：

1 本報告應用於記錄強力甲板板和舷頂列板橫剖面的厚度測量：

貨物區域內一個、兩個或三個剖面，包括附錄 3 中典型橫剖面圖表表明的結構項目（1）、（2）和（3）。

2 對於油船，所有甲板板列板均應記錄，對於礦砂/油船，僅對開口線外的甲板板列板予以記錄。

3 頂部區域包括甲板板、甲板邊板和舷頂列板（包括圓形舷緣）。

4 應註明測量的確切肋骨號。

5 所記錄的單點測量應代表多點測量的平均值。

6 最大允許減小量可在附加的文件中說明。

舷側外板和甲板板厚度測量報告（一、兩或三個橫剖面）（TM2-T(ii)）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

舷側外板																													
	第.....號肋骨的第一個橫剖圖									第.....號肋骨的第二個橫剖圖										第.....號肋骨的第三個橫剖圖									
列板位置	編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		編號或符號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S				
				P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%			
舷頂列板下第 1 塊列板																													
第 2 塊																													
第 3 塊																													
第 4 塊																													
第 5 塊																													
第 6 塊																													
第 7 塊																													
第 8 塊																													
第 9 塊																													
第 10 塊																													
第 11 塊																													
第 12 塊																													
第 13 塊																													
第 14 塊																													
第 15 塊																													
第 16 塊																													
第 17 塊																													
第 18 塊																													
第 19 塊																													
第 20 塊																													
龍骨列板																													
艙底總數																													

測量者簽字：.....

註 – 見下頁

TM2-T(ii)報告的註釋：

1 本報告應用於記錄橫剖面處舷側外板的厚度測量：

貨物區域內一個、兩個或三個剖面，包括附錄 3 中典型橫剖面圖表表明的結構項目（4）、（5）、（6）和（7）。

2 船底區域包括龍骨板、船底板和舭部板。

3 應註明測量的確切肋骨號。

4 所記錄的單點測量應代表多點測量的平均值。

5 最大允許減小量可在附加的文件中說明。

縱向構件厚度測量報告（一、兩或三個橫剖面）（TM3-T）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

結構構件	第.....號肋骨的第一個橫剖圖									第.....號肋骨的第二個橫剖圖									第.....號肋骨的第三個橫剖圖								
	項目編號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		項目編號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S		項目編號	原始厚度(mm)	最大允許減小量(mm)	測量		減小量 P		減小量 S	
				P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%

測量者簽字：.....

註 – 見下頁

TM3-T 報告的註釋：

1 本報告應用於記錄橫剖面處縱向構件的厚度測量：

貨物區域內一個、兩個或三個剖面，包括附錄 3 中典型橫剖面圖表表明的相應結構項目（8）至（20）。

2 應註明測量的確切肋骨號。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

橫向結構構件厚度測量報告（貨油艙長度範圍內的貨油和壓載水艙）（TM4-T）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

液艙說明：									
結構位置：									
結構構件	項目	原始厚度	最大允許減小量	測量		減小量 P		減小量 S	
		mm	mm	P	S	mm	%	mm	%

測量者簽字：.....

註 – 見下頁

TM4-T 報告的註釋：

1 本報告應用於記錄橫向構件的厚度測量，包括附錄 3 中典型橫剖面圖表表明的相應結構項目（25）至（32）。

2 測量區域的指導參見附錄。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

水密/油密橫艙壁厚度測量報告（貨油艙或貨艙處所內）（TM5-T）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

液艙/貨艙狀態								
結構位置：						**肋骨號：**		
結構部件（板材/扶強材）	原始厚度	最大允許減小量	測量		減小量 P		減小量 S	
	mm	mm	P	S	mm	%	mm	%

測量者簽字：.....

註 – 見下頁

TM5-T 報告的註釋：

1 本報告應用於記錄水密/油密橫艙壁的厚度測量。

2 測量區域的指導參見附錄 3。

3 所記錄的單點測量應代表多點測量的平均值。

4 最大允許減小量可在附加的文件中說明。

其他結構構件厚度測量報告（TM6-T）

船名：.....船級標識號：.....報告編號：.....IMO 編號：.....

結構構件：

結構位置：

說明	原始厚度 (mm)	最大允許減小量	測量		減小量 P		減小量 S	
		mm	P	S	Mm	%	mm	%

草圖

測量者簽字：.....

註 – 見下頁

TM6-T 報告的註釋

1 本報告應用於記錄其他結構件的厚度測量，包括附錄 3 中所示的結構項目（36）、（37）和（38）。

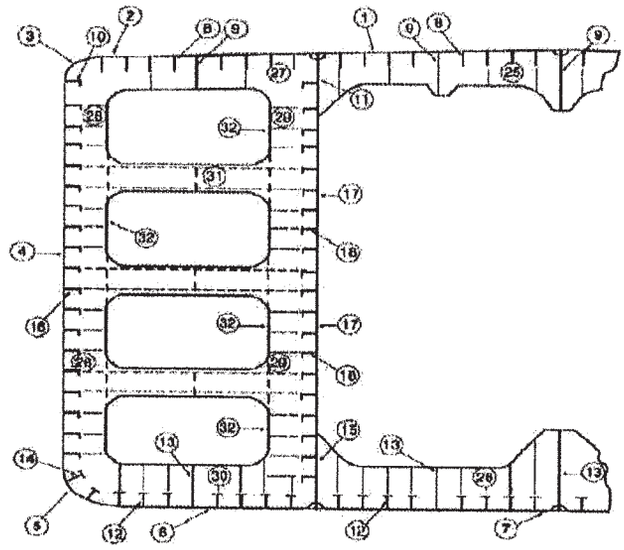
2 所記錄的單點測量應代表多點測量的平均值。

3 最大允許減小量可在附加的文件中說明。

附錄 3

測厚指導

油船表明縱向和橫向構件的典型橫剖面



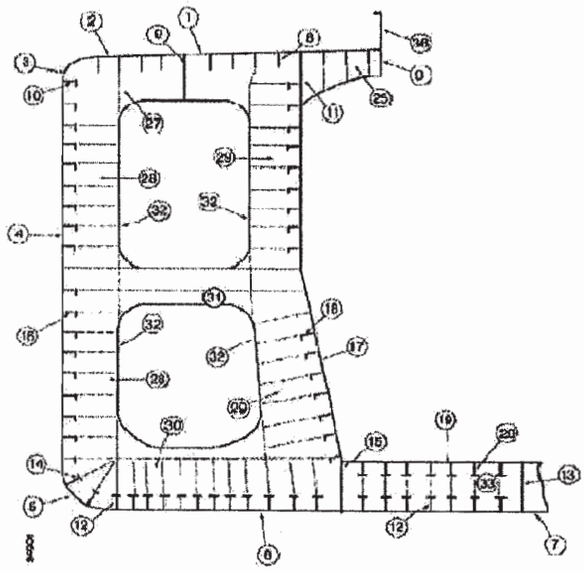
TM2-T(i)&(ii)報告
① 強力甲板板
② 甲板邊板
③ 舷頂列板
④ 舷側板
⑤ 舭板
⑥ 船底外板
⑦ 龍骨板

TM3-T 報告
⑧ 甲板縱骨
⑨ 甲板縱桁
⑩ 舷頂列板縱骨
⑪ 縱向艙壁頂列板
⑫ 船底縱骨
⑬ 船底縱桁
⑭ 舭縱骨
⑮ 縱向艙壁底列板
⑯ 舷側縱骨
⑰ 縱向艙壁板(剩餘部分)
⑱ 縱向艙壁縱骨
⑲ 內底板
⑳ 內底縱骨
㉑
㉒
㉓
㉔

TM4-T報告
㉕ 甲板橫樑(中央艙)
㉖ 肋板(中央艙)
㉗ 甲板橫樑(邊艙)
㉘ 舷側垂直強肋骨
㉙ 縱向艙壁垂直強肋骨
㉚ 肋板(邊艙)
㉛ 支撐
㉜ 橫樑面板
㉝ 雙層底肋板
㉞
㉟

TM6-T 報告
㊱ 艙口圍板
㊲ 艙口間甲板板
㊳ 艙口蓋
㊴
㊵

礦砂/油船表明縱向和橫向構件的典型橫剖面



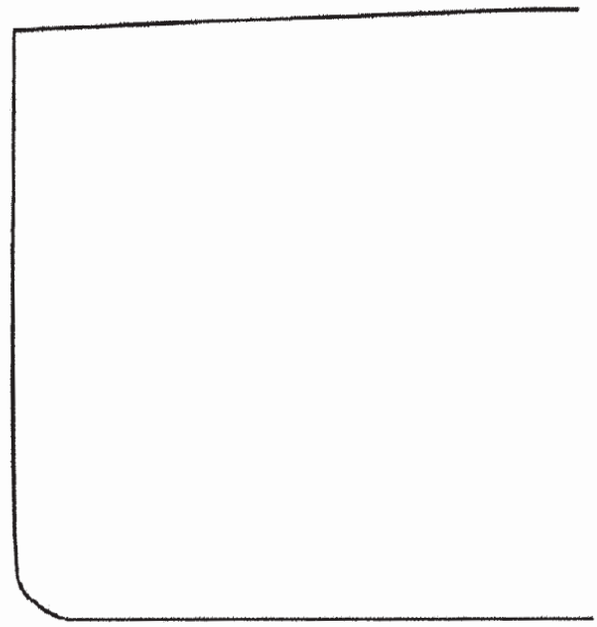
TM2-T(i)&(ii)報告
① 強力甲板板
② 甲板邊板
③ 舷頂列板
④ 舷側板
⑤ 舭板
⑥ 船底外板
⑦ 龍骨板

TM3-T 報告
⑧ 甲板縱骨
⑨ 甲板縱桁
⑩ 舷頂列板縱骨
⑪ 縱向艙壁頂列板
⑫ 船底縱骨
⑬ 船底縱桁
⑭ 舭縱骨
⑮ 縱向艙壁底列板
⑯ 舷側縱骨
⑰ 縱向艙壁板 (剩餘部分)
⑱ 縱向艙壁縱骨
⑲ 內底板
⑳ 內底縱骨
㉑
㉒
㉓
㉔

TM4-T報告
㉕ 甲板橫樑 (中央艙)
㉖ 肋板 (中央艙)
㉗ 甲板橫樑 (邊艙)
㉘ 舷側垂直強肋骨
㉙ 縱向艙壁垂直強肋骨
㉚ 肋板 (邊艙)
㉛ 支撐
㉜ 橫樑面板
㉝ 雙層底肋板
㉞
㉟

TM6-T 報告
㊱ 艙口圍板
㊲ 艙口間甲板板
㊳ 艙口蓋
㊴
㊵

橫剖面概要（應用於典型油船、礦砂/油船剖面不適用時的縱向和橫向構件）



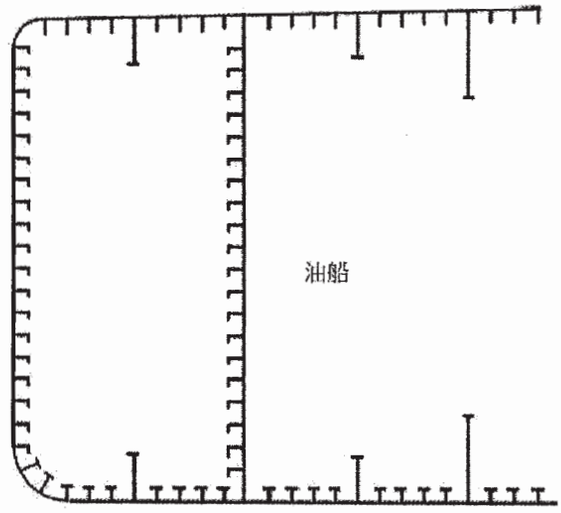
TM2-T(i)&(ii)報告
① 強力甲板板
② 甲板邊板
③ 舷頂列板
④ 舷側板
⑤ 舭板
⑥ 船底外板
⑦ 龍骨板

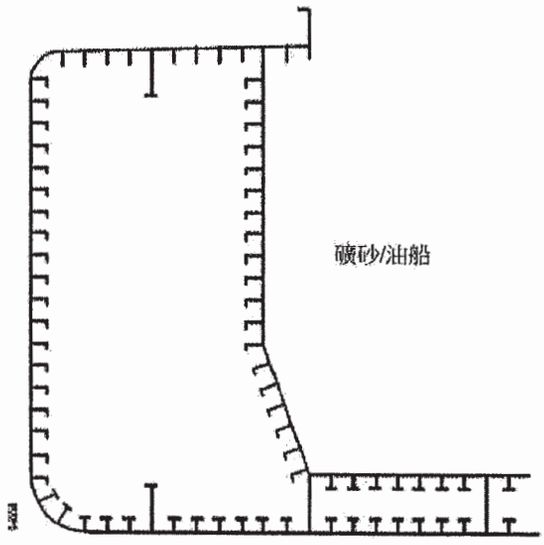
TM3-T 報告
⑧ 甲板縱骨
⑨ 甲板縱桁
⑩ 舷頂列板縱骨
⑪ 縱向艙壁頂列板
⑫ 船底縱骨
⑬ 船底縱桁
⑭ 舭縱骨
⑮ 縱向艙壁底列板
⑯ 舷側縱骨
⑰ 縱向艙壁板 (剩餘部分)
⑱ 縱向艙壁縱骨
⑲ 內底板
⑳ 內底縱骨
㉑
㉒
㉓
㉔

TM4-T報告
㉕ 甲板橫樑 (中央艙)
㉖ 肋板 (中央艙)
㉗ 甲板橫樑 (邊艙)
㉘ 舷側垂直強肋骨
㉙ 縱向艙壁垂直強肋骨
㉚ 肋板 (邊艙)
㉛ 支撐
㉜ 橫樑面板
㉝ 雙層底肋板
㉞
㉟

TM6-T 報告
㉟ 艙口圍板
㊲ 艙口間甲板板
㊳ 艙口蓋
㊴
㊵

TM2-T(i)&(ii)和 TM3-T 報告的表明所有縱向構件的典型橫剖面



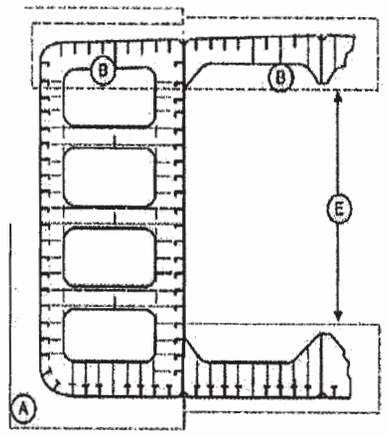


近觀檢驗要求

（油船和礦砂/油船表明與近觀檢驗要求相關的典型測厚區域的橫剖面）

油船：

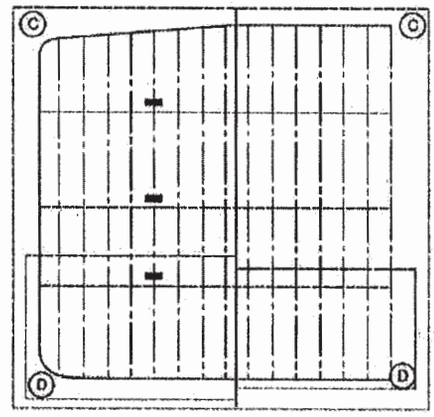
典型橫剖面



TM3-T 和 TM4-T（如適當）報告的厚度

油船：

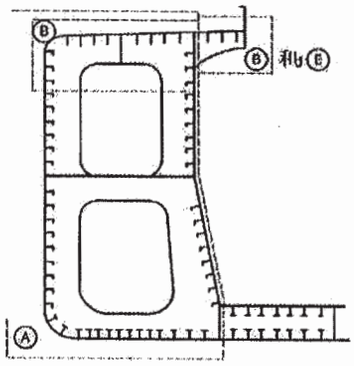
典型橫艙壁



TM5-T 報告的厚度

礦砂/油船：

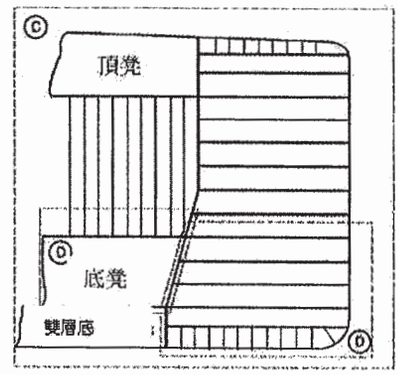
典型橫剖面



TM3-T 和 TM4-T（如適用）報告的厚度

礦砂/油船：

典型橫艙壁



TM5-T 報告的厚度

近觀檢驗區域

厚度測量範圍和形式的建議參見附件 4。

附件 11

與油船加強檢驗計劃有關的技術評估導則

換證檢驗

1 簡介

本導則包含與技術評估有關的資料和建議，可結合油船換證檢驗的計劃加以使用。如 5.1.5 所述，本導則是一個建議的方法，在認為必要和適當時，可由主管機關決定，結合制定所要求的檢驗計劃予以施用。

2 目的和原則

2.1 *目的*

本導則所述的技術評估的宗旨是幫助確定臨界結構區域、指定可疑區域，並把注意力放在那些極易發生損耗或損壞、或表明有損耗或損壞史的結構件或結構件區域。該資料可能有助於指定要進行測厚、近觀檢驗和液艙試驗的位置、區域和液艙。

2.2 *最低要求*

本導則不可用於降低附件 1、2 和 3 中分別對近觀檢驗、測厚和液艙試驗的要求，這些要求在任何情況下都應作為最低要求予以遵守。

2.3 *時限*

如同檢驗計劃的其他方面一樣，本導則所述的技術評估應由船東或經營者配合主管機關，在換證檢驗開始之前予以實施，即在開

始檢驗之前且通常在檢驗完成之日前至少 12 至 15 個月。

2.4 ***應予考慮的方面***

2.4.1 特定船舶下列方面的技術評估可作為指定檢驗液艙和區域的基礎，這些技術評估可包括對相關可能蝕耗的風險進行定量或定性評估：

.1 設計特徵，如不同結構組件的應力等級、設計細節和高強度鋼（HTS）的使用範圍；

.2 與特定船舶及類似船舶（如有）的腐蝕、裂紋、屈曲、凹陷和修理有關的過去史；和

.3 與所載貨物類型、貨油/壓載的不同液艙的使用、液艙保護以及塗層（如有）狀況有關的資料。

2.4.2 對各種結構件和區域易損壞或易蝕耗的相關風險的技術評估，應根據諸如參考資料 1 和 2 所列的經認可原則和慣例進行評判和確定。

3 技術評估

3.1 ***總則***

3.1.1 有三種基本形式的可能缺陷，它們可能成為與檢驗計劃有關的技術評估對象，即腐蝕、裂紋和屈曲。碰撞損壞通常不包含在檢驗計劃中，因為凹陷通常在備忘錄中註明且由驗船師作為常規情況進行處理。

3.1.2 結合檢驗計劃過程開展的技術評估，原則上應按圖 1 的圖解形式表明，該圖表明如何結合檢驗計劃程序進行技術評定。該方法的

依據是對基本上與設計和腐蝕有關的知識和經驗的一種風險評估。

3.1.3 應考慮到設計中有關容易因振動、高應力或疲勞造成屈曲或裂紋的結構細節。

3.1.4 腐蝕與老化過程有關，並且與新船防腐系統的質量和營運中的後續維護密不可分。腐蝕也可導致裂紋和（或）屈曲。

3.2 ***方法***

3.2.1 ***設計細節***

3.2.1.1 本船及姐妹船和（或）類似船舶（如有）的損壞經歷，是計劃過程中使用的主要資料來源。此外，還應包括從設計圖紙中選擇的結構細節。應考慮的典型損壞經歷包括：

.1 裂紋的數量、範圍、位置和發生次數；和

.2 屈曲位置。

3.2.1.2 該資料可在檢驗報告和（或）船東檔案中包括船東自查結果中找到。這些缺陷應予以分析、註明並標記在草圖上。

3.2.1.3 此外，還應利用一般經驗。例如，應參照參考資料 1，其中包括各種油船結構細節的典型損壞和建議的修理方法目錄。

3.2.1.4 在使用這些圖表時，應一道審核主要結構圖紙，以比對實際結構，並查找易受損壞的類似細節。圖 2 所示是一個實例。

3.2.1.5 除使用上述圖表外，審核主要結構圖紙還應包括核查已出現過裂紋的典型設計細節。應仔細考慮造成損壞的因素。

3.2.1.6 高強度鋼（HTS）的使用是一個重要因素。在使用普通低碳鋼

時有着良好營運史的構件，在使用高強度鋼及其較高相關應力時，可能更易受損。甲板和船底結構的縱向材料使用高強度鋼的經驗普遍和總體上較好。在其他受到較高動應力的部位如舷側結構，使用高強度鋼的經驗則不那麼令人鼓舞。

3.2.1.7 在這一方面，根據相關方法對典型和重要的組件及構件的應力計算可能證明有用，並應予以考慮。

3.2.1.8 所選擇的在該過程中確定的結構區域應予以記錄，並標記在將要納入檢驗計劃的結構圖上。

3.2.2 *腐蝕*

3.2.2.1 為評估相關的腐蝕風險，通常應考慮以下資料：

.1 液艙和處所的使用狀況；

.2 塗層狀況；

.3 陽極狀況；

.4 掃艙程序；

.5 以前腐蝕損壞；

.6 貨油艙用作壓載艙的時間；

.7 腐蝕風險方案（見參考資料 2，表 3.1）；和

.8 加熱液艙的位置。

3.2.2.2 參考資料 2 以典型狀況圖給出明確實例，其可用於判定和描述塗層狀況。

3.2.2.3 腐蝕風險的評估應基於參考資料 2，以及船齡和為制定檢驗計劃而收集的資料推測出的船舶狀況的相關資料。

3.2.2.4 應列出各種液艙和處所相應指明的腐蝕風險。

3.2.3 *近觀檢驗和測厚的位置*

3.2.3.1 根據腐蝕風險表和設計經驗的評估，可指定初次近觀檢驗和測厚（剖面）的位置。

3.2.3.2 通常應指定已判定具備最大腐蝕風險的液艙和處所內的測厚剖面。

3.2.3.3 最初應根據最大腐蝕風險指定進行近觀檢驗的液艙和處所，並應始終包括壓載艙。選擇的原則是隨船齡的增長或在資料缺乏或不可靠時增大範圍。

參考資料

1 油船結構合作論壇（TSCF），“油船結構檢查和狀況評估指導手冊，1986”。

2 油船結構合作論壇（TSCF），“油船結構狀況評估和維護，1992”。

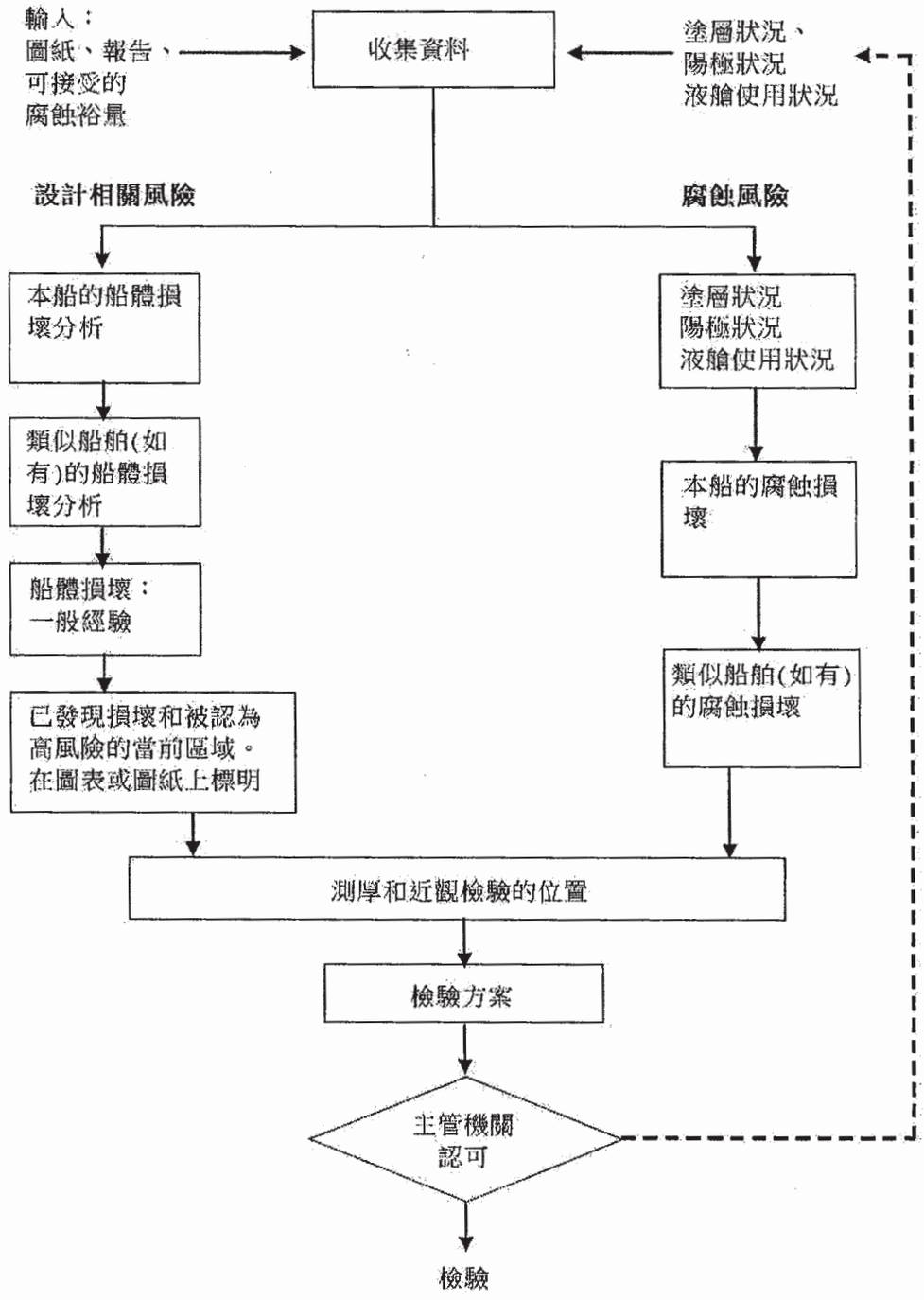
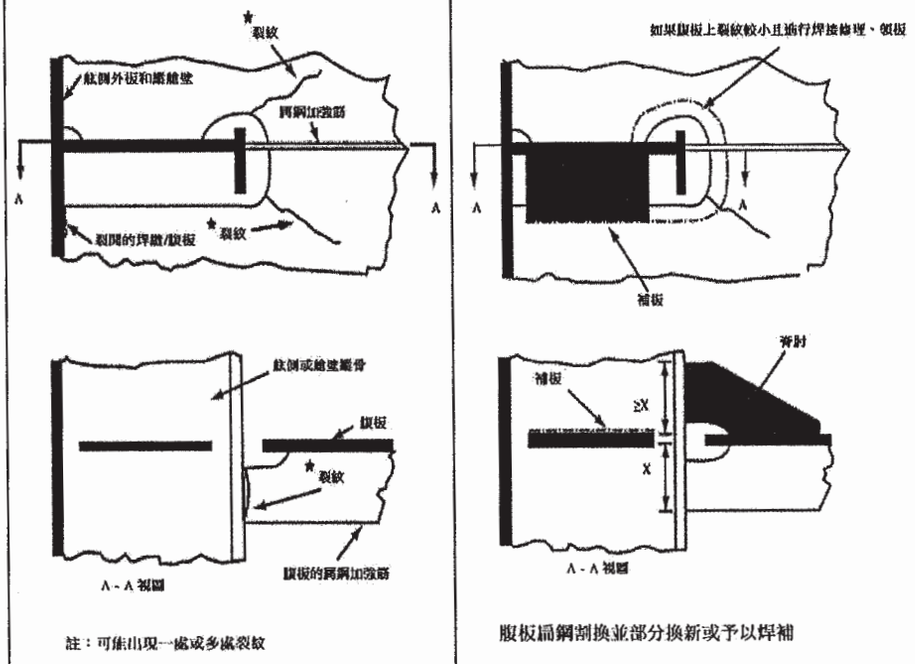


圖 1 – 技術評估和檢驗計劃過程

位置： 縱骨與橫框架的連接

例1： 縱向扶強材連接切口處腹板和扁鋼裂紋

典型損壞	建議修理



註：可能出現一處或多處裂紋

腹板扁鋼割換並部分換新或予以焊補

造成損壞因素：

1. 扁鋼扶強材的不對稱連接導致疲勞載荷下扶強材根部處產生高應力。
2. 縱骨與腹板的連接面積不足。
3. 板厚周邊包焊處的焊縫有缺陷。
4. 應力集中區域有高度局部腐蝕，如扁鋼扶強材連接處、縱骨切口處角隅，以及腹板與船體連接切口處。
5. 橫向腹板處應力集中。
6. 動力波浪載荷/船舶運動。

圖1	油船結構合作論壇 主題：結構細節的目錄	圖1

圖2 – 典型損壞和修理示例 （ 根據參考資料1複製 ）

附件 12

油船船體樑總縱強度衡準

1 一般要求

1.1 本衡準應按 8.1.2 要求，用於船體樑總縱強度的評估。

1.2 為使所評估的船舶總縱強度能被承認為有效，縱向內部構件和船體外板之間的角焊縫應處於良好狀況，以保持船體外板和縱向內部構件的完整性。

2 總縱強度的評估

對船長 130m 及以上且船齡在 10 年以上的油船，應在“貨船構造安全證書”或“貨船安全證書”的換證檢驗（SC 換證檢驗）期間，酌情以測得、換新或加強的結構件厚度為基礎，按本附件的要求對船體樑總縱強度進行評估。船體樑總縱強度的狀況評估應根據附錄 3 中規定的方法確定。

2.1 *船體樑的甲板和底部折板橫剖面面積的計算*

2.1.1 應在 SC 換證檢驗期間，酌情利用測得、換新或加強的結構件厚度，對船體樑的甲板折板（甲板板和甲板縱骨）以及底部折板（船底板和船底縱骨）橫剖面面積進行計算。

2.1.2 如甲板或底部折板的橫剖面面積減小量超過其各自的建造面積（即船舶建造時的原始剖面面積）的 10%，則應採取下列任一措施：

.1 對甲板或船底位置進行換新或加強，以使實際剖面面積不小於建造面積的 90%；或

.2 在 SC 換證檢驗期間，酌情利用測得、換新或加強的結構件厚度，應用附錄 1 中規定的計算方法計算船體樑的橫剖面的實際剖面模數（Z_{act}）。

2.2 ***船體樑橫剖面模數的要求***

2.2.1 根據 2.1.2.2 計算的船體樑橫剖面實際剖面模數應根據適用情況符合下列任一要求：

.1 對於 2002 年 7 月 1 日或以後建造的船舶，根據 2.1.2.2 計算的船體樑橫剖面實際剖面模數 Z_{act} 應不小於主管機關確定的減少極限值，同時考慮到本組織通過的建議案；或

.2 對於 2002 年 7 月 1 日以前建造的船舶，只要 Z_{act} 在任何情況下不小於附錄 2 中規定的最小剖面模數的減小極限值，則根據 2.1.2.2 要求計算的船體樑橫剖面實際剖面模數 Z_{act} 應符合主管機關或認可的船級社要求的營運船舶最小剖面模數衡準。

附錄 1

船體樑船中剖面的剖面模數計算衡準

1 在計算船體樑橫剖面模數時，應考慮到所有縱向連續強力構件的剖面積。

2 對較大開口，即長度超過 2.5m 或寬度超過 1.2m 以及採用扇形焊接的扇形孔，應始終在剖面模數計算中扣除其剖面面積。

3 對較小開口（人孔、減輕孔、焊縫處的單個扇形孔等），只要其寬度或陰影區寬度在一個橫剖面上的總和所減少的甲板或船底剖面模數不超過 3%，且縱骨和縱向桁材上減輕孔、流水孔和焊縫處單個扇形孔的高度不超過腹板高度的 25%（但對扇形孔深度最大不超過 75mm），則不必扣除其剖面面積。

4 較小開口寬度總和在一個橫剖面上小於船底或甲板區域的 $0.06(B-\Sigma b)$（B=船寬，Σb=較大開口的總寬度），可視作等同於上述剖面模數的減小。

5 投影區域將通過畫兩條為 30°角的切線獲得。

6 甲板剖面模數與舷側型甲板線有關。

7 船底剖面模數與基線有關。

8 如得到縱艙壁或高腹板桁材的有效支持，連續凸形甲板和連續縱向艙口圍板應包含在縱向構件剖面面積中。甲板剖面模數應通過慣性力矩除以下列距離求得，但此距離應大於到舷側甲板邊線的距離：

$$y_t = y\left(0.9+0.2\frac{x}{B}\right)$$

式中：

y = 中和軸至連續強力構件頂點的距離；

x = 連續強力構件頂點至船體中心線的距離；

x 和 y 應在 y_t 最大值處測量。

9 多艙口間的縱桁將通過特殊計算予以考慮。

附錄 2

營運船舶最小總縱強度的減小極限值

1 營運油船的最小剖面模數（Z_{mc}）的減小極限值由下列公式得到：

$$Z_{mc} = cL^2 B (C_b + 0.7)k \quad (\text{cm}^3)$$

式中：

L = 船長。L 係指在夏季載重線上首柱前緣至舵柱後緣，或如無承舵柱時至舵桿中心的距離，m。L 應不小於夏季載重線總長的 96%，且不必大於 97%。對於特殊船艉和船艏布置的船舶，L 可予以特殊考慮。

B = 最大型寬，m。

C_b = 基於 L 和 B 及相應於夏季載重線吃水 d 的型方形係數。C_b 應取不小於 0.6。

$$C_b = \frac{d \text{ 吃水的型排水量}(\text{m}^3)}{LBd}$$

$$c = 0.9c_n$$

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

$$c_n = 10.75, \text{ 對 } 300 \text{ m} \leq L \leq 350 \text{ m}$$

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

k = 材料係數，如：

k = 1.0，對屈服應力為 235 N/mm² 及以上的低碳鋼；

k = 0.78，對屈服應力為 315 N/mm² 及以上的高強度鋼；

k = 0.72，對屈服應力為 355 N/mm² 及以上的高強度鋼。

2 上述 1 中基於剖面模數要求的船體樑所有縱向連續構件尺寸應保持在船中 0.4L 範圍內。但在特殊情況下，考慮到船舶種類、船型和裝載條件，該尺寸可向船中 0.4L 區域的兩端逐漸減小，但不應影響船舶的裝載適應性。

3 但是，上述標準可能不適用於特殊船型或特殊設計的船舶，如特殊主要比例和（或）重量分布的船舶。

附錄 3

總縱強度評估和修理方法的測厚取樣方法

1 總縱強度評估範圍

如果船體樑長度包含了壓載艙和貨油艙，總縱強度評估應在船中 0.4*L* 範圍內。如果鄰近的壓載艙和貨油艙延伸至船中 0.4*L* 之外，總縱強度評估應在船中 0.5*L* 範圍內。

2 厚度測量的取樣方法

2.1 按照第 2.5 節的要求，應選擇橫剖面以對儘可能多的腐蝕環境中的不同液艙進行厚度測量，例如與裝有加熱盤管的貨油艙同處一個共同界面的壓載艙、其他壓載艙、允許注入海水的貨油艙和其他貨油艙。如有，應選擇與裝有加熱盤管的貨油艙同處一個共同界面的壓載艙和允許注入海水的油艙。

2.2 應按照附件 2 對橫剖面的最低數量進行取樣。橫剖面應位於懷疑會產生，或從 2.3 規定的甲板板和船底板測量中已發現的，最大厚度縮減的區域，並應在已進行局部換新或加強的區域之外。

2.3 在貨物區域內應按照附件 2 的要求測量的每塊甲板板和（或）船底板上，應至少測量兩個點。

2.4 在應按照附件 2 的要求測量的每個橫剖面的甲板和船底的 0.1*D*（*D* 為船舶型深）範圍內，應在腹板和面板上測量每根縱骨和縱桁，並應在縱骨之間測量每塊板的一個點。

2.5 對於除 2.4 規定的按照附件 2 的要求在每個橫剖面處進行測量者外的縱向構件，應在腹板和面板上測量每根縱骨和縱桁，並在每塊列板的每塊

板上至少測量一個點。

2.6 每一構件的厚度應通過每一構件上橫剖面處所有測量值的平均值來確定。

3 總縱強度不足時的附加測量

3.1 如果按照本附件中的總縱強度要求，發現一個或一個以上的橫剖面有缺陷，應增加進行厚度測量的橫剖面數量以使船中 0.5*L* 區域內的每個液艙均已取樣。對部分在 0.5*L* 區域內，但延伸至 0.5*L* 區域外的液艙處所也應進行取樣。

3.2 在每個修理區域前部的一個橫剖面和每個修理區域後部的一個橫剖面上也應進行附加的厚度測量，該厚度測量的範圍應足以確保鄰近修理剖面的區域也符合本規則的要求。

4 有效的修理方法

4.1 為滿足本附件要求而進行的換新或加強應符合 4.2。

4.2 經換新或加強的結構件的最小連續長度應不小於該處主要構件間距的兩倍。此外，更換的構件（板、扶強材、樑腹板和折板等）前部和後部的每個連接件對接處的厚度減小應不在顯著腐蝕範圍內（相關的每一特定構件允許縮減量的 75%）。如果對接處的厚度差超過較小厚度的 15%，應採取厚度平穩過渡。

4.3 涉及設置複板或改變結構件的替代修理方法應經特殊考慮。在考慮設置複板時，應限於下列情況：

.1 恢復和（或）增加總縱強度；

.2 應加強的甲板或船底板的厚度減小應不在顯著腐蝕範圍（相關

甲板板的允許縮減量的 75%）以內；

.3 定位和布置，包括複板的終止應按照主管機關認可的標準進行；

.4 複板連續至船中整個 0.5*L* 的長度範圍；和

.5 對接焊中採用連續填角焊和全焊透焊縫，並根據複板的長度採用塞焊。採用的焊接工藝應經主管機關批准。

4.4 考慮到抗皺折力和縱向構件和外板之間的焊接狀況，鄰近更換區域且與安裝的複板相連的現有結構應能承受施加的載荷。

INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

Resolution A.1049(27)

Adopted on 30 November 2011

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization regarding the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

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* (hereinafter referred to as "the Guidelines"),

NOTING that the 1994 Conference of Contracting Governments to the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention") adopted regulation XI-1/2 of the Convention to make the provisions of the Guidelines mandatory,

NOTING ALSO resolutions MSC.49(66), MSC.105(73), MSC.125(75), MSC.144(77), MSC.197(80), MSC.261(84) and resolution 2 of the 1997 Conference of Contracting Governments to the Convention, by which amendments to the Guidelines were adopted by the Maritime Safety Committee and the Conference of Contracting Governments to the Convention, in accordance with article VIII(b) and regulation XI-1/2 of the Convention, as appropriate,

RECOGNIZING that the numerous amendments made to the Guidelines necessitated a comprehensive revision in order to ensure the effective implementation of their provisions and to maintain the highest practical level of safety,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its eighty-ninth session,

1. ADOPTS the International Code on the Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers, 2011 (2011 ESP Code), as set out in the annex to the present resolution;

2. INVITES Contracting Governments to the Convention to note that the 2011 ESP Code will become effective upon entry into force of the associated amendments to chapter XI-1 of the Convention;

3. REQUESTS the Secretary-General of the Organization to transmit certified copies of the present resolution and the 2011 ESP Code, contained in the annex, to all Contracting Governments to the Convention after the aforementioned amendments to chapter XI-1 of the Convention have been adopted;

4. ALSO REQUESTS the Secretary-General of the Organization to transmit copies of the present resolution and the 2011 ESP Code contained in the annex to all Members of the Organization which are not Contracting Governments to the SOLAS Convention after the aforementioned amendments to chapter XI-1 of the Convention have been adopted;

5. FURTHER REQUESTS the Maritime Safety Committee to keep the Code under review and update it as necessary, in the light of experience gained in its application.

Annex

INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

Contents

ANNEX A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING SINGLE-SIDE SKIN CONSTRUCTION

1 General
1.1 Application
1.2 Definitions
1.3 Repairs
1.4 Surveyors
1.5 Thickness measurements and close-up surveys

2 Renewal survey
2.1 General
2.2 Dry-dock survey
2.3 Space protection
2.4 Hatch covers and coamings
2.5 Extent of overall and close-up surveys
2.6 Extent of thickness measurements
2.7 Extent of tank pressure testing
2.8 Additional renewal survey requirements after determining compliance with regulations XII/12 and XII/13 of the Convention

3 Annual survey
3.1 General
3.2 Examination of the hull
3.3 Examination of weather decks, hatch covers and coamings
3.4 Examination of cargo holds
3.5 Examination of ballast tanks
3.6 Additional annual survey requirements for the foremost cargo hold of ships subject to regulation XII/9.1 of the Convention in accordance with the requirements of annex 12
3.7 Additional annual survey requirements after determining compliance with regulations XII/12 and XII/13 of the Convention

4 Intermediate survey
4.1 General
4.2 Bulk carriers 5 to 10 years of age
4.3 Bulk carriers 10 to 15 years of age
4.4 Bulk carriers exceeding 15 years of age

5 Preparations for survey
5.1 Survey programme
5.2 Conditions for survey
5.3 Access to structures
5.4 Equipment for survey
5.5 Surveys at sea or at anchorage
5.6 Survey planning meeting

6 Documentation on board
6.1 General
6.2 Survey report file
6.3 Supporting documents
6.4 Review of documentation on board

7 Procedures for thickness measurements
7.1 General
7.2 Certification of thickness measurement company
7.3 Reporting

8 Reporting and evaluation of survey
8.1 Evaluation of survey report
8.2 Reporting

Annexes
Annex 1 Requirements for close-up survey at renewal surveys
Annex 2 Requirements for thickness measurements at renewal surveys
Annex 3 Owner's inspection report
Annex 4A Survey programme
Annex 4B Survey planning questionnaire
Annex 5 Procedures for certification of a company engaged in thickness measurement of hull structures
Annex 6 Survey reporting principles
Annex 7 Condition Evaluation Report
Annex 8 Recommended procedures for thickness measurements
Annex 9 Guidelines for technical assessment in conjunction with the planning of enhanced surveys for bulk carriers – Renewal survey hull
Annex 10 Requirements for extent of thickness measurement at areas of substantial corrosion
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 regulation XII/9.1 of the Convention
Annex 13 Strength of cargo hatch cover securing arrangements for bulk carriers
Annex 14 Procedural requirements for thickness measurements
Annex 15 Guidelines for the thickness measurements of side shell frames and brackets in single-side skin bulk carriers required to comply with resolution MSC.168(79)

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING DOUBLE-SIDE SKIN CONSTRUCTION

1 General
1.1 Application
1.2 Definitions
1.3 Repairs
1.4 Surveyors
1.5 Thickness measurements and close-up surveys

2 Renewal survey
2.1 General
2.2 Dry-dock survey
2.3 Space protection
2.4 Hatch covers and coamings
2.5 Extent of overall and close-up surveys
2.6 Extent of thickness measurements
2.7 Extent of tank pressure testing
2.8 Additional renewal survey requirements after determining compliance with regulations XII/12 and XII/13 of the Convention

3 Annual survey
3.1 General
3.2 Examination of the hull
3.3 Examination of weather decks, hatch covers and coamings
3.4 Examination of cargo holds
3.5 Examination of ballast tanks
3.6 Additional annual survey requirements after determining compliance with regulations XII/12 and XII/13 of the Convention

4 Intermediate survey
4.1 General
4.2 Double-side skin bulk carriers 5 to 10 years of age
4.3 Double-side skin bulk carriers 10 to 15 years of age
4.4 Double-side skin bulk carriers exceeding 15 years of age

5 Preparations for survey
5.1 Survey programme
5.2 Conditions for survey
5.3 Access to structures
5.4 Equipment for survey
5.5 Surveys at sea or at anchorage
5.6 Survey planning meeting

6 Documentation on board
6.1 General
6.2 Survey report file
6.3 Supporting documents
6.4 Review of documentation on board

7 Procedures for thickness measurements
7.1 General
7.2 Certification of thickness measurement company
7.3 Reporting

8 Reporting and evaluation of survey
8.1 Evaluation of survey report
8.2 Reporting

Annexes
Annex 1 Requirements for close-up survey at renewal surveys
Annex 2 Requirements for thickness measurements at renewal surveys
Annex 3 Owner's inspection report
Annex 4A Survey programme
Annex 4B Survey planning questionnaire
Annex 5 Procedures for certification of a company engaged in thickness measurement of hull structures
Annex 6 Survey reporting principles
Annex 7 Condition Evaluation Report
Annex 8 Recommended procedures for thickness measurements
Annex 9 Guidelines for technical assessment in conjunction with planning for enhanced surveys of double-side skin bulk carriers – Renewal survey hull
Annex 10 Requirements for extent of thickness measurements at those areas of substantial corrosion of bulk carriers with double-side skin construction within the cargo length area
Annex 11 Strength of cargo hatch cover securing arrangements for bulk carriers
Annex 12 Procedural requirements for thickness measurements

ANNEX B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF DOUBLE-HULL OIL TANKERS

1 General
1.1 Application
1.2 Definitions
1.3 Repairs
1.4 Surveyors
1.5 Thickness measurements and close-up surveys

2 Renewal survey
2.1 General
2.2 Dry-dock survey
2.3 Tank corrosion prevention system
2.4 Extent of overall and close-up surveys
2.5 Extent of thickness measurements
2.6 Extent of tank pressure testing

3 Annual survey
3.1 General
3.2 Examination of the hull
3.3 Examination of weather decks
3.4 Examination of cargo pump-rooms and pipe tunnels if fitted
3.5 Examination of ballast tanks

4 Intermediate survey
4.1 General
4.2 Oil tankers 5 to 10 years of age
4.3 Oil tankers 10 to 15 years of age
4.4 Oil tankers exceeding 15 years of age

5 Preparations for survey
5.1 Survey programme
5.2 Conditions for survey
5.3 Access to structures
5.4 Equipment for survey
5.5 Surveys at sea or at anchorage
5.6 Survey planning meeting

6 Documentation on board
6.1 General
6.2 Survey report file
6.3 Supporting documents
6.4 Review of documentation on board

7 Procedures for thickness measurements
7.1 General
7.2 Certification of thickness measurement company
7.3 Reporting

8 Reporting and evaluation of survey
8.1 Evaluation of survey report
8.2 Reporting

Annexes
Annex 1 Minimum requirements for close-up survey at renewal survey of double-hull oil tankers
Annex 2 Minimum requirements for thickness measurements at renewal survey of double-hull oil tankers
Annex 3 Minimum requirements for tank testing at renewal survey of double-hull oil tankers
Annex 4 Requirements for extent of thickness measurements at areas of substantial corrosion of double-hull oil tankers
Annex 5 Owner's inspection report
Annex 6A Survey programme
Annex 6B Survey planning questionnaire
Annex 7 Procedures for certification of a company engaged in thickness measurement of hull structures
Annex 8 Survey reporting principles
Annex 9 Condition Evaluation Report
Annex 10 Recommended procedures for thickness measurements of double-hull oil tankers
Annex 11 Guidelines for technical assessment in conjunction with the planning of enhanced surveys for oil tankers
Annex 12 Criteria for longitudinal strength of hull girder for oil tankers

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS OTHER THAN DOUBLE-HULL OIL TANKERS

1 General
1.1 Application
1.2 Definitions
1.3 Repairs
1.4 Surveyors
1.5 Thickness measurements and close-up surveys

2 Renewal survey
2.1 General
2.2 Dry-dock survey
2.3 Tank corrosion prevention system
2.4 Extent of overall and close-up surveys
2.5 Extent of thickness measurements
2.6 Extent of tank pressure testing

3 Annual survey
3.1 General
3.2 Examination of the hull
3.3 Examination of weather decks
3.4 Examination of cargo pump-rooms and pipe tunnels if fitted
3.5 Examination of ballast tanks

4 Intermediate survey
4.1 General
4.2 Oil tankers 5 to 10 years of age
4.3 Oil tankers 10 to 15 years of age
4.4 Oil tankers exceeding 15 years of age

5 Preparations for survey
5.1 Survey programme
5.2 Conditions for survey
5.3 Access to structures
5.4 Equipment for survey
5.5 Surveys at sea or at anchorage
5.6 Survey planning meeting

6 Documentation on board
6.1 General
6.2 Survey report file
6.3 Supporting documents
6.4 Review of documentation on board

7 Procedures for thickness measurements
7.1 General
7.2 Certification of thickness measurement company
7.3 Reporting

8 Reporting and evaluation of survey
8.1 Evaluation of survey report
8.2 Reporting

Annexes
Annex 1 Requirements for close-up survey at renewal surveys
Annex 2 Requirements for thickness measurements at renewal surveys
Annex 3 Requirements for tank pressure testing at renewal surveys
Annex 4 Requirements for extent of thickness measurements at areas of substantial corrosion
Annex 5 Owner's inspection report
Annex 6A Survey programme
Annex 6B Survey planning questionnaire
Annex 7 Procedures for certification of a company engaged in thickness measurement of hull structures
Annex 8 Survey reporting principles
Annex 9 Condition Evaluation Report
Annex 10 Recommended procedures for thickness measurements
Annex 11 Guidelines for technical assessment in conjunction with the planning of enhanced surveys for oil tankers
Annex 12 Criteria for longitudinal strength of hull girder for oil tankers

ANNEX A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING THE SURVEYS OF BULK CARRIERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING SINGLE-SIDE SKIN CONSTRUCTION

1 General

1.1 *Application*

1.1.1 The Code should apply to all self-propelled bulk carriers of 500 gross tonnage and above other than double-side skin bulk carriers as defined in paragraph 1.2.1 of part B of annex A.

1.1.2 The Code should apply to surveys of hull structure and piping systems in way of cargo holds, cofferdams, pipe tunnels, void spaces, fuel oil tanks, within the cargo length area and all ballast tanks.

1.1.3 The Code contains the minimum extent of examination, thickness measurements and tank testing. The survey should be extended when substantial corrosion and/or structural defects are found and include additional close-up survey when necessary.

1.1.4 Ships subject to compliance with regulation XII/6.1 of the Convention should be subject to the additional thickness measurement guidance contained in annex 11.

1.1.5 Ships subject to compliance with resolution MSC.168(79) should be subject to the additional thickness measurement guidance contained in annex 15.

1.1.6 For bulk carriers with hybrid cargo hold arrangements, e.g. with some cargo holds of single-side skin and others of double-side skin, the requirements of part B of annex A apply to cargo holds of double-side skin and associated wing spaces.

1.1.7 The surveys should be carried out during the surveys prescribed by regulation I/10 of the 1974 SOLAS Convention, as amended.

1.2 *Definitions*

1.2.1 *Bulk carrier* is a ship which is constructed generally with single deck, topside tanks and hopper side tanks in cargo spaces, and is intended primarily to carry dry cargo in bulk and includes combination carriers.

1.2.2 *Ballast tank* is a tank which is used for salt water ballast, or, where applicable, a space which is used for both cargo and salt water ballast will be treated as a ballast tank when substantial corrosion has been found in that space.

1.2.3 *Spaces* are separate compartments including holds, tanks, cofferdams and void spaces bounding cargo holds, decks and the outer hull.

1.2.4 *Overall survey* is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

1.2.5 *Close-up survey* is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

1.2.6 *Transverse section* is the cross section of the hull perpendicular to the ship's centerline and includes all longitudinal members such as plating, longitudinals and girders at the deck, side and bottom, inner bottom and hopper side plating, longitudinal bulkheads, and bottom plating in top wing tanks.

1.2.7 *Representative spaces* are those which are expected to reflect the condition of other spaces of similar type and service and with similar corrosion prevention systems. When selecting representative spaces account should be taken of the service and repair history on board and identifiable critical and/or suspect areas.

1.2.8 *Suspect areas* are locations showing substantial corrosion and/or are considered by the surveyor to be prone to rapid wastage.

1.2.9 *Substantial corrosion* is an extent of corrosion such that assessment of corrosion pattern indicates wastage in excess of 75% of allowable margins, but within acceptable limits. For ships built under the IACS Common Structural Rules, substantial corrosion is an extent of corrosion such that the assessment of the corrosion pattern indicates a gauged (or measured) thickness between t_{net} + 0.5 mm and t_{net}.

1.2.10 A *corrosion prevention system* is normally considered a full hard protective coating. Hard protective coating should usually be epoxy coating or equivalent. Other coating systems, which are neither soft nor semi-hard coatings, may be considered acceptable as alternatives provided that they are applied and maintained in compliance with the manufacturer's specifications.

1.2.11 *Coating condition* is defined as follows:

GOOD condition with only minor spot rusting;

FAIR condition with local breakdown of coating at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition; and

POOR condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.

1.2.12 *Critical structural areas* are locations which have been identified from calculations to require monitoring or from the service history of the subject ship or from similar or sister ships to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the ship.

1.2.13 *Cargo length area* is that part of the ship which includes cargo holds and adjacent areas including fuel tanks, cofferdams, ballast tanks and void spaces.

1.2.14 *Intermediate survey* is a survey carried out either at the second or third annual survey or between these surveys.

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 or recommendation.

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

1.2.17 *Specially considered* (in connection with close-up surveys and thickness measurements) means sufficient close-up inspection and thickness measurements are taken to confirm the actual average condition of the structure under the coating.

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 (see 1.2.15) repaired. Areas to be considered include:

.1 side structure and side plating;

.2 deck structure and deck plating;

.3 bottom structure and bottom plating;

.4 inner bottom structure and inner bottom plating;

.5 inner side structure and inner side plating;

.6 watertight or oiltight bulkheads;

.7 hatch covers or hatch coamings; and

.8 items in 3.3.10.

For locations 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 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.

1.4 *Surveyors*

For bulk carriers of 20,000 tons deadweight and above, two surveyors should jointly carry out the first scheduled renewal survey after the bulk carrier passes 10 years of age (i.e. third renewal survey), and all subsequent renewal surveys and intermediate surveys. On bulk carriers of 100,000 tons deadweight and above, the intermediate survey between 10 and 15 years of age should be performed by two surveyors. If the surveys are carried out by a recognized organization, the surveyors should be exclusively employed by such recognized organizations.

1.5 *Thickness measurements and close-up surveys*

In any kind of survey, i.e. renewal, intermediate, annual or other surveys having the scope of the foregoing ones, thickness measurements of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys.

2 Renewal survey

2.1 *General*

2.1.1 The renewal survey may be commenced at the fourth annual survey and be progressed during the succeeding year with a view to completion by the fifth anniversary date.

2.1.2 As part of the preparation for the renewal survey, the survey programme should be dealt with in advance of the survey. The thickness measurement should not be held before the fourth annual survey.

2.1.3 The survey should include, in addition to the requirements of the annual survey, examination, tests and checks of sufficient extent to ensure that the hull and related piping, as required in 2.1.5, is in a satisfactory condition and is fit for its intended purpose for the new period of validity of the Cargo Ship Safety Construction Certificate, subject to proper maintenance and operation and to periodical surveys being carried out at the due dates.

2.1.4 All cargo holds, ballast tanks, pipe tunnels, cofferdams and void spaces bounding cargo holds, decks and outer hull should be examined, and this examination should be supplemented by thickness measurement and testing as required by 2.6 and 2.7, to ensure that the structural integrity remains effective. The examination should be sufficient to discover substantial corrosion, significant deformation, fractures, damages or other structural deterioration, that may be present.

2.1.5 All piping systems within the above spaces should be examined and operationally tested under working pressure to the attending surveyor's satisfaction to ensure that the tightness and condition remain satisfactory.

2.1.6 The survey extent of ballast tanks converted to void spaces should be specially considered in relation to the requirements for ballast tanks.

2.1.7 Concurrent crediting to both intermediate survey and renewal survey for surveys and thickness measurements of spaces should not be acceptable.

2.2 *Dry-dock survey*

2.2.1 A survey in dry-dock should be a part of the renewal survey. There should be a minimum of two inspections of the outside of the ship's bottom during the five-year period of the certificate. In all cases, the maximum interval between bottom inspections should not exceed 36 months.

2.2.2 For ships of 15 years of age and over, inspection of the outside of the ship's bottom should be carried out with the ship in dry-dock. For ships of less than 15 years of age, alternate inspections of the ship's bottom not conducted in conjunction with the renewal survey may be carried out with the ship afloat. Inspection of the ship afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably qualified staff is available.

2.2.3 If a survey in dry-dock is not completed in conjunction with the renewal survey or if the 36 month maximum interval referred to in 2.2.1 is not complied with, the Cargo Ship Safety Construction Certificate should cease to be valid until a survey in dry-dock is completed.

2.2.4 The overall and close-up surveys and thickness measurements, as applicable, of the lower portions of the cargo holds and ballast tanks should be carried out in accordance with the applicable requirements for renewal surveys, if not already performed.

Note: Lower portions of the cargo holds and ballast tanks are considered to be the parts below light ballast water line.

2.3 *Space protection*

2.3.1 Where provided, the condition of the corrosion prevention system of ballast tanks should be examined. For ballast tanks, excluding double-bottom tanks, where a hard protective coating is found in POOR condition as defined in 1.2.11, and it is not renewed, or where a soft or semi-hard coating has been applied, or where a hard protective coating has not been applied from the time of construction, the tanks in question should be examined at annual intervals. Thickness measurements should be carried out as deemed necessary by the surveyor. When such breakdown of hard protective coating is found in water ballast double-bottom tanks and it is not renewed, where a soft or semi-hard coating has been applied or where a hard protective coating has not been applied from the time of construction, the tanks in question may be examined at annual intervals. When considered necessary by the surveyor, or where extensive corrosion exists, thickness measurement should be carried out.

2.3.2 Where a hard protective coating is provided in cargo holds and is found in GOOD condition, the extent of close-up surveys and thickness measurements may be specially considered.

2.4 *Hatch covers and coamings*

The hatch covers and coamings should be surveyed as follows:

2.4.1 A thorough inspection of the items listed in 3.3 should be carried out in addition to all hatch covers and coamings.

2.4.2 Checking of the satisfactory operation of all mechanically operated hatch covers should be made, including:

.1 stowage and securing in open condition;

.2 proper fit and efficiency of sealing in closed condition; and

.3 operational testing of hydraulic and power components, wires, chains, and link drives.

2.4.3 The effectiveness of sealing arrangements of all hatch covers by hose testing or equivalent should be checked.

2.4.4 Thickness measurement of the hatch cover and coaming plating and stiffeners should be carried out as given in annex 2.

2.5 *Extent of overall and close-up surveys*

2.5.1 An overall survey of all tanks and spaces should be carried out at the renewal survey. Fuel oil tanks in the cargo length area should be surveyed as follows:

Renewal survey No.1 Age ⩽ 5	Renewal survey No.2 5 < Age ⩽ 10	Renewal survey No.3 10 < Age ⩽ 15	Renewal survey No.4 and subsequent 15 < Age
None	One	Two	Half, minimum two

Notes:

1. These requirements apply to tanks of integral (structural) type.
2. If a selection of tanks is accepted to be examined, then different tanks should be examined at each renewal survey, on a rotational basis.
3. Peak tanks (all uses) should be examined internally at each renewal survey.
4. At renewal survey No.3 and subsequent renewal surveys, one deep tank for fuel oil in the cargo area should be included, if fitted.

2.5.2 The minimum requirements for close-up surveys at renewal survey are given in annex 1.

2.5.3 The surveyor may extend the close-up survey as deemed necessary taking into account the maintenance of the spaces under survey, the condition of the corrosion prevention system and where spaces have structural arrangements or details which have suffered defects in similar spaces or on similar ships according to the available information.

2.5.4 For areas in spaces where hard protective coatings are found to be in a GOOD condition, the extent of close-up surveys according to annex 1 may be specially considered. Refer also to 2.3.2.

2.6 *Extent of thickness measurements*

2.6.1 The minimum requirements for thickness measurements at the renewal survey are given in annex 2. Annex 11 provides additional thickness measurement guidelines applicable to the vertically corrugated transverse watertight bulkhead between cargo holds No.1 and No.2 on ships subject to compliance with regulation XII/6.1 of the Convention. For additional thickness measurement guidelines applicable to the side shell frames and brackets on ships subject to compliance with resolution MSC.168(79), reference is made to 1.1.5 and annex 15.

2.6.2 Representative thickness measurements to determine both general and local levels of corrosion in the shell frames and their end attachments in all cargo holds and ballast tanks should be carried out. Thickness measurement should also be carried out to determine the corrosion levels on the transverse bulkhead plating. The extent of thickness measurements may be specially considered provided the surveyor is satisfied by the close-up examination, that there is no structural diminution, and the hard protective coating where applied remains efficient.

2.6.3 Provisions for extended measurements for areas with substantial corrosion as defined in 1.2.9 are given in annex 10 and may be additionally specified in the survey programme as required in 5.1. These extended thickness measurements should be carried out before the survey is credited as completed. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken.

2.6.4 The surveyor may further extend the thickness measurements as deemed necessary.

2.6.5 For areas in tanks where hard protective coatings are found to be in GOOD condition as defined in 1.2.11, the extent of thickness measurements according to annex 2 may be specially considered by the Administration.

2.6.6 Transverse sections should be chosen where the largest reductions are suspected to occur or are revealed from deck plating measurements.

2.7 *Extent of tank pressure testing*

2.7.1 All boundaries of water ballast tanks, deep tanks and cargo holds used for water ballast within the cargo length area should be pressure tested. For fuel oil tanks, only representative tanks should be pressure tested.

2.7.2 The surveyor may extend the tank testing as deemed necessary.

2.7.3 Boundaries of ballast tanks should be tested with a head of liquid to the top of air pipes.

2.7.4 Boundaries of ballast holds should be tested with a head of liquid to near the top of hatches.

2.7.5 Boundaries of fuel oil tanks should be tested with a head of liquid to the highest point that liquid will rise under service conditions. Tank testing of fuel oil tanks may be specially considered based on a satisfactory external examination of the tank boundaries and a confirmation from the master stating that the pressure testing has been carried out according to the requirements with satisfactory results.

2.7.6 The testing of double-bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tanktop is carried out.

2.8 *Additional renewal survey requirements after determining compliance with regulations XII/12 and XII/13 of the Convention*

2.8.1 For ships complying with the requirements of regulation XII/12 of the Convention for hold, ballast and dry space water level detectors, the renewal survey should include an examination and a test of the water ingress detection system and of their alarms.

2.8.2 For ships complying with the requirements of regulation XII/13 of the Convention for the availability of pumping systems, the renewal survey should include an examination and a test of the means for draining and pumping ballast tanks forward of the collision bulkhead and bilges of dry spaces any part of which extends forward of the foremost cargo hold, and of their controls.

3 Annual survey

3.1 *General*

The annual survey should consist of an examination for the purpose of ensuring, as far as practicable, that the hull, weather decks, hatch covers, coamings and piping are maintained in a satisfactory condition and should take into account the service history, condition and extent of the corrosion prevention system of ballast tanks and areas identified in the survey report file.

3.2 *Examination of the hull*

3.2.1 Examination of the hull plating and its closing appliances should be carried out as far as can be seen.

3.2.2 Examination of watertight penetrations should be carried out as far as practicable.

3.3 *Examination of weather decks, hatch covers and coamings*

3.3.1 It should be confirmed that no unapproved changes have been made to the hatch covers, hatch coamings and their securing and sealing devices since the last survey.

3.3.2 A thorough survey of cargo hatch covers and coamings is only possible by examination in the open as well as closed positions and should include verification of proper opening and closing operation. As a result, at least the hatch covers sets within the forward 25% of the ship's length and at least one additional set, such that all the sets on the ship are assessed at least once in every five-year period, should be surveyed open, closed and in operation to the full extent in each direction at each annual survey, including:

.1 stowage and securing in open condition;

.2 proper fit and efficiency of sealing in closed condition; and

.3 operational testing of hydraulic and power components, wires, chains and link drives.

The closing of the covers should include the fastening of all peripheral, and cross joint cleats or other securing devices. Particular attention should be paid to the condition of hatch covers in the forward 25% of the ship's length, where sea loads are normally greatest.

3.3.3 If there are indications of difficulty in operating and securing hatch covers, additional sets above those required by 3.3.2, at the discretion of the surveyor, should be tested in operation.

3.3.4 Where the cargo hatch securing system does not function properly, repairs should be carried out under the supervision of the Administration. Where hatch covers or coamings undergo substantial repairs, the strength of securing devices should be upgraded to comply with annex 13.

3.3.5 For each cargo hatch cover set, at each annual survey, the following items should be surveyed:

.1 cover panels, including side plates, and stiffener attachments that may be accessible in the open position by close-up survey (for corrosion, cracks, deformation);

.2 sealing arrangements of perimeter and cross joints (gaskets for condition and permanent deformation, flexible seals on combination carriers, gasket lips, compression bars, drainage channels and non-return valves);

.3 clamping devices, retaining bars, cleating (for wastage, adjustment, and condition of rubber components);

.4 closed cover locating devices (for distortion and attachment);

.5 chain or rope pulleys;

.6 guides;

.7 guiderails and track wheels;

.8 stoppers;

.9 wires, chains, tensioners and gypsies;

.10 hydraulic system, electrical safety devices and interlocks; and

.11 end and interpanel hinges, pins and stools where fitted.

3.3.6 At each hatchway, at each annual survey, the coamings, with plating, stiffeners and brackets should be checked for corrosion, cracks and deformation, especially of the coaming tops including close-up survey.

3.3.7 Where considered necessary, the effectiveness of sealing arrangements may be proved by hose or chalk testing supplemented by dimensional measurements of seal compressing components.

3.3.8 Where portable covers, wooden or steel pontoons are fitted, the satisfactory condition of the following should be confirmed, where applicable:

.1 wooden covers and portable beams, carriers or sockets for the portable beam, and their securing devices;

.2 steel pontoons, including close-up survey of hatch cover plating;

.3 tarpaulins;

.4 cleats, battens and wedges;

.5 hatch securing bars and their securing devices;

.6 loading pads/bars and the side plate edge;

.7 guideplates and chocks; and

.8 compression bars, drainage channels and drain pipes (if any).

3.3.9 The flame screens on vents to all bunker tanks should be examined.

3.3.10 Bunker and vent piping systems, including ventilators should be examined.

3.4 *Examination of cargo holds*

3.4.1 For bulk carriers of 10 to 15 years of age, the following should be carried out:

.1 overall survey of all cargo holds;

.2 close-up examination of sufficient extent, minimum 25% of frames, to establish the condition of the lower region of the shell frames including approximately lower one-third length of the side frame at the side shell and side frame end attachment and the adjacent shell plating in the forward cargo hold. Where this level of survey reveals the need for remedial measures, 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;

.3 when considered necessary by the surveyor, or where extensive corrosion exists, thickness measurement should be carried out. If the results of these thickness measurements indicate that substantial corrosion is found, the extent of thickness measurements should be increased in accordance with annex 10. These extended thickness measurements should be carried out before the annual survey is credited as completed. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken;

.4 where the hard protective coating in cargo holds is found to be in GOOD condition, the extent of close-up surveys and thickness measurements may be specially considered; and

.5 all piping and penetrations in cargo holds, including overboard piping, should be examined.

3.4.2 For bulk carriers over 15 years of age, the following should be carried out:

.1 overall survey of all cargo holds;

.2 close-up examination of sufficient extent, minimum 25% of frames, to establish the condition of the lower region of the shell frames including approximately lower one-third length of the side frame at the side shell and side frame end attachment and the adjacent shell plating in the forward cargo hold and one other selected cargo hold. Where this level of survey reveals the need for remedial measures, 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 as well as a close-up survey of sufficient extent of all remaining cargo holds;

.3 when considered necessary by the surveyor, or when extensive corrosion exists, thickness measurement should be carried out. If the results of these thickness measurements indicate that substantial corrosion is found, the extent of thickness measurements should be increased in accordance with annex 10. These extended thickness measurements should be carried out before the annual survey is credited as completed. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken;

.4 where hard protective coating is fitted in cargo holds and is found in GOOD condition, the extent of the close-up surveys and thickness measurements may be specially considered; and

.5 all piping and penetrations in cargo holds, including overboard piping, should be examined.

3.5 *Examination of ballast tanks*

Examination of ballast tanks should be carried out when required as a consequence of the results of the renewal survey and intermediate survey. When considered necessary by the Administration, or when extensive corrosion exists, thickness measurement should be carried out. If the results of these thickness measurements indicate that substantial corrosion is found, the extent of thickness measurements should be increased in accordance with annex 10. These extended thickness measurements should be carried out before the survey is credited as completed. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken.

3.6 *Additional annual survey requirements for the foremost cargo hold of ships subject to regulation XII/9 of the Convention in accordance with the requirements of annex 12*

3.6.1 Ships subject to regulation XII/9 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^3 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/4.4 of the Convention.

3.6.2 In accordance with regulation XII/9 of the Convention, for the foremost cargo hold of such ship the additional survey requirements listed in annex 12 should be applied.

3.7 *Additional annual survey requirements after determining compliance with regulations XII/12 and XII/13 of the Convention*

3.7.1 For ships complying with the requirements of regulation XII/12 of the Convention for hold, ballast and dry cargo space water level detectors, the annual survey should include an examination and a test, at random, of the water ingress detection systems and of their alarms.

3.7.2 For ships complying with the requirements of regulation XII/13 of the Convention for the availability of pumping systems, the annual survey should include an examination and a test, of the means for draining and pumping ballast tanks forward of the collision bulkhead and bilges of dry spaces any part of which extends forward of the foremost cargo hold, and of their controls.

4 Intermediate 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.

4.1.3 Concurrent crediting to both intermediate survey and renewal survey for surveys and thickness measurements of space should not be acceptable.

4.2 *Bulk carriers 5 to 10 years of age*

4.2.1 *Ballast tanks*

4.2.1.1 For tanks used for water ballast, an overall survey of representative tanks selected by the surveyor should be carried out. The selection should include fore and aft peak tanks and a number of other tanks, taking into account the total number and type of ballast tanks. If such overall survey reveals no visible structural defects, the examination may be limited to verification that the corrosion prevention system remains efficient.

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

4.2.1.3 In ballast tanks other than double-bottom tanks, where a hard protective coating is found in POOR condition and it is not renewed, or where soft or semi-hard coating has been applied, or where a hard 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 ballast double-bottom tanks, where a soft or semi-hard coating has been applied, or where a hard protective coating has not been applied, the tanks in question may 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, suspect areas identified at previous renewal surveys 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 previous surveys.

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 survey are areas found to be suspect areas at previous surveys.

4.2.3.2 The extent of thickness measurement may be specially considered provided the surveyor is satisfied by the close-up survey, that there is no structural diminution and the hard protective coatings are found to be in a GOOD condition.

4.2.3.3 Where substantial corrosion is found, the extent of thickness measurements should be increased in accordance with the requirements of annex 10. These extended thickness measurements should be carried out before the survey is credited as completed. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken.

4.3 *Bulk carriers 10 to 15 years of age*

4.3.1 The requirements of the intermediate survey should be the same extent as the previous renewal survey as required in 2 and 5.1. However, internal examination of fuel tanks and pressure testing of all tanks are not required unless deemed necessary by the attending surveyor.

4.3.2 In application of 4.3.1, the intermediate 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.

4.3.3 In application of 4.3.1, an underwater survey may be considered in lieu of the requirements of 2.2.

4.4 *Bulk carriers exceeding 15 years of age*

4.4.1 The requirements of the intermediate survey should be to the same extent as the previous renewal survey required in 2 and 5.1. However, internal examination of fuel tanks and pressure testing of all tanks are not required unless deemed necessary by the attending surveyor.

4.4.2 In application of 4.4.1, the intermediate 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.

4.4.3 In application of 4.4.1, a survey in dry-dock should be part of the intermediate survey. The overall and close-up surveys and thickness measurements, as applicable, of the lower portions of the cargo holds and water ballast tanks should be carried out in accordance with the applicable requirements for intermediate surveys, if not already performed.

Note: Lower portions of the cargo holds and ballast tanks are considered to be the parts below light ballast water line.

5 Preparations for survey

5.1 *Survey programme*

5.1.1 The owner in cooperation with the Administration should work out a specific survey programme prior to the commencement of any part of:

.1 the renewal survey; and

.2 the intermediate survey for bulk carriers over 10 years of age.

The survey programme should be in a written format based on the information in annex 4A. The survey should not commence until the survey programme has been agreed.

5.1.1.1 Prior to the development of the survey programme, the survey planning questionnaire should be completed by the owner based on the information set out in annex 4B, and forwarded to the Administration.

5.1.1.2 The survey programme at intermediate survey may consist of the survey programme at the previous renewal survey supplemented by the condition evaluation report of that renewal survey and later relevant survey reports. The survey programme should be worked out taking into account any amendments to the survey requirements after the last renewal survey carried out.

5.1.2 In developing the survey programme, the following documentation should be collected and consulted with a view to selecting tanks, holds, areas and structural elements to be examined:

.1 survey status and basic ship information;

.2 documentation on board, as described in 6.2 and 6.3;

.3 main structural plans (scantlings drawings), including information regarding use of high-tensile steels (HTS);

.4 relevant previous survey and inspection reports from both the classification society and the owner;

.5 information regarding the use of ship's holds and tanks, typical cargoes and other relevant data;

.6 information regarding corrosion prevention level on the new building; and

.7 information regarding the relevant maintenance level during operation.

5.1.3 The submitted survey programme should account for and comply, as a minimum, with the requirements of 2.7 and annexes 1 and 2 for close-up survey, thickness measurement and tank testing, respectively, and is to include relevant information including at least:

.1 basic ship information and particulars;

.2 main structural plans (scantling drawings), including information regarding use of high-tensile steels (HTS);

.3 plan of holds and tanks;

.4 list of holds and tanks with information on use, protection and condition of coating;

.5 conditions for survey (e.g. information regarding hold and tank cleaning, gas-freeing, ventilation, lighting, etc.);

.6 provisions and methods for access to structures;

.7 equipment for surveys;

.8 nomination of holds and tanks and areas for close-up survey (see 2.5);

.9 nomination of sections for thickness measurement (see 2.6);

.10 nomination of tanks for testing (see 2.7); and

.11 damage experience related to ship in question.

5.1.4 The Administration will advise the owner of the maximum acceptable structural corrosion diminution levels applicable to the ship.

5.1.5 Use may also be made of the Guidelines for technical assessment in conjunction with the planning of enhanced surveys for bulk carriers contained in annex 9. These Guidelines are a recommended tool which may be invoked at the discretion of the Administration, when considered necessary and appropriate, in conjunction with the preparation of the required survey programme.

5.2 *Conditions for survey*

5.2.1 The owner should provide the necessary facilities for a safe execution of the survey.

5.2.2 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access should be agreed between the owner and the Administration.

5.2.3 Details of the means of access should be provided in the survey planning questionnaire.

5.2.4 In cases where the provisions of safety and required access are judged by the attending surveyor(s) not to be adequate, the survey of the spaces involved should not proceed.

5.2.5 Cargo holds, tanks and spaces should be safe for access. Cargo holds, tanks and spaces should be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it should be verified that the atmosphere in the tank is free from hazardous gas and contains sufficient oxygen.

5.2.6 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces should be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces should be sufficiently clean and free from water, scale, dirt, oil residues, etc., to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

5.2.7 Sufficient illumination should be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

5.2.8 Where soft or semi-hard coatings have been applied, safe access should be provided for the surveyor to verify the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating should be removed.

5.2.9 The surveyor(s) should always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed spaces inspection. In addition a backup team of at least two experienced persons should be stationed at the hatch opening of the tank or space that is being surveyed. The back-up team should continuously observe the work in the tank or space and should keep lifesaving and evacuation equipment ready for use.

5.2.10 A communication system should be arranged between the survey party in the cargo hold, tank or space being examined, the responsible officer on deck and, as the case may be, the navigation bridge. The communication arrangements should be maintained throughout the survey.

5.3 *Access to structures*

5.3.1 For overall survey, means should be provided to enable the surveyor to examine the structure in a safe and practical way.

5.3.2 For close-up surveys of the hull structure, other than cargo hold shell frames, one or more of the following means for access, acceptable to the surveyor, should be provided:

.1 permanent staging and passages through structures;

.2 temporary staging and passages through structures;

.3 lifts and moveable platforms;

.4 portable ladders;

.5 boats or rafts; and

.6 other equivalent means.

5.3.3 For close-up surveys of the cargo hold shell frames of bulk carriers less than 100,000 dwt, one or more of the following means for access, acceptable to the surveyor, should be provided:

.1 permanent staging and passages through structures;

.2 temporary staging and passages through structures;

.3 portable ladder restricted to not more than 5 m in length may be accepted for surveys of lower section of a shell frame including bracket;

.4 hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

.5 boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and

.6 other equivalent means.

5.3.4 For close-up surveys of the cargo hold shell frames of bulk carriers of 100,000 dwt and above, the use of portable ladders should not be accepted and one or more of the following means for access, acceptable to the surveyor, should be provided:

Annual surveys, intermediate survey under 10 years of age and first renewal survey:

.1 permanent staging and passages through structures;

.2 temporary staging and passages through structures;

.3 hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

.4 boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and

.5 other equivalent means.

Subsequent intermediate surveys and renewal surveys:

.1 either permanent or temporary staging and passages through structures for close-up survey of at least the upper part of hold frames;

.2 hydraulic arm vehicles such as conventional cherry pickers for surveys of lower and middle part of shell frames as alternative to staging;

.3 lifts and movable platforms;

.4 boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and

.5 other equivalent means.

5.3.5 Notwithstanding the above requirements, the use of a portable ladder fitted with a mechanical device to secure the upper end of the ladder is acceptable for the "close-up examination of sufficient extent, minimum 25% of frames, to establish the condition of the lower region of the shell frames, including approximately lower one third length of side frame at side shell and side frame and attachment and the adjacent shell plating of the forward cargo hold" at annual survey, required in 3.4.1.2 and the "one other selected cargo hold" required in 3.4.2.2.

5.4 *Equipment for survey*

5.4.1 Thickness measurements should normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment should be proven to the surveyor as required.

5.4.2 One or more of the following fracture detection procedures may be required if deemed necessary by the surveyor:

.1 radiographic equipment;

.2 ultrasonic equipment;

.3 magnetic particle equipment; and/or

.4 dye penetrant.

5.4.3 Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use should be made available during the survey. A safety checklist should be provided.

5.4.4 Adequate and safe lighting should be provided for the safe and efficient conduct of the survey.

5.4.5 Adequate protective clothing should be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

5.5 *Surveys at sea or at anchorage*

5.5.1 Surveys at sea or at anchorage may be accepted provided the surveyor is given the necessary assistance from the personnel on board. Necessary precautions and procedures for carrying out the survey should be in accordance with 5.1, 5.2, 5.3 and 5.4.

5.5.2 A communication system should be arranged between the survey party in the spaces and the responsible officer on deck. This system should also include the personnel in charge of ballast pump handling if boats or rafts are used.

5.5.3 Surveys of tanks or applicable holds by means of boats or rafts should only be undertaken with the agreement of the surveyor, who should take into account the safety arrangements provided, including weather forecasting and ship response under foreseeable conditions and provided the expected rise of water within the tank does not exceed 0.25 m.

5.5.4 When rafts or boats will be used for close-up survey the following conditions should be observed:

.1 only rough duty, inflatable rafts or boats, having satisfactory residual buoyancy and stability even if one chamber is ruptured, should be used;

.2 the boat or raft should be tethered to the access ladder and an additional person should be stationed down the access ladder with a clear view of the boat or raft;

.3 appropriate lifejackets should be available for all participants;

.4 the surface of water in the tank or hold should be calm (under all foreseeable conditions the expected rise of water within the tank should not exceed 0.25 m) and the water level stationary. On no account should the level of the water be rising while the boat or raft is in use;

.5 the tank, hold or space must contain clean ballast water only. Even a thin sheen of oil on the water is not acceptable; and

.6 at no time should the water level be allowed to be within 1 m of the deepest under deck web face flat so that the survey team is not isolated from a direct escape route to the tank hatch. Filling to levels above the deck transverses should only be contemplated if a deck access manhole is fitted and open in the bay being examined, so that an escape route for the survey party is available at all times. Other effective means of escape to the deck may be considered.

5.5.5 Rafts or boats alone may be allowed for inspection of the under deck areas for tanks or spaces, if the depth of the webs is 1.5 m or less.

5.5.6 If the depth of the webs is more than 1.5 m, rafts or boats alone may be allowed only:

.1 when the coating of the under-deck structure is in GOOD condition and there is no evidence of wastage; or

.2 if a permanent means of access is provided in each bay to allow safe entry and exit. This means:

.1 access direct from the deck via a vertical ladder and a small platform fitted approximately 2 m below the deck in each bay; or

.2 access to deck from a longitudinal permanent platform having ladders to deck in each end of the tank. The platform should, for the full length of the tank, be arranged in level with, or above, the maximum water level needed for rafting of under deck structure. For this purpose, the ullage corresponding to the maximum water level should be assumed not more than 3 m from the deck plate measured at the midspan of deck transverses and the middle length of the tank.

If neither of the above conditions are met, then staging or other equivalent means should be provided for the survey of the under-deck areas.

5.5.7 The use of rafts or boats alone in 5.5.5 and 5.5.6 does not preclude the use of boats or rafts to move about within a tank during a survey.

5.6 *Survey planning meeting*

5.6.1 The establishment of proper preparation and the close cooperation between the attending surveyor(s) and the owner's representatives on board prior to and during the survey are an essential part in the safe and efficient conduct of the survey. During the survey on board safety meetings should be held regularly.

5.6.2 Prior to commencement of any part of the renewal and intermediate survey, a survey planning meeting should be held between the attending surveyor(s), the owner's representative in attendance, the thickness measurement company operator (as applicable) and the master of the ship or an appropriately qualified representative appointed by the master or company for the purpose to ascertain that all the arrangements envisaged in the survey programme are in place, so as to ensure the safe and efficient conduct of the survey work to be carried out (see also 7.1.2).

5.6.3 The following is an indicative list of items that should be addressed in the meeting:

.1 schedule of the vessel (i.e. the voyage, docking and undocking manoeuvres, periods alongside, cargo and ballast operations, etc.);

.2 provisions and arrangements for thickness measurements (i.e. access, cleaning/descaling, illumination, ventilation, personal safety);

.3 extent of the thickness measurements;

.4 acceptance criteria (refer to the list of minimum thicknesses);

.5 extent of close-up survey and thickness measurement considering the coating condition and suspect areas/areas of substantial corrosion;

.6 execution of thickness measurements;

.7 taking representative readings in general and where uneven corrosion/ pitting is found;

.8 mapping of areas of substantial corrosion; and

.9 communication between attending surveyor(s), the thickness measurement company operator(s) and owner representative(s) concerning findings.

6 Documentation on board

6.1 *General*

6.1.1 The owner should obtain, supply and maintain on board documentation as specified in 6.2 and 6.3, which should be readily available for the surveyor. The condition evaluation report referred to in 6.2 should include a translation into English.

6.1.2 The documentation should be kept on board for the lifetime of the ship.

6.2 *Survey report file*

6.2.1 A survey report file should be a part of the documentation on board consisting of:

.1 reports of structural surveys (annex 6);

.2 condition evaluation report (annex 7); and

.3 thickness measurement reports (annex 8).

6.2.2 The survey report file should be available also in the owner's and the Administration offices, or in the office of the organization recognized by the Administration.

6.3 *Supporting documents*

The following additional documentation should be available on board:

.1 survey programme as required under 5.1 until such time as the renewal survey, or intermediate survey, as applicable, has been completed.

.2 main structural plans of cargo holds and ballast tanks;

.3 previous repair history;

.4 cargo and ballast history;

.5 inspections by ship's personnel with reference to:

.1 structural deterioration in general;

.2 leakages in bulkheads and piping;

.3 condition of coating or corrosion prevention system, if any. Guidance for reporting is shown in annex 3; and

.6 any other information that would help to identify critical structural areas and/or suspect areas requiring inspection.

6.4 *Review of documentation on board*

Prior to survey, the surveyor should examine the completeness of the documentation on board, and its contents as a basis for the survey.

7 Procedures for thickness measurements

7.1 *General*

7.1.1 The required thickness measurements, if not carried out by the recognized organization acting on behalf of the Administration, should be witnessed by a surveyor of the recognized 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 Thickness measurements of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys.

7.1.4 In all cases the extent of the thickness measurements should be sufficient as to represent the actual average condition.

7.1.5 Procedural requirements for thickness measurements are set out in annex 14.

7.2 *Certification of thickness measurement company*

The thickness measurements should be carried out by a qualified company certified by an organization recognized by the Administration according to principles stated in annex 5.

7.3 *Reporting*

7.3.1 A thickness measurement report should be prepared and submitted to the Administration. The report should give the location of measurements, the thickness measured as well as corresponding original thickness. Furthermore, the report should give the date when the measurements were carried out, type of measuring equipment, names of personnel and their qualifications and be signed by the operator. The thickness measurement report should follow the principles as specified in the recommended procedures for thickness measurements set out in annex 8.

7.3.2 The surveyor should review the final thickness measurement report and countersign the cover page.

8 Reporting and evaluation of survey

8.1 *Evaluation of survey report*

8.1.1 The data and information on the structural condition of the ship collected during the survey should be evaluated for acceptability and continued structural integrity of the ship.

8.1.2 The analysis of data should be carried out and endorsed by the Administration or recognized organization authorized by the Administration and the conclusions of the analysis should form a part of the condition evaluation report.

8.2 *Reporting*

8.2.1 Principles for survey reporting are shown in annex 6.

8.2.2 When a survey is split between different survey stations, a report should be made for each portion of the survey. A list of items examined and/or tested (pressure testing, thickness measurements, etc.) and an indication of whether the item has been credited, should be made available to the next attending surveyor(s), prior to continuing or completing the survey.

8.2.3 A condition evaluation report of the survey and results should be issued to the owner as shown in annex 7 and placed on board the ship for reference at future surveys. The condition evaluation report should be endorsed by the Administration or by the recognized organization on behalf of the Administration.

ANNEX 1

REQUIREMENTS FOR CLOSE-UP SURVEY AT RENEWAL SURVEYS

Age ≤ 5 years	5 < Age ≤ 10 years	10 < Age ≤ 15 years	Age > 15 years
Renewal Survey No. 1	**Renewal Survey No. 2**	**Renewal Survey No. 3**	**Renewal Survey No. 4 and subsequent**
(A) 25% of shell frames in the forward cargo hold at representative positions (A) Selected frames in remaining cargo holds (B) One transverse web with associated plating and longitudinals in two representative water ballast tanks of each type (i.e. topside, or hopper side tank) (C) Two selected cargo hold transverse bulkheads, including internal structure of upper and lower stools, where fitted (D) All cargo hold hatch covers and coamings (plating and stiffeners)	(A) All shell frames in the forward cargo hold and 25% of shell frames in each of the remaining cargo holds including upper and lower end attachments and adjacent shell plating (A) For bulk carriers of 100,000 dwt and above, all shell frames in the forward cargo hold and 50% of shell frames in each of the remaining cargo holds, including upper and lower end attachments and adjacent shell plating. (B) One transverse web with associated plating and longitudinals in each water ballast tank (B) Forward and aft transverse bulkhead in one ballast tank, including stiffening system (C) All cargo hold transverse bulkheads, including internal structure of upper and lower stools, where fitted (D) All cargo hold hatch covers and coamings (plating and stiffeners) (E) All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches	(A) All shell frames in the forward and one other selected cargo hold and 50% of frames in each of the remaining cargo holds, including upper and lower end attachments and adjacent shell plating (B) All transverse bulkheads in ballast tanks, including stiffening system (B) All transverse webs with associated plating and longitudinals in each water ballast tank Areas (C), (D), and (E) as for renewal survey No.2	(A) All shell frames in all cargo holds including upper and lower end attachments and adjacent shell plating. Areas (B)–(E) as for column 3

(A) Cargo hold transverse frame.
(B) Transverse web or watertight transverse bulkhead in water ballast tanks.
(C) Cargo hold transverse bulkhead platings, stiffeners and girders.
(D) Cargo hold hatch covers and coamings.
(E) Deck plating inside line of hatch openings between cargo hold hatches.

See sketches of appendix 3 to annex 8 for areas corresponding to (A), (B), (C), (D) and (E).

See also sketch in annex 15 for zones of side shell frames for ships subject to compliance with resolution MSC.168(79).

Note: Close-up survey of transverse bulkheads to be carried out at four levels:

Level (a) Immediately above the inner bottom and immediately above the line of gussets (if fitted) and shedders for ships without lower stool.

Level (b) Immediately above and below the lower stool shelf plate (for those ships fitted with lower stools), and immediately above the line of the shedder plates.

Level (c) About mid-height of the bulkhead.

Level (d) Immediately below the upper deck plating and immediately adjacent to the upper wing tank, and immediately below the upper stool shelf plate for those ships fitted with upper stools, or immediately below the topside tank.

ANNEX 2

REQUIREMENTS FOR THICKNESS MEASUREMENTS AT RENEWAL SURVEYS

Age ≤ 5 years	5 < Age ≤ 10 years	10 < Age ≤ 15 years	Age > 15 years
1	2	3	4
1 Suspect areas	1 Suspect areas 2 Within the cargo length area: two transverse sections of deck plating outside line of cargo hatch openings 3 Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to annex 1 4 Wind and water strakes in way of transverse sections considered under point 2 above 5 Selected wind and water strakes outside the cargo length area 6 See 1.1.5 and annex 15 for additional thickness measurement guidelines applicable to the side shell frames and brackets on ships subject to compliance with resolution MSC.168(79)	1 Suspect areas 2 Within the cargo length area: .1 each deck plate outside line of cargo hatch openings .2 two transverse sections, one of which should be in the amidship area, outside line of cargo hatch openings 3 Measurement, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to annex 1 4 All wind and water strakes within the cargo length area 5 Selected wind and water strakes outside the cargo length area 6 See 1.1.5 and annex 15 for additional thickness measurement guidelines applicable to the side shell frames and brackets on ships subject to compliance with resolution MSC.168(79) 7 As required by annex 12 for ships subject to compliance with regulation XII/6.1of the Convention	1 Suspect areas 2 Within the cargo length area: .1 each deck plate outside line of cargo hatch openings .2 three transverse sections, one of which should be in the amidship area, outside line of cargo hatch openings .3 each bottom plate 3 Point 3 referred to in column 3 4 All wind and water strakes, full length 5 See 1.1.5 and annex 15 for additional thickness measurement guidelines applicable to the side shell frames and brackets on ship subject to compliance with resolution MSC.168(79) 6 As required by annex 12 for ships subject to compliance with regulation XII/6.1 of the Convention

ANNEX 3

OWNER'S INSPECTION REPORT

Structural condition

Ship's name: ..... Owner's inspection report – Structural condition For tank/hold No: ..... Grade of steel: deck: ..... side: ..... bottom: ..... longitudinal bulkhead:							
Elements	Cracks	Buckles	Corrosion	Coating condition	Pitting	Modification/repair	Other
Deck:							
Bottom:							
Side:							
Side framing:							
Longitudinal bulkheads:							
Transverse bulkheads:							
Repairs carried out due to: Thickness measurements carried out (dates): Results in general: Overdue surveys: Outstanding conditions of class: Comments:							
Date of inspection: ..... Inspected by: ..... Signature:							

ANNEX 4A

SURVEY PROGRAMME

Basic information and particulars

Name of ship:
IMO number:
Flag State:
Port of registry:
Gross tonnage:
Deadweight (metric tonnes):
Length between perpendiculars (m):
Shipbuilder:
Hull number:
Recognized organization (RO):
RO ship identity:
Date of build of the ship:
Owner:
Thickness measurement company:

1 Preamble

1.1 *Scope*

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo length area, cargo holds, ballast tanks, including fore and aft peak tanks, required by the Code.

1.1.2 The arrangements and safety aspects of the survey should be acceptable to the attending surveyor(s).

1.2 *Documentation*

All documents used in the development of the survey programme should be available on board during the survey as required by section 6.

2 Arrangement of cargo holds, tanks and spaces

This section of the survey programme should provide information (either in the form of plans or text) on the arrangement of cargo holds, tanks and spaces that fall within the scope of the survey.

3 List of cargo holds, tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme should indicate any changes relating to (and should update) the information on the use of the holds and tanks of the ship, the extent of coatings and the corrosion prevention system provided in the survey planning questionnaire.

4 Conditions for survey

This section of the survey programme should provide information on the conditions for survey, e.g. information regarding cargo hold and tank cleaning, gas freeing, ventilation, lighting, etc.

5 Provisions and method of access to structures

This section of the survey programme should indicate any changes relating to (and should update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

6 List of equipment for survey

This section of the survey programme should identify and list the equipment that will be made available for carrying out the survey and the required thickness measurements.

7 Survey requirements

7.1 *Overall survey*

This section of the survey programme should identify and list the spaces that should undergo an overall survey for this ship in accordance with 2.5.1.

7.2 *Close-up survey*

This section of the survey programme should identify and list the hull structures that should undergo a close-up survey for this ship in accordance with 2.5.2.

8 Identification of tanks for tank testing

This section of the survey programme should identify and list the cargo holds and tanks that should undergo tank testing for this ship in accordance with 2.7.

9 Identification of areas and sections for thickness measurements

This section of the survey programme should identify and list the areas and sections where thickness measurements should be taken in accordance with 2.6.1.

10 Minimum thickness of hull structures

This section of the survey programme should specify the minimum thickness for hull structures of this ship that are subject to survey, according to (a) or (b):

(a) Determined from the attached wastage allowance table and the original thickness to the hull structure plans of the ship;

(b) Given in the following table(s):

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)
Deck			
Plating			
Longitudinals			
Longitudinal girders			
Cross deck plating			
Cross deck stiffeners			
Bottom			
Plating			
Longitudinals			
Longitudinal girders			
Inner bottom			
Plating			
Longitudinals			
Longitudinal girders			
Floors			
Ship side in way of topside tanks			
Plating			
Longitudinals			
Ship side in way of hopper side tanks			
Plating			
Longitudinals			
Ship side in way of tanks (if applicable)			
Plating			
Longitudinals			
Longitudinal stringers			
Ship side in way of cargo holds			
Plating			
Side frames webs			
Side frames flanges			
Upper brackets webs			
Upper brackets flanges			
Lower brackets webs			
Lower brackets flanges			
Longitudinal bulkhead (if applicable)			
Plating			
Longitudinals (if applicable)			
Longitudinal girders (if applicable)			
Transverse bulkheads			
Plating			
Stiffeners (if applicable)			
Upper stool plating			
Upper stool stiffeners			
Lower stool plating			
Lower stool stiffeners			

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)
Transverse web frames in topside tanks			
Plating			
Flanges			
Stiffeners			
Transverse web frames in hopper tanks			
Plating			
Flanges			
Stiffeners			
Hatch covers			
Plating			
Stiffeners			
Hatch coamings			
Plating			
Stiffeners			

Note: The wastage allowance tables should be attached to the survey programme.

11 Thickness measurement company

This section of the survey programme should identify changes, if any, relating to the information on the thickness measurement company provided in the survey planning questionnaire.

12 Damage experience related to the ship

This section of the survey programme should, using the tables provided below, provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.

Hull damages sorted by location for this ship

Cargo hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

Hull damages for sister or similar ships (if available) in the case of design-related damage

Cargo hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

13 Areas identified with substantial corrosion from previous surveys

This section of the survey programme should identify and list the areas of substantial corrosion from previous surveys.

14 Critical structural areas and suspect areas

This section of the survey programme should identify and list the critical structural areas and the suspect areas, when such information is available.

15 Other relevant comments and information

This section of the survey programme should provide any other comments and information relevant to the survey.

Appendices

Appendix 1 – List of plans

5.1.3.2 requires that main structural plans of cargo holds and ballast tanks (scantling drawings), including information on regarding use of high tensile steel (HTS) should be available. This appendix of the survey programme should identify and list the main structural plans which form part of the survey programme.

Appendix 2 – Survey planning questionnaire

The survey planning questionnaire (annex 4B), which has been submitted by the owner, should be appended to the survey programme.

Appendix 3 – Other documentation

This part of the survey programme should identify and list any other documentation that forms part of the plan.

Prepared by the owner in cooperation with the Administration for compliance with 5.1.3:

Date:

(name and signature of authorized owner's representative)

Date:

(name and signature of authorized representative of the Administration)

ANNEX 4B

SURVEY PLANNING QUESTIONNAIRE

1 The following information will enable the owner in cooperation with the Administration to develop a survey programme complying with the requirements of the Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, should provide all information and material required by the Code.

Particulars

Ship's name:

IMO number:

Flag State:

Port of registry:

Owner:

Recognized organization:

RO Ship identity:

Gross tonnage:

Deadweight (metric tonnes):

Date of build:

Information on access provision for close-up surveys and thickness measurement

2 The owner should indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. normally within reach of hand.

Hold/Tank No.	Structure	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
F.P.	Fore peak					
A.P.	Aft peak					
Cargo holds	Hatch side coamings					
	Topside sloping plate					
	Upper stool plating					
	Cross deck					
	Side shell, frames and brackets					
	Transverse bulkhead					
	Hopper tank plating					
	Lower stool					
	Tank top					
Topside tanks	Under deck structure					
	Side shell and structure					
	Sloping plate and structure					
	Webs and bulkheads					
Hopper tanks	Hopper sloping plate and structure					
	Side shell and structure					
	Bottom structure					
	Webs and bulkheads					
	Double-bottom structure					
	Upper stool internal structure					
	Lower stool internal structure					

History of bulk cargoes of a corrosive nature (e.g. high sulphur content)

Owner's inspections

3 Using a format similar to that of the table below (which is given as an example), the owner should provide details of the results of their inspections, for the last 3 years – in accordance with the Code – on all CARGO holds and BALLAST tanks and VOID spaces within the cargo area.

Tank/Hold No.	Corrosion protection (1)	Coating extent (2)	Coating condition (3)	Structural deterioration (4)	Hold and tank history (5)
Cargo holds					
Topside tanks					
Hopper tanks					
Double-side skin tanks					
Double-bottom tanks					
Upper stools					
Lower stools					
Fore peak					
Aft peak					
Miscellaneous other spaces:					

Note:

Indicate tanks which are used for oil/ballast.

Name of owner's representative:
.....
Signature:.....
Date: .....

1) HC = hard coating; SC = soft coating;
SH = semi-hard coating; NP = no protection

2) U = upper part; M = middle part;
L = lower part; C = complete

3) G = good; F = fair; P = poor;
RC = recoated (during the last three years)

4) N = no findings recorded; Y = findings recorded, description of findings should be attached to this questionnaire

5) DR = Damage & Repair; L = Leakages;
CV = Conversion (description to be attached to this questionnaire)

Reports of port State control inspections

List the reports of port State control inspections containing hull structural related deficiencies and relevant information on rectification of the deficiencies:

Safety management system

List non-conformities related to hull maintenance including the associated corrective actions:

Name and address of the approved thickness measurement company

ANNEX 5

PROCEDURES FOR CERTIFICATION OF A COMPANY ENGAGED IN THICKNESS MEASUREMENT OF HULL STRUCTURES

1 Application

This guidance applies for certification of a company which intends to engage in the thickness measurement of hull structures of ships.

2 Procedures for certification

Submission of documents

2.1 The following documents should be submitted to an organization recognized by the Administration for approval:

.1 outline of the company, e.g. organization and management structure;

.2 experience of the company on thickness measurement of hull structures of ships;

.3 technicians' careers, i.e. experience of technicians as thickness measurement operators, technical knowledge and experience of hull structure, etc. Operators should be qualified according to a recognized industrial NDT Standard;

.4 equipment used for thickness measurement such as ultrasonic testing machines and their maintenance/calibration procedures;

.5 a guide for thickness measurement operators;

.6 training programmes for technicians for thickness measurement; and

.7 measurement record format in accordance with recommended procedures for thickness measurements (see annex 8).

Auditing of the company

2.2 Upon reviewing the documents submitted with satisfactory results, the company should be audited in order to ascertain that the company is duly organized and managed in accordance with the documents submitted, and eventually is capable of conducting thickness measurement of the hull structure of ships.

2.3 Certification is conditional upon an on board demonstration of thickness measurement as well as satisfactory reporting.

3 Certification

3.1 Upon satisfactory results of both the audit of the company referred to in 2.2 and the demonstration tests referred to in 2.3, the Administration or organization recognized by the Administration should issue a certificate of approval as well as a notice to the effect that the thickness measurement operation system of the company has been certified.

3.2 Renewal/endorsement of the certificate should be made at intervals not exceeding three years by verification that original conditions are maintained.

4 Report of any alteration to the certified thickness measurement operation system

In cases where any alteration to the certified thickness measurement operation system of the company is made, such an alteration should be immediately reported to the organization recognized by the Administration. Re-audit should be made where deemed necessary by the organization recognized by the Administration.

5 Withdrawal of the certification

The certification may be withdrawn in the following cases:

.1 where the measurements were improperly carried out or the results were improperly reported;

.2 where the surveyor found any deficiencies in the approved thickness measurement operation systems of the company; and

.3 where the company failed to report any alteration referred to in 4 to the organization recognized by the Administration as required.

ANNEX 6

SURVEY REPORTING PRINCIPLES

As a principle, for bulk carriers subject to the Code, the surveyor should include the following contents in his report for survey of hull structure and piping systems, as relevant for the survey.

1 General

1.1 A survey report should be generated in the following cases:

.1 in connection with commencement, continuation and/or completion of periodical hull surveys, i.e. annual, intermediate and renewal surveys, as relevant;

.2 when structural damages/defects have been found;

.3 when repairs, renewals or modifications have been carried out; and

.4 when condition of class (recommendation) has been imposed or has been deleted.

1.2 The reporting should provide:

.1 evidence that prescribed surveys have been carried out in accordance with applicable requirements;

.2 documentation of surveys carried out with findings, repairs carried out and condition of class (recommendation) imposed or deleted;

.3 survey records, including actions taken, which should form an auditable documentary trail. Survey reports should be kept in the survey report file required to be on board;

.4 information for planning of future surveys; and

.5 information which may be used as input for maintenance of classification rules and instructions.

1.3 When a survey is split between different survey stations, a report should be made for each portion of the survey. A list of items surveyed, relevant findings and an indication of whether the item has been credited, are to be made available to the next attending surveyor, prior to continuing or completing the survey. Thickness measurement and tank testing carried out is also to be listed for the next surveyor.

2 Extent of the survey

2.1 Identification of compartments where an overall survey has been carried out.

2.2 Identification of locations, in each ballast tank and cargo hold including hatch covers and coamings, where a close-up survey has been carried out, together with information on the means of access used.

2.3 Identification of locations, in each ballast tank and cargo hold including hatch covers and coamings, where thickness measurement has been carried out.

Note: As a minimum, the identification of location of close-up survey and thickness measurement should include a confirmation, with description of individual structural members, corresponding to the extent of requirements stipulated in annex A based on type of periodical survey and the ship's age.

Where only partial survey is required, i.e. 25% of shell frames, one transverse web, two selected cargo hold transverse bulkheads, the identification should include location within each ballast tank and cargo hold by reference to frame numbers.

2.4 For areas in ballast tanks and cargo holds where protective coating is found to be in good condition and the extent of close-up survey and/or thickness measurement has been specially considered, structures subject to special consideration should be identified.

2.5 Identification of tanks subject to tank testing.

2.6 Identification of piping systems on deck and within cargo holds, ballast tanks, pipe tunnels, cofferdams and void spaces where:

.1 examination including internal examination of piping with valves and fittings and thickness measurement, as relevant, has been carried out; and

.2 operational test to working pressure has been carried out.

3 Result of the survey

3.1 Type, extent and condition of protective coating in each tank, as relevant (rated GOOD, FAIR or POOR) including identification of tanks fitted with anodes.

3.2 Structural condition of each compartment with information on the following, as relevant:

.1 identification of findings, such as:

.1 corrosion with description of location, type and extent;

.2 areas with substantial corrosion;

.3 cracks/fractures with description of location and extent;

.4 buckling with description of location and extent; and

.5 indents with description of location and extent;

.2 identification of compartments where no structural damages/defects are found. The report may be supplemented by sketches/photos; and

.3 thickness measurement report should be verified and signed by the surveyor controlling the measurements on board.

4 Actions taken with respect to findings

4.1 Whenever the attending surveyor is of the opinion that repairs are required, each item to be repaired should be identified in a numbered list. Whenever repairs are carried out, details of the repairs effected should be reported by making specific reference to relevant items in the numbered list.

4.2 Repairs carried out should be reported with identification of:

.1 compartment;

.2 structural member;

.3 repair method (i.e. renewal or modification), including:

.1 steel grades and scantlings (if different from the original); and

.2 sketches/photos, as appropriate;

.4 repair extent; and

.5 non-destructive test (NDT)/tests.

4.3 For repairs not completed at the time of survey, condition of class/recommendation should be imposed with a specific time limit for the repairs. In order to provide correct and proper information to the surveyor attending for survey of the repairs, condition of class/recommendation should be sufficiently detailed with identification of each item to be repaired. For identification of extensive repairs, reference may be made to the survey report.

ANNEX 7

CONDITION EVALUATION REPORT

Issued upon completion of renewal survey

General particulars

Ship's name:	Class/Administration identity number: Previous class/Administration identity number(s): IMO number:
Port of registry:	National flag: Previous national flag(s):
Deadweight (metric tonnes):	Gross tonnage: National: ITC (1969):
Date of build: Date of major conversion: Type of conversion:	Classification notation: Owner: Previous owner(s):

1 The survey reports and documents listed below have been reviewed by the undersigned and found to be satisfactory.

2 A summary of the survey is attached herewith on sheet 2.

3 The renewal survey has been completed in accordance with the present Code on (date) .....

Condition evaluation report completed by	Name Signature	Title
Office	Date	
Condition evaluation report verified by	Name Signature	Title
Office	Date	

Attached reports and documents:

1)
2)
3)
4)
5)

Contents of condition evaluation report

Part 1	– General particulars:	- See front page
Part 2	– Report review:	- Where and how survey was done
Part 3	– Close-up survey:	- Extent (which tanks/holds)

Part 4	– Thickness measurements:	- Reference to thickness measurement report
		- Summary of where measured
		- Separate form indicating the spaces with substantial corrosion, and corresponding:
		  - thickness diminution
		  - corrosion pattern

Part 5	– Tank/hold corrosion prevention system:	- Separate form indicating:
		  - location of coating
		  - condition of coating (if applicable)

Part 6	– Repairs:	- Identification of spaces/areas
Part 7	– Condition of class/flag State requirements:	
Part 8	– Memoranda:	- Acceptable defects - Any points of attention for future surveys, e.g. for suspect areas - Extended annual/intermediate survey due to coating breakdown
Part 9	– Conclusion:	- Statement on evaluation/verification of survey report

Extract of thickness measurements

Reference is made to the thickness measurement report:

Position of substantially corroded tanks/areas[1] or areas with deep pitting[3]	**Thickness diminution [%]**	**Corrosion pattern[2]**	**Remarks: (e.g. reference to attached sketches)**

Notes:

1 Substantial corrosion, i.e. 75 to 100% of acceptable margins wasted.

2 P = Pitting
C = Corrosion in general

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 ⅛ or more of actual plate thickness should be noted.

Tank/hold corrosion prevention system

Tank/hold Nos.[1]	Tank/hold protection[2]	Coating condition[3]	Remarks

Notes:

1 All ballast tanks and cargo holds should be listed.

2 C = Coating
NP = No protection

3 Coating condition according to the following standard:

GOOD condition with only minor spot rusting.

FAIR condition with local breakdown of coating at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition.

POOR condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.

If coating condition POOR is given, extended annual surveys should be introduced. This should be noted in part 8 of the Contents of condition evaluation report.

ANNEX 8

RECOMMENDED PROCEDURES FOR THICKNESS MEASUREMENTS

General

1 These procedures should be used for recording thickness measurements as required by part A of annex A.

2 Reporting forms TM1-BC, TM2-BC(i), TM2-BC(ii) TM3-BC, TM4-BC, TM5-BC, TM6-BC, TM7-BC(i) and TM7-BC(ii), set out in appendix 2 should be used for recording thickness measurements and the maximum allowance diminution should be stated. The maximum allowable diminution could be stated in an attached document.

3 Appendix 3 contains guidance diagrams and notes relating to the reporting forms and the requirements for thickness measurement.

4 The reporting forms should, where appropriate, be supplemented by data presented on structural sketches.

Appendix 1 General particulars
Appendix 2 Reports on thickness measurement
Appendix 3 Guidance on thickness measurement

Appendix 1

GENERAL PARTICULARS

Ship's name: .....
IMO number: .....
Class/Administration identity number: .....
Port of registry: .....
Gross tonnage: .....
Deadweight: .....
Date of build: .....
Classification society: .....

Name of company performing thickness measurement: .....
.....
Thickness measurement company certified by: .....
Certificate number: .....
Certificate valid from: ..... to .....
Place of measurement: .....
First date of measurement: .....
Last date of measurement: .....
Renewal survey/intermediate survey due: .....
Details of measurement equipment: .....
Qualification of operator: .....

Report number: ..... consisting of ..... pages
Name of operator: ..... Name of surveyor: .....
Signature of operator: ..... Signature of surveyor: .....
Company official stamp: ..... Administration: .....

Official stamp

Appendix 2

REPORTS ON THICKNESS MEASUREMENT

Reports on thickness measurement of all deck plating, all bottom shell plating or side shell plating (TM1-BC)

Ship's name..... IMO number..... Class Identity No.....Report No.....

STRAKE POSITION																	
PLATE POSITION	No. or letter	Orig. thk. (mm)	Forward reading						Aft reading						Mean diminution		Maximum allowable diminution (mm)
			Gauged		Diminution P		Diminution S		Gauged		Diminution P		Diminution S				
			P	S	mm	%	mm	%	P	S	mm	%	mm	%	P	S	
12th forward																	
11th																	
10th																	
9th																	
8th																	
7th																	
6th																	
5th																	
4th																	
3rd																	
2nd																	
1st																	
Amidships																	
1st aft																	
2nd																	
3rd																	
4th																	
5th																	
6th																	
7th																	
8th																	
9th																	
10th																	
11th																	
12th																	

Operator's signature.....

Notes – see following page

Notes to report TM1-BC:

1 This report should be used for recording the thickness measurement of:

.1 All strength deck plating within the cargo length area.

.2 Keel, bottom shell plating and bilge plating within the cargo length area.

.3 Side shell plating that is all wind and water strakes within the cargo length area.

.4 Side shell plating that is selected wind and water strakes outside the cargo length area.

2 The strake position should be clearly indicated as follows:

.1 For strength deck, indicate the number of the strake of plating inboard from the stringer plate.

.2 For bottom plating, indicate the number of the strake of plating outboard from the keel plate.

.3 For side shell plating, give number of the strake of plating below sheerstrake and letter as shown on shell expansion.

3 Only the deck plating strakes outside line of openings should be recorded.

4 Measurements should be taken at the forward and aft areas of all plates.

5 The single measurements recorded should represent the average of multiple measurements.

6 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of shell and deck plating (one, two or three transverse sections) (TM2-BC(i))

Ship's name..... IMO number..... Class Identity No..... Report No.....

	STRENGTH DECK AND SHEERSTRAKE PLATING																									
	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....									THIRD TRANSVERSE SECTION AT FRAME NUMBER....								
STRAKE POSITION	No. or letter	Orig. thk (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)	No. or letter	Orig. thk (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)	No. or letter	Orig. thk (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)
			P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%	
Stringer plate																										
1st strake inboard																										
2nd																										
3rd																										
4th																										
5th																										
6th																										
7th																										
8th																										
9th																										
10th																										
11th																										
12th																										
13th																										
14th																										
centre strake																										
sheerstrake																										
TOPSIDE TOTAL																										

Operator's signature.....

Notes – see following page

Notes to report TM2-BC(i):

1 This report should be used for recording the thickness measurement of strength deck plating and sheer-strake plating transverse sections:

One, two or three sections within the cargo length area, comprising structural items (1), (2) and (3) as shown on the diagram of typical transverse sections (appendix 3).

2 Only the deck plating outside the line of openings should be recorded.

3 The topside area comprises deck plating, stringer plate and sheer-strake (including rounded gunwales).

4 The exact frame station of measurement should be stated.

5 The single measurements recorded should represent the average of multiple measurements.

6 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of shell and deck plating (one, two or three transverse sections) (TM2-BC(ii))

Ship's name..... IMO number..... Class Identity No..... Report No.....

	SHELL PLATING																											
	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....									THIRD TRANSVERSE SECTION AT FRAME NUMBER....								
STRAKE POSITION	No. or letter	Orig. thk (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)	No. or letter	Orig. thk (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)	No. or letter	Orig. thk (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)
			P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%	
1st below sheerstrake																												
2nd																												
3rd																												
4th																												
5th																												
6th																												
7th																												
8th																												
9th																												
10th																												
11th																												
12th																												
13th																												
14th																												
15th																												
16th																												
17th																												
18th																												
19th																												
20th																												
keel strake																												
BOTTOM TOTAL																												

Operator's signature.....

Notes – see following page

Notes to report TM2-BC(ii):

1 This report should be used for recording the thickness measurements of shell plating at transverse sections:

One, two or three sections within the cargo length area comprising structural items (4), (5), (6), and (7) as shown on the diagram of typical transverse sections (appendix 3).

2 The bottom area comprises keel, bottom and bilge plating.

3 The exact frame station of measurement should be stated.

4 The single measurements recorded should represent the average of multiple measurements.

5 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of longitudinal members (one, two or three transverse sections) (TM3-BC)

Ship's name..... IMO number..... Class Identity No..... Report No.....

STRUCTURAL MEMBER	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....										THIRD TRANSVERSE SECTION AT FRAME NUMBER....									
	Item no.	Orig. thk (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)	Item no.	Orig. thk (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)		Item no.	Orig. thk (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)
			P	S	mm	%	mm	%				P	S	mm	%	mm	%					P	S	mm	%	mm	%	

Notes to report TM3-BC:

1 This report should be used for recording the thickness measurement of longitudinal members at transverse sections:

One, two or three sections within the cargo length area, comprising the appropriate structural items (8) to (20) as shown on the diagram of typical transverse sections (appendix 3).

2 The exact frame station of measurement should be stated.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of transverse structural members in the double bottom, hopper side and topside water ballast tanks (TM4-BC)

Ship's name..... IMO number..... Class Identity No..... Report No.....

TANK DESCRIPTION:

LOCATION OF STRUCTURE:

STRUCTURAL MEMBER	ITEM	Original thickness (mm)	Gauged		Diminution P		Diminution S		Maximum allowable diminution (mm)
			Port	Starboard	mm	%	mm	%	

Operator's signature.....

Notes – see following page

Notes to report TM4-BC:

1 This report should be used for recording the thickness measurement of transverse structural members, comprising appropriate structural items (23) to (25) as shown on the diagram of typical transverse sections (appendix 3).

2 Guidance for areas of measurement is indicated in appendix 3.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of cargo hold transverse bulkheads (TM5-BC)

Ship's name..... IMO number..... Class Identity No..... Report No.....

LOCATION OF STRUCTURE:						FRAME NUMBER:		
STRUCTURAL COMPONENT (PLATING/STIFFENER)	Original thickness (mm)	Gauged		Diminution P		Diminution S		Maximum allowable diminution (mm)
		Port	Starboard	mm	%	mm	%	

Operator's signature.....

Notes – see following page

Notes to report TM5-BC:

1 This report form should be used for recording the thickness measurement of cargo hold transverse bulkheads.

2 Guidance for areas of measurement is indicated in appendix 3.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of miscellaneous structural members (TM6-BC)

Ship's name..... IMO number..... Class Identity No..... Report No.....

STRUCTURAL MEMBER:

LOCATION OF STRUCTURE:

SKETCH

DESCRIPTION	Orig. thk. (mm)	Gauged		Diminution P		Diminution S		Max. allow. dimin. (mm)
		P	S	mm	%	mm	%	

Operator's signature.....

Notes – see following page

Notes to report TM6-BC:

1 This report should be used for recording the thickness measurement of miscellaneous structural members including structural items (28), (29), (30) and (31) as shown on the diagram of typical transverse sections in appendix 3.

2 Guidance for areas of measurement is indicated in appendix 3.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of cargo hold transverse frames (TM7-BC(i))

Ship's name..... IMO number..... Class Identity No..... Report No.....

CARGO HOLD No.																											
FRAME NUMBER	UPPER PART								MID PART									LOWER PART									
	Orig. thk. (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)	No. or letter	Orig. thk. (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)	No. or letter	Orig. thk. (mm)	Gauged		Diminution P		Diminution S		Max allow. dimin. (mm)
		P	S	mm	%	mm	%				P	S	mm	%	mm	%				P	S	mm	%	mm	%	

Operator's signature.....

Notes – see following page

Notes to report TM7-BC(i):

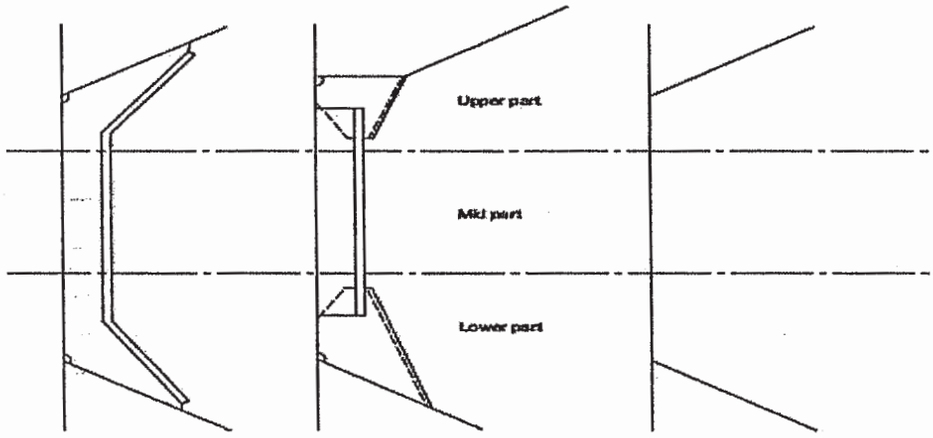
1 This report should be used for recording the thickness measurement of:

- cargo hold transverse frames; and
- structural item number (34) as shown on the diagram of typical transverse section indicating longitudinal and transverse members in appendix 3.

2 Guidance for areas of measurement is indicated in appendix 3.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.



Typical transverse frames in cargo hold: thickness gauging area (A)

Non-typical transverse frame in cargo hold: thickness gauging area (A)

Report on thickness measurement of cargo hold side shell frames (TM7-BC(ii))

Ship's name..... IMO number..... Class identity No..... Report No.....

CARGO HOLD NO.: Side: (Port / stb.)

	ZONE A						Zone B						ZONE C						ZONE D					
FRAME No	Org. Thk.	t_{REN}	t_{COAT}	t_M	Diminution		Org. Thk.	t_{REN}	t_{COAT}	t_M	Diminution		Org. Thk.	t_{REN}	t_{COAT}	t_M	Diminution		Org. Thk.	t_{REN}	t_{COAT}	t_M	Diminution	
	mm	mm	mm	mm	mm	%	mm	mm	mm	mm	mm	%	mm	mm	mm	mm	mm	%	mm	mm	mm	mm	mm	%

Operator's signature.....

Notes on report TM7-BC(ii):

1 This report should be used for recording the thickness measurement of:

Cargo hold transverse frames for application of resolution MSC.168(79).

2 Guidance for areas of measurement is provided in annex 15.

3 Symbols should be applied as follows:

t_M = thickness as measured, in mm

t_{REN} = thickness at which renewal is required in accordance with paragraph 2.1.2 of annex 2 to resolution MSC.168(79)

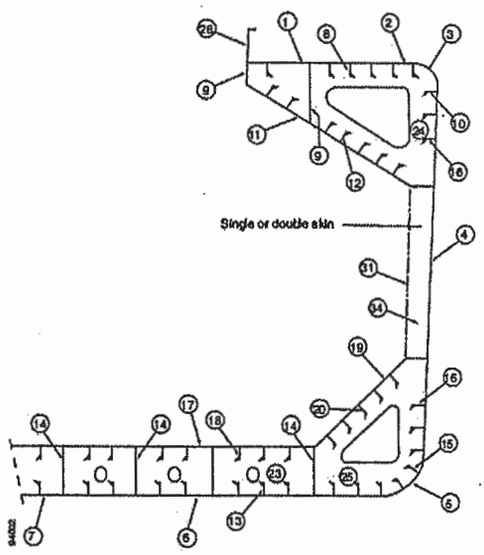
t_{COAT} = 0.75 • (thickness, in mm, as required by annex 1 to resolution MSC.168(79), in paragraph 3 for frame webs and in paragraph 4 for upper and lower brackets).

4 The maximum allowable diminution could be stated in an attached document.

Appendix 3

GUIDANCE ON THICKNESS MEASUREMENT

Typical transverse section indicating longitudinal and transverse members



REPORT ON TM3-BC

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 TM3-BC

8. Deck longitudinals
9. Deck girders
10. Sheerstrake longitudinals
11. Topside tank sloping plating
12. Topside tank sloping plating longitudinals
13. Bottom longitudinals
14. Bottom girders
15. Bilge longitudinals
16. Side shell longitudinals
17. Inner bottom plating
18. Inner bottom longitudinals
19. Hopper side plating
20. Hopper side longitudinals
21.
22.

REPORT ON TM4-BC

23. Double bottom tank floors
24. Topside tank transverses
25. Hopper side tank transverses
26.
27.

REPORT ON TM5-BC

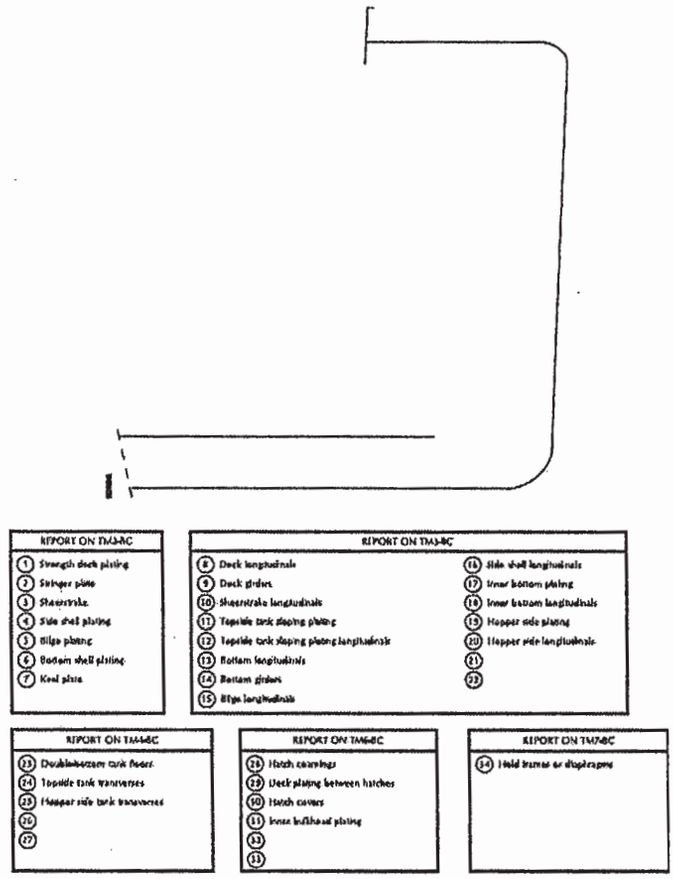
28. Hatch coamings
29. Deck plating between hatches
30. Hatch covers
31. Inner bulkhead plating
32.
33.

REPORT ON TM7-BC

34. Web frames or diaphragms

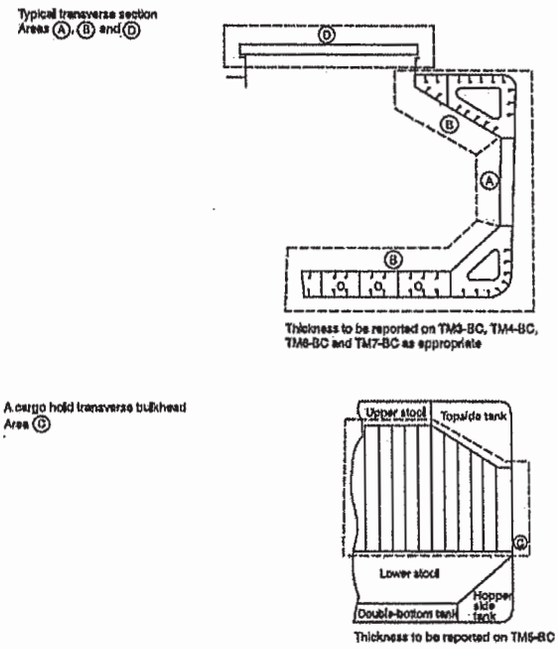
Transverse section outline

(To be used for longitudinal and transverse members where the typical transverse section is not applicable)



Close–up survey and thickness measurement areas

(Typical areas for thickness measurement of cargo hold frames, structural members and transverse bulkheads in association with close-up survey requirements)



ANNEX 9

GUIDELINES FOR TECHNICAL ASSESSMENT IN CONJUNCTION WITH THE PLANNING OF ENHANCED SURVEYS FOR BULK CARRIERS – RENEWAL SURVEY HULL

1 Introduction

These Guidelines contain information and suggestions concerning technical assessments which may be of use in conjunction with the planning of enhanced renewal surveys of bulk carriers. As indicated in 5.1.5, the Guidelines are a recommended tool which may be invoked at the discretion of an Administration, when considered necessary and appropriate, in conjunction with the preparation of the required survey programme.

2 Purpose and principles

2.1 *Purpose*

The purpose of the technical assessments described in these Guidelines is to assist in identifying critical structural areas, nominating suspect areas and in focusing attention on structural elements or areas of structural elements which may be particularly susceptible to, or evidence a history of, wastage or damage. This information may be useful in nominating locations, areas, holds and tanks for thickness measurement, close-up survey and tank testing.

Critical structural areas are locations which have been identified from calculations to require monitoring or from the service history of the subject ship or from similar or sister ships (if available) to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the ship.

2.2 *Minimum requirements*

These Guidelines may not be used to reduce the requirements of annexes 1 and 2 and paragraph 2.7 of part A for close-up survey, thickness measurement and tank testing, respectively, which are, in all cases, to be complied with as a minimum.

2.3 *Timing*

As with other aspects of survey planning, the technical assessments described in these Guidelines should be completed by the owner or operator in cooperation with the Administration well in advance of the commencement of the renewal survey, i.e. prior to commencing the survey and normally at least 12 to 15 months before the survey's completion due date.

2.4 *Aspects to be considered*

2.4.1 Technical assessments, which may include quantitative or qualitative evaluation of relative risks of possible deterioration, of the following aspects of a particular ship may be used as a basis for the nomination of holds, tanks and areas for survey:

.1 design features such as stress levels on various structural elements, design details and extent of use of high-tensile steel;

.2 former history with respect to corrosion, cracking, buckling, indents and repairs for the particular ship as well as similar vessels, where available; and

.3 information with respect to types of cargo carried, protection of tanks, and condition of coating, if any, of holds and tanks.

2.4.2 Technical assessments of the relative risks of susceptibility to damage or deterioration of various structural elements and areas should be judged and decided on the basis of recognized principles and practices, such as may be found in reference 3.

3 Technical assessment

3.1 *General*

3.1.1 There are three basic types of possible failure which may be the subject of technical assessment in connection with planning of surveys: corrosion, cracks and buckling. Contact damages are not normally covered by the survey plan since indents are usually noted in memoranda and assumed to be dealt with as a normal routine by surveyors.

3.1.2 Technical assessments performed in conjunction with the survey planning process should, in principle, be as shown schematically in figure 1 which depicts, schematically, how technical assessments can be carried out in conjunction with the survey planning process. The approach is based on an evaluation of experience and knowledge basically related to:

.1 design; and

.2 corrosion.

3.1.3 The design should be considered with respect to structural details which may be susceptible to buckling or cracking as a result of vibration, high stress levels or fatigue.

3.1.4 Corrosion is related to the ageing process, and is closely connected with the quality of corrosion protection at new building, and subsequent maintenance during the service life. Corrosion may also lead to cracking and/or buckling.

3.2 *Methods*

3.2.1 *Design details*

3.2.1.1 Damage experience related to the ship in question and similar ships, where available, is the main source of information to be used in the process of planning. In addition, a selection of structural details from the design drawings should be included.

3.2.1.2 Typical damage experience to be considered will consist of:

.1 number, extent, location and frequency of cracks; and

.2 location of buckles.

3.2.1.3 This information may be found in the survey reports and/or the owner's files, including the results of the owner's own inspections. The defects should be analysed, noted and marked on sketches.

3.2.1.4 In addition, general experience should be utilized. For example, figure 2 shows typical locations in bulk carriers which experience has shown may be susceptible to structural damage. Also, reference should be made to reference 3 which contains a catalogue of typical damages and proposed repair methods for various bulk carrier structural details.

3.2.1.5 Such figures should be used together with a review of the main drawings, in order to compare with the actual structure and search for similar details which may be susceptible to damage. An example is shown in figure 3.

3.2.1.6 The review of the main structural drawings, in addition to using the above-mentioned figures, should include checking typical design details where cracking has been experienced. The factors contributing to damage should be carefully considered.

3.2.1.7 The use of high-tensile steel (HTS) is an important factor. Details showing good service experience where ordinary, mild steel has been used may be more susceptible to damage when HTS, and its higher associated stresses, are utilized. There is extensive and, in general, good experience with the use of HTS for longitudinal material in deck and bottom structures. Experience in other locations, where the dynamic stresses may be higher, is less favourable, e.g. side structures.

3.2.1.8 In this respect, stress calculations of typical and important components and details, in accordance with relevant methods, may prove useful and should be considered.

3.2.1.9 The selected areas of the structure identified during this process should be recorded and marked on the structural drawings to be included in the survey programme.

3.2.2 *Corrosion*

3.2.2.1 In order to evaluate relative corrosion risks, the following information is generally to be considered:

.1 usage of tanks, holds and spaces;

.2 condition of coatings;

.3 cleaning procedures;

.4 previous corrosion damage;

.5 ballast use and time for cargo holds;

.6 risk of corrosion in cargo holds and ballast tanks; and

.7 location of ballast tanks adjacent to heated fuel oil tanks.

3.2.2.2 Reference 2 gives definitive examples which can be used for judging and describing coating condition, using typical pictures of conditions.

3.2.2.3 For bulk carriers, reference 3 should be used as the basis for the evaluation, together with the age of the ship and relevant information on the anticipated condition of the ship as derived from the information collected in order to prepare the survey programme.

3.2.2.4 The various tanks, holds and spaces should be listed with the corrosion risks nominated accordingly.

3.2.3 *Locations for close-up survey and thickness measurement*

3.2.3.1 On the basis of the table of corrosion risks and the evaluation of design experience, the locations for initial close-up survey and thickness measurement (sections) may be nominated.

3.2.3.2 The sections subject to thickness measurement should normally be nominated in tanks, holds and spaces where corrosion risk is judged to be the highest.

3.2.3.3 The nomination of tanks, holds and spaces for close-up survey should, initially, be based on highest corrosion risk, and should always include ballast tanks. The principle for the selection should be that the extent is increased by age or where information is insufficient or unreliable.

References

1 TSCF, Guidance Manual for the Inspection and Condition Assessment of Tanker Structures, 1986.

2 TSCF, Condition Evaluation and Maintenance of Tanker Structures, 1992.

3 IACS, Bulk Carriers: Guidelines for Surveys, Assessment and Repair of Hull Structures, 2007.

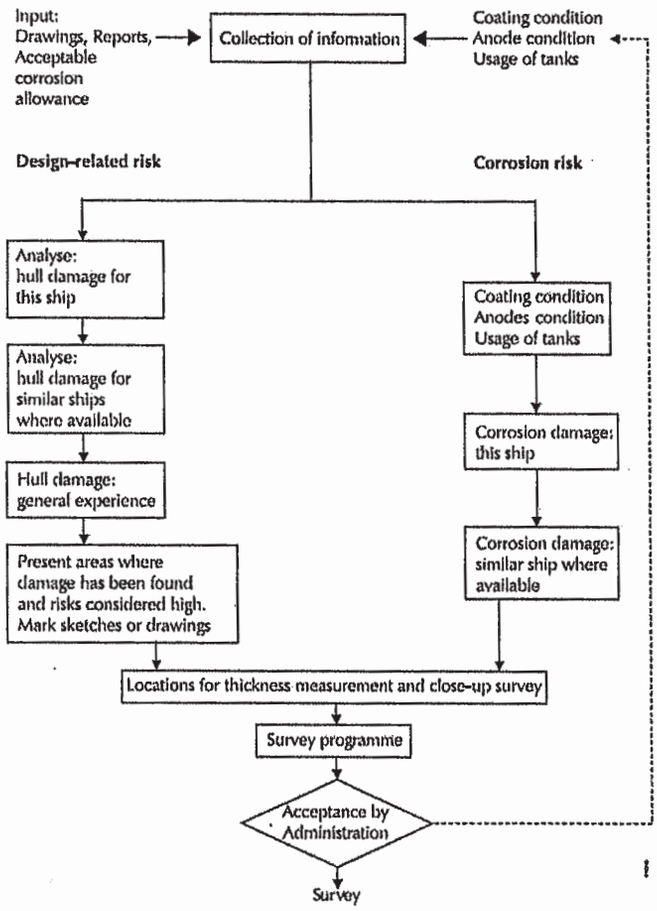


Figure 1 – Technical assessment and the survey planning process

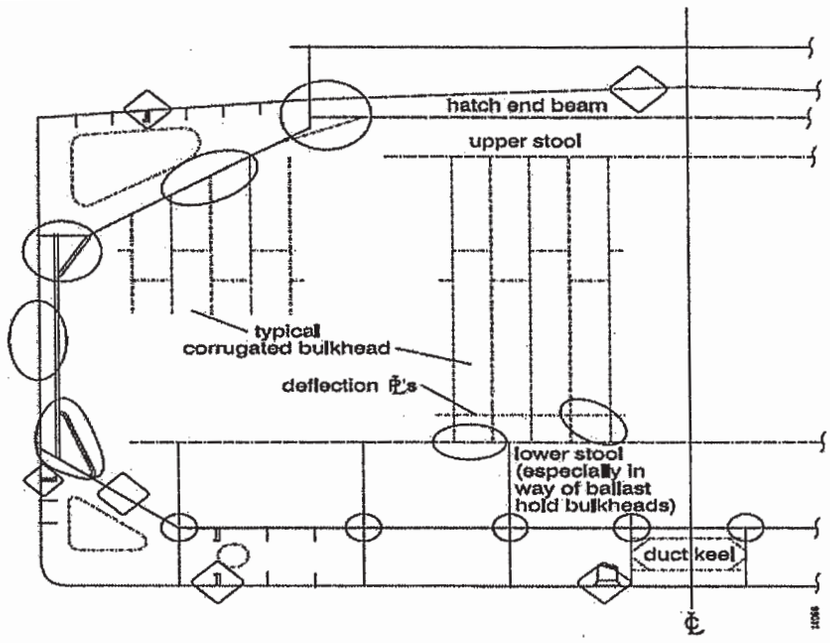
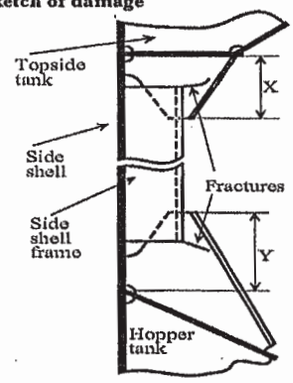


Figure 2 – Typical locations susceptible to structural damage or corrosion

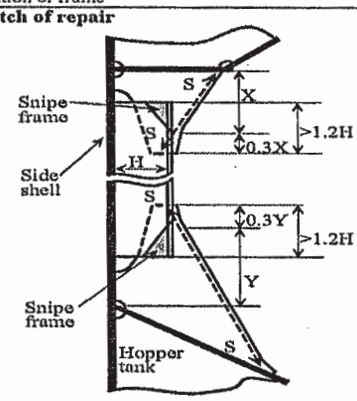
BULK CARRIERS	Guidelines for Surveys, Assessment and Repair of Hull Structure	
Part 1	Cargo hold region	Example No.
Area 3	Cargo hold side structure	1-a
Detail of damage	Fractures in brackets at termination of frame	

Sketch of damage



Separate bracket configuration

Sketch of repair



S=Snipped end

Notes on possible cause of damage

1. This type of damage is caused due to stress concentration.

Notes on repairs

1. For small fractures, e. g. hairline fractures, the fracture can be veed-out, ground, examined by NDT for fractures, and rewelded.
2. For larger/significant fractures consideration is to be given to cropping and partly renewing/ renewing the frame brackets. If renewing the brackets, end of frames can be sniped to soften them.
3. If felt prudent, soft toes are to be incorporated at the boundaries of the bracket to the hopper plating.
4. Attention to be given to the structure in wing tanks in way of the extended bracket arm. i.e. reinforcement provided in line with the bracket.

Figure 3 – Typical damage and repair example (reproduced from reference 3)

ANNEX 10

REQUIREMENTS FOR EXTENT OF THICKNESS MEASUREMENT AT AREAS OF SUBSTANTIAL CORROSION

Renewal survey of bulk carriers within the cargo area
Shell plating

Structural member	Extent of measurement	Pattern of measurement
1 Bottom and side shell plating	a Suspect plate, plus four adjacent plates	a Five-point pattern for each panel between longitudinals
	b See other tables for particulars on gauging in way of tanks and cargo holds	
2 Bottom/side shell longitudinals	Minimum of three longitudinals in way of suspect areas	Three measurements in line across web Three measurements on flange

Transverse bulkheads in cargo holds

Structural member	Extent of measurement	Pattern of measurement
1 Lower stool	a Transverse band within 25 mm of welded connection to inner bottom	a Five-point pattern between stiffeners over 1 m length
	b Transverse band within 25 mm of welded connection to shelf plate	b Ditto
2 Transverse bulkhead	a Transverse band at approximately mid-height	a Five-point pattern over 1 m^2 of plating
	b Transverse band at part of bulkhead adjacent to upper deck or below upper stool shelf plate (for those ships fitted with upper stools)	b Five-point pattern over 1 m^2 of plating

Deck structure including cross strips, main cargo hatchways, hatch covers, coamings and topside tanks

Structural member	Extent of measurement	Pattern of measurement
1 Cross-deck strip plating	Suspect cross-deck strip plating	Five-point pattern between under deck stiffeners over 1 m length
2 Under-deck stiffeners	a Transverse members	a Five-point pattern at each end and mid-span
	b Longitudinal member	b Five-point pattern on both web and flange
3 Hatch covers	a Side and end skirts, each three locations	a Five-point pattern at each location
	b Three longitudinal bands, outboard strakes (2) and centerline strake (1)	b Five-point measurement each band
4 Hatch coamings	Each side and end of coaming, one band lower third, one band upper two-thirds of coaming	Five-point measurement each band, i.e. end or side coaming
5 Topside water ballast tanks	a Watertight transverse bulkheads i lower third of bulkhead ii upper two-thirds of bulkhead iii stiffeners	 i five-point pattern over 1 m^2 of plating ii five-point pattern over 1 m^2 of plating iii five-point pattern over 1 m length
	b Two representative swash transverse bulkheads i lower third of bulkhead ii upper two-thirds of bulkhead iii stiffeners	 i five-point pattern over 1 m^2 of plating ii five-point pattern over 1 m^2 of plating iii five-point pattern over 1 m length
	c Three representative bays of slope plating i lower third of tank ii upper two-thirds of tank	 i five-point pattern over 1 m^2 of plating ii five-point pattern over 1 m^2 of plating
	d Longitudinals, suspect and adjacent	d Five-point pattern both web and flange over 1 m length
6 Main deck plating	Suspect plates and adjacent (4)	Five-point pattern over 1 m^2 of plating
7 Main deck longitudinals	Minimum of three longitudinals where plating measured	Five-point pattern on both web and flange over 1 m length
8 Web frames/ transverses	Suspect plates	Five-point pattern over 1 m^2

Double-bottom and hopper structure

Structural member	Extent of measurement	Pattern of measurement
1 Inner/double-bottom plating	Suspect plate plus all adjacent plates	Five-point pattern for each panel between longitudinals over 1 m length
2 Inner/double-bottom longitudinals	Three longitudinals where plates measured	Three measurements in line across web, and three measurements on flange
3 Longitudinal girders or transverse floors	Suspect plates	Five-point pattern over about 1 m^2
4 Watertight bulkheads (WT floors)	a Lower third of tank	a Five-point pattern over 1 m^2 of plating
	b Upper two thirds of tank	b Five-point pattern alternate plates over 1 m^2 of plating
5 Web frames	Suspect plate	Five-point pattern over 1 m^2 of plating
6 Bottom/side shell longitudinals	Minimum of three longitudinals in way of suspect areas	Three measurements in line across web, and three measurements on flange

Cargo holds

Structural member	Extent of measurement	Pattern of measurement
1 Side shell frames	Suspect frame and each adjacent	a At each end and mid span: five-point pattern of both web and flange
		b Five-point pattern within 25 mm of welded attachment to both shell and lower slope plate

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/1.7 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/1.7 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/1.7 of the Convention.

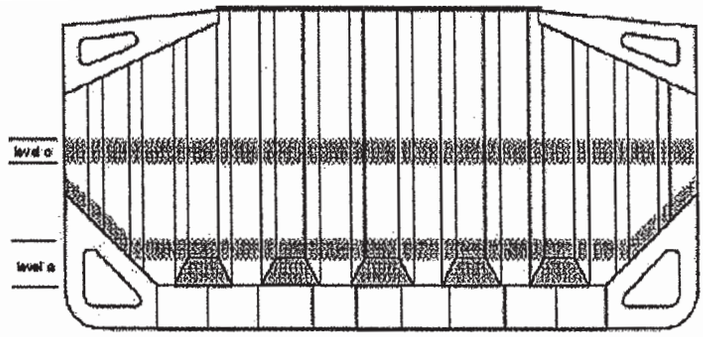


Figure 1 – Ships without lower stool

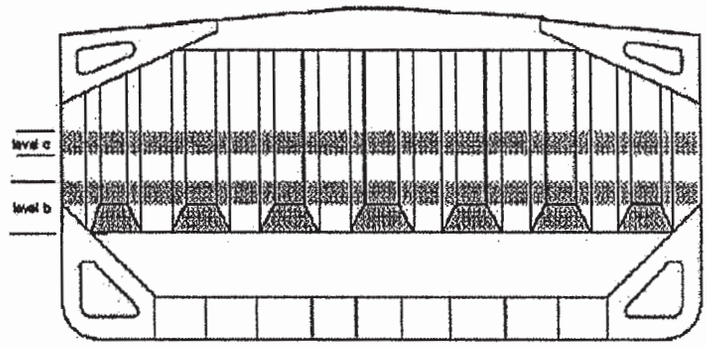


Figure 2 – Ships with lower stool

ANNEX 12

ADDITIONAL ANNUAL SURVEY REQUIREMENTS FOR THE FOREMOST CARGO HOLD OF SHIPS SUBJECT TO REGULATION XII/9 OF THE CONVENTION

1 General

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

2 Extent of survey

2.1 *For bulk carriers of 5 to 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 renewal 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 renewal 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 above. The minimum requirement for thickness measurements are areas found to be suspect areas at the previous renewal 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:

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 13

STRENGTH OF CARGO HATCH COVER SECURING ARRANGEMENTS FOR BULK CARRIERS

1 Securing devices

The strength of securing devices should comply with the following requirements:

.1 Panel hatch covers should be secured by appropriate devices (bolts, wedges or similar) suitably spaced alongside the coamings and between cover elements. Arrangement and spacing should be determined with due attention to the effectiveness for weathertightness, depending upon the type and the size of the hatch cover, as well as on the stiffness of the cover edges between the securing devices.

.2 The net sectional area of each securing device should not be less than:

$A = 1.4\ a / f\ (cm^2)$

where:

a = spacing between securing devices not to be taken less than 2 m
f = $(\sigma_Y / 235)^e$
σ_Y = specified minimum upper yield stress in N/mm^2 of the steel used for fabrication, not to be taken greater than 70% of the ultimate tensile strength
e = 0.75 for $\sigma_Y > 235$
1.0 for $\sigma_Y \leq 235$.

Rods or bolts should have a net diameter not less than 19 mm for hatchways exceeding 5 m^2 in area.

.3 Between cover and coaming and at cross-joints, a packing line pressure sufficient to obtain weathertightness should be maintained by the securing devices. For packing line pressures exceeding 5 N/mm, the cross section area should be increased in direct proportion. The packing line pressure should be specified.

.4 The cover edge stiffness should be sufficient to maintain adequate sealing pressure between securing devices. The moment of inertia, I, of edge elements should not be less than:

$I = 6\ p\ a^4\ (cm^4)$

where:

p = packing line pressure in N/mm, minimum 5 N/mm
a = spacing in metres of securing devices.

.5 Securing devices should be of reliable construction and securely attached to the hatchway coamings, decks or covers. Individual securing devices on each cover are to have approximately the same stiffness characteristics.

.6 Where rod cleats are fitted, resilient washers or cushions should be incorporated.

.7 Where hydraulic cleating is adopted, a positive means should be provided to ensure that it remains mechanically locked in the closed position in the event of failure of the hydraulic system.

2 Stoppers

2.1 Nos. 1 and 2 hatch covers should be effectively secured, by means of stoppers, against the transverse forces arising from a pressure of 175 kN/m^2.

2.2 No.2 hatch covers should be effectively secured, by means of stoppers, against the longitudinal forces acting on the forward end arising from a pressure of 175 kN/m^2.

2.3 No.1 hatch cover should be effectively secured, by means of stoppers, against the longitudinal forces acting on the forward end arising from a pressure of 230 kN/m^2. This pressure may be reduced to 175 kN/m^2 if a forecastle is fitted.

2.4 The equivalent stress in stoppers and their supporting structures and calculated in the throat of the stopper welds should not exceed the allowable value of 0.8 σ_Y.

3 Materials and welding

Where stoppers or securing devices are fitted to comply with this annex, they should be manufactured of materials, including welding electrodes, to the satisfaction of the Administration.

ANNEX 14

PROCEDURAL REQUIREMENTS FOR THICKNESS MEASUREMENTS

1 General

Thickness measurements required in the context of hull structural surveys, if not carried out by the society itself, should be witnessed by a surveyor. The attendance of the surveyor should be recorded. This also applies to thickness measurements taken during voyages.

2 Survey meeting

2.1 Prior to commencement of the renewal or intermediate survey, a meeting should be held between the attending surveyor(s), the owner's representative(s) in attendance, the thickness measurement firm's representative(s) and the master of the ship or an appropriately qualified representative appointed by the master or Company so as to ensure the safe and efficient execution of the surveys and thickness measurements to be carried out on board.

2.2 Communication with the thickness measurement operator(s) and owner's representative(s) should be agreed during the meeting, with respect to the following:

.1 reporting of thickness measurements on regular basis; and

.2 prompt notification to the surveyor in case of findings such as:

.1 excessive and/or extensive corrosion or pitting/grooving of any significance;

.2 structural defects like buckling, fractures and deformed structures;

.3 detached and/or holed structure; and

.4 corrosion of welds.

2.3 The survey report should indicate where and when the meeting took place and who attended (the name of the surveyor(s), the owner's representative(s) and the thickness measurement firm's representative(s)).

3 Monitoring of the thickness measurement process on board

3.1 The surveyor should decide final extent and location of thickness measurements after overall survey of representative spaces on board.

3.2 In case the owner prefers to commence the thickness measurements prior to the overall survey, then the surveyor should advise that the planned extent and locations of thickness measurements are subject to confirmation during the overall survey. Based on findings, the surveyor may require additional thickness measurements to be taken.

3.3 The surveyor should direct the gauging operation by selecting locations such that readings taken represent, on average, the condition of the structure for that area.

3.4 Thickness measurements taken mainly to evaluate the extent of corrosion, which may affect the hull girder strength, should be carried out in a systematic manner such that all longitudinal structural members are gauged, as required.

3.5 Where thickness measurements indicate substantial corrosion or wastage in excess of allowable diminution, the surveyor should direct locations for additional thickness measurements in order to delineate areas of substantial corrosion and to identify structural members for repairs/renewals.

3.6 Thickness measurements of structures in areas where close-up surveys are required should be carried out simultaneously with close-up survey.

4 Review and verification

4.1 Upon completion of the thickness measurements, the surveyor should confirm that no further gaugings are needed, or specify additional gaugings.

4.2 Where these guidelines allow the extent of thickness measurements to be reduced after special considerations by the surveyor, these special considerations should be reported, where appropriate.

4.3 In case thickness measurements are partly carried out, the extent of remaining thickness measurements should be reported for the use of the next surveyor.

ANNEX 15

GUIDELINES FOR THE THICKNESS MEASUREMENTS OF SIDE SHELL FRAMES AND BRACKETS IN SINGLE-SIDE SKIN BULK CARRIERS REQUIRED TO COMPLY WITH RESOLUTION MSC.168(79)

1 General

Thickness measurements should be conducted to determine the general condition of the structure and to define the extent of possible steel renewals or other measures for the webs and flanges of side shell frames and brackets for verification of the compliance with resolution MSC.168(79).

2 Zones of side shell frames and brackets

2.1 For the purpose of steel renewal, sand blasting and coating, four zones A, B, C and D are defined as shown in figure 1.

2.2 Zones A and B should be considered the most critical zones.

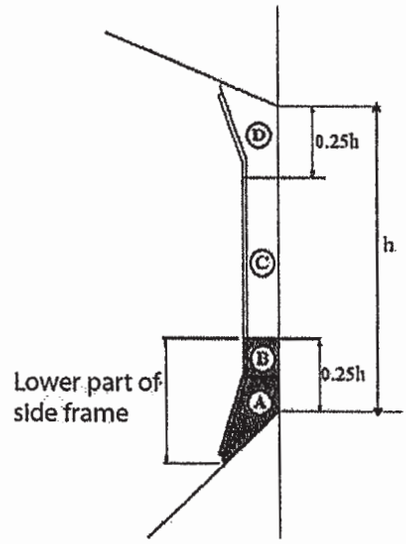


Figure 1 – Zones of side shell frames and brackets

3 Pitting and grooving

3.1 Pits can grow in a variety of shapes, some of which should be ground before assessment.

3.2 Pitting corrosion may be found under coating blisters, which should be removed before inspection.

3.3 To measure the remaining thickness of pits or grooving the normal ultrasonic transducer (generally 10 mm diameter) will not suffice. A miniature transducer (3 to 5 mm diameter) should be used. Alternatively the firm conducting the thickness measurement should use a pit gauge to measure the depth of the pits and grooving and calculate the remaining thickness.

Assessment based upon area

3.4 This is the method specified in paragraph 2.5 of annex 2 to resolution MSC.168(79) and is based upon the intensity determined from figure 2 below.

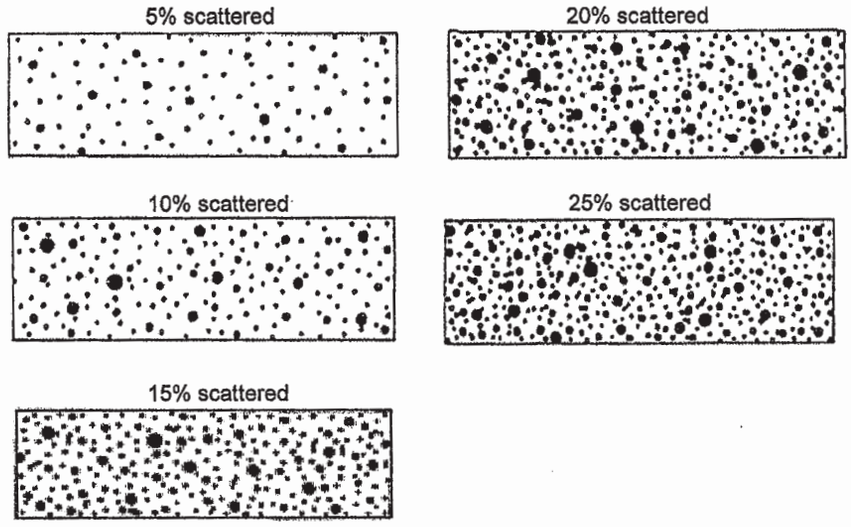


Figure 2 – Pitting intensity diagrams (from 5 to 25% intensity)

3.5 If pitting intensity is higher than 15% in an area (see figure 2), then thickness measurements should be taken to determine the extent of the pitting corrosion. The 15% is based upon pitting or grooving on only one side of the plate.

3.6 In cases where pitting is evident as defined above (exceeding 15%) then an area of 300 mm diameter or more (or, where this is impracticable on the frame flange or the side shell, hopper tank plating or topside tank plating attached to the side frame, an equivalent rectangular area), at the most pitted part, should be cleaned to bare metal, and the thickness measured in way of the five deepest pits within the cleaned area. The least thickness measured in way of any of these pits is to be taken as the thickness to be recorded.

3.7 The minimum acceptable remaining thickness in any pit or groove is equal to:

.1 75% of the as built thickness, for pitting or grooving in the cargo hold side frame webs and flanges.

.2 70% of the as built thickness, for pitting or grooving in the side shell, hopper tank and topside tank plating attached to the cargo hold side frame, over a width up to 30 mm from each side of it.

4 Thickness measurement methodology

4.1 Numbers of side frames to be measured should be equivalent to those of the renewal survey or intermediate survey corresponding to the ship's age. Representative thickness measurements should be taken for each zone as specified below.

4.2 Special consideration to the extent of the thickness measurements may be given by the Administration or organization recognized by the Administration, if the structural members show no thickness diminution with respect to the as built thicknesses and the coating is found in "as new" condition (i.e. without breakdown or rusting).

4.3 Where thickness measurement readings close to the criteria are found, the number of hold frames to be measured should be increased.

4.4 If renewal or other measures according to resolution MSC.168(79) should be applied on individual frames in a hold, then all frames in that hold should have thickness measurements taken.

4.5 There is a variety of construction methods used for side shell frames in bulk carriers. Some have faceplates (T sections) on the side shell frames, some have flanged plates and some have bulb plates. The use of faceplates and flanged sections is considered similar for thickness measurement purposes in that both the web and faceplate or web and flange plate should be measured. If bulb plate has been used, then web of the bulb plate should be measured in the normal manner and the sectional modulus should be specially considered if required.

Gaugings for Zones A, B and D

Web plating

4.6 The pattern for thickness measurements in Zones A, B and D should be a five-point pattern. See figure 3. The five-point pattern should be over the depth of the web and the same area vertically. The thickness measurement report should reflect the average reading.

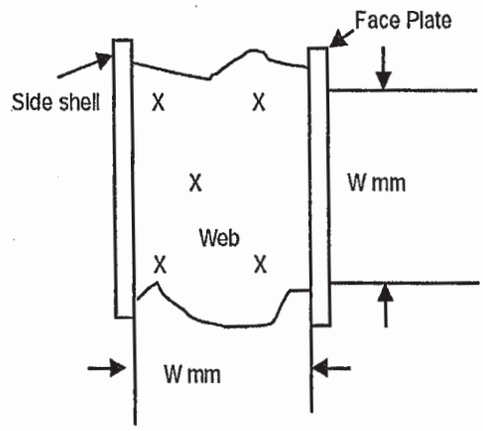


Figure 3 – Typical five-point pattern on the web plate

Thickness measurements for Zone C

Web plating

4.7 Depending on the condition of the web in way of Zone C, the web may be measured by taking three readings over the length of Zone C and averaging them. The average reading should be compared with the allowable thickness. If the web plating has general corrosion then this pattern should be expanded to a five-point pattern as noted above.

Thickness measurements for section a) and b) (flanges and side shell plating)

4.8 Where the lower bracket length or depth does not meet the requirements in annex 1 to resolution MSC.168(79), thickness measurements should be taken at sections a) and b) to calculate the actual section modulus required in paragraph 3.4 of annex 2 to resolution MSC.168(79) (see figure 4). At least two readings on the flange/faceplate should be taken on each side of the frame (i.e. fore and aft) in way of section a) and section b).

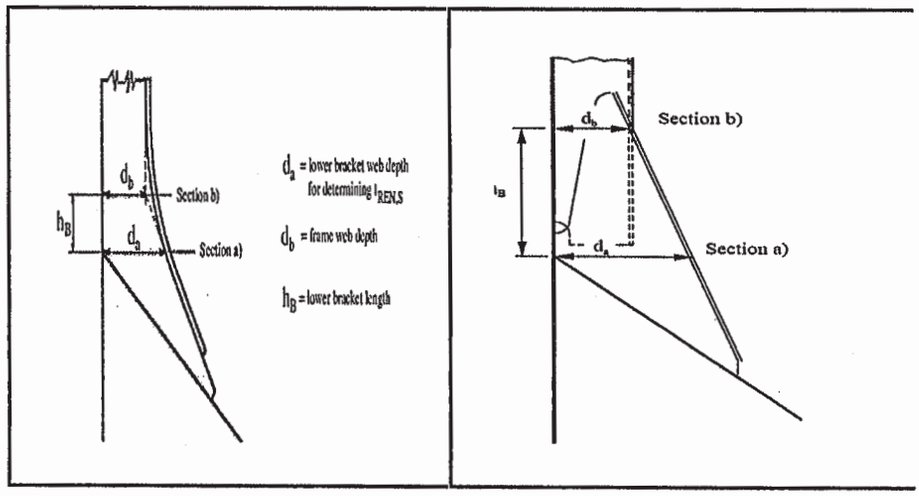


Figure 4 – Sections a) and b)

5 Report on thickness measurement of cargo hold frames

See form TM7-BC(ii) as contained in appendix 2 to annex 8.

References

IACS, Blue Books: Unified Requirement UR Z10.2 Hull Surveys of Bulk Carriers, Revision 27 2009, Annex V.

Resolution MSC.168(79) on Standards and criteria for side structures of bulk carriers of single-side skin construction.

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING DOUBLE-SIDE SKIN CONSTRUCTION

1 General

1.1 *Application*

1.1.1 The Code should apply to all self-propelled double-side skin bulk carriers of 500 gross tonnage and above.

1.1.2 The Code should apply to surveys of hull structure and piping systems in way of cargo holds, cofferdams, pipe tunnels, void spaces, fuel oil tanks within the cargo length area and all ballast tanks.

1.1.3 The Code contains the minimum extent of examination, thickness measurements and tank testing. The survey should be extended when substantial corrosion and/or structural defects are found and include additional close-up survey when necessary.

1.1.4 For bulk carriers with hybrid cargo hold arrangements, e.g. with some cargo holds of single-side skin and others of double-side skin, the requirements of part A of annex A apply to cargo holds of single-side skin.

1.1.5 The surveys should be carried out during the surveys prescribed by regulation I/10 of the Convention.

1.2 *Definitions*

1.2.1 *Double-side skin bulk carrier* is a ship which is constructed generally with single deck, topside tanks and hopper side tanks in cargo spaces, and is intended primarily to carry dry cargo in bulk including ore carriers and combination carriers, in which all cargo holds are bounded by a double-side skin (regardless of the width of the wing space).

1.2.2 *Ballast tank* is a tank which is used solely for salt water ballast or, where applicable, a space which is used for both cargo and salt water ballast will be treated as a ballast tank when substantial corrosion has been found in that space. A double-side tank should be considered, for survey purposes, as a separate tank even if it is in connection to either the topside tank or the hopper side tank.

1.2.3 *Spaces* are separate compartments including holds, tanks, cofferdams and void spaces bounding cargo holds, decks and the outer hull.

1.2.4 *Overall survey* is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

1.2.5 *Close-up survey* is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

1.2.6 *Transverse section* is the cross section of the hull perpendicular to the ship's centerline and includes all longitudinal members such as plating, longitudinals and girders at the deck sides, bottom, inner bottom, hopper sides, inner sides, top wing inner sides and longitudinal bulkheads.

1.2.7 *Representative spaces* are those which are expected to reflect the condition of other spaces of similar type and service and with similar corrosion prevention systems. When selecting representative spaces, account should be taken of the service and repair history on board and identifiable critical structural areas and/or suspect areas.

1.2.8 *Suspect areas* are locations showing substantial corrosion and/or are considered by the surveyor to be prone to rapid wastage.

1.2.9 *Substantial corrosion* is an extent of corrosion such that assessment of corrosion pattern indicates a wastage in excess of 75% of allowable margins, but within acceptable limits. For ships built under the IACS Common Structural Rules, substantial corrosion is an extent of corrosion such that the assessment of the corrosion pattern indicates a gauged (or measured) thickness between t_{net} + 0.5 mm and t_{net}.

1.2.10 A *corrosion prevention system* is normally considered a full hard protective coating. Hard protective coating should usually be epoxy coating or equivalent. Other coating systems which are neither soft nor semi-hard coatings, may be considered acceptable as alternatives provided that they are applied and maintained in compliance with the manufacturer's specifications.

1.2.11 *Coating condition* is defined as follows:

GOOD condition with only minor spot rusting;

FAIR condition with local breakdown of coating at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition;

POOR condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.

1.2.12 *Critical structural areas* are locations which have been identified from calculations to require monitoring or from the service history of the subject ship or from similar or sister ships (if applicable) to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the ship.

1.2.13 *Cargo length area* is that part of the ship which includes all cargo holds and adjacent areas including fuel tanks, cofferdams, ballast tanks and void spaces.

1.2.14 *Intermediate survey* is a survey carried out either at the second or third annual survey or between these surveys.

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 or recommendation.

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

1.2.17 *Specially considered* (in connection with close-up surveys and thickness measurements) means sufficient close-up inspection and thickness measurements are taken to confirm the actual average condition of the structure under the coating.

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 (see 1.2.15) repaired. Areas which should be considered include:

.1 side structure and side plating;

.2 deck structure and deck plating;

.3 bottom structure and bottom plating;

.4 inner bottom structure and inner bottom plating;

.5 inner side structure and inner side plating;

.6 watertight or oiltight bulkheads;

.7 hatch covers or hatch coamings; and

.8 items in 3.3.10.

For locations 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 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.

1.4 *Surveyors*

For bulk carriers of 20,000 tons deadweight and above, two surveyors should jointly carry out the first scheduled renewal survey after the bulk carrier passes 10 years of age (i.e. third renewal survey), and all subsequent renewal surveys and intermediate surveys. If the surveys are carried out by a recognized organization, the surveyors should be exclusively employed by such recognized organizations.

1.5 *Thickness measurements and close-up surveys*

In any kind of survey, i.e. renewal, intermediate, annual or other surveys having the scope of the foregoing ones, thickness measurements of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys.

2 Renewal survey

2.1 *General*

2.1.1 The renewal survey may be commenced at the fourth annual survey and be progressed during the succeeding year with a view to completion by the fifth anniversary date.

2.1.2 As part of the preparation for the renewal survey, the survey programme should be dealt with in advance of the survey. The thickness measurement should not be held before the fourth annual survey.

2.1.3 The survey should include, in addition to the requirements of the annual survey, examination, tests and checks of sufficient extent to ensure that the hull and related piping, as required in 2.1.5, is in satisfactory condition and is fit for its intended purpose for the new period of validity of the Cargo Ship Safety Construction Certificate, subject to proper maintenance and operation and to periodical surveys being carried out at the due dates.

2.1.4 All cargo holds, ballast tanks, including double-bottom and double-side tanks, pipe tunnels, cofferdams and void spaces bounding cargo holds, decks and outer hull should be examined, and this examination should be supplemented by thickness measurement and testing, as required by 2.6 and 2.7, to ensure that the structural integrity remains effective. The examination should be sufficient to discover substantial corrosion, significant deformation, fractures, damages or other structural deterioration that may be present.

2.1.5 All piping systems within the above spaces should be examined and operationally tested under working pressure to attending surveyor's satisfaction to ensure that tightness and condition remain satisfactory.

2.1.6 The survey extent of ballast tanks converted to void spaces should be specially considered in relation to the requirements for ballast tanks.

2.1.7 Concurrent crediting to both intermediate survey and renewal survey for surveys and thickness measurements of spaces should not be acceptable.

2.2 *Dry-dock survey*

2.2.1 A survey in dry-dock should be a part of the renewal survey. There should be a minimum of two inspections of the outside of the ship's bottom during the five-year period of the certificate. In all cases, the maximum interval between bottom inspections should not exceed 36 months.

2.2.2 For ships of 15 years of age and over, inspection of the outside of the ship's bottom should be carried out with the ship in dry-dock. For ships of less than 15 years of age, alternate inspections of the ship's bottom not conducted in conjunction with the renewal survey may be carried out with the ship afloat. Inspection of the ship afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably qualified staff is available.

2.2.3 If a survey in dry-dock is not completed in conjunction with the enhanced survey during renewal survey or if the 36-month maximum interval referred to in 2.2.1 is not complied with, the Cargo Ship Safety Construction Certificate should cease to be valid until a survey in dry-dock is completed.

2.2.4 The overall and close-up survey and thickness measurements, as applicable, of the lower portions of the cargo holds and ballast tanks should be carried out in accordance with the applicable requirements for renewal survey, if not already performed.

Note: Lower portions of the cargo holds and ballast tanks are considered to be the parts below light ballast water line.

2.3 *Space protection*

2.3.1 Where provided, the condition of the corrosion prevention system of ballast tanks should be examined. For ballast tanks, excluding double-bottom tanks, where a hard protective coating is found in POOR condition as defined in 1.2.11, and it is not renewed, or where a soft or semi-hard coating has been applied, or where a hard protective coating has not been applied from the time of constructions, the tanks in question should be examined at annual intervals. Thickness measurements should be carried out as deemed necessary by the surveyor. When such breakdown of hard protective coating is found in water ballast double-bottom tanks and it is not renewed, or where a soft or semi-hard coating has been applied or where a hard protective coating has not been applied from the time of construction, the tanks in question may be examined at annual intervals. When considered necessary by the surveyor, or where extensive corrosion exists, thickness measurement should be carried out.

2.3.2 Where a hard protective coating is provided in cargo holds and is found in good condition, the extent of close-up surveys and thickness measurements may be specially considered.

2.4 *Hatch covers and coamings*

The hatch covers and coamings should be surveyed as follows:

2.4.1 A thorough inspection of the items listed in 3.3 should be carried out, in addition to all hatch covers and coamings.

2.4.2 Checking of the satisfactory operation of all mechanically operated hatch covers should be made, including:

.1 stowage and securing in open condition;

.2 proper fit and efficiency of sealing in closed condition; and

.3 operational testing of hydraulic and power components, wires, chains and link drives.

2.4.3 The effectiveness of sealing arrangements of all hatch covers by hose testing or equivalent should be checked.

2.4.4 Thickness measurement of the hatch cover and coaming plating and stiffeners should be carried out as given in annex 2.

2.5 *Extent of overall and close-up surveys*

2.5.1 An overall survey of all tanks and spaces should be carried out at the renewal survey. Fuel oil tanks in the cargo length area should be surveyed as follows:

Renewal survey No.1 Age ⩽ 5	Renewal survey No.2 5 < Age ⩽ 10	Renewal survey No.3 10 < Age ⩽ 15	Renewal survey No.4 and subsequent 15 < Age
None	One	Two	Half, minimum two

Notes:

1. These requirements apply to tanks of integral (structural) type.
2. If a selection of tanks is accepted to be examined, then different tanks should be examined at each renewal survey, on a rotational basis.
3. Peak tanks (all uses) should be examined internally at each renewal survey.
4. At renewal survey no.3 and subsequent renewal surveys, one deep tank for fuel oil in the cargo area should be included, if fitted.

2.5.2 The minimum requirements for close-up surveys at renewal surveys are given in annex 1, appendix 1 for double-side skin bulk carriers, excluding ore carriers, and in annex 1, appendix 2 for ore carriers respectively.

2.5.3 The surveyor may extend the close-up survey as deemed necessary taking into account the maintenance of the spaces under survey, the condition of the corrosion prevention system and where spaces have structural arrangements or details which have suffered defects in similar spaces or on similar ships according to available information.

2.5.4 For areas in spaces where hard protective coatings are found to be in a GOOD condition, the extent of close-up surveys according to annex 1 may be specially considered (refer also to 2.3.2).

2.6 *Extent of thickness measurements*

2.6.1 The minimum requirements for thickness measurements at the renewal survey are given in annex 2.

2.6.2 Representative thickness measurements to determine both general and local levels of corrosion in the transverse web frames in all water ballast tanks should be carried out. Thickness measurements should also be carried out to determine the corrosion levels on the transverse bulkhead plating. The extent of thickness measurements may be specially considered provided the surveyor is satisfied by the close-up examination that there is no structural diminution, and the hard protective coating where applied remains efficient.

2.6.3 Provisions for extended measurements for areas with substantial corrosion as defined in 1.2.9 are given in annex 10 and may be additionally specified in the survey programme as required by 5.1. These extended thickness measurements should be carried out before the survey is credited as completed. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken.

2.6.4 The surveyor may further extend the thickness measurements as deemed necessary.

2.6.5 For areas in tanks where hard protective coatings are found to be in GOOD condition as defined in 1.2.11, the extent of thickness measurements according to annex 2 may be specially considered by the Administration.

2.6.6 Transverse sections should be chosen where the largest reductions are suspected to occur or are revealed from deck plating measurements.

2.7 *Extent of tank pressure testing*

2.7.1 All boundaries of water ballast tanks, deep tanks and cargo holds used for water ballast within the cargo length area should be pressure tested. For fuel tanks, only representative tanks should be pressure tested.

2.7.2 The surveyor may extend the tank testing as deemed necessary.

2.7.3 Boundaries of ballast tanks should be tested with a head of liquid to the top of air pipes.

2.7.4 Boundaries of ballast holds should be tested with a head of liquid to near to the top of hatches.

2.7.5 Boundaries of fuel oil tanks should be tested with a head of liquid to the highest point that liquid will rise under service conditions. Tank testing of fuel oil tanks may be specially considered based on a satisfactory external examination of the tank boundaries and a confirmation from the master stating that the pressure testing has been carried out according to the requirements with satisfactory results.

2.7.6 The testing of double-bottom tanks and other spaces not designated for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tank top is carried out.

2.8 *Additional renewal survey requirements after determining compliance with regulations XII/12 and XII/13 of the Convention*

2.8.1 For ships complying with the requirements of regulation XII/12 of the Convention for hold, ballast and dry space water level detectors, the renewal survey should include an examination and a test of the water ingress detection system and of their alarms.

2.8.2 For ships complying with the requirements of regulation XII/13 of the Convention for the availability of pumping systems, the renewal survey should include an examination and a test of the means for draining and pumping ballast tanks forward of the collision bulkhead and bilges of dry spaces any part of which extends forward of the foremost cargo hold, and of their controls.

3 Annual survey

3.1 *General*

The annual survey should consist of an examination for the purpose of ensuring, as far as practicable, that the hull weather decks, hatch covers, coamings and piping are maintained in a satisfactory condition and should take into account the service history, condition and extent of the corrosion prevention system of ballast tanks and areas identified in the survey report file.

3.2 *Examination of the hull*

3.2.1 Examination of the hull plating and its closing appliances should be carried out as far as can be seen.

3.2.2 Examination of watertight penetrations should be carried out as far as practicable.

3.3 *Examination of weather decks, hatch covers and coamings*

3.3.1 It should be confirmed that no unapproved changes have been made to the hatch covers, hatch coamings and their securing and sealing devices since the last survey.

3.3.2 A thorough survey of cargo hatch covers and coamings is only possible by examination in the open as well as closed positions and should include verification of proper opening and closing operation. As a result, the hatch cover sets within the forward 25% of the ship's length and at least one additional set, such that all sets on the ship are assessed at least once in every five-year period, should be surveyed open, closed and in operation to the full extent in each direction at each annual survey, including:

.1 stowage and securing in open condition;

.2 proper fit and efficiency of sealing in closed condition; and

.3 operational testing of hydraulic and power components, wires, chains and link drives.

The closing of the covers should include the fastening of all peripheral, and cross joint cleats or other securing devices. Particular attention should be paid to the condition of hatch covers in the forward 25% of the ship's length, where sea loads are normally greatest.

3.3.3 If there are indications of difficulty in operating and securing hatch covers, additional sets above those required by 3.3.2, at the discretion of the surveyor, should be tested in operation.

3.3.4 Where the cargo hatch securing system does not function properly, repairs should be carried out under the supervision of the Administration. Where hatch covers or coamings undergo substantial repairs, the strength of securing devices should be upgraded to comply with annex 11.

3.3.5 For each cargo hatch cover set, at each annual survey, the following items should be surveyed:

.1 cover panels, including side plates, and stiffener attachments that may be accessible in the open position by close-up survey (for corrosion, cracks, deformation);

.2 sealing arrangements of perimeter and cross joints (gaskets for condition and permanent deformation, flexible seals on combination carriers, gasket lips, compression bars, drainage channels and non-return valves);

.3 clamping devices, retaining bars, cleating (for wastage, adjustment, and condition of rubber components);

.4 closed cover locating devices (for distortion and attachment);

.5 chain or rope pulleys;

.6 guides;

.7 guiderails and track wheels;

.8 stoppers;

.9 wires, chains, tensioners and gypsies;

.10 hydraulic system, electrical safety devices and interlocks; and

.11 end and interpanel hinges, pins and stools where fitted.

3.3.6 At each hatchway, at each annual survey, the coamings, with plating, stiffeners and brackets should be checked for corrosion, cracks and deformation, especially of the coaming tops including close-up survey.

3.3.7 Where considered necessary, the effectiveness of sealing arrangements may be proved by hose or chalk testing supplemented by dimensional measurements of seal compressing components.

3.3.8 Where portable covers, wooden or steel pontoons are fitted, the satisfactory condition of the following should be confirmed:

.1 wooden covers and portable beams, carriers or sockets for the portable beam, and their securing devices;

.2 steel pontoons, including close-up survey of hatch cover plating;

.3 tarpaulins;

.4 cleats, battens and wedges;

.5 hatch securing bars and their securing devices;

.6 loading pads/bars and the side plate edge;

.7 guide plates and chocks; and

.8 compression bars, drainage channels and drain pipes (if any).

3.3.9 The flame screens on vents to all bunker tanks should be examined.

3.3.10 Bunker and vent piping systems, including ventilators, should be examined.

3.4 *Examination of cargo holds*

3.4.1 For double-side skin bulk carriers of 10 to 15 years of age, the following should be carried out:

.1 overall survey of two selected cargo holds;

.2 when considered necessary by the surveyor, or where extensive corrosion exists, thickness measurement should be carried out. If the results of these thickness measurements indicate that substantial corrosion is found, the extent of thickness measurements should be increased in accordance with annex 10. These extended thickness measurements should be carried out before the survey is credited as complete. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken; and

.3 all piping and penetrations in cargo holds, including overboard piping, should be examined.

3.4.2 For double-side skin bulk carriers over 15 years of age, the following should be carried out:

.1 overall survey of all cargo holds;

.2 when considered necessary by the surveyor, or where extensive corrosion exists, thickness measurement should be carried out. If the results of these thickness measurements indicate that substantial corrosion is found, the extent of thickness measurements should be increased in accordance with annex 10. These extended thickness measurements should be carried out before the survey is credited as complete. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken; and

.3 all piping and penetrations in cargo holds, including overboard piping, should be examined.

3.5 *Examination of ballast tanks*

Examination of ballast tanks should be carried out when required as a consequence of the results of the renewal survey and intermediate survey. When considered necessary by the surveyor, or where extensive corrosion exists, thickness measurement should be carried out. If the results of these thickness measurements indicate that substantial corrosion is found, the extent of thickness measurements should be increased in accordance with annex 10. These extended thickness measurements should be carried out before the survey is credited as complete. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken.

3.6 *Additional annual survey requirements after determining compliance with regulations XII/12 and XII/13 of the Convention*

3.6.1 For ships complying with the requirements of regulation XII/12 of the Convention for hold, ballast and dry space water level detectors, the annual survey should include an examination and a test, at random, of the water ingress detection systems and of their alarms.

3.6.2 For ships complying with the requirements of regulation XII/13 of the Convention for the availability of pumping systems, the annual survey should include an examination and a test, of the means for draining and pumping ballast tanks forward of the collision bulkhead and bilges of dry spaces any part of which extends forward of the foremost cargo hold, and of their controls.

4 Intermediate 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.

4.1.3 Concurrent crediting to both intermediate survey and renewal survey for surveys and thickness measurements of spaces should not be acceptable.

4.2 *Double-side skin bulk carriers 5 to 10 years of age*

4.2.1 *Ballast tanks*

4.2.1.1 For tanks used for water ballast, an overall survey of representative tanks selected by the surveyor should be carried out. The selection should include fore and aft peak tanks and a number of other tanks, taking into account the total number and type of ballast tanks. If such overall survey reveals no visible structural defects, the examination may be limited to verification that the corrosion prevention system remains efficient.

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

4.2.1.3 In ballast tanks other than double-bottom tanks, where a hard protective coating is found in POOR condition and it is not renewed, or where soft or semi-hard coating has been applied, or where a hard 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 hard protective coating is found in ballast double-bottom tanks, where a soft or semi-hard coating has been applied, or where a hard protective coating has not been applied, the tanks in question may 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 above requirements, areas found to be suspect areas at the previous renewal survey should be overall and close-up surveyed.

4.2.2 *Cargo holds*

4.2.2.1 An overall survey of all cargo holds should be carried out.

4.2.2.2 Where considered necessary by the surveyor as a result of the overall survey as described in 4.2.2.1, the survey should be extended to include a close-up survey those areas of the structure in the cargo holds selected by the surveyor.

4.2.3 *Extent of thickness measurements*

4.2.3.1 Thickness measurements should be carried out to an extent sufficient to determine both general and local corrosion levels at areas subject to close-up survey where required as per 4.2.2.2 and as provided in 4.2.1.4.

4.2.3.2 The extent of thickness measurements may be specially considered provided the surveyor is satisfied by the close-up survey that there is no structural diminution and the hard protective coatings are found to be in a GOOD condition.

4.2.3.3 Where substantial corrosion is found, the extent of thickness measurements should be increased in accordance with the requirements of annex 10. These extended thickness measurements should be carried out before the survey is credited as completed. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken.

4.2.3.4 Where the hard protective coating in cargo holds is found to be in GOOD condition, the extent of close-up surveys and thickness measurements may be specially considered.

4.3 *Double-side skin bulk carriers 10 to 15 years of age*

4.3.1 The requirements of the intermediate survey should be the same extent as the previous renewal survey as required in 2 and 5.1. However, internal examination of fuel oil tanks and pressure testing of all tanks are not required unless deemed necessary by the attending surveyor.

4.3.2 In application of 4.3.1, the intermediate 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.

4.3.3 In application of 4.3.1, an underwater survey may be considered in lieu of the requirements of 2.2.

4.4 *Double-side skin bulk carriers exceeding 15 years of age*

4.4.1 The requirements of the intermediate survey should be to the same extent as the previous renewal survey required in 2 and 5.1. However, internal examination of fuel tanks and pressure testing of all tanks are not required unless deemed necessary by the attending surveyor.

4.4.2 In application of 4.4.1, the intermediate 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.

4.4.3 In application of 4.4.1, a survey in dry-dock should be part of the intermediate survey. The overall and close-up surveys and thickness measurements, as applicable, of the lower portions of the cargo holds and water ballast tanks should be carried out in accordance with the applicable requirements for intermediate surveys, if not already performed.

Note: Lower portions of the cargo holds and ballast tanks are considered to be the parts below light ballast water line.

5 Preparations for survey

5.1 *Survey programme*

5.1.1 The owner in cooperation with the Administration should work out a specific survey programme prior to the commencement of any part of:

.1 the renewal survey; and

.2 the intermediate survey for double-side skin bulk carriers over 10 years of age.

The survey programme should be in a written format based on the information in annex 4A. The survey should not commence until the survey programme has been agreed.

5.1.1.1 Prior to the development of the survey programme, the survey planning questionnaire should be completed by the owner based on the information set out in annex 4B, and forwarded to the Administration.

5.1.1.2 The survey programme at intermediate survey may consist of the survey programme at the previous renewal survey supplemented by the condition evaluation report of that renewal survey and later relevant survey reports.

5.1.1.3 The survey programme should be worked out taking into account any amendments to the survey requirements after the last renewal survey carried out.

5.1.2 In developing the survey programme, the following documentation should be collected and consulted with a view to selecting tanks, holds, areas and structural elements to be examined:

.1 survey status and basic ship information;

.2 documentation on board, as described in 6.2 and 6.3;

.3 main structural plans (scantlings drawings), including information regarding use of high-tensile steels (HTS);

.4 relevant previous survey and inspection reports from both the classification society and the owner;

.5 information regarding the use of ship's holds and tanks, typical cargoes and other relevant data;

.6 information regarding corrosion prevention level on the new building; and

.7 information regarding the relevant maintenance level during operation.

5.1.3 The submitted survey programme should account for, and comply, as a minimum, with the provisions of annexes 1 and 2 and 2.7 for close-up survey, thickness measurement and tank testing, respectively, and should include relevant information, including at least:

.1 basic ship information and particulars;

.2 main structural plans (scantling drawings), including information regarding use of high-tensile steels (HTS);

.3 plan of holds and tanks;

.4 list of holds and tanks with information on use, protection and condition of coating;

.5 conditions for survey (e.g. information regarding hold and tank cleaning, gas-freeing, ventilation, lighting, etc.);

.6 provisions and methods for access to structures;

.7 equipment for surveys;

.8 nomination of holds and tanks and areas for close-up survey (see 2.5);

.9 nomination of sections for thickness measurement (see 2.6);

.10 nomination of tanks for testing (see 2.7); and

.11 damage experience related to ship in question.

5.1.4 The Administration should advise the owner of the maximum acceptable structural corrosion diminution levels applicable to the ship.

5.1.5 Use may also be made of the Guidelines for technical assessment in conjunction with the planning of enhanced surveys for double-side skin bulk carriers, contained in annex 9. These Guidelines are a recommended tool which may be invoked at the discretion of the Administration, when considered necessary and appropriate, in conjunction with the preparation of the required survey programme.

5.2 *Conditions for survey*

5.2.1 The owner should provide the necessary facilities for a safe execution of the survey.

5.2.2 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access, should be agreed between the owner and the Administration.

5.2.3 Details of the means of access should be provided in the survey planning questionnaire.

5.2.4 In cases where the provisions of safety and required access are judged by the attending surveyors not to be adequate, the survey of the spaces involved should not proceed.

5.2.5 Cargo holds, tanks and spaces should be safe for access. Cargo holds, tanks and spaces should be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it should be verified that the atmosphere in the tank is free from hazardous gas and contains sufficient oxygen.

5.2.6 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces should be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces should be sufficiently clean and free from water, scale, dirt, oil residues, etc., to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

5.2.7 Sufficient illumination should be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

5.2.8 Where soft or semi-hard coatings have been applied, safe access should be provided for the surveyor to verify the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating should be removed.

5.2.9 The surveyor(s) should always be accompanied by, at least, one responsible person, assigned by the owner, experienced in tank and enclosed spaces inspection. In addition, a back-up team of at least two experienced persons should be stationed at the hatch opening of the tank or space that is being surveyed. The back-up team should continuously observe the work in the tank or space and should keep life-saving and evacuation equipment ready for use.

5.2.10 A communication system should be arranged between the survey party in the cargo hold, tank or space being examined, the responsible officer on deck and, as the case may be, the navigation bridge. The communication arrangements should be maintained throughout the survey.

5.3 *Access to structures*

5.3.1 For overall survey, means should be provided to enable the surveyor to examine the structure in a safe and practical way.

5.3.2 For close-up survey, one or more of the following means for access, acceptable to the surveyor, should be provided:

.1 permanent staging and passages through structures;

.2 temporary staging and passages through structures;

.3 lifts and moveable platforms;

.4 portable ladders;

.5 boats or rafts; and

.6 other equivalent means.

5.4 *Equipment for survey*

5.4.1 Thickness measurements should normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment should be proven to the surveyor as required.

5.4.2 One or more of the following fracture detection procedures may be required if deemed necessary by the surveyor:

.1 radiographic equipment;

.2 ultrasonic equipment;

.3 magnetic particle equipment; and

.4 dye penetrant.

5.4.3 Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use should be made available during the survey. A safety checklist should be provided.

5.4.4 Adequate and safe lighting should be provided for the safe and efficient conduct of the survey.

5.4.5 Adequate protective clothing should be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

5.5 *Surveys at sea or at anchorage*

5.5.1 Surveys at sea or at anchorage may be accepted provided the surveyor is given the necessary assistance from the personnel on board. Necessary precautions and procedures for carrying out the survey should be in accordance with 5.1, 5.2, 5.3 and 5.4.

5.5.2 A communication system should be arranged between the survey party in the spaces under examination and the responsible officer on deck. This system should also include the personnel in charge of ballast pump handling if boats or rafts are used.

5.5.3 Surveys of tanks or applicable holds by means of boats or rafts may only be undertaken with the agreement of the surveyor, who should take into account the safety arrangements provided, including weather forecasting and ship response under foreseeable conditions and provided the expected rise of water within the tank does not exceed 0.25 m.

5.5.4 When rafts or boats will be used for close-up survey, the following conditions should be observed:

.1 only rough duty, inflatable rafts or boats, having satisfactory residual buoyancy and stability even if one chamber is ruptured, should be used;

.2 the boat or raft should be tethered to the access ladder and an additional person should be stationed down the access ladder with a clear view of the boat or raft;

.3 appropriate lifejackets should be available for all participants;

.4 the surface of water in the tank or hold should be calm (under all foreseeable conditions the expected rise of water within the tank should not exceed 0.25 m) and the water level stationary. On no account should the level of the water be rising while the boat or raft is in use;

.5 the tank, hold or space should contain clean ballast water only. Even a thin sheen of oil on the water is not acceptable; and

.6 at no time should the water level be allowed to be within 1 m of the deepest under deck web face flat so that the survey team is not isolated from a direct escape route to the tank hatch. Filling to levels above the deck transverses should only be contemplated if a deck access manhole is fitted and open in the bay being examined, so that an escape route for the survey party is available at all times. Other effective means of escape to the deck may be considered.

5.5.5 Rafts or boats alone may be allowed for inspection of the under deck areas for tanks or spaces, if the depth of the webs is 1.5 m or less.

5.5.6 If the depth of the webs is more than 1.5 m, rafts or boats alone may be allowed only:

.1 when the coating of the under deck structure is in GOOD condition and there is no evidence of wastage; or

.2 if a permanent means of access is provided in each bay to allow safe entry and exit. This means:

.1 access direct from the deck via a vertical ladder and a small platform fitted approximately 2 m below the deck in each bay; or

.2 access to deck from a longitudinal permanent platform having ladders to deck in each end of the tank. The platform should, for the full length of the tank, be arranged in level with, or above, the maximum water level needed for rafting of under deck structure. For this purpose, the ullage corresponding to the maximum water level should be assumed not more than 3 m from the deck plate measured at the midspan of deck transverses and in the middle length of the tank.

If neither of the above conditions are met, then staging or other equivalent means should be provided for the survey of the under-deck areas.

5.5.7 The use of rafts or boats alone in 5.5.5 and 5.5.6 does not preclude the use of boats or rafts to move about within a tank during a survey.

5.6 *Survey planning meeting*

5.6.1 The establishment of proper preparation and the close cooperation between the attending surveyor(s) and the owner's representatives on board prior to and during the survey are an essential part in the safe and efficient conduct of the survey. During the survey on board safety meetings should be held regularly.

5.6.2 Prior to commencement of any part of the renewal and intermediate survey, a survey planning meeting should be held between the attending surveyor(s), the owner's representative in attendance, the thickness measurement Company operator (as applicable) and the master of the ship or an appropriately qualified representative appointed by the master or Company for the purpose to ascertain that all the arrangements envisaged in the survey programme are in place, so as to ensure the safe and efficient conduct of the survey work to be carried out (see also 7.1.2).

5.6.3 The following is an indicative list of items that should be addressed in the meeting:

.1 schedule of the ship (i.e. the voyage, docking and undocking manoeuvres, periods alongside, cargo and ballast operations, etc.);

.2 provisions and arrangements for thickness measurements (i.e. access, cleaning/descaling, illumination, ventilation, personal safety);

.3 extent of the thickness measurements;

.4 acceptance criteria (refer to the list of minimum thicknesses);

.5 extent of close-up survey and thickness measurement considering the coating condition and suspect areas/areas of substantial corrosion;

.6 execution of thickness measurements;

.7 taking representative readings in general and where uneven corrosion/ pitting is found;

.8 mapping of areas of substantial corrosion; and

.9 communication between attending surveyor(s) the thickness measurement company operator(s) and owner's representative(s) concerning findings.

6 Documentation on board

6.1 *General*

6.1.1 The owner should obtain, supply and maintain on board documentation as specified in 6.2 and 6.3, which should be readily available for the surveyor. The condition evaluation report referred to in 6.2 should include a translation into English.

6.1.2 The documentation should be kept on board for the lifetime of the ship.

6.2 *Survey report file*

6.2.1 A survey report file should be a part of the documentation on board consisting of:

.1 reports of structural surveys (annex 6);
.2 condition evaluation report (annex 7); and

.3 thickness measurement reports (annex 8).

6.2.2 The survey report file should be available also in the owner's and the Administration offices or in the office of the organization recognized by the Administration.

6.3 *Supporting documents*

6.3.1 The following additional documentation should be available on board:

.1 survey programme, as required under 5.1 until such time as the renewal survey or intermediate survey, as applicable, has been completed;

.2 main structural plans of cargo holds and ballast tanks;

.3 previous repair history;

.4 cargo and ballast history;

.5 inspections by ship's personnel with reference to:

.1 structural deterioration in general;

.2 leakages in bulkheads and piping; and

.3 condition of coating or corrosion prevention system, if any. Guidance for reporting is shown in annex 3; and

.6 any other information that would help to identify critical structural areas and/or suspect areas requiring inspection.

6.4 *Review of documentation on board*

Prior to survey, the surveyor should examine the completeness of the documentation on board, and its contents as a basis for the survey.

7 Procedures for thickness measurements

7.1 *General*

7.1.1 The required thickness measurements, if not carried out by the recognized organization acting on behalf of the Administration itself, should be witnessed by a surveyor of the recognized 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 Thickness measurements of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys.

7.1.4 In all cases the extent of the thickness measurements should be sufficient as to represent the actual average condition.

7.1.5 Procedural requirements for thickness measurements are set out in annex 12.

7.2 *Certification of thickness measurement company*

The thickness measurements should be carried out by a qualified company certified by an organization recognized by the Administration according to principles stated in annex 5.

7.3 *Reporting*

7.3.1 A thickness measurement report should be prepared and submitted to the Administration. The report should give the location of measurements, the thickness measured as well as corresponding original thickness. Furthermore, the report should give the date when the measurements were carried out, type of measuring equipment, names of personnel and their qualifications and be signed by the operator. The thickness measurement report should follow the principles as specified in the recommended procedures for thickness measurements set out in annex 8.

7.3.2 The surveyor should review the final thickness measurement reports and countersign the cover page.

8 Reporting and evaluation of survey

8.1 *Evaluation of survey report*

8.1.1 The data and information on the structural condition of the ship collected during the survey should be evaluated for acceptability and continued structural integrity of the ship.

8.1.2 The analysis of data should be carried out and endorsed by the Administration or recognized organization authorized by the Administration and the conclusions of the analysis should form a part of the condition evaluation report.

8.2 *Reporting*

8.2.1 Principles for survey reporting are shown in annex 6.

8.2.2 When a survey is split between different survey stations, a report should be made for each portion of the survey. A list of items examined and/or tested (pressure testing, thickness measurements, etc.) and an indication of whether the item has been credited, should be made available to the next attending surveyor(s), prior to continuing or completing the survey.

8.2.3 A condition evaluation report of the survey and results should be issued to the owner as shown in annex 7 and placed on board the ship for reference at future surveys. The condition evaluation report should be endorsed by the Administration or by the recognized organization on behalf of the Administration.

ANNEX 1

REQUIREMENTS FOR CLOSE-UP SURVEY AT RENEWAL SURVEYS

Appendix 1 – Minimum requirements for close-up survey at renewal survey of double-side skin bulk carriers excluding ore carriers

Age ≤ 5 years Renewal Survey No. 1	5 < Age ≤ 10 years Renewal Survey No. 2	10 < Age ≤ 15 years Renewal Survey No. 3	Age > 15 years Renewal Survey No. 4 and subsequent
One transverse web with associated plating and longitudinals in two representative water ballast tanks of each type. This is to include the foremost topside and double-side water ballast tanks on either side. (A) Two selected cargo hold transverse bulkheads, including internal structure of upper and lower stools, where fitted. (C) All cargo hold hatch covers and coaming (plating and stiffeners). (D)	One transverse web with associated plating and longitudinals as applicable in each water ballast tank. (A) Forward and aft transverse bulkheads including stiffening system in a transverse section including topside, hopper side and double-side ballast tanks. (A) 25% of ordinary transverse web frames in the foremost double-side tanks. (B) One transverse bulkhead in each cargo hold, including internal structure of upper and lower stools, where fitted. (C) All cargo hold hatch covers and coamings (plating and stiffeners). (D) All deck plating and under-deck structure inside line of hatch openings between all cargo hold hatches. (E)	All transverse webs with associated plating and longitudinals as applicable in each water ballast tank. (A) All transverse bulkheads including stiffening system in each water ballast tank. (A) 25% of ordinary transverse web frames in all double-side tanks. (B) All cargo hold transverse bulkheads including internal structure of upper and lower stools, where fitted. (C) All cargo hold hatch covers and coamings (plating and stiffeners). (D) All deck plating and under-deck structure inside line of hatch openings between all cargo hold hatches. (E)	All transverse webs with associated plating and longitudinals as applicable in each water ballast tank. (A) All transverse bulkheads including stiffening system in each water ballast tank. (A) All ordinary transverse frames in all double-side tanks. (B) Areas (C)–(E) as for column 3

(A), (B), (C), (D) and (E) are areas to be subjected to close-up surveys and thickness measurements (see sketches in appendix 3 to annex 8)

(A) Transverse web frame or watertight transverse bulkhead in topside, hopper side and double-side ballast tanks. In fore and aft peak tanks transverse web frame means a complete transverse web frame ring including adjacent structural members.

(B) Ordinary transverse frame in double-side tanks.

(C) Cargo hold transverse bulkhead, plating, stiffeners and girders.

(D) Cargo hold hatch covers and coamings.

(E) Deck plating and under-deck structure inside line of hatch openings between cargo hold hatches.

Note: Close-up survey of transverse bulkheads should be carried out at four levels:

Level (a) Immediately above the inner bottom and immediately above the line of gussets (if fitted) and shedders for ships without lower stool.

Level (b) Immediately above and below the lower stool shelf plate (for those ships fitted with lower stools), and immediately above the line of the shedder plates.

Level (c) About mid-height of the bulkhead.

Level (d) Immediately below the upper deck plating and immediately adjacent to the upper wing tank, and immediately below the upper stool shelf plate for those ships fitted with upper stools, or immediately below the topside tanks.

Appendix 2

Minimum requirements for close-up survey at renewal survey for ore carriers

Age < 5 years **Renewal Survey No.1**	**5 < Age ⩽ 10 years** **Renewal Survey No.2**	**age > 10** **Renewal Survey No.3 and subsequent**
One web frame ring complete including adjacent structural members in a ballast wing tank. (A) One transverse bulkhead lower part – including girder system and adjacent structural members – in a ballast tank. (A)	All web frame rings complete including adjacent structural members in a ballast wing tank. (A) One deck transverse including adjacent deck structural members in each remaining ballast tank. (A) Forward and aft transverse bulkheads complete – including girder system and adjacent structural members – in a ballast wing tank. One transverse bulkhead lower part – including girder system and adjacent structural members – in each remaining ballast tank. (A)	All web frame rings complete including adjacent structural members in each ballast tank. (A) All transverse bulkheads complete – including girder system and adjacent structural members – in each ballast tank. (A) One web frame ring complete including adjacent structural members in each wing void space. (A) Additional web frame rings in void spaces as deemed necessary by the Administration or organization recognized by the Administration. (A)
Two selected cargo hold transverse bulkheads, including internal structure of upper and lower stools, where fitted. (C)	One transverse bulkhead in each cargo hold, including internal structure of upper and lower stools, where fitted. (C)	All cargo hold transverse bulkheads, including internal structure of upper and lower stools, where fitted. (C)
All cargo hold hatch covers and coamings (plating and stiffeners). (D)	All cargo hold hatch covers and coamings (plating and stiffeners). (D)	All cargo hold hatch covers and coamings (plating and stiffeners). (D)
	All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches. (E)	All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches. (E)

(A), (C), (D) and (E) are areas to be subjected to close-up surveys and thickness measurements (see sketches in appendix 3 to annex 8)

(A) Transverse web frame or watertight transverse bulkhead in ballast wing tanks and void spaces. In fore and aft peak tanks transverse web frame means a complete transverse web frame ring including adjacent structural members.

(C) Cargo hold transverse bulkhead plating, stiffeners and girders.

(D) Cargo hold hatch covers and coamings.

(E) Deck plating and under deck structure inside line of hatch openings between cargo hold hatches.

Note: Close-up survey of transverse bulkheads should be carried out at four levels:

Level (a)	Immediately above the inner bottom and immediately above the line of gussets (if fitted) and shedders for ships without lower stool.
Level (b)	Immediately above and below the lower stool shelf plate (for those ships fitted with lower stools), and immediately above the line of the shedder plates.
Level (c)	About mid-height of the bulkhead.
Level (d)	Immediately below the upper deck plating and immediately adjacent to the upper wing tank, and immediately below the upper stool shelf plate for those ships fitted with upper stools, or immediately below the topside tanks.

ANNEX 2

REQUIREMENTS FOR THICKNESS MEASUREMENTS AT RENEWAL SURVEYS

Age ≤ 5 years	5 < Age ≤ 10 years	10 < Age ≤ 15 years	Age > 15 years
Renewal Survey No. 1	Renewal Survey No. 2	Renewal Survey No. 3	Renewal Survey No. 4 and subsequent
1 Suspect areas	1 Suspect areas 2 Within the cargo length area: two transverse sections of deck plating outside line of cargo hatch openings 3 Measurement, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to annex 1 4 Wind and water strakes in way of the two transverse sections considered under point 2 above 5 Selected wind and water strakes outside the cargo length area	1 Suspect areas 2 Within the cargo length area: .1 each deck plate outside line of cargo hatch openings .2 two transverse sections, one of which should be in the amidship area, outside line of cargo hatch openings 3 Measurement, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to annex 1 4 All wind and water strakes within the cargo length area 5 Selected wind and water strakes outside the cargo length area	1 Suspect areas 2 Within the cargo length area: .1 each deck plate outside line of cargo hatch openings .2 three transverse sections, one of which should be in the amidship area, outside line of cargo hatch openings .3 each bottom plate 3 Point 3 referred to in column 3 4 All wind and water strakes, full length

ANNEX 3

OWNER'S INSPECTION REPORT

Structural condition

Ship's name: ..... Owner's inspection report – Structural condition For tank/hold No: ..... Grade of steel: deck: ..... side: ..... bottom: ..... longitudinal bulkhead:							
Elements	Cracks	Buckles	Corrosion	Coating condition	Pitting	Modification/repair	Other
Deck:							
Bottom:							
Side:							
Side framing:							
Longitudinal bulkheads:							
Transverse bulkheads:							
Repairs carried out due to: Thickness measurements carried out (dates): Results in general: Overdue surveys: Outstanding conditions of class: Comments:							
Date of inspection: ..... Inspected by: ..... Signature:							

ANNEX 4A

SURVEY PROGRAMME

Basic information and particulars

Name of ship:
IMO number:
Flag State:
Port of registry:
Gross tonnage:
Deadweight (metric tonnes):
Length between perpendiculars (m):
Shipbuilder:
Hull number:
Recognized organization (RO):
RO ship identity:
Date of build of the ship:
Owner:
Thickness measurement company:

1 Preamble

1.1 *Scope*

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo length area, cargo holds, ballast tanks, including fore and aft peak tanks, required by the Code.

1.1.2 The arrangements and safety aspects of the survey should be acceptable to the attending surveyor(s).

1.2 *Documentation*

All documents used in the development of the survey programme should be available on board during the survey as required by section 6.

2 Arrangement of cargo holds, tanks and spaces

This section of the survey programme should provide information (either in the form of plans or text) on the arrangement of cargo holds, tanks and spaces that fall within the scope of the survey.

3 List of cargo holds, tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme should indicate any changes relating to (and should update) the information on the use of the holds and tanks of the ship, the extent of coatings and the corrosion prevention system provided in the survey planning questionnaire.

4 Conditions for survey

This section of the survey programme should provide information on the conditions for survey, e.g. information regarding cargo hold and tank cleaning, gas freeing, ventilation, lighting, etc.

5 Provisions and method of access to structures

This section of the survey programme should indicate any changes relating to (and should update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

6 List of equipment for survey

This section of the survey programme should identify and list the equipment that will be made available for carrying out the survey and the required thickness measurements.

7 Survey requirements

7.1 *Overall survey*

This section of the survey programme should identify and list the spaces that should undergo an overall survey for this ship in accordance with 2.5.1.

7.2 *Close-up survey*

This section of the survey programme should identify and list the hull structures that should undergo a close-up survey for this ship in accordance with 2.5.2.

8 Identification of tanks for tank testing

This section of the survey programme should identify and list the cargo holds and tanks that should undergo tank testing for this ship in accordance with 2.7.

9 Identification of areas and sections for thickness measurements

This section of the survey programme should identify and list the areas and sections where thickness measurements should be taken in accordance with 2.6.1.

10 Minimum thickness of hull structures

This section of the survey programme should specify the minimum thickness for hull structures of this ship that are subject to survey, according to .1 or .2:

.1 Determined from the attached wastage allowance table and the original thickness to the hull structure plans of the ship;

.2 Given in the following table(s):

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)
Deck			
Plating			
Longitudinals			
Longitudinal girders			
Cross deck plating			
Cross deck stiffeners			
Bottom			
Plating			
Longitudinals			
Longitudinal girders			
Inner bottom			
Plating			
Longitudinals			
Longitudinal girders			
Floors			
Ship side in way of topside tanks			
Plating			
Longitudinals			
Ship side in way of hopper side tanks			
Plating			
Longitudinals			
Ship side in way of double-hull tanks (if applicable)			
Plating			
Longitudinals or ordinary transverse frames			
Longitudinal stringers			
Longitudinal bulkhead inner side (if applicable)			
Plating			
Longitudinals (if applicable)			
Longitudinals or ordinary transverse frames			
Longitudinal girders (if applicable)			
Transverse bulkheads			
Plating			
Stiffeners (if applicable)			
Upper stool plating			
Upper stool stiffeners			
Lower stool plating			
Lower stool stiffeners			
Transverse web frames in topside tanks			
Plating			
Flanges			
Stiffeners			

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)
Transverse web frames in hopper tanks			
Plating			
Flanges			
Stiffeners			
Transverse web frames in double-side tanks			
Plating			
Flanges			
Stiffeners			
Hatch covers			
Plating			
Stiffeners			
Hatch coamings			
Plating			
Stiffeners			

Note: The wastage allowance tables should be attached to the survey programme.

11 Thickness measurement company

This section of the survey programme should identify changes, if any, relating to the information on the thickness measurement company provided in the survey planning questionnaire.

12 Damage experience related to the ship

This section of the survey programme should, using the tables provided below, provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.

Hull damages sorted by location for this ship

Cargo hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

Hull damages for sister or similar ships (if available) in the case of design-related damage

Cargo hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

13 Areas identified with substantial corrosion from previous surveys

This section of the survey programme should identify and list the areas of substantial corrosion from previous surveys.

14 Critical structural areas and suspect areas

This section of the survey programme should identify and list the critical structural areas and the suspect areas, when such information is available.

15 Other relevant comments and information

This section of the survey programme should provide any other comments and information relevant to the survey.

Appendices

Appendix 1 – List of plans

The provisions of 5.1.3.2 require that the main structural plans of cargo holds and ballast tanks (scantling drawings), including information regarding the use of high-tensile steel (HTS), should be available. This appendix of the survey programme should identify and list the main structural plans which form part of the survey programme.

Appendix 2 – Survey planning questionnaire

The survey planning questionnaire (annex 4B), which has been submitted by the owner, should be appended to the survey programme.

Appendix 3 – Other documentation

This part of the survey programme should identify and list any other documentation that forms part of the plan.

Prepared by the owner in cooperation with the Administration for compliance with 5.1.3.

Date:

(name and signature of authorized owner's representative)

Date:

(name and signature of authorized representative of the Administration)

ANNEX 4B

SURVEY PLANNING QUESTIONNAIRE

1 The following information will enable the owner, in cooperation with the Administration, to develop a survey programme complying with the requirements of the Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, should provide all information and material required by the Code.

Particulars

Ship's name:

IMO number:

Flag State:

Port of registry:

Owner:

Recognized organization:

RO Ship identity:

Gross tonnage:

Deadweight (metric tonnes):

Date of build:

Information on access provision for close-up surveys and thickness measurement

2 The owner should indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. normally within reach of hand.

Hold/Tank No.	Structure	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
F.P.	Fore peak					
A.P.	Aft peak					
Cargo holds	Hatch side coamings					
	Topside sloping plate					
	Upper stool plating					
	Cross deck					
	Double-side tank plating					
	Transverse bulkhead					
	Hopper tank plating					
	Lower stool plating					
	Tank top					
Topside tanks	Under-deck structure					
	Side shell and structure					
	Sloping plate and structure					
	Webs and bulkheads					
Hopper tanks	Hopper sloping plate and structure					
	Side shell and structure					
	Bottom structure					
	Webs and bulkheads					
Double-side tanks	Side shell and structure					
	Inner skin and structure					
	Webs and bulkheads					
	Double-bottom structure					
	Upper stool internal structure					
	Lower stool internal structure					

Hold/Tank No.	Structure	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
Wing tanks of ore carriers	Underdeck and structure					
	Side shell and structure					
	Side shell vertical web and structure					
	Longitudinal bulkhead and structure					
	Longitudinal bulkhead web and structure					
	Bottom plating and structure					
	Cross ties/stringers					

History of bulk cargoes of a corrosive nature (e.g. high-sulphur content)

Owner's inspections

3 Using a format similar to that of the table below (which is given as an example), the owner should provide details of the results of their inspections, for the last three years in accordance with the Code on all CARGO holds and BALLAST tanks and VOID spaces within the cargo area.

Tank/Hold No.	Corrosion protection (1)	Coating extent (2)	Coating condition (3)	Structural deterioration (4)	Hold and tank history (5)
Cargo holds					
Topside tanks					
Hopper tanks					
Double-side skin tanks					
Double-bottom tanks					
Upper stools					
Lower stools					
Wing tanks (ore tankers)					
Fore peak					
Aft peak					
Miscellaneous other spaces:					

Note:

Indicate tanks which are used for oil/ballast.

Name of owner's representative:

.....

Signature:.....

Date: .....

1) HC = hard coating; SC = soft coating;
SH = semi-hard coating; NP = no protection

2) U = upper part; M = middle part;
L = lower part; C = complete

3) G = good; F = fair; P = poor;
RC = recoated (during the last three years)

4) N = no findings recorded; Y = findings recorded,
description of findings should be attached to this questionnaire

5) DR = damage & repair; L = leakages;
CV = conversion (description to be attached to this questionnaire)

Reports of port State control inspections

List the reports of port State control inspections containing hull structural related deficiencies, and relevant information on rectification of the deficiencies:

Safety management system

List non-conformities related to hull maintenance, including the associated corrective actions:

Name and address of the approved thickness measurement company

ANNEX 5

PROCEDURES FOR CERTIFICATION OF A COMPANY ENGAGED IN THICKNESS MEASUREMENT OF HULL STRUCTURES

1 Application

This guidance applies for certification of the company which intends to engage in the thickness measurement of hull structures of ships.

2 Procedures for certification

Submission of documents

2.1 The following documents should be submitted to an organization recognized by the Administration for approval:

.1 outline of the company, e.g. organization and management structure;

.2 experience of the company on thickness measurement of hull structures of ships;

.3 technicians' careers, i.e. experience of technicians as thickness measurement operators, technical knowledge and experience of hull structure, etc. Operators should be qualified according to a recognized industrial NDT Standard;

.4 equipment used for thickness measurement such as ultrasonic testing machines and their maintenance/calibration procedures;

.5 a guide for thickness measurement operators;

.6 training programmes for technicians for thickness measurement;

.7 measurement record format in accordance with recommended procedures for thickness measurements (see annex 8).

Auditing of the company

2.2 Upon reviewing the documents submitted with satisfactory results, the company should be audited in order to ascertain that the company is duly organized and managed in accordance with the documents submitted, and eventually is capable of conducting thickness measurement of the hull structure of ships.

2.3 Certification is conditional upon an on board demonstration of thickness measurement as well as satisfactory reporting.

3 Certification

3.1 Upon satisfactory results of both the audit of the company referred to in 2.2 and the demonstration tests referred to in 2.3, the Administration or organization recognized by the Administration should issue a certificate of approval as well as a notice to the effect that the thickness measurement operation system of the company has been certified.

3.2 Renewal/endorsement of the certificate should be made at intervals not exceeding three years by verification that original conditions are maintained.

4 Report of any alteration to the certified thickness measurement operation system

In cases where any alteration to the certified thickness measurement operation system of the company is made, such an alteration should be immediately reported to the organization recognized by the Administration. Re-audit should be made where deemed necessary by the organization recognized by the Administration.

5 Withdrawal of the certification

The certification may be withdrawn in the following cases:

.1 where the measurements were improperly carried out or the results were improperly reported;

.2 where the surveyor found any deficiencies in the approved thickness measurement operation systems of the company; and

.3 where the company failed to report any alteration referred to in 4 to the organization recognized by the Administration as required.

ANNEX 6

SURVEY REPORTING PRINCIPLES

As a principle, for bulk carriers subject to the Code, the surveyor should include the following contents in his report for survey of hull structure and piping systems, as relevant for the survey.

1 General

1.1 A survey report should be generated in the following cases:

.1 in connection with commencement, continuation and/or completion of periodical hull surveys, i.e. annual, intermediate and renewal surveys, as relevant;

.2 when structural damages/defects have been found;

.3 when repairs, renewals or modifications have been carried out; and

.4 when condition of class (recommendation) has been imposed or has been deleted.

1.2 The reporting should provide:

.1 evidence that prescribed surveys have been carried out in accordance with applicable requirements;

.2 documentation of surveys carried out with findings, repairs carried out and condition of class (recommendation) imposed or deleted;

.3 survey records, including actions taken, which should form an auditable documentary trail. Survey reports should be kept in the survey report file required to be on board;

.4 information for planning of future surveys; and

.5 information which may be used as input for maintenance of classification rules and instructions.

1.3 When a survey is split between different survey stations, a report should be made for each portion of the survey. A list of items surveyed, relevant findings and an indication of whether the item has been credited, should be made available to the next attending surveyor, prior to continuing or completing the survey. Thickness measurement and tank testing carried out should also be listed for the next surveyor.

2 Extent of the survey

2.1 Identification of compartments where an overall survey has been carried out.

2.2 Identification of locations, in each ballast tank and cargo hold including hatch covers and coamings, where a close-up survey has been carried out, together with information on the means of access used.

2.3 Identification of locations, in each ballast tank and cargo hold including hatch covers and coamings, where thickness measurement has been carried out.

Note: As a minimum, the identification of location of close-up survey and thickness measurement should include a confirmation with description of individual structural members corresponding to the extent of requirements stipulated in part B of annex A based on type of periodical survey and the ship's age.

Where only partial survey is required, e.g. one transverse web, two selected cargo hold transverse bulkheads, the identification should include location within each ballast tank and cargo hold by reference to frame numbers.

2.4 For areas in ballast tanks and cargo holds where protective coating is found to be in good condition and the extent of close-up survey and/or thickness measurement has been specially considered, structures subject to special consideration should be identified.

2.5 Identification of tanks subject to tank testing.

2.6 Identification of piping systems on deck and within cargo holds, ballast tanks, pipe tunnels, cofferdams and void spaces where:

.1 examination including internal examination of piping with valves and fittings and thickness measurement, as relevant, has been carried out; and

.2 operational test to working pressure has been carried out.

3 Result of the survey

3.1 Type, extent and condition of protective coating in each tank, as relevant (rated GOOD, FAIR or POOR).

3.2 Structural condition of each compartment with information on the following, as relevant:

.1 identification of findings, such as:

.1 corrosion with description of location, type and extent;

.2 areas with substantial corrosion;

.3 cracks/fractures with description of location and extent;

.4 buckling with description of location and extent; and

.5 indents with description of location and extent;

.2 identification of compartments where no structural damages/defects are found. The report may be supplemented by sketches/photos; and

.3 thickness measurement report should be verified and signed by the surveyor controlling the measurements on board.

4 Actions taken with respect to findings

4.1 Whenever the attending surveyor is of the opinion that repairs are required, each item to be repaired should be identified in a numbered list. Whenever repairs are carried out, details of the repairs effected should be reported by making specific reference to relevant items in the numbered list.

4.2 Repairs carried out should be reported with identification of:

.1 compartment;

.2 structural member;

.3 repair method (i.e. renewal or modification), including:

.1 steel grades and scantlings (if different from the original); and

.2 sketches/photos, as appropriate;

.4 repair extent; and

.5 non-destructive test (NDT)/tests.

4.3 For repairs not completed at the time of survey, condition of class/recommendation should be imposed with a specific time limit for the repairs. In order to provide correct and proper information to the surveyor attending for survey of the repairs, condition of class/recommendation should be sufficiently detailed with identification of each item to be repaired. For identification of extensive repairs, reference may be made to the survey report.

ANNEX 7

CONDITION EVALUATION REPORT

Issued upon completion of renewal survey

General particulars

Ship's name:	Class/Administration identity number: Previous class/Administration identity number(s): IMO number:
Port of registry:	National flag: Previous national flag(s):
Deadweight (metric tonnes):	Gross tonnage: National: ITC (1969):
Date of build:	Classification notation:
Date of major conversion:	
Type of conversion:	Owner: Previous owner(s):

1 The survey reports and documents listed below have been reviewed by the undersigned and found to be satisfactory.

2 A summary of the survey is attached herewith on sheet 2.

3 The renewal survey has been completed in accordance with the present Code on (date) .....

Condition evaluation report completed by	Name Signature	Title
Office	Date	
Condition evaluation report verified by	Name Signature	Title
Office	Date	

Attached reports and documents:

1)
2)
3)
4)
5)
6)

Contents of condition evaluation report

Part 1	– General particulars:	- See front page
Part 2	– Report review:	- Where and how survey was done
Part 3	– Close-up survey:	- Extent (which tanks/holds)

Part 4	– Thickness measurements:	- Reference to thickness measurement report
		- Summary of where measured
		- Separate form indicating the spaces with substantial corrosion, and corresponding:
		  - thickness diminution
		  - corrosion pattern

Part 5	– Tank/hold corrosion prevention system:	- Separate form indicating:
		  - location of coating
		  - condition of coating (if applicable)

Part 6	– Repairs:	- Identification of spaces/areas
Part 7	– Condition of class/flag State requirements:	
Part 8	– Memoranda:	- Acceptable defects - Any points of attention for future surveys, e.g. for suspect areas - Extended annual/intermediate survey due to coating breakdown
Part 9	– Conclusion:	- Statement on evaluation/verification of survey report

Extract of thickness measurements

Reference is made to the thickness measurement report:

Position of substantially corroded tanks/areas[1] or areas with deep pitting[3]	**Thickness diminution [%]**	**Corrosion pattern[2]**	**Remarks: (e.g. reference to attached sketches)**

Notes:

1 Substantial corrosion, i.e. 75 to 100% of acceptable margins wasted.

2 P = Pitting
C = Corrosion in general

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 ⅛ or more of actual plate thickness should be noted.

Tank/hold corrosion prevention system

Tank/hold Nos.[1]	Tank/hold corrosion prevention system[2]	Coating condition[3]	Remarks

Notes:

1 All ballast tanks and cargo holds should be listed.
2 C = Coating NP = No protection
3 Coating condition according to the following standard:

GOOD condition with only minor spot rusting.

FAIR condition with local breakdown of coating at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition.

POOR condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.

If coating condition POOR is given, extended annual surveys should be introduced. This should be noted in part 8 of the contents of condition evaluation report.

ANNEX 8

RECOMMENDED PROCEDURES FOR THICKNESS MEASUREMENTS

1 This annex should be used for recording thickness measurements as required by part B of annex A.

2 Thickness measurement sheet forms TM1-DSBC, TM2-DSBC(i), TM2-DSBC(ii), TM3-DSBC, TM4-DSBC, TM5-DSBC and TM6-DSBC (appendix 2) should be used, as appropriate, for recording thickness measurements. The maximum allowable diminution should be stated. The maximum allowable diminution could be stated in an attached document.

3 Appendix 3 contains guidance diagrams and notes relating to the reporting forms and the procedure for the thickness measurements.

Appendix 1

THICKNESS MEASUREMENT REPORT GENERAL PARTICULARS

Ship's name: .....
IMO number: .....
Class/Administration identity number: .....
Port of registry: .....
Gross tonnage: .....
Deadweight: .....
Date of build: .....
Classification society: .....

Name of company performing thickness measurement: .....
.....
Thickness measurement company certified by: .....
Certificate number: .....
Certificate valid from: ..... to .....
Place of measurement: .....
First date of measurement: .....
Last date of measurement: .....
Renewal survey/intermediate survey due: .....
Details of measurement equipment: .....
Qualification of operator: .....

Report number: ..... consisting of ..... pages
Name of operator: ..... Name of surveyor: .....
Signature of operator: ..... Signature of surveyor: .....
Company official stamp: ..... Administration: .....

Official stamp

Appendix 2

Report on thickness measurement of all deck plating, bottom shell plating and side shell plating (TM1-DSBC)

Ship's name..... Class Identity No..... Report No..... IMO number.....

STRAKE POSITION / PLATE POSITION	No. or letter	Orig. thk. (mm)	Forward reading						Aft reading						Mean diminution %		
			Gauged		Diminution P		Diminution S		Gauged		Diminution P		Diminution S				
			P	S	mm	%	mm	%	P	S	mm	%	mm	%	P	S	mm
12th forward																	
11th																	
10th																	
9th																	
8th																	
7th																	
6th																	
5th																	
4th																	
3rd																	
2nd																	
1st																	
Amidships																	
1st aft																	
2nd																	
3rd																	
4th																	
5th																	
6th																	
7th																	
8th																	
9th																	
10th																	
11th																	
12th																	

Operator's signature.....

Notes – see following page

Notes to report TM1-DSBC:

1 This report should be used for recording the thickness measurement of:

.1 all strength deck plating within cargo length area;

.2 all keel, bottom shell plating and bilge plating within the cargo length area;

.3 side shell plating including selected wind and water strakes outside cargo length area; and

.4 all wind and water strakes within cargo length area.

2 The strake position should be cleared as follows:

.1 for strength deck indicate the number of the strake of plating inboard from the stringer plate;

.2 for bottom plating indicate the number of the strake of plating outboard from the keel plate; and

.3 for side shell plating give number of the strake of plating below sheerstrake and letter as shown on shell expansion.

3 Only the deck plating strakes outside line of openings are to be recorded.

4 Measurements should be taken at the forward and aft areas of all plates and where plates cross ballast/cargo tank boundaries separate measurements for the area of plating in way of each type of tank should be recorded.

5 The single measurements recorded should represent the average of multiple measurements.

6 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of shell and deck plating at transverse sections (one, two or three transverse sections) (TM2-DSBC(i))

Ship's name..... Class Identity No..... Report No..... IMO number.....

STRENGTH DECK AND SHEERSTRAKE PLATING																											
	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....										THIRD TRANSVERSE SECTION AT FRAME NUMBER....								
STRAKE POSITION	No. or letter	Orig. thk	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk	Max allow. dimin.	Gauged		Diminution P		Diminution S	
		(mm)	(mm)	P	S	mm	%	mm	%		(mm)	(mm)	P	S	mm	%	mm	%		(mm)	(mm)	P	S	mm	%	mm	%
Stringer plate																											
1st strake inboard																											
2nd																											
3rd																											
4th																											
5th																											
6th																											
7th																											
8th																											
9th																											
10th																											
11th																											
12th																											
13th																											
14th																											
centre strake																											
sheerstrake																											
TOPSIDE TOTAL																											

Operator's signature.....

Notes – see following page

Notes to report TM2-DSBC(i):

1 This report should be used for recording the thickness measurement of:

Strength deck plating and sheerstrake plating transverse sections:

One, two or three sections within the cargo length area, comprising structural items (1), (2) and (3) as shown on the diagrams of typical transverse sections (appendix 3).

2 Only the deck plating strakes outside line of hatch openings should be recorded.

3 The top side area comprises deck plating, stringer plate and sheerstrake (including rounded gunwales).

4 The exact frame station of measurement should be stated.

5 The single measurements recorded should represent the average of multiple measurements.

6 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of shell and deck plating at transverse sections (one, two or three transverse sections) (TM2-DSBC(ii))

Ship's name..... Class Identity No..... Report No..... IMO number.....

	SHELL PLATING																											
	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....									THIRD TRANSVERSE SECTION AT FRAME NUMBER....									
STRAKE POSITION	No. or letter	Orig. thk	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk	Max allow. dimin.	Gauged		Diminution P		Diminution S	
		(mm)	(mm)	P	S	mm	%	mm	%		(mm)	(mm)	P	S	mm	%	mm	%		(mm)	(mm)	P	S	mm	%	mm	%
1st below sheerstrake																											
2nd																											
3rd																											
4th																											
5th																											
6th																											
7th																											
8th																											
9th																											
10th																											
11th																											
12th																											
13th																											
14th																											
15th																											
16th																											
17th																											
18th																											
19th																											
20th																											
keel strake																											
BOTTOM TOTAL																											

Operator's signature.....

Notes – see following page

Notes to report TM2-DSBC(ii):

1 This report should be used for recording the thickness measurement of:

Shell plating at transverse sections:

One, two or three sections within the cargo length area, comprising structural items (3), (4), (5) and (6) as shown on the diagrams of typical transverse sections in appendix 3.

2 The bottom area comprises keel, bottom and bilge plating.

3 The exact frame station of measurement should be stated.

4 The single measurements recorded should represent the average of multiple measurements.

5 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of longitudinal members at transverse sections (one, two or three transverse sections) (TM3-DSBC)

Ship's name..... Class Identity No..... Report No..... IMO number.....

STRUCTURAL MEMBER	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....									THIRD TRANSVERSE SECTION AT FRAME NUMBER....								
	Item no.	Orig. thk	Max allow. dimin.	Gauged		Diminution P		Diminution S		Item no.	Orig. thk	Max allow. dimin.	Gauged		Diminution P		Diminution S		Item no.	Orig. thk	Max allow. dimin.	Gauged		Diminution P		Diminution S	
		(mm)	(mm)	P	S	mm	%	mm	%		(mm)	(mm)	P	S	mm	%	mm	%		(mm)	(mm)	P	S	mm	%	mm	%

Notes to report TM3-DSBC:

1 This report should be used for recording the thickness measurement of:

Longitudinal members at transverse sections:

Two, or three sections within the cargo length area comprising the appropriate structural items (10) to (25) as shown on diagrams of typical transverse sections in appendix 3.

2 The exact frame station of measurement should be stated.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of transverse structural members in the double-bottom, hopper side and topside water ballast tanks (TM4-DSBC)

Ship's name..... Class Identity No..... Report No..... IMO number.....

TANK DESCRIPTION:									
LOCATION OF STRUCTURE:									
STRUCTURAL MEMBER	ITEM	Original thickness (mm)	Max. allow. dimin. (mm)	Gauged		Diminution P		Diminution S	
				Port	Starboard	mm	%	mm	%

Operator's signature.....

Notes – see following page

Notes to report TM4-DSBC:

1 This report should be used for recording the thickness measurement of:

Transverse structural members, comprising the appropriate structural items (30) to (34) as shown on diagrams of typical transverse sections illustrated in appendix 3.

2 Guidance for areas of measurements is indicated in appendix 3.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of watertight transverse bulkheads in cargo holds (TM5-DSBC)

Ship's name..... Class Identity No..... Report No..... IMO number.....

LOCATION OF STRUCTURE: FRAME NO:

STRUCTURAL COMPONENT (PLATING/STIFFENER)

	Original thickness	Max. allow. dimin.	Gauged		Diminution P		Diminution S	
	(mm)	(mm)	P	S	mm	%	mm	%

Operator's signature.....

Notes – see following page

Notes to report TM5-DSBC:

1 This report should be used for recording the thickness measurement of:

Watertight transverse bulkheads in cargo holds.

2 Guidance for areas of measurements is indicated in appendix 3.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of miscellaneous structural members (TM6-DSBC)

Ship's name..... Class Identity No..... Report No..... IMO number.....

STRUCTURAL MEMBER:

LOCATION OF STRUCTURE:

DESCRIPTION	Orig. thk.	Max. allow. dimin.	Gauged		Diminution P		Diminution S	
	mm	mm	P	S	mm	%	mm	%

SKETCH

Operator's signature.....

Notes – see following page

Notes to report TM6-DSBC:

1 This report should be used for recording the thickness measurement of:

Miscellaneous structural members including structural items (40), (41) and (42) as shown on diagrams of typical transverse sections illustrated in appendix 3.

2 Guidance for areas of measurements is indicated in appendix 3.

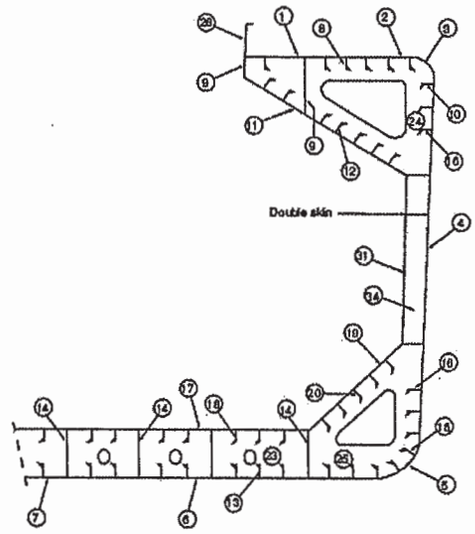
3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Appendix 3

THICKNESS MEASUREMENT – DOUBLE-SIDE SKIN CONSTRUCTION SHIPS
THICKNESS MEASUREMENT – DOUBLE-SIDE SKIN BULK CARRIER

Typical transverse section of a double-side skin bulk carrier with indication of longitudinal and transverse members.



REPORT ON TM2-DSBC(I) and (II)

(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 TM3-DSBC

(8) Deck longitudinals
(9) Deck girders
(10) Sheerstrake longitudinals
(11) Topside tank sloping plating
(12) Topside tank sloping plating longitudinals
(13) Bottom longitudinals
(14) Bottom girders
(15) Bilge longitudinals
(16) Side shell longitudinals, if any
(17) Inner bottom plating
(18) Inner bottom longitudinals
(19) Hopper plating
(20) Hopper longitudinals
(21) Inner side plating
– Inner side longitudinals, if any
– Horizontal girders in wing ballast tanks

REPORT ON TM4-DSBC

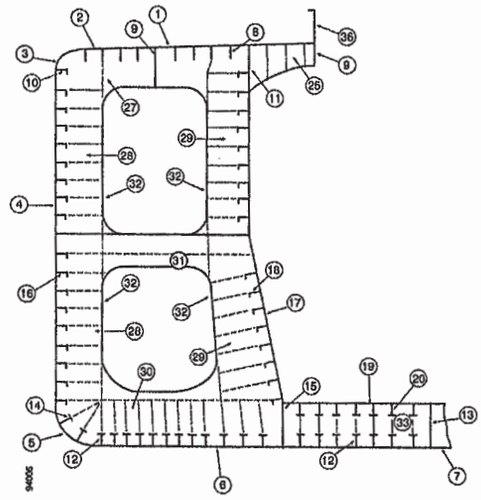
(23) Double-bottom tank floors
(25) Hopper side tank transverses
(24) Transverse web frame
– Topside tank transverse

REPORT ON TM6-DSBC

(24) Hatch coamings
– Deck plating between hatches
– Hatch covers

THICKNESS MEASUREMENT – ORE CARRIERS

Typical transverse section of an ore carrier with indication of longitudinal and transverse members.



REPORT ON TM2-DSBC (I) and (II)
(1) Strength deck plating
(2) Stringer plate
(3) Sheerstrake
(4) Side shell plating
(5) Bilge plating
(6) Bottom shell plating
(7) Keel plate

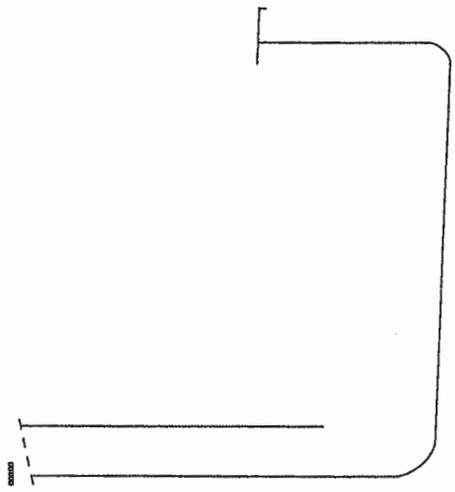
REPORT ON TM3-DSBC
(8) Deck longitudinals
(9) Deck girders
(10) Sheerstrake longitudinals
(11) Longitudinal bulkhead top strake
(12) Bottom longitudinals
(13) Bottom girders
(14) Bilge longitudinals
(15) Longitudinal bulkhead lower strake
(16) Side shell longitudinals
(17) Longitudinal bulkhead plating (remainder)
(18) Longitudinal bulkhead longitudinals
(19) Inner bottom plating
(20) Inner bottom longitudinals
(21)
(22)
(23)
(24)

REPORT ON TM4-DSBC
(25) Deck transverse centre tank
(26) Bottom transverse centre tank
(27) Deck transverse wing tank
(28) Side shell vertical web
(29) Longitudinal bulkhead vertical web
(30) Bottom transverse wing tank
(31) Sirus
(32) Transverse web face plate
(33) Double bottom floors
(34)
(35)

REPORT ON TM6-DSBC
(36) Hatch coamings
(37) Deck plating between hatches
(38) Hatch covers
(39)
(40)

THICKNESS MEASUREMENT – DOUBLE-SIDE SKIN BULK CARRIER

Transverse section outline: the diagram may be used for those ships where the typical transverse sections are not suitable.



REPORT ON TM2-DSBC(i) and (ii)

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 TM3-DSBC

8. Deck longitudinals
9. Deck girders
10. Sheerstrake longitudinals
11. Topside tank sloping plating
12. Topside tank sloping plating longitudinals
13. Bottom longitudinals
14. Bottom girders
15. Bilge longitudinals
16. Side shell longitudinals, if any
17. Inner bottom plating
18. Inner bottom longitudinals
19. Hopper plating
20. Hopper longitudinals
31. Inner side plating
    - Inner side longitudinals, if any
    - Horizontal girders in wing ballast tanks

REPORT ON TM4-DSBC

23. Double-bottom tank floors
25. Hopper side tank transverses
34. Transverse web frame
    - Topside tank transverses

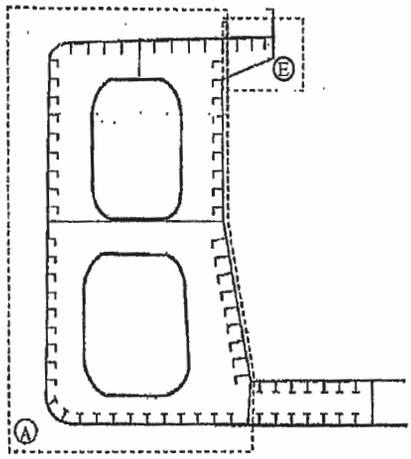
REPORT ON TM6-DSBC

28. Hatch coamings
    - Deck plating between hatches
    - Hatch covers

THICKNESS MEASUREMENT – ORE CARRIERS

Areas subject to close-up survey and thickness measurements – areas (A), (C), (D) and (E) as defined in annex 1 of part B – Thickness to be reported on TM3-DSBC, TM4-DSBC, TM5-DSBC and TM6-DSBC as appropriate

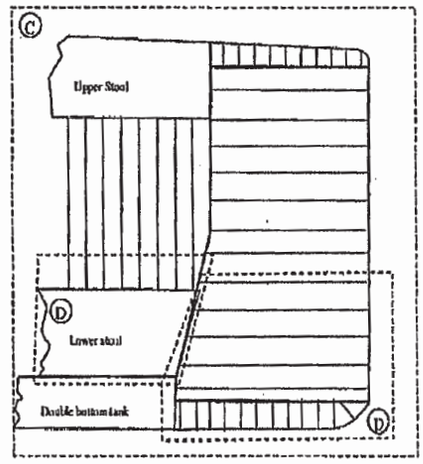
Typical transverse section close-up survey



Thickness to be reported on TM3-DSBC and TM4-DSBC as appropriate

Close-up survey area

Typical transverse bulkhead



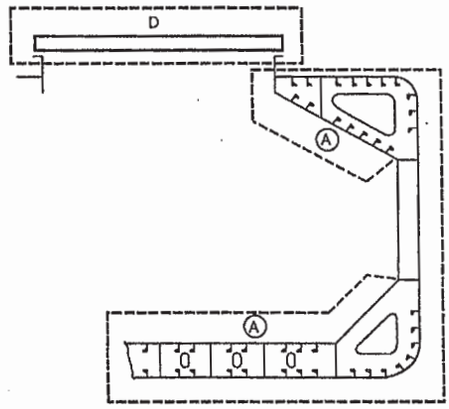
Thickness to be reported on TM5-DSBC

THICKNESS MEASUREMENTS – DOUBLE-SIDE SKIN BULK CARRIER

Areas subject to close-up survey and thickness measurements – areas (A) to (E) as defined in annex 1 of part B – Thickness to be reported on TM3-DSBC, TM4-DSBC, TM5-DSBC and TM6-DSBC as appropriate.

Typical transverse section

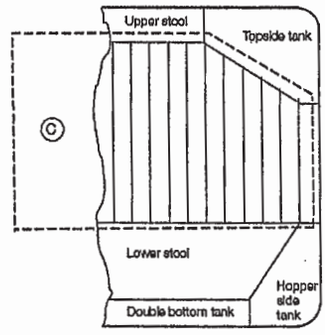
Areas (A) and (D)



Thickness to be reported on TM3-DSBC, TM4-DSBC, and TM6-DSBC, as appropriate

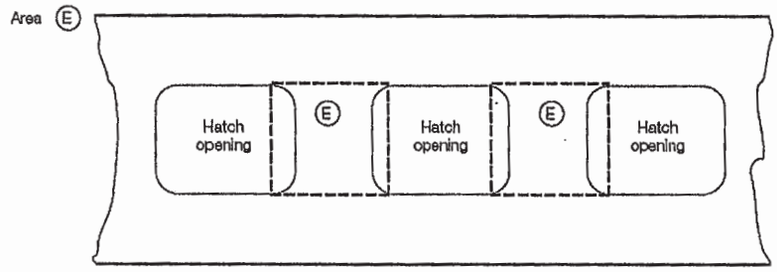
A cargo hold, transverse bulkhead

Area (C)



Thickness to be reported on TM5-DSBC

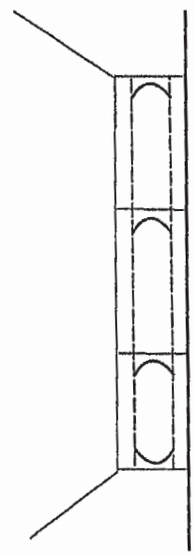
Typical areas of deck plating and underdeck structure inside line of hatch openings between cargo hold hatches



Thickness to be reported on TM1-DSBC

Ordinary transverse frame in double-side skin tank

Area (B)



Thickness to be reported on TM4-DSBC

ANNEX 9

GUIDELINES FOR TECHNICAL ASSESSMENT IN CONJUNCTION WITH PLANNING FOR ENHANCED SURVEYS OF DOUBLE-SIDE SKIN BULK CARRIERS – RENEWAL SURVEY HULL

1 Introduction

These guidelines contain information and suggestions concerning technical assessments, which may be of use in conjunction with the planning of enhanced renewal surveys of double-side skin bulk carriers. As indicated in 5.1.5, the guidelines are a recommended tool which may be invoked at the discretion of the Administration, when considered necessary and appropriate, in conjunction with the preparation of the required survey programme.

2 Purpose and principles

2.1 *Purpose*

2.1.1 The purpose of the technical assessments described in these guidelines is to assist in identifying critical structural areas, nominating suspect areas and in focusing attention on structural elements or areas of structural elements which may be particularly susceptible to, or evidence a history of, wastage or damage. This information may be useful in nominating locations, areas holds and tanks for thickness measurement, close-up survey and tank testing.

2.1.2 Critical structural areas are locations which have been identified from calculations to require monitoring or from the service history of the subject ship or from similar or sister ships (if available) to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the ship.

2.2 *Minimum requirements*

However, these guidelines may not be used to reduce the requirements pertaining to thickness measurement, close-up survey and tank testing contained in annexes 1 and 2 of part B and in 2.7, respectively, which, in all cases, should be complied with as a minimum.

2.3 *Timing*

As with other aspects of survey planning, the technical assessments described in these guidelines should be worked out by the owner or operator in cooperation with the Administration well in advance of the commencement of the renewal survey, i.e. prior to commencing the survey and normally at least 12 to 15 months before the survey's completion due date.

2.4 *Aspects to be considered*

2.4.1 Technical assessments, which may include quantitative or qualitative evaluation of relative risks of possible deterioration, of the following aspects of a particular ship may be used as a basis for the nomination of holds, tanks and areas for survey:

.1 design features such as stress levels on various structural elements, design details and extent of use of high-tensile steel;

.2 former history with respect to corrosion, cracking, buckling, indents and repairs for the particular ship as well as similar vessels, where available; and

.3 information with respect to types of cargo carried, use of different holds/tanks for cargo/ballast, protection of holds and tanks and condition of coating, if any.

2.4.2 Technical assessments of the relative risks of susceptibility to damage or deterioration of various structural elements and areas should be judged and decided on the basis of recognized principles and practices, such as may be found in references 2, 3 and 4.

3 Technical assessment

3.1 *General*

3.1.1 There are three basic types of possible failure, which may be the subject of technical assessment in connection with planning of surveys; corrosion, cracks and buckling. Contact damages are not normally covered by the survey planning since indents are usually noted in memoranda and assumed to be dealt with as a normal routine by surveyors.

3.1.2 Technical assessments performed in conjunction with the survey planning process should, in principle, be as shown schematically in figure 1.

The approach is basically an evaluation of the risk in the following aspects based on the knowledge and experience related to:

.1 design; and

.2 corrosion.

3.1.3 The design should be considered with respect to structural details, which may be susceptible to buckling or cracking as a result of vibration, high stress levels or fatigue.

3.1.4 Corrosion is related to the ageing process, and is closely connected with the quality of corrosion prevention systems fitted at new building, and subsequent maintenance during the service life. Corrosion may also lead to cracking and/or buckling.

3.2 *Methods*

3.2.1 *Design details*

3.2.1.1 Damage experience related to the ship in question and sister and/or similar ships, where available, is the main source of information to be used in the process of planning. In addition, a selection of structural details from the design drawings should be included.

3.2.1.2 Typical damage experience to be considered will consist of:

.1 number, extent, location and frequency of cracks; and

.2 location of buckles.

3.2.1.3 This information may be found in the survey reports and/or the owner's files, including the results of the owner's own inspections. The defects should be analysed, noted and marked on sketches.

3.2.1.4 In addition, general experience should be utilized. Also, reference should be made to reference 2, which contains a catalogue of typical damages and proposed repair methods for various structural details on single-skin bulk carriers. Reference should also be made to

reference 3, which contains catalogues of typical damages and proposed repair methods for double-hull oil tanker structural details which may to some extent be similar to structural details in double-side skin bulk carriers. Such figures should be used together with a review of the main drawings, in order to compare with the actual structure and search for similar details that may be susceptible to damage. In particular, chapter 3 of reference 3 deals with various aspects specific to double-hull tankers, such as stress concentration locations, misalignment during construction, corrosion trends, fatigue considerations and areas requiring special attention, while chapter 4 of reference 3 addresses experience gained on structural defects in double-hulls (chemical tankers, OBO carriers, ore/oil carriers, gas carriers), which should also be considered in working out the survey planning.

3.2.1.5 The review of the main structural drawings, in addition to using the above-mentioned figures, should include checking for typical design details where cracking has been experienced. The factors contributing to damage should be carefully considered.

3.2.1.6 The use of high-tensile steel (HTS) is an important factor. Details showing good service experience where ordinary, mild steel has been used may be more susceptible to damage when HTS, and its higher associated stresses, are utilized. There is extensive and, in general, good experience, with the use of HTS for longitudinal material in deck and bottom structures. Experience in other locations, where the dynamic stresses may be higher, is less favourable, e.g. side structures.

3.2.1.7 In this respect, stress calculations of typical and important components and details, in accordance with relevant methods, may prove useful and should be considered.

3.2.1.8 The selected areas of the structure identified during this process should be recorded and marked on the structural drawings to be included in the survey programme.

3.2.2 *Corrosion*

3.2.2.1 In order to evaluate relative corrosion risks, the following information should generally be considered:

.1 usage of tanks, holds and spaces;

.2 condition of coatings;

.3 cleaning procedures;

.4 previous corrosion damage;

.5 ballast use and time for cargo holds;

.6 risk of corrosion in cargo holds and ballast tanks; and

.7 location of ballast tanks adjacent to heated fuel oil tanks.

3.2.2.2 Reference 4 gives definitive examples which can be used for judging and describing coating condition, using typical pictures of conditions.

3.2.2.3 The evaluation of corrosion risks should be based on information in both reference 2 and reference 4, as far as applicable to double-side skin construction, together with relevant information on the anticipated condition of the ship as derived from the information collected in order to prepare the survey programme and the age of the ship. The various holds, tanks and spaces should be listed with the corrosion risks nominated accordingly.

3.2.3 *Locations for close-up survey and thickness measurement*

3.2.3.1 On the basis of the table of corrosion risks and the evaluation of design experience, the locations for initial close-up survey and thickness measurement (areas and sections) may be nominated.

3.2.3.2 The sections subject to thickness measurement should normally be nominated in tanks, holds and spaces where corrosion risk is judged to be the highest.

3.2.3.3 The nomination of tanks, holds and spaces for close-up survey should initially be based on highest corrosion risk, and should always include ballast tanks. The principle for the selection should be that the extent is increased by age or where information is insufficient or unreliable.

References

1 IACS, Unified Requirement Z10.5, Hull Surveys of Double Skin Bulk Carriers

2 IACS, Bulk Carriers: Guidelines for Surveys, Assessment and Repair of Hull Structures, January 2007

3 TSCF, Guidelines for the Inspection and Maintenance of Double Hull Tanker Structures, 1995

4 TSCF, Guidance Manual for Tanker Structures, 1997

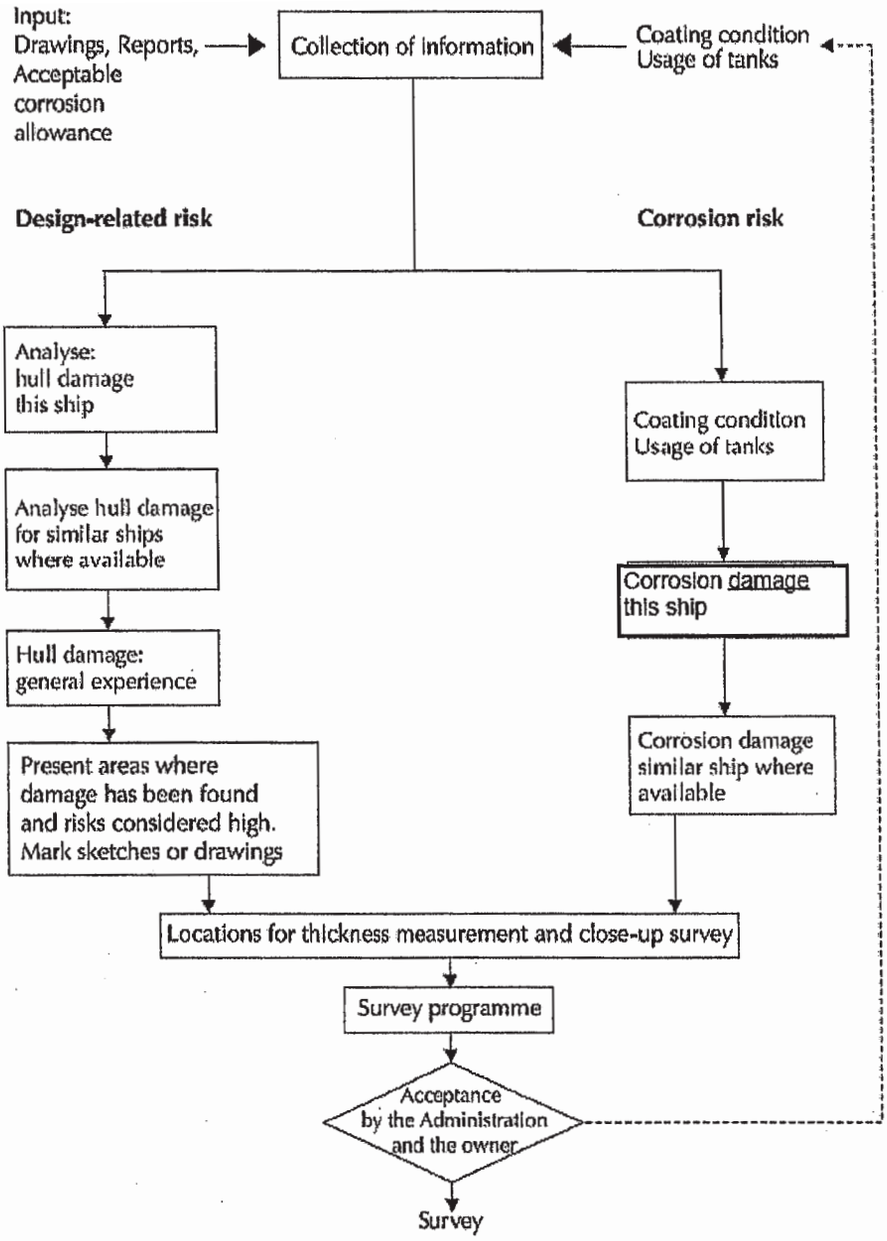


Figure 1 – Technical assessment and the survey planning process

ANNEX 10

REQUIREMENTS FOR EXTENT OF THICKNESS MEASUREMENTS AT THOSE AREAS OF SUBSTANTIAL CORROSION OF BULK CARRIERS WITH DOUBLE-SIDE SKIN CONSTRUCTION WITHIN THE CARGO LENGTH AREA

Table 1 – Bottom, inner bottom and hopper structure

Structural member	Extent of measurement	Pattern of measurement
Bottom, inner bottom and hopper structure plating	Minimum of three bays across double-bottom tank, including aft bay Measurements around and under all suction bell mouths	Five-point pattern for each panel between longitudinals and floors
Bottom, inner bottom and hopper structure longitudinals	Minimum of three longitudinals in each bay where bottom plating measured	Three measurements in line across flange and three measurements on the vertical web
Bottom girders, including the watertight ones	At fore and aft watertight floors and in centre of tanks	Vertical line of single measurements on girder plating with one measurement between each panel stiffener, or a minimum of three measurements
Bottom floors, including the watertight ones	Three floors in the bays where bottom plating measured, with measurements at both ends and middle	Five-point pattern over 2 m^2 area
Hopper structure web frame ring	Three floors in bays where bottom plating measured	Five-point pattern over 1 m^2 of plating Single measurements on flange
Hopper structure transverse watertight bulkhead or swash bulkhead	– lower ⅓ of bulkhead	five-point pattern over 1 m^2 of plating
	– upper ⅔ of bulkhead	five-point pattern over 2 m^2 of plating
	– stiffeners (minimum of three)	For web, five-point pattern over span (two measurements across web at each end and one at centre of span). For flange, single measurements at each end and centre of span
Panel stiffening	Where applicable	Single measurements

Table 2 – Deck structure including cross strips, main cargo hatchways, hatch covers, coamings and topside tanks

Structural member	Extent of measurement	Pattern of measurement
Cross deck strip plating	Suspect cross deck strip plating	Five-point pattern between under deck stiffeners over 1 m length
Under deck stiffeners	Transverse members Longitudinal member	Five-point pattern at each end and mid span Five-point pattern on both web and flange
Hatch covers	Side and end skirts, each three locations Three longitudinal bands, outboard strakes (2) and centerline strake (1)	Five-point pattern at each location Five-point measurement each band
Hatch coamings	Each side and end of coaming, one band lower ⅓, one band upper ⅔ of coaming	Five-point measurement each band, i.e. end or side coaming
Topside ballast tanks	a) watertight transverse bulkheads: – Lower ⅓ of bulkhead – Upper ⅔ of bulkhead – Stiffeners	Five-point pattern over 1 m^2 of plating Five-point pattern over 1 m^2 of plating Five-point pattern over 1 m length
Topside ballast tanks	b) two representative swash transverse bulkheads: – Lower ⅓ of bulkhead – Upper ⅔ of bulkhead – Stiffeners	Five-point pattern over 1 m^2 of plating Five-point pattern over 1 m^2 of plating Five-point pattern over 1 m length
Topside ballast tanks	c) three representative bays of slope plating: – Lower ⅓ of tank – Upper ⅔ of tank	Five-point pattern over 1 m^2 of plating Five point pattern over 1 m^2 of plating

Structural member	Extent of measurement	Pattern of measurement
Topside ballast tanks	d) Longitudinals, suspect and adjacent	Five point pattern on both web and flange over 1 m length
Main deck plating	Suspect plates and adjacent (4)	Five-point pattern over 1 m^2 of plating
Main deck longitudinals	Suspect plates	Five point pattern on both web and flange over 1 m length
Web frames/ transverses	Suspect plates	Five-point pattern over 1 m^2 of plating

Table 3 – Structure in double-side spaces of double-side skin bulk carriers including wing void spaces of ore carriers

Structural member	Extent of measurement	Pattern of measurement
Side shell and inner plating: – Upper strake and strakes in way of horizontal girders – All other strakes	– Plating between each pair of transverse frames/longitudinals in a minimum of three bays (along the tank) – Plating between every third pair of longitudinals in same three bays	– Single measurement – Single measurement
Side shell and inner side transverse frames/ longitudinals on: – upper strake – all other strakes	– Each transverse frame/ longitudinal in same three bays – Every third transverse frame/longitudinal in same three bays	– Three measurements across web and one measurement on flange – Three measurements across web and one measurement on flange
Transverse frames/ longitudinals: – brackets	Minimum of three at top, middle and bottom of tank in same three bays	Five-point pattern over area of bracket
Vertical web and transverse bulkheads: – strakes in a way of horizontal girders – other strakes	– Minimum of two webs and both transverse bulkheads – Minimum of two webs and both transverse bulkheads	– Five-point pattern over approximately 2 m^2 area – Two measurements between each pair of vertical stiffeners
Horizontal girders	Plating on each girder in a minimum of three bays	Two measurements between each pair of longitudinal girder stiffeners
Panel stiffening	Where applicable	Single measurements

Table 4 – Transverse bulkheads in cargo holds

Structural member	Extent of measurement	Pattern of measurement
Lower stool, where fitted	– Transverse band within 25 mm of welded connection to inner bottom – Transverse bands within 25 mm of welded connection to shelf plate	– Five-point pattern between stiffeners over 1 m length – Five-point pattern between stiffeners over 1 m length
Transverse bulkheads	– Transverse band at approximately mid height – Transverse band at part of bulkhead adjacent to upper deck or below upper stool shelf plate (for those ships fitted with upper stools)	– Five-point pattern over 1 m^2 of plating – Five-point pattern over 1 m^2 of plating

ANNEX 11

STRENGTH OF CARGO HATCH COVER SECURING ARRANGEMENTS FOR BULK CARRIERS

1 Securing devices

The strength of securing devices should comply with the following requirements:

.1 Panel hatch covers should be secured by appropriate devices (bolts, wedges or similar) suitably spaced alongside the coamings and between cover elements. Arrangement and spacing should be determined with due attention to the effectiveness for weathertightness, depending upon the type and the size of the hatch cover, as well as on the stiffness of the cover edges between the securing devices.

.2 The net sectional area of each securing device should not be less than:

$A = 1.4\ a/f\ (cm^2)$

where:

a = spacing between securing devices not to be taken less than 2 m
f = $(\sigma_Y / 235)^e$
σ_Y = specified minimum upper yield stress in N/mm² of the steel used for fabrication, not to be taken greater than 70% of the ultimate tensile strength
e = 0.75 for $\sigma_Y > 235$
= 1.0 for $\sigma_Y \leq 235$

Rods or bolts should have a net diameter not less than 19 mm for hatchways exceeding 5 m² in area.

.3 Between cover and coaming and at cross-joints, a packing line pressure sufficient to obtain weathertightness should be maintained by the securing devices. For packing line pressures exceeding 5 N/mm, the cross section area should be increased in direct proportion. The packing line pressure should be specified.

.4 The cover edge stiffness should be sufficient to maintain adequate sealing pressure between securing devices. The moment of inertia, I, of edge elements should not be less than:

$I = 6\ p\ a^4\ (cm^4)$

where:

p = packing line pressure in N/mm, minimum 5 N/mm
a = spacing in metres of securing devices.

.5 Securing devices should be of reliable construction and securely attached to the hatchway coamings, decks or covers. Individual securing devices on each cover should have approximately the same stiffness characteristics.

.6 Where rod cleats are fitted, resilient washers or cushions should be incorporated.

.7 Where hydraulic cleating is adopted, a positive means should be provided to ensure that it remains mechanically locked in the closed position in the event of failure of the hydraulic system.

2 Stoppers

2.1 Nos. 1 and 2 hatch covers should be effectively secured, by means of stoppers, against the transverse forces arising from a pressure of 175 kN/m^2.

2.2 No.2 hatch covers should be effectively secured, by means of stoppers, against the longitudinal forces acting on the forward end arising from a pressure of 175 kN/m^2.

2.3 No.1 hatch cover should be effectively secured, by means of stoppers, against the longitudinal forces acting on the forward end arising from a pressure of 230 kN/m^2. This pressure may be reduced to 175 kN/m^2 if a forecastle is fitted.

2.4 The equivalent stress in stoppers and their supporting structures and calculated in the throat of the stopper welds is not to exceed the allowable value of 0.8 σ_Y.

3 Materials and welding

Where stoppers or securing devices are fitted to comply with this annex, they should be manufactured of materials, including welding electrodes, to the satisfaction of the Administration.

ANNEX 12

PROCEDURAL REQUIREMENTS FOR THICKNESS MEASUREMENTS

1 General

Thickness measurements required in the context of hull structural surveys, if not carried out by the society itself should be witnessed by a surveyor. The attendance of the surveyor should be recorded. This also applies to thickness measurements taken during voyages.

2 Survey meeting

2.1 Prior to commencement of the renewal or intermediate survey, a meeting should be held between the attending surveyor(s), the owner's representative(s) in attendance and the thickness measurement firm's representative(s) so as to ensure the safe and efficient execution of the surveys and thickness measurements to be carried out on board.

2.2 Communication with the thickness measurement operator(s) and owner's representative(s) should be agreed during the meeting, with respect to the following:

.1 reporting of thickness measurements on a regular basis;

.2 prompt notification to the surveyor in case of findings such as:

.1 excessive and/or extensive corrosion or pitting/grooving of any significance;

.2 structural defects like buckling, fractures and deformed structures;

.3 detached and/or holed structure; and

.4 corrosion of welds.

2.3 The survey report should indicate where and when the meeting took place and who attended (the name of the surveyor(s), the owner's representative(s) and the thickness measurement firm's representative(s)).

3 Monitoring of the thickness measurement process on board

3.1 The surveyor should decide final extent and location of thickness measurements after overall survey of representative spaces on board.

3.2 In case the owner prefers to commence the thickness measurements prior to the overall survey, then the surveyor should advise that the planned extent and locations of thickness measurements are subject to confirmation during the overall survey. Based on findings, the surveyor may require additional thickness measurements to be taken.

3.3 The surveyor should direct the gauging operation by selecting locations such that readings taken represent, on average, the condition of the structure for that area.

3.4 Thickness measurements taken mainly to evaluate the extent of corrosion, which may affect the hull girder strength, should be carried out in a systematic manner such that all longitudinal structural members are gauged, as required.

3.5 Where thickness measurements indicate substantial corrosion or wastage in excess of allowable diminution, the surveyor should direct locations for additional thickness measurements in order to delineate areas of substantial corrosion and to identify structural members for repairs/renewals.

3.6 Thickness measurements of structures in areas where close-up surveys are required should be carried out simultaneously with close-up survey.

4 Review and verification

4.1 Upon completion of the thickness measurements, the surveyor should confirm that no further gaugings are needed, or specify additional gaugings.

4.2 Where these guidelines allow the extent of thickness measurements to be reduced after special considerations by the surveyor, these special considerations should be reported, where appropriate.

4.3 In case thickness measurements are partly carried out, the extent of remaining thickness measurements should be reported for the use of the next surveyor.

ANNEX B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF DOUBLE-HULL OIL TANKERS

1 General

1.1 *Application.*

1.1.1 The Code should apply to all self-propelled double-hull oil tankers of 500 gross tonnage and above.

1.1.2 The Code should apply to surveys of hull structure and piping systems in way of cargo tanks, pump-rooms, cofferdams, pipe tunnels, void spaces within the cargo area and all ballast tanks.

1.1.3 The Code contains the minimum extent of examination, thickness measurements and tank testing. The survey should be extended when substantial corrosion and/or structural defects are found and include additional close-up survey when necessary.

1.1.4 The surveys should be carried out during the surveys prescribed by regulation I/10 of the Convention.

1.2 *Definitions*

1.2.1 *Double-hull oil tanker* is a ship which is constructed primarily for the carriage of oil in bulk, which has the cargo tanks protected by a double-hull which extends for the entire length of the cargo area, consisting of double sides and double-bottom spaces for the carriage of water ballast or void spaces.

1.2.2 *Ballast tank* is a tank which is used solely for the carriage of salt water ballast.

1.2.3 *Combined cargo/ballast tank,* if referred to within the Code, is a tank which is used for the carriage of cargo or ballast water as a routine part of the vessel's operation and will be treated as a Ballast Tank. Cargo tanks in which water ballast might be carried only in exceptional cases per MARPOL regulation I/18.3 are to be treated as cargo tanks.

1.2.4 *Overall survey* is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

1.2.5 *Close-up survey* is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

1.2.6 *Transverse section* is the cross section of the hull perpendicular to the ship's centerline and includes all longitudinal members such as plating, longitudinals and girders at the deck, sides, bottom, inner bottom and longitudinal bulkheads.

1.2.7 *Representative tanks* are those which are expected to reflect the condition of other tanks of similar type and service and with similar corrosion prevention systems. When selecting representative tanks, account should be taken of the service and repair history on board and identifiable critical and/or suspect areas.

1.2.8 *Suspect areas* are locations showing substantial corrosion and/or are considered by the surveyor to be prone to rapid wastage.

1.2.9 *Substantial corrosion* is an extent of corrosion such that assessment of corrosion pattern indicates a wastage in excess of 75% of allowable margins, but within acceptable limits. For ships built under the IACS Common Structural Rules, substantial corrosion is an extent of corrosion such that the assessment of the corrosion pattern indicates a gauged (or measured) thickness between t_{net} + 0.5mm and t_{net}.

1.2.10 *Corrosion prevention system* is normally considered a full hard coating. Hard protective coating should usually be epoxy coating or equivalent. Other coating systems, which are neither soft nor semi-hard coatings, may be considered acceptable as alternatives provided that they are applied and maintained in compliance with the manufacturer's specification.

1.2.11 *Coating condition* is defined as follows:

GOOD condition with only minor spot rusting;

FAIR condition with local breakdown of coating at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition; and

POOR condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.

1.2.12 *Critical structural areas* are locations which have been identified from calculations to require monitoring or from the service history of the subject ship or from similar or sister ships to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the ship.

1.2.13 *Cargo area* is that part of the ship which contains cargo tanks, slop tanks and cargo/ballast pump-rooms, cofferdams, ballast tanks and void spaces adjacent to cargo tanks and also deck areas throughout the entire length and breadth of the part of the ship over the above mentioned spaces.

1.2.14 *Intermediate survey* is a survey carried out either at the second or the third annual survey.

1.2.15 *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 or recommendation.

1.2.16 *Specially considered* (in connection with close-up surveys and thickness measurements) means sufficient close-up inspection and thickness measurements are taken to confirm the actual average condition of the structure under coating.

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 (see 1.2.15) repaired. Areas to be considered include:

.1 bottom structure and bottom plating;

.2 side structure and side plating;

.3 deck structure and deck plating;

.4 watertight or oiltight bulkheads; and

.5 hatch covers and hatch coamings, where fitted.

For locations 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 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.

1.4 *Surveyors*

For tankers of 20,000 tons deadweight and above, two surveyors should jointly carry out the first scheduled renewal survey after the tanker passes 10 years of age (i.e. third renewal survey), and all subsequent renewal surveys and intermediate surveys. If the surveys are carried out by a recognized organization, the surveyors should be exclusively employed by such recognized organizations.

1.5 *Thickness measurements and close-up surveys*

In any kind of survey, i.e. renewal, intermediate, annual or other surveys having the scope of the foregoing ones, thickness measurements of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys.

2 Renewal survey

2.1 *General*

2.1.1 The renewal survey may be commenced at the fourth annual survey and be progressed during the succeeding year with a view to completion by the fifth anniversary date.

2.1.2 As part of the preparation for the renewal survey the survey programme should be dealt with in advance of the renewal survey. The thickness measurement should not be carried out before the fourth annual survey.

2.1.3 The survey should include, in addition to the requirements of the annual survey, examination, tests and checks of sufficient extent to ensure that the hull and related piping as required in 2.1.5 is in a satisfactory condition and is fit for its intended purpose for the new period of validity of the Cargo Ship Safety Construction Certificate, subject to proper maintenance and operation and to periodical surveys being carried out at the due dates.

2.1.4 All cargo tanks, ballast tanks, and any other tanks in double-hull spaces, pump-rooms, pipe tunnels, cofferdams and void spaces bounding cargo tanks, decks and outer hull should be examined, and this examination should be supplemented by thickness measurement and testing as required in 2.5 and 2.6, to ensure that the structural integrity remains effective. The aim of the examination is to discover substantial corrosion, significant deformation, fractures, damages or other structural deterioration that may be present.

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 any 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.

2.2 *Dry-dock survey*

2.2.1 A survey in dry-dock should be a part of the renewal survey. There should be a minimum of two inspections of the outside of the ship's bottom during the five-year period of the Safety Construction Certificate. In all cases, the maximum interval between bottom inspections should not exceed 36 months.

2.2.2 For ships of 15 years of age and over, inspection of the outside of the ship's bottom should be carried out with the ship in dry-dock. For ships of less than 15 years of age, alternate inspections of the ship's bottom not conducted in conjunction with the renewal survey may be carried out with the ship afloat. Inspection of the ship afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably qualified staff is available.

2.2.3 If a survey in dry-dock is not completed in conjunction with the renewal survey or if the 36 month maximum interval referred to in 2.2.1 is not complied with, the Cargo Ship Safety Construction Certificate should cease to be valid until a survey in dry-dock is completed.

2.2.4 The overall and close-up surveys and thickness measurements, as applicable, of the lower portions of the cargo tanks and ballast tanks should be carried out in accordance with the applicable requirements for renewal surveys, if not already performed.

Note: Lower portions of the cargo and ballast tanks are considered to be the parts below light ballast water line.

2.3 *Tank corrosion prevention system*

Where provided, the condition of the corrosion prevention system of cargo tanks should be examined. A ballast tank should be examined at subsequent annual intervals where:

.1 a hard protective coating has not been applied from the time of construction; or

.2 a soft or semi-hard coating has been applied; or

.3 substantial corrosion is found within the tank; or

.4 the hard protective coating is found to be in less than GOOD condition and the hard protective coating is not repaired to the satisfaction of the surveyor.

Thickness measurement should be carried out as deemed necessary by the surveyor.

2.4 *Extent of overall and close-up surveys*

2.4.1 An overall survey of all tanks and spaces should be carried out at the renewal survey. Suspect areas identified at previous surveys should be examined.

2.4.2 The minimum requirements for close-up surveys at the renewal survey are given in annex 1.

2.4.3 The surveyor may extend the scope of the close-up survey as deemed necessary taking into account the maintenance of the tanks under survey, the condition of the corrosion prevention system and also in the following cases:

.1 in particular, tanks having structural arrangements or details which have suffered defects in similar tanks or on similar ships according to available information; and

.2 in tanks which have structures with reduced scantlings in association with a corrosion prevention system approved by the Administration.

2.4.4 For areas in tanks where hard protective coatings are found to be in GOOD condition as defined in 1.2.11, the extent of close-up surveys according to annex 1 may be specially considered by the Administration.

2.5 *Extent of thickness measurements*

2.5.1 The minimum requirements for thickness measurements at the renewal survey are given in annex 2.

2.5.2 Provisions for extended measurements for areas with substantial corrosion are given in annex 4, and may be additionally specified in the survey programme as required in 5.1. These extended thickness measurements should be carried out before the survey is credited as completed. Suspect areas identified at previous surveys should have thickness measurements taken.

2.5.3 The surveyor may further extend the thickness measurements as deemed necessary.

2.5.4 For areas in tanks where hard protective coatings are found to be in GOOD condition as defined in 1.2.11, the extent of thickness measurements according to annex 2 may be specially considered by the Administration.

2.5.5 Transverse sections should be chosen where the largest reductions are suspected to occur or are revealed from deck plating measurements.

2.5.6 In cases where two or three sections are to be measured, at least one should include a ballast tank within 0.5*L* amidships. In case of oil tankers of 130 m in length and upwards (as defined in the International Convention on Load Lines in force) and more than 10 years of age, for the evaluation of the ship's longitudinal strength as required in 8.2, the sampling method of thickness measurements is given in annex 12.

2.6 *Extent of tank pressure testing*

2.6.1 The minimum requirements for tank pressure testing at the renewal survey are given in annex 3.

2.6.2 The surveyor may extend the tank pressure testing as deemed necessary.

2.6.3 Boundaries of ballast tanks should be tested with a head of liquid to the top of air pipes.

2.6.4 Boundaries of cargo tanks should be tested to the highest point that liquid will rise under service conditions.

2.6.5 The testing of double-bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tanktop is carried out.

3 Annual survey

3.1 *General*

The annual survey should consist of an examination for the purpose of ensuring, as far as practicable, that the hull and piping are maintained in a satisfactory condition and should take into account the service history, condition and extent of the corrosion prevention system of ballast tanks and areas identified in the survey report file.

3.2 *Examination of the hull*

3.2.1 Examination of the hull plating and its closing appliances should be carried out as far as can be seen.

3.2.2 Examination of watertight penetrations should be carried out as far as practicable.

3.3 *Examination of weather decks*

3.3.1 Examination of cargo tank openings including gaskets, covers, coamings and flame screens.

3.3.2 Examination of cargo tank pressure/vacuum valves and flame screens.

3.3.3 Examination of flame screens on vents to all bunker tanks.

3.3.4 Examination of cargo, crude oil washing, bunker and vent piping systems, including vent masts and headers.

3.4 *Examination of cargo pump-rooms and pipe tunnels if fitted*

3.4.1 Examination of all pump-room bulkheads for signs of oil leakage or fractures and, in particular, the sealing arrangements of all penetrations of pump-room bulkheads.

3.4.2 Examination of the condition of all piping systems and pipe tunnels.

3.5 *Examination of ballast tanks*

3.5.1 Examination of ballast tanks should be carried out when required as a consequence of the results of the renewal survey and intermediate survey. When considered necessary by the Administration or when extensive corrosion is found, thickness measurements should be carried out.

3.5.2 Where substantial corrosion as defined in 1.2.9 is found, the extent of thickness measurements should be increased in accordance with the requirements in annex 4. These extended thickness measurements should be carried out before the survey is credited as completed. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken.

4 Intermediate 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 should be carried out. 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.

4.1.4 Concurrent crediting to both intermediate survey and renewal survey for surveys and thickness measurements of spaces should not be acceptable.

4.2 *Oil tankers 5 to 10 years of age*

4.2.1 The requirements of 4.1.3 apply.

4.2.2.1 For tanks used for salt-water ballast, an overall survey of representative tanks selected by the surveyor should be carried out. If the overall survey of salt water ballast tanks reveals no visible structural defects, the examination may be limited to verification that the protective coatings remain in GOOD condition.

4.2.3 A ballast tank should be examined at subsequent annual intervals where:

.1 a hard protective coating has not been applied from the time of construction; or

.2 a soft or semi-hard coating has been applied; or

.3 substantial corrosion is found within the tank; or

.4 the hard protective coating is found to be in less than GOOD condition and the hard protective coating is not repaired to the satisfaction of the surveyor.

4.3 *Oil tankers 10 to 15 years of age*

4.3.1 The requirements of the intermediate survey should be to the same extent as the previous renewal survey as required in 2 and 5.1. However, pressure testing of cargo and ballast tanks and the requirements for longitudinal strength evaluation of hull girder as required in 8.1.2 are not required unless deemed necessary by the Administration.

4.3.2 In application of 4.3.1, the intermediate 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 application of 2.1.1.

4.3.3 In application of 4.3.1., an underwater survey may be considered in lieu of the requirements of 2.2.

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 renewal survey as required in 2 and 5.1. However, pressure testing of cargo and ballast tanks and the requirements for longitudinal strength evaluation of hull girder as required in 8.1.2 are not required unless deemed necessary by the Administration.

4.4.2 In application of 4.4.1, the intermediate 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.

4.4.3 In application of 4.4.1, a survey in dry-dock should be part of the intermediate survey. The overall and close-up surveys and thickness measurements, as applicable, of the lower portions of the cargo tanks and water ballast tanks should be carried out in accordance with the applicable requirements for intermediate surveys, if not already carried out.

Note: Lower portions of the cargo and ballast tanks are considered to be the parts below light ballast water line.

5 Preparations for survey

5.1 *Survey programme*

5.1.1 The owner in cooperation with the Administration or organization recognized by the Administration should work out a specific survey programme prior to the commencement of any part of:

.1 the renewal survey; and

.2 the intermediate survey for oil tanker over 10 years of age.

The survey programme at intermediate survey may consist of the survey programme at the previous renewal survey supplemented by the condition evaluation report of that renewal survey and later relevant survey reports. The survey programme should be worked out taking into account any amendments to the survey requirements implemented after the last renewal survey carried out. The survey programme should be in a written format based on the information in annex 6A. The survey should not commence until the survey programme has been agreed.

5.1.1.1 Prior to the development of the survey programme, the survey planning questionnaire should be completed by the owner, based on the information set out in annex 6B, and forwarded to the Administration.

5.1.2 In developing the survey programme, the following documentation should be collected and consulted with a view to selecting tanks, areas, and structural elements to be examined:

.1 survey status and basic ship information;

.2 documentation on board, as described in 6.2 and 6.3;

.3 main structural plans of cargo and ballast tanks (scantlings drawings), including information regarding use of high-tensile steels (HTS);

.4 Condition Evaluation Report, according to annex 9;

.5 relevant previous damage and repair history;

.6 relevant previous survey and inspection reports from both the recognized organization and the owner;

.7 cargo and ballast history for the last three years, including carriage of cargo under heated conditions;

.8 details of the inert gas plant and tank cleaning procedures;

.9 information and other relevant data regarding conversion or modification of the ship's cargo and ballast tanks since the time of construction;

.10 description and history of the coating and corrosion protection system (including anodes and previous class notations), if any;

.11 inspections of the owner's personnel during the last three years with reference to structural deterioration in general, leakages in tank boundaries and piping and condition of the coating and corrosion protection system (including anodes) if any. Guidance for reporting is shown in annex 5;

.12 information regarding the relevant maintenance level during operation including port State control reports of inspection containing hull related deficiencies, safety management system non-conformities relating to hull maintenance, including the associated corrective action(s); and

.13 any other information that will help identify suspect areas and critical structural areas.

5.1.3 The submitted survey programme should account for and comply, as a minimum, with the requirements of 2.6 and annexes 1, 2 and 3 for close-up survey, thickness measurement and tank testing, respectively, and should include relevant information including at least:

.1 basic ship information and particulars;

.2 main structural plans of cargo and ballast tanks (scantling drawings), including information regarding use of high tensile steels (HTS);

.3 plan of tanks;

.4 list of tanks with information on their use, corrosion prevention system and condition of coating;

.5 conditions for survey (e.g. information regarding tank cleaning, gas freeing, ventilation, lighting, etc.);

.6 provisions and methods for access to structures;

.7 equipment for surveys;

.8 identification of tanks and areas for close-up survey (see 2.4);

.9 identification of areas and sections for thickness measurement (see 2.5);

.10 identification of tanks for tank testing (see 2.6);

.11 identification of the thickness measurement company;

.12 damage experience related to the ship in question; and

.13 critical structural areas and suspect areas, where relevant.

5.1.4 The Administration will advise the owner of the maximum acceptable structural corrosion diminution levels applicable to the ship.

5.1.5 Use may also be made of the Guidelines for technical assessment in conjunction with the planning of enhanced surveys for tankers, contained in annex 11. These Guidelines are a recommended tool which may be invoked at the discretion of the Administration, when considered necessary and appropriate, in conjunction with the preparation of the required survey programme.

5.2 *Conditions for survey*

5.2.1 The owner should provide the necessary facilities for a safe execution of the survey.

5.2.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access should be agreed between the owner and the Administration.

5.2.1.2 Details of the means of access should be provided in the survey planning questionnaire.

5.2.1.3 In cases where the provisions of safety and required access are judged by the attending surveyors not to be adequate, the survey of the spaces involved should not proceed.

5.2.2 Tanks and spaces should be safe for access. Tanks and spaces should be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it should be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen.

5.2.3 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces should be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces should be sufficiently clean and free from water, scale, dirt, oil residues, etc., to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

5.2.4 Sufficient illumination should be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

5.2.5 Where soft or semi-hard coatings have been applied, safe access should be provided for the surveyor to verify the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating should be removed.

5.2.6 The surveyor(s) should always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed spaces inspection. In addition a backup team of at least two experienced persons should be stationed at the hatch opening of the tank or space that is being surveyed. The back-up team should continuously observe the work in the tank or space and should keep lifesaving and evacuation equipment ready for use.

5.2.7 A communication system should be arranged between the survey party in the tank or space being examined, the responsible officer on deck and, as the case may be, the navigation bridge. The communication arrangements should be maintained throughout the survey.

5.3 *Access to structures*

5.3.1 For overall surveys, means should be provided to enable the surveyor to examine the structure in a safe and practical way.

5.3.2 For close-up surveys, one or more of the following means for access, acceptable to the surveyor, should be provided:

.1 permanent staging and passages through structures;

.2 temporary staging and passages through structures;

.3 lifts and moveable platforms;

.4 boats or rafts;

.5 portable ladders; and

.6 other equivalent means.

5.4 *Equipment for survey*

5.4.1 Thickness measurement should normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment should be proven to the surveyor as required.

5.4.2 One or more of the following fracture detection procedures may be required if deemed necessary by the surveyor:

.1 radiographic equipment;

.2 ultrasonic equipment;

.3 magnetic particle equipment;

.4 dye penetrant; and

.5 other equivalent means.

5.4.3 Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use should be made available during the survey. A safety checklist should be provided.

5.4.4 Adequate and safe lighting should be provided for the safe and efficient conduct of the survey.

5.4.5 Adequate protective clothing should be made available and used during the survey (e.g. safety helmet, gloves, safety shoes, etc.).

5.5 *Surveys at sea or at anchorage*

5.5.1 Surveys at sea or at anchorage may be accepted provided the surveyor(s) is given the necessary assistance from the personnel on board. Necessary precautions and procedures for carrying out the survey should be in accordance with 5.1, 5.2, 5.3 and 5.4.

5.5.2 A communication system should be arranged between the survey party in the tank and the responsible officer on deck. This system should also include the personnel in charge of ballast pump handling if boats or rafts are used.

5.5.3 Surveys of tanks by means of boats or rafts may only be undertaken with the agreement of the surveyor, who should take into account the safety arrangements provided, including weather forecasting and ship response under foreseeable conditions and provided the expected rise of water within the tank does not exceed 0.25 m.

5.5.4 When rafts or boats are used for close-up surveys, the following conditions should be observed:

.1 only rough duty, inflatable rafts or boats, having satisfactory residual buoyancy and stability even if one chamber is ruptured, should be used;

.2 the boat or raft should be tethered to the access ladder and an additional person should be stationed down the access ladder with a clear view of the boat or raft;

.3 appropriate lifejackets should be available for all participants;

.4 the surface of water in the tank should be calm (under all foreseeable conditions the expected rise of water within the tank should not exceed 0.25 m) and the water level stationary. On no account should the level of the water be rising while the boat or raft is in use;

.5 the tank or space must contain clean ballast water only. Even a thin sheen of oil on the water is not acceptable;

.6 at no time should the water level be allowed to be within 1 m of the deepest under-deck web face flat so that the survey team is not isolated from a direct escape route to the tank hatch. Filling to levels above the deck transverses should only be contemplated if a deck access manhole is fitted and open in the bay being examined, so that an escape route for the survey party is available at all times. Other effective means of escape to the deck may be considered; and

.7 if the tanks (or spaces) are connected by a common venting system, or inert gas system, the tank in which the boat or raft should be used should be isolated to prevent a transfer of gas from other tanks (or spaces).

5.5.5 Rafts or boats alone may be allowed for inspection of the under deck areas of tanks or spaces if the depth of the webs is 1.5 m or less.

5.5.6 If the depth of the webs is more than 1.5 m, rafts or boats alone may be allowed only:

.1 when the coating of the under-deck structure is in GOOD condition and there is no evidence of wastage; or

.2 if a permanent means of access is provided in each bay to allow safe entry and exit. This means:

.1 access direct from the deck via a vertical ladder with a small platform fitted approximately 2 m below the deck in each bay; or

.2 access to deck from a longitudinal permanent platform having ladders to deck in each end of the tank. The platform should, for the full length of the tank, be arranged in level with, or above, the maximum water level needed for rafting of under deck structure. For this purpose, the ullage corresponding to the maximum water level should be assumed not more than 3 m from the deck plate measured at the midspan of deck transverses and in the middle length of the tank (see figure 1).

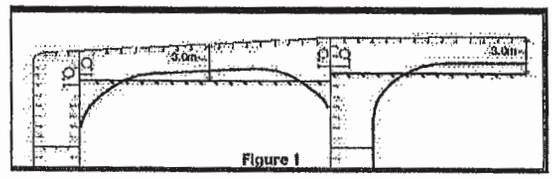


Figure 1

If neither of the above conditions are met, then staging or other equivalent means should be provided for the survey of the under-deck areas.

5.5.7 The use of rafts or boats alone in 5.5.5 and 5.5.6 does not preclude the use of boats or rafts to move about within a tank during a survey.

5.6 *Survey planning meeting*

5.6.1 Proper preparation and close cooperation between the attending surveyor(s) and the owner's representatives on board prior to and during the survey are an essential part in the safe and efficient conduct of the survey. During the survey on board safety meetings should be held regularly.

5.6.2 Prior to commencement of any part of the renewal and intermediate survey, a survey planning meeting should be held between the attending surveyor(s), the owner's representative in attendance, the thickness measurement company operator (as applicable) and the master of the ship or an appropriately qualified representative nominated by the master or company for the purpose of ascertaining that all the arrangements envisaged in the survey programme are in place, so as to ensure the safe and efficient conduct of the survey work to be carried out.

5.6.3 The following is an indicative list of items that should be addressed in the meeting:

.1 schedule of the vessel (i.e. the voyage, docking and undocking manoeuvres, periods alongside, cargo and ballast operations, etc.);

.2 provisions and arrangements for thickness measurements (i.e. access, cleaning/descaling, illumination, ventilation, personal safety);

.3 extent of the thickness measurements;

.4 acceptance criteria (refer to the list of minimum thicknesses);

.5 extent of close-up survey and thickness measurement considering the coating condition and suspect areas/areas of substantial corrosion;

.6 execution of thickness measurements;

.7 taking representative readings in general and where uneven corrosion/pitting is found;

.8 mapping of areas of substantial corrosion; and

.9 communication between attending surveyor(s) the thickness measurement company operator(s) and owner representative(s) concerning findings.

6 Documentation on board

6.1 *General*

6.1.1 The owner should obtain, supply and maintain on board the ship, documentation as specified in 6.2 and 6.3 which should be readily available for the surveyor. The condition evaluation report referred to in 6.2 should include a translation into English.

6.1.2 The documentation should be kept on board for the lifetime of the ship.

6.2 *Survey report file*

6.2.1 A survey report file should be a part of the documentation on board consisting of:

.1 reports of structural surveys (annex 8);

.2 condition evaluation report (annex 9); and

.3 thickness measurement reports (annex 10).

6.2.2 The survey report file should be available also in the owner's and the Administration's offices, or in the office of the organization recognized by the Administration.

6.3 *Supporting documents*

The following additional documentation should be available on board:

.1 survey programme as required by 5.1 until such time as the renewal survey or intermediate survey, as applicable, has been completed;

.2 main structural plans of cargo and ballast tanks;

.3 previous repair history;

.4 cargo and ballast history;

.5 extent of use of inert gas plant an tank cleaning procedures;

.6 inspections by ship's personnel with reference to:

.1 structural deterioration in general;

.2 leakage in bulkheads and piping; and

.3 condition of coating or corrosion prevention system, if any; and

.7 any other information that would help to identify critical structural areas and/or suspect areas requiring inspection.

6.4 *Review of documentation on board*

Prior to survey, the surveyor should examine the completeness of the documentation on board and its contents as a basis for the survey.

7 Procedures for thickness measurements

7.1 *General*

7.1.1 The required thickness measurements, if not carried out by the recognized organization acting on behalf of the Administration, should be witnessed by a surveyor of the recognized 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 Thickness measurements of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys.

7.1.4 In all cases the extent of the thickness measurements should be sufficient as to represent the actual average condition.

7.2 *Certification of thickness measurement company*

The thickness measurements should be carried out by a qualified company certified by an organization recognized by the Administration according to principles stated in annex 7.

7.3 *Reporting*

7.3.1 A thickness measurement report should be prepared and submitted to the Administration. The report should give the location of measurements, the thickness measured as well as corresponding original thickness. Furthermore, the report should give the date when the measurements were carried out, type of measuring equipment, names of personnel and their qualifications and be signed by the operator. The thickness measurement report should follow the principles as specified in the recommended procedures for thickness measurements set out in annex 10.

7.3.2 The surveyor should review the final thickness measurement report and countersign the cover page.

8 Reporting and evaluation of survey

8.1 *Evaluation of survey report*

8.1.1 The data and information on the structural condition of the ship collected during the survey should be evaluated for acceptability and continued structural integrity of the ship.

8.1.2 In case of oil tankers of 130 m in length and upwards (as defined in the International Convention on Load Lines in force), the ship's longitudinal strength should be evaluated by using the thickness of structural members measured, renewed and reinforced, as appropriate, during the renewal survey of safety construction carried out after the ship reached 10 years of age, in accordance with the criteria for longitudinal strength of the ship's hull girder for oil tankers specified in annex 12.

8.1.3 The analysis of data should be carried out and endorsed by the Administration or recognized organization authorized by the Administration and the conclusions of the analysis should form a part of the condition evaluation report.

8.1.4 The final result of the evaluation of the ship's longitudinal strength required in 8.1.2, after renewal or reinforcement work of structural members, if carried out as a result of initial evaluation, should be reported as a part of the condition evaluation report.

8.2 *Reporting*

8.2.1 Principles for survey reporting are shown in annex 8.

8.2.2 When a survey is split between different survey stations, a report should be made for each portion of the survey. A list of items examined and/or tested (pressure testing, thickness measurements, etc.) and an indication of whether the item has been credited, should be made available to the next attending surveyor(s), prior to continuing or completing the survey.

8.2.3 A condition evaluation report of the survey and results should be issued to the owner as shown in annex 9 and placed on board the ship for reference at future surveys. The condition evaluation report should be endorsed by the Administration or recognized organization authorized by the Administration.

ANNEX 1

MINIMUM REQUIREMENTS FOR CLOSE-UP SURVEY AT RENEWAL SURVEY OF DOUBLE-HULL OIL TANKERS

<table>
<tr><th>Age ≤ 5 years</th><th>5 < Age ≤ 10 years</th><th>10 < Age ≤ 15 years</th><th>Age > 15 years</th></tr>
<tr><th>Renewal Survey No.
1</th><th>Renewal Survey No.
2</th><th>Renewal Survey No.
3</th><th>Renewal Survey No.
4 and subsequent</th></tr>
<tr><td>One web frame (1), in a complete ballast tank (see Note 1)</td><td>All web frames (1), in a complete ballast tank (see Note 1)
The knuckle area and the upper part (5 m approximately) of one web frame in each remaining ballast tank (6)</td><td>All web frames (1), in all ballast tanks</td><td rowspan="4">As for ships referred to in column 3
Additional transverse areas as deemed necessary by the Administration</td></tr>
<tr><td>One deck transverse, in a cargo oil tank (2)</td><td>One deck transverse, in two cargo oil tanks (2)</td><td rowspan="3">All web frames (7), including deck transverse and cross ties, if fitted, in a cargo oil tank
One web frame (7), including deck transverse and cross ties, if fitted, in each remaining cargo oil tank
All transverse bulkheads, in all cargo oil (3) and ballast (4) tanks</td></tr>
<tr><td>One transverse bulkhead (4), in a complete ballast tank (see Note 1)</td><td>One transverse bulkhead (4), in each complete ballast tank (see Note 1)</td></tr>
<tr><td>One transverse bulkhead (5) in a cargo oil centre tank
One transverse bulkhead (5), in a cargo oil wing tank (see Note 2)</td><td>One transverse bulkhead (5), in two cargo oil centre tanks
One transverse bulkhead (5), in a cargo oil wing tank (see Note 2)</td></tr>
</table>

Notes:

(1), (2), (3), (4), (5), (6) and (7) are areas to be subjected to close-up surveys and thickness measurements (see appendix 3 of annex 10).

(1) Web frame in a ballast tank means vertical web in side tank, hopper web in hopper tank, floor in double-bottom tank and deck transverse in double-deck tank (where fitted), including adjacent structural members. In fore and aft peak tanks web frame means a complete transverse web frame ring including adjacent structural members.

(2) Deck transverse, including adjacent deck structural members (or external structure on deck in way of the tank, where applicable).

(3) Transverse bulkhead complete in cargo tanks, including girder system, adjacent structural members (such as longitudinal bulkheads) and internal structure of lower and upper stools, where fitted.

(4) Transverse bulkhead complete in ballast tanks, including girder system and adjacent structural members, such as longitudinal bulkheads, girders in double-bottom tanks, inner bottom plating, hopper side, connecting brackets.

(5) Transverse bulkhead lower part in cargo tank, including girder system, adjacent structural members (such as longitudinal bulkheads) and internal structure of lower stool, where fitted.

(6) The knuckle area and the upper part (5 m approximately), including adjacent structural members. Knuckle area is the area of the web frame around the connections of the slope hopper plating to the inner hull bulkhead and the inner bottom plating, up to 2 m from the corners both on the bulkhead and the double bottom.

(7) Web frame in a cargo oil tank means deck transverse, longitudinal bulkhead vertical girder and cross ties, where fitted, including adjacent structural members.

Note 1: Complete ballast tank: means double-bottom tank plus double-side tank plus double-deck tank, as applicable, even if these tanks are separate.

Note 2: Where no centre cargo tanks are fitted (as in the case of centre longitudinal bulkhead), transverse bulkheads in wing tanks should be surveyed.

ANNEX 2

MINIMUM REQUIREMENTS FOR THICKNESS MEASUREMENTS AT RENEWAL SURVEY OF DOUBLE-HULL OIL TANKERS

Age ≤ 5 years	5 < Age ≤ 10 years	10 < Age ≤ 15 years	Age > 15 years
1	2	3	4
One section of deck plating for the full beam of the ship within the cargo area	Within the cargo area: - each deck plate - one transverse section	Within the cargo area: - each deck plate - two transverse sections (1) - all wind and water strakes	Within the cargo area: - each deck plate - three transverse sections (1) - each bottom plate
	Selected wind and water strakes outside the cargo area	Selected wind and water strakes outside the cargo area	All wind and water strakes in full length
Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to annex 1	Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to annex 1	Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to annex 1	Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to annex 1
Suspect areas	Suspect areas	Suspect areas	Suspect areas
(1): at least one section should be within 0.5*L* amidships.			

ANNEX 3

MINIMUM REQUIREMENTS FOR TANK TESTING AT RENEWAL SURVEY OF DOUBLE-HULL OIL TANKERS

Age ≤ 5 years	Age > 5 years	Age > 10 years
1	2	3
All ballast tank boundaries	All ballast tank boundaries	All ballast tank boundaries
Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, representative fuel oil tanks, pump-rooms or cofferdams	Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, representative fuel oil tanks, pump-rooms or cofferdams	Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, representative fuel oil tanks, pump-rooms or cofferdams
	All cargo tank bulkheads which form the boundaries of segregated cargoes	All remaining cargo tank bulkheads

ANNEX 4/SHEET 1

REQUIREMENTS FOR EXTENT OF THICKNESS MEASUREMENTS AT AREAS OF SUBSTANTIAL CORROSION OF DOUBLE-HULL OIL TANKERS

Renewal survey of double-hull oil tankers

Bottom, inner bottom and hopper structure		
Structural member	**Extent of measurement**	**Pattern of measurement**
Bottom, inner bottom and hopper structure plating	Minimum of three bays across double-bottom tank, including aft bay Measurements around and under all suction bell mouths	Five-point pattern for each panel between longitudinals and floors
Bottom, inner bottom and hopper structure longitudinals	Minimum of three longitudinals in each bay where bottom plating measured	Three measurements in line across flange and three measurements on vertical web
Bottom girders, including the watertight ones	At fore and aft watertight floors and in centre of tanks	Vertical line of single measurements on girder plating with one measurement between each panel stiffener, or a minimum of three measurements
Bottom floors, including the watertight ones	Three floors in bays where bottom plating measured, with measurements at both ends and middle	Five-point pattern over 2 m^2 area
Hopper structure web frame ring	Three floors in bays where bottom plating measured	Five-point pattern over 1 m^2 of plating. Single measurements on flange
Hopper structure transverse watertight bulkhead or swash bulkhead	- lower ⅓ of bulkhead	Five-point pattern over 1 m^2 of plating
	- upper ⅔ of bulkhead	Five-point pattern over 2 m^2 of plating
	- stiffeners (minimum of three)	For web, five-point pattern over span (two measurements across web at each end and one at centre of span). For flange, single measurements at each end and centre of span
Panel stiffening	Where applicable	Single measurements

ANNEX 4/SHEET 2

REQUIREMENTS FOR EXTENT OF THICKNESS MEASUREMENTS AT AREAS OF SUBSTANTIAL CORROSION OF DOUBLE-HULL OIL TANKERS

Renewal survey of double-hull oil tankers within the cargo area length

Deck structure		
Structural member	**Extent of measurement**	**Pattern of measurement**
Deck plating	Two transverse bands across tank	Minimum of three measurements per plate per band
Deck longitudinals	Every third longitudinal in each of two bands with a minimum of one longitudinal	Three measurements in line vertically on webs and two measurements on flange (if fitted)
Deck girders and brackets (usually in cargo tanks only)	At fore and aft transverse bulkhead, bracket toes and in centre of tanks	Vertical line of single measurements on web plating with one measurement between each panel stiffener, or a minimum of three measurements. Two measurements across flange. Five-point pattern on girder/bulkhead brackets
Deck transverse webs	Minimum of two webs, with measurements at both ends and middle of span	Five-point pattern over 1 m^2 area. Single measurements on flange
Vertical web and transverse bulkhead in wing ballast tank (2 m from deck)	Minimum of two webs, and both transverse bulkheads	Five-point pattern over 1 m^2 area
Panel stiffening	Where applicable	Single measurements

ANNEX 4/SHEET 3

REQUIREMENTS FOR EXTENT OF THICKNESS MEASUREMENTS AT AREAS OF SUBSTANTIAL CORROSION OF DOUBLE-HULL OIL TANKERS

Renewal survey of double-hull oil tankers within the cargo area length

Structure in wing ballast tanks		
Structural member	**Extent of measurement**	**Pattern of measurement**
Side shell and longitudinal bulkhead plating: - upper strake and strakes in way of horizontal girders - all other strakes	Plating between each pair of longitudinals in a minimum of three bays (along the tank) Plating between every third pair of longitudinals in same three bays	Single measurement Single measurement
Side shell and longitudinal bulkhead longitudinals on: - upper strake - all other strakes	Each longitudinal in same three bays Every third longitudinal in same three bays	Three measurements across web and one measurement on flange Three measurements across web and one measurement on flange
Longitudinals brackets	Minimum of three at top, middle and bottom of tank in same three bays	Five-point pattern over area of bracket
Vertical web and transverse bulkheads (excluding deckhead area): - strakes in way of horizontal girders - other strakes	Minimum of two webs and both transverse bulkheads Minimum of two webs and both transverse bulkheads	Five-point pattern over approximately 2 m^2 area Two measurements between each pair of vertical stiffeners
Horizontal girders	Plating on each girder in a minimum of three bays	Two measurements between each pair of longitudinal girder stiffeners
Panel stiffening	Where applicable	Single measurements

ANNEX 4/SHEET 4

REQUIREMENTS FOR EXTENT OF THICKNESS MEASUREMENTS AT AREAS OF SUBSTANTIAL CORROSION OF DOUBLE-HULL OIL TANKERS

Renewal survey of double-hull oil tankers within the cargo area length

Longitudinal bulkheads in cargo tanks		
Structural member	**Extent of measurement**	**Pattern of measurement**
Deckhead and bottom strakes, and strakes in way of the horizontal stringers of transverse bulkheads	Plating between each pair of longitudinals in a minimum of three bays	Single measurement
All other strakes	Plating between every third pair of longitudinals in same three bays	Single measurement
Longitudinals on deckhead and bottom strakes	Each longitudinal in same three bays	Three measurements across web and one measurement on flange
All other longitudinals	Every third longitudinal in same three bays	Three measurements across web and one measurement on flange
Longitudinals brackets	Minimum of three at top, middle and bottom of tank in same three bays	Five-point pattern over area of bracket
Web frames and cross ties	Three webs with minimum of three locations on each web, including in way of cross tie connections	Five-point pattern over approximately 2 m^2 area of webs, plus single measurements on flanges of web frame and cross ties
Lower end brackets (opposite side of web frame)	Minimum of three brackets	Five-point pattern over approximately 2 m^2 area of brackets, plus single measurements on bracket flanges

ANNEX 4/SHEET 5

REQUIREMENTS FOR EXTENT OF THICKNESS MEASUREMENTS AT AREAS OF SUBSTANTIAL CORROSION OF DOUBLE-HULL OIL TANKERS

Renewal survey of double-hull oil tankers within the cargo area length

Transverse watertight and swash bulkheads in cargo tanks		
Structural member	**Extent of measurement**	**Pattern of measurement**
Upper and lower stool, where fitted	Transverse band within 25 mm of welded connection to inner bottom/deck plating Transverse band within 25 mm of welded connection to shelf plate	Five-point pattern between stiffeners over 1 m length
Deckhead and bottom strakes, and strakes in way of horizontal stringers	Plating between pair of stiffeners at three locations: approximately ¼, ½ and ¾ width of tank	Five-point pattern between stiffeners over 1 m length
All other strakes	Plating between pair of stiffeners at middle location	Single measurement
Strakes in corrugated bulkheads	Plating for each change of scantling at centre of panel and at flange of fabricated connection	Five-point pattern over approximately 1 m^2 of plating
Stiffeners	Minimum of three typical stiffeners	For web, five-point pattern over span between bracket connections (two measurements across web at each bracket connection and one at centre of span) For flange, single measurements at each bracket toe and at centre of span
Brackets	Minimum of three at top, middle and bottom of tank	Five-point pattern over area of bracket
Horizontal stringers	All stringers with measurements at both ends and middle	Five-point pattern over 1 m^2 area, plus single measurements near bracket toes and on flanges

ANNEX 5

OWNER'S INSPECTION REPORT

Structural condition

Ship's name:							
For tank No:							
Grade of steel: deck: ..... side:							
bottom: ..... longitudinal bulkhead:							
Elements	Cracks	Buckles	Corrosion	Coating condition	Pitting	Modification/repair	Other
Deck:							
Bottom:							
Side:							
Longitudinal bulkhead:							
Transverse bulkhead:							
Repairs carried out due to:							
Thickness measurements carried out (dates):							
Results in general:							
Overdue surveys:							
Outstanding conditions of class:							
Comments:							
Date of inspection:							
Inspected by:							
Signature:							

ANNEX 6A

SURVEY PROGRAMME

Basic information and particulars

Name of ship:
IMO number:
Flag State:
Port of registry:
Gross tonnage:
Deadweight (metric tonnes):
Length between perpendiculars (m):
Shipbuilder:
Hull number:
Recognized organization (RO):
RO ship identity:
Date of delivery of the ship:
Owner:
Thickness measurement company:

1 Preamble

1.1 *Scope*

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo area, ballast tanks, including fore and aft peak tanks, required by the Code.

1.1.2 The arrangements and safety aspects of the survey should be acceptable to the attending surveyor(s).

1.2 *Documentation*

All documents used in the development of the survey programme should be available on board during the survey as required by section 6.

2 Arrangement of tanks and spaces

This section of the survey programme should provide information (either in the form of plans or text) on the arrangement of tanks and spaces that fall within the scope of the survey.

3 List of tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme should indicate any changes relating to (and should update) the information on the use of the tanks of the ship, the extent of coatings and the corrosion protective system provided in the survey planning questionnaire.

4 Conditions for survey

This section of the survey programme should provide information on the conditions for survey, e.g. information regarding cargo hold and tank cleaning, gas freeing, ventilation, lighting, etc.

5 Provisions and method of access to structures

This section of the survey programme should indicate any changes relating to (and should update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

6 List of equipment for survey

This section of the survey programme should identify and list the equipment that will be made available for carrying out the survey and the required thickness measurements.

7 Survey requirements

7.1 *Overall survey*

This section of the survey programme should identify and list the spaces that should undergo an overall survey for the ship in accordance with 2.4.1.

7.2 *Close-up survey*

This section of the survey programme should identify and list the hull structures that should undergo a close-up survey for the ship in accordance with 2.4.2.

8 Identification of tanks for tank testing

This section of the survey programme should identify and list the tanks that should undergo tank testing for the ship in accordance with 2.6.

9 Identification of areas and sections for thickness measurements

This section of the survey programme should identify and list the areas and sections where thickness measurements should be taken in accordance with 2.5.1.

10 Minimum thickness of hull structures

This section of the survey programme should specify the minimum thickness for hull structures of the ship that are subject to the Code (indicate either (a) or preferably (b), if such information is available):

(a) Determined from the attached wastage allowance table and the original thickness to the hull structure plans of the ship;

(b) Given in the following table(s):

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)
Deck			
Plating			
Longitudinals			
Longitudinal girders			
Bottom			
Plating			
Longitudinals			
Longitudinal girders			
Ship side			
Plating			
Longitudinals			
Longitudinal girders			
Longitudinal bulkhead			
Plating			
Longitudinals			
Longitudinal girders			
Inner bottom			
Plating			
Longitudinals			
Longitudinal girders			
Transverse bulkheads			
Plating			
Stiffeners			
Transverse web frames, floors and stringers			
Plating			
Flanges			
Stiffeners			
Cross ties			
Flanges			
Webs			

Note: The wastage allowance tables should be attached to the survey programme.

11 Thickness measurement company

This section of the survey programme should identify changes, if any, relating to the information on the thickness measurement company provided in the survey planning questionnaire.

12 Damage experience related to the ship

This section of the survey programme should, using the tables provided below, provide details of the hull damages for at least the last three years in way of the cargo and ballast tanks and void spaces within the cargo area. These damages are subject to survey.

Hull damages sorted by location for this ship

Tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

Hull damages for sister or similar ships (if available) in the case of design related damage

Tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

13 Areas identified with substantial corrosion from previous surveys

This section of the survey programme should identify and list the areas of substantial corrosion from previous surveys.

14 Critical structural areas and suspect areas

This section of the survey programme should identify and list the critical structural areas and the suspect areas, if such information is available.

15 Other relevant comments and information

This section of the survey programme should provide any other comments and information relevant to the survey.

Appendices

Appendix 1 – List of plans

Paragraph 5.1.3.2 requires that main structural plans of cargo and ballast tanks (scantling drawings), including information on regarding use of high tensile steel (HTS), to be available. This appendix of the survey programme should identify and list the main structural plans which form part of the survey programme.

Appendix 2 – Survey planning questionnaire

The survey planning questionnaire (annex 6B), which has been submitted by the owner, should be appended to the survey programme.

Appendix 3 – Other documentation

This part of the survey programme should identify and list any other documentation that forms part of the plan.

Prepared by the owner in cooperation with the Administration for compliance with 5.1.3.

Date:

(name and signature of authorized owner's representative)

Date:

(name and signature of authorized representative of the Administration)

ANNEX 6B

SURVEY PLANNING QUESTIONNAIRE

The following information will enable the owner in cooperation with the Administration to develop a survey programme complying with the requirements of the Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, should provide all information and material required by the resolution.

Particulars

Ship's name:

IMO number:

Flag State:

Port of registry:

Owner:

Recognized organization (RO):

Gross tonnage:

Deadweight (metric tonnes):

Date of delivery:

Information on access provision for close-up surveys and thickness measurement

The owner should indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. normally within reach of hand.

Tank No.	Structure	C (Cargo)/B (Ballast)	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
F.P.	Fore peak						
A.P.	Aft peak						
Wing tanks	Underdeck						
	Side shell						
	Bottom transverse						
	Longitudinal						
	Transverse						
Centre tanks	Under deck						
	Bottom transverse						
	Transverse						

History of cargo with H_2S content or heated cargo for the last three years together with indication as to whether cargo was heated and, where available, Material Safety Data Sheets (MSDS)

Owner's inspections

Using a format similar to that of the table below (which is given as an example), the owner should provide details of the results of their inspections for the last three years on all cargo and ballast tanks and void spaces within the cargo area, including peak tanks.

Tank No.	Corrosion protection (1)	Coating extent (2)	Coating condition (3)	Structural deterioration (4)	Tank damage history (5)
Cargo centre tanks					
Cargo wing tanks					
Slop					
Ballast tanks					
Aft peak					
Fore peak					
Miscellaneous spaces					

Note:

Indicate tanks which are used for oil/ballast.

1) HC = hard coating; SC = soft coating;
A = anodes; NP = no protection

2) U = upper part; M = middle part;
L = lower part; C = complete

3) G = good; F = fair; P = poor;
RC = recoated (during the last three years)

4) N = no findings recorded; Y = findings recorded,
description of findings should be attached to this questionnaire

5) DR = Damage & Repair; L = Leakages;
CV = Conversion (description to be attached to this questionnaire)

Name of owner's representative:

.....

Signature:.....

Date: .....

Reports of port State control inspections

List the reports of port State control inspections containing hull structural related deficiencies and relevant information on rectification of the deficiencies:

Safety management system

List non-conformities related to hull maintenance, including the associated corrective actions:

Name and address of the approved thickness measurement company

ANNEX 7

PROCEDURES FOR CERTIFICATION OF A COMPANY ENGAGED IN THICKNESS MEASUREMENT OF HULL STRUCTURES

1 Application

This guidance applies for certification of the company which intends to engage in the thickness measurement of hull structures of ships.

2 Procedures for certification

Submission of documents

2.1 The following documents should be submitted to an organization recognized by the Administration for approval:

.1 outline of the company, e.g. organization and management structure;

.2 experience of the company in thickness measurement of hull structures of ships;

.3 technicians' careers, i.e. experience of technicians as thickness measurement operators, technical knowledge and experience of hull structure, etc. Operators should be qualified according to a recognized industrial non-destructive test (NDT) standard;

.4 equipment used for thickness measurement such as ultrasonic testing machines and their maintenance/calibration procedures;

.5 a guide for thickness measurement operators;

.6 training programmes for technicians for thickness measurement; and

.7 measurement record format in accordance with recommended procedures for thickness measurements (see annex 10). Recommended procedures for thickness measurements of double-hull oil tankers are contained in annex 2.

Auditing of the company

2.2 Upon satisfactory review of the documents submitted, the company should be audited in order to ascertain that the company is duly organized and managed in accordance with the documents submitted and is capable of conducting thickness measurement of the hull structure of ships.

2.3 Certification is conditional upon an on board demonstration of thickness measurement as well as satisfactory reporting.

3 Certification

3.1 Upon satisfactory results of both the audit of the company referred to in 2.2 and the demonstration tests referred to in 2.3, the Administration or organization recognized by the Administration should issue a certificate of approval as well as a notice to the effect that the thickness measurement operation system of the company has been certified.

3.2 Renewal/endorsement of the certificate should be carried out at intervals not exceeding three years by verification that original conditions are maintained.

4 Report of any alteration to the certified thickness measurement operation system

In case any alteration to the certified thickness measurement operation system of the company is made, such alteration should be immediately reported to the organization recognized by the Administration. A re-audit should be carried out where deemed necessary by the organization recognized by the Administration.

5 Withdrawal of certification

The certification may be withdrawn in the following cases:

.1 where the measurements were improperly carried out or the results were improperly reported;

.2 where the surveyor found any deficiencies in the approved thickness measurement operation system of the company; and

.3 where the company failed to report any alteration referred to in 4 to the organization recognized by the Administration as required.

ANNEX 8

SURVEY REPORTING PRINCIPLES

As a principle, for oil tankers subject to the Code, the surveyor should include the following contents in his report for survey of hull structure and piping systems, as relevant for the survey.

1 General

1.1 A survey report should be generated in the following cases:

.1 in connection with commencement, continuation and/or completion of periodical hull surveys, i.e. annual, intermediate and renewal surveys, as relevant;

.2 when structural damages/defects have been found;

.3 when repairs, renewals or modifications have been carried out; and

.4 when condition of class (recommendation) has been imposed or deleted.

1.2 The reporting should provide:

.1 evidence that prescribed surveys have been carried out in accordance with applicable requirements;

.2 documentation of surveys carried out with findings, repairs carried out and condition of class (recommendation) imposed or deleted;

.3 survey records, including actions taken, which should form an auditable documentary trail. Survey reports should be kept in the survey report file required to be on board;

.4 information for planning of future surveys; and

.5 information which may be used as input for maintenance of classification rules and instructions.

1.3 When a survey is split between different survey stations, a report should be made for each portion of the survey. A list of items surveyed, relevant findings and an indication of whether the item has been credited, should be made available to the next attending surveyor, prior to continuing or completing the survey. Thickness measurement and tank testing carried out should also be listed for the next surveyor.

2 Extent of the survey

2.1 Identification of compartments where an overall survey has been carried out.

2.2 Identification of locations, in each tank, where a close-up survey has been carried out, together with information of the means of access used.

2.3 Identification of locations, in each tank, where thickness measurement has been carried out.

Note: As a minimum, the identification of location of close-up survey and thickness measurement should include a confirmation with description of individual structural members corresponding to the extent of requirements stipulated in this part of annex B based on type of periodical survey and the ship's age.

Where only partial survey is required, i.e. one web frame ring/one deck transverse, the identification should include location within each ballast tank and cargo hold by reference to frame numbers.

2.4 For areas in tanks where protective coating is found to be in good condition and the extent of close-up survey and/or thickness measurement has been specially considered, structures subject to special consideration should be identified.

2.5 Identification of tanks subject to tank testing.

2.6 Identification of piping systems on deck, including crude oil washing (COW) piping, and ballast piping within cargo and ballast tanks, pipe tunnels, cofferdams and void spaces where:

.1 examination including internal examination of piping with valves and fittings and thickness measurement, as relevant, has been carried out; and

.2 operational test to working pressure has been carried out.

3 Result of survey

3.1 Type, extent and condition of protective coating in each tank, as relevant (rated GOOD, FAIR or POOR), including identification of tanks fitted with anodes.

3.2 Structural condition of each compartment with information on the following, as relevant:

.1 Identification of findings, such as:

.1 corrosion with description of location, type and extent;

.2 areas with substantial corrosion;

.3 cracks/fractures with description of location and extent;

.4 buckling with description of location and extent; and

.5 indents with description of location and extent.

.2 Identification of compartments where no structural damage/defects are found. The report may be supplemented by sketches/photographs.

.3 Thickness measurement report should be verified and signed by the surveyor controlling the measurements on board.

.4 Evaluation result of longitudinal strength of the hull girder of oil tankers of 130 m in length and upwards and over 10 years of age. The following data should be included, as relevant:

.1 measured and as-built transverse sectional areas of deck and bottom flanges;

.2 diminution of transverse sectional areas of deck and bottom flanges; and

.3 details of renewals or reinforcements carried out, as relevant (see 4.2).

4 Actions taken with respect to findings

4.1 Whenever the attending surveyor is of the opinion that repairs are required, each item to be repaired should be identified in a numbered list. Whenever repairs are carried out, details of the repairs effected should be reported by making specific reference to relevant items in the numbered list.

4.2 Repairs carried out should be reported with identification of:

.1 compartment;

.2 structural member;

.3 repair method (i.e. renewal or modification), including:

.1 steel grades and scantlings (if different from the original); and

.2 sketches/photographs, as appropriate;

.4 repair extent; and

.5 non-destructive tests (NDT).

4.3 For repairs not completed at the time of survey, condition of class/recommendation should be imposed with a specific time limit for the repairs. In order to provide correct and proper information to the surveyor attending for survey of the repairs, condition of class/recommendation should be sufficiently detailed with identification of each item to be repaired. For identification of extensive repairs, reference may be given to the survey report.

ANNEX 9

CONDITION EVALUATION REPORT

Issued upon completion of renewal survey

General particulars

Ship's name:	Class/Administration identity number: Previous class/Administration identity number(s): IMO number:
Port of registry:	National flag: Previous national flag(s):
Deadweight (metric tonnes):	Gross tonnage: National: ITC (1969):
Date of build: Date of major conversion: Type of conversion:	Classification notation: Owner: Previous owner(s):

1 The survey reports and documents listed below have been reviewed by the undersigned and found to be satisfactory.

2 A summary of the survey is attached herewith on sheet 2.

3 The renewal survey has been completed in accordance with the present Code on (date) .....

Condition evaluation report completed by	Name Signature	Title
Office	Date	
Condition evaluation report verified by	Name Signature	Title
Office	Date	

Attached reports and documents:

1)
2)
3)
4)
5)
6)

Contents of condition evaluation report

Part 1	– General particulars:	- See front page
Part 2	– Report review:	- Where and how survey was done
Part 3	– Close-up survey:	- Extent (which tanks)
Part 4	– Cargo and ballast piping system:	- Examined - Operationally tested

Part 5	– Thickness measurements:	- Reference to thickness measurement report
		- Summary of where measured
		- Separate form indicating the spaces with substantial corrosion, and corresponding:
		  - thickness diminution
		  - corrosion pattern

Part 6	– Tank corrosion prevention system:	- Separate form indicating:
		  - location of coating/anodes
		  - condition of coating (if applicable)

Part 7	– Repairs:	- Identification of tanks/areas
Part 8	– Condition of class/flag State requirements:	
Part 9	– Memoranda:	- Acceptable defects - Any points of attention for future surveys, e.g. for suspect areas - Extended annual/intermediate survey due to coating breakdown
Part 10	– Evaluation results of the ship's longitudinal strength (for oil tankers of 130 m in length and upwards and over 10 years of age)	
Part 11	– Conclusion:	- Statement on evaluation/ verification of survey report

Extract of thickness measurements

Reference is made to the thickness measurement report:

Position of substantially corroded tanks/areas[1] or areas with deep pitting[3]	**Thickness diminution [%]**	**Corrosion pattern[2]**	**Remarks: (e.g. reference to attached sketches)**

Notes:

1 Substantial corrosion, i.e. 75 to 100% of acceptable margins wasted.

2 P = Pitting
C = Corrosion in general

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 ⅛ or more of actual plate thickness should be noted.

Tank corrosion prevention system

Tank Nos.[1]	Tank corrosion prevention system[2]	Coating condition[3]	Remarks

Notes:

1 All segregated ballast tanks and combined cargo/ballast tanks should be listed.

2 C = Coating
NP = No protection

3 Coating condition according to the following standard:

GOOD condition with only minor spot rusting.

FAIR condition with local breakdown of coating at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition.

POOR condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.

If coating condition less than GOOD is given, extended annual surveys should be introduced. This should be noted in part 9 of the Contents of condition evaluation report.

Evaluation result of longitudinal strength of the hull girder of oil tankers of 130 m in length and upwards and of over 10 years of age
(of sections 1, 2 and 3 below, only one applicable section should be completed)

1 This section applies to ships regardless of the date of construction: Transverse sectional areas of deck flange (deck plating and deck longitudinals) and bottom flange (bottom shell plating and bottom longitudinals) of the ship's hull girder have been calculated by using the thickness measured, renewed or reinforced, as appropriate, during the renewal survey of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate (SC renewal survey) most recently conducted after the ship reached 10 years of age, and found that the diminution of the transverse sectional area does not exceed 10% of the as-built area, as shown in the following table:

Table 1 – Transverse sectional area of hull girder flange

		Measured	As-built	Diminution
Transverse section 1	Deck flange	cm^2	cm^2	cm^2 (%)
	Bottom flange	cm^2	cm^2	cm^2 (%)
Transverse section 2	Deck flange	cm^2	cm^2	cm^2 (%)
	Bottom flange	cm^2	cm^2	cm^2 (%)
Transverse section 3	Deck flange	cm^2	cm^2	cm^2 (%)
	Bottom flange	cm^2	cm^2	cm^2 (%)

2 This section applies to ships constructed on or after 1 July 2002: Section moduli of transverse section of the ship's hull girder have been calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey most recently conducted after the ship reached 10 years of age in accordance with the provisions of paragraph 2.2.1.1 of annex 12, and are found to be within their diminution limits determined by the Administration, taking into account the recommendations adopted by the Organization, as shown in the following table:

Table 2 – Transverse section modulus of hull girder

		Z_{act} (cm^3)[1]	Z_{req} (cm^3)[2]	Remarks
Transverse section 1	Upper deck			
	Bottom			
Transverse section 2	Upper deck			
	Bottom			
Transverse section 3	Upper deck			
	Bottom			

Notes:

1 Z_{act} means the actual section moduli of the transverse section of the ship's hull girder calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey, in accordance with the provisions of paragraph 2.2.1.1 of annex 12.

2 Z_{req} means the diminution limit of the longitudinal bending strength of ships, as calculated in accordance with the provisions of paragraph 2.2.1.1 of annex 12.

The calculation sheets for Z_{act} should be attached to this report.

3 This section applies to ships constructed before 1 July 2002: Section moduli of transverse sections of the ship's hull girder have been calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey most recently conducted after the ship reached 10 years of age in accordance with the provisions of paragraph 2.2.1.2 of annex 12, and found to meet the criteria required by the Administration or the recognized classification society and that Z_{act} is not less than Z_{mc} (defined in note 2 below) as specified in appendix 2 to annex 12, as shown in the following table.

Describe the criteria for acceptance of the minimum section moduli of the ship's hull girder for ships in service required by the Administration or the recognized classification society.

Table 3 – Transverse section modulus of hull girder

		Z_{act} (cm^3)[1]	Z_{mc} (cm^3)[2]	Remarks
Transverse section 1	Upper deck			
	Bottom			
Transverse section 2	Upper deck			
	Bottom			
Transverse section 3	Upper deck			
	Bottom			

Notes:

1 As defined in note 1 of table 2.

2 Z_{mc} means the diminution limit of minimum section modulus calculated in accordance with the provisions of paragraph 2.2.1.2 of annex 12.

ANNEX 10

RECOMMENDED PROCEDURES FOR THICKNESS MEASUREMENTS OF DOUBLE-HULL OIL TANKERS

General

1 These procedures should be used for recording thickness measurements as required by annexes 2 and 4.

2 Reporting forms TM1-DHT, TM2-DHT(i), TM2-DHT(ii), TM3-DHT, TM4-DHT, TM5-DHT and TM6-DHT, set out in appendix 2, should be used for recording thickness measurements and the maximum allowable diminution should be stated. The maximum allowable diminution could be stated in an attached document.

3 Appendix 3 contains guidance diagrams and notes relating to the reporting forms and the requirements for thickness measurement.

4 The reporting forms should, where appropriate, be supplemented by data presented on structural sketches.

Appendix 1

GENERAL PARTICULARS

Ship's name: .....
IMO number: .....
Class/Administration identity number:.....
Port of registry: .....
Gross tonnage: .....
Deadweight: .....
Date of build: .....
Classification society: .....

Name of company performing thickness measurement: .....
.....
Thickness measurement company certified by: .....
Certificate number: .....
Certificate valid from: ..... to .....
Place of measurement: .....
First date of measurement: .....
Last date of measurement: .....
Renewal survey/intermediate survey due: .....
Details of measurement equipment: .....
Qualification of operator: .....
Report number: ..... consisting of ..... pages
Name of operator: ..... Name of surveyor: .....
Signature of operator: ..... Signature of surveyor: .....
Company official stamp: ..... Administration: .....

Official stamp

Appendix 2

Report on thickness measurement of all deck plating, all bottom shell plating or side shell plating* (TM1-DHT)

Ship's name..... Class Identity No..... Report No..... IMO number.....

STRAKE POSITION			Forward reading						Aft reading						Mean diminution %		
PLATE POSITION	No. or letter	Orig. thk. mm	Gauged		Diminution P		Diminution S		Gauged		Diminution P		Diminution S				
			P	S	mm	%	mm	%	P	S	mm	%	mm	%	P	S	mm
12th forward																	
11th																	
10th																	
9th																	
8th																	
7th																	
6th																	
5th																	
4th																	
3rd																	
2nd																	
1st																	
Amidships																	
1st aft																	
2nd																	
3rd																	
4th																	
5th																	
6th																	
7th																	
8th																	
9th																	
10th																	
11th																	
11th																	
12th																	

Operator's signature.....

Notes – see following page (* – delete as appropriate)

Notes to the report TM1-DHT:

1 This report should be used for recording the thickness measurement of:

.1 All strength deck plating within the cargo area.

.2 All keel, bottom shell plating and bilge plating within the cargo area.

.3 Side shell plating including selected wind and water strakes outside cargo area.

.4 All wind and water strakes within cargo area.

2 The strake position should be clearly indicated as follows:

.1 For strength deck indicate the number of the strake of plating inboard from the stringer plate.

.2 For bottom plating indicate the number of the strake of plating outboard from the keel plate.

.3 For side shell plating give number of the strake of plating below sheerstrake and letter as shown on shell expansion.

3 Measurements should be taken at the forward and aft areas of all and where plates cross ballast/cargo tank boundaries separate measurements for the area of plating in way of each type of tank should be recorded.

4 The single measurements recorded should represent the average of multiple measurements.

5 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of shell and deck plating (one, two or three transverse sections) (TM2-DHT(i))

Ship's name..... Class Identity No..... Report No..... IMO number.....

	STRENGTH DECK AND SHEERSTRAKE PLATING																											
	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....										THIRD TRANSVERSE SECTION AT FRAME NUMBER....									
STRAKE POSITION	No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S	
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%
Stringer plate																											
1st strake inboard																											
2nd																											
3rd																											
4th																											
5th																											
6th																											
7th																											
8th																											
9th																											
10th																											
11th																											
12th																											
13th																											
14th																											
centre strake																											
sheerstrake																											
TOPSIDE TOTAL																											

Operator's signature.....

Notes – see following page

Notes to the report TM2-DHT(I):

1 This report form should be used for recording the thickness measurements of strength deck plating and sheerstrake plating transverse sections:

One, two or three sections within the cargo area comprising structural items (0), (1) and (2) as shown on the diagrams of typical transverse sections illustrated in appendix 3.

2 The topside area comprises deck plating, stringer plate and sheerstrake (including rounded gunwales).

3 The exact frame station of measurement should be stated.

4 The single measurements recorded should represent the average of multiple measurements.

5 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of shell and deck plating (one, two or three transverse sections) (TM2-DHT(ii))

Ship's name..... Class Identity No..... Report No..... IMO number.....

	SHELL PLATING																											
	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....										THIRD TRANSVERSE SECTION AT FRAME NUMBER....									
STRAKE POSITION	No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S	
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%
1st below sheerstrake																											
2nd																											
3rd																											
4th																											
5th																											
6th																											
7th																											
8th																											
9th																											
10th																											
11th																											
12th																											
13th																											
14th																											
15th																											
16th																											
17th																											
18th																											
19th																											
20th																											
keel strake																											
BOTTOM TOTAL																											

Operator's signature.....

Notes – see following page

Notes to the report TM2-DHT(II):

1 This report form should be used for recording the thickness measurements of shell plating transverse sections:

One, two or three sections within the cargo area comprising structural items (3), (4) and (5) and (6) as shown on the diagrams of typical transverse sections illustrated in appendix 3.

2 The bottom area comprises keel, bottom and bilge plating.

3 The exact frame station of measurement should be stated.

4 The single measurements recorded should represent the average of multiple measurements.

5 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of longitudinal members (one, two or three transverse sections) (TM3-DHT)

Ship's name..... Class Identity No..... Report No..... IMO number.....

STRUCTURAL MEMBER	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....								THIRD TRANSVERSE SECTION AT FRAME NUMBER....							
	Item no.	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		Item no.	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		Item no.	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S	
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%

Operator's signature.....

Notes – see following page

Notes to the report TM3-DHT:

1 This report should be used for recording the thickness measurements of longitudinal members at transverse sections:

One, two or three sections within the cargo area comprising appropriate structural items (10) to (29) as shown on the diagrams of typical transverse sections illustrated in appendix 3.

2 The exact frame station of measurement should be stated.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of transverse structural members (in the cargo oil and water ballast tanks within the cargo tank length) (TM4-DHT)

Ship's name..... Class Identity No..... Report No..... IMO number.....

TANK DESCRIPTION:

LOCATION OF STRUCTURE:

STRUCTURAL MEMBER	ITEM	Original thickness	Max. allow. dimin.	Gauged		Diminution P		Diminution S	
		mm	mm	P	S	mm	%	mm	%

Operator's signature.....

Notes – see following page

Notes to the report TM4-DHT:

1 This report should be used for recording the thickness measurements of transverse structural members, comprising appropriate structural items (30) to (36) as shown on diagrams of typical transverse sections illustrated in appendix 3.

2 Guidance for areas of measurement is indicated in appendix 3. The single measurements recorded should represent the average of multiple measurements.

3 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of W.T./O.T. transverse bulkheads (within the cargo tank or cargo hold spaces) (TM5-DHT)

Ship's name..... Class Identity No..... Report No..... IMO number.....

TANK/HOLD description

LOCATION OF STRUCTURE: FRAME NO:

STRUCTURAL COMPONENT (Plating, Stiffener)	Original thickness	Max. allow. dimin.	Gauged		Diminution P		Diminution S	
	mm	mm	P	S	mm	%	mm	%

Operator's signature.....

Notes – see following page

Notes to the report TM5-DHT:

1 This report should be used for recording the thickness measurement of W.T./O.T. transverse bulkheads.

2 Guidance for areas of measurement is indicated in appendix 3.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of miscellaneous structural members (TM6-DHT)

Ship's name..... IMO number..... Class Identity No..... Report No.....

STRUCTURAL MEMBER:									SKETCH
LOCATION OF STRUCTURE:									
Description	Org. thk.	Max. allow. dimin.	Gauged		Diminution P		Diminution S		
	mm	mm	P	S	mm	%	mm	%	

Operator's signature.....

Notes – see following page

Notes to the report TM6-DHT:

1 This report should be used for recording the thickness measurement of miscellaneous structural members.

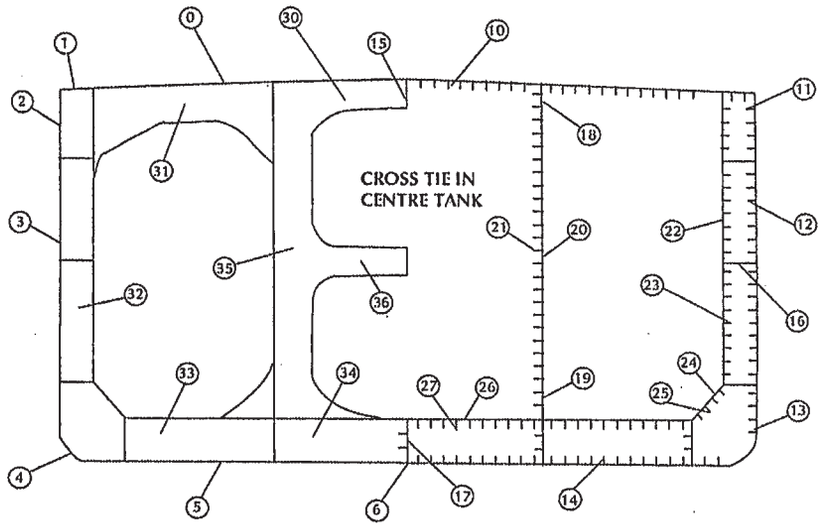
2 The single measurements recorded should represent the average of multiple measurements.

3 The maximum allowable diminution could be stated in an attached document.

Appendix 3

THICKNESS MEASUREMENT – DOUBLE-HULL OIL TANKERS

Typical transverse section of a double-hull oil tanker above 150,000 dwt with indication of longitudinal and transverse members.



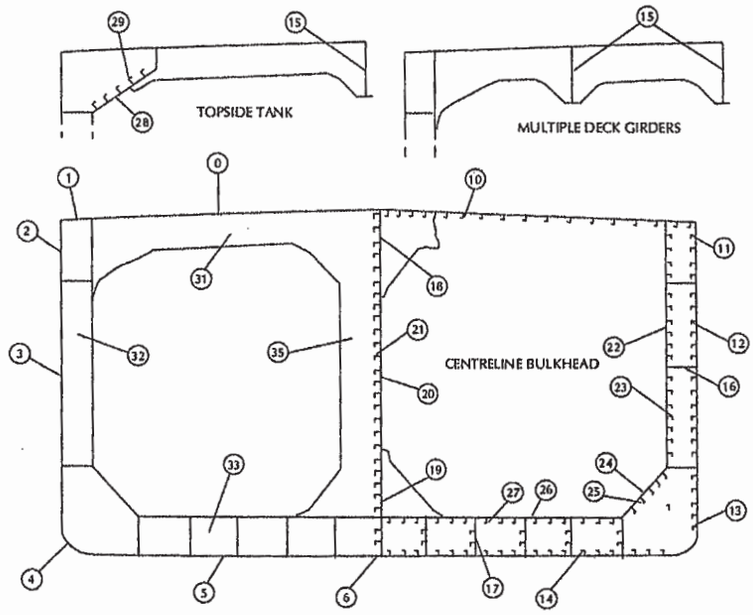
REPORT ON TM2-DHT(I) and (II)
(0) Strength deck plating
(1) Stringer plate
(2) Sheerstrake
(3) Side shell plating
(4) Bilge plating
(5) Bottom shell plating
(6) Keel plate

REPORT ON TM3-DHT	
(10) Deck longitudinals	(20) Longitudinal bulkhead plating (remainder)
(11) Sheerstrake longitudinals	(21) Longitudinal bulkhead longitudinals
(12) Side shell longitudinals	(22) Inner side plating
(13) Bilge longitudinals	(23) Inner side longitudinals
(14) Bottom longitudinals	(24) Hopper plating
(15) Deck girders	(25) Hopper longitudinals
(16) Horizontal girders in wing ballast tanks	(26) Inner bottom plating
(17) Bottom girders	(27) Inner bottom longitudinals
(18) Longitudinal bulkhead top strake	(28) Topside tank plating
(19) Longitudinal bulkhead bottom strake	(29) Topside tank longitudinals

REPORT ON TM4-DHT
(30) Deck transverse – centre tank
(31) Deck transverse – wing tank
(32) Vertical web in wing ballast tank
(33) Double bottom floor – wing tank
(34) Double bottom floor – centre tank
(35) Longitudinal bulkhead vertical web
(36) Cross ties

THICKNESS MEASUREMENT – DOUBLE-HULL OIL TANKERS

Typical transverse section of a double-hull oil tanker up to 150,000 dwt with indication of longitudinal and transverse members.



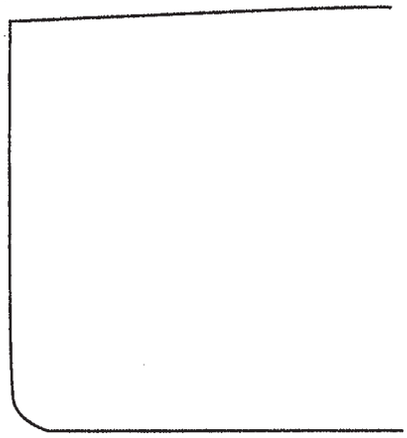
REPORT ON TM2-DHT(i) and (ii)
(0) Strength deck plating
(1) Stringer plate
(2) Sheerstrake
(3) Side shell plating
(4) Bilge plating
(5) Bottom shell plating
(6) Keel plate

REPORT ON TM3-DHT	
(10) Deck longitudinals	(20) Longitudinal bulkhead plating (remainder)
(11) Sheerstrake longitudinals	(21) Longitudinal bulkhead longitudinals
(12) Side shell longitudinals	(22) Inner side plating
(13) Bilge longitudinals	(23) Inner side longitudinals
(14) Bottom longitudinals	(24) Hopper plating
(15) Deck girders	(25) Hopper longitudinals
(16) Horizontal girders in wing ballast tanks	(26) Inner bottom plating
(17) Bottom girders	(27) Inner bottom longitudinals
(18) Longitudinal bulkhead top strake	(28) Topside tank plating
(19) Longitudinal bulkhead bottom strake	(29) Topside tank longitudinals

REPORT ON TM4-DHT
(30) Deck transverse – centre tank
(31) Deck transverse – wing tank
(32) Vertical web in wing ballast tank
(33) Double bottom floor – wing tank
(34) Double bottom floor – centre tank
(35) Longitudinal bulkhead vertical web
(36) Cross ties

THICKNESS MEASUREMENT – DOUBLE-HULL OIL TANKERS

Transverse section outline. The diagram may be used for those ships where typical sections are not applicable



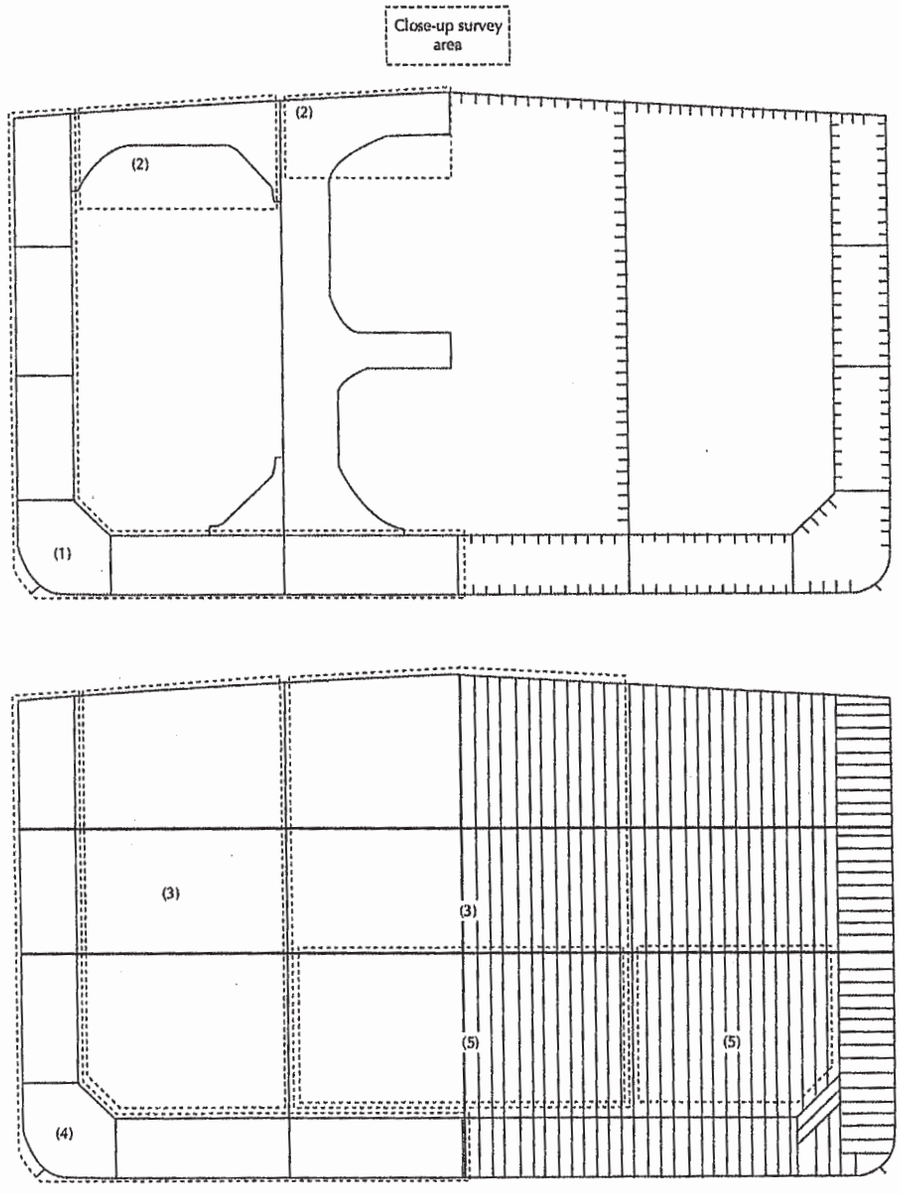
REPORT ON TM2-DHT(i) and (ii)
0 Strength deck plating
1 Stringer plate
2 Sheerstrake
3 Side shell plating
4 Bilge plating
5 Bottom shell plating
6 Keel plate

REPORT ON TM3-DHT	
10 Deck longitudinals	20 Longitudinal bulkhead plating (remainder)
11 Sheerstrake longitudinals	21 Longitudinal bulkhead longitudinals
12 Side shell longitudinals	22 Inner side plating
13 Bilge longitudinals	23 Inner side longitudinals
14 Bottom longitudinals	24 Hopper plating
15 Deck girders	25 Hopper longitudinals
16 Horizontal girders in wing ballast tanks	26 Inner bottom plating
17 Bottom girders	27 Inner bottom longitudinals
18 Longitudinal bulkhead top strake	28 Topside tank plating
19 Longitudinal bulkhead bottom strake	29 Topside tank longitudinals

REPORT ON TM4-DHT
30 Deck transverse – centre tank
31 Deck transverse – wing tank
32 Vertical web in wing ballast tank
33 Double bottom floor – wing tank
34 Double bottom floor – centre tank
35 Longitudinal bulkhead vertical web
36 Cross ties

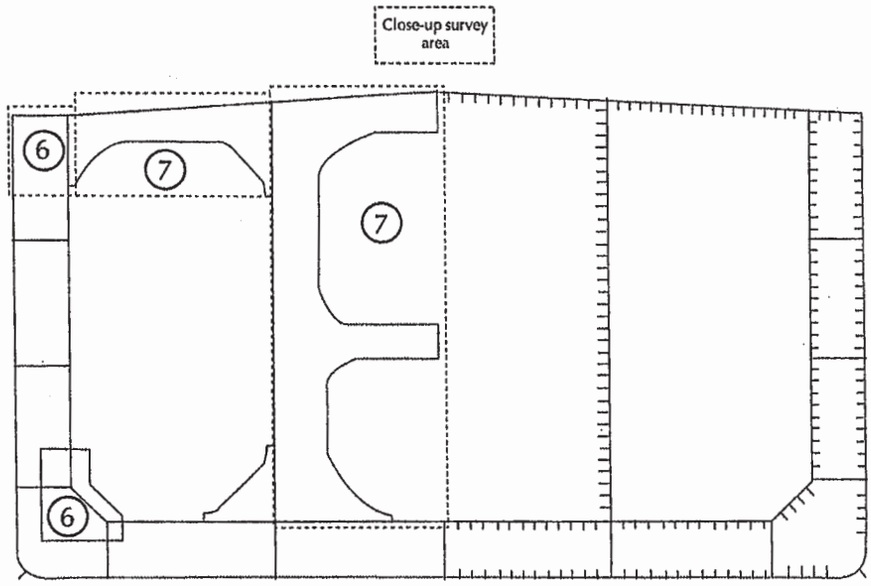
THICKNESS MEASUREMENT – DOUBLE-HULL OIL TANKERS

Areas subject to close-up survey and thickness measurements – areas (1) to (5) as defined in annex 1 – Thickness to be reported on TM3-DHT, TM4-DHT and TM5-DHT as appropriate.



THICKNESS MEASUREMENT – DOUBLE-HULL OIL TANKERS

Areas subject to close-up survey and thickness measurements – areas (6) to (7) as defined in annex 1 – Thickness to be reported on TM3-DHT and TM4-DHT as appropriate.



ANNEX 11

GUIDELINES FOR TECHNICAL ASSESSMENT IN CONJUNCTION WITH THE PLANNING OF ENHANCED SURVEYS FOR OIL TANKERS

Renewal survey

1 Introduction

These Guidelines contain information and suggestions concerning technical assessments which may be of use in conjunction with the planning of renewal surveys of oil tankers. As indicated in 5.1.5, these Guidelines are a recommended tool which may be invoked at the discretion of an Administration, when considered necessary and appropriate, in conjunction with the preparation of the required survey programme.

2 Purpose and principles

2.1 *Purpose*

The technical assessments described in these Guidelines should assist in identifying critical structural areas, nominating suspect areas and in focusing attention on structural elements or areas of structural elements which may be particularly susceptible to, or evidence a history of, wastage or damage. This information may be useful in nominating locations, areas and tanks for thickness measurement, close-up survey and tank testing.

2.2 *Minimum requirements*

These Guidelines may not be used to reduce the requirements of annexes 1, 2 and 3 for close-up survey, thickness measurement and tank testing, respectively, which are, in all cases, to be complied with as a minimum.

2.3 *Timing*

As with other aspects of survey planning, the technical assessments described in these Guidelines should be carried out by the owner or operator in cooperation with the Administration well in advance of the commencement of the renewal survey, i.e. prior to commencing the survey and normally at least 12 to 15 months before the survey's completion due date.

2.4 *Aspects to be considered*

Technical assessments, which may include quantitative or qualitative evaluation of relative risks of possible deterioration, of the following aspects of a particular ship may be used as a basis for the nomination of tanks and areas for survey of:

.1 design features such as stress levels on various structural elements, design details and extent of use of high-tensile steel (HTS);

.2 former history with respect to corrosion, cracking, buckling, indents and repairs for the particular ship as well as similar vessels, where available; and

.3 information with respect to types of cargo carried, use of different tanks for cargo/ballast, protection of tanks and condition of coating, if any.

Technical assessments of the relative risks of susceptibility to damage or deterioration of various structural elements and areas should be judged and decided on the basis of recognized principles and practices, such as may be found in references 1 and 2.

3 Technical assessment

3.1 *General*

3.1.1 There are three basic types of possible failure which may be the subject of a technical assessment in connection with the planning of surveys: corrosion, cracks and buckling. Contact damages are not normally covered by the survey plan since indents are usually noted in memoranda and assumed to be dealt with as normal routine by surveyors.

3.1.2 Technical assessments performed in conjunction with the survey planning process should, in principle, be as shown schematically in figure 1 which depicts how technical assessments can be carried out in conjunction with the survey planning process. The approach is basically an evaluation of the risk, based on the knowledge and experience related to design and corrosion.

3.1.3 The design should be considered with respect to structural details which may be susceptible to buckling or cracking as a result of vibration, high stress levels or fatigue.

3.1.4 Corrosion is related to the ageing process and is closely connected with the quality of corrosion protection at newbuilding and subsequent maintenance during the service life. Corrosion may also lead to cracking and/or buckling.

3.2 *Methods*

3.2.1 *Design details*

3.2.1.1 Damage experience related to the ship in question and similar ships, where available, are the main source of information to be used in the process of planning. In addition, a selection of structural details from the design drawings should be included. Typical damage experience to be considered will consist of:

.1 number, extent, location and frequency of cracks; and

.2 location of buckles.

3.2.1.2 This information may be found in the survey reports and/or the owner's files, including the results of the owner's own inspections. The defects should be analysed, noted and marked on sketches.

3.2.1.3 In addition, general experience should be utilized. For example, reference should be made to reference 1, which contains a catalogue of typical damages and proposed repair methods for various tanker structural details.

3.2.1.4 Such figures should be used together with a review of the main drawings, in order to compare with the actual structure and search for similar details which may be susceptible to damage. An example is shown in figure 2. In particular, chapter 3 of reference 1 deals with various aspects specific to double-hull tankers, such as stress concentration locations, misalignment during construction, corrosion trends, fatigue considerations and areas requiring special attention, which should be considered in working out the survey planning.

3.2.1.5 The review of the main structural drawings, in addition to using the above-mentioned figures, should include checking for typical design details where cracking has been experienced. The factors contributing to damage should be carefully considered.

3.2.1.6 The use of HTS is an important factor. Details showing good service experience where ordinary, mild steel has been used may be more susceptible to damage when HTS, and its higher associated stresses, are utilized. There is extensive and, in general, good experience, with the use of HTS for longitudinal material in deck and bottom structures. Experience in other locations, where the dynamic stresses may be higher, is less favourable, e.g. side structures.

3.2.1.7 In this respect, stress calculations of typical and important components and details, in accordance with relevant methods, may prove useful and should be considered.

3.2.1.8 The selected areas of the structure identified during this process should be recorded and marked on the structural drawings to be included in the survey programme.

3.2.2 *Corrosion*

3.2.2.1 In order to evaluate relative corrosion risks, the following information is generally to be considered:

.1 usage of tanks and spaces;

.2 condition of coatings;

.3 condition of anodes;

.4 cleaning procedures;

.5 previous corrosion damage;

.6 ballast use and time for cargo tanks;

.7 corrosion risk scheme (see reference 2, table 2.1); and

.8 location of heated tanks.

3.2.2.2 Reference 2 gives definitive examples which can be used for judging and describing coating condition, using typical pictures of conditions.

3.2.2.3 The evaluation of corrosion risks should be based on information in reference 2, together with the age of the ship and relevant information on the anticipated condition as derived from the information collected in order to prepare the survey programme.

3.2.2.4 The various tanks and spaces should be listed with the corrosion risks nominated accordingly. Special attention should be given to the areas where the double-hull tanker is particularly exposed to corrosion. To this end, the specific aspects addressing corrosion in double-hull tankers indicated in 3.4 (Corrosion trends) of reference 1 should be taken into account.

3.2.3 *Locations for close-up survey and thickness measurement*

3.2.3.1 On the basis of the table of corrosion risks and the evaluation of design experience, the locations for initial close-up survey and thickness measurement (sections) may be nominated.

3.2.3.2 The sections subject to thickness measurement should normally be nominated in tanks and spaces where corrosion risk is judged to be the highest.

3.2.3.3 The nomination of tanks and spaces for close-up survey should, initially, be based on highest corrosion risk and should always include ballast tanks. The principle for the selection should be that the extent is increased by age or where information is insufficient or unreliable.

References

1 TSCF, Guidelines for the Inspection and Maintenance of Double Hull Tanker Structures, 1995.

2 TSCF, Guidance Manual for Tanker Structures, 1997.

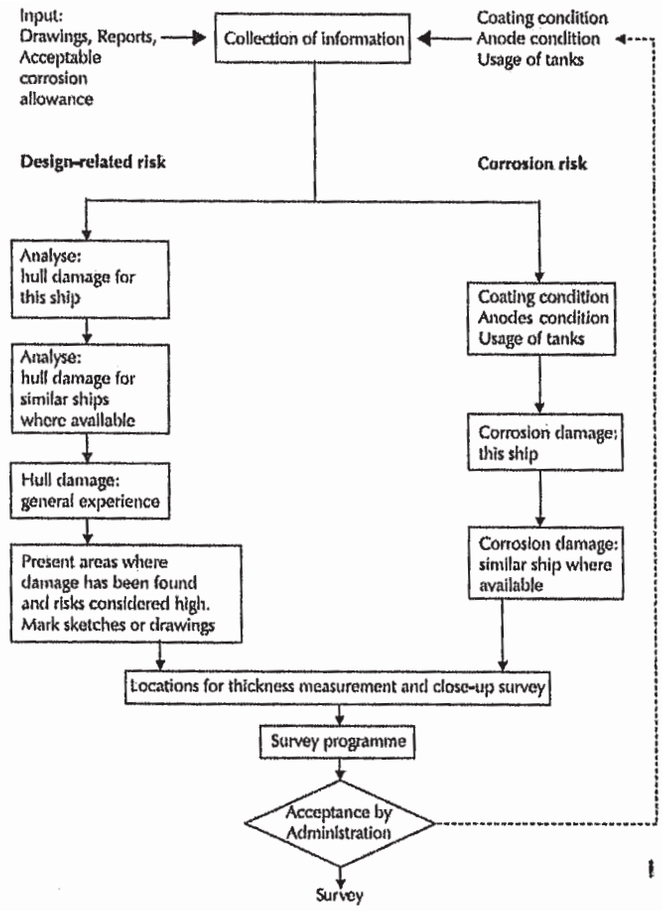


Figure 1 – Technical assessment and the survey planning process

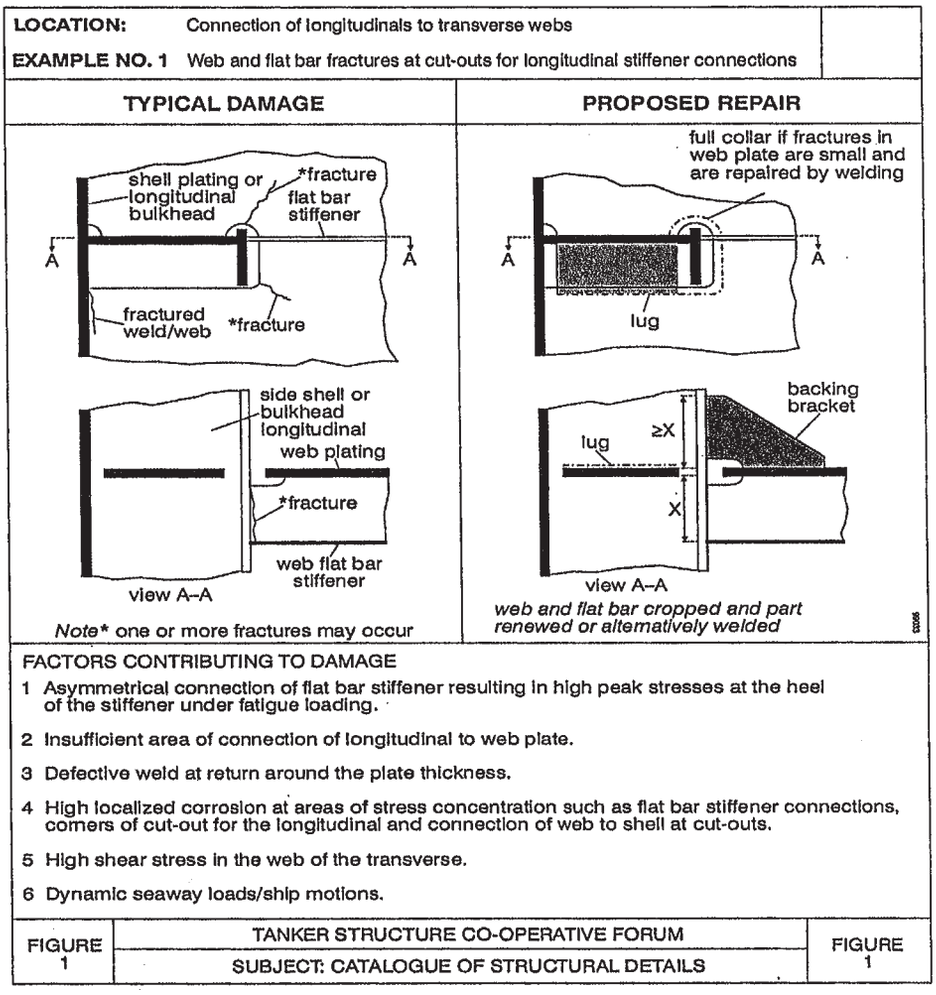


Figure 2 – Typical damage and repair example (reproduced from reference 2)

ANNEX 12

CRITERIA FOR LONGITUDINAL STRENGTH OF HULL GIRDER FOR OIL TANKERS

1 General

1.1 These criteria should be used for the evaluation of the longitudinal strength of the ship's hull girder as required by 8.1.2.

1.2 In order that the ship's longitudinal strength to be evaluated can be recognized as valid, fillet welding between longitudinal internal members and hull envelopes should be in sound condition so as to keep the integrity of longitudinal internal members with hull envelopes.

2 Evaluation of longitudinal strength

On oil tankers of 130 m in length and upwards and over 10 years of age, the longitudinal strength of the ship's hull girder should be evaluated in compliance with the requirements of this annex on the basis of the thickness measured, renewed or reinforced, as appropriate, during the renewal survey of the Cargo Ship Safety Construction Certificate or Cargo Ship Safety Certificate (SC renewal survey). The condition of the hull girder for longitudinal strength evaluation should be determined in accordance with the methods specified in appendix 3.

2.1 *Calculation of transverse sectional areas of deck and bottom flanges of hull girder*

2.1.1 The transverse sectional areas of deck flange (deck plating and deck longitudinals) and bottom flange (bottom shell plating and bottom longitudinals) of the ship's hull girder should be calculated by using the thickness measured, renewed or reinforced, as appropriate, during the SC renewal survey.

2.1.2 If the diminution of sectional areas of either deck or bottom flange exceeds 10% of their respective as-built area (i.e. original sectional area when the ship was built), either one of the following measures should be taken:

.1 to renew or reinforce the deck or bottom flanges so that the actual sectional area is not less than 90% of the as-built area; or

.2 to calculate the actual section of moduli (Z_{act}) of transverse section of the ship's hull girder by applying the calculation method specified in appendix 1, by using the thickness measured, renewed or reinforced, as appropriate, during the SC renewal survey.

2.2 *Requirements for transverse section modulus of hull girder*

2.2.1 The actual section moduli of the transverse section of the ship's hull girder, calculated in accordance with 2.1.2.2, should satisfy either of the following provisions, as applicable:

.1 for ships constructed on or after 1 July 2002, the actual section moduli (Z_{act}) of the transverse section of the ship's hull girder calculated in accordance with the requirements of paragraph 2.1.2.2 should be not less than the diminution limits determined by the Administration, taking into account the recommendations adopted by the Organization; or

.2 for ships constructed before 1 July 2002, the actual section moduli (Z_{act}) of the transverse section of the ship's hull girder calculated in accordance with the requirements of 2.1.2.2 should meet the criteria for minimum section modulus for ships in service required by the Administration or recognized classification society, provided that in no case Z_{act} should be less than the diminution limit of the minimum section modulus (Z_{mc}) as specified in appendix 2.

Appendix 1

CALCULATION CRITERIA OF SECTION MODULI OF MIDSHIP SECTION OF HULL GIRDER

1 When calculating the transverse section modulus of the ship's hull girder, the sectional area of all continuous longitudinal strength members should be taken into account.

2 Large openings, i.e. openings exceeding 2.5 m in length or 1.2 m in breadth, and scallops, where scallop welding is applied, are always to be deducted from the sectional areas used in the section modulus calculation.

3 Smaller openings (manholes, lightening holes, single scallops in way of seams, etc.) need not be deducted, provided that the sum of their breadths or shadow area breadths in one transverse section does not reduce the section modulus at deck or bottom by more than 3% and provided that the height of lightening holes, draining holes and single scallops in longitudinals or longitudinal girders does not exceed 25% of the web depth, for scallops maximum 75 mm.

4 A deduction-free sum of smaller opening breadths in one transverse section in the bottom or deck area of $0.06(B - \Sigma b)$ (where B = breadth of ship, Σb = total breadth of large openings) may be considered equivalent to the above reduction in sectional modulus.

5 The shadow area will be obtained by drawing two tangent lines with an opening angle of 30°.

6 The deck modulus is related to the moulded deck line at side.

7 The bottom modulus is related to the base line.

8 Continuous trunks and longitudinal hatch coamings should be included in the longitudinal sectional area provided they are effectively supported by longitudinal bulkheads or deep girders. The deck modulus is then to be calculated by dividing the moment of inertia by the following distance, provided this is greater than the distance to the deck line at side:

$$y_t = y\left(0.9 + 0.2\frac{x}{B}\right)$$

where:

y = distance from neutral axis to top of continuous strength member;

x = distance from top of continuous strength member to centerline of the ship;

x and y to be measured to the point giving the largest value of y_t.

9 Longitudinal girders between multi-hatchways will be considered by special calculations.

Appendix 2

DIMINUTION LIMIT OF MINIMUM LONGITUDINAL STRENGTH OF SHIPS IN SERVICE

1 The diminution limit of the minimum section modulus (Z_{mc}) of oil tankers in service is given by the following formula:

$$Z_{mc} = cL^2B(C_b + 0.7)k \ (cm^3)$$

where:

L = Length of ships. L is the distance, in metres, on the summer load waterline from the fore-side of stem to the after side of the rudder post, or the centre of the rudder stock if there is no rudder post. L is not to be less than 96%, and need not be greater than 97%, of the extreme length on the summer load waterline. In ships with unusual stern and bow arrangement, the length L may be specially considered.

B = Greatest moulded breadth in metres.

C_b = Moulded block coefficient at draught d corresponding to summer load waterline, based on L and B. C_b is not to be taken less than 0.6.

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

$$c = 0.9c_n$$

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

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

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

k = material factor, e.g.

k = 1.0 for mild steel with yield stress of 235 N/mm² and over

k = 0.78 for high-tensile steel with yield stress of 315 N/mm² and over

k = 0.72 for high-tensile steel with yield stress of 355 N/mm² 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 0.4L 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 0.4L 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.

Appendix 3

SAMPLING METHOD OF THICKNESS MEASUREMENTS FOR LONGITUDINAL STRENGTH EVALUATION AND REPAIR METHODS

1 Extent of longitudinal strength evaluation

Longitudinal strength should be evaluated within 0.4*L* amidships for the extent of the hull girder length that contains tanks therein and within 0.5*L* amidships for adjacent tanks which may extend beyond 0.4*L* amidships, where tanks means ballast tanks and cargo tanks.

2 Sampling method of thickness measurement

2.1 Pursuant to the requirements of section 2.5, transverse sections should be chosen such that thickness measurements can be taken for as many different tanks in corrosive environments as possible, e.g. ballast tanks sharing a common plane boundary with cargo tanks fitted with heating coils, other ballast tanks, cargo tanks permitted to be filled with seawater and other cargo tanks. Ballast tanks sharing a common plane boundary with cargo tanks fitted with heating coils and cargo tanks permitted to be filled with seawater should be selected where present.

2.2 The minimum number of transverse sections to be sampled should be in accordance with annex 2. The transverse sections should be located where the largest thickness reductions are suspected to occur or are revealed from deck and bottom plating measurements prescribed in 2.3 and should be clear of areas which have been locally renewed or reinforced.

2.3 At least two points should be measured on each deck plate and/or bottom shell plate required to be measured within the cargo area in accordance with the requirements of annex 2.

2.4 Within 0.1*D* (where *D* is the ship's moulded depth) of the deck and bottom at each transverse section to be measured in accordance with the requirements of annex 2, every longitudinal and girder should be measured on the web and face plate, and every plate should be measured at one point between longitudinals.

2.5 For longitudinal members other than those specified in 2.4 to be measured at each transverse section in accordance with the requirements of annex 2, every longitudinal and girder should be measured on the web and face plate, and every plate should be measured at least in one point per strake.

2.6 The thickness of each component should be determined by averaging all of the measurements taken in way of the transverse section on each component.

3 Additional measurements where the longitudinal strength is deficient

3.1 Where one or more of the transverse sections are found to be deficient in respect of the longitudinal strength requirements given in this annex, the number of transverse sections for thickness measurement should be increased such that each tank within the 0.5*L* amidships region has been sampled. Tank spaces that are partially within, but extend beyond, the 0.5*L* region, should be sampled.

3.2 Additional thickness measurements should also be performed on one transverse section forward and one aft of each repaired area to the extent necessary to ensure that the areas bordering the repaired section also comply with the requirements of the Code.

4 Effective repair methods

4.1 The extent of renewal or reinforcement carried out to comply with this annex should be in accordance with 4.2.

4.2 The minimum continuous length of a renewed or reinforced structural member should be not less than twice the spacing of the primary members in way. In addition, the thickness diminution in way of the butt joint of each joining member forward and aft of the replaced member (plates, stiffeners, girder webs and flanges, etc.) should not be within the substantial corrosion range (75% of the allowable diminution associated with each particular member). Where differences in thickness at the butt joint exceed 15% of the lower thickness, a transition taper should be provided.

4.3 Alternative repair methods involving the fitting of straps or structural member modification should be subject to special consideration. In considering the fitting of straps, it should be limited to the following conditions:

.1 to restore and/or increase longitudinal strength;

.2 the thickness diminution of the deck or bottom plating to be reinforced should not be within the substantial corrosion range (75% of the allowable diminution associated with the deck plating);

.3 the alignment and arrangement, including the termination of the straps, is in accordance with a standard recognized by the Administration;

.4 the straps are continuous over the entire 0.5*L* amidships length; and

.5 continuous fillet welding and full penetration welds are used at butt welding and, depending on the width of the strap, slot welds. The welding procedures applied should be acceptable to the Administration.

4.4 The existing structure adjacent to replacement areas and in conjunction with the fitted straps, etc., should be capable of withstanding the applied loads, taking into account the buckling resistance and the condition of welds between the longitudinal members and hull envelope plating.

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS OTHER THAN DOUBLE-HULL OIL TANKERS

1 General

1.1 *Application*

1.1.1 The Code should apply to self-propelled oil tankers of 500 gross tonnage and above other than double-hull oil tankers, as defined in 1.2.1 of part A of annex B.

1.1.2 The Code should apply to surveys of hull structure and piping systems in way of cargo tanks, pump-rooms, cofferdams, pipe tunnels, void spaces within the cargo area and all ballast tanks.

1.1.3 The Code contains the minimum extent of examination, thickness measurements and tank pressure testing. The survey should be extended when substantial corrosion and/or structural defects are found and include additional close-up survey when necessary.

1.1.4 The surveys should be carried out during the surveys prescribed by regulation I/10 of the Convention.

1.2 *Definitions*

1.2.1 *Ballast tank* is a tank which is used solely for the carriage of salt water ballast.

1.2.2 *Combined cargo/ballast tank*, if referred to within the Code, is a tank which is used for the carriage of cargo or ballast water as a routine part of the ship's operation and will be treated as a ballast tank. Cargo tanks in which water ballast might be carried only in exceptional cases per MARPOL regulation I/18.3 are to be treated as cargo tanks.

1.2.3 *Overall survey* is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

1.2.4 *Close-up survey* is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

1.2.5 *Transverse section* is the cross section of the hull perpendicular to the ship's centerline and includes all longitudinal members such as plating, longitudinals and girders at the deck, sides, bottom, inner bottom and longitudinal bulkheads.

1.2.6 *Representative tanks* are those which are expected to reflect the condition of other tanks of similar type and service and with similar corrosion prevention systems. When selecting representative tanks, account should be taken of the service and repair history on board and identifiable critical and/or suspect areas.

1.2.7 *Suspect areas* are locations showing substantial corrosion and/or are considered by the surveyor to be prone to rapid wastage.

1.2.8 *Substantial corrosion* is an extent of corrosion such that assessment of corrosion pattern indicates a wastage in excess of 75% of allowable margins, but within acceptable limits.

1.2.9 *Corrosion prevention system* is normally considered a full hard protective coating. Hard protective coating should usually be epoxy coating or equivalent. Other coating systems, which are neither soft nor semi-hard coatings, may be considered acceptable as alternatives provided that they are applied and maintained in compliance with the manufacturer's specifications.

1.2.10 *Coating condition* is defined as follows:

GOOD condition with only minor spot rusting;

FAIR condition with local breakdown of coating at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition;

POOR condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.

1.2.11 *Critical structural areas* are locations which have been identified from calculations to require monitoring or from the service history of the subject ship or from similar or sister ships to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the ship.

1.2.12 *Cargo area* is that part of the ship which contains cargo tanks, slop tanks and cargo/ballast pump-rooms, cofferdams, ballast tanks and void spaces adjacent to cargo tanks and also deck areas throughout the entire length and breadth of the part of the ship over the above-mentioned spaces.

1.2.13 *Intermediate survey* is a survey carried out either at the second or third annual survey.

1.2.14 *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 or recommendation.

1.2.15 *Specially considered* (in connection with close-up surveys and thickness measurements) means sufficient close-up inspection and thickness measurements are taken to confirm the actual average condition of the structure under coating.

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 and hatch coamings where fitted to combination carriers.

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 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.

1.4 *Surveyors*

For tankers of 20,000 tons deadweight and above, two surveyors should jointly carry out the first scheduled renewal survey after the tanker passes 10 years of age (i.e. third renewal survey), and all subsequent renewal surveys and intermediate surveys. If the surveys are carried out by a recognized organization, the surveyors should be exclusively employed by such recognized organizations.

1.5 *Thickness measurements and close-up surveys*

In any kind of survey, i.e. renewal, intermediate, annual or other surveys having the scope of the foregoing ones, thickness measurements of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys.

2 Renewal survey

2.1 *General*

2.1.1 The renewal survey may be commenced at the fourth annual survey and be progressed during the succeeding year with a view to completion by the fifth anniversary date.

2.1.2 As part of the preparation for the renewal survey, the survey programme should be dealt with, in advance of the renewal survey. The thickness measurement should not be held before the fourth annual survey.

2.1.3 The survey should include, in addition to the requirements of the annual survey, examination, tests and checks of sufficient extent to ensure that the hull and related piping as required in 2.1.5 is in a satisfactory condition and is fit for its intended purpose for the new period of validity of the Cargo Ship Safety Construction Certificate, subject to proper maintenance and operation and to periodical surveys being carried out at the due dates.

2.1.4 All cargo tanks, ballast tanks, and any other tanks within the cargo areas which are forming hull structures, pump-rooms, pipe tunnels, cofferdams and void spaces bounding cargo tanks, decks and outer hull should be examined, and this examination should be supplemented by thickness measurement and testing as required in 2.5 and 2.6, to ensure that the structural integrity remains effective. The aim of the examination is to discover substantial corrosion, significant deformation, fractures, damages or other structural deterioration that may be present.

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 any cargo piping in any 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.

2.1.6 The survey extent of combined ballast/cargo tanks should be evaluated based on the records of ballast history and extent of the corrosion prevention system provided.

2.2 *Dry-dock survey*

2.2.1 A survey in dry-dock should be a part of the renewal survey. There should be a minimum of two inspections of the outside of the ship's bottom during the five-year period of the Cargo Ship Safety Construction Certificate. In all cases, the maximum interval between bottom inspections should not exceed 36 months.

2.2.2 For ships of 15 years of age and over, inspection of the outside of the ship's bottom should be carried out with the ship in dry-dock. For ships of less than 15 years of age, alternate inspections of the ship's bottom not conducted in conjunction with the renewal survey may be carried out with the ship afloat. Inspection of the ship afloat should only be carried out when the conditions are satisfactory and the proper equipment and suitably qualified staff is available.

2.2.3 If a survey in dry-dock is not completed in conjunction with the renewal survey or if the 36 month maximum interval referred to in 2.2.1 is not complied with, the Cargo Ship Safety Construction Certificate should cease to be valid until a survey in dry-dock is completed.

2.2.4 The overall and close-up surveys and thickness measurements, as applicable, of the lower portions of the cargo tanks and ballast tanks should be carried out in accordance with the applicable requirements for renewal surveys, if not already performed.

Note: Lower portions of the cargo and ballast tanks are considered to be the parts below light ballast water line.

2.3 *Tank corrosion prevention system*

Where provided, the condition of the corrosion prevention system of cargo tanks should be examined. A ballast tank should be examined at annual intervals where:

.1 a hard protective coating has not been applied from the time of construction; or

.2 a soft or semi-hard coating has been applied; or

.3 substantial corrosion is found within the tank; or

.4 the hard protective coating is found to be in less than GOOD condition and the hard protective coating is not repaired to the satisfaction of the surveyor.

Thickness measurements should be carried out as deemed necessary by the surveyor.

2.4 *Extent of overall and close-up surveys*

2.4.1 An overall survey of all tanks and spaces should be carried out at the renewal survey. Suspect areas identified at previous surveys should be examined.

2.4.2 The minimum requirements for close-up surveys at the renewal survey are given in annex 1.

2.4.3 The surveyor may extend the scope of the close-up survey as deemed necessary taking into account the maintenance of the tanks under survey, the condition of the corrosion prevention system and also in the following cases:

.1 in particular, tanks having structural arrangements or details which have suffered defects in similar tanks or on similar ships according to available information; and

.2 in tanks which have structures with reduced scantlings in association with a corrosion prevention system approved by the Administration.

2.4.4 For areas in tanks where hard protective coatings are found to be in GOOD condition as defined in 1.2.10, the extent of close-up surveys according to annex 1 may be specially considered by the Administration.

2.5 *Extent of thickness measurements*

2.5.1 The minimum requirements for thickness measurements at the renewal survey are given in annex 2.

2.5.2 Provisions for extended measurements for areas with substantial corrosion are given in annex 4, and as may be additionally specified in the survey programme as required in 5.1. These extended thickness measurements should be carried out before the survey is credited as completed. Suspect areas identified at previous surveys should have thickness measurements taken.

2.5.3 The surveyor may further extend the thickness measurements as deemed necessary.

2.5.4 For areas in tanks where hard protective coatings are found to be in GOOD condition as defined in 1.2.10, the extent of thickness measurements according to annex 2 may be specially considered by the Administration.

2.5.5 Transverse sections should be chosen where the largest reductions are suspected to occur or are revealed from deck plating measurements.

2.5.6 In cases where two or three sections should be measured, at least one should include a ballast tank within 0.5*L* amidships. In case of oil tankers of 130 m in length and upwards (as defined in the International Convention on Load Lines in force) and more than 10 years of age, for the evaluation of the ship's longitudinal strength as required in 8.1.2, the sampling method of thickness measurements is given in annex 12.

2.6 Extent of tank *pressure testing*

2.6.1 The minimum requirements for tank pressure testing at the renewal survey are given in annex 3.

2.6.2 The surveyor may extend the tank pressure testing as deemed necessary.

2.6.3 Boundaries of ballast tanks should be tested with a head of liquid to the top of air pipes.

2.6.4 Boundaries of cargo tanks should be tested to the highest point that liquid will rise under service conditions.

3 Annual survey

3.1 *General*

The annual survey should consist of an examination for the purpose of ensuring, as far as practicable, that the hull and piping are maintained in a satisfactory condition and should take into account the service history, condition and extent of the corrosion prevention system of ballast tanks and areas identified in the survey report file.

3.2 *Examination of the hull*

3.2.1 Examination of the hull plating and its closing appliances should be carried out as far as can be seen.

3.2.2 Examination of watertight penetrations should be carried out as far as practicable.

3.3 *Examination of weather decks*

3.3.1 Examination of cargo tank openings including gaskets, covers, coamings and flame screens.

3.3.2 Examination of cargo tank pressure/vacuum valves and flame screens.

3.3.3 Examination of flame screens on vents to all bunker tanks.

3.3.4 Examination of cargo, crude oil washing, bunker and vent piping systems, including vent masts and headers.

3.4 *Examination of cargo pump-rooms and pipe tunnels if fitted*

3.4.1 Examination of all pump-room bulkheads for signs of oil leakage or fractures and, in particular, the sealing arrangements of all penetrations of pump-room bulkheads.

3.4.2 Examination of the condition of all piping systems and pipe tunnels.

3.5 *Examination of ballast tanks*

3.5.1 Examination of ballast tanks should be carried out when required as a consequence of the results of the renewal survey and intermediate survey. When considered necessary by the Administration or when extensive corrosion is found, thickness measurements should be carried out.

3.5.2 Where substantial corrosion as defined in 1.2.8 is found, the extent of thickness measurements should be increased in accordance with the requirements in annex 4. These extended thickness measurements should be carried out before the survey is credited as completed. Suspect areas identified at previous surveys should be examined. Areas of substantial corrosion identified at previous surveys should have thickness measurements taken.

4 Intermediate 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 should be carried out. 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.

4.1.4 Concurrent crediting to both intermediate survey and renewal survey for surveys and thickness measurements of spaces should not be acceptable.

4.2 *Oil tankers 5 to 10 years of age*

4.2.1 The requirements of 4.1.3 apply.

4.2.2 All ballast tanks should be examined. When considered necessary by the Administration, thickness measurement and testing should be carried out to ensure that the structural integrity remains effective.

4.2.3 A ballast tank should be examined at subsequent annual intervals where:

.1 a hard protective coating has not been applied from the time of construction; or

.2 a soft or semi-hard coating has been applied; or

.3 substantial corrosion is found within the tanks; or

.4 the hard protective coating is found to be in less than GOOD condition and the hard protective coating is not repaired to the satisfaction of the surveyor.

4.2.4 In addition to the requirements above, suspect areas identified at previous surveys should be examined.

4.3 *Oil tankers 10 to 15 years of age*

4.3.1 The requirements of the intermediate survey should be to the same extent as the previous renewal survey as required in 2 and 5.1. However, pressure testing of cargo and ballast tanks and the requirements for longitudinal strength evaluation of hull girder as required in 8.1.2 are not required unless deemed necessary by the Administration.

4.3.2 In application of 4.3.1, the intermediate 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.

4.3.3 In application of 4.3.1, an underwater survey may be considered in lieu of the requirements of 2.2.

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 renewal survey as required in 2 and 5.1. However, pressure testing of cargo and ballast tanks and the requirements for longitudinal strength evaluation of hull girder as required in 8.1.2 are not required unless deemed necessary by the Administration.

4.4.2 In application of 4.4.1, the intermediate 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.

4.4.3 In application of 4.4.1 a survey in dry-dock should be part of the intermediate survey. The overall and close-up surveys and thickness measurements, as applicable, of the lower portions of the cargo tanks and water ballast tanks should be carried out in accordance with the applicable requirements for intermediate surveys, if not already performed.

Note: Lower portions of the cargo and ballast tanks are considered to be the parts below the light ballast water line.

5 Preparations for survey

5.1 *Survey programme*

5.1.1 The owner in cooperation with the Administration or organization recognized by the Administration should work out a specific survey programme prior to the commencement of any part of:

.1 the renewal survey, and

.2 the intermediate survey for oil tanker over 10 years of age.

The survey programme at intermediate survey may consist of the survey programme at the previous renewal survey supplemented by the condition evaluation report of that renewal survey and later relevant survey reports. The survey programme should be worked out taking into account any amendments to the survey requirements implemented after the last renewal survey carried out. The survey programme should be in a written format based on the information in annex 6A. The survey should not commence until the survey programme has been agreed.

5.1.1.1 Prior to the development of the survey programme, the survey planning questionnaire should be completed by the owner based on the information set out in annex 6B, and forwarded to the Administration.

5.1.2 In developing the survey programme, the following documentation should be collected and consulted with a view to selecting tanks, areas, and structural elements to be examined:

.1 survey status and basic ship information;

.2 documentation on board, as described in 6.2 and 6.3;

.3 main structural plans of cargo and ballast tanks (scantlings drawings), including information regarding use of high-tensile steels (HTS);

.4 Condition Evaluation Report, according to annex 9;

.5 relevant previous damage and repair history;

.6 relevant previous survey and inspection reports from both the recognized organization and the owner;

.7 cargo and ballast history for the last 3 years, including carriage of cargo under heated conditions;

.8 details of the inert gas plant and tank cleaning procedures;

.9 information and other relevant data regarding conversion or modification of the ship's cargo and ballast tanks since the time of construction;

.10 description and history of the coating and corrosion protection system (including anodes and previous class notations), if any;

.11 inspections of the owner's personnel during the last three years with reference to structural deterioration in general, leakages in tank boundaries and piping and condition of the coating and corrosion protection system (including anodes) if any. Guidance for reporting is shown in annex 5;

.12 information regarding the relevant maintenance level during operation, including port State control reports of inspection containing hull related deficiencies, safety management system non-conformities relating to hull maintenance, including the associated corrective action(s); and

.13 any other information that will help identify suspect areas and critical structural areas.

5.1.3 The submitted survey programme should account for and comply, as a minimum, with the requirements of 2.6 and annexes 1, 2 and 3 for close-up survey, thickness measurement and tank testing, respectively, and should include relevant information including at least:

.1 basic ship information and particulars;

.2 main structural plans of cargo and ballast tanks (scantling drawings), including information regarding use of high tensile steels (HTS);

.3 plan of tanks;

.4 list of tanks with information on their use, corrosion prevention system and condition of coating;

.5 conditions for survey (e.g. information regarding tank cleaning, gas freeing, ventilation, lighting, etc.);

.6 provisions and methods for access to structures;

.7 equipment for surveys;

.8 identification of tanks and areas for close-up survey (see 2.4);

.9 identification of areas and sections for thickness measurement (see 2.5);

.10 identification of tanks for tank testing (see 2.6);

.11 identification of the thickness measurement company;

.12 damage experience related to the ship in question; and

.13 critical structural areas and suspect areas, where relevant.

5.1.4 The Administration will advise the owner of the maximum acceptable structural corrosion diminution levels applicable to the ship.

5.1.5 Use may also be made of the Guidelines for technical assessment in conjunction with the planning of enhanced surveys for tankers, contained in annex 11. These Guidelines are a recommended tool which may be invoked at the discretion of the Administration, when considered necessary and appropriate, in conjunction with the preparation of the required survey programme.

5.2 *Conditions for survey*

5.2.1 The owner should provide the necessary facilities for a safe execution of the survey.

5.2.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access should be agreed between the owner and the Administration.

5.2.1.2 Details of the means of access should be provided in the survey planning questionnaire.

5.2.1.3 In cases where the provisions of safety and required access are judged by the attending surveyors not to be adequate, the survey of the spaces involved should not proceed.

5.2.2 Tanks and spaces should be safe for access. Tanks and spaces should be gas-free and properly ventilated. Prior to entering tank, void or enclosed space, it should be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen.

5.2.3 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces should be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces should be sufficiently clean and free from water, scale, dirt, oil residues, etc., to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

5.2.4 Sufficient illumination should be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

5.2.5 Where soft or semi-hard coatings have been applied, safe access should be provided for the surveyor to verify the effectiveness of the coating and to carry out an assessment of the condition of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating should be removed.

5.2.6 The surveyor(s) should always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed spaces inspection. In addition a backup team of at least two experienced persons should be stationed at the hatch opening of the tank or space that is being surveyed. The back-up team should continuously observe the work in the tank or space and should keep life-saving and evacuation equipment ready for use.

5.2.7 A communication system should be arranged between the survey party in the tank or space being examined, the responsible officer on deck and, as the case may be, the navigation bridge. The communication arrangements should be maintained throughout the survey.

5.3 *Access to structures*

5.3.1 For overall survey, means should be provided to enable the surveyor to examine the structure in a safe and practical way.

5.3.2 For close-up surveys, one or more of the following means for access, acceptable to the surveyor, should be provided:

.1 permanent staging and passages through structures;

.2 temporary staging and passages through structures;

.3 lifts and moveable platforms;

.4 boats or rafts;

.5 portable ladders; and/or

.6 other equivalent means.

5.4 *Equipment for survey*

5.4.1 Thickness measurement should normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment should be proven to the surveyor as required.

5.4.2 One or more of the following fracture detection procedures may be required if deemed necessary by the surveyor:

.1 radiographic equipment;

.2 ultrasonic equipment;

.3 magnetic particle equipment;

.4 dye penetrant; and/or

.5 other equivalent means.

5.4.3 Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use should be made available during the survey. A safety checklist should be provided.

5.4.4 Adequate and safe lighting should be provided for the safe and efficient conduct of the survey.

5.4.5 Adequate protective clothing should be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

5.5 *Surveys at sea or at anchorage*

5.5.1 Surveys at sea or at anchorage may be accepted provided the surveyor(s) is given the necessary assistance from the personnel on board. Necessary precautions and procedures for carrying out the survey should be in accordance with 5.1, 5.2, 5.3 and 5.4.

5.5.2 A communication system should be arranged between the survey party in the tank and the responsible officer on deck. This system should also include the personnel in charge of ballast pump handling if boats or rafts are used.

5.5.3 Surveys of tanks by means of boats or rafts may only be undertaken with the agreement of the surveyor, who should take into account the safety arrangements provided, including weather forecasting and ship response under foreseeable conditions and provided the expected rise of water within the tank does not exceed 0.25 m.

5.5.4 When rafts or boats are used for close-up survey the following conditions should be observed:

.1 only rough duty, inflatable rafts or boats, having satisfactory residual buoyancy and stability even if one chamber is ruptured, should be used;

.2 the boat or raft should be tethered to the access ladder and an additional person should be stationed down the access ladder with a clear view of the boat or raft;

.3 appropriate lifejackets should be available for all participants;

.4 the surface of water in the tank should be calm (under all foreseeable conditions the expected rise of water within the tank should not exceed 0.25 m) and the water level stationary. On no account should the level of the water be rising while the boat or raft is in use;

.5 the tank or space must contain clean ballast water only. Even a thin sheen of oil on the water is not acceptable;

.6 at no time should the water level be allowed to be within 1 m of the deepest under-deck web face flat so that the survey team is not isolated from a direct escape route to the tank hatch. Filling to levels above the deck transverses should only be contemplated if a deck access manhole is fitted and open in the bay being examined, so that an escape route for the survey party is available at all times. Other effective means of escape to the deck may be considered; and

.7 if the tanks (or spaces) are connected by a common venting system, or inert gas system, the tank in which the boat or raft should be used should be isolated to prevent a transfer of gas from other tanks (or spaces).

5.5.5 Rafts or boats alone may be allowed for inspection of the underdeck areas of tanks or spaces if the depth of the webs is 1.5 m or less.

5.5.6 If the depth of the webs is more than 1.5 m, rafts or boats alone may be allowed only:

.1 when the coating of the under-deck structure is in GOOD condition and there is no evidence of wastage; or

.2 if a permanent means of access is provided in each bay to allow safe entry and exit. This means:

.1 access direct from the deck via a vertical ladder with a small platform fitted approximately 2 m below the deck; and

.2 access to deck from a longitudinal permanent platform having ladders to deck in each end of the tank. The platform should, for the full length of the tank, be arranged in level with, or above, the maximum water level needed for rafting of under deck structure. For this purpose, the ullage corresponding to the maximum water level should be assumed not more than 3 m from the deck plate measured at the midspan of deck transverses and in the middle length of the tanks (see figure 1).

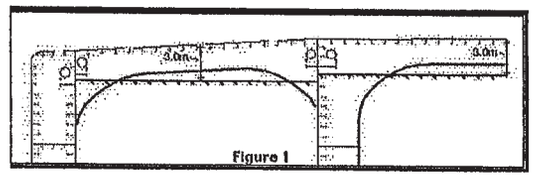


Figure 1

If neither of the above conditions are met, then staging or other equivalent means should be provided for the survey of the under-deck areas.

5.5.7 The use of rafts or boats alone in 5.5.5 and 5.5.6 does not preclude the use of boats or rafts to move about within a tank during a survey.

5.6 *Survey planning meeting*

5.6.1 Proper preparation and close cooperation between the attending surveyor(s) and the owner's representatives on board prior to and during the survey are an essential part in the safe and efficient conduct of the survey. During the survey onboard safety meetings should be held regularly.

5.6.2 Prior to commencement of any part of the renewal and intermediate survey, a survey planning meeting should be held between the attending surveyor(s), the owner's representative in attendance, the thickness measurement company operator (as applicable) and the master of the ship or an appropriately qualified representative nominated by the master or company for the purpose to ascertain that all the arrangements envisaged in the survey programme are in place, so as to ensure the safe and efficient conduct of the survey work to be carried out.

5.6.3 The following is an indicative list of items that should be addressed in the meeting:

.1 schedule of the ship (i.e. the voyage, docking and undocking manoeuvres, periods alongside, cargo and ballast operations, etc.);

.2 provisions and arrangements for thickness measurements (i.e. access, cleaning/de-scaling, illumination, ventilation, personal safety);

.3 extent of the thickness measurements;

.4 acceptance criteria (refer to the list of minimum thicknesses);

.5 extent of close-up survey and thickness measurement considering the coating condition and suspect areas/areas of substantial corrosion;

.6 execution of thickness measurements;

.7 taking representative readings in general and where uneven corrosion/pitting is found;

.8 mapping of areas of substantial corrosion; and

.9 communication between attending surveyor(s), the thickness measurement company operator(s), and owner representative(s) concerning findings.

6 Documentation on board

6.1 *General*

6.1.1 The owner should obtain, supply and maintain on board the ship documentation as specified in 6.2 and 6.3, which should be readily available for the surveyor. The condition evaluation report referred to in 6.2 should include a translation into English.

6.1.2 The documentation should be kept on board for the lifetime of the ship.

6.2 *Survey report file*

6.2.1 A survey report file should be a part of the documentation on board consisting of:

.1 reports of structural surveys (annex 8);

.2 condition evaluation report (annex 9); and

.3 thickness measurement reports (annex 10).

6.2.2 The survey report file should be available also in the owner's and the Administration offices, or in the office of the organization recognized by the Administration.

6.3 *Supporting documents*

The following additional documentation should be available on board:

.1 main structural plans of cargo and ballast tanks;

.2 previous repair history;

.3 cargo and ballast history;

.4 extent of use of inert gas plant and tank cleaning procedures;

.5 inspections by ship's personnel with reference to:

.1 structural deterioration in general;

.2 leakages in bulkheads and piping; and

.3 condition of coating or corrosion prevention system, if any. Guidance for reporting is shown in annex 5; and

.6 survey programme as required by 5.1 until such time as the renewal survey has been completed; and

.7 any other information that would help to identify critical structural areas and/or suspect areas requiring inspection.

6.4 *Review of documentation on board*

Prior to survey, the surveyor should examine the completeness of the documentation on board and its contents as a basis for the survey.

7 Procedures for thickness measurements

7.1 *General*

7.1.1 The required thickness measurements, if not carried out by the recognized organization acting on behalf of the Administration, should be witnessed by a surveyor of the recognized 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 Thickness measurements of structures in areas where close-up surveys are required should be carried out simultaneously with close-up surveys.

7.1.4 In all cases the extent of the thickness measurements should be sufficient as to represent the actual average condition.

7.2 *Certification of thickness measurement company*

The thickness measurements should be carried out by a qualified company certified by an organization recognized by the Administration according to principles stated in annex 7.

7.3 *Reporting*

7.3.1 A thickness measurement report should be prepared and submitted to the Administration. The report should give the location of measurements, the thickness measured as well as corresponding original thickness. Furthermore, the report should give the date when the measurements were carried out, type of measuring equipment, names of personnel and their qualifications and be signed by the operator. The thickness measurement report should follow the principles as specified in the recommended procedures for thickness measurements set out in annex 10.

7.3.2 The surveyor should review the final thickness measurement report and countersign the cover page.

8 Reporting and evaluation of survey

8.1 *Evaluation of survey report*

8.1.1 The data and information on the structural condition of the ship collected during the survey should be evaluated for acceptability and continued structural integrity of the ship.

8.1.2 In case of oil tankers of 130 m in length and upwards (as defined in the International Convention on Load Lines in force), the ship's longitudinal strength should be evaluated by using the thickness of structural members measured, renewed and reinforced, as appropriate, during the renewal survey of safety construction carried out after the ship reached 10 years of age, in accordance with the criteria for longitudinal strength of the ship's hull girder for oil tankers specified in annex 12.

8.1.3 The analysis of data should be carried out and endorsed by the Administration or recognized organization authorized by the Administration and the conclusions of the analysis should form a part of the condition evaluation report.

8.1.4 The final result of the evaluation of the ship's longitudinal strength required in 8.1.2, after renewal or reinforcement work of structural members, if carried out as a result of initial evaluation, should be reported as a part of the condition evaluation report.

8.2 *Reporting*

8.2.1 Principles for survey reporting are shown in annex 8.

8.2.2 When a survey is split between different survey stations, a report should be made for each portion of the survey. A list of items examined and/or tested (pressure-testing, thickness measurements, etc.) and an indication of whether the item has been credited, should be made available to the next attending surveyor(s), prior to continuing or completing the survey.

8.2.3 A condition evaluation report of the survey and results should be issued to the owner as shown in annex 9 and placed on board the ship for reference at future surveys. The condition evaluation report should be endorsed by the Administration or recognized organization authorized by the Administration.

ANNEX 1

REQUIREMENTS FOR CLOSE-UP SURVEY AT RENEWAL SURVEYS

Age ≤ 5 years	5 < Age ≤ 10 years	10 < Age ≤ 15 years	Age > 15 years
Renewal Survey No. 1	**Renewal Survey No. 2**	**Renewal Survey No. 3**	**Renewal Survey No. 4 and subsequent**
(A) ONE WEB FRAME RING – in a ballast wing tank, if any, or a cargo wing tank used primarily for water ballast (B) ONE DECK TRANSVERSE – in a cargo tank (D) ONE TRANSVERSE BULKHEAD – in a ballast tank (D) ONE TRANSVERSE BULKHEAD – in a cargo wing tank (D) ONE TRANSVERSE BULKHEAD – in a cargo centre tank	(A) ALL WEB FRAME RINGS – in a ballast wing tank, if any, or a cargo wing tank used primarily for water ballast (B) ONE DECK TRANSVERSE – in each of the remaining ballast tanks, if any (B) ONE DECK TRANSVERSE – in a cargo wing tank (B) ONE DECK TRANSVERSE – in two cargo centre tanks (C) BOTH TRANSVERSE BULKHEADS in a wing ballast tank, if any, or a cargo wing tank used primarily for water ballast (D) ONE TRANSVERSE BULKHEAD – in each remaining ballast tank (D) ONE TRANSVERSE BULKHEAD – in a cargo wing tank (D) ONE TRANSVERSE BULKHEAD – in two cargo centre tanks	(A) ALL WEB FRAME RINGS – in all ballast tanks (A) ALL WEB FRAME RINGS – in a cargo wing tank (A) A minimum of 30% of all web frame rings in each remaining cargo wing tank (see note 1) (C) ALL TRANSVERSE BULKHEADS – in all cargo and ballast tanks (E) A minimum of 30% of deck and bottom transverses including adjacent structural members in each cargo centre tank (see note 1) (F) As considered necessary by the Administration	As for ships referred to in column 3 Additional transverses included as deemed necessary by the Administration

Note 1:

The 30% should be rounded up to the next whole integer.

(A) Complete transverse web frame ring including adjacent structural members

(B) Deck transverse including adjacent deck structural members

(C) Transverse bulkheads complete – including girder system and adjacent members

(D) Transverse bulkhead lower part – including girder system and adjacent structural members

(E) Deck and bottom transverse including adjacent structural members

(F) Additional complete transverse web ring frame

ANNEX 2

REQUIREMENTS FOR THICKNESS MEASUREMENTS AT RENEWAL SURVEYS

Age ≤ 5 years	5 < Age ≤ 10 years	10 < Age ≤ 15 years	Age > 15 years
1	2	3	4
1 One section of deck plating for the full beam of the ship within the cargo area (in way of a ballast tank, if any, or a cargo tank used primarily for water ballast) 2 Measurements of structural members subject to close-up survey according to annex 1, for general assessment and recording of corrosion pattern 3 Suspect areas	1 Within the cargo area: .1 each deck plate .2 one transverse section 2 Measurements of structural members subject to close-up survey according to annex 1, for general assessment and recording of corrosion pattern 3 Suspect areas 4 Selected wind and water strakes outside the cargo area	1 Within the cargo area: .1 each deck plate .2 two transverse sections .3 all wind and water strakes 2 Measurements of structural members subject to close-up survey according to annex 1, for general assessment and recording of corrosion pattern 3 Suspect areas 4 Selected wind and water strakes outside the cargo area	1 Within the cargo area: .1 each deck plate .2 three transverse sections .3 each bottom plate 2 Measurements of structural members subject to close-up survey according to annex 1, for general assessment and recording of corrosion pattern 3 Suspect areas 4 All wind and water strakes in full length

ANNEX 3

REQUIREMENTS FOR TANK PRESSURE TESTING AT RENEWAL SURVEYS

Age ≤ 5 years	Age > 5 years		
1	2		
1 Cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, fuel oil tanks, pump-rooms or cofferdams 2 All ballast tank boundaries.	1 All ballast tank boundaries 2 All cargo tank bulkheads		

ANNEX 4

REQUIREMENTS FOR EXTENT OF THICKNESS MEASUREMENTS AT AREAS OF SUBSTANTIAL CORROSION

Renewal survey within the cargo area

Bottom structure

Structural member	Extent of measurement	Pattern of measurement
1 Bottom plating	Minimum of three bays across tank, including aft bay. Measurements around and under all bell mouths	Five-point pattern for each panel between longitudinals and webs
2 Bottom longitudinals	Minimum of three longitudinals in each bay where bottom plating measured	Three measurements in line across flange and three measurements on vertical web
3 Bottom girders and brackets	At fore and aft transverse bulkhead bracket toes and in centre of tanks	Vertical line of single measurements on web plating with one measurement between each panel stiffener, or a minimum of three measurements. Two measurements across face flat. Five-point pattern on girder/bulkhead brackets
4 Bottom transverse webs	Three webs in bays where bottom plating measured, with measurements at both ends and middle	Five-point pattern over 2 m^2 area. Single measurements on face flat.
5 Panel stiffening	Where fitted	Single measurements

Deck structure

Structural member	Extent of measurement	Pattern of measurement
1 Deck plating	Two bands across tank	Minimum of three measurements per plate per band
2 Deck longitudinals	Minimum of three longitudinals in each of two bays	Three measurements in line vertically on webs, and two measurements on flange (if fitted)
3 Deck girders and brackets	At fore and aft transverse bulkhead, bracket toes and in centre of tanks	Vertical line of single measurements on web plating with one measurement between each panel stiffener, or a minimum of three measurements. Two measurements across face flat. Five-point pattern on girder/bulkhead brackets
4 Deck transverse webs	Minimum of two webs with measurements at middle and both ends of span	Five-point pattern over about 2 m^2 area. Single measurements on face flat
5 Panel stiffening	Where available	Single measurements

Shell and longitudinal bulkheads

Structural member	Extent of measurement	Pattern of measurement
1 Deckhead and bottom strakes, and strakes in way of stringer platforms	Plating between each pair of longitudinals in a minimum of three bays	Single measurement
2 All other strakes	Plating between every third pair of longitudinals in same three bays	Single measurement
3 Longitudinals – deckhead and bottom strakes	Each longitudinal in same three bays	Three measurements across web and one measurement on flange
4 Longitudinals – all others	Every third longitudinal in same three bays	Three measurements across web and one measurement on flange
5 Longitudinals – bracket	Minimum of three at top, middle and bottom of tank in same three bays	Five-point pattern over area of bracket
6 Web frames and cross ties	Three webs with minimum of three locations on each web, including in way of cross tie connections	Five-point pattern over about 2 m^2 area, plus single measurements on web frame and cross tie face flats

Transverse bulkheads and swash bulkheads

Structural member	Extent of measurement	Pattern of measurement
1 Deckhead and bottom strakes, and strakes in way of stringer platforms	Plating between pair of stiffeners at three locations – approximately quarter, half and three-quarters width of tank	Five-point pattern between stiffeners over 1 m length
2 All other strakes	Plating between pair of stiffeners at middle location	Single measurement
3 Strakes in corrugated bulkheads	Plating for each change of scantling at centre of panel and at flange or fabricated connection	Five-point pattern over about 1 m^2 of plating
4 Stiffeners	Minimum of three typical stiffeners	For web, five-point pattern over span between bracket connections (two measurements across web at each bracket connection, and one at centre of span). For flange, single measurements at each bracket toe and at centre of span
5 Brackets	Minimum of three at top, middle and bottom of tank	Five-point pattern over area of bracket
6 Deep webs and girders	Measurements at toe of bracket and centre of span	For web, five-point pattern over about 1 m^2 area. Three measurements across face flat
7 Stringer platforms	All stringers with measurements at both ends and middle	Five-point pattern over 1 m^2 area plus single measurements near bracket toes and on face flats

ANNEX 5

OWNER'S INSPECTION REPORT

Structural condition
Ship's name: .....
Owners's inspection report – Structural condition
For tank No: .....
Grade of steel: deck: ..... side: .....
bottom: ..... longitudinal bulkhead: .....

Elements	Cracks	Buckles	Corrosion	Coating condition	Pitting	Modification/repair	Other
Deck:							
Bottom:							
Side:							
Longitudinal bulkheads:							
Transverse bulkheads:							

Repairs carried out due to:
Thickness measurements carried out (dates):
Results in general:
Overdue surveys:
Outstanding conditions of class:
Comments:

Date of inspection: .....
Inspected by: .....
Signature: .....

ANNEX 6A

SURVEY PROGRAMME

Basic information and particulars

Name of ship:
IMO number:
Flag State:
Port of registry:
Gross tonnage:
Deadweight (metric tonnes):
Length between perpendiculars (m):
Shipbuilder:
Hull number:
Recognized organization (RO):
RO ship identity:
Date of delivery of the ship:
Owner:
Thickness measurement company:

1 Preamble

1.1 *Scope*

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo area, ballast tanks, including fore and aft peak tanks, required by the Code.

1.1.2 The arrangements and safety aspects of the survey should be acceptable to the attending surveyor(s).

1.2 *Documentation*

All documents used in the development of the survey programme should be available on board during the survey as required by section 6.

2 Arrangement of tanks and spaces

This section of the survey programme should provide information (either in the form of plans or text) on the arrangement of tanks and spaces that fall within the scope of the survey.

3 List of tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme should indicate any changes relating to (and should update) the information on the use of the tanks of the ship, the extent of coatings and the corrosion protective system provided in the survey planning questionnaire.

4 Conditions for survey

This section of the survey programme should provide information on the conditions for survey, e.g. information regarding cargo hold and tank cleaning, gas freeing, ventilation, lighting, etc.

5 Provisions and method of access to structures

This section of the survey programme should indicate any changes relating to (and should update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

6 List of equipment for survey

This section of the survey programme should identify and list the equipment that will be made available for carrying out the survey and the required thickness measurements.

7 Survey requirements

7.1 *Overall survey*

This section of the survey programme should identify and list the spaces that should undergo an overall survey for the ship in accordance with 2.4.1.

7.2 *Close-up survey*

This section of the survey programme should identify and list the hull structures that should undergo a close-up survey for the ship in accordance with 2.4.2.

8 Identification of tanks for tank testing

This section of the survey programme should identify and list the tanks that should undergo tank testing for the ship in accordance with 2.6.

9 Identification of areas and sections for thickness measurements

This section of the survey programme should identify and list the areas and sections where thickness measurements should be taken in accordance with 2.5.1.

10 Minimum thickness of hull structures

This section of the survey programme should specify the minimum thickness for hull structures of the ship that are subject to the Code (indicate either (a) or preferably (b), if such information is available):

(a) Determined from the attached wastage allowance table and the original thickness to the hull structure plans of the ship;

(b) Given in the following table(s):

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)
Deck			
Plating			
Longitudinals			
Longitudinal girders			
Bottom			
Plating			
Longitudinals			
Longitudinal girders			
Ship side			
Plating			
Longitudinals			
Longitudinal girders			
Longitudinal bulkhead			
Plating			
Longitudinals			
Longitudinal girders			
Inner bottom			
Plating			
Longitudinals			
Longitudinal girders			
Transverse bulkheads			
Plating			
Stiffeners			
Transverse web frames, floors and stringers			
Plating			
Flanges			
Stiffeners			
Cross ties			
Flanges			
Webs			

Note: The wastage allowance tables should be attached to the survey programme.

11 Thickness measurement company

This section of the survey programme should identify changes, if any, relating to the information on the thickness measurement company provided in the survey planning questionnaire.

12 Damage experience related to the ship

This section of the survey programme should, using the tables provided below, provide details of the hull damages for at least the last three years in way of the cargo and ballast tanks and void spaces within the cargo area. These damages are subject to survey.

Hull damages sorted by location for the ship

Tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

Hull damages for sister or similar ships (if available) in the case of design related damage

Tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

13 Areas identified with substantial corrosion from previous surveys

This section of the survey programme should identify and list the areas of substantial corrosion from previous surveys.

14 Critical structural areas and suspect areas

This section of the survey programme should identify and list the critical structural areas and the suspect areas, if such information is available.

15 Other relevant comments and information

This section of the survey programme should provide any other comments and information relevant to the survey.

Appendices

Appendix 1 – List of plans

Paragraph 5.1.3.2 requires that main structural plans of cargo and ballast tanks (scantling drawings), including information on regarding use of high tensile steel (HTS), to be available. This appendix of the survey programme should identify and list the main structural plans which form part of the survey programme.

Appendix 2 – Survey planning questionnaire

The survey planning questionnaire (annex 6B), which has been submitted by the owner, should be appended to the survey programme.

Appendix 3 – Other documentation

This part of the survey programme should identify and list any other documentation that forms part of the plan.

Prepared by the owner in cooperation with the Administration for compliance with 5.1.3.

Date:

(name and signature of authorized owner's representative)

Date:

(name and signature of authorized representative of the Administration)

ANNEX 6B

SURVEY PLANNING QUESTIONNAIRE

The following information will enable the owner in cooperation with the Administration to develop a survey programme complying with the requirements of the Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, should provide all information and material required by the resolution.

Particulars

Ship's name:

IMO number:

Flag State:

Port of registry:

Owner:

Recognized organization (RO):

Gross tonnage:

Deadweight (metric tonnes):

Date of delivery:

Information on access provision for close-up surveys and thickness measurement

The owner should indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. normally within reach of hand.

Tank No.	Structure	C (Cargo)/B (Ballast)	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
F.P.	Fore peak						
A.P.	Aft peak						
Wing tanks	Underdeck						
	Side shell						
	Bottom transverse						
	Longitudinal						
	Transverse						
Centre tanks	Under deck						
	Bottom transverse						
	Transverse						

History of cargo with H_2S content or heated cargo for the last three years together with indication as to whether cargo was heated and, where available, Material Safety Data Sheets (MSDS)

Owner's inspections

Using a format similar to that of the table below (which is given as an example), the owner should provide details of the results of their inspections for the last three years on all cargo and ballast tanks and void spaces within the cargo area, including peak tanks.

Tank No.	Corrosion protection (1)	Coating extent (2)	Coating condition (3)	Structural deterioration (4)	Tank damage history (5)
Cargo centre tanks					
Cargo wing tanks					
Slop					
Ballast tanks					
Aft peak					
Fore peak					
Miscellaneous spaces					

Note:

Indicate tanks which are used for oil/ballast.

Name of owner's representative:

.....

Signature:.....

Date: .....

1) HC = hard coating; SC = soft coating;
A = anodes; NP = no protection

2) U = upper part; M = middle part;
L = lower part; C = complete

3) G = good; F = fair; P = poor;
RC = recoated (during the last three years)

4) N = no findings recorded; Y = findings recorded,
description of findings should be attached to this questionnaire

5) DR = Damage & Repair; L = Leakages;
CV = Conversion (description to be attached to this questionnaire)

Reports of port State control inspections

List the reports of port State control inspections containing hull structural related deficiencies, relevant information on rectification of the deficiencies:

Safety management system

List non-conformities related to hull maintenance, including the associated corrective actions:

Name and address of the approved thickness measurement company

ANNEX 7

PROCEDURES FOR CERTIFICATION OF A COMPANY ENGAGED IN THICKNESS MEASUREMENT OF HULL STRUCTURES

1 Application

This guidance applies for certification of the company which intends to engage in the thickness measurement of hull structures of ships.

2 Procedures for certification

Submission of documents

2.1 The following documents should be submitted to an organization recognized by the Administration for approval:

.1 outline of the company, e.g. organization and management structure;

.2 experience of the company on thickness measurement of hull structures of ships;

.3 technicians' careers, i.e. experience of technicians as thickness measurement operators, technical knowledge and experience of hull structure, etc. Operators should be qualified according to a recognized industrial NDT Standard;

.4 equipment used for thickness measurement such as ultrasonic testing machines and their maintenance/calibration procedures;

.5 a guide for thickness measurement operators;

.6 training programmes for technicians for thickness measurement; and

.7 measurement record format in accordance with recommended procedures for thickness measurements (see annex 10).

Auditing of the company

2.2 Upon reviewing the documents submitted with satisfactory results, the company should be audited in order to ascertain that the company is duly organized and managed in accordance with the documents submitted, and eventually is capable of conducting thickness measurement of the hull structure of ships.

2.3 Certification is conditional upon an on board demonstration of thickness measurement as well as satisfactory reporting.

3 Certification

3.1 Upon satisfactory results of both the audit of the company referred to in 2.2 and the demonstration tests referred to in 2.3, the Administration or organization recognized by the Administration should issue a certificate of approval as well as a notice to the effect that the thickness measurement operation system of the company has been certified.

3.2 Renewal/endorsement of the certificate should be made at intervals not exceeding three years by verification that original conditions are maintained.

4 Report of any alteration to the certified thickness measurement operation system

In cases where any alteration to the certified thickness measurement operation system of the company is made, such an alteration should be immediately reported to the organization recognized by the Administration. Re-audit should be made where deemed necessary by the organization recognized by the Administration.

5 Withdrawal of the certification

The certification may be withdrawn in the following cases:

.1 where the measurements were improperly carried out or the results were improperly reported;

.2 where the surveyor found any deficiencies in the approved thickness measurement operation system of the company; and

.3 where the company failed to report any alteration referred to in 4 to the organization recognized by the Administration as required.

ANNEX 8

SURVEY REPORTING PRINCIPLES

As a principle, for oil tankers subject to the Code, the surveyor should include the following contents in his report for survey of hull structure and piping systems, as relevant for the survey.

1 General

1.1 A survey report should be generated in the following cases:

.1 in connection with commencement, continuation and/or completion of periodical hull surveys, i.e. annual, intermediate and renewal surveys, as relevant;

.2 when structural damages/defects have been found;

.3 when repairs, renewals or modifications have been carried out; and

.4 when condition of class (recommendation) has been imposed or deleted.

1.2 The reporting should provide:

.1 evidence that prescribed surveys have been carried out in accordance with applicable requirements;

.2 documentation of surveys carried out with findings, repairs carried out and condition of class (recommendation) imposed or deleted;

.3 survey records, including actions taken, which should form an auditable documentary trail. Survey reports should be kept in the survey report file required to be on board;

.4 information for planning of future surveys; and

.5 information which may be used as input for maintenance of classification rules and instructions.

1.3 When a survey is split between different survey stations, a report should be made for each portion of the survey. A list of items surveyed, relevant findings and an indication of whether the item has been credited, should be made available to the next attending surveyor, prior to continuing or completing the survey. Thickness measurement and tank testing carried out should also be listed for the next surveyor.

2 Extent of the survey

2.1 Identification of compartments where an overall survey has been carried out.

2.2 Identification of locations, in each tank, where a close-up survey has been carried out, together with information of the means of access used.

2.3 Identification of locations, in each tank, where thickness measurement has been carried out.

Note: As a minimum, the identification of location of close-up survey and thickness measurement should include a confirmation with description of individual structural members corresponding to the extent of requirements stipulated in this part of Annex B based on type of periodical survey and the ship's age.

Where only partial survey is required, i.e. one web frame ring/one deck transverse, the identification should include location within each ballast tank and cargo hold by reference to frame numbers.

2.4 For areas in tanks where protective coating is found to be in good condition and the extent of close-up survey and/or thickness measurement has been specially considered, structures subject to special consideration should be identified.

2.5 Identification of tanks subject to tank testing.

2.6 Identification of piping systems on deck, including crude oil washing (COW) piping, and ballast piping within cargo and ballast tanks, pipe tunnels, cofferdams and void spaces where:

.1 examination, including internal examination of piping with valves and fittings and thickness measurement, as relevant, has been carried out; and

.2 operational test to working pressure has been carried out.

3 Result of survey

3.1 Type, extent and condition of protective coating in each tank, as relevant (rated GOOD, FAIR or POOR), including identification of tanks fitted with anodes.

3.2 Structural condition of each compartment with information on the following, as relevant:

.1 Identification of findings, such as:

.1 corrosion with description of location, type and extent;

.2 areas with substantial corrosion;

.3 cracks/fractures with description of location and extent;

.4 buckling with description of location and extent; and

.5 indents with description of location and extent.

.2 Identification of compartments where no structural damages/defects are found. The report may be supplemented by sketches/photographs.

.3 Thickness measurement report should be verified and signed by the surveyor controlling the measurements on board.

.4 Evaluation result of longitudinal strength of the hull girder of oil tankers of 130 m in length and upwards and over 10 years of age. The following data should be included, as relevant:

.1 measured and as-built transverse sectional areas of deck and bottom flanges;

.2 diminution of transverse sectional areas of deck and bottom flanges; and

.3 details of renewals or reinforcements carried out, as relevant (see 4.2).

4 Actions taken with respect to findings

4.1 Whenever the attending surveyor is of the opinion that repairs are required, each item to be repaired should be identified in a numbered list. Whenever repairs are carried out, details of the repairs effected should be reported by making specific reference to relevant items in the numbered list.

4.2 Repairs carried out should be reported with identification of:

.1 compartment;

.2 structural member;

.3 repair method (i.e. renewal or modification), including:

.3.1 steel grades and scantlings (if different from the original);

.3.2 sketches/photographs, as appropriate;

.4 repair extent; and

.5 non-destructive tests (NDT).

4.3 For repairs not completed at the time of survey, condition of class/recommendation should be imposed with a specific time limit for the repairs. In order to provide correct and proper information to the surveyor attending for survey of the repairs, condition of class/recommendation should be sufficiently detailed with identification of each item to be repaired. For identification of extensive repairs, reference may be given to the survey report.

ANNEX 9

CONDITION EVALUATION REPORT

Issued upon completion of renewal survey

General particulars

Ship's name:	Class/Administration identity number: Previous class/Administration identity number(s): IMO number:
Port of registry:	National flag: Previous national flag(s):
Deadweight (metric tonnes):	Gross tonnage: National: ITC (1969):
Date of build:	Classification notation:
Date of major conversion: Type of conversion:	Owner: Previous owner(s):

1 The survey reports and documents listed below have been reviewed by the undersigned and found to be satisfactory.

2 A summary of the survey is attached herewith on sheet 2

3 The renewal survey has been completed in accordance with the present Code on (date) .....

Condition evaluation report completed by	Name Signature	Title
Office	Date	
Condition evaluation report verified by	Name Signature	Title
Office	Date	

Attached reports and documents:

1)
2)
3)
4)
5)
6)

Contents of condition evaluation report

Part 1 –	General particulars:	- See front page
Part 2 –	Report review:	- Where and how survey was done
Part 3 –	Close-up survey:	- Extent (which tanks)
Part 4 –	Cargo and ballast piping system:	- Examined - Operationally tested

Part 5 –	Thickness measurements:	- Reference to thickness measurement report
		- Summary of where measured
		- Separate form indicating the spaces with substantial corrosion, and corresponding:
		  - thickness diminution
		  - corrosion pattern

Part 6 –	Tank corrosion prevention system:	- Separate form indicating:
		  - location of coating/anodes
		  - condition of coating
		(if applicable)

Part 7 –	Repairs:	- Identification of spaces/areas
Part 8 –	Condition of class/flag State requirements:	
Part 9 –	Memoranda:	- Acceptable defects - Any points of attention for future surveys, e.g. for suspect areas - Extended annual/intermediate survey due to coating breakdown
Part 10 –	Evaluation results of the ship's longitudinal strength (for oil tankers of 130 m in length and upwards and over 10 years of age)	
Part 11 –	Conclusion:	- Statement on evaluation/verification of survey report

Extract of thickness measurements

Reference is made to the thickness measurement report:

Position of substantially corroded tanks/areas[1] or areas with deep pitting[3]	**Thickness diminution [%]**	**Corrosion pattern[2]**	**Remarks: (e.g. reference to attached sketches)**

Notes:

1 Substantial corrosion, i.e. 75 to 100% of acceptable margins wasted.

2 P = Pitting
C = Corrosion in general

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 ⅓ or more of actual plate thickness should be noted.

Tank corrosion prevention system

Tank Nos.[1]	Tank corrosion prevention system[2]	Coating condition[3]	Remarks

Notes:

1 All segregated ballast tanks and combined cargo/ballast tanks should be listed.

2 C = Coating NP = No protection

3 Coating condition according to the following standard:

GOOD condition with only minor spot rusting.

FAIR condition with local breakdown of coating at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition.

POOR condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.

If coating condition less than GOOD is given, extended annual surveys should be introduced. This should be noted in part 9 of the Contents of condition evaluation report.

Evaluation result of longitudinal strength of the hull girder of oil tankers of 130 m in length and upwards and of over 10 years of age

(of sections 1, 2 and 3 below, only one applicable section should be completed)

1 This section applies to ships regardless of the date of construction: Transverse sectional areas of deck flange (deck plating and deck longitudinals) and bottom flange (bottom shell plating and bottom longitudinals) of the ship's hull girder have been calculated by using the thickness measured, renewed or reinforced, as appropriate, during the renewal survey of the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate (SC renewal survey) most recently conducted after the ship reached 10 years of age, and found that the diminution of the transverse sectional area does not exceed 10% of the as-built area, as shown in the following table:

Table 1 – Transverse sectional area of hull girder flange

		Measured	As-built	Diminution
Transverse section 1	Deck flange	cm^2	cm^2	cm^2 (%)
	Bottom flange	cm^2	cm^2	cm^2 (%)
Transverse section 2	Deck flange	cm^2	cm^2	cm^2 (%)
	Bottom flange	cm^2	cm^2	cm^2 (%)
Transverse section 3	Deck flange	cm^2	cm^2	cm^2 (%)
	Bottom flange	cm^2	cm^2	cm^2 (%)

2 This section applies to ships constructed on or after 1 July 2002: Section moduli of transverse section of the ship's hull girder have been calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey most recently conducted after the ship reached 10 years of age in accordance with the provisions of paragraph 2.2.1.1 of annex 12, and are found to be within their diminution limits determined by the Administration, taking into account the recommendations adopted by the Organization, as shown in the following table:

Table 2 – Transverse section modulus of hull girder

		Z_{act} $(cm^3)^1$	Z_{req} $(cm^3)^2$	Remarks
Transverse section 1	Upper deck			
	Bottom			
Transverse section 2	Upper deck			
	Bottom			
Transverse section 3	Upper deck			
	Bottom			

Notes:

1 Z_{act} means the actual section moduli of the transverse section of the ship's hull girder calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey, in accordance with the provisions of paragraph 2.2.1.1 of annex 12.

2 Z_{req} means the diminution limit of the longitudinal bending strength of ships, as calculated in accordance with the provisions of paragraph 2.2.1.1 of annex 12.

The calculation sheets for Z_{act} should be attached to this report.

3 This section applies to ships constructed before 1 July 2002: Section moduli of transverse sections of the ship's hull girder have been calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey most recently conducted after the ship reached 10 years of age in accordance with the provisions of paragraph 2.2.1.2 of annex 12, and found to meet the criteria required by the Administration or the recognized classification society and that Z_{act} is not less than Z_{mc} (defined in note 2 below) as specified in appendix 2 to annex 12, as shown in the following table.

Describe the criteria for acceptance of the minimum section moduli of the ship's hull girder for ships in service required by the Administration or the recognized classification society.

Table 3 – Transverse section modulus of hull girder

		Z_{act} (cm^3)[1]	Z_{mc} (cm^3)[2]	Remarks
Transverse section 1	Upper deck			
	Bottom			
Transverse section 2	Upper deck			
	Bottom			
Transverse section 3	Upper deck			
	Bottom			

Notes:

1 As defined in note 1 of table 2.

2 Z_{mc} means the diminution limit of minimum section modulus calculated in accordance with the provisions of paragraph 2.2.1.2 of annex 12.

ANNEX 10

RECOMMENDED PROCEDURES FOR THICKNESS MEASUREMENTS

General

1 These procedures should be used for recording thickness measurements as required by annexes 2 and 4.

2 Reporting forms TM1-T, TM2-T(i), TM2-T(ii), TM3-T, TM4-T, TM5-T and TM6-T, set out in appendix 2, should be used for recording thickness measurements and the maximum allowable diminution should be stated. The maximum allowable diminution could be stated in an attached document.

3 Appendix 3 contains guidance diagrams and notes relating to the reporting forms and the requirements for thickness measurement.

4 The reporting forms should, where appropriate, be supplemented by data presented on structural sketches.

Appendix 1

GENERAL PARTICULARS

Ship's name: .....
IMO number: .....
Class/Administration identity number: .....
Port of registry: .....
Gross tonnage: .....
Deadweight: .....
Date of build: .....
Classification society: .....

Name of company performing thickness measurement: .....
.....
Thickness measurement company certified by: .....
Certificate number: .....
Certificate valid from: ..... to .....
Place of measurement: .....
First date of measurement: .....
Last date of measurement: .....
Periodical survey/intermediate survey due: .....
Details of measurement equipment: .....
Qualification of operator: .....
Report number: ..... consisting of ..... pages
Name of operator: ..... Name of surveyor: .....
Signature of operator: ..... Signature of surveyor: .....
Company official stamp: ..... Administration: .....

Official stamp

Appendix 2

Report on thickness measurement of all deck plating, all bottom shell plating or side shell plating (TM1-T)

Ship's name..... Class Identity No..... Report No..... IMO number.....

STRAKE POSITION																	
PLATE POSITION	No. or letter	Orig. thk. (mm)	Forward reading						Aft reading						Mean diminution %		Max. allow. dimin. (mm)
			Gauged		Diminution P		Diminution S		Gauged		Diminution P		Diminution S				
			P	S	mm	%	mm	%	P	S	mm	%	mm	%	P	S	
12th forward																	
11th																	
10th																	
9th																	
8th																	
7th																	
6th																	
5th																	
4th																	
3rd																	
2nd																	
1st																	
Amidships																	
1st aft																	
2nd																	
3rd																	
4th																	
5th																	
6th																	
7th																	
8th																	
9th																	
10th																	
11th																	
12th																	

Operator's signature.....

Notes – see following page

Notes to report TM1-T:

1 This report should be used for recording the thickness measurement of:

.1 All strength deck plating within the cargo area.

.2 All keel, bottom shell plating and bilge plating within the cargo area.

.3 Side shell plating including selected wind and water strakes outside the cargo area.

.4 All wind and water strakes within the cargo area

2 The strake position should be clearly indicated as follows:

.1 For strength deck plating, indicate the number of the strake of plating inboard from the stringer plate.

.2 For bottom plating, indicate the number of the strake of plating outboard from the keel plate.

.3 For side shell plating, give number of the strake of plating below sheer strake and letter as shown on shell expansion.

3 For oil tankers, all deck plating strakes should be recorded, for ore/oil ships only the deck plating strakes outside line of openings should be recorded.

4 Measurements should be taken at the forward and aft areas of all plates and where plates cross ballast/cargo tank boundaries, separate measurements for the area of plating in way of each type of tank should be recorded.

5 The single measurements recorded should represent the average of multiple measurements.

6 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of shell and deck plating (one, two or three transverse sections) (TM2-T(i))

Ship's name..... Class Identity No..... Report No..... IMO number.....

	STRENGTH DECK AND SHEERSTRAKE PLATING																											
	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....										THIRD TRANSVERSE SECTION AT FRAME NUMBER....									
STRAKE POSITION	No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S	
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%
Stringer plate																											
1st stake inboard																											
2nd																											
3rd																											
4th																											
5th																											
6th																											
7th																											
8th																											
9th																											
10th																											
11th																											
12th																											
13th																											
14th																											
centre strake																											
sheerstrake																											
TOPSIDE TOTAL																											

Operator's signature.....

Notes – see following page

Notes to report TM2-T(i):

1 This report should be used for recording the thickness measurement of strength deck plating and sheerstrake plating transverse sections:

One, two or three sections within the cargo area comprising structural items (1), (2) and (3) as shown on the diagrams of typical transverse section indicating longitudinal and transverse members, in appendix 3.

2 For oil tankers all deck plating strakes should be recorded, for ore/oil ships only the deck plating strakes outside line of openings should be recorded.

3 The topside area comprises deck plating, stringer plate and sheerstrake (including rounded gunwales).

4 The exact frame station of measurement should be stated.

5 The single measurements recorded should represent the average of multiple measurements.

6 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of shell and deck plating (one, two or three transverse sections) (TM2-T(ii))

Ship's name..... Class Identity No..... Report No..... IMO number.....

	SHELL PLATING																											
	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....									THIRD TRANSVERSE SECTION AT FRAME NUMBER....									
STRAKE POSITION	No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		No. or letter	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S	
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%
1st below sheerstrake																											
2nd																											
3rd																											
4th																											
5th																											
6th																											
7th																											
8th																											
9th																											
10th																											
11th																											
12th																											
13th																											
14th																											
15th																											
16th																											
17th																											
18th																											
19th																											
20th																											
keel strake																											
BOTTOM TOTAL																											

Operator's signature.....

Notes – see following page

Notes to report TM2-T(ii):

1 This report should be used for recording the thickness measurements of shell plating transverse sections:

One, two or three sections within the cargo area comprising structural items (4), (5), (6), and (7) as shown on the diagrams of typical transverse section indicating longitudinal and transverse members, in appendix 3.

2 The bottom area comprises keel, bottom and bilge plating.

3 The exact frame station of measurement should be stated.

4 The single measurements recorded should represent the average of multiple measurements.

5 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of longitudinal members (one, two or three transverse sections) (TM3-T)

Ship's name..... Class Identity No..... Report No..... IMO number.....

STRUCTURAL MEMBER	FIRST TRANSVERSE SECTION AT FRAME NUMBER....									SECOND TRANSVERSE SECTION AT FRAME NUMBER....										THIRD TRANSVERSE SECTION AT FRAME NUMBER....									
	Item no.	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		Item no.	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S			Item no.	Orig. thk.	Max allow. dimin.	Gauged		Diminution P		Diminution S		
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%			mm	mm	P	S	mm	%	mm	%	

Notes to report TM3-T:

1 This report should be used for recording the thickness measurement of longitudinal members at transverse sections:

One, two or three sections within the cargo area comprising structural items (8) to (20) as shown on the diagrams of typical transverse section indicating longitudinal and transverse members, in appendix 3.

2 The exact frame station of measurement should be stated.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of transverse structural members (in the cargo oil and water ballast tanks within the cargo tank length) (TM4-T)

Ship's name..... Class Identity No..... Report No..... IMO number.....

TANK DESCRIPTION:									
LOCATION OF STRUCTURE:									
STRUCTURAL MEMBER	ITEM	Original thickness	Max. allow. dimin.	Gauged		Diminution P		Diminution S	
		mm	mm	P	S	mm	%	mm	%

Operator's signature.....

Notes – see following page

Notes to report TM4-T:

1 This report should be used for recording the thickness measurement of transverse structural members, comprising appropriate structural items (25) to (32) as shown on the diagrams of typical transverse section indicating longitudinal and transverse members in appendix 3.

2 Guidance for areas of measurement is indicated in appendix 3.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness of W.T./O.T. transverse bulkheads (within the cargo tank or cargo hold spaces) (TM5-T)

Ship's name..... Class Identity No..... Report No..... IMO number.....

TANK/HOLD

LOCATION OF STRUCTURE: FRAME NO:

STRUCTURAL COMPONENT (Plating, Stiffener)	Original thickness	Max. allow. dimin.	Gauged		Diminution P		Diminution S	
	mm	mm	P	S	mm	%	mm	%

Operator's signature.....

Notes – see following page

Notes to report TM5-T:

1 This report should be used for recording the thickness measurement of W.T./O.T. transverse bulkheads.

2 Guidance for areas of measurement is indicated in appendix 3.

3 The single measurements recorded should represent the average of multiple measurements.

4 The maximum allowable diminution could be stated in an attached document.

Report on thickness measurement of miscellaneous structural members (TM6-T)

Ship's name..... Class Identity No..... Report No..... IMO number.....

STRUCTURAL MEMBER:									SKETCH
LOCATION OF STRUCTURE:									
Description	Org. thk.	Max. allow. dimin.	Gauged		Diminution P		Diminution S		
	mm	mm	P	S	mm	%	mm	%	

Operator's signature.....

Notes – see following page

Notes to report TM6-T:

1 This report should be used for recording the thickness measurement of miscellaneous structural members including structural items (36), (37) and (38) shown in appendix 3.

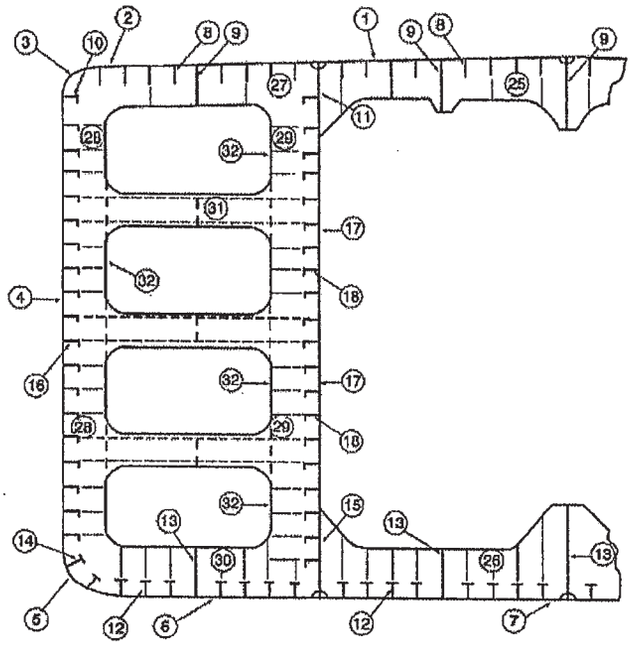
2 The single measurements recorded should represent the average of multiple measurements.

3 The maximum allowable diminution could be stated in an attached document.

Appendix 3

GUIDANCE ON THICKNESS MEASUREMENT

Typical transverse section of oil tanker indicating longitudinal and transverse members



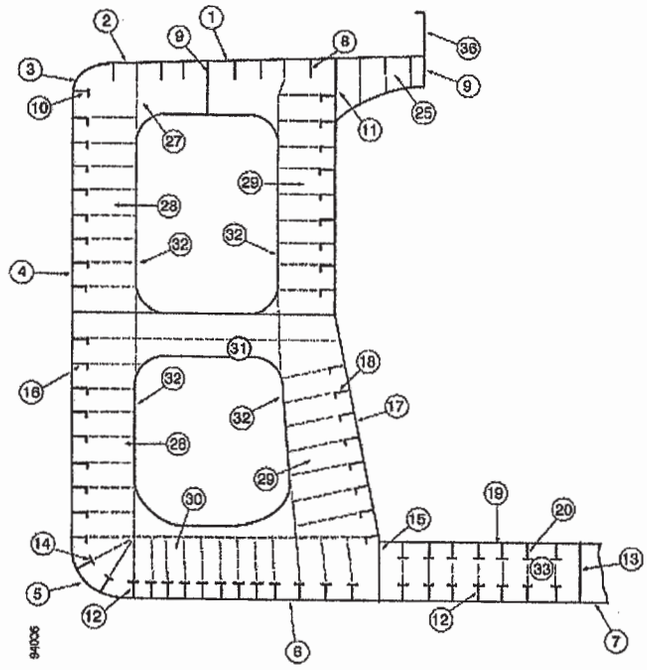
REPORT ON TM2-T(I) & (II)
1 Strength deck plating
2 Stringer plate
3 Sheerstrake
4 Side shell plating
5 Bilge plating
6 Bottom shell plating
7 Keel plate

REPORT ON TM3-T
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
21
22
23
24

REPORT ON TM4-T
25 Deck transverse centre tank
26 Bottom transverse centre tank
27 Deck transverse wing tank
28 Side shell vertical web
29 Longitudinal bulkhead vertical web
30 Bottom transverse wing tank
31 Struts
32 Transverse web face plate
33 D.B floors
34
35

REPORT ON TM5-T
36 Hatch coamings
37 Deck plating between hatches
38 Hatch covers
39
40

Typical transverse section of ore/oil ship indicating longitudinal and transverse members



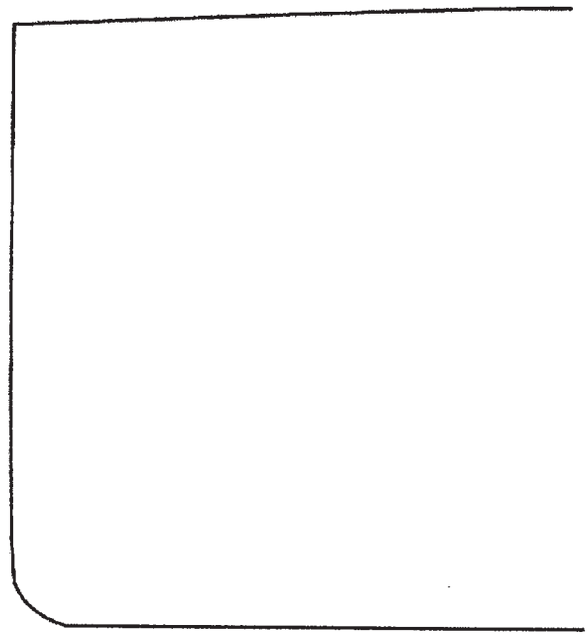
REPORT ON TM2-T(i) & (ii)
1 Strength deck plating
2 Stringer plate
3 Sheerstrake
4 Side shell plating
5 Bilge plating
6 Bottom shell plating
7 Keel plate

REPORT ON TM6-T
36 Hatch coamings
37 Deck plating between hatches
38 Hatch covers
39
40

REPORT ON TM3-T
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
21
22
23
24

REPORT ON TM4-T
25 Deck transverse centre tank
26 Bottom transverse centre tank
27 Deck transverse wing tank
28 Side shell vertical web
29 Longitudinal bulkhead vertical web
30 Bottom transverse wing tank
31 Struts
32 Transverse web face plate
33 D.B. floors
34
35

Transverse section outline (to be used for longitudinal and transverse members where typical oil tanker or oil/ore ship sections are not applicable)



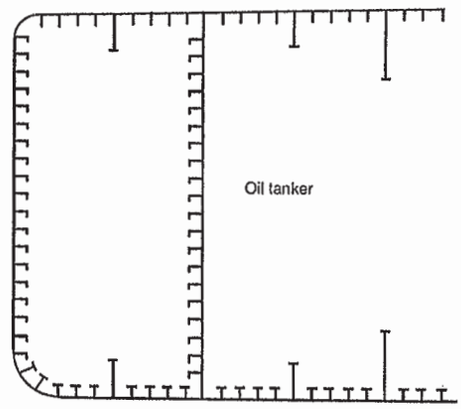
REPORT ON TM2-T(I) & (II)
(1) Strength deck plating
(2) Stringer plate
(3) Sheerstrake
(4) Side shell plating
(5) Bilge plating
(6) Bottom shell plating
(7) Keel plate

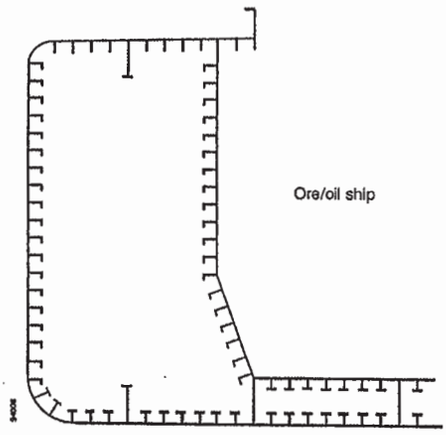
REPORT ON TM3-T
(8) Deck longitudinals
(9) Deck girders
(10) Sheerstrake longitudinals
(11) Longitudinal bulkhead top strake
(12) Bottom longitudinals
(13) Bottom girders
(14) Bilge longitudinals
(15) Longitudinal bulkhead lower strake
(16) Side shell longitudinals
(17) Longitudinal bulkhead plating (remainder)
(18) Longitudinal bulkhead longitudinals
(19) Inner bottom plating
(20) Inner bottom longitudinals
(21)
(22)
(23)
(24)

REPORT ON TM4-T
(25) Deck transverse centre tank
(26) Bottom transverse centre tank
(27) Deck transverse wing tank
(28) Side shell vertical web
(29) Longitudinal bulkhead vertical web
(30) Bottom transverse wing tank
(31) Struts
(32) Transverse web face plate
(33) D.B. floors
(34)
(35)

REPORT ON TM6-T
(36) Hatch coamings
(37) Deck plating between hatches
(38) Hatch covers
(39)
(40)

Typical transverse sections showing all longitudinal members to be reported on TM2-T(i) & (ii) and TM3-T

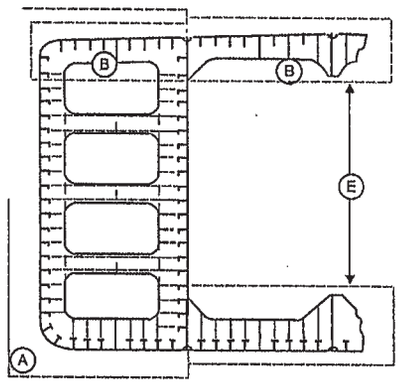




Close-up survey requirements

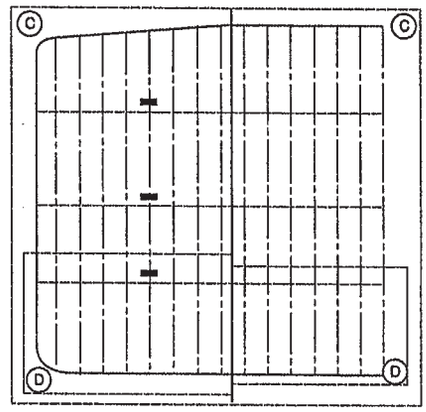
(Transverse sections of oil tankers and ore/oil ships showing typical areas for thickness measurement in association with close-up survey requirements)

Oil tanker:
typical transverse section



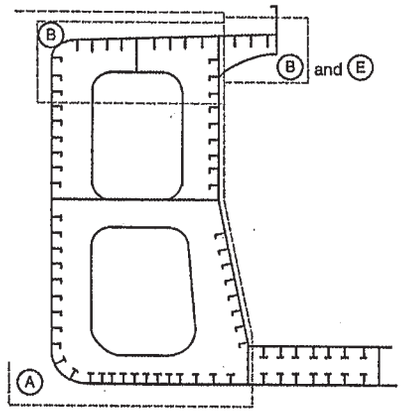
Thickness to be reported on
TM3-T and TM4-T as appropriate

Oil tanker:
typical tranverse bulkhead



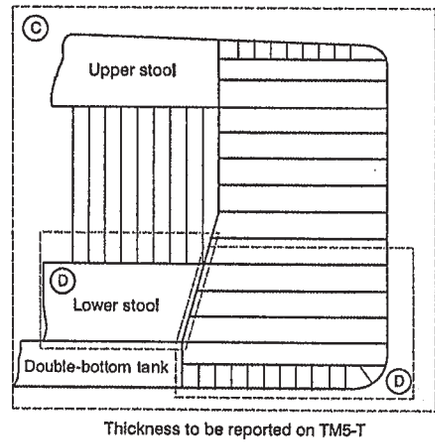
Thickness to be reported on TM5-T

Ore/oil ship:
typical transverse section



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

Ore/oil ship:
typical tranverse bulkhead



Thickness to be reported on TM5-T

94096

Close-up survey area

Recommendations for the extent and pattern of thickness measurements are indicated in annex 4.

ANNEX 11

GUIDELINES FOR TECHNICAL ASSESSMENT IN CONJUNCTION WITH THE PLANNING OF ENHANCED SURVEYS FOR OIL TANKERS

Renewal survey

1 Introduction

These Guidelines contain information and suggestions concerning technical assessments which may be of use in conjunction with the planning of enhanced special surveys of oil tankers. As indicated in 5.1.5, these Guidelines are a recommended tool which may be invoked at the discretion of an Administration, when considered necessary and appropriate, in conjunction with the preparation of the required survey programme.

2 Purpose and principles

2.1 *Purpose*

The purpose of the technical assessments described in these Guidelines is to assist in identifying critical structural areas, nominating suspect areas and in focusing attention on structural elements or areas of structural elements which may be particularly susceptible to, or evidence a history of, wastage or damage. This information may be useful in nominating locations, areas and tanks for thickness measurement, close-up survey and tank testing.

2.2 *Minimum requirements*

These Guidelines may not be used to reduce the requirements of annexes 1, 2 and 3 for close-up survey, thickness measurement and tank testing, respectively, which are, in all cases, to be complied with as a minimum.

2.3 *Timing*

As with other aspects of survey planning, the technical assessments described in these Guidelines should be carried out by the owner or operator in cooperation with the Administration well in advance of the commencement of the renewal survey, i.e. prior to commencing the survey and normally at least 12 to 15 months before the survey's completion due date.

2.4 *Aspects to be considered*

2.4.1 Technical assessments, which may include quantitative or qualitative evaluation of relative risks of possible deterioration, of the following aspects of a particular ship may be used as a basis for the nomination of tanks and areas for survey:

.1 design features such as stress levels on various structural elements, design details and extent of use of high-tensile steel (HTS);

.2 former history with respect to corrosion, cracking, buckling, indents and repairs for the particular ship as well as similar vessels, where available; and

.3 information with respect to types of cargo carried, use of different tanks for cargo/ballast, protection of tanks and condition of coating, if any.

2.4.2 Technical assessments of the relative risks of susceptibility to damage or deterioration of various structural elements and areas should be judged and decided on the basis of recognized principles and practices, such as may be found in references 1 and 2.

3 Technical assessment

3.1 *General*

3.1.1 There are three basic types of possible failure which may be the subject of technical assessment in connection with planning of surveys: corrosion, cracks and buckling. Contact damages are not normally covered by the survey plan since indents are usually noted in memoranda and assumed to be dealt with as a normal routine by surveyors.

3.1.2 Technical assessments performed in conjunction with the survey planning process should, in principle, be as shown schematically in figure 1 which depicts, schematically, how technical assessments can be carried out in conjunction with the survey planning process. The approach is basically an evaluation of the risk based on the knowledge and experience related to design and corrosion.

3.1.3 The design should be considered with respect to structural details which may be susceptible to buckling or cracking as a result of vibration, high stress levels or fatigue.

3.1.4 Corrosion is related to the ageing process, and is closely connected with the quality of corrosion protection at newbuilding, and subsequent maintenance during the service life. Corrosion may also lead to cracking and/or buckling.

3.2 *Methods*

3.2.1 *Design details*

3.2.1.1 Damage experience related to the ship in question and similar ships, where available, are the main source of information to be used in the process of planning. In addition, a selection of structural details from the design drawings should be included. Typical damage experience to be considered will consist of:

.1 number, extent, location and frequency of cracks; and

.2 location of buckles.

3.2.1.2 This information may be found in the survey reports and/or the owner's files, including the results of the owner's own inspections. The defects should be analysed, noted and marked on sketches.

3.2.1.3 In addition, general experience should be utilized. For example, reference should be made to reference 1, which contains a catalogue of typical damages and proposed repair methods for various tanker structural details.

3.2.1.4 Such figures should be used together with a review of the main drawings, in order to compare with the actual structure and search for similar details which may be susceptible to damage. An example is shown in figure 2.

3.2.1.5 The review of the main structural drawings, in addition to using the above-mentioned figures, should include checking for typical design details where cracking has been experienced. The factors contributing to damage should be carefully considered.

3.2.1.6 The use of HTS is an important factor. Details showing good service experience where ordinary, mild steel has been used may be more susceptible to damage when HTS, and its higher associated stresses, are utilized. There is extensive and, in general, good experience, with the use of HTS for longitudinal material in deck and bottom structures. Experience in other locations, where the dynamic stresses may be higher, is less favourable, e.g. side structures.

3.2.1.7 In this respect, stress calculations of typical and important components and details, in accordance with relevant methods, may prove useful and should be considered.

3.2.1.8 The selected areas of the structure identified during this process should be recorded and marked on the structural drawings to be included in the survey programme.

3.2.2 *Corrosion*

3.2.2.1 In order to evaluate relative corrosion risks, the following information is generally to be considered:

.1 usage of tanks and spaces;

.2 condition of coatings;

.3 condition of anodes;

.4 cleaning procedures;

.5 previous corrosion damage;

.6 ballast use and time for cargo tanks;

.7 corrosion risk scheme (see reference 2, table 3.1); and

.8 location of heated tanks.

3.2.2.2 Reference 2 gives definitive examples which can be used for judging and describing coating condition, using typical pictures of conditions.

3.2.2.3 The evaluation of corrosion risks should be based on information in reference 2, together with the age of the ship and relevant information on the anticipated condition as derived from the information collected in order to prepare the survey programme.

3.2.2.4 The various tanks and spaces should be listed with the corrosion risks nominated accordingly.

3.2.3 *Locations for close-up survey and thickness measurement*

3.2.3.1 On the basis of the table of corrosion risks and the evaluation of design experience, the locations for initial close-up survey and thickness measurement (sections) may be nominated.

3.2.3.2 The sections subject to thickness measurement should normally be nominated in tanks and spaces where corrosion risk is judged to be the highest.

3.2.3.3 The nomination of tanks and spaces for close-up survey should, initially, be based on highest corrosion risk, and should always include ballast tanks. The principle for the selection should be that the extent is increased by age or where information is insufficient or unreliable.

References

1 TSCF, Guidance Manual for the Inspection and Condition Assessment of Tanker Structures, 1986.

2 TSCF, Condition Evaluation and Maintenance of Tanker Structures, 1992.

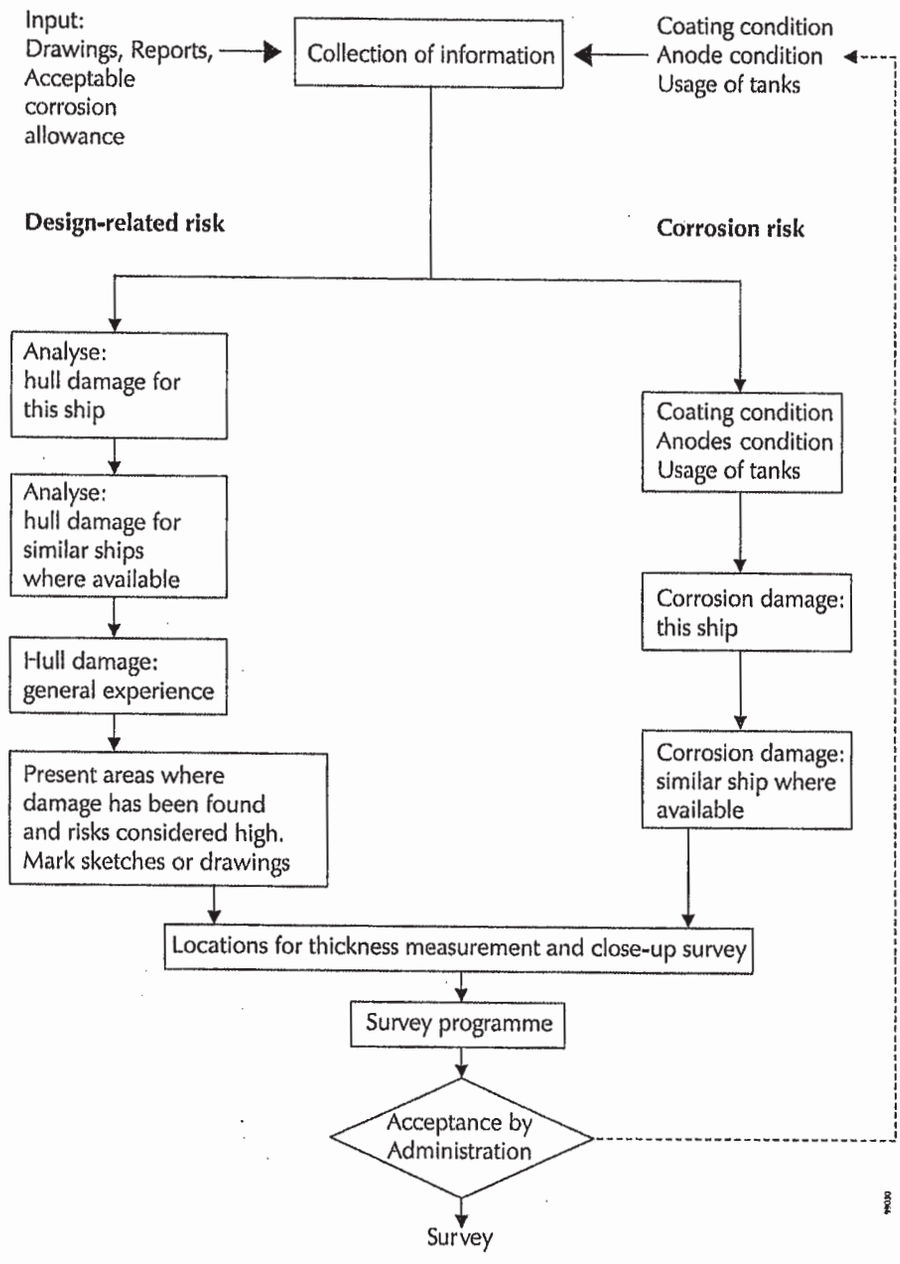


Figure 1 – Planning process: technical assessment and the survey

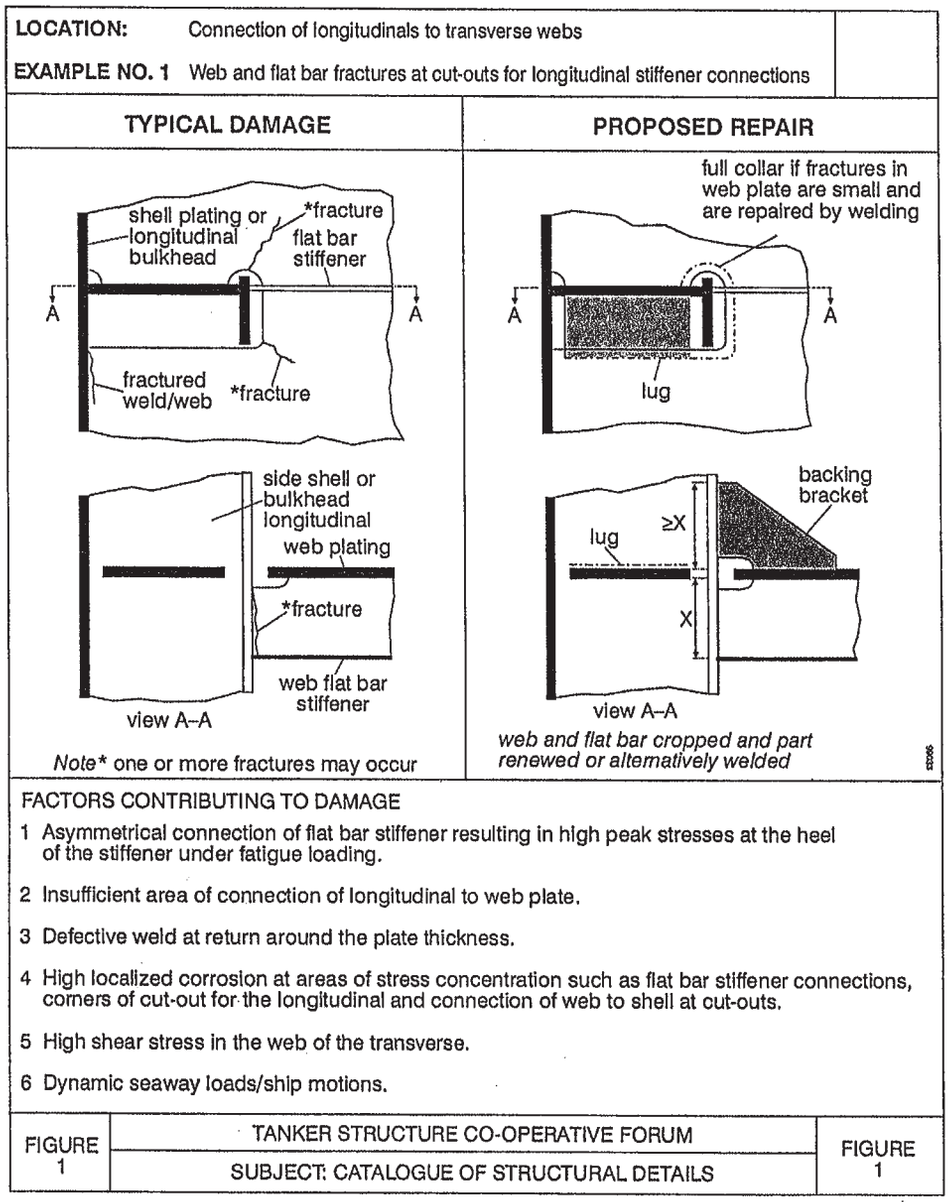


Figure 2 – Typical damage and repair example (reproduced from reference 1)

ANNEX 12

CRITERIA FOR LONGITUDINAL STRENGTH OF HULL GIRDER FOR OIL TANKERS

1 General

1.1 These criteria should be used for the evaluation of the longitudinal strength of the ship's hull girder as required by 8.1.2.

1.2 In order that the ship's longitudinal strength to be evaluated can be recognized as valid, fillet welding between longitudinal internal members and hull envelopes should be in sound condition so as to keep the integrity of longitudinal internal members with hull envelopes.

2 Evaluation of longitudinal strength

On oil tankers of 130 m in length and upwards and over 10 years of age, the longitudinal strength of the ship's hull girder should be evaluated in compliance with the requirements of this annex on the basis of the thickness measured, renewed or reinforced, as appropriate, during the renewal survey of the Cargo Ship Safety Construction Certificate or Cargo Ship Safety Certificate (SC renewal survey). The condition of the hull girder for longitudinal strength evaluation should be determined in accordance with the methods specified in appendix 3.

2.1 *Calculation of transverse sectional areas of deck and bottom flanges of hull girder*

2.1.1 The transverse sectional areas of deck flange (deck plating and deck longitudinals) and bottom flange (bottom shell plating and bottom longitudinals) of the ship's hull girder should be calculated by using the thickness measured, renewed or reinforced, as appropriate, during the SC renewal survey.

2.1.2 If the diminution of sectional areas of either deck or bottom flange exceeds 10% of their respective as-built area (i.e. original sectional area when the ship was built), either one of the following measures should be taken:

.1 to renew or reinforce the deck or bottom flanges so that the actual sectional area is not less than 90% of the as-built area; or

.2 to calculate the actual section of moduli (Z_{act}) of transverse section of the ship's hull girder by applying the calculation method specified in appendix 1, by using the thickness measured, renewed or reinforced, as appropriate, during the SC renewal survey.

2.2 *Requirements for transverse section modulus of hull girder*

2.2.1 The actual section moduli of the transverse section of the ship's hull girder, calculated in accordance with paragraph 2.1.2.2, should satisfy either of the following provisions, as applicable:

.1 for ships constructed on or after 1 July 2002, the actual section moduli (Z_{act}) of the transverse section of the ship's hull girder calculated in accordance with the requirements of paragraph 2.1.2.2 should be not less than the diminution limits determined by the Administration, taking into account the recommendations adopted by the Organization; or

.2 for ships constructed before 1 July 2002, the actual section moduli (Z_{act}) of the transverse section of the ship's hull girder calculated in accordance with the requirements of paragraph 2.1.2.2 should meet the criteria for minimum section modulus for ships in service required by the Administration or recognized classification society, provided that in no case Z_{act} should be less than the diminution limit of the minimum section modulus (Z_{mc}) as specified in appendix 2.

Appendix 1

CALCULATION CRITERIA OF SECTION MODULI OF MIDSHIP SECTION OF HULL GIRDER

1 When calculating the transverse section modulus of the ship's hull girder, the sectional area of all continuous longitudinal strength members should be taken into account.

2 Large openings, i.e. openings exceeding 2.5 m in length or 1.2 m in breadth, and scallops, where scallop welding is applied, are always to be deducted from the sectional areas used in the section modulus calculation.

3 Smaller openings (manholes, lightening holes, single scallops in way of seams, etc.) need not be deducted, provided that the sum of their breadths or shadow area breadths in one transverse section does not reduce the section modulus at deck or bottom by more than 3% and provided that he height of lightening holes, draining holes and single scallops in longitudinals or longitudinal girders does not exceed 25% of the web depth, for scallops of maximum 75 mm.

4 A deduction-free sum of smaller opening breadths in one transverse section in the bottom or deck area of 0.06 ($B - \Sigma b$) (where B = breadth of ship, Σb = total breadth of large openings) may be considered equivalent to the above reduction in sectional modulus.

5 The shadow area will be obtained by drawing two tangent lines with an opening angle of 30°.

6 The deck modulus is related to the moulded deck line at side.

7 The bottom modulus is related to the base line.

8 Continuous trunks and longitudinal hatch coamings should be included in the longitudinal sectional area provided they are effectively supported by longitudinal bulkheads or deep girders. The deck modulus is then to be calculated by dividing the moment of inertia by the following distance, provided this is greater than the distance to the deck line at side:

$$y_t = y\left(0.9 + 0.2\frac{x}{B}\right)$$

where:

y = distance from neutral axis to top of continuous strength member;

x = distance from top of continuous strength member to centerline of the ship;

x and y to be measured to the point giving the largest value of y_t.

9 Longitudinal girders between multi-hatchways will be considered by special calculations.

Appendix 2

DIMINUTION LIMIT OF MINIMUM LONGITUDINAL STRENGTH OF SHIPS IN SERVICE

1 The diminution limit of the minimum section modulus (Z_{mc}) of oil tankers in service is given by the following formula:

$$Z_{mc} = cL^2 B (C_b + 0.7)k \qquad (cm^3)$$

where:

L = Length of ship. L is the distance, in metres, on the summer load waterline from the fore-side of stem to the after-side of the rudder post, or the centre of the rudder stock if there is no rudder post. L is not to be less than 96%, and need not be greater than 97%, of the extreme length on the summer load waterline. In ships with unusual stern and bow arrangement, the length L may be specially considered.

B = Greatest moulded breadth in metres.

C_b = Moulded block coefficient at draught d corresponding to summer load waterline, based on L and B. C_b is not to be taken less than 0.6.

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

$$c = 0.9c_n$$

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

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

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

k = material factor, e.g.

k = 1.0 for mild steel with yield stress of 235 N/mm² and over

k = 0.78 for high-tensile steel with yield stress of 315 N/mm² and over

k = 0.72 for high-tensile steel with yield stress of 355 N/mm² and over.

2 Scantlings of all continuous longitudinal members of the ship's hull girder based on the section modulus requirement in 1 above should be maintained within 0.4L 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 0.4L 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.

Appendix 3

SAMPLING METHOD OF THICKNESS MEASUREMENTS FOR LONGITUDINAL STRENGTH EVALUATION AND REPAIR METHODS

1 Extent of longitudinal strength evaluation

Longitudinal strength should be evaluated within 0.4*L* amidships for the extent of the hull girder length that contains tanks therein and within 0.5*L* amidships for adjacent tanks which may extend beyond 0.4*L* amidships, where tanks means ballast tanks and cargo tanks.

2 Sampling method of thickness measurement

2.1 Pursuant to the requirements of section 2.5, transverse sections should be chosen such that thickness measurements can be taken for as many different tanks in corrosive environments as possible, e.g. ballast tanks sharing a common plane boundary with cargo tanks fitted with heating coils, other ballast tanks, cargo tanks permitted to be filled with sea water and other cargo tanks. Ballast tanks sharing a common plane boundary with cargo tanks fitted with heating coils and cargo tanks permitted to be filled with seawater should be selected where present.

2.2 The minimum number of transverse sections to be sampled should be in accordance with annex 2. The transverse sections should be located where the largest thickness reductions are suspected to occur or are revealed from deck and bottom plating measurements prescribed in 2.3 and should be clear of areas which have been locally renewed or reinforced.

2.3 At least two points should be measured on each deck plate and/or bottom shell plate required to be measured within the cargo area in accordance with the requirements of annex 2.

2.4 Within 0.1*D* (where *D* is the ship's moulded depth) of the deck and bottom at each transverse section to be measured in accordance with the requirements of annex 2, every longitudinal and girder should be measured on the web and face plate, and every plate should be measured at one point between longitudinals.

2.5 For longitudinal members other than those specified in 2.4 to be measured at each transverse section in accordance with the requirements of annex 2, every longitudinal and girder should be measured on the web and face plate, and every plate should be measured at least in one point per strake.

2.6 The thickness of each component should be determined by averaging all of the measurements taken in way of the transverse section on each component.

3 Additional measurements where the longitudinal strength is deficient

3.1 Where one or more of the transverse sections are found to be deficient in respect of the longitudinal strength requirements given in this annex, the number of transverse sections for thickness measurement should be increased such that each tank within the 0.5*L* amidships region has been sampled. Tank spaces that are partially within, but extend beyond, the 0.5*L* region, should be sampled.

3.2 Additional thickness measurements should also be performed on one transverse section forward and one aft of each repaired area to the extent necessary to ensure that the areas bordering the repaired section also comply with the requirements of the Code.

4 Effective repair methods

4.1 The extent of renewal or reinforcement carried out to comply with this annex should be in accordance with 4.2.

4.2 The minimum continuous length of a renewed or reinforced structural member should be not less than twice the spacing of the primary members in way. In addition, the thickness diminution in way of the butt joint of each joining member forward and aft of the replaced member (plates, stiffeners, girder webs and flanges, etc.) should not be within the substantial corrosion range (75% of the allowable diminution associated with each particular member). Where differences in thickness at the butt joint exceed 15% of the lower thickness, a transition taper should be provided.

4.3 Alternative repair methods involving the fitting of straps or structural member modification should be subject to special consideration. In considering the fitting of straps, it should be limited to the following conditions:

.1 to restore and/or increase longitudinal strength;

.2 the thickness diminution of the deck or bottom plating to be reinforced should not be within the substantial corrosion range (75% of the allowable diminution associated with the deck plating);

.3 the alignment and arrangement, including the termination of the straps, is in accordance with a standard recognized by the Administration;

.4 the straps are continuous over the entire 0.5*L* amidships length; and

.5 continuous fillet welding and full penetration welds are used at butt welding and, depending on the width of the strap, slot welds. The welding procedures applied should be acceptable to the Administration.

4.4 The existing structure adjacent to replacement areas and in conjunction with the fitted straps, etc., should be capable of withstanding the applied loads, taking into account the buckling resistance and the condition of welds between the longitudinal members and hull envelope plating.

第 MSC.371（93）號決議

（2014 年 5 月 22 日通過）

《2011 年國際散貨船和油船檢驗期間加強檢驗程序規則》（2011 年加強檢驗規則）修正案

海上安全委員會，

憶及國際海事組織公約關於本委員會的職能的第 28（二）條，

注意到第 A.1049（27）號決議所通過的《國際散貨船和油船檢驗期間加強檢驗程序規則》（以下稱“2011 年加強檢驗規則”），該規則根據經第 MSC.325（90）號決議所通過的《1974 年國際海上人命安全公約》（SOLAS）（以下稱“公約”）第 XI-1/2 條相關修正案的生效而生效，

在其第 93 屆會議上**審議了**按公約 VIII（b）（i）條提出和分發的 2011 年加強檢驗規則修正案，

1 按照公約第 VIII（b）（iv）條，**通過** 2011 年加強檢驗規則修正案，其文本載於本決議附件；

2 按照公約第 VIII（b）（vi）（2）（bb）條，**決定**該修正案於 2015 年 7 月 1 日須視為已獲接受，除非在此日期之前，有三分之一以上的公約締約國政府或其商船合計噸位不少於世界商船總噸 50%的締約國政府通報其反對該修正案；

3 **提請**各締約國政府注意，按照公約第 VIII（b）（vii）（2）條，該修正案在按上述 2 款獲接受後，須於 2016 年 1 月 1 日生效，

4 **要求**秘書長按照公約第 VIII（b）（v）條，將本決議及其附件中的修正案文本的核准無誤副本分發給所有公約締約國政府；

5 **還要求**秘書長將本決議及其附件的副本分發給非公約締約國的本組織會員國。

附件

2011 年國際散貨船和油船檢驗期間加強檢驗程序規則

（2011 年加強檢驗規則）修正案

附件 A

散貨船檢驗期間加強檢驗程序規則

A 部分

單舷側結構散貨船檢驗期間加強檢驗程序規則

1－總則

1 在 1.2.6 末尾增加如下句子：

“對於橫骨架式的散貨船，橫剖面包括附連的骨架及其在橫剖面處的端部連接。”

2 在 1.2.7 中，在“可識別的關鍵”和“和/或可疑區域”之間插入“結構區域”。

3 在 1.2.9 末尾，“其測量（或測厚）厚度介於 t_{net}+0.5mm 和 t_{net} 之間的腐蝕程度。”由“其測量厚度介於 t_{ren}+0.5mm 和 t_{ren} 之間的腐蝕程度。換新厚度（t_{ren}）係指最小許用厚度，mm，如低於此數值，應進行結構構件換新。”替代。

4 在 1.2.11 中，“或有%或更大範圍的塗層”由“或有 10%或更大範圍的塗層”替代。

5 在 1.2.17 的開頭，在“特別考慮”前插入“特殊考慮或”。

6 在現有 1.2.17 後新增 1.2.18 如下：

“1.2.18 *點腐蝕*係指分散的腐蝕點/區域，其腐蝕程度大於其周圍區域的總體腐蝕程度。點腐蝕密度的定義見附則 15 的圖 2。”

7 在現有 1.3.2 之後新增 1.3.3 如下：

“1.3.3 如上述 1.3.1 中提及的結構損壞為局部損壞，其性質不會影響到船舶的結構完整性（例如橫向甲板條上微小的孔）並已妥善處理，則驗船師在對周圍的結構評估後可考慮允許進行適當的臨時性修理以確保水密或風雨密完整性，並為完成永久性修理和保持船級給出特定期限的相關船級條件或遺留項目。”

2－換證檢驗

8 在 2.1.1 末尾增加如下句子：

“當換證檢驗在第 4 次年度檢驗之前開始，如將該工作作為換證檢驗的組成部分，則整個檢驗應在 15 個月內完成。”

9 在現有 2.3.2 之後新增 2.3.3 如下：

“2.3.3 對於根據船級社協會共同結構規範（CSR）建造的散貨船，已確定的顯著腐蝕區域可：

.1 由按塗料製造商的要求敷設的塗層予以保護，並每年進行檢查以確認該處的塗層仍處於良好的狀況；或

.2 要求每年進行測厚。”

3－年度檢驗

10 在 3.4.1.3、3.4.2.3 和 3.5 末尾增加如下句子：

“對於根據船級社協會共同結構規範建造的散貨船，如果按塗料製造商的要求敷設保護塗層並維持處於良好的狀況，則無需進行年度厚度測量；”。

4－中間檢驗

11 在 4.2.1.3 的第二句中，“發現塗層狀況”由“發現硬保護塗層狀況”替代。

12 在 4.2.3.3 末尾，新增句子和解釋性說明如下：

“對於根據船級社協會共同結構規範建造的散貨船，已確定的顯著腐蝕區域可：

.1 由按塗料製造商的要求敷設的塗層予以保護，並每年進行檢查以確認該處的塗層仍處於良好的狀況；或

.2 要求每年進行測厚。

解釋性說明：

對於現有散貨船，如果船東可選擇對貨艙進行上述要求的塗裝或重新塗裝，則可考慮近觀檢驗和測厚的範圍。在對現有船舶的貨艙進行塗裝之前，應在驗船師在場的情況下確定尺寸。”

13 在現有 4.2.3.3 之後新增 4.2.3.4 如下：

“4.2.3.4 如果在貨艙中敷設了硬保護塗層，並且發現其處於良好的狀況，則近觀檢驗和測厚的範圍可予以特殊考慮。”

6－船上文件

14 在 6.3.2 末尾增加如下內容：

“（對於共同結構規範散貨船，這些圖紙應包括每一結構構件的建造厚度和換新厚度。圖紙上還應清晰地標註任何自願增加的厚度。船上提供的船中剖面圖應包括所有貨艙內貨艙橫剖面的最小許用船體梁剖面特性）。”

B 部分

雙舷側結構散貨船檢驗期間加強檢驗程序規則

1 — 總則

15 在 1.2.6 末尾，增加如下句子：

“對於橫骨架式的散貨船，橫剖面包括附連的骨架及其在橫剖面處的端部連接。”

16 在 1.2.9 末尾，“其測量（或測厚）厚度介於 t_{net}+0.5mm 和 t_{net} 之間的腐蝕程度。”由“其測量厚度介於 t_{ren}+0.5mm 和 t_{ren} 之間的腐蝕程度。換新厚度（t_{ren}）係最小許用厚度，mm，如低於此數值，應進行結構構件換新。”替代。

17 在 1.2.17 的開頭，在“特別考慮”前插入“特殊考慮或”。

18 在現有 1.3.2 之後新增 1.3.3 如下：

“1.3.3 如上述 1.3.1 中提及的結構損壞為局部損壞，其性質不會影響到船舶的結構完整性（例如橫向甲板條上微小的孔）並已妥善處理，則驗船師在對周圍的結構評估後可考慮允許進行適當的臨時性修理以確保水密或風雨密完整性，並為完成永久性

修理和保持船級給出特定期限的相關船級條件或遺留項目。”

2－換證檢驗

19 在 2.1.1 末尾增加如下句子：

“當換證檢驗在第 4 次年度檢驗之前開始，如將該工作作為換證檢驗的組成部分，則整個檢驗應在 15 個月內完成。”

20 在現有 2.3.2 之後新增 2.3.3 如下：

“2.3.3 對於根據船級社協會共同結構規範（CSR）建造的散貨船，已確定的顯著腐蝕區域可：

.1 由按塗料製造商的要求敷設的塗層予以保護，並每年進行檢查以確認該處的塗層仍處於良好的狀況；或

.2 要求每年進行測厚。”

3－年度檢驗

21 在 3.4.1.2、3.4.2.2 和 3.5 末尾增加如下句子：

“對於根據船級社協會共同結構規範建造的散貨船，如果按塗料製造商的要求敷設保護塗層並維持處於良好的狀況，則無需進行年度厚度測量；”

4－中間檢驗

22 在 4.2.3.3 末尾新增句子和解釋性說明如下：

“對於根據船級社協會共同結構規範建造的散貨船，已確定的顯著腐蝕區域可：

.1 由按塗料製造商的要求敷設的塗層予以保護，並每年進行檢查以確認該處的塗層仍處於良好的狀況；或

.2 要求每年進行測厚。

解釋性說明：

對於現有散貨船，如果船東可選擇對貨艙進行上述要求的塗裝或重新塗裝，則可考慮近觀檢驗和測厚範圍。在對現有船舶的貨艙進行塗裝之前，應在驗船師在場的情況下確定尺寸。”

6－船上文件

23 在 6.3.1.2 末尾增加如下內容：

“（對於共同規範散貨船，這些圖紙應包括每一結構構件的建造厚度和換新厚度。圖紙上還應清晰地標註任何自願增加的厚度。船上提供的船中剖面圖應包括所有貨艙內貨艙橫剖面的最小許用船體梁剖面特性）。”

附件 B

油船檢驗期間加強檢驗程序規則

A 部分

雙殼油船檢驗期間加強檢驗程序規則

1－總則

24 在 1.2.6 末尾增加如下句子：

“對於橫骨架式的油船，橫剖面包括附連的骨架及其在橫剖面處的端部連接。”

25 在 1.2.7 中，在“可識別的關鍵”和“和/或可疑區域”之間插入“結構區域”一詞。

26 在 1.2.9 末尾，“其測量（或測厚）厚度介於 t_{net}+0.5mm 和 t_{net} 之間的腐蝕程度。”由“其測量厚度介於 t_{ren}+0.5mm 和 t_{ren} 之間的腐蝕程度。換新厚度（t_{ren}）係指最小許用厚度，mm，如低於此數值，應進行結構構件換新。”替代。

27 在 1.2.10 中，第一句“防腐系統通常可考慮全硬塗層”由“防腐系統通常可考慮全硬保護塗層”替代。

28 在 1.2.16 的開頭，在“特別考慮”前插入“特殊考慮或”。

29 在 1.3.1.5 末尾增加“（兼裝船）”。

30 在現有 1.3.2 之後新增 1.3.3 如下：

“1.3.3 如上述 1.3.1 中提及的結構損壞為局部損壞，其性質不會影響到船舶的結構完整性（例如橫向甲板條上微小的孔）並已

妥善處理，則驗船師在對周圍的結構評估後可考慮允許進行適當的臨時性修理以確保水密或風雨密完整性，並為完成永久性修理和保持船級給出特定期限的相關船級條件或遺留項目。”

2－換證檢驗

31 在 2.1.1 末尾增加如下句子：

“當換證檢驗在第 4 次年度檢驗之前開始，如將該工作作為換證檢驗的組成部分，則整個檢驗應在 15 個月內完成。”

32 在現有 2.1.5 之後新增 2.1.6 如下：

“2.1.6 不接受將中間檢驗時對於處所的檢驗和測厚同時作為換證檢驗的組成部分。”

33 在 2.5.2 末尾，“以前檢驗中確定的可疑區域應進行測厚。”由“應檢查以前檢驗中確定的可疑區域。以前檢驗中確定的顯著腐蝕區域應進行測厚。”替代。

3－年度檢驗

34 在 3.5.2 末尾增加如下句子：

“對於根據船級社協會共同結構規範建造的油船，要求檢查已確定的顯著腐蝕區域，並進行附加的測厚。”

4－中間檢驗

35 在現有 4.1.3 之後新增 4.1.4 如下，現有 4.1.4 重新編號為 4.1.5：

“4.1.4 對於根據船級社協會共同結構規範建造的油船，要求檢查已確定的顯著腐蝕區域，並進行附加的測厚。”

6－船上文件

36 在 6.3.2 末尾增加如下內容：

“（對於共同規範船舶，這些圖紙應包括每一結構構件的建造厚度和換新厚度。圖紙上還應清晰地標註任何自願增加的厚度。船上提供的船中剖面圖應包括所有液貨艙內液貨艙橫剖面的最小許用船體梁剖面特性）。”

B 部分

雙殼油船以外的油船檢驗期間加強檢驗程序規則

1－總則

37 在 1.2.5 末尾增加如下句子：

“對於橫骨架式的油船，橫剖面包括附連的骨架及其在橫剖面處的端部連接。”

38 在 1.2.6 中，在“可識別的關鍵”和“和/或可疑區域”之間插入“結構區域”一詞。

39 在 1.2.15 的開頭，在“特別考慮”前插入“特殊考慮或”。

40 在現有 1.3.2 之後新增 1.3.3 如下：

“1.3.3 如上述 1.3.1 中提及的結構損壞為局部損壞，其性質不會影響到船舶的結構完整性（例如橫向甲板條上微小的孔）並已妥善處理，則驗船師在對周圍的結構評估後可考慮允許進行適當的臨時性修理以確保水密或風雨密完整性，並為完成永久性修理和保持船級給出特定期限的相關船級條件或遺留項目。”

2－換證檢驗

41 在 2.1.1 末尾增加如下句子：

“當換證檢驗在第 4 次年度檢驗之前開始，如將該工作作為換證檢驗的組成部分，則整個檢驗應在 15 個月內完成。”

42 在現有 2.1.6 之後新增 2.1.7 如下：

“2.1.7 不接受將中間檢驗時對於處所的檢驗和測厚同時作為換證檢驗的組成部分。”

43 在 2.5.2 末尾，“以前檢驗中確定的可疑區域應進行測厚。”由“應檢查以前檢驗中確定的可疑區域。以前檢驗中確定的顯著腐蝕區域應進行測厚。”替代。

6－船上文件

44 在 6.3.1 末尾增加如下內容：

“（對於共同規範船舶，這些圖紙應包括每一結構構件的建造厚度和換新厚度。圖紙上還應清晰地標註任何自願增加的厚度。船上提供的船中剖面圖應包括所有液貨艙內液貨艙橫剖面的最小許用船體梁剖面特性）。”

RESOLUTION MSC.371(93)
(adopted on 22 May 2014)

AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution A.1049(27), by which the Assembly adopted the International Code on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil Tankers (hereinafter referred to as "the 2011 ESP Code"), which became effective upon entry into force of the associated amendments to regulation XI-1/2 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"), adopted by resolution MSC.325(90),

HAVING CONSIDERED, at its ninety-third session, amendments to the 2011 ESP Code 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 2011 ESP Code, 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 amendments shall be deemed to have been accepted on 1 July 2015 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 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 2016 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 ALSO 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.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

ANNEX A
CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS

Part A
CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING SINGLE-SIDE SKIN CONSTRUCTION

1 – General

1 At the end of paragraph 1.2.6, the following sentence is added:

"For transversely framed bulk carriers, a transverse section includes adjacent frames and their end connections in way of transverse sections."

2 In paragraph 1.2.7, the words "structural areas" are inserted between the words "identifiable critical" and "and/or suspect areas".

3 At the end of paragraph 1.2.9, the words "a gauged (or measured) thickness between t_{net} + 0.5 mm and t_{net}" are replaced by the words "a measured thickness between t_{ren} + 0.5mm and t_{ren}. Renewal thickness (t_{ren}) is the minimum allowable thickness, in mm, below which renewal of structural members is to be carried out."

4 In paragraph 1.2.11 the figure "10" is inserted between the words "hard scale at" and "per cent".

5 At the beginning of paragraph 1.2.17, the words "*Special consideration or*" are inserted before the words "*specially considered*".

6 The following new paragraph 1.2.18 is added after existing paragraph 1.2.17:

"1.2.18 *Pitting corrosion* is defined as scattered corrosion spots/areas with local material reductions which are greater than the general corrosion in the surrounding area. Pitting intensity is defined in figure 2 of annex 15."

7 The following new paragraph 1.3.3 is added after existing paragraph 1.3.2:

"1.3.3 Where the damage found on the structure mentioned in paragraph 1.3.1 above is isolated and of a localized nature which does not affect the ship's structural integrity (as for example a minor hole in a cross-deck strip), consideration may be given by the surveyor to allow an appropriate temporary repair to restore watertight or weather tight integrity after evaluation of the surrounding structure and impose an associated condition of classification or recommendation with a specific time limit in order to complete the permanent repair and retain classification."

2 – Renewal survey

8 At the end of paragraph 2.1.1, the following sentence is added:

"When the renewal survey is commenced prior to the fourth annual survey, the entire survey is to be completed within 15 months if such work is to be credited to the renewal survey."

9 The following new paragraph 2.3.3 is added after existing paragraph 2.3.2:

"2.3.3 For bulk carriers built under IACS Common Structural Rules (CSR), the identified substantial corrosion areas may be:

.1 protected by coating applied in accordance with the coating manufacturer's requirements and examined at annual intervals to confirm the coating in way is still in good condition; or alternatively

.2 required to be measured at annual intervals."

3 – Annual survey

10 At the end of paragraphs 3.4.1.3, 3.4.2.3 and 3.5, the following sentence is added:

"For bulk carriers built under the IACS Common Structural Rules, the annual thickness gauging may be omitted where a protective coating has been applied in accordance with the coating manufacturer's requirements and is maintained in good condition;"

4 – Intermediate survey

11 In the second sentence of paragraph 4.2.1.3, the words "hard protective" are inserted between the words "breakdown of" and "coating".

12 At the end of paragraph 4.2.3.3, the following new sentence and explanatory note are added:

"For bulk carriers built under IACS Common Structural Rules, the identified substantial corrosion areas may be:

.1 protected by coating applied in accordance with the coating manufacturer's requirements and examined at annual intervals to confirm the coating in way is still in good condition; or alternatively

.2 required to be measured at annual intervals."

Explanatory note:

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 surveys and thickness measurement. Prior to the coating of cargo holds of existing ships, scantlings should be ascertained in the presence of a surveyor."

13 The following new paragraph 4.2.3.4 is added after existing paragraph 4.2.3.3:

"4.2.3.4 Where hard protective coating is fitted in cargo holds and is found in GOOD condition, the extent of the close-up surveys and thickness measurements may be specially considered."

6 – Documentation on board

14 At the end of paragraph 6.3.2, the following text is added:

"(for CSR bulk carriers, these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for hold transverse section in all cargo holds)."

Part B
CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING DOUBLE-SIDE SKIN CONSTRUCTION

1 – General

15 At the end of paragraph 1.2.6, the following sentence is added:

"For transversely framed bulk carriers, a transverse section includes adjacent frames and their end connections in way of transverse sections."

16 At the end of paragraph 1.2.9, the words "a gauged (or measured) thickness between t_{net} + 0.5 mm and t_{net}" are replaced by the words "a measured thickness between t_{ren} + 0.5mm and t_{ren}. Renewal thickness (t_{ren}) is the minimum allowable thickness, in mm, below which renewal of structural members is to be carried out".

17 At the beginning of paragraph 1.2.17, the words "*Special consideration or*" are inserted before the words "*specially considered*".

18 The following new paragraph 1.3.3 is added after the existing paragraph 1.3.2:

"1.3.3 Where the damage found on the structure mentioned in paragraph 1.3.1 above is isolated and of a localized nature which does not affect the ship's structural integrity (as for example a minor hole in a cross-deck strip), consideration may be given by the surveyor to allow an appropriate temporary repair to restore watertight or weather tight integrity after evaluation of the surrounding structure and impose an associated condition of classification or recommendation with a specific time limit in order to complete the permanent repair and retain classification."

2 – Renewal survey

19 At the end of paragraph 2.1.1, the following sentence is added:

"When the renewal survey is commenced prior to the fourth annual survey, the entire survey is to be completed within 15 months if such work is to be credited to the renewal survey."

20 The following new paragraph 2.3.3 is added after the existing paragraph 2.3.2:

"2.3.3 For bulk carriers built under IACS Common Structural Rules (CSR), the identified substantial corrosion areas may be:

.1 protected by coating applied in accordance with the coating manufacturer's requirements and examined at annual intervals to confirm the coating in way is still in good condition; or alternatively

.2 required to be measured at annual intervals."

3 – Annual survey

21 At the end of paragraphs 3.4.1.2, 3.4.2.2 and 3.5, the following sentence is added:

"For bulk carriers built under the IACS Common Structural Rules, the annual thickness gauging may be omitted where a protective coating has been applied in accordance with the coating manufacturer's requirements and is maintained in good condition;"

4 – Intermediate survey

22 At the end of paragraph 4.2.3.3, the following new sentence and explanatory note are added:

"For bulk carriers built under IACS Common Structural Rules, the identified substantial corrosion areas may be:

.1 protected by coating applied in accordance with the coating manufacturer's requirements and examined at annual intervals to confirm the coating in way is still in good condition; or alternatively

.2 required to be measured at annual intervals."

Explanatory note:

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 surveys and thickness measurement. Prior to the coating of cargo holds of existing ships, scantlings should be ascertained in the presence of a surveyor."

6 – Documentation on board

23 At the end of paragraph 6.3.1.2, the following text is added:

"(for CSR bulk carriers, these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for hold transverse section in all cargo holds)."

ANNEX B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS

Part A
CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF DOUBLE-HULL OIL TANKERS

1 – General

24 At the end of paragraph 1.2.6, the following sentence is added:

"For transversely framed oil tankers, a transverse section includes adjacent frames and their end connections in way of transverse sections."

25 In paragraph 1.2.7, the words "structural areas" are inserted between the words "identifiable critical" and "and/or suspect areas".

26 At the end of paragraph 1.2.9, the words "a gauged (or measured) thickness between t_{net} + 0.5 mm and t_{net}" are replaced by the words "a measured thickness between t_{ren} + 0.5mm and t_{ren}. Renewal thickness (t_{ren}) is the minimum allowable thickness, in mm, below which renewal of structural members is to be carried out".

27 In the first sentence of paragraph 1.2.10, the word "protective" is inserted between the words "full hard" and "coating".

28 At the beginning of paragraph 1.2.16, the words "*Special consideration or*" are inserted before the words "*specially considered*".

29 At the end of paragraph 1.3.1.5, the words "(combination carriers)" are added.

30 The following new paragraph 1.3.3 is added after existing paragraph 1.3.2:

"1.3.3 Where the damage found on the structure mentioned in paragraph 1.3.1 above is isolated and of a localized nature which does not affect the ship's structural integrity (as for example a minor hole in a cross-deck strip), consideration may be given by the surveyor to allow an appropriate temporary repair to restore watertight or weathertight integrity after evaluation of the surrounding structure and impose an associated condition of classification or recommendation with a specific time limit in order to complete the permanent repair and retain classification."

2 – Renewal survey

31 At the end of paragraph 2.1.1, the following sentence is added:

"When the renewal survey is commenced prior to the fourth annual survey, the entire survey is to be completed within 15 months if such work is to be credited to the renewal survey."

32 The following new paragraph 2.1.6 is added after existing paragraph 2.1.5:

"2.1.6 Concurrent crediting to both intermediate survey and renewal survey for surveys and thickness measurements of spaces should not be acceptable."

33 At the end of paragraph 2.5.2, the words "should have thickness measurements taken." are replaced by the words "are to be examined. Areas of substantial corrosion identified at previous surveys are to have thickness measurements taken".

3 – Annual survey

34 At the end of paragraph 3.5.2, the following sentence is added:

"For oil tankers built under IACS Common Structural Rules, the identified substantial corrosion areas are required to be examined and additional thickness measurements are to be carried out."

4 – Intermediate survey

35 The following new paragraph 4.1.4 is added after existing paragraph 4.1.3 and the existing paragraph 4.1.4 is renumbered as 4.1.5:

"4.1.4 For oil tankers built under IACS Common Structural Rules, the identified substantial corrosion areas are required to be examined and additional thickness measurements are to be carried out."

6 – Documentation on board

36 At the end of paragraph 6.3.2, the following text is added:

"(for CSR ships these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for the tank transverse section in all cargo tanks)."

Part B
CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS OTHER THAN DOUBLE-HULL OIL TANKERS

1 – General

37 At the end of paragraph 1.2.5, the following sentence is added:

"For transversely framed oil tankers, a transverse section includes adjacent frames and their end connections in way of transverse sections."

38 In paragraph 1.2.6, the words "structural areas" are inserted between the words "identifiable critical" and "and/or suspect areas".

39 At the beginning of paragraph 1.2.15, the words "*Special consideration or*" are added before the words "*specially considered*".

40 The following new paragraph 1.3.3 is added after the existing paragraph 1.3.2:

"1.3.3 Where the damage found on structure mentioned in paragraph 1.3.1 above is isolated and of a localized nature which does not affect the ship's structural integrity (as for example a minor hole in a cross-deck strip), consideration may be given by the surveyor to allow an appropriate temporary repair to restore watertight or weather tight integrity after evaluation of the surrounding structure and impose an associated condition of classification or recommendation with a specific time limit in order to complete the permanent repair and retain classification."

2 – Renewal survey

41 At the end of paragraph 2.1.1, the following sentence is added:

"When the renewal survey is commenced prior to the fourth annual survey, the entire survey is to be completed within 15 months if such work is to be credited to the renewal survey."

42 The following new paragraph 2.1.7 is added after existing paragraph 2.1.6:

"2.1.7 Concurrent crediting to both intermediate survey and renewal survey for surveys and thickness measurements of spaces should not be acceptable."

43 At the end of paragraph 2.5.2, the words "should have thickness measurements taken" are replaced by the words "are to be examined. Areas of substantial corrosion identified at previous surveys are to have thickness measurements taken."

6 – Documentation on board

44 At the end of paragraph 6.3.1, the following text is added:

"(for CSR ships these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for hold transverse section in all cargo tanks)."

第 MSC.381（94）號決議

（2014 年 11 月 21 日通過）

《2011 年國際散貨船和油船檢驗期間加強檢驗計劃規則》（《2011 年加強檢驗規則》）修正案

海上安全委員會，

憶及《國際海事組織公約》關於本委員會職能的第二十八條第（二）款，

注意到第 A.1049（27）號決議通過的《2011 年國際散貨船和油船檢驗期間加強檢驗計劃規則》（“2011 年加強檢驗規則”）將於《1974 年國際海上人命安全公約》（《安全公約》）（“本公約”）第 XI-1 章的相關修正案生效時生效，

在其第 94 屆會議上**審議了**按照本公約第 VIII（b）（i）條建議和分發的《2011 年加強檢驗規則》修正案，

1 按照本公約第 VIII（b）（iv）條，**通過**《2011 年加強檢驗規則》修正案，其文本載於本決議附件；

2 按照本公約第 VIII（b）（vi）（2）（bb）條，**決定**該修正案將於 2016 年 1 月 1 日視為已被接受，除非在此日期之前，有三分之一以上的本公約締約國政府或其商船隊總和佔世界商船總噸數不少於 50%的締約國政府通報本組織秘書長反對該修正案；

3 **提請**締約國政府注意，按照本公約第 VIII（b）（vii）（2）條，該修正案將在按上述第 2 段被接受後，於 2016 年 7 月 1 日生效；

4 **要求**秘書長就本公約第 VIII（b）（v）條之目的，將本決議及其附件中的修正案文本的核證無誤副本分發給所有本公約締約國政府；

5 **還要求**秘書長將本決議及其附件的副本分發給非本公約締約國的本組織會員國。

附件

《2011 年國際散貨船和油船檢驗期間加強檢驗計劃規則》（《2011 年加強檢驗規則》）的修正案

附件 A

散貨船檢驗期間加強檢驗計劃規則

A 部分

單舷側結構散貨船檢驗期間加強檢驗計劃規則

1 第 1.3.3 段由下文替代：

“1.3.3 如以上第 1.3.1 段中所述結構上發現的損壞係孤立的及局部性質的，不影響船舶機構完整性（例如跨甲板板條中的小洞），驗船師在對周圍結構做出評估並提出相關條件或建議及完成永久性修理的具體時間限制後可考慮允許適當臨時修理，以恢復水密或風雨密完整性並保留相關法定發證的有效性。”

2 5.3.2.3 中的文本由下文替代：

“.3 液壓臂升降台，如傳統的車載升降台、升降機和可移動台架；”

3 在現有 5.4 之後新增 5.5 如下：

“5.5 救助和應急響應設備

如果呼吸器和/或其他設備用作“救助和應急響應設備”，該設

備應適合於被檢驗處所的結構。”

4 現有 5.5 和 5.6 分別重新編號。

5 在目錄中，在索引 5.4 之後新增索引“5.5 救助和應急響應設備”，現有索引 5.5 和 5.6 相應重新編號。

6 在重新編號的 5.6.7 中，引述的 5.5.5 和 5.5.6 由 5.6.5 和 5.6.6 替 代。

7 在現有 6.1.2 之後新增 6.1.3 如下：

“6.1.3 對於受《安全公約》第 II-1/3-10 條約束的散貨船，一旦船舶建造檔案（SCF）中包含的文件出現更改，船東應在船舶整個壽命期間安排對 SCF 的更新。關於 SCF 更新的程序文件應納入安全管理體系”。

8 將 6.3 下的現有文本編號為 6.3.1，並在原 6.3 的末尾新增 6.3.2 如下：

“6.3.2 對於受《安全公約》第 II-1/3-10 條約束的散貨船，船上應備有船舶建造檔案（SCF），檔案中僅需包括船上應保留的條目”。

9 將 6.4 下的現有文本編號為 6.4.1，並在原 6.4 的末尾新增 6.4.2 和 6.4.3 如下：

“6.4.2 對於受《安全公約》第 II-1/3-10 條約束的散貨船，一旦船舶建造檔案（SCF）中包含的文件出現更改，在檢驗完成後，驗船師應核實船舶建造檔案業經更新。

6.4.3 對於受《安全公約》第 II-1/3-10 條約束的散貨船，在

檢驗完成後，驗船師應核實船體結構建造所用材料的任何增加和/或換新均記錄在船舶建造檔案的材料清單中。”

附件 7　狀況評估報告

10　船舶概況改為：

“船舶概況

船名：主管機關/經認可組織標識號：

原主管機關/經認可組織標識號：

國際海事組織編號：

…”

附件 14　厚度測量程序要求

11　第 1 節改為：

“1　　總則

船體結構檢驗中所要求的厚度測量，如並非由經認可組織代主管機關進行，應由經認可組織驗船師予以見證。驗船師的到場應予以記錄。這也適用於航行期間進行的厚度測量。”

B 部分

雙舷側結構散貨船檢驗期間加強檢驗計劃規則

12　第 1.3.3 段由下文替代：

“1.3.3　如以上第 1.3.1 段中所述結構上發現的損壞係孤立的及局部性質的，不影響船舶機構完整性（例如跨甲板板條中的

小洞），驗船師在對周圍結構做出評估並提出相關條件或建議及完成永久性修理的具體時間限制後可考慮允許適當臨時修理，以恢復水密或風雨密完整性並保留相關法定發證的有效性。”

13 5.3.2.3 中的文本由下文替代：

“.3 液壓臂升降台，如傳統的車載升降台、升降機和可移動台架；”

14 在現有 5.4 之後新增 5.5 如下；

“5.5 救助和應急響應設備

如果呼吸器和/或其他設備用作“救助和應急響應設備”，該設備應適合於被檢驗處所的結構。”

15 現有 5.5 和 5.6 分別重新編號。

16 在目錄中，在索引 5.4 後新增索引“5.5 救助和應急響應設備”，現有索引 5.5 和 5.6 相應重新編號。

17 在重新編號的 5.6.7 中，引述的 5.5.5 和 5.5.6 由 5.6.5 和 5.6.6 替代。

18 在現有 6.1.2 之後新增 6.1.3 如下：

“6.1.3 對於受《安全公約》第 II-1/3-10 條約束的散貨船，一旦船舶建造檔案（SCF）中包含的文件出現更改，船東應在船舶整個壽命期間安排對 SCF 的更新。關於 SCF 更新的程序文件應納入安全管理體系。”

19 將 6.3 下的現有文本編號為 6.3.1，並在原 6.3 的末尾新增 6.3.2

如下：

“6.3.2 對於受《安全公約》第 II-1/3-10 條約束的散貨船，船上應備有船舶建造檔案（SCF），檔案中僅需包括船上應保留的條目”。

20 將 6.4 下的現有文本編號為 6.4.1，並在原 6.4 的末尾新增 6.4.2 和 6.4.3 如下：

“6.4.2 對於受《安全公約》第 II-1/3-10 條約束的散貨船，一旦船舶建造檔案（SCF）中包含的文件出現更改，在檢驗完成後，驗船師應核實船舶建造檔案業經更新。

6.4.3 對於受《安全公約》第 II-1/3-10 條約束的散貨船，在檢驗完成後，驗船師應核實船體結構建造所用材料的任何增加和/或換新均記錄在船舶建造檔案的材料清單中。”

附件 7 狀況評估報告

21 船舶概況改為：

“船舶概況

船名：主管機關/經認可組織標識號：

原主管機關/經認可組織標識號：

國際海事組織編號：

...”

附件 12 厚度測量程序要求

22 第 1 節改為：

“1 總則

船體結構檢驗中所要求的厚度測量，如並非由經認可組織代主管機關進行，應由經認可組織驗船師予以見證。驗船師的到場應予以記錄。這也適用於航行期間進行的厚度測量。”

附件 B

油船檢驗期間加強檢驗計劃規則

A 部分

雙殼油船檢驗期間加強檢驗計劃規則

23 第 1.3.3 段由下文替代：

“1.3.3 如以上第 1.3.1 段中所述結構上發現的損壞係孤立的及局部性質的，不影響船舶機構完整性（例如跨甲板板條中的小洞），驗船師在對周圍結構做出評估並提出相關條件或建議及完成永久性修理的具體時間限制後可考慮允許適當臨時修理，以恢復水密或風雨密完整性並保留相關法定發證的有效性。”

24 2.6.1 中的文本由下列新文本替代：

“2.6.1 在換證檢驗時壓載艙壓力試驗的最低要求見 2.6.3 和附則 3。

在換證檢驗時液貨艙試驗的最低要求見 2.6.4 和附則 3。

在滿足下列條件的前提下，驗船師可接受船上的船員在船長指導下進行液貨艙試驗：

.1 在進行試驗前，船東已提交液艙試驗程序並經主管機關或被認可組織評審；

.2 無影響液艙結構完整性的泄漏、變形或顯著腐蝕記錄；

.3 已在全面或近觀檢驗完成之日以前不超過 3 個月的特別檢驗窗口內進行液艙試驗並合格；

.4 試驗合格結果記錄在船舶日誌中；和

.5 在全面和近觀檢驗時，驗船師查明液艙的內外部狀況和相關結構合格。”

25 5.3.2.3 中的文本由下文替代：

“.3 液壓臂升降台，如傳統的車載升降台、升降機和可移動台架；”

26 在現有 5.4 之後新增 5.5 如下：

“5.5 救助和應急響應設備

如果呼吸器和/或其他設備用作“救助和應急響應設備”，該設備應適合於被檢驗處所的結構。”

27 現有 5.5 和 5.6 分別重新編號。

28 在目錄中，在索引 5.4 後新增索引“5.5 救助和緊急響應設備”，現有索引 5.5 和 5.6 相應重新編號。

29 在重新編號的 5.6.7 中，引述的 5.5.5 和 5.5.6 由 5.6.5 和 5.6.6 替代。

30 在現有 6.1.2 之後新增 6.1.3 如下：

“6.1.3 對於受《安全公約》第 II-1/3-10 條約束的散貨船，一旦船舶建造檔案（SCF）中包含的文件出現更改，船東應在船舶整個壽命期間安排對 SCF 的更新。關於 SCF 更新的程序文件應納入安全管理體系”。

31 將 6.3 下的現有文本編號為 6.3.1，並在原 6.3 的末尾新增 6.3.2

如下：

“6.3.2 對於受《安全公約》第 II-1/3-10 條約束的散貨船，船上應備有船舶建造檔案（SCF），檔案中僅需包括船上應保留的條目”。

32 將 6.4 下的現有文本編號為 6.4.1，並在原 6.4 的末尾新增 6.4.2 和 6.4.3 如下：

“6.4.2 對於受《安全公約》第 II-1/3-10 條約束的散貨船，一旦船舶建造檔案（SCF）中包含的文件出現更改，在檢驗完成後，驗船師應核實船舶建造檔案業經更新。

6.4.3 對於受《安全公約》第 II-1/3-10 條約束的散貨船，在檢驗完成後，驗船師應核實船體結構建造所用材料的任何增加和/或換新均記錄在船舶建造檔案的材料清單中。”

附件 9 狀況評估報告

33 船舶概況改為：

“船舶概況

船名：主管機關/經認可組織標識號：

原主管機關/經認可組織標識號：

國際海事組織編號：

...”

34 表 2（船體樑的橫剖面模數）註解 3 由以下所列替代：

“3 本節適用於 2002 年 7 月 1 日以前建造的船舶：按附件

12 中 2.2.1.2 段的規定，在對已達到 10 年船齡的船舶進行最近一次 SC 換證檢驗期間，已酌情使用測量、換新或加強的結構件厚度，對船體樑橫剖面模數進行了計算，發現其符合主管機關或經認可組織要求的衡準，且 Z_{act} 不小於附件 12 附錄 2 中規定的 Z_{mc}（見下列註 2 定義），如下表所列。

闡述主管機關或經認可組織要求的營運船舶船體樑最小剖面模數的認可衡準。”

附件 12 油船船體樑總縱強度衡準

35 2.2.1.2 段由下文替代：

“.2 對於 2002 年 7 月 1 日以前建造的船舶，只要實際剖面模數（Z_{act}）在任何情況下不小於附錄 2 中規定的最小剖面模數（Z_{mc}）的減小極限值，則根據 2.1.2.2 要求計算的船體樑橫剖面實際剖面模數（Z_{act}）應符合主管機關或經認可組織要求的營運船舶最小剖面模數（Z_{mc}）衡準。”

B 部分

雙殼油船以外的油船檢驗期間加強檢驗計劃規則

36 第 1.3.3 段由下文替代：

“1.3.3 如以上第 1.3.1 段中所述結構上發現的損壞係孤立的及局部性質的，不影響船舶機構完整性（例如跨甲板板條中的小洞），驗船師在對周圍結構做出評估並提出相關條件或建議及完成永久性修理的具體時間限制後可考慮允許適當臨時修理，以恢復水密或風雨密完整性並保留相關法定發證的有效性。”

37 2.6.1 中的文本由下列新文本替代：

“2.6.1 在換證檢驗時壓載艙壓力試驗的最低要求見 2.6.3 和附則 3。

在換證檢驗時液貨艙試驗的最低要求見 2.6.4 和附則 3。

在滿足下列條件的前提下，驗船師可接受船上的船員在船長指導下進行液貨艙試驗：

.1 在進行試驗前，船東已提交液艙試驗程序並經主管機關或被認可組織評審；

.2 無影響液艙結構完整性的泄漏、變形或顯著腐蝕記錄；

.3 已在全面或近觀檢驗完成之日以前不超過 3 個月的特別檢驗窗口內進行液艙試驗並合格；

.4 試驗合格結果記錄在船舶日誌中；和

.5 在全面和近觀檢驗時，驗船師查明液艙的內外部狀況和相關結構合格。”

38 5.3.2.3 中的文本由下文替代：

“.3 液壓臂升降台，如傳統的車載升降台、升降機和可移動台架；”

39 在現有 5.4 之後新增 5.5 如下：

“5.5 救助和應急響應設備

如果呼吸器和/或其他設備用作“救助和應急響應設備”，該設備應適合於被檢驗處所的結構。”

40 現有 5.5 和 5.6 分別重新編號。

41 在目錄中，在索引 5.4 後新增索引“5.5 救助和應急響應設備”，現有索引 5.5 和 5.6 相應重新編號。

42 在重新編號的 5.6.7 中，引述的 5.5.5 和 5.5.6 由 5.6.5 和 5.6.6 替代。

附件 9 狀況評估報告

43 船舶概況改為：

“船舶概況

船名：主管機關/經認可組織標識號：

原主管機關/經認可組織標識號：

國際海事組織編號：

...”

44 表 2（船體樑的橫剖面模數）註解 3 由以下所列替代：

“3 本節適用於 2002 年 7 月 1 日以前建造的船舶：按附件 12 中 2.2.1.2 段的規定，在對已達到 10 年船齡的船舶進行最近一次 SC 換證檢驗期間，已酌情使用測量、換新或加強的結構件厚度，對船體樑橫剖面模數進行了計算，發現其符合主管機關或經認可組織要求的衡準，且 Z_{act} 不小於附件 12 附錄 2 中規定的 Z_{mc}（見下列註 2 定義），如下表所列。

闡述主管機關或經認可組織要求的營運船舶船體樑最小剖面模數的認可衡準。”

附件 12 油船船體樑總縱強度衡準

45 2.2.1.2 段由下文替代：

“.2 對於 2002 年 7 月 1 日以前建造的船舶，只要實際剖面模數（Z_{act}）在任何情況下不小於附錄 2 中規定的最小剖面模數（Z_{mc}）的減小極限值，則根據 2.1.2.2 要求計算的船體樑橫剖面實際剖面模數（Z_{act}）應符合主管機關或經認可組織要求的營運船舶最小剖面模數（Z_{mc}）衡準。”

RESOLUTION MSC.381(94)
(adopted on 21 November 2014)

AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution A.1049(27), by which the Assembly adopted the International Code on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil Tankers, 2011 ("the 2011 ESP Code"), will become effective upon entry into force of the associated amendments to chapter XI-1 of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

HAVING CONSIDERED, at its ninety-fourth session, amendments to the 2011 ESP Code 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 2011 ESP Code, 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 amendments shall be deemed to have been accepted on 1 January 2016 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 to the Secretary-General of the Organization their objections to the amendments;

3 INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2016 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of 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 ALSO 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.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

ANNEX A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING SINGLE-SIDE SKIN CONSTRUCTION

1 Paragraph 1.3.3 is replaced by the following:

"1.3.3 Where the damage found on the structure mentioned in paragraph 1.3.1 above is isolated and of a localized nature which does not affect the ship's structural integrity (as for example a minor hole in a cross-deck strip), consideration may be given by the surveyor to allow an appropriate temporary repair to restore watertight or weathertight integrity after evaluation of the surrounding structure and impose an associated condition or recommendation with a specific time limit in order to complete the permanent repair and retain the validity of the relevant statutory certification."

2 The text in paragraph 5.3.2.3 is replaced by the following:

".3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"

3 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment

If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."

4 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.

5 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.

6 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.

7 The following new paragraph 6.1.3 is added after the existing paragraph 6.1.2:

"6.1.3 For bulk carriers subject to SOLAS regulation II-1/3-10, the owner should arrange the updating of the Ship Construction File (SCF) throughout the ship's life whenever a modification of the documentation included in the SCF has taken place. Documented procedures for updating the SCF should be included within the Safety Management System."

8 The existing text under paragraph 6.3 is numbered as paragraph 6.3.1 and the following new paragraph 6.3.2 is added at the end of paragraph 6.3:

"6.3.2 For bulk carriers subject to SOLAS regulation II-1/3-10, the Ship Construction File (SCF), limited to the items to be retained on board, should be available on board."

9 The existing text under paragraph 6.4 is numbered as paragraph 6.4.1 and the following new paragraphs 6.4.2 and 6.4.3 are added at the end of paragraph 6.4:

"6.4.2 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify that the update of the Ship Construction File (SCF) has been done whenever a modification of the documentation included in the SCF has taken place.

6.4.3 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify any addition and/or renewal of materials used for the construction of the hull structure are documented within the Ship Construction File list of materials."

Annex 7 Condition evaluation report

10 The general particulars are replaced by the following:

"General particulars

Ship's name:	Administration/recognized organization identity number: Previous Administration/recognized organization identity number(s): IMO number:

..."

Annex 14 Procedural requirements for thickness measurement

11 Section 1 is replaced by the following:

"**1 General**

Thickness measurements required in the context of hull structural surveys, if not carried out by the recognized organization acting on behalf of the Administration, should be witnessed by a surveyor of the recognized organization. The attendance of the surveyor should be recorded. This also applies to thickness measurements taken during voyages."

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING DOUBLE-SIDE SKIN CONSTRUCTION

12 Paragraph 1.3.3 is replaced by the following:

"1.3.3 Where the damage found on the structure mentioned in paragraph 1.3.1 above is isolated and of a localized nature which does not affect the ship's structural integrity (as for example a minor hole in a cross-deck strip), consideration may be given by the surveyor to allow an appropriate temporary repair

to restore watertight or weathertight integrity after evaluation of the surrounding structure and impose an associated condition or recommendation with a specific time limit in order to complete the permanent repair and retain the validity of the relevant statutory certification."

13 The text in paragraph 5.3.2.3 is replaced by the following:

".3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"

14 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment

If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."

15 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.

16 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.

17 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.

18 The following new paragraph 6.1.3 is added after the existing paragraph 6.1.2:

"6.1.3 For bulk carriers subject to SOLAS regulation II-1/3-10, the Owner should arrange the updating of the Ship Construction File (SCF) throughout the ship's life whenever a modification of the documentation included in the SCF has taken place. Documented procedures for updating the SCF should be included within the Safety Management System."

19 The existing text under paragraph 6.3 is numbered as paragraph 6.3.1 and the following new paragraph 6.3.2 is added at the end of paragraph 6.3:

"6.3.2 For bulk carriers subject to SOLAS regulation II-1/3-10, the Ship Construction File (SCF), limited to the items to be retained on board, should be available on board."

20 The existing text under paragraph 6.4 is numbered as paragraph 6.4.1 and the following new paragraphs 6.4.2 and 6.4.3 are added at the end of paragraph 6.4:

"6.4.2 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify that the update of the Ship Construction File (SCF) has been done whenever a modification of the documentation included in the SCF has taken place.

6.4.3 For bulk carriers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify any addition and/or renewal of materials used for the construction of the hull structure are documented within the Ship Construction File list of materials."

Annex 7 Condition evaluation report

21 The general particulars are replaced by the following:

"General particulars

Ship's name:	Administration/recognized organization identity number: Previous Administration/recognized organization identity number(s): IMO number:

..."

Annex 12 Procedural requirements for thickness measurement

22 Section 1 is replaced by the following:

"**1 General**

Thickness measurements required in the context of hull structural surveys, if not carried out by the recognized organization acting on behalf of the Administration, should be witnessed by a surveyor of the recognized organization. The attendance of the surveyor should be recorded. This also applies to thickness measurements taken during voyages."

ANNEX B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF DOUBLE-HULL OIL TANKERS

23 Paragraph 1.3.3 is replaced by the following:

"1.3.3 Where the damage found on the structure mentioned in paragraph 1.3.1 above is isolated and of a localized nature which does not affect the ship's structural integrity (as for example a minor hole in a cross-deck strip), consideration may be given by the surveyor to allow an appropriate temporary repair to restore watertight or weathertight integrity after evaluation of the surrounding structure and impose an associated condition or recommendation with a specific time limit in order to complete the permanent repair and retain the validity of the relevant statutory certification."

24 The text in paragraph 2.6.1 is replaced by the following new text:

"2.6.1 The minimum requirements for ballast tank pressure testing at the renewal survey are given in 2.6.3 and in annex 3.

The minimum requirements for cargo tank testing at the renewal survey are given in 2.6.4 and annex 3.

Cargo tank testing carried out by the vessel's crew under the direction of the master may be accepted by the surveyor provided the following conditions are complied with:

.1 the tank testing procedure has been submitted by the owner and reviewed by the Administration or recognized organization prior to the testing being carried out;

.2 there is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;

.3 the tank testing has been satisfactorily carried out within special survey window not more than 3 months prior to the date of the survey on which the overall or close up survey is completed;

.4 the satisfactory results of the testing is recorded in the vessel's logbook; and

.5 the internal and external condition of the tanks and associated structure are found satisfactory by the surveyor at the time of the overall and close up survey."

25 The text in paragraph 5.3.2.3 is replaced by the following:

".3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"

26 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment

If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."

27 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.

28 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.

29 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.

30 The following new paragraph 6.1.3 is added after the existing paragraph 6.1.2:

"6.1.3 For oil tankers subject to SOLAS regulation II-1/3-10, the Owner should arrange the updating of the Ship Construction File (SCF) throughout the ship's life whenever a modification of the documentation included in the SCF has taken place. Documented procedures for updating the SCF should be included within the Safety Management System."

31 The existing text under paragraph 6.3 is numbered as paragraph 6.3.1 and the following new paragraph 6.3.2 is added at the end of paragraph 6.3:

"6.3.2 For oil tankers subject to SOLAS regulation II-1/3-10, the Ship Construction File (SCF), limited to the items to be retained on board, should be available on board."

32 The existing text under paragraph 6.4 is numbered as paragraph 6.4.1 and the following new paragraphs 6.4.2 and 6.4.3 are added at the end of paragraph 6.4:

"6.4.2 For oil tankers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify that the update of the Ship Construction File (SCF) has been done whenever a modification of the documentation included in the SCF has taken place.

6.4.3 For oil tankers subject to SOLAS regulation II-1/3-10, on completion of the survey, the surveyor should verify any addition and/or renewal of materials used for the construction of the hull structure are documented within the Ship Construction File list of materials."

Annex 9 Condition evaluation report

33 The general particulars are replaced by the following:

"General particulars

Ship's name:	Administration/recognized organization identity number: Previous Administration/recognized organization identity number(s): IMO number:

..."

34 Note 3 to table 2 (Transverse section modulus of hull girder) is replaced by the following:

"3 This section applies to ships constructed before 1 July 2002: Section moduli of transverse sections of the ship's hull girder have been calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey most recently conducted after the ship reached 10 years of age in accordance with the provisions of paragraph 2.2.1.2 of annex 12, and found to meet the criteria required by the Administration or the recognized organization and that Z_{act} is not less than Z_{mc} (defined in note 2 below) as specified in appendix 2 to annex 12, as shown in the following table.

Describe the criteria for acceptance of the minimum section moduli of the ship's hull girder for ships in service required by the Administration or the recognized organization."

Annex 12 Criteria for longitudinal strength of hull girder for oil tankers

35 Paragraph 2.2.1.2 is replaced by the following:

".2 for ships constructed before 1 July 2002, the actual section moduli (Z_{act}) of the transverse section of the ship's hull girder calculated in accordance with the requirements of 2.1.2.2 should meet the criteria for minimum section modulus for ships in service required by the Administration or recognized organization, provided that in no case Z_{act} should be less than the diminution limit of the minimum section modulus (Z_{mc}) as specified in appendix 2."

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS OTHER THAN DOUBLE-HULL OIL TANKERS

36 Paragraph 1.3.3 is replaced by the following:

"1.3.3 Where the damage found on the structure mentioned in paragraph 1.3.1 above is isolated and of a localized nature which does not affect the ship's structural integrity (as for example a minor hole in a cross-deck strip), consideration may be given by the surveyor to allow an appropriate temporary repair to restore watertight or weathertight integrity after evaluation of the surrounding structure and impose an associated condition or recommendation with a specific time limit in order to complete the permanent repair and retain the validity of the relevant statutory certification."

37 The text in paragraph 2.6.1 is replaced by the following new text:

"2.6.1 The minimum requirements for ballast tank pressure testing at the renewal survey are given in 2.6.3 and in annex 3.

The minimum requirements for cargo tank testing at the renewal survey are given in 2.6.4 and annex 3.

Cargo tank testing carried out by the vessel's crew under the direction of the master may be accepted by the surveyor provided the following conditions are complied with:

.1 the tank testing procedure has been submitted by the owner and reviewed by the Administration or recognized organization prior to the testing being carried out;

.2 there is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;

.3 the tank testing has been satisfactorily carried out within special survey window not more than 3 months prior to the date of the survey on which the overall or close up survey is completed;

.4 the satisfactory results of the testing is recorded in the vessel's logbook; and

.5 the internal and external condition of the tanks and associated structure are found satisfactory by the surveyor at the time of the overall and close up survey."

38 The text in paragraph 5.3.2.3 is replaced by the following:

".3 hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;"

39 The following new paragraph 5.5 is added after the existing paragraph 5.4:

"5.5 Rescue and emergency response equipment

If breathing apparatus and/or other equipment is used as "Rescue and emergency response equipment" then the equipment should be suitable for the configuration of the space being surveyed."

40 The existing paragraphs 5.5 and 5.6 are renumbered, respectively.

41 In the table of contents, a new reference to paragraph "5.5 Rescue and emergency response equipment" is added after reference to paragraph 5.4 and the existing reference to paragraph numbers 5.5 and 5.6 are renumbered accordingly.

42 In the renumbered paragraph 5.6.7, the referenced paragraph numbers 5.5.5 and 5.5.6 are replaced by 5.6.5 and 5.6.6.

Annex 9 Condition evaluation report

43 The general particulars are replaced by the following:

"General particulars

Ship's name:	Administration/recognized organization identity number: Previous Administration/recognized organization identity number(s): IMO number:

..."

44 Note 3 to table 2 (Transverse section modulus of hull girder) is replaced by the following:

"3 This section applies to ships constructed before 1 July 2002: Section moduli of transverse sections of the ship's hull girder have been calculated by using the thickness of structural members measured, renewed or reinforced, as appropriate, during the SC renewal survey most recently conducted after the ship reached 10 years of age in accordance with the provisions of paragraph 2.2.1.2 of annex 12, and found to meet the criteria required by the Administration or the recognized organization and that Z_{act} is not less than Z_{mc} (defined in note 2 below) as specified in appendix 2 to annex 12, as shown in the following table.

Describe the criteria for acceptance of the minimum section moduli of the ship's hull girder for ships in service required by the Administration or the recognized organization."

Annex 12 Criteria for longitudinal strength of hull girder for oil tankers

45 Paragraph 2.2.1.2 is replaced by the following:

".2 for ships constructed before 1 July 2002, the actual section moduli (Z_{act}) of the transverse section of the ship's hull girder calculated in accordance with the requirements of 2.1.2.2 should meet the criteria for minimum section modulus for ships in service required by the Administration or recognized organization, provided that in no case Z_{act} should be less than the diminution limit of the minimum section modulus (Z_{mc}) as specified in appendix 2."

第 MSC.405（96）號決議

（2016 年 5 月 19 日通過）

2011 年國際散貨船和油船檢驗期間加強檢驗程序規則（2011 年 ESP 規則）修正案

海上安全委員會，

憶及國際海事組織公約關於本委員會職能的第 28（b）條，

注意到大會 A.1049（27）決議通過的《2011 年國際散貨船和油船檢驗期間加強檢驗程序規則》（“2011 年 ESP 規則”）已按照《1974 年國際海上人命安全公約》（“本公約”）第 XI-1 章成為強制性要求，

還注意到本公約第 VIII（b）條和第 XI-1/2 條關於對 2011 年 ESP 規則的修正程序，

在其第 96 屆會議上**審議**了按本公約第 VIII（b）（i）條提出和分發的 2011 年 ESP 規則修正案，

1 按本公約第 VIII（b）（iv）條規定，**通過**了 2011 年 ESP 規則修正案，其文本載於本決議附件；

2 按本公約第 VIII（b）（vi）（2）（bb）條規定，**決定**該修正案須於 2017 年 7 月 1 日視為已被接受，除非在此日期之前，有三分之一以上的本公約締約國政府或擁有商船合計噸位數不少於世界商船總噸數 50% 的締約國政府通報秘書長其反對該修正案；

3 **提請**本公約締約國政府注意，按本公約第 VIII（b）（vii）（2）條規定，該修正案須在按上述 2 被接受後，於 2018 年 1 月 1 日生效；

4 **要求**秘書長按本公約第 VIII（b）（v）條規定，將核正無誤的本決議及其附件中的修正案文本副本分發給所有本公約締約國政府；

5 **還要求**秘書長將本決議及其附件的副本分發給非本公約締約國的本組織會員國。

附件

2011 年國際散貨船和油船檢驗期間加強檢驗程序規則

（2011 年 ESP 規則）修正案

附件 A

散貨船檢驗期間加強檢驗程序規則

A 部分

單舷側結構散貨船檢驗期間加強檢驗程序規則

1 在 4.2.1.3 中，在“塗層狀況‘差’”前插入“硬保護”一詞。

2 5.2.2 由下文替代：

“5.2.2 為使現場驗船師能進行檢驗，船東和主管機關應基於本組織制定的建議案商定合適和安全的通道規定。”

3 5.2.9 由下文替代：

“5.2.9 船東應指派至少一位對液艙和封閉處所檢查有經驗的負責人員始終陪伴現場驗船師。”

4 刪除 5.2.10。

B 部分

雙舷側結構散貨船檢驗期間加強檢驗程序規則

5 5.2.2 由下文替代：

“5.2.2 為使現場驗船師能進行檢驗，船東和主管機關應基於本組織制定的建議案商定合適和安全的通道規定。”

6 5.2.9 由下文替代：

“5.2.9 船東應指派至少一位對液艙和封閉處所檢查有經驗的負責人員始終陪伴現場驗船師。”

7 刪除 5.2.10。

附件 B

油船檢驗期間加強檢驗程序規則

A 部分

雙殼油船檢驗期間加強檢驗程序規則

8 5.2.1.1 由下文替代：

“5.2.1.1 為使現場驗船師能進行檢驗，船東和主管機關應基於本組織制定的建議案商定合適和安全的通道規定。”

9 5.2.6 由下文替代：

“5.2.6 船東應指派至少一位對液艙和封閉處所檢查有經驗的負責人員始終陪伴現場驗船師。”

10 刪除 5.2.7。

B 部分

雙殼油船以外的油船檢驗期間加強檢驗程序規則

11 5.2.1.1 由下文替代：

“5.2.1.1 為使現場驗船師能進行檢驗，船東和主管機關應基於本組織制定的建議案商定合適和安全的通道規定。”

12 5.2.6 由下文替代：

“5.2.6 船東應指派至少一位對液艙和封閉處所檢查有經驗的負責人員始終陪伴現場驗船師。”

13 刪除 5.2.7。

RESOLUTION MSC.405(96)
(adopted on 19 May 2016)

AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

THE MARITIME SAFETY COMMITTEE,

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

NOTING resolution A.1049(27), by which the Assembly adopted the International Code on the Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers, 2011 ("the 2011 ESP Code"), which has become mandatory under chapter XI-1 of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"),

NOTING ALSO article VIII(b) and regulation XI-1/2 of the Convention concerning the procedure for amending the 2011 ESP Code,

HAVING CONSIDERED, at its ninety-sixth session, amendments to the 2011 ESP Code 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 2011 ESP Code 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 2017 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 the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2018 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of 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 REQUESTS ALSO 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.

ANNEX

AMENDMENTS TO THE INTERNATIONAL CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS, 2011 (2011 ESP CODE)

ANNEX A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING SINGLE-SIDE SKIN CONSTRUCTION

1 In paragraph 4.2.1.3, the words "hard protective" are inserted after the words "When such breakdown of".

2 Paragraph 5.2.2 is replaced with the following text:

"5.2.2 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access should be agreed between the owner and the Administration, based on recommendations developed by the Organization.

3 Paragraph 5.2.9 is replaced with the following text:

"5.2.9 The surveyor(s) should always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed space inspection."

4 Paragraph 5.2.10 is deleted.

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF BULK CARRIERS HAVING DOUBLE-SIDE SKIN CONSTRUCTION

5 Paragraph 5.2.2 is replaced with the following text:

"5.2.2 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access should be agreed between the owner and the Administration, based on recommendations developed by the Organization.

6 Paragraph 5.2.9 is replaced with the following text:

"5.2.9 The surveyor(s) should always be accompanied by, at least, one responsible person, assigned by the owner, experienced in tank and enclosed space inspection."

7 Paragraph 5.2.10 is deleted.

ANNEX B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS

Part A

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF DOUBLE-HULL OIL TANKERS

8 Paragraph 5.2.1.1 is replaced with the following text:

"5.2.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access should be agreed between the owner and the Administration, based on recommendations developed by the Organization.

9 Paragraph 5.2.6 is replaced with the following text:

"5.2.6 The surveyor(s) should always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed space inspection."

10 Paragraph 5.2.7 is deleted.

Part B

CODE ON THE ENHANCED PROGRAMME OF INSPECTIONS DURING SURVEYS OF OIL TANKERS OTHER THAN DOUBLE-HULL OIL TANKERS

11 Paragraph 5.2.1.1 is replaced with the following text:

"5.2.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access should be agreed between the owner and the Administration, based on recommendations developed by the Organization.

12 Paragraph 5.2.6 is replaced with the following text:

"5.2.6 The surveyor(s) should always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed space inspection."

13 Paragraph 5.2.7 is deleted.

批 示 摘 錄

透過行政長官二零二一年十二月二十八日批示：

劉軍勵——根據第26/2009號行政法規《領導及主管人員通則的補充規定》第八條的規定，因具備適當經驗及專業能力履行職務，其擔任政府總部事務局局長的定期委任，自二零二二年二月一日起，續期一年。

———

二零二二年一月十九日於行政長官辦公室

辦公室主任　許麗芳

Extracto de despacho

Por despachos de S. Ex.ª o Chefe do Executivo, de 28 de Dezembro de 2021:

Lao Kuan Lai da Luz — renovada a comissão de serviço, pelo período de um ano, como directora da Direcção dos Serviços para os Assuntos da Sede do Governo, nos termos do artigo 8.º do Regulamento Administrativo n.º 26/2009 (Disposições complementares do estatuto do pessoal de direcção e chefia) por possuir experiência e competência profissional adequada para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

———

Gabinete do Chefe do Executivo, aos 19 de Janeiro de 2022. — A Chefe do Gabinete, *Hoi Lai Fong.*

行 政 會 秘 書 處

批 示 摘 錄

摘錄自簽署人於二零二一年十二月十四日作出的批示：

根據現行第12/2015號法律《公共部門勞動合同制度》第四條第二款、第三款及第六條第四款的規定，吳嬋秋於本秘書處擔任第四職階勤雜人員的長期行政任用合同，自二零二二年一月二十五日起續期三年。

———

二零二二年一月十三日於行政會秘書處

秘書長　許麗芳

SECRETARIA DO CONSELHO EXECUTIVO

Extracto de despacho

Por despacho da signatária, de 14 de Dezembro de 2021:

Ng Sim Chao — renovado o contrato administrativo de provimento de longa duração, pelo período de três anos, como auxiliar, 4.º escalão, nesta Secretaria, nos termos dos artigos 4.º, n.ºs 2 e 3, e 6.º, n.º 4, da Lei n.º 12/2015 (Regime do contrato de trabalho nos serviços públicos), em vigor, a partir de 25 de Janeiro de 2022.

———

Secretaria do Conselho Executivo, aos 13 de Janeiro de 2022. — A Secretária-geral, *Hoi Lai Fong.*

政府總部事務局

批示摘錄

透過行政長官二零二一年十二月二十八日批示：

李月梅——根據第26/2009號行政法規《領導及主管人員通則的補充規定》第八條的規定，因具備適當經驗及專業能力履行職務，其擔任本局副局長的定期委任，自二零二二年二月一日起，續期一年。

根據第26/2009號行政法規《領導及主管人員通則的補充規定》第八條的規定，本局下列主管人員因具備適當經驗及專業能力履行職務，其定期委任，自二零二二年二月一日起，續期一年。

——謝佩雯，行政財政廳廳長

——林曉欣，禮賓公關廳廳長

——庄永燊，綜合事務廳廳長

——郭淑華，財政管理處處長

——張詠梅，領事事務處處長

——雷子燊，研究組織處處長

——盧桂蘭，公眾接待處處長

趙希恬——根據第15/2009號法律第二條第三款（二）項、第四條及第五條，第26/2009號行政法規第二條、第三條第二款、第五條、第七條及第九條第一款，現行《澳門公共行政工作人員通則》第二十三條第二款a）項，以及第44/2020號行政法規第六條第二款（一）項及第七條的規定，以定期委任方式獲委任為本局行政輔助處處長，自二零二二年二月一日起，為期一年。

按照第15/2009號法律第五條第二款的規定，現公佈委任的依據和獲委任人的學歷及專業簡歷如下：

1. 委任的依據

——職位出缺（該職位經第44/2020號行政法規設立）；

DIRECÇÃO DOS SERVIÇOS PARA OS ASSUNTOS DA SEDE DO GOVERNO

Extractos de despachos

Por despachos de S. Ex.ª o Chefe do Executivo, de 28 de Dezembro de 2021:

Lei Ut Mui — renovada a comissão de serviço, pelo período de um ano, como subdirectora destes Serviços, nos termos do artigo 8.º do Regulamento Administrativo n.º 26/2009 (Disposições complementares do estatuto do pessoal de direcção e chefia), por possuir experiência e competência profissional adequada para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

O seguinte pessoal de chefia, destes Serviços — renovadas as comissões de serviço, pelo período de um ano, nos termos do artigo 8.º do Regulamento Administrativo n.º 26/2009 (Disposições complementares do estatuto do pessoal de direcção e chefia), por possuírem competência profissional e experiência adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022:

— Che Pui Man, como chefe do Departamento Administrativo e Financeiro;

— Isabel Lam, como chefe do Departamento de Protocolo e Relações Públicas;

— Chong Weng San, como chefe do Departamento de Assuntos Genéricos;

— Kuok Sok Wa, como chefe da Divisão de Gestão Financeira;

— Cheong Weng Mui, como chefe da Divisão de Assuntos Consulares;

— Loi Chi San, como chefe da Divisão de Estudos e Organização;

— Lou Kuai Lan, como chefe da Divisão de Atendimento ao Público.

Chio Hei Tim — nomeada, em comissão de serviço, pelo período de um ano, chefe da Divisão de Apoio Administrativo destes Serviços, nos termos das disposições conjugadas da alínea *2*) do n.º 3 do artigo 2.º e dos artigos 4.º e 5.º da Lei n.º 15/2009, do artigo 2.º, do n.º 2 do artigo 3.º, dos artigos 5.º e 7.º e do n.º 1 do artigo 9.º do Regulamento Administrativo n.º 26/2009, da alínea *a*) do n.º 2 do artigo 23.º do Estatuto dos Trabalhadores da Administração Pública de Macau, em vigor, e da alínea *1*) do n.º 2 do artigo 6.º e do artigo 7.º do Regulamento Administrativo n.º 44/2020, a partir de 1 de Fevereiro de 2022.

Ao abrigo do n.º 2 do artigo 5.º da Lei n.º 15/2009, é publicada a nota relativa aos fundamentos da nomeação e ao currículo académico e profissional da nomeada:

1. Fundamentos da nomeação

— Vacatura do cargo (criado pelo Regulamento Administrativo n.º 44/2020);

——獲委任人的個人履歷顯示其具備專業能力及才幹擔任本局行政輔助處處長一職。

2. 學歷

——澳門大學葡萄牙語學士。

3. 專業簡歷

——2010年7月至2016年11月，原政府總部輔助部門行政技術助理員，曾多次代任該部門人力資源暨檔案處處長；

——2016年11月至2021年1月，原政府總部輔助部門技術輔導員，曾多次代任該部門人力資源暨檔案處處長；

——2021年2月至今，政府總部事務局技術輔導員；

——2021年2月至今，政府總部事務局行政輔助處代處長。

韋志炎——根據第15/2009號法律第二條第三款（二）項、第四條及第五條，第26/2009號行政法規第二條、第三條第二款、第五條、第七條及第九條第一款，現行《澳門公共行政工作人員通則》第二十三條第二款a）項，以及第44/2020號行政法規第十三條第二款（一）項及第十四條的規定，以定期委任方式獲委任為本局資訊技術處處長，自二零二二年二月一日起，為期一年。

按照第15/2009號法律第五條第二款的規定，現公佈委任的依據和獲委任人的學歷及專業簡歷如下：

1. 委任的依據

——職位出缺（該職位經第44/2020號行政法規設立）；

——獲委任人的個人履歷顯示其具備專業能力及才幹擔任本局資訊技術處處長一職。

2. 學歷

——中山大學計算機科學與技術學士。

3. 專業簡歷

——2013年10月至2021年1月，原政府總部輔助部門技術員，曾多次代任該部門文件暨資訊中心職務主管；

— A nomeada possui competência profissional e aptidão para o exercício do cargo de chefe da Divisão de Apoio Administrativo destes Serviços, conforme se comprova no seu *curriculum vitae*.

2. Currículo académico

— Licenciatura em Estudos Portugueses pela Universidade de Macau.

3. Currículo profissional

— De Julho de 2010 a Novembro de 2016, assistente técnica administrativa dos então Serviços de Apoio da Sede do Governo, tendo substituído, por várias vezes, a chefe da Divisão de Recursos Humanos e Arquivo dos mesmos Serviços;

— De Novembro de 2016 a Janeiro de 2021, adjunta-técnica dos então Serviços de Apoio da Sede do Governo, tendo substituído, por várias vezes, a chefe da Divisão de Recursos Humanos e Arquivo dos mesmos Serviços;

— Desde Fevereiro de 2021 até à presente data, adjunta-técnica da Direcção dos Serviços para os Assuntos da Sede do Governo;

— Desde Fevereiro de 2021 até à presente data, chefe da Divisão de Apoio Administrativo da Direcção dos Serviços para os Assuntos da Sede do Governo, em regime de substituição.

Wai Chi Im — nomeado, em comissão de serviço, pelo período de um ano, chefe da Divisão de Informática destes Serviços, nos termos das disposições conjugadas da alínea 2) do n.º 3 do artigo 2.º e dos artigos 4.º e 5.º da Lei n.º 15/2009, do artigo 2.º, do n.º 2 do artigo 3.º, dos artigos 5.º e 7.º e do n.º 1 do artigo 9.º do Regulamento Administrativo n.º 26/2009, da alínea *a*) do n.º 2 do artigo 23.º do Estatuto dos Trabalhadores da Administração Pública de Macau, em vigor, e da alínea *1*) do n.º 2 do artigo 13.º e do artigo 14.º do Regulamento Administrativo n.º 44/2020, a partir de 1 de Fevereiro de 2022.

Ao abrigo do n.º 2 do artigo 5.º da Lei n.º 15/2009, é publicada a nota relativa aos fundamentos da nomeação e ao currículo académico e profissional do nomeado:

1. Fundamentos da nomeação

— Vacatura do cargo (criado pelo Regulamento Administrativo n.º 44/2020);

— O nomeado possui competência profissional e aptidão para o exercício do cargo de chefe da Divisão de Informática, destes Serviços, conforme se comprova no seu *curriculum vitae*.

2. Currículo académico

— Licenciatura em Ciência e Tecnologia de Informática pela Universidade de Sun Yat-Sen.

3. Currículo profissional

— De Outubro de 2013 a Janeiro de 2021, técnico dos então Serviços de Apoio da Sede do Governo, tendo substituído, por várias vezes, a chefia funcional do Centro de Documentação e Informação dos mesmos Serviços;

—— 2021年2月，政府總部事務局技術員；

——2021年3月至今，政府總部事務局高級技術員；

——2021年2月至今，政府總部事務局資訊技術處代處長。

透過行政長官二零二一年十二月三十一日批示：

張淑婷——根據現行第12/2015號法律《公共部門勞動合同制度》第六條第二款（一）項及第三款的規定，其在本局擔任第二職階首席顧問高級技術員的行政任用合同修改為長期行政任用合同，為期三年，自二零二一年十二月十七日起生效。

透過行政長官辦公室主任二零二一年十二月三十一日批示：

黎鳳媚——根據現行第12/2015號法律《公共部門勞動合同制度》第四條第二款、第三款及第六條第四款的規定，其在本局擔任第四職階勤雜人員的長期行政任用合同續期三年，自二零二二年二月十四日起生效。

黃勇彰——根據現行第12/2015號法律《公共部門勞動合同制度》第四條第二款、第三款及第六條第一款的規定，其在本局擔任第二職階輕型車輛司機的行政任用合同續期壹年，自二零二二年二月十四日起生效。

透過行政長官辦公室主任二零二二年一月六日批示：

根據現行《澳門公共行政工作人員通則》第三十四條的規定，財政局第三職階首席特級行政技術助理員馬占士在本局擔任同一職務的徵用，自二零二二年二月一日起，續期一年。

— Em Fevereiro de 2021, técnico da Direcção dos Serviços para os Assuntos da Sede do Governo;

— Desde Março de 2021 até à presente data, técnico superior da Direcção dos Serviços para os Assuntos da Sede do Governo;

— Desde Fevereiro de 2021 até à presente data, chefe da Divisão de Informática da Direcção dos Serviços para os Assuntos da Sede do Governo, em regime de substituição.

Por despacho de S. Ex.ª o Chefe do Executivo, de 31 de Dezembro de 2021:

Cheong Sok Teng, técnica superior assessora principal, 2.º escalão, destes Serviços — alterado o respectivo contrato administrativo de provimento para contrato administrativo de provimento de longa duração, por prazo de três anos, nos termos da alínea *1)* do n.º 2 e do n.º 3 do artigo 6.º da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), em vigor, a partir de 17 de Dezembro de 2021.

Por despachos da chefe do Gabinete do Chefe do Executivo, de 31 de Dezembro de 2021:

Lai Fong Mei — renovado o contrato administrativo de provimento de longa duração, para o exercício de funções de auxiliar, 4.º escalão, nestes Serviços, nos termos dos n.os 2 e 3 do artigo 4.º e do n.º 4 do artigo 6.º da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), em vigor, pelo período de três anos, a partir de 14 de Fevereiro de 2022.

Wong Iong Cheong — renovado o contrato administrativo de provimento, para o exercício de funções de motorista de ligeiros, 2.º escalão, nestes Serviços, nos termos dos n.os 2 e 3 do artigo 4.º e do n.º 1 do artigo 6.º da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), em vigor, pelo período de um ano, a partir de 14 de Fevereiro de 2022.

Por despacho da chefe do Gabinete do Chefe do Executivo, de 6 de Janeiro de 2022:

Jaime Diamantino Hyndman Amarante, assistente técnico administrativo especialista principal, 3.º escalão, da Direcção dos Serviços de Finanças — prorrogada, por mais um ano, a sua requisição para o exercício das mesmas funções nestes Serviços, nos termos do artigo 34.º do ETAPM, em vigor, a partir de 1 de Fevereiro de 2022.

聲 明

茲聲明，應溫雪梅的要求，根據現行《澳門公共行政工作人員通則》第二十三條第六款及第15/2009號法律《領導及主管人員通則的基本規定》第十七條第一款（一）項的規定，其擔任本局禮賓事務處處長的定期委任於期限屆滿日自動終止，二零二二年二月一日返回本局人員編制第三職階首席特級公關督導員的原職位。

Declarações

Para os devidos efeitos se declara que, a pedido de Van Sut Mui, a sua comissão de serviço como chefe da Divisão de Assuntos Protocolares destes Serviços cessa, automaticamente, no termo do prazo, regressando ao seu lugar de origem como assistente de relações públicas especialista principal, 3.º escalão, do quadro do pessoal destes Serviços, nos termos do n.º 6 do artigo 23.º do ETAPM, em vigor, conjugado com a alínea *1)* do n.º 1 do artigo 17.º da Lei n.º 15/2009 (Disposições Fundamentais do Estatuto do Pessoal de Direcção e Chefia), a 1 de Fevereiro de 2022.

茲聲明，根據現行《澳門公共行政工作人員通則》第四十五條的規定，因趙希恬獲定期委任為本局行政輔助處處長，故其在本局擔任第一職階首席技術輔導員的不具期限的行政任用合同，於二零二二年二月一日自動終止。

茲聲明，根據現行《澳門公共行政工作人員通則》第四十五條的規定，因韋志炎獲定期委任為本局資訊技術處處長，故其在本局擔任第一職階二等高級技術員的不具期限的行政任用合同，於二零二二年二月一日自動終止。

二零二二年一月二十日於政府總部事務局

局長　劉軍勵

— Para os devidos efeitos se declara que o contrato administrativo de provimento sem termo de Chio Hei Tim, para o exercício de funções de adjunta-técnica principal, 1.º escalão, nestes Serviços, cessa, automaticamente, nos termos do artigo 45.º do ETAPM, em vigor, a 1 de Fevereiro de 2022, por motivo da sua nomeação, em comissão de serviço, para o cargo de chefe da Divisão de Apoio Administrativo destes Serviços.

— Para os devidos efeitos se declara que o contrato administrativo de provimento sem termo de Wai Chi Im, para o exercício de funções de técnico superior de 2.ª classe, 1.º escalão, nestes Serviços, cessa, automaticamente, nos termos do artigo 45.º do ETAPM, em vigor, a 1 de Fevereiro de 2022, por motivo da sua nomeação, em comissão de serviço, para o cargo de chefe da Divisão de Informática destes Serviços.

Direcção dos Serviços para os Assuntos da Sede do Governo, aos 20 de Janeiro de 2022. — A Directora dos Serviços, *Lao Kuan Lai da Luz.*

行政法務司司長辦公室

批示摘錄

摘錄自行政法務司司長二零二一年十二月二十二日批示：

劉志英，本辦公室第一職階首席高級技術員——根據現行第12/2015號法律《公共部門勞動合同制度》第六條第二款（一）項及第三款的規定，其行政任用合同修改為長期行政任用合同，為期三年，自二零二一年十二月十九日起生效。

二零二二年一月十九日於行政法務司司長辦公室

辦公室主任　林智龍

GABINETE DO SECRETÁRIO PARA A ADMINISTRAÇÃO E JUSTIÇA

Extracto de despacho

Por despacho do Ex.mo Senhor Secretário para a Administração e Justiça, de 22 de Dezembro de 2021:

Lao Chi Ieng, técnica superior principal, 1.º escalão, deste Gabinete — alterado o seu contrato administrativo de provimento para contrato administrativo de provimento de longa duração, por prazo de três anos, nos termos da alínea *1*) do n.º 2 e do n.º 3 do artigo 6.º da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), em vigor, a partir de 19 de Dezembro de 2021.

Gabinete do Secretário para a Administração e Justiça, aos 19 de Janeiro de 2022. — O Chefe do Gabinete, *Lam Chi Long.*

經濟財政司司長辦公室

第 23/2022 號經濟財政司司長批示

經濟財政司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，並根據經第2/2021號行政法規修改及重新公佈的第6/1999號行政法規《政府部門及實體的組織、職權與運作》第三條第一款（二）項、經第85/2021號行政命令修改的第181/2019號行政命令第一款，以及經十二月二十一日第87/89/M號法令核

GABINETE DO SECRETÁRIO PARA A ECONOMIA E FINANÇAS

Despacho do Secretário para a Economia e Finanças n.º 23/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e nos termos da alínea 2) do n.º 1 do artigo 3.º do Regulamento Administrativo n.º 6/1999 (Organização, competências e funcionamento dos serviços e entidades públicos), alterado e republicado pelo Regulamento Administrativo n.º 2/2021, do n.º 1 da Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, bem como da alínea b) do n.º 1 do artigo 30.º do Estatuto dos

准的《澳門公共行政工作人員通則》第三十條第一款b）項的規定，作出本批示。

一、黃健清在澳門生產力暨科技轉移中心擔任職務的臨時定期委任，自二零二二年四月五日起續期兩年。

二、每月報酬相等於獲委任人在勞工事務局原職位的報酬，有關報酬及按原薪俸計算繼續為醫療福利、退休金及撫卹金作出扣除的僱主實體負擔由勞工事務局承擔。

二零二二年一月十四日

經濟財政司司長　李偉農

第 24/2022 號經濟財政司司長批示

經濟財政司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，並根據經第2/2021號行政法規修改及重新公佈的第6/1999號行政法規《政府部門及實體的組織、職權與運作》第三條第一款（二）項、經第85/2021號行政命令修改的第181/2019號行政命令第一款，以及經十二月二十一日第87/89/M號法令核准的《澳門公共行政工作人員通則》第三十條第一款b）項的規定，作出本批示。

一、胡詩慶在澳門生產力暨科技轉移中心擔任職務的臨時定期委任，自二零二二年四月五日起續期兩年。

二、每月報酬相等於獲委任人在勞工事務局原職位的報酬，有關報酬及按原薪俸計算繼續為醫療福利及公積金作出扣除的僱主實體負擔由勞工事務局承擔。

二零二二年一月十四日

經濟財政司司長　李偉農

第 25/2022 號經濟財政司司長批示

經濟財政司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，並根據經第2/2021號行政法規修改及重新公佈的第6/1999號行政法規《政府部門及實體的組織、職權與運作》第三條第一款（二）項、經第85/2021號行政命令修改的第181/2019號行政命令第一款，以及經十二月二十一日第87/89/M號法令核

Trabalhadores da Administração Pública de Macau, aprovado pelo Decreto-Lei n.º 87/89/M, de 21 de Dezembro, o Secretário para a Economia e Finanças manda:

1. É renovada a comissão eventual de serviço de Vong Kin Cheng para exercer funções no Centro de Produtividade e Transferência de Tecnologia de Macau, pelo período de dois anos, com efeitos a partir de 5 de Abril de 2022.

2. A remuneração mensal é a correspondente à do lugar de origem na Direcção dos Serviços para os Assuntos Laborais, a quem caberá suportar a respectiva remuneração e os encargos com os descontos, reportados ao vencimento de origem, para efeitos de assistência da doença, aposentação e sobrevivência, na parte respeitante à entidade patronal.

14 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

Despacho do Secretário para a Economia e Finanças n.º 24/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e nos termos da alínea 2) do n.º 1 do artigo 3.º do Regulamento Administrativo n.º 6/1999 (Organização, competências e funcionamento dos serviços e entidades públicos), alterado e republicado pelo Regulamento Administrativo n.º 2/2021, do n.º 1 da Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, bem como da alínea b) do n.º 1 do artigo 30.º do Estatuto dos Trabalhadores da Administração Pública de Macau, aprovado pelo Decreto-Lei n.º 87/89/M, de 21 de Dezembro, o Secretário para a Economia e Finanças manda:

1. É renovada a comissão eventual de serviço de Wu Sze Hing para exercer funções no Centro de Produtividade e Transferência de Tecnologia de Macau, pelo período de dois anos, com efeitos a partir de 5 de Abril de 2022.

2. A remuneração mensal é a correspondente à do lugar de origem na Direcção dos Serviços para os Assuntos Laborais, a quem caberá suportar a respectiva remuneração e os encargos com os descontos, reportados ao vencimento de origem, para efeitos de assistência da doença e previdência, na parte respeitante à entidade patronal.

14 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

Despacho do Secretário para a Economia e Finanças n.º 25/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e nos termos da alínea 2) do n.º 1 do artigo 3.º do Regulamento Administrativo n.º 6/1999 (Organização, competências e funcionamento dos serviços e entidades públicos), alterado e republicado pelo Regulamento Administrativo n.º 2/2021, do n.º 1 da Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, bem como da alínea b) do n.º 1 do artigo 30.º do Estatuto dos Trabalhadores da Administração Pública de Macau, aprovado

准的《澳門公共行政工作人員通則》第三十條第一款b）項的規定，作出本批示。

一、Luísa Maria da Silva Pedruco Novo在澳門生產力暨科技轉移中心擔任職務的臨時定期委任，自二零二二年四月五日起續期兩年。

二、每月報酬相等於獲委任人在勞工事務局原職務的報酬，有關報酬及按原薪俸計算繼續為醫療福利及公積金作出扣除的僱主實體負擔由勞工事務局承擔。

二零二二年一月十四日

經濟財政司司長　李偉農

pelo Decreto-Lei n.º 87/89/M, de 21 de Dezembro, o Secretário para a Economia e Finanças manda:

1. É renovada a comissão eventual de serviço de Luísa Maria da Silva Pedruco Novo para exercer funções no Centro de Produtividade e Transferência de Tecnologia de Macau, pelo período de dois anos, com efeitos a partir de 5 de Abril de 2022.

2. A remuneração mensal é a correspondente à do cargo de origem na Direcção dos Serviços para os Assuntos Laborais, a quem caberá suportar a respectiva remuneração e os encargos com os descontos, reportados ao vencimento de origem, para efeitos de assistência da doença e previdência, na parte respeitante à entidade patronal.

14 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

第 26/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予政策研究和區域發展局一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$602,300.00（澳門元陸拾萬貳仟叁佰元）；

在該局的建議下，並聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予政策研究和區域發展局一項金額為$602,300.00（澳門元陸拾萬貳仟叁佰元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：副局長吳海恩；

委員：綜合支援廳廳長黎宇明；

委員：特級技術員梁婉媚；

候補委員：行政財政處處長黎輝博；

候補委員：首席技術輔導員張景皓；

候補委員：首席技術輔導員林鍵。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

Despacho do Secretário para a Economia e Finanças n.º 26/2022

Considerando a necessidade de ser atribuído à Direcção dos Serviços de Estudo de Políticas e Desenvolvimento Regional, para o corrente ano económico, um fundo permanente de $ 602 300,00 (seiscentas e duas mil e trezentas patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Sob proposta da aludida Direcção e ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído à Direcção dos Serviços de Estudo de Políticas e Desenvolvimento Regional um fundo permanente de $ 602 300,00 (seiscentas e duas mil e trezentas patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Ung Hoi Ian, subdirector dos Serviços.

Vogal: Lai U Meng, chefe do Departamento de Apoio Geral;

Vogal: Leong Un Mei, técnica especialista.

Vogal suplente: Lai Fai Pok, chefe da Divisão Administrativa e Financeira;

Vogal suplente: Cheong Keng Hou, adjunto-técnico principal;

Vogal suplente: Lam Kin, adjunto-técnico principal.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

第 27/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予澳門特別行政區公共資產監督規劃辦公室一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$38,000.00（澳門元叁萬捌仟元）；

在該辦公室的建議下，並聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予澳門特別行政區公共資產監督規劃辦公室一項金額為$38,000.00（澳門元叁萬捌仟元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：辦公室主任陳海帆，當其出缺或因故不能視事時，由其合法代任人代任；

委員：辦公室副主任廖志漢；

委員：顧問高級技術員李敏濤；

候補委員：顧問高級技術員倫紹發；

候補委員：顧問高級技術員鄧雨榮。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

Despacho do Secretário para a Economia e Finanças n.º 27/2022

Considerando a necessidade de ser atribuído ao Gabinete para o Planeamento da Supervisão dos Activos Públicos da Região Administrativa Especial de Macau, para o corrente ano económico, um fundo permanente de $ 38 000,00 (trinta e oito mil patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Sob proposta do aludido Gabinete e ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído ao Gabinete para o Planeamento da Supervisão dos Activos Públicos da Região Administrativa Especial de Macau um fundo permanente de $ 38 000,00 (trinta e oito mil patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Chan Hoi Fan, coordenadora do Gabinete e, nas suas faltas ou impedimentos, o seu substituto legal.

Vogal: Lio Chi Hon, coordenador-adjunto do Gabinete;

Vogal: Lei Man Tou, técnica superior assessora.

Vogal suplente: Lon Sio Fat, técnico superior assessor;

Vogal suplente: Tang U Ieng, técnica superior assessora.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

第 28/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予人才發展委員會一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$58,250.00（澳門元伍萬捌仟貳佰伍拾元）；

在該委員會的建議下，並聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第

Despacho do Secretário para a Economia e Finanças n.º 28/2022

Considerando a necessidade de ser atribuído à Comissão de Desenvolvimento de Talentos, para o corrente ano económico, um fundo permanente de $ 58 250,00 (cinquenta e oito mil, duzentas e cinquenta patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Sob proposta da aludida Comissão e ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado

一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予人才發展委員會一項金額為$58,250.00（澳門元伍萬捌仟貳佰伍拾元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：秘書長周昶行；

委員：一等高級技術員蔡小旋；

委員：特級技術員吳宛儀；

候補委員：首席顧問高級技術員林雁玲；

候補委員：特級技術員曾華強。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído à Comissão de Desenvolvimento de Talentos um fundo permanente de $ 58 250,00 (cinquenta e oito mil, duzentas e cinquenta patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Chao Chong Hang, secretário-geral.

Vogal: Choi Sio Sun, técnica superior de 1.ª classe;

Vogal: Ng Un I, técnica especialista.

Vogal suplente: Lam Ngan Leng, técnica superior assessora principal;

Vogal suplente: Chang Wa Keong, técnico especialista.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong*.

第 29/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予法務局一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$1,171,700.00（澳門元壹佰壹拾柒萬壹仟柒佰元）；

在該局的建議下，並聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予法務局一項金額為$1,171,700.00（澳門元壹佰壹拾柒萬壹仟柒佰元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：行政及財政管理廳廳長李勝里，當其出缺或因故不能視事時，由財政及財產處處長陳婉琪代任；

委員：財政及財產處處長陳婉琪；

委員：首席顧問高級技術員劉潔心；

Despacho do Secretário para a Economia e Finanças n.º 29/2022

Considerando a necessidade de ser atribuído à Direcção dos Serviços de Assuntos de Justiça, para o corrente ano económico, um fundo permanente de $ 1 171 700,00 (um milhão, cento e setenta e um mil e setecentas patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Sob proposta da aludida Direcção e ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído à Direcção dos Serviços de Assuntos de Justiça um fundo permanente de $ 1 171 700,00 (um milhão, cento e setenta e um mil e setecentas patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Lei Seng Lei, chefe do Departamento de Gestão Administrativa e Financeira e, nas suas faltas ou impedimentos, Chan Un Kei, chefe da Divisão Financeira e Patrimonial.

Vogal: Chan Un Kei, chefe da Divisão Financeira e Patrimonial;

Vogal: Lau Kit Sam, técnica superior assessora principal.

候補委員：顧問高級技術員陳佩玲；

候補委員：一等高級技術員駱倩怡；

候補委員：二等技術輔導員黃思雅。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

Vogal suplente: Chan Pui Leng, técnica superior assessora;

Vogal suplente: Lok Sin I, técnica superior de 1.ª classe;

Vogal suplente: Wong Si Nga, adjunta-técnica de 2.ª classe.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

第 30/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予財政局一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$230,000.00（澳門元貳拾叁萬元）；

在該局的建議下；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予財政局一項金額為$230,000.00（澳門元貳拾叁萬元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：副局長鍾聖心，當其出缺或因故不能視事時，由其合法代任人代任；倘兩者出缺或因故不能視事時，則由行政暨財政處處長張祖強代任；

委員：行政暨財政處處長張祖強；

委員：財政及財產管理科科長周美翠；

候補委員：特級技術員林文捷；

候補委員：首席特級技術輔導員羅金雲。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

Despacho do Secretário para a Economia e Finanças n.º 30/2022

Considerando a necessidade de ser atribuído à Direcção dos Serviços de Finanças, para o corrente ano económico, um fundo permanente de $ 230 000,00 (duzentas e trinta mil patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Sob proposta da aludida Direcção;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído à Direcção dos Serviços de Finanças um fundo permanente de $ 230 000,00 (duzentas e trinta mil patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Chong Seng Sam, subdirectora dos Serviços e, nas suas faltas ou impedimentos, o seu substituto legal ou, nas faltas ou impedimentos de ambos, Chang Tou Keong Michel, chefe da Divisão Administrativa e Financeira.

Vogal: Chang Tou Keong Michel, chefe da Divisão Administrativa e Financeira;

Vogal: Chao Mei Choi, chefe da Secção de Administração Financeira e Patrimonial.

Vogal suplente: Lam Man Chit, técnico especialista;

Vogal suplente: Lo Kam Van, adjunta-técnica especialista principal.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

第 31/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予財政局——公物管理廳一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$19,000.00（澳門元壹萬玖仟元）；

經聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予財政局——公物管理廳一項金額為$19,000.00（澳門元壹萬玖仟元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：樓宇管理及保養處處長林嘉莉，當其出缺或因故不能視事時，由其合法代任人代任；

委員：行政暨財政處財政及財產管理科科長周美翠；

委員：首席特級技術輔導員李寶珊；

候補委員：首席特級技術輔導員羅金雲；

候補委員：特級技術輔導員余雅詩。

本批示自公佈翌日起生效。

二零二二年一月十九日

經濟財政司司長　李偉農

Despacho do Secretário para a Economia e Finanças n.º 31/2022

Considerando a necessidade de ser atribuído à Direcção dos Serviços de Finanças — Departamento de Gestão Patrimonial, para o corrente ano económico, um fundo permanente de $ 19 000,00 (dezanove mil patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído à Direcção dos Serviços de Finanças — Departamento de Gestão Patrimonial um fundo permanente de $ 19 000,00 (dezanove mil patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Lam Ka Lei, chefe da Divisão de Administração e Conservação de Edifícios e, nas suas faltas ou impedimentos, o seu substituto legal.

Vogal: Chao Mei Choi, chefe da Secção de Administração Financeira e Patrimonial da Divisão Administrativa e Financeira;

Vogal: Lei Pou San, adjunta-técnica especialista principal.

Vogal suplente: Lo Kam Van, adjunta-técnica especialista principal;

Vogal suplente: Iu Alice, adjunta-técnica especialista.

O presente despacho entra em vigor no dia seguinte ao da sua publicação.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

第 32/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予中國與葡語國家經貿合作論壇常設秘書處輔助辦公室一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$265,900.00（澳門元貳拾陸萬伍仟玖佰元）；

在該辦公室的建議下，並聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第

Despacho do Secretário para a Economia e Finanças n.º 32/2022

Considerando a necessidade de ser atribuído ao Gabinete de Apoio ao Secretariado Permanente do Fórum para a Cooperação Económica e Comercial entre a China e os Países de Língua Portuguesa, para o corrente ano económico, um fundo permanente de $ 265 900,00 (duzentas e sessenta e cinco mil e novecentas patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Sob proposta do aludido Gabinete e ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regu-

一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予中國與葡語國家經貿合作論壇常設秘書處輔助辦公室一項金額為$265,900.00（澳門元貳拾陸萬伍仟玖佰元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：辦公室主任莫苑梨；

委員：特級技術員李敏妍；

委員：首席技術員李淑美；

候補委員：特級技術員劉鳳儀；

候補委員：特級行政技術助理員陳碧霞。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

lamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído ao Gabinete de Apoio ao Secretariado Permanente do Fórum para a Cooperação Económica e Comercial entre a China e os Países de Língua Portuguesa um fundo permanente de $ 265 900,00 (duzentas e sessenta e cinco mil e novecentas patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Mok Iun Lei, coordenadora do Gabinete.

Vogal: Lei Man In, técnica especialista;

Vogal: Lee Sok Mei, técnica principal.

Vogal suplente: Lau Fong I, técnica especialista;

Vogal suplente: Chan Pek Ha, assistente técnica administrativa especialista.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

第 33/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予金融情報辦公室一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$150,740.00（澳門元壹拾伍萬零柒佰肆拾元）；

在該辦公室的建議下，並聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予金融情報辦公室一項金額為$150,740.00（澳門元壹拾伍萬零柒佰肆拾元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：辦公室主任朱婉儀，當其出缺或因故不能視事時，由其合法代任人代任；

委員：辦公室副主任馮婉琪；

委員：特級技術員林劍鋒；

候補委員：顧問高級技術員黃信新；

Despacho do Secretário para a Economia e Finanças n.º 33/2022

Considerando a necessidade de ser atribuído ao Gabinete de Informação Financeira, para o corrente ano económico, um fundo permanente de $ 150 740,00 (cento e cinquenta mil, setecentas e quarenta patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Sob proposta do aludido Gabinete e ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído ao Gabinete de Informação Financeira um fundo permanente de $ 150 740,00 (cento e cinquenta mil, setecentas e quarenta patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Chu Un I, coordenadora do Gabinete e, nas suas faltas ou impedimentos, o seu substituto legal.

Vogal: Fong Iun Kei, coordenadora-adjunta do Gabinete;

Vogal: Lam Kim Fong, técnico especialista.

Vogal suplente: Vong Son San, técnico superior assessor;

候補委員：首席特級技術輔導員馬思麗。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

第 34/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予環境保護局一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$120,000.00（澳門元壹拾貳萬元）；

在該局的建議下，並聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予環境保護局一項金額為$120,000.00（澳門元壹拾貳萬元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：局長譚偉文，當其出缺或因故不能視事時，由其合法代任人代任；

委員：行政財政處處長何建君，當其出缺或因故不能視事時，由其合法代任人代任；

委員：職務主管方少琼，當其出缺或因故不能視事時，由其合法代任人代任。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

第 35/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予地球物理暨氣象局一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$185,000.00（澳門元壹拾捌萬伍仟元）；

Vogal suplente: Ma Si Lai Teresa, adjunta-técnica especialista principal.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

Despacho do Secretário para a Economia e Finanças n.º 34/2022

Considerando a necessidade de ser atribuído à Direcção dos Serviços de Protecção Ambiental, para o corrente ano económico, um fundo permanente de $ 120 000,00 (cento e vinte mil patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Sob proposta da aludida Direcção e ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído à Direcção dos Serviços de Protecção Ambiental um fundo permanente de $ 120 000,00 (cento e vinte mil patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Tam Vai Man, director dos Serviços e, nas suas faltas ou impedimentos, o seu substituto legal.

Vogal: Ho Kin Kuan, chefe da Divisão Administrativa e Financeira e, nas suas faltas ou impedimentos, o seu substituto legal; e

Vogal: Fong Sio Keng, chefia funcional e, nas suas faltas ou impedimentos, o seu substituto legal.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

Despacho do Secretário para a Economia e Finanças n.º 35/2022

Considerando a necessidade de ser atribuído à Direcção dos Serviços Meteorológicos e Geofísicos, para o corrente ano económico, um fundo permanente de $ 185 000,00 (cento e oitenta e cinco mil patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

在該局的建議下，並聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予地球物理暨氣象局一項金額為$185,000.00（澳門元壹拾捌萬伍仟元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：局長梁永權，當其出缺或因故不能視事時，由其合法代任人代任；

委員：行政暨財政部主任區少玫，當其出缺或因故不能視事時，由二等高級技術員吳雅玲代任；

委員：會計、財產暨總務科科長崔家俊，當其出缺或因故不能視事時，由其合法代任人代任。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

Sob proposta da aludida Direcção e ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído à Direcção dos Serviços Meteorológicos e Geofísicos um fundo permanente de $ 185 000,00 (cento e oitenta e cinco mil patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Leong Weng Kun, director dos Serviços e, nas suas faltas ou impedimentos, o seu substituto legal.

Vogal: Au Siu Mui, chefe do Núcleo Administrativo e Financeiro e, nas suas faltas ou impedimentos, Ng Nga Leng, técnica superior de 2.ª classe;

Vogal: Daniel Eduardo Marçal Anok, chefe da Secção de Contabilidade, Património e Economato e, nas suas faltas ou impedimentos, o seu substituto legal.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

第 36/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予建設發展辦公室一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$68,850.00（澳門元陸萬捌仟捌佰伍拾元）；

在該辦公室的建議下，並聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予建設發展辦公室一項金額為$68,850.00（澳門元陸萬捌仟捌佰伍拾元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：辦公室主任林煒浩，當其出缺或因故不能視事時，由其合法代任人代任；

Despacho do Secretário para a Economia e Finanças n.º 36/2022

Considerando a necessidade de ser atribuído ao Gabinete para o Desenvolvimento de Infra-estruturas, para o corrente ano económico, um fundo permanente de $ 68 850,00 (sessenta e oito mil, oitocentas e cinquenta patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Sob proposta do aludido Gabinete e ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído ao Gabinete para o Desenvolvimento de Infra-estruturas um fundo permanente de $ 68 850,00 (sessenta e oito mil, oitocentas e cinquenta patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: Lam Wai Hou, coordenador do Gabinete e, nas suas faltas ou impedimentos, o seu substituto legal.

委員：特級技術員黃素妍；

委員：特級技術輔導員陳念嫦；

候補委員：特級技術輔導員袁明傑；

候補委員：特級技術員歐陽園美。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

Vogal: Wong Sou In, técnica especialista;

Vogal: Chan Nim Seong, adjunta-técnica especialista.

Vogal suplente: Iun Meng Kit, adjunto-técnico especialista;

Vogal suplente: Ao Ieong Un Mei, técnica especialista.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

第 37/2022 號經濟財政司司長批示

基於在本財政年度有需要撥予醫療事故鑑定委員會一項按照第2/2018號行政法規《預算綱要法施行細則》第五十六條至第五十九條的規定而設立的常設基金，金額為$74,500.00（澳門元柒萬肆仟伍佰元）；

在該委員會的建議下，並聽取財政局意見；

經濟財政司司長行使《澳門特別行政區基本法》第六十四條、第2/2018號行政法規《預算綱要法施行細則》第五十七條第一款及經第85/2021號行政命令修改的第181/2019號行政命令賦予的職權，作出本批示。

撥予醫療事故鑑定委員會一項金額為$74,500.00（澳門元柒萬肆仟伍佰元）的常設基金。該基金由以下成員組成之行政委員會負責管理：

主席：委員會主席柯慶華，當其出缺或因故不能視事時，由其合法代任人代任；

委員：顧問高級技術員葉智恆；

委員：顧問高級技術員梁秀娟；

候補委員：委員會成員馬敏燕；

候補委員：特級技術輔導員張美蓉。

本批示自公佈翌日起生效，其效力追溯至二零二二年一月一日。

二零二二年一月十九日

經濟財政司司長　李偉農

Despacho do Secretário para a Economia e Finanças n.º 37/2022

Considerando a necessidade de ser atribuído à Comissão de Perícia do Erro Médico, para o corrente ano económico, um fundo permanente de $ 74 500,00 (setenta e quatro mil e quinhentas patacas), constituído nos termos do disposto nos artigos 56.º a 59.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental);

Sob proposta da aludida Comissão e ouvida a Direcção dos Serviços de Finanças;

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e pelo n.º 1 do artigo 57.º do Regulamento Administrativo n.º 2/2018 (Regulamentação da Lei de enquadramento orçamental), conjugado com a Ordem Executiva n.º 181/2019, alterada pela Ordem Executiva n.º 85/2021, o Secretário para a Economia e Finanças manda:

É atribuído à Comissão de Perícia do Erro Médico um fundo permanente de $ 74 500,00 (setenta e quatro mil e quinhentas patacas), para ser gerido por uma comissão administrativa composta pelos seguintes membros:

Presidente: O Heng Wa, presidente da Comissão e, nas suas faltas ou impedimentos, o seu substituto legal.

Vogal: Ip Chi Hang, técnico superior assessor;

Vogal: Leong Sao Kun, técnica superior assessora.

Vogal suplente: Estela Ma, membro da Comissão;

Vogal suplente: Cheong Mei Iong, adjunta-técnica especialista.

O presente despacho entra em vigor no dia seguinte ao da sua publicação e os seus efeitos retroagem ao dia 1 de Janeiro de 2022.

19 de Janeiro de 2022.

O Secretário para a Economia e Finanças, *Lei Wai Nong.*

二零二二年一月二十日於經濟財政司司長辦公室

辦公室主任　辜美玲

Gabinete do Secretário para a Economia e Finanças, aos 20 de Janeiro de 2022. — A Chefe do Gabinete, *Ku Mei Leng.*

保安司司長辦公室

第 5/2022 號保安司司長批示

保安司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，根據第6/1999號行政法規《政府部門及實體的組織、職權與運作》第四條第二款，第8/2020號行政命令，以及第2/2012號法律《公共地方錄像監視法律制度》第八條、第十一條第一款、第四款及第六款的規定，且經聽取個人資料保護辦公室具約束力的意見後，作出本批示。

一、經考慮司法警察局提出的申請及依據後，批准於青茂口岸澳門口岸區出入境大堂安裝及使用8台錄像監視系統攝影機。

二、司法警察局為負責管理有關錄像監視系統的實體。

三、第一款所指攝影機的使用許可期間與第141/2021號保安司司長批示所指的屆滿日一致；可續期，為此須核實作出許可的依據是否仍然維持。

四、本批示於公佈翌日生效。

二零二二年一月十九日

保安司司長　黃少澤

二零二二年一月二十日於保安司司長辦公室

辦公室主任　張玉英

GABINETE DO SECRETÁRIO PARA A SEGURANÇA

Despacho do Secretário para a Segurança n.º 5/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau, e nos termos do n.º 2 do artigo 4.º do Regulamento Administrativo n.º 6/1999 (Organização, competências e funcionamento dos serviços e entidades públicos), da Ordem Executiva n.º 8/2020, do artigo 8.º e dos n.os 1, 4 e 6 do artigo 11.º da Lei n.º 2/2012 (Regime jurídico da videovigilância em espaços públicos), e ouvido o parecer vinculativo do Gabinete para a Protecção de Dados Pessoais, o Secretário para a Segurança manda:

1. Considerando os fundamentos de que se prevalecem os respectivos pedidos, apresentados pela Polícia Judiciária (PJ), autorizo a instalação e utilização de 8 câmaras de videovigilância nos átrios das partidas e das chegadas da Zona do Posto Fronteiriço da Parte de Macau do Posto Fronteiriço Qingmao.

2. A PJ é a entidade responsável pela gestão do referido sistema de videovigilância.

3. O prazo da autorização da câmara de videovigilância referida no ponto 1 coincide com o prazo constante do Despacho do Secretário para a Segurança n.º 141/2021, podendo este ser renovado mediante comprovação da manutenção dos fundamentos invocados para a sua concessão.

4. O presente despacho entra em vigor no dia seguinte ao da sua publicação.

19 de Janeiro de 2022.

O Secretário para a Segurança, *Wong Sio Chak*.

Gabinete do Secretário para a Segurança, aos 20 de Janeiro de 2022. — A Chefe do Gabinete, *Cheong Ioc Ieng*.

社會文化司司長辦公室

第 1/2022 號社會文化司司長批示

社會文化司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，並根據十二月二十一日第87/89/M號法令核准的《澳門公共行政工作人員通則》第二十三條、第15/2009號法律《領導及主管人員通則的基本規定》第二條第二款（一）項、第四條及第五條、第26/2009號行政法規《領導及主管人員通則的補充規定》第二條第一款、第七條及第九條，以及第40/2020號行政法規《教育及青年發展局的組織及運作》第三條第一款的規定，結合經第87/2021號行政命令修改的第183/2019號行政命令第一款的規定，作出本批示。

GABINETE DA SECRETÁRIA PARA OS ASSUNTOS SOCIAIS E CULTURA

Despacho da Secretária para os Assuntos Sociais e Cultura n.º 1/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e nos termos do artigo 23.º do Estatuto dos Trabalhadores da Administração Pública de Macau, aprovado pelo Decreto-Lei n.º 87/89/M, de 21 de Dezembro, da alínea 1) do n.º 2 do artigo 2.º e dos artigos 4.º e 5.º da Lei n.º 15/2009 (Disposições Fundamentais do Estatuto do Pessoal de Direcção e Chefia), do n.º 1 do artigo 2.º e dos artigos 7.º e 9.º do Regulamento Administrativo n.º 26/2009 (Disposições complementares do estatuto do pessoal de direcção e chefia) e do n.º 1 do artigo 3.º do Regulamento Administrativo n.º 40/2020 (Organização e funcionamento da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude), conjugados com o n.º 1 da Ordem Executiva n.º 183/2019, alterada pela Ordem Executiva n.º 87/2021, a Secretária para os Assuntos Sociais e Cultura manda:

一、以定期委任方式委任龔志明為教育及青年發展局局長，自二零二二年二月一日起，為期一年。

二、因本委任所產生的負擔，由教育及青年發展局的預算承擔。

三、以附件形式公佈委任理由及獲委任人的學歷及專業簡歷。

二零二二年一月十日

社會文化司司長　歐陽瑜

附件

委任龔志明為教育及青年發展局局長的理由如下：

——職位出缺；

——龔志明的個人履歷顯示其具備專業能力及才幹擔任教育及青年發展局局長。

學歷：

——暨南大學經濟學學士學位（國際金融專業）；

——澳門理工學院學士學位（體育及運動學）；

——北京體育大學教育學碩士學位（體育人文社會學）；

——華南師範大學管理學博士學位（教育經濟與管理）。

專業簡歷：

——2007年至2012年　教育暨青年局高級技術員；

——2012年至2015年　教育暨青年局學校體育暨課餘活動事務處處長；

——2015年至2017年　教育暨青年局學前暨小學教育處處長；

——2017年至2018年　教育暨青年局教育廳廳長；

——2018年至2021年　教育暨青年局副局長；

——2021年至今　教育及青年發展局副局長。

1. É nomeado, em comissão de serviço, Kong Chi Meng, para exercer o cargo de director dos Serviços de Educação e de Desenvolvimento da Juventude, pelo período de um ano, a partir de 1 de Fevereiro de 2022.

2. Os encargos resultantes da presente nomeação são suportados pelo orçamento da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude.

3. É publicada, em anexo, a nota relativa aos fundamentos da nomeação e ao currículo académico e profissional do nomeado.

10 de Janeiro de 2022.

A Secretária para os Assuntos Sociais e Cultura, *Ao Ieong U.*

ANEXO

Fundamentos da nomeação de Kong Chi Meng para o cargo de director dos Serviços de Educação e de Desenvolvimento da Juventude:

— Vacatura do cargo;

— Kong Chi Meng possui competência profissional e aptidão para o exercício do cargo de director dos Serviços de Educação e de Desenvolvimento da Juventude, que se demonstra pelo *curriculum vitae*.

Currículo académico:

— Licenciatura em Economia (especialização em Finança Internacional) pela Universidade de Jinan;

— Licenciatura em Educação Física e Desporto pelo Instituto Politécnico de Macau;

— Mestrado em Ciências da Educação (Sociologia do Desporto) pela Universidade de Desporto de Pequim;

— Doutoramento em Gestão (Economia da Educação e Gestão) pela Universidade Normal do Sul da China.

Currículo profissional:

— Técnico superior da Direcção dos Serviços de Educação e Juventude, de 2007 a 2012;

— Chefe da Divisão de Desporto Escolar e Ocupação de Tempos Livres da Direcção dos Serviços de Educação e Juventude, de 2012 a 2015;

— Chefe da Divisão de Educação Pré-Escolar e Ensino Primário da Direcção dos Serviços de Educação e Juventude, de 2015 a 2017;

— Chefe do Departamento de Ensino da Direcção dos Serviços de Educação e Juventude, de 2017 a 2018;

— Subdirector dos Serviços de Educação e Juventude, de 2018 a 2021;

— Subdirector dos Serviços de Educação e de Desenvolvimento da Juventude, de 2021 até à presente data.

第 3/2022 號社會文化司司長批示

社會文化司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，並根據經第2/2021號行政法規修改的第6/1999號行政法規《政府部門及實體的組織、職權與運作》第五條第二款、第15/2009號法律《領導及主管人員通則的基本規定》第二條第二款（二）項、第四條及第五條、第26/2009號行政法規《領導及主管人員通則的補充規定》第二條、第七條及第九條，以及第27/2019號行政法規《澳門旅遊學院章程》第四條第二款（二）項、第二十五條第二款、第三款及第四十六條的規定，結合經第87/2021號行政命令修改的第183/2019號行政命令第一款的規定，作出本批示。

一、以定期委任方式委任羅曼儀為澳門旅遊學院副院長，自二零二二年二月二十二日起，為期兩年。

二、因本委任所產生的負擔，由澳門旅遊學院的預算承擔。

三、以附件形式公佈委任理由及被委任人的學歷及專業簡歷。

二零二二年一月十四日

社會文化司司長　歐陽瑜

附件

委任羅曼儀為澳門旅遊學院副院長的理由如下：

——職位出缺；

——羅曼儀的個人履歷顯示其具備專業能力及才幹擔任澳門旅遊學院副院長一職。

學歷：

——葡萄牙波爾圖酒店及旅遊學校，酒店管理文憑；

——葡萄牙埃斯托利爾酒店旅遊高等學院，酒店領導及管理高等專科課程；

——旅遊學院旅遊企業管理學士學位；

——澳門高等校際學院教育碩士；

——葡萄牙里斯本大學博士課程（教育博士學位組成部分）。

Despacho da Secretária para os Assuntos Sociais e Cultura n.º 3/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e nos termos do n.º 2 do artigo 5.º do Regulamento Administrativo n.º 6/1999 (Organização, competências e funcionamento dos serviços e entidades públicos), alterado pelo Regulamento Administrativo n.º 2/2021, da alínea 2) do n.º 2 do artigo 2.º e dos artigos 4.º e 5.º da Lei n.º 15/2009 (Disposições Fundamentais do Estatuto do Pessoal de Direcção e Chefia), dos artigos 2.º, 7.º e 9.º do Regulamento Administrativo n.º 26/2009 (Disposições complementares do estatuto do pessoal de direcção e chefia), da alínea 2) do n.º 2 do artigo 4.º, dos n.ºs 2 e 3 do artigo 25.º e do artigo 46.º do Regulamento Administrativo n.º 27/2019 (Estatutos do Instituto de Formação Turística de Macau), conjugados com o n.º 1 da Ordem Executiva n.º 183/2019, alterada pela Ordem Executiva n.º 87/2021, a Secretária para os Assuntos Sociais e Cultura manda:

1. É nomeada, em comissão de serviço, Diamantina Luíza do Rosário Sá Coimbra para exercer o cargo de vice-presidente do Instituto de Formação Turística de Macau, pelo período de dois anos, a partir de 22 de Fevereiro de 2022.

2. Os encargos resultantes da presente nomeação são suportados pelo orçamento do Instituto de Formação Turística de Macau.

3. É publicada, em anexo, a nota relativa aos fundamentos da nomeação e ao currículo académico e profissional da nomeada.

14 de Janeiro de 2022.

A Secretária para os Assuntos Sociais e Cultura, *Ao Ieong U.*

ANEXO

Fundamentos da nomeação de Diamantina Luíza do Rosário Sá Coimbra para o cargo de vice-presidente do Instituto de Formação Turística de Macau:

— Vacatura do cargo;

— Diamantina Luíza do Rosário Sá Coimbra possui capacidade profissional e competência para o exercício do cargo de vice-presidente do Instituto de Formação Turística de Macau, como se demonstra pelo *curriculum vitae*.

Currículo académico:

— Diploma de Curso de Gestão e Técnica Hoteleira, Escola de Hotelaria e Turismo do Porto, Portugal;

— Diploma de Bacharel em Direcção e Gestão Hoteleira, Escola Superior de Hotelaria e Turismo do Estoril, Portugal;

— Diploma de Licenciatura em Gestão de Empresas Turísticas, Instituto de Formação Turística;

— Mestrado em Ciências da Educação, Instituto Inter-Universitário de Macau;

— Curso de Doutoramento (parte integrante do Programa de Doutoramento em Educação), Universidade de Lisboa, Portugal.

專業簡歷：

——1990年4月至1990年9月，旅遊司旅業及酒店業學校督導員之實習工作；

——1990年10月至1992年5月，旅遊司技術員；

——1992年5月至1995年9月，旅遊司及旅遊培訓學院望廈迎賓館組長；

——1995年10月至2000年12月，旅遊培訓學院望廈迎賓館館長；

——1998年5月至今，澳門旅遊學院編制內技術員；

——1996年至2000年，兼任旅遊學院「房務理論及實踐課程」實習課程協調員；

——2004年至2006年，兼任旅遊學院特別項目協調主任；

——2007年至2009年，兼任澳門旅遊博彩技術培訓中心——金利達校區總監；

——2000年12月至2019年8月，旅遊學院旅業及酒店業學校校長；

——2019年8月至今，澳門旅遊學院持續教育學校校長；

——2021年2月至今，澳門旅遊學院代副院長。

Currículo profissional:

— De Abril de 1990 a Setembro de 1990, monitora da Escola de Turismo e Indústria Hoteleira, estagiária da Direcção dos Serviços de Turismo;

— De Outubro de 1990 a Maio de 1992, técnica da Direcção dos Serviços de Turismo;

— De Maio de 1992 a Setembro de 1995, chefe do sector de Pousada de Mong-Há da Direcção dos Serviços de Turismo e do Instituto de Formação Turística;

— De Outubro de 1995 a Dezembro de 2000, directora da Pousada de Mong-Há do Instituto de Formação Turística;

— De Maio de 1998 até à presente data, técnica do quadro do Instituto de Formação Turística de Macau;

— De 1996 a 2000, regente de «Teoria e Prática de Andares» do Instituto de Formação Turística, em regime de acumulação de funções;

— De 2004 a 2006, coordenadora do Projeto Especial do Instituto de Formação Turística, em regime de acumulação de funções;

— De 2007 a 2009, directora do Kam Lei Tak Campus do Centro de Formação Técnica nas Áreas do Turismo e do Jogo de Macau, em regime de acumulação de funções;

— De Dezembro de 2000 a Agosto de 2019, directora da Escola de Turismo e Indústria Hoteleira do Instituto de Formação Turística;

— De Agosto de 2019 até à presente data, directora da Escola de Educação Contínua do Instituto de Formação Turística de Macau;

— De Fevereiro de 2021 até à presente data, vice-presidente, substituta, do Instituto de Formação Turística de Macau.

第 4/2022 號社會文化司司長批示

社會文化司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，並根據第15/2018號行政法規《高等教育委員會》第四條第一款（四）項及第五條第一款的規定，作出本批示。

一、續任社會文化司司長辦公室何鈺珊主任為高等教育委員會的成員，任期至二零二二年十一月十八日止。

二、本批示自二零二二年二月五日起產生效力。

二零二二年一月十八日

社會文化司司長　歐陽瑜

Despacho da Secretária para os Assuntos Sociais e Cultura n.º 4/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e nos termos da alínea 4) do n.º 1 do artigo 4.º e do n.º 1 do artigo 5.º do Regulamento Administrativo n.º 15/2018 (O Conselho do Ensino Superior), a Secretária para os Assuntos Sociais e Cultura manda:

1. É renovado o mandato de Ho Ioc San, na qualidade de chefe do Gabinete da Secretária para os Assuntos Sociais e Cultura, como membro do Conselho do Ensino Superior, até 18 de Novembro de 2022.

2. O presente despacho produz efeitos a partir de 5 de Fevereiro de 2022.

18 de Janeiro de 2022.

A Secretária para os Assuntos Sociais e Cultura, *Ao Ieong U.*

第 5/2022 號社會文化司司長批示

社會文化司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，並根據經第2/2021號行政法規重新公佈的第6/1999號行政法規《政府部門及實體的組織、職權與運作》第七條，以及經第87/2021號行政命令修改的第183/2019號行政命令第五款的規定，作出本批示。

一、轉授予教育及青年發展局局長龔志明作出下列行為的權限：

（一）簽署任用書；

（二）授予職權及接受宣誓；

（三）批准臨時委任、續任，以及將臨時委任或定期委任轉為確定委任；

（四）以澳門特別行政區的名義，簽署行政任用合同及個人勞動合同；

（五）批准行政任用合同的續期；

（六）批准個人勞動合同的續期，但以不涉及有關報酬條件的更改為限；

（七）批准免職及解除行政任用合同及個人勞動合同；

（八）批准特別假期及短期無薪假，以及就因個人理由而提交的累積年假申請作出決定；

（九）簽署計算及結算教育及青年發展局工作人員服務時間的證明文件；

（十）批准採用輪值工作；

（十一）批准教育及青年發展局工作人員及其家屬前往衛生局範圍內運作的健康檢查委員會作檢查；

（十二）按照法律規定，批准向有關工作人員發放經十二月二十一日第87/89/M號法令核准的《澳門公共行政工作人員通則》及第2/2011號法律《年資獎金、房屋津貼及家庭津貼制度》或合同規定的年資獎金及津貼，以及第8/2006號法律訂定的《公務人員公積金制度》所規定的供款時間獎金；

Despacho da Secretária para os Assuntos Sociais e Cultura n.º 5/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e nos termos do artigo 7.º do Regulamento Administrativo n.º 6/1999 (Organização, competências e funcionamento dos serviços e entidades públicos) republicado pelo Regulamento Administrativo n.º 2/2021, e do n.º 5 da Ordem Executiva n.º 183/2019, alterada pela Ordem Executiva n.º 87/2021, a Secretária para os Assuntos Sociais e Cultura manda:

1. É subdelegada no director dos Serviços de Educação e de Desenvolvimento da Juventude, Kong Chi Meng, a competência para a prática dos seguintes actos:

1) Assinar os diplomas de provimento;

2) Conferir posse e receber a prestação de compromisso de honra;

3) Autorizar a nomeação provisória e a recondução e converter as nomeações provisórias ou em comissão de serviço em nomeações definitivas;

4) Outorgar, em nome da Região Administrativa Especial de Macau, nos contratos administrativos de provimento e contratos individuais de trabalho;

5) Autorizar a renovação dos contratos administrativos de provimento;

6) Autorizar a renovação dos contratos individuais de trabalho, desde que não implique alteração das condições remuneratórias;

7) Determinar a exoneração e autorizar a rescisão dos contratos administrativos de provimento e dos contratos individuais de trabalho;

8) Conceder licença especial e licença sem vencimento de curta duração e decidir sobre pedidos de acumulação de férias por motivos pessoais;

9) Assinar documentos comprovativos de contagem e liquidação do tempo de serviço prestado pelos trabalhadores da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude;

10) Autorizar a adopção do trabalho por turnos;

11) Autorizar a apresentação dos trabalhadores da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude e dos seus familiares às Juntas Médicas, que funcionam no âmbito dos Serviços de Saúde;

12) Autorizar a atribuição de prémios de antiguidade e de subsídios previstos no Estatuto dos Trabalhadores da Administração Pública de Macau, aprovado pelo Decreto-Lei n.º 87/89/M, de 21 de Dezembro, na Lei n.º 2/2011 (Regime do prémio de antiguidade e dos subsídios de residência e de família) ou nos contratos e a atribuição do prémio de tempo de contribuição previsto no Regime de Previdência dos Trabalhadores dos Serviços Públicos, estabelecido pela Lei n.º 8/2006, ao respectivo pessoal, nos termos legais;

（十三）決定有權收取日津貼的工作人員出外公幹，但以收取三天日津貼為限；

（十四）批准工作人員參加在澳門特別行政區舉行的會議、研討會、座談會、講座及其他同類活動，以及批准有關人員在上項所指條件下參加在澳門特別行政區以外地方舉行的該等活動；

（十五）批准返還不涉及擔保承諾或執行與教育及青年發展局或澳門特別行政區所簽訂合同的文件；

（十六）批准處於無薪假、合同中止或其他狀況的工作人員請求回任或返回部門的申請；

（十七）批准為人員、物料及設備、不動產及車輛投保；

（十八）批准提供與教育及青年發展局存檔文件有關的資訊、查閱該等文件或發出該等文件的證明，但法律另有規定者除外；

（十九）批准作出由載於澳門特別行政區預算內關於教育及青年發展局的開支表章節中的撥款承擔的、用於進行工程及取得財貨和勞務的開支，但以五十萬澳門元為限；如屬免除諮詢或豁免訂立書面合同者，有關金額上限減半；

（二十）除上項所指開支外，批准部門運作所必需的每月固定開支，例如設施及動產的租賃開支、水電費、清潔服務費、公共地方的開支或其他同類開支；

（二十一）批准發放載於澳門特別行政區預算內關於教育及青年發展局的開支表章節中的資助及補助，但以三十萬澳門元為限；

（二十二）批准金額不超過二萬澳門元的招待費；

（二十三）批准將教育及青年發展局獲分配使用的而現對該局運作已無用處的財產報廢；

（二十四）接受及退還作為保證金的存款，取消銀行擔保及終止保險擔保，以及退還在工程及取得財貨和勞務的程序中提交作為擔保或因任何其他名義而被留存的款項；

（二十五）核准公共承攬工程的工作計劃；

（二十六）認可公共承攬工程的委託工程筆錄、臨時接收筆錄及確定接收筆錄；

13) Determinar deslocações de trabalhadores, de que resulte o direito à percepção de ajudas de custo por três dias;

14) Autorizar a participação de trabalhadores em congressos, seminários, colóquios, jornadas e outras actividades semelhantes, quando realizados na Região Administrativa Especial de Macau ou, quando realizados no exterior, nas condições referidas na alínea anterior;

15) Autorizar a restituição de documentos que não sejam pertinentes à garantia de compromissos ou à execução de contratos com a Direcção dos Serviços de Educação e de Desenvolvimento da Juventude ou com a Região Administrativa Especial de Macau;

16) Autorizar os requerimentos de reingresso ou regresso ao serviço dos trabalhadores em situação de licença sem vencimento, de suspensão do contrato e em demais situações;

17) Autorizar o seguro de pessoal, material, equipamento, imóveis e viaturas;

18) Autorizar a informação, consulta ou passagem de certidões de documentos arquivados na Direcção dos Serviços de Educação e de Desenvolvimento da Juventude, com exclusão dos excepcionados por lei;

19) Autorizar despesas com a realização de obras e a aquisição de bens e serviços, por força das dotações inscritas no capítulo da tabela de despesas do Orçamento da Região Administrativa Especial de Macau relativo à Direcção dos Serviços de Educação e de Desenvolvimento da Juventude, até ao montante de $ 500 000,00 (quinhentas mil) patacas, sendo este valor reduzido a metade quando tenha sido dispensada a consulta ou a celebração de contrato escrito;

20) Autorizar, para além das despesas referidas na alínea anterior, as decorrentes de encargos mensais certos e necessários ao funcionamento do serviço, como sejam as de arrendamento de instalações e aluguer de bens móveis, do pagamento de electricidade e água, serviços de limpeza, despesas de condomínio ou de outras da mesma natureza;

21) Autorizar a atribuição de quaisquer apoios e abonos do capítulo da tabela de despesa do Orçamento da Região Administrativa Especial de Macau, relativo à Direcção dos Serviços de Educação e de Desenvolvimento da Juventude, até ao montante de $ 300 000,00 (trezentas mil) patacas;

22) Autorizar despesas de representação até ao montante de $ 20 000,00 (vinte mil) patacas;

23) Autorizar o abate à carga de bens patrimoniais afectos à Direcção dos Serviços de Educação e de Desenvolvimento da Juventude que forem julgados incapazes para o serviço;

24) Aceitar e restituir os montantes depositados como caução, cancelar garantias bancárias e extinguir seguros-caução, bem como restituir quantias retidas como garantia ou a qualquer outro título apresentadas em processos de obras ou aquisição de bens e serviços;

25) Aprovar os planos de trabalho nas empreitadas de obras públicas;

26) Homologar os autos de consignação, recepção provisória e definitiva nas empreitadas de obras públicas;

（二十七）認可取得財貨和勞務的程序中的臨時接收筆錄及確定接收筆錄；

（二十八）以澳門特別行政區的名義簽署一切在教育及青年發展局範圍內訂立的有關合同的公文書；

（二十九）在教育及青年發展局職責範疇，簽署發給澳門特別行政區及以外地方的實體和機構的文書。

二、對行使現轉授予的權限而作出的行為，得提起必要行政上訴。

三、獲轉授權人可將有利於部門良好運作的權限轉授予領導及主管人員。

四、本批示自二零二二年二月一日起產生效力。

二零二二年一月十九日

社會文化司司長　歐陽瑜

27) Homologar os autos de recepção provisória e definitiva nos procedimentos de aquisição de bens e serviços;

28) Outorgar, em nome da Região Administrativa Especial de Macau, em todos os instrumentos públicos relativos a contratos que devam ser lavrados no âmbito da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude;

29) Assinar o expediente dirigido a entidades e organismos da Região Administrativa Especial de Macau e do exterior, no âmbito das atribuições da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude.

2. Dos actos praticados no uso das competências ora subdelegadas cabe recurso administrativo necessário.

3. O subdelegado pode subdelegar no pessoal de direcção e chefia as competências que julgue adequadas ao bom funcionamento dos serviços.

4. O presente despacho produz efeitos a partir de 1 de Fevereiro de 2022.

19 de Janeiro de 2022.

A Secretária para os Assuntos Sociais e Cultura, *Ao Ieong U.*

第 6/2022 號社會文化司司長批示

社會文化司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，並根據經第2/2021號行政法規重新公佈的第6/1999號行政法規《政府部門及實體的組織、職權與運作》第七條，以及第6/2022號行政命令第五款的規定，作出本批示。

一、轉授予人才發展委員會秘書長周昶行作出下列行為的權限：

（一）以澳門特別行政區名義，簽署行政任用合同及個人勞動合同；

（二）批准行政任用合同的續期；

（三）批准個人勞動合同的續期，但以不涉及有關報酬條件的變更為限；

（四）批准解除行政任用合同及個人勞動合同；

（五）批准特別假，以及因個人理由或工作需要就轉移年假作出決定；

（六）批准工作人員享受年假、提前或延遲享受年假的申請，以及批准工作人員的缺勤解釋；

（七）簽署計算及結算工作人員服務時間的證明文件；

Despacho da Secretária para os Assuntos Sociais e Cultura n.º 6/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e nos termos do artigo 7.º do Regulamento Administrativo n.º 6/1999 (Organização, competências e funcionamento dos serviços e entidades públicos), republicado pelo Regulamento Administrativo n.º 2/2021, e do n.º 5 da Ordem Executiva n.º 6/2022, a Secretária para os Assuntos Sociais e Cultura manda:

1. É subdelegada no secretário-geral da Comissão de Desenvolvimento de Talentos, Chao Chong Hang, a competência para a prática dos seguintes actos:

1) Outorgar, em nome da Região Administrativa Especial de Macau, nos contratos administrativos de provimento e contratos individuais de trabalho;

2) Autorizar a renovação dos contratos administrativos de provimento;

3) Autorizar a renovação dos contratos individuais de trabalho, desde que não implique alteração das condições remuneratórias;

4) Autorizar a rescisão dos contratos administrativos de provimento e dos contratos individuais de trabalho;

5) Conceder licença especial e decidir sobre transferência de férias, por motivos pessoais dos trabalhadores ou por conveniência de serviço;

6) Autorizar o gozo de férias, a respectiva antecipação ou adiamento a pedido do trabalhador, bem como a justificação das faltas dos trabalhadores;

7) Assinar os documentos comprovativos da contagem e liquidação do tempo de serviço prestado pelos trabalhadores;

（八）批准不超越法定上限的超時工作或輪值工作；

（九）批准工作人員及其家屬前往衛生局範圍內運作的健康檢查委員會作檢查；

（十）按照法律規定，批准向有關工作人員發放經十二月二十一日第87/89/M號法令核准的《澳門公共行政工作人員通則》、第2/2011號法律《年資獎金、房屋津貼及家庭津貼制度》或合同規定的年資獎金及其他津貼，以及第8/2006號法律《公務人員公積金制度》規定的供款時間獎金；

（十一）決定有權收取日津貼的工作人員出外公幹，但以收取三天日津貼為限；

（十二）批准工作人員參加在澳門特別行政區舉行的會議、研討會、座談會、講座及其他同類活動，以及批准有關人員在上項所指的條件下參加在澳門特別行政區以外地方舉行的該等活動；

（十三）批准返還與擔保承諾或執行與人才發展委員會或澳門特別行政區所簽訂的合同無關的文件；

（十四）批准為人員、物料、設備、不動產及車輛投保；

（十五）批准提供與人才發展委員會存檔文件有關的資訊、查閱該等文件或發出該等文件的證明，但法律另有規定者除外；

（十六）批准作出由載於澳門特別行政區預算內關於人才發展委員會開支表章節中的撥款承擔的、用於進行工程及取得資產和勞務的開支，但以澳門元三十萬元為限，如免除諮詢或豁免訂立書面合同者，有關金額上限減半；

（十七）除上項所指開支外，批准人才發展委員會運作所必需的每月固定開支，例如設施及動產的租賃開支、水電費、清潔服務費、管理費、運輸通訊費、期刊（紙本或電子版）或其他同類開支，不論金額多少；

（十八）批准金額不超過澳門元二萬元的招待費；

（十九）批准將人才發展委員會獲分配使用的而現對該委員會運作已無用處的財產報廢；

（二十）接受及退還作為保證金的存款，取消銀行擔保及終止保險擔保，以及退還在工程及取得財貨和勞務的程序中提交作為擔保或因任何其他名義而被留存的款項；

8) Autorizar a prestação de serviço em regime de horas extraordinárias ou por turnos até ao limite legalmente previsto;

9) Autorizar a apresentação dos trabalhadores e dos seus familiares às Juntas Médicas, que funcionam no âmbito dos Serviços de Saúde;

10) Autorizar a atribuição dos prémios de antiguidade e de outros subsídios previstos no Estatuto dos Trabalhadores da Administração Pública de Macau, aprovado pelo Decreto-Lei n.º 87/89/M, de 21 de Dezembro, na Lei n.º 2/2011 (Regime do prémio de antiguidade e dos subsídios de residência e de família) ou nos contratos, e a atribuição do prémio de tempo de contribuição previsto na Lei n.º 8/2006 (Regime de Previdência dos Trabalhadores dos Serviços Públicos), aos respectivos trabalhadores, nos termos legais;

11) Determinar deslocações de trabalhadores, de que resulte direito à percepção de ajudas de custo por três dias;

12) Autorizar a participação de trabalhadores em congressos, seminários, colóquios, jornadas e outras actividades semelhantes, quando realizados na Região Administrativa Especial de Macau ou, quando realizados no exterior, nas condições referidas na alínea anterior;

13) Autorizar a restituição de documentos que não sejam pertinentes à garantia de compromissos ou à execução de contratos com a Comissão de Desenvolvimento de Talentos ou com a Região Administrativa Especial de Macau;

14) Autorizar os seguros de pessoal, material e equipamento, imóveis e viaturas;

15) Autorizar a informação, consulta ou passagem de certidões de documentos arquivados na Comissão de Desenvolvimento de Talentos, com exclusão dos excepcionados por lei;

16) Autorizar despesas com a realização de obras e a aquisição de bens e serviços por força das dotações inscritas no capítulo da tabela de despesas do Orçamento da Região Administrativa Especial de Macau relativo à Comissão de Desenvolvimento de Talentos, até ao montante de 300 000 patacas, sendo este valor reduzido a metade quando tenha sido dispensada a consulta ou a celebração de contrato escrito;

17) Autorizar, para além das despesas referidas na alínea anterior, as despesas decorrentes de encargos mensais certos, necessários ao funcionamento da Comissão de Desenvolvimento de Talentos, como sejam os de arrendamento de instalações e aluguer de bens móveis, pagamento de electricidade, água, serviços de limpeza, despesas de condomínio, serviços de transporte e telecomunicações, publicações periódicas (em suporte de papel ou informático) ou outras da mesma natureza, independentemente do respectivo valor;

18) Autorizar despesas de representação até ao montante de 20 000 patacas;

19) Autorizar o abate à carga de bens patrimoniais afectos à Comissão de Desenvolvimento de Talentos que forem julgados incapazes para o serviço;

20) Aceitar e restituir os montantes depositados como caução, cancelar garantias bancárias e extinguir seguros-caução, bem como restituir quantias retidas como garantia ou a qualquer outro título apresentadas em processos de obras ou aquisição de bens e serviços;

（二十一）核准公共承攬工程的工作計劃；

（二十二）認可公共承攬工程的委託工程筆錄、臨時接收筆錄及確定接收筆錄；

（二十三）認可取得財貨和勞務的程序中的臨時接收筆錄及確定接收筆錄；

（二十四）在人才發展委員會職責範疇內，簽署發給澳門特別行政區及以外地方的實體和機構的文書；

（二十五）以澳門特別行政區的名義，在人才發展委員會職責範疇內，簽署所有與澳門特別行政區或外地的其他公共部門、公共或私人實體的協議、合同及議定書。

二、對行使現轉授予的權限而作出的行為，得提起必要行政上訴。

三、獲轉授權人可將有利於人才發展委員會秘書處良好運作的權限轉授予副秘書長。

四、本批示自二零二二年二月一日起產生效力。

二零二二年一月十九日

社會文化司司長　歐陽瑜

21) Aprovar os planos de trabalho nas empreitadas de obras públicas;

22) Homologar os autos de consignação, recepção provisória e definitiva nas empreitadas de obras públicas;

23) Homologar os autos de recepção provisória e definitiva nos procedimentos de aquisição de bens e serviços;

24) Assinar o expediente dirigido a entidades e organismos da Região Administrativa Especial de Macau ou do exterior, no âmbito das atribuições da Comissão de Desenvolvimento de Talentos;

25) Outorgar, em nome da Região Administrativa Especial de Macau, em todos os acordos, contratos ou protocolos a celebrar com outros serviços públicos e entidades públicas ou privadas, da Região Administrativa Especial de Macau ou do exterior, no âmbito das atribuições da Comissão de Desenvolvimento de Talentos.

2. Dos actos praticados no uso das competências ora subdelegadas cabe recurso administrativo necessário.

3. O subdelegado pode subdelegar no secretário-geral adjunto as competências que julgue adequadas ao bom funcionamento do secretariado da Comissão de Desenvolvimento de Talentos.

4. O presente despacho produz efeitos a partir de 1 de Fevereiro de 2022.

19 de Janeiro de 2022.

A Secretária para os Assuntos Sociais e Cultura, *Ao Ieong U*.

第 7/2022 號社會文化司司長批示

社會文化司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，並根據十二月二十一日第87/89/M號法令核准的《澳門公共行政工作人員通則》第二十三條、第15/2009號法律《領導及主管人員通則的基本規定》第二條第二款（一）項、第四條及第五條、第26/2009號行政法規《領導及主管人員通則的補充規定》第二條第一款、第七條及第九條，以及經第41/2021號行政法規修改的第20/2015號行政法規《文化局的組織及運作》第三條第一款的規定，結合經第87/2021號行政命令修改的第183/2019號行政命令第一款的規定，作出本批示。

一、以定期委任方式委任梁惠敏為文化局局長，自二零二二年二月一日起，為期一年。

二、因本委任所產生的負擔，由文化局的預算承擔。

Despacho da Secretária para os Assuntos Sociais e Cultura n.º 7/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e nos termos do artigo 23.º do Estatuto dos Trabalhadores da Administração Pública de Macau, aprovado pelo Decreto-Lei n.º 87/89/M, de 21 de Dezembro, da alínea 1) do n.º 2 do artigo 2.º e dos artigos 4.º e 5.º da Lei n.º 15/2009 (Disposições Fundamentais do Estatuto do Pessoal de Direcção e Chefia), do n.º 1 do artigo 2.º e dos artigos 7.º e 9.º do Regulamento Administrativo n.º 26/2009 (Disposições complementares do estatuto do pessoal de direcção e chefia) e do n.º 1 do artigo 3.º do Regulamento Administrativo n.º 20/2015, alterado pelo Regulamento Administrativo n.º 41/2021 (Organização e funcionamento do Instituto Cultural), conjugados com o n.º 1 da Ordem Executiva n.º 183/2019, alterada pela Ordem Executiva n.º 87/2021, a Secretária para os Assuntos Sociais e Cultura manda:

1. É nomeada, em comissão de serviço, Leong Wai Man para exercer o cargo de presidente do Instituto Cultural, pelo período de um ano, a partir de 1 de Fevereiro de 2022.

2. Os encargos resultantes da presente nomeação são suportados pelo orçamento do Instituto Cultural.

三、以附件形式公佈委任理由及獲委任人的學歷及專業簡歷。

二零二二年一月二十日

社會文化司司長　歐陽瑜

附件

委任梁惠敏為文化局局長的理由如下：

——職位出缺；

——梁惠敏的個人履歷顯示其具備專業能力及才幹擔任文化局局長。

學歷：

——私立東海大學學士學位（建築學）；

——倫敦大學學院研究生文憑（建築學）。

專業簡歷：

——2009年至2016年　文化局高級技術員；

——2011年至2015年　文化局文化財產廳職務主管；

——2015年　文化局文化財產廳代廳長；

——2016年至2018年　文化局文化遺產廳廳長；

——2018年至今　文化局副局長。

3. É publicada, em anexo, a nota relativa aos fundamentos da nomeação e ao currículo académico e profissional do nomeado.

20 de Janeiro de 2022.

A Secretária para os Assuntos Sociais e Cultura, *Ao Ieong U*.

ANEXO

Fundamentos da nomeação de Leong Wai Man para o cargo de presidente do Instituto Cultural:

— Vacatura do cargo;

— Leong Wai Man possui competência profissional e aptidão para o exercício do cargo de presidente do Instituto Cultural, que se demonstra pelo *curriculum vitae*.

Currículo académico:

— Licenciatura em Arquitectura pela *Tunghai University*;

— Pós-graduação em área de arquitectura pela *University College London*.

Currículo profissional:

— Técnica superior do Instituto Cultural, de 2009 a Janeiro de 2016;

— Chefia funcional do Departamento do Património Cultural do Instituto Cultural, de 2011 a 2015;

— Chefe do Departamento do Património Cultural do Instituto Cultural, substituta, em 2015;

— Chefe do Departamento do Património Cultural do Instituto Cultural, de 2016 a 2018;

— Vice-Presidente do Instituto Cultural, de 2018 até à presente data.

批 示 摘 錄

透過社會文化司司長二零二一年十二月三十日之批示：

黃燕松——根據現行第12/2015號法律《公共部門勞動合同制度》第六條第二款（一）項及第三款的規定，其在社會文化司司長辦公室擔任第一職階一等高級技術員的行政任用合同修改為長期行政任用合同，自二零二一年十二月十九日起生效。

Extracto de despacho

Por despacho da Ex.ma Senhora Secretária para os Assuntos Sociais e Cultura, de 30 de Dezembro de 2021:

Wong In Chong — alterado o seu contrato administrativo de provimento para contrato administrativo de provimento de longa duração, como técnica superior de 1.ª classe, 1.º escalão, no Gabinete da Secretária para os Assuntos Sociais e Cultura, nos termos da alínea *1*) do n.º 2 e do n.º 3 do artigo 6.º da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), em vigor, a partir de 19 de Dezembro de 2021.

聲 明

為著應有的效力，茲聲明，根據第15/2009號法律《領導及主管人員通則的基本規定》第十七條第一款（一）項的規定，應老

Declarações

Para os devidos efeitos se declara que Lou Pak Sang cessa, a seu pedido, a comissão de serviço no termo do seu prazo, como director dos Serviços de Educação e de Desenvolvimento da

柏生的要求，其擔任教育及青年發展局局長的定期委任，於期限屆滿時終止，即自二零二二年二月一日起終止。

根據現行第12/2015號法律《公共部門勞動合同制度》第九條第一款及第十五條（三）項的規定，本辦公室第二職階顧問高級技術員黃威威，自二零二二年一月十七日調職至藥物監督管理局之日，其在本辦公室的不具期限的行政任用合同失效。

二零二二年一月二十日於社會文化司司長辦公室

辦公室主任　何鈺珊

Juventude, nos termos da alínea *1*) do n.º 1 do artigo 17.º da Lei n.º 15/2009 (Disposições Fundamentais do Estatuto do Pessoal de Direcção e Chefia), a partir de 1 de Fevereiro de 2022.

— Para os devidos efeitos se declara que o contrato administrativo de provimento sem termo de Wong Wai Wai, técnico superior assessor, 2.º escalão, deste Gabinete, caduca em 17 de Janeiro de 2022, data em que inicia funções no Instituto para a Supervisão e Administração Farmacêutica, por mobilidade, nos termos do n.º 1 do artigo 9.º e da alínea *3*) do artigo 15.º da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), em vigor.

Gabinete da Secretária para os Assuntos Sociais e Cultura, aos 20 de Janeiro de 2022. — A Chefe do Gabinete, *Ho Ioc San*.

運輸工務司司長辦公室

第 3/2022 號運輸工務司司長批示

運輸工務司司長行使《澳門特別行政區基本法》第六十四條賦予的職權，並根據第60/2021號行政命令獨一條第二款的規定，作出本批示。

轉授一切所需權力予郵電局局長劉惠明或其法定代任人，以便代表澳門特別行政區與香港特別行政區簽署《港澳兩地電子簽名證書互認的框架性意見》。

二零二二年一月十八日

運輸工務司司長　羅立文

更正

鑒於發現公佈於二零二一年十月二十七日第四十三期《澳門特別行政區公報》第二組的第28/2021號運輸工務司司長批示的附件，關於一幅以長期租借制度批出，位於澳門半島，鄰近加思欄馬路，總面積1145平方米的土地批給修改合同有不正確之處，因此，透過公佈整份經修改的合同條款以作更正。

“*第一條款——合同標的*

1. 本合同標的為：

1）修改一幅以長期租借制度批出，總登記面積為1,173.1（壹仟壹佰柒拾叁點壹）平方米，經重新量度後修正為1,145（壹仟

GABINETE DO SECRETÁRIO PARA OS TRANSPORTES E OBRAS PÚBLICAS

Despacho do Secretário para os Transportes e Obras Públicas n.º 3/2022

Usando da faculdade conferida pelo artigo 64.º da Lei Básica da Região Administrativa Especial de Macau e nos termos do n.º 2 do artigo único da Ordem Executiva n.º 60/2021, o Secretário para os Transportes e Obras Públicas manda:

São subdelegados na directora dos Serviços de Correios e Telecomunicações, Lau Wai Meng, ou no seu substituto legal, todos os poderes necessários para celebrar, em representação da Região Administrativa Especial de Macau, o «Parecer-Quadro para o Reconhecimento Mútuo dos Certificados de Assinatura Electrónica entre Hong Kong e Macau», com a Região Administrativa Especial de Hong Kong.

18 de Janeiro de 2022.

O Secretário para os Transportes e Obras Públicas, *Raimundo Arrais do Rosário.*

Rectificação

Tendo-se verificado inexactidões no contrato de revisão da concessão por aforamento do terreno situado na península de Macau, junto à Estrada de S. Francisco, com a área global de 1 145 m^2, anexo ao Despacho do Secretário para os Transportes e Obras Públicas n.º 28/2021, publicado no *Boletim Oficial da Região Administrativa Especial de Macau* n.º 43, II Série, de 27 de Outubro de 2021, procede-se à sua rectificação, mediante a publicação integral do clausulado revisto:

«Cláusula primeira — Objecto do contrato

1. Constitui objecto do presente contrato:

1) A revisão da concessão, por aforamento, do terreno com a área registal total de 1 173,1 m^2 (mil, cento e setenta e três vírgula um metros quadrados), rectificada por novas medições

壹佰肆拾伍）平方米，在拆卸建有澳門半島，鄰近加思欄馬路，標示在物業登記局B30冊第54頁第11200號及B31冊第156頁第11766號土地上的樓宇後合併而成，在地圖繪製暨地籍局於二零一九年十二月十七日發出的第4565/1993號地籍圖中以字母“A”及“B”定界及標示，以及其利用權以乙方名義登錄於第329742G號的土地的批給；

2）根據新街道準線的規定，將一幅無帶任何責任或負擔，在上述地籍圖中以字母“B”定界及標示，面積101（壹佰零壹）平方米，價值為$101,000.00（澳門元拾萬零壹仟圓整），將脫離上項所指土地的地塊的利用權歸還甲方，以納入國家公產，作為公共街道。

2. 批出土地現時的面積為1,044（壹仟零肆拾肆）平方米，在上述地籍圖中以字母“A”定界及標示，以下簡稱為土地，其批給轉由本合同的條款規範。

第二條款——土地的重新利用及用途

1. 土地重新利用作興建一幢屬分層所有權制度，樓高9（玖）層，其中1（壹）層為地庫的樓宇，其用途分配如下：

1）住宅：..... 建築面積5,820平方米；

2）停車場：.....建築面積1,129平方米。

2. 上款所述面積可在申請工程檢驗時作修改，以便發出使用准照。

3. 乙方須遵守土地所在地區內生效的城市規劃的規定。

第三條款——利用權價金及地租

1. 土地的利用權價金調整為$555,920.00（澳門元伍拾伍萬伍仟玖佰貳拾圓整）。

2. 當乙方按照第10/2013號法律第一百二十五條的規定接受本合同條件時，須一次性全數繳付上款訂定的經調整後的利用權價金。

3. 每年繳付的地租調整為$1,390.00（澳門元壹仟叁佰玖拾圓整）。

4. 不準時繳付地租，將按照稅務執行程序的規定進行強制徵收。

第四條款——重新利用的期間

1. 土地重新利用的總期間為54（伍拾肆）個月，由作為本修改批給憑證的批示在《澳門特別行政區公報》公佈之日起計。

para 1 145 m^2 (mil, cento e quarenta e cinco metros quadrados), resultante da anexação, logo que demolidos os prédios situados junto à Estrada de S. Francisco, na península de Macau, descritos na Conservatória de Registo Predial (CRP) sob os n.^{os} 11 200 a fls. 54 do livro B30 e 11 766 a fls. 156 do livro B31, cujos domínios úteis se encontram inscritos sob o n.º 329 742G, a favor da segunda outorgante, demarcados e assinalados com as letras «A» e «B» na planta n.º 4 565/1993, emitida pela Direcção dos Serviços de Cartografia e Cadastro (DSCC), em 17 de Dezembro de 2019;

2) A reversão, por força de novos alinhamentos, a favor da primeira outorgante, livre de quaisquer ónus ou encargos, do domínio útil da parcela de terreno demarcada e assinalada com a letra «B» na referida planta da DSCC, com a área de 101 m^2 (cento e um metros quadrados) e com o valor atribuído de $ 101 000,00 (cento e uma mil patacas), a desanexar do terreno referido na alínea anterior, que se destina a integrar o domínio público do Estado, como via pública.

2. A concessão do terreno agora com 1 044 m^2 (mil e quarenta e quatro metros quadrados), assinalado e demarcado com a letra «A» na referida planta, de ora em diante designado, simplesmente, por terreno, passa a reger-se pelas cláusulas do presente contrato.

Cláusula segunda — Reaproveitamento e finalidade do terreno

1. O terreno é reaproveitado com a construção de um edifício, em regime de propriedade horizontal, compreendendo 9 (nove) pisos, sendo 1 (um) em cave, afectado às seguintes finalidades de utilização:

1) Habitação: .....com a área bruta de construção de 5 820 m^2;

2) Estacionamento: ... com a área bruta de construção de 1 129 m^2.

2. As áreas referidas no número anterior podem ser sujeitas a eventuais rectificações no momento do pedido de vistoria de obra, para efeito de emissão da licença de utilização.

3. A segunda outorgante é obrigada a submeter-se às prescrições do plano urbanístico que vigore na zona onde o terreno se situa.

Cláusula terceira — Preço do domínio útil e foro

1. O preço do domínio útil do terreno é actualizado para $ 555 920,00 (quinhentas e cinquenta e cinco mil, novecentas e vinte patacas).

2. O preço actualizado do domínio útil, estipulado no número anterior, é pago integralmente e de uma só vez, aquando da aceitação das condições do presente contrato, a que se refere o artigo 125.º da Lei n.º 10/2013.

3. O foro anual a pagar é actualizado para $ 1 390,00 (mil, trezentas e noventa patacas).

4. O não pagamento pontual do foro determina a cobrança coerciva nos termos do processo de execução fiscal.

Cláusula quarta — Prazo de reaproveitamento

1. O reaproveitamento do terreno deve operar-se no prazo global de 54 (cinquenta e quatro) meses, contados a partir da publicação no *Boletim Oficial da Região Administrativa Especial de Macau* do despacho que titula a presente revisão de concessão.

2. 上款所述的期間包括乙方遞交工程計劃、甲方審議該計劃及發出有關准照的時間。

3. 乙方應遵守以下期間：

1）由第1款所指的批示公佈之日起計180（壹佰捌拾）日內，編製和遞交工程計劃（地基、結構、供水、排水、供電及其他專業計劃）；

2）由通知工程計劃獲核准之日起計60（陸拾）日內，遞交發出工程准照的申請書；

3）由發出工程准照之日起計15（拾伍）日內，遞交動工申請。

4. 為適用上款的規定，計劃須完整及適當備齊所有資料，方視為確實完成遞交。

5. 如基於不可歸責於乙方且甲方認為充分的理由，則應乙方的申請，甲方可批准中止或延長本條款所指的任一期間。

6. 上款所指的申請須於相關期間屆滿前提出。

第五條款——特別負擔

由乙方獨力承擔的特別負擔為：

1）騰空在地圖繪製暨地籍局於二零一九年十二月十七日發出的第4565/1993號地籍圖中以字母“A”及“B”定界及標示的地塊，並移走其上倘有的全部建築物、物料及基礎設施；

2）根據二零一三年十月三日核准的第85A345號街道準線圖的規定，按照乙方編制及由土地工務運輸局審批的計劃，乙方須負責設計及建造公眾可達的行人天橋。

3）對上項所述的建築工程，乙方保證優質施工和使用質量良好的材料，並負責維修及更正該等工程由臨時接收之日起計兩年內所出現的一切瑕疵。

4）甲方保留透過預先通知的權利，可選擇取代乙方作為直接執行部分或全部組成第2）項所述的特別負擔的工程，而相關費用的支付繼續由乙方負擔。

2. O prazo referido no número anterior inclui os prazos para a apresentação, pela segunda outorgante, e apreciação, pela primeira outorgante, do projecto de obra e para a emissão das respectivas licenças.

3. A segunda outorgante deve observar os seguintes prazos:

1) 180 (cento e oitenta) dias, contados da data da publicação do despacho mencionado no n.º 1, para a elaboração e apresentação dos projectos de obra (projectos de fundações, estruturas, águas, esgotos, electricidade e demais projectos de especialidade);

2) 60 (sessenta) dias, contados da data da notificação da aprovação do projecto da obra, para a apresentação do pedido de emissão da licença das obras;

3) 15 (quinze) dias, contados da data de emissão da licença de obras, para a apresentação do pedido de início da obra.

4. Para efeitos do disposto no número anterior, os projectos só se consideram efectivamente apresentados, quando completa e devidamente instruídos com todos os elementos.

5. A requerimento da segunda outorgante, qualquer dos prazos referidos na presente cláusula pode ser suspenso ou prorrogado por autorização da primeira outorgante, por motivo não imputável à segunda outorgante e que a primeira outorgante considere justificativo.

6. O pedido referido no número anterior tem de ser apresentado antes do termo do respectivo prazo.

Cláusula quinta — Encargos especiais

Constituem encargos especiais, a suportar exclusivamente pela segunda outorgante:

1) A desocupação das parcelas de terreno demarcadas e assinaladas com as letras «A» e «B» na planta n.º 4 565/1993, emitida pela DSCC em 17 de Dezembro de 2019, e a remoção das mesmas de todas as construções, materiais e infra-estruturas, porventura, aí existentes;

2) A concepção e a execução da obra de passagem superior para peões, acessível ao público, conforme o projecto a elaborar pela segunda outorgante e a aprovar pela DSSOPT, de acordo com a planta de alinhamento oficial n.º 85A345, aprovada em 3 de Outubro de 2013;

3) A segunda outorgante garante a boa execução e qualidade dos materiais a aplicar nas obras de construção referidas na alínea anterior, durante o período de dois anos, contados da data da recepção provisória daquelas obras, obrigando-se a reparar e a corrigir todas as deficiências que se venham a manifestar durante aquele período;

4) A primeira outorgante reserva-se o direito de, mediante aviso prévio, optar por se substituir à segunda outorgante na execução directa de parte ou da totalidade das obras que constituem o encargo especial a que se refere a alínea 2), continuando a ser encargo da segunda outorgante o pagamento dos respectivos custos.

第六條款——罰款

1. 基於乙方不遵守第四條款所訂的任一期間，每逾期一日，處以相當於溢價金0.1%（百分之零點一）的罰款，並以150（壹佰伍拾）日為限。

2. 基於不可歸責於乙方且為甲方認為充分的理由而批准中止或延長重新利用期間者，則免除乙方承擔上款所指的責任。

第七條款——合同溢價金

乙方須向甲方繳付總金額為$67,099,948.00（澳門元陸仟柒佰零玖萬玖仟玖佰肆拾捌圓整）的合同溢價金，繳付方式如下：

1）$23,000,000.00（澳門元貳仟叁佰萬圓整），當乙方按照第10/2013號法律第一百二十五條的規定接受本合同條件時繳付；

2）餘款$44,099,948.00（澳門元肆仟肆佰零玖萬玖仟玖佰肆拾捌圓整），連同年利率5%的利息分5（伍）期繳付，以半年為一期，每期金額相等，即本金連利息合共$9,492,375.00（澳門元玖佰肆拾玖萬貳仟叁佰柒拾伍圓整）。第一期須於作為本修改批給憑證的批示在《澳門特別行政區公報》公佈後6（陸）個月內繳付。

第八條款——移轉

1. 倘土地未被完全重新利用而將本批給所衍生的狀況移轉，須事先獲得甲方的許可，否則將導致該項移轉無效及不產生任何效力，且不影響第十二條款之規定。

2. 為適用上款的規定，下列情況亦視為移轉本批給所衍生的狀況：

1）一次或多次累計移轉乙方或其控權股東公司資本超過50%（百分之五十）；

2）按《民法典》第二百五十八條第三款的規定，設定未經利害關係人同意不可廢止的授權書或複授權書，且該等授權書賦予受權人對批給所衍生狀況的處分權或在程序中作出所有行為。

3. 在不影響上款的規定下，如乙方移轉其或其控權股東公司資本超過10%（百分之十），須在有關移轉事實發生後30（叁拾）日內將之通知土地工務運輸局，否則於首次違反時，處以相當於溢價金1%（百分之一）的罰款，而屬第二次違反者則收回土地。

Cláusula sexta — Multa

1. Pelo incumprimento de qualquer um dos prazos fixados na cláusula quarta, a segunda outorgante fica sujeita a multa no montante correspondente a 0,1% (zero vírgula um por cento) do prémio por cada dia de atraso, até 150 (cento e cinquenta) dias.

2. A segunda outorgante fica exonerada da responsabilidade referida no número anterior no caso da primeira outorgante ter autorizado a suspensão ou a prorrogação do prazo de reaproveitamento, por motivo não imputável à segunda outorgante e considerado justificativo pela primeira outorgante.

Cláusula sétima — Prémio do contrato

A segunda outorgante paga à primeira outorgante, a título de prémio do contrato, o montante global de $ 67 099 948,00 (sessenta e sete milhões, noventa e nove mil, novecentas e quarenta e oito patacas), da seguinte forma:

1) $ 23 000 000,00 (vinte e três milhões de patacas), aquando da aceitação das condições do presente contrato, a que se refere o artigo 125.º da Lei n.º 10/2013;

2) O remanescente, no valor de $ 44 099 948,00 (quarenta e quatro milhões, noventa e nove mil, novecentas e quarenta e oito patacas), que vence juros à taxa anual de 5% (cinco por cento), é pago em 5 (cinco) prestações semestrais, iguais de capital e juros, no montante de $ 9 492 375,00 (nove milhões, quatrocentas e noventa e duas mil, trezentas e setenta e cinco patacas), cada uma, vencendo-se a primeira 6 (seis) meses após a publicação no *Boletim Oficial da Região Administrativa Especial de Macau* do despacho que titula a presente revisão de concessão.

Cláusula oitava — Transmissão

1. A transmissão de situações decorrentes desta concessão, enquanto o terreno não estiver integralmente reaproveitado, depende de prévia autorização da primeira outorgante, sob pena de nulidade e de nenhum efeito, sem prejuízo do disposto na cláusula décima segunda.

2. Para efeitos do disposto no número anterior, também se considera equivalente à transmissão de situações resultantes da presente concessão:

1) A transmissão, por uma ou várias vezes em acumulação, superior a 50% (cinquenta por cento) do capital social da segunda outorgante ou do capital social do seu sócio dominante;

2) A constituição de procuração ou substabelecimento que confira ao procurador poderes para a prática de todos os actos no procedimento ou a disposição das situações resultantes da concessão e que seja irrevogável sem o acordo do interessado, nos termos do n.º 3 do artigo 258.º do Código Civil.

3. Sem prejuízo do disposto no número anterior, quando se verifique a transmissão superior a 10% (dez por cento) do capital da segunda outorgante ou do capital social do seu sócio dominante, esta deve comunicar o facto à DSSOPT no prazo de 30 (trinta) dias a contar da sua ocorrência, sob pena de aplicação de multa no montante correspondente a 1% (um por cento) do prémio na primeira infracção e de devolução do terreno na segunda infracção.

4. 受移轉人須受本合同修改後的條件約束，尤其有關重新利用的期間及附加溢價金方面。

5. 在完成重新利用前，按照第10/2013號法律第四十二條第五款的規定，乙方僅可將批給所衍生的權利向依法獲許可在澳門特別行政區經營的信貸機構作意定抵押。

6. 違反上款的規定而作出的抵押均屬無效。

第九條款——工程及使用准照

1. 工程准照僅在乙方遞交已按照本合同第七條款的規定繳付已到期溢價金的證明後，方予發出。

2. 使用准照僅在遞交已全數繳付第七條款訂定的溢價金的證明及履行第五條款訂定的義務，以及清繳倘有的罰款後，方予發出。

第十條款——監督

在批出土地的重新利用期間，乙方必須准許行政當局有關部門執行監督工作的代表進入土地及施工範圍，並向代表提供一切所需的協助，使其有效地執行任務。

第十一條款——失效

1. 本批給在下列情況下失效：

1）第六條款第1款規定的150（壹佰伍拾）日期間屆滿後仍未完成重新利用，且不論之前曾否被科處罰款；

2）連續或間斷中止重新利用土地超過90（玖拾）日，但有不可歸責於乙方且甲方認為充分的理由除外。

2. 批給的失效由行政長官以批示宣告，並在《澳門特別行政區公報》公佈。

3. 批給的失效導致已繳付的溢價金及以任何方式已在土地上作出的一切改善物歸甲方所有，乙方無權獲得任何賠償或補償，且不影響甲方有權徵收所欠繳的到期溢價金、地租或倘有的罰款。

4. 在不影響上款的規定下，如宣告本批給失效，乙方佔有土地而不加重新利用的年數乘以有關利用權價金的二十分之一的款項歸甲方所有，而該價金的餘額退還予乙方。

4. A transmissão sujeita o transmissário à revisão das condições do presente contrato, designadamente das relativas ao prazo de reaproveitamento e ao pagamento do prémio adicional.

5. Antes da conclusão do reaproveitamento, a segunda outorgante só pode constituir hipoteca voluntária sobre o direito resultante da concessão a favor de instituições de crédito legalmente autorizadas a exercer actividade na Região Administrativa Especial de Macau, nos termos do disposto no n.º 5 do artigo 42.º da Lei n.º 10/2013.

6. A hipoteca constituída em violação do disposto no número anterior é nula.

Cláusula nona — Licenças de obras e de utilização

1. A licença de obras só é emitida após a apresentação do comprovativo de que a segunda outorgante satisfez o pagamento das prestações do prémio já vencidas, em conformidade com o estabelecido na cláusula sétima do presente contrato.

2. A licença de utilização apenas é emitida após a apresentação do comprovativo de que o prémio fixado na cláusula sétima se encontra pago na sua totalidade, o cumprimento das obrigações estabelecidas na cláusula quinta e desde que as multas, se as houver, estejam pagas.

Cláusula décima — Fiscalização

Durante o período de reaproveitamento do terreno concedido, a segunda outorgante obriga-se a franquear o acesso ao mesmo e às obras aos representantes dos Serviços da Administração, que aí se desloquem no desempenho da sua acção fiscalizadora, prestando-lhes toda a assistência e meios para o bom desempenho da sua função.

Cláusula décima primeira — Caducidade

1. A presente concessão caduca nos seguintes casos:

1) Não conclusão do reaproveitamento, decorrido o prazo de 150 (cento e cinquenta) dias, previsto no n.º 1 da cláusula sexta, independentemente de ter sido aplicada ou não a multa;

2) Suspensão, consecutiva ou intercalada, do reaproveitamento do terreno por prazo superior a 90 (noventa) dias, salvo por motivo não imputável à segunda outorgante e que a primeira outorgante considere justificativo.

2. A caducidade da concessão é declarada por despacho do Chefe do Executivo, a publicar no *Boletim Oficial da Região Administrativa Especial de Macau*.

3. A caducidade da concessão determina a reversão para a primeira outorgante dos prémios pagos e de todas as benfeitorias por qualquer forma incorporadas no terreno, sem direito a qualquer indemnização ou compensação por parte da segunda outorgante, sem prejuízo da cobrança pela primeira outorgante dos prémios vencidos, dos foros em dívida e das eventuais multas ainda não pagas.

4. Sem prejuízo do disposto no número anterior, no caso de declaração da caducidade da concessão, revertem para a primeira outorgante tantos vigésimos do respectivo preço do domínio útil quantos os anos em que o terreno esteve na posse da segunda outorgante sem reaproveitamento, sendo-lhe restituído o remanescente do preço.

第十二條款——土地的收回

1. 倘發生下列任一事實時，甲方可宣告收回土地：

1）未經批准而修改批給用途或更改土地的重新利用；

2）不履行第五條款及第七條款訂定的義務；

3）違反第八條款第1款的規定，未經預先許可將批給所衍生的狀況移轉；

4）第二次違反第八條款第3款的規定；

5）土地的使用偏離批給目的，或該等目的從未實現；

6）當城市規劃變動後而無法開始或繼續對土地進行重新利用，且出現第10/2013號法律第一百四十條第二款所指的任一情況；

7）將長期租借轉租。

2. 土地的收回由行政長官以批示宣告，並在《澳門特別行政區公報》公佈。

3. 土地收回的宣告將產生以下效力：

1）土地的利用權消滅；

2）已繳付的溢價金、利用權價金及以任何方式已在土地上作出的改善物歸甲方所有，承批人有權收取由甲方訂定的賠償。

4. 本條款規定的土地的收回，不影響甲方有權徵收所欠繳的到期溢價金、地租及倘有的罰款。

5. 如基於本條款第1款6）項的規定收回土地，則乙方有權獲得第10/2013號法律第一百四十條第五款和第六款規定的賠償。

第十三條款——有權限法院

澳門特別行政區法院為有權解決由本合同所產生任何爭訟的法院。

第十四條款——適用法例

如有遺漏，本合同以第10/2013號法律和其他適用法例規範”。

二零二二年一月十八日

運輸工務司司長　羅立文

二零二二年一月十九日於運輸工務司司長辦公室

辦公室主任　張翠玲

Cláusula décima segunda — Devolução do terreno

1. A primeira outorgante pode declarar a devolução do terreno quando se verifique qualquer dos seguintes factos:

1) Alteração não autorizada da finalidade de concessão ou da modificação do reaproveitamento do terreno;

2) Incumprimento das obrigações estabelecidas nas cláusulas quinta e sétima;

3) Transmissão, sem autorização prévia, das situações resultantes da concessão, com violação do disposto no n.º 1 da cláusula oitava;

4) Segunda infracção ao disposto no n.º 3 da cláusula oitava;

5) Quando a utilização do terreno se afaste dos fins para que foi concedido ou estes não estejam, em qualquer momento, a ser prosseguidos;

6) Quando, no seguimento de alteração do planeamento urbanístico que implique a impossibilidade de iniciar ou continuar o reaproveitamento do terreno, se verifique qualquer uma das situações referidas no n.º 2 do artigo 140.º da Lei n.º 10/2013;

7) Subaforamento.

2. A devolução do terreno é declarada por despacho do Chefe do Executivo, a publicar no *Boletim Oficial da Região Administrativa Especial de Macau*.

3. A declaração de devolução do terreno produz os seguintes efeitos:

1) Extinção do domínio útil do terreno;

2) Reversão para a primeira outorgante dos prémios e do preço do domínio útil pagos, bem como de todas as benfeitorias por qualquer forma incorporadas no terreno, tendo a concessionária direito à indemnização a fixar por aquela.

4. A devolução do terreno nos termos da presente cláusula não prejudica a cobrança pela primeira outorgante, dos prémios vencidos, dos foros em dívida e das eventuais multas ainda não pagas.

5. No caso de devolução com fundamento na alínea 6) do n.º 1 da presente cláusula, a segunda outorgante tem direito à indemnização prevista nos n.os 5 e 6 do artigo 140.º da Lei n.º 10/2013.

Cláusula décima terceira — Foro competente

Para efeitos de resolução de qualquer litígio emergente do presente contrato, o foro competente é o da Região Administrativa Especial de Macau.

Cláusula décima quarta — Legislação aplicável

O presente contrato rege-se, nos casos omissos, pela Lei n.º 10/2013 e demais legislação aplicável».

18 de Janeiro de 2022.

O Secretário para os Transportes e Obras Públicas, *Raimundo Arrais do Rosário.*

Gabinete do Secretário para os Transportes e Obras Públicas, aos 19 de Janeiro de 2022. — A Chefe do Gabinete, *Cheong Chui Ling.*

廉 政 公 署

批 示 摘 錄

摘錄自廉政專員於二零二二年一月十三日批示如下：

郭邵文——根據第4/2012號法律修改的第10/2000號法律第十六條和第三十條，以及第3/2013號行政法規修改的第3/2009號行政法規第三十一條第一款及第三十二條第一款之規定，自二零二二年二月一日起，以定期委任方式委任為廉政公署顧問，為期一年，以填補上述行政法規附件所載職位。

摘錄自廉政專員於二零二二年一月十八日批示如下：

吳佩珊——根據第4/2012號法律修改的第10/2000號法律第十六條和第三十條，第3/2013號行政法規修改的第3/2009號行政法規第三十條第一款及第三十二條第一款，第4/2017號及第2/2021號法律修改的第14/2009號法律第十四條第一款（二）項、第二款、第三款及第四款，以及經第21/2021號行政法規修改並重新公佈的第14/2016號行政法規第二條第三款及第五條之規定，以定期委任方式委任為第一職階顧問高級技術員，自本批示摘錄公佈日起生效。

郭嘉良——根據第4/2012號法律修改的第10/2000號法律第十六條和第三十條，第3/2013號行政法規修改的第3/2009號行政法規第三十條第一款，第12/2015號法律《公共部門勞動合同制度》第四條及第七條，以及第4/2017號及第2/2021號法律修改的第14/2009號法律第十三條第二款（一）項及第四款之規定，以附註形式修改其行政任用合同第三條款，自二零二二年一月十三日起晉階至第二職階勤雜人員。

COMISSARIADO CONTRA A CORRUPÇÃO

Extractos de despachos

Por despacho do Ex.mo Senhor Comissário contra a Corrupção, de 13 de Janeiro de 2022:

Kuok Sio Man — nomeado, em comissão de serviço, pelo período de um ano, assessor deste Comissariado, nos termos dos artigos 16.º e 30.º da Lei n.º 10/2000, com as alterações introduzidas pela Lei n.º 4/2012, 31.º, n.º 1, e 32.º, n.º 1, do Regulamento Administrativo n.º 3/2009, alterado pelo Regulamento Administrativo n.º 3/2013, a partir de 1 de Fevereiro de 2022, indo ocupar um dos lugares referidos no anexo ao citado regulamento administrativo.

Por despachos do Ex.mo Senhor Comissário contra a Corrupção, de 18 de Janeiro de 2022:

Ng Pui San — nomeada, em comissão de serviço, técnica superior assessora, 1.º escalão, nos termos dos artigos 16.º e 30.º da Lei n.º 10/2000, com as alterações introduzidas pela Lei n.º 4/2012, 30.º, n.º 1, e 32.º, n.º 1, do Regulamento Administrativo n.º 3/2009, alterado pelo Regulamento Administrativo n.º 3/2013, 14.º, n.os 1, alínea *2)*, 2, 3 e 4, da Lei n.º 14/2009, com as alterações introduzidas pelas Leis n.os 4/2017 e 2/2021, 2.º, n.º 3, e 5.º do Regulamento Administrativo n.º 14/2016, alterado e republicado pelo Regulamento Administrativo n.º 21/2021, a partir da data da publicação do presente extracto de despacho.

Kuok Ka Leong — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento progredindo para auxiliar, 2.º escalão, nos termos dos artigos 16.º e 30.º da Lei n.º 10/2000, com as alterações introduzidas pela Lei n.º 4/2012, 30.º, n.º 1, do Regulamento Administrativo n.º 3/2009, alterado pelo Regulamento Administrativo n.º 3/2013, 4.º e 7.º da Lei n.º 12/2015 «Regime do Contrato de Trabalho nos Serviços Públicos», e 13.º, n.os 2, alínea *1)*, e 4, da Lei n.º 14/2009, com as alterações introduzidas pelas Leis n.os 4/2017 e 2/2021, a partir de 13 de Janeiro de 2022.

聲 明 書
Declaração

摘要
Extracto

二零二二年財政年度第一次預算修改
1.ª alteração orçamental do ano económico de 2022

根據第2/2018號行政法規第五十二條及第五十三條第五款的規定，茲公佈下列（澳門特別行政區財政預算/二零二二）款項轉移：

Nos termos do artigo 52.º e do n.º 5 do artigo 53.º do Regulamento Administrativo n.º 2/2018, publicam-se as seguintes transferências de verbas (Orçamento da RAEM/2022):

分類 Classificação			名稱 Designação	追加/登錄 Reforços/ Inscrições	註銷 Anulações
組織 Orgân.	功能 Func.	經濟 Económica			
71700100			**廉政公署 Comissariado contra a Corrupção**		
	2-05-1	41-01-03-00-00	樓宇及場所 Edifícios e estabelecimentos		3,770,000.00
	2-05-1	41-02-10-00-00	資訊及系統設備 Equipamentos informáticos e sistemáticos	3,770,000.00	
			總額 Total	**3,770,000.00**	**3,770,000.00**
核准依據： Referente à autorização：			04/01/2022之廉政專員批示 Despacho do Exm.º Sr. Comissário, de 04/01/2022		

——

二零二二年一月二十日於廉政公署——辦公室主任　陳彥照

Comissariado contra a Corrupção, aos 20 de Janeiro de 2022. — O Chefe do Gabinete, *Chan In Chio*.

審計署

批示摘錄

摘錄自審計長於二零二二年一月七日的批示：

根據第11/1999號法律第二十五條，第12/2007號行政法規第十六條、第二十八條及第二十九條，以及第26/2009號行政法規第八條的規定，並因具備適當經驗及專業能力履行職務，唐碧菁擔任審計局副局長的定期委任，自二零二二年二月七日起續期一年。

聲明

根據現行第12/2015號法律《公共部門勞動合同制度》第九條及第十五條（三）項的規定，本署第二職階顧問高級技術員簡慧妍，自二零二二年一月十二日調職至終審法院院長辦公室之日，其在本署的不具期限的行政任用合同失效。

———

二零二二年一月十九日於審計長辦公室

辦公室代主任　鄒家禮

COMISSARIADO DA AUDITORIA

Extracto de despacho

Por despacho do Ex.mo Senhor Comissário da Auditoria, de 7 de Janeiro de 2022:

Tong Pek Cheng — renovada a comissão de serviço, pelo período de um ano, como subdirectora da Direcção dos Serviços de Auditoria, nos termos dos artigos 25.º da Lei n.º 11/1999, 16.º, 28.º e 29.º do Regulamento Administrativo n.º 12/2007, e 8.º do Regulamento Administrativo n.º 26/2009, por possuir competência profissional e experiência adequadas para o exercício das suas funções, a partir de 7 de Fevereiro de 2022.

Declaração

Para os devidos efeitos se declara que o contrato administrativo de provimento sem termo de Kan Wai In, técnica superior assessora, 2.º escalão, deste Comissariado, caduca em 12 de Janeiro de 2022, data em que inicia funções no Gabinete do Presidente do Tribunal de Última Instância, por mobilidade, nos termos dos artigos 9.º e 15.º, alínea *3)*, da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), em vigor.

———

Gabinete do Comissário da Auditoria, aos 19 de Janeiro de 2022. — O Chefe do Gabinete, substituto, *Chau Ka Lai*.

終審法院院長辦公室

批示摘錄

摘錄自終審法院院長於二零二二年一月十八日作出的批示：

根據經十二月十九日第39/2011號行政法規重新公佈的三月六日第19/2000號行政法規第十三條第一款、八月二日第7/2004號法律第四條、第十條第一款、第十一條及第二十五條，以及八月十日第26/2009號行政法規第八條的規定，因具備適當經驗及專業能力履行職務，終審法院主任書記員曾豔芬的定期委任獲續期一年，由二零二二年二月四日起生效。

摘錄自終審法院院長辦公室主任於二零二二年一月十九日作出的批示：

根據經十二月十九日第39/2011號行政法規重新公佈的三月六日第19/2000號行政法規第十三條第一款、八月三日第14/2009號法律第十三條第一款（二）項、第四款、八月十七日第12/2015

GABINETE DO PRESIDENTE DO TRIBUNAL DE ÚLTIMA INSTÂNCIA

Extractos de despachos

Por despacho do Presidente do Tribunal de Última Instância, de 18 de Janeiro de 2022:

Chang Im Fan — renovada a comissão de serviço, pelo período de um ano, como escrivã de direito no Tribunal de Última Instância, nos termos do artigo 13.º, n.º 1, do Regulamento Administrativo n.º 19/2000, de 6 de Março, republicado pelo Regulamento Administrativo n.º 39/2011, de 19 de Dezembro, artigos 4.º, 10.º, n.º 1, 11.º e 25.º da Lei n.º 7/2004, de 2 de Agosto, e artigo 8.º do Regulamento Administrativo n.º 26/2009, de 10 de Agosto, por possuir competência profissional e experiência adequada para o exercício das suas funções, a partir de 4 de Fevereiro de 2022.

Por despacho da chefe do Gabinete do Presidente do Tribunal de Última Instância, de 19 de Janeiro de 2022:

Tam Ieok Mei, adjunta-técnica de 2.ª classe, 1.º escalão, em regime de contrato administrativo de provimento de longa duração, deste Gabinete — alterado o seu índice salarial para o 2.º escalão, índice 275, nos termos do artigo 13.º, n.º 1, do Regulamento Administrativo n.º 19/2000, de 6 de Março,

號法律第四條，以及第3/GPTUI/2016號終審法院院長批示第一款（六）項的規定，本辦公室第一職階二等技術輔導員譚若微的長期行政任用合同獲更改為第二職階，薪俸點275，自二零二二年一月八日起生效。

摘錄自終審法院院長辦公室主任於二零二二年一月二十日作出的批示：

根據經十二月十九日第39/2011號行政法規重新公佈的三月六日第19/2000號行政法規第十三條第一款、八月十七日第12/2015號法律第四條、第六條第四款，以及第3/GPTUI/2016號終審法院院長批示第一款（七）項的規定，本辦公室第二職階勤雜人員梁燕清的長期行政任用合同獲准續期三年，由二零二二年二月八日起生效。

二零二二年一月二十日於終審法院院長辦公室

辦公室主任　陳玉蓮

republicado pelo Regulamento Administrativo n.º 39/2011, de 19 de Dezembro, artigo 13.º, n.os 1, alínea *2)*, 4, da Lei n.º 14/2009, de 3 de Agosto, e artigo 4.º da Lei n.º 12/2015, de 17 de Agosto, conjugado com o n.º 1, alínea *6)*, do Despacho do Presidente do Tribunal de Última Instância n.º 3/GPTUI/2016, desde 8 de Janeiro de 2022.

Por despacho da chefe do Gabinete do Presidente do Tribunal de Última Instância, de 20 de Janeiro de 2022:

Leong In Cheng, auxiliar, 2.º escalão, em regime de contrato administrativo de provimento de longa duração, deste Gabinete — renovado o referido contrato, pelo período de três anos, nos termos do artigo 13.º, n.º 1, do Regulamento Administrativo n.º 19/2000, de 6 de Março, republicado pelo Regulamento Administrativo n.º 39/2011, de 19 de Dezembro, artigos 4.º, 6.º, n.º 4, da Lei n.º 12/2015, de 17 de Agosto, conjugado com o n.º 1, alínea *7)*, do Despacho do Presidente do Tribunal de Última Instância n.º 3/GPTUI/2016, a partir de 8 de Fevereiro de 2022.

Gabinete do Presidente do Tribunal de Última Instância, aos 20 de Janeiro de 2022. — A Chefe do Gabinete, *Chan Iok Lin*.

檢 察 長 辦 公 室

批 示 摘 錄

摘錄自辦公室主任於二零二二年一月四日的批示：

林梓鳳——根據第14/2009號法律《公務人員職程制度》第十三條第二款（一）項，以及第12/2015號法律《公共部門勞動合同制度》第四條第二款、第六條第二款（一）項及第三款的規定，以附註形式修改其在本辦公室的行政任用合同第二及第三條款，自二零二二年一月一日起，修改為長期行政任用合同，並由同日起晉階為第二職階勤雜人員。

二零二二年一月二十日於檢察長辦公室

辦公室主任　譚炳棠

GABINETE DO PROCURADOR

Extracto de despacho

Por despacho do chefe deste Gabinete, de 4 de Janeiro de 2022:

Lam Chi Fong — alterada, por averbamento, as cláusulas 2.ª e 3.ª do seu contrato administrativo de provimento neste Gabinete, e alterado o respectivo contrato para contrato administrativo de provimento de longa duração progredindo para auxiliar, 2.º escalão, nos termos do artigo 13.º, n.º 2, alínea *1)*, da Lei n.º 14/2009 (Regime das carreiras dos trabalhadores dos serviços públicos), conjugado com os artigos 4.º, n.º 2, 6.º, n.os 2, alínea *1),* e 3, da Lei n.º 12/2015 (Regime do contrato de trabalho nos serviços públicos), a partir de 1 de Janeiro de 2022.

Gabinete do Procurador, aos 20 de Janeiro de 2022. — O Chefe do Gabinete, *Tam Peng Tong.*

新 聞 局

批 示 摘 錄

摘錄自局長於二零二二年一月十四日作出的批示：

周芷盈及張子開，本局不具期限的行政任用合同（試用期）第一職階二等高級技術員——根據第12/2015號法律《公共部門

GABINETE DE COMUNICAÇÃO SOCIAL

Extracto de despacho

Por despachos da directora do Gabinete, de 14 de Janeiro de 2022:

Chao Chi Ieng e Cheong Chi Hoi, técnicos superiores de 2.ª classe, 1.º escalão, deste Gabinete, em regime de contrato administrativo de provimento sem termo (período experi-

勞動合同制度》第四條第二款和第三款之規定，自二零二二年一月十三日起繼續以不具期限的行政任用合同方式在本局擔任職務。

二零二二年一月二十日於新聞局

局長　陳露

mental) — autorizada a continuar para exercerem funções nestes Gabinete, em regime de contrato administrativo de provimento sem termo, nos termos do artigo 4.º, n.os 2 e 3, da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), a partir de 13 de Janeiro de 2022.

Gabinete de Comunicação Social, aos 20 de Janeiro de 2022. — A Directora do Gabinete, *Chan Lou*.

澳門特別行政區
公共資產監督規劃辦公室

批示摘錄

摘錄自行政長官於二零二一年十二月十日所作出的批示：

吳俊建，原行政公職局編制內第一職階首席翻譯員，根據現行《澳門公共行政工作人員通則》第三十四條的規定，以較高一級的第一職階主任翻譯員繼續徵用到本辦公室擔任職務，自二零二二年二月一日起，為期一年。

二零二二年一月十四日於澳門特別行政區公共資產監督規劃辦公室

主任　陳海帆

GABINETE PARA O PLANEAMENTO DA SUPERVISÃO DOS ACTIVOS PÚBLICOS DA REGIÃO ADMINISTRATIVA ESPECIAL DE MACAU

Extracto de despacho

Por despacho de S. Ex.ª o Chefe do Executivo, de 10 de Dezembro de 2021:

Ng Chon Kin, intérprete-tradutor principal, 1.º escalão, do quadro do pessoal da Direcção dos Serviços de Administração e Função Pública — prorrogada a sua requisição, pelo período de um ano, para desempenhar funções neste Gabinete, na categoria imediatamente superior, intérprete-tradutor chefe, 1.º escalão, nos termos do artigo 34.º do Estatuto dos Trabalhadores da Administração Pública de Macau, vigente, a partir de 1 de Fevereiro de 2022.

Gabinete para o Planeamento da Supervisão dos Activos Públicos da Região Administrativa Especial de Macau, aos 14 de Janeiro de 2022. — A Coordenadora, *Chan Hoi Fan*.

行政公職局

批示摘錄

按局長於二零二一年十二月十四日作出的批示：

根據第12/2015號法律第四條第二款及第六條第一款的規定，洪綺敏在本局擔任第二職階二等高級技術員（人力資源管理範疇）的行政任用合同，自二零二二年一月十五日起續期兩年，薪俸點為455點。

根據第12/2015號法律第四條第二款及第六條第四款的規定，李佩衡在本局擔任第二職階顧問高級技術員的長期行政任用合同，自二零二二年二月一日起續期三年，薪俸點為625點。

DIRECÇÃO DOS SERVIÇOS DE ADMINISTRAÇÃO E FUNÇÃO PÚBLICA

Extractos de despachos

Por despachos do director dos Serviços, de 14 de Dezembro de 2021:

Hong I Man — renovado o seu contrato administrativo de provimento, pelo período de dois anos, como técnico superior de 2.ª classe, 2.º escalão, índice 455, área de gestão de recursos humanos, nestes Serviços, nos termos dos artigos 4.º, n.º 2, e 6.º, n.º 1, da Lei n.º 12/2015, a partir de 15 de Janeiro de 2022.

Lei Pui Hang — renovado o seu contrato administrativo de provimento de longa duração, pelo período de três anos, como técnica superior assessora, 2.º escalão, índice 625, nestes Serviços, nos termos dos artigos 4.º, n.º 2, e 6.º, n.º 4, da Lei n.º 12/2015, a partir de 1 de Fevereiro de 2022.

根據第12/2015號法律第四條第二款及第六條第四款的規定，林莉娜在本局擔任第一職階首席技術輔導員的長期行政任用合同，自二零二二年二月一日起續期三年，薪俸點為350點。

根據第12/2015號法律第四條第二款及第六條第四款的規定，許雪瑩在本局擔任第一職階首席技術輔導員的長期行政任用合同，自二零二二年二月十四日起續期三年，薪俸點為350點。

根據第12/2015號法律第四條第二款及第六條第四款的規定，陳逸健在本局擔任第一職階首席技術輔導員的長期行政任用合同，自二零二二年一月二十八日起續期三年，薪俸點為350點。

按代局長於二零二一年十二月十七日作出的批示：

根據經第4/2017號法律修改的第14/2009號法律第十三條第一款（二）項、第四款及第12/2015號法律第四條第二款的規定，以附註形式修改袁嘉雯在本局擔任職務的行政任用合同第三條款，晉階為第二職階二等技術輔導員，薪俸點275點，並自二零二一年十二月十六日起生效。

按代局長於二零二一年十二月二十二日作出的批示：

根據經第4/2017號法律修改的第14/2009號法律第十三條第一款（二）項、第四款及第12/2015號法律第四條第二款的規定，以附註形式修改Fernando Leong在本局擔任職務的不具期限的行政任用合同第三條款，晉階為第三職階主任文案，薪俸點為590點，二零二一年十二月二十日起生效。

按行政法務司司長於二零二一年十二月二十三日作出的批示：

根據第15/2009號法律第五條及第26/2009號行政法規第八條的規定，本局語言事務廳廳長黃桂英因具備合適的管理能力及專業經驗，故其定期委任自二零二二年二月二十七日起獲續期一年；

按行政法務司司長於二零二一年十二月二十九日作出的批示：

根據現行《澳門公共行政工作人員通則》第三十四條的規定，徵用統計暨普查局人員編制第一職階顧問高級技術員（資訊範疇）葉錦榮，在本局擔任第一職階顧問高級技術員（資訊範疇）職務，薪俸點為600點，為期一年，自二零二二年一月四日起生效。

二零二二年一月十七日於行政公職局

局長　高炳坤

Lam Lei Na — renovado o seu contrato administrativo de provimento de longa duração, pelo período de três anos, como adjunta-técnica principal, 1.º escalão, índice 350, nestes Serviços, nos termos dos artigos 4.º, n.º 2, e 6.º, n.º 4, da Lei n.º 12/2015, a partir de 1 de Fevereiro de 2022.

Hoi Sut Ieng — renovado o seu contrato administrativo de provimento de longa duração, pelo período de três anos, como adjunta-técnica principal, 1.º escalão, índice 350, nestes Serviços, nos termos dos artigos 4.º, n.º 2, e 6.º, n.º 4, da Lei n.º 12/2015, a partir de 14 de Fevereiro de 2022.

Chan Iat Kin — renovado o seu contrato administrativo de provimento de longa duração, pelo período de três anos, como adjunto-técnico principal, 1.º escalão, índice 350, nestes Serviços, nos termos dos artigos 4.º, n.º 2, e 6.º, n.º 4, da Lei n.º 12/2015, a partir de 28 de Janeiro de 2022.

Por despacho da directora dos Serviços, substituta, de 17 de Dezembro de 2021:

Un Ka Man — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento progredindo para a categoria de adjunto-técnico de 2.ª classe, 2.º escalão, índice 275, nestes Serviços, nos termos do artigo 13.º, n.ºs 1, alínea *2*), e 4, da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, conjugado com o artigo 4.º, n.º 2, da Lei n.º 12/2015, a partir de 16 de Dezembro de 2021.

Por despacho da directora dos Serviços, substituta, de 22 de Dezembro de 2021:

Fernando Leong — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento sem termo progredindo para a categoria de letrado-chefe, 3.º escalão, índice 590, nestes Serviços, nos termos do artigo 13.º, n.ºs 1, alínea *2*), e 4, da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, conjugado com o artigo 4.º, n.º 2, da Lei n.º 12/2015, a partir de 20 de Dezembro de 2021.

Por despacho do Ex.mo Senhor Secretário para a Administração e Justiça, de 23 de Dezembro de 2021:

Vong Kuai Ieng — renovada a comissão de serviço, pelo período de um ano, como chefe do Departamento dos Assuntos Linguísticos destes Serviços, nos termos dos artigos 5.º da Lei n.º 15/2009 e 8.º do Regulamento Administrativo n.º 26/2009, por possuir capacidade de gestão e experiência profissional adequadas para o exercício das suas funções, a partir de 27 de Fevereiro de 2022.

Por despacho do Ex.mo Senhor Secretário para a Administração e Justiça, de 29 de Dezembro de 2021:

Ip Kam Weng, técnico superior assessor, 1.º escalão, área de informática, do quadro do pessoal da Direcção dos Serviços de Estatística e Censos — requisitado, pelo período de um ano, como técnico superior assessor, 1.º escalão, índice 600, área de informática, nestes Serviços, nos termos do artigo 34.º do ETAPM, vigente, a partir de 4 de Janeiro de 2022.

Direcção dos Serviços de Administração e Função Pública, aos 17 de Janeiro de 2022. — O Director dos Serviços, *Kou Peng Kuan*.

法 務 局

批 示 摘 錄

按簽署人於二零二一年十一月二十二日作出之批示：

根據第14/2009號法律第十三條第二款（四）項、第三款及第四款之規定，本局第八職階勤雜人員鍾勝妹的行政任用合同第三條款修改為同一職級第九職階，薪俸點220，自二零二一年十一月十三日起生效。

按行政法務司司長於二零二一年十二月十六日作出的批示：

根據第15/2009號法律第二條第三款（一）項、第四條和第五條，以及第26/2009號行政法規第七條之規定，以定期委任方式委任馮銘恩擔任本局法制研究及立法統籌廳廳長之職位，為期壹年，自二零二二年一月二十六日起生效，以填補第26/2015號行政法規所設立之職位空缺。

按上述法律第五條第二款，茲刊登委任理由及獲委任人的學歷和專業簡歷。

1. 委任依據：

——職位出缺；

——馮銘恩的個人履歷顯示其具備專業能力及才幹擔任法務局法制研究及立法統籌廳廳長一職。

2. 學歷

——澳門大學法學士；

——澳門大學中文法學碩士；

——國家行政學院公共管理碩士。

3.專業簡歷

——2013年 進入公職；

——2013年8月至2015年4月　個人資料保護辦公室技術員（法律範疇）；

——2015年4月至2017年7月　行政法務司司長辦公室高級技術員（法律範疇）；

——2017年7月至2020年7月　法務局高級技術員（法律範疇）；

DIRECÇÃO DOS SERVIÇOS DE ASSUNTOS DE JUSTIÇA

Extractos de despachos

Por despacho do signatário, de 22 de Novembro de 2021:

Chong Seng Mui, auxiliar, 8.º escalão, provida em regime de contrato administrativo de provimento, destes Serviços — alterada a cláusula 3.ª contratual para a mesma categoria, 9.º escalão, índice 220, nos termos do artigo 13.º, n.os 2, alínea *4)*, 3 e 4, da Lei n.º 14/2009, a partir de 13 de Novembro de 2021.

Por despacho do Ex.mo Senhor Secretário para a Administração e Justiça, de 16 de Dezembro de 2021:

Fong Meng Ian — nomeada, em comissão de serviço, pelo período de um ano, chefe do Departamento de Estudo do Sistema Jurídico e Coordenação Legislativa destes Serviços, nos termos dos artigos 2.º, n.º 3, alínea *1)*, 4.º e 5.º da Lei n.º 15/2009 e 7.º do Regulamento Administrativo n.º 26/2009, para o preenchimento do lugar previsto no Regulamento Administrativo n.º 26/2015, a partir de 26 de Janeiro de 2022.

Ao abrigo do artigo 5.º, n.º 2, da supracitada lei, é publicada a nota relativa aos fundamentos da respectiva nomeação e ao currículo académico e profissional da nomeada.

1. Fundamentos da nomeação:

— Vacatura do cargo;

— Fong Meng Ian possui competência profissional e aptidão para o exercício do cargo de chefe do Departamento de Estudo do Sistema Jurídico e Coordenação Legislativa da Direcção dos Serviços de Assuntos de Justiça, que se demonstra pelo *curriculum vitae*.

2. Currículo académico:

— Licenciatura em Direito na Universidade de Macau;

— Mestrado em Direito em Língua Chinesa na Universidade de Macau;

— Mestrado em Administração Pública, ministrado pela «Chinese Academy of Governance».

3. Currículo profissional:

— Ingresso na função pública em 2013;

— Técnica, da área jurídica, do Gabinete para a Protecção de Dados Pessoais, de Agosto de 2013 a Abril de 2015;

— Técnica superior, da área jurídica, do Gabinete da Secretária para a Administração e Justiça, de Abril de 2015 a Julho de 2017;

— Técnica superior, da área jurídica, da Direcção dos Serviços de Assuntos de Justiça, de Julho de 2017 a Julho de 2020;

——2020年1月至7月　法務局法規草擬一處代處長；

——2020年7月至今　法務局法規草擬一處處長；

——2021年10月至今 法務局法制研究及立法統籌廳代廳長。

按簽署人於二零二二年一月十三日作出之批示：

根據現行第14/2009號法律第十四條第一款（二）項、第二款、第12/2015號法律第四條第二款及第三款之規定，本局公眾接待行政技術輔助範疇第二職階首席技術輔導員李靖君及楊敏的行政任用合同第三條款修改為第一職階特級技術輔導員，薪俸點400，自本批示摘錄公佈日起生效。

按簽署人於二零二二年一月十七日作出之批示：

根據現行第14/2009號法律第十四條第一款（二）項、第二款及現行《澳門公共行政工作人員通則》第二十二條第八款a項之規定，本局公共行政管理範疇第二職階二等高級技術員李德藍，獲確定委任為本局人員編制高級技術員人員組別公共行政管理範疇第一職階一等高級技術員，自本批示摘錄公佈日起生效。

聲 明

本局第九職階勤雜人員何孝忠，以不具期限的行政任用合同方式任用，根據第12/2015號法律第十五條（一）項的規定，上述合同自二零二二年一月十一日起失效。

特此聲明

二零二二年一月十八日於法務局

局長　劉德學

— Chefe da 1.ª Divisão de Produção Legislativa, substituta, da Direcção dos Serviços de Assuntos de Justiça, de Janeiro a Julho de 2020;

— Chefe da 1.ª Divisão de Produção Legislativa da Direcção dos Serviços de Assuntos de Justiça, de Julho de 2020 até à presente data;

— Chefe do Departamento de Estudo do Sistema Jurídico e Coordenação Legislativa, substituta, da Direcção dos Serviços de Assuntos de Justiça, de Outubro de 2021 até à presente data.

Por despachos do signatário, de 13 de Janeiro de 2022:

Lei Cheng Kuan e Ieong Man, adjuntas-técnicas principais, 2.º escalão, área de apoio técnico-administrativo com atendimento do público, destes Serviços — alterada a cláusula 3.ª dos contratos administrativos de provimento para adjuntas-técnicas especialistas, 1.º escalão, índice 400, nos termos do artigo 14.º, n.os 1, alínea *2)*, e 2, da Lei n.º 14/2009, conjugado com o artigo 4.º, n.os 2 e 3, da Lei n.º 12/2015, em vigor, a partir da data da publicação do presente extracto de despacho.

Por despacho do signatário, de 17 de Janeiro de 2022:

Lei Tak Lam, técnica superior de 2.ª classe, 2.º escalão, da área de gestão e administração pública — nomeada, definitivamente, técnica superior de 1.ª classe, 1.º escalão, da área de gestão e administração pública, do grupo de pessoal técnico superior do quadro do pessoal destes Serviços, nos termos do artigo 14.º, n.os 1, alínea *2*), e 2, da Lei n.º 14/2009, conjugado com o artigo 22.º, n.º 8, alínea *a*), do ETAPM, em vigor, a partir da data da publicação do presente extracto de despacho.

Declaração

Para os devidos efeitos se declara que o contrato administrativo de provimento sem termo de Ho Hao Chong, auxiliar, 9.º escalão, destes Serviços, caducou a partir de 11 de Janeiro de 2022, nos termos do artigo 15.º, alínea *1*), da Lei n.º 12/2015.

Direcção dos Serviços de Assuntos de Justiça, aos 18 de Janeiro de 2022. — O Director dos Serviços, *Liu Dexue*.

身 份 證 明 局

批 示 摘 錄

按本局代局長於二零二一年十二月二十二日作出的批示：

根據經第4/2017號法律修改的第14/2009號法律第十三條第二款（二）項、第四款及第12/2015號法律第四條第二款的規定，

DIRECÇÃO DOS SERVIÇOS DE IDENTIFICAÇÃO

Extractos de despachos

Por despachos do director, substituto, dos Serviços, de 22 de Dezembro de 2021:

Cheong Sou Peng — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento de longa duração progredindo para auxiliar, 3.º escalão, índice 130,

以附註形式修改蔣素平在本局擔任職務的長期行政任用合同第三條款，晉階為第三職階勤雜人員，薪俸點130點，自二零二一年十二月十五日起生效。

根據經第4/2017號法律修改的第14/2009號法律第十三條第一款（二）項、第四款及第12/2015號法律第四條第二款的規定，以附註形式修改陳秀芬在本局擔任職務的不具期限的行政任用合同第三條款，晉階為第二職階首席技術輔導員，薪俸點365點，自二零二一年十二月十七日起生效。

按行政法務司司長於二零二一年十二月二十三日作出的批示：

根據第15/2009號法律第五條及第26/2009號行政法規第八條的規定，本局社團及財團登記處處長唐偉杰因具備合適的管理能力及專業經驗履行職務，故其定期委任自二零二二年三月一日起獲續期一年。

聲 明

為著有關效力，茲聲明，本局編制人員第一職階首席特級技術輔導員馮瑞珠，根據現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項規定，自二零二二年一月十七日起自願退休。

二零二二年一月十八日於身份證明局

局長　黃寶瑩

nestes Serviços, nos termos do artigo 13.º, n.os 2, alínea *2*), e 4, da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, conjugado com o artigo 4.º, n.º 2, da Lei n.º 12/2015, a partir de 15 de Dezembro de 2021.

Chan Sao Fan — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento sem termo progredindo para adjunta-técnica principal, 2.º escalão, índice 365, nestes Serviços, nos termos do artigo 13.º, n.os 1, alínea *2*), e 4, da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, conjugado com o artigo 4.º, n.º 2, da Lei n.º 12/2015, a partir de 17 de Dezembro de 2021.

Por despacho do Ex.mo Senhor Secretário para a Administração e Justiça, de 23 de Dezembro de 2021:

Tong Wai Kit — renovada a comissão de serviço, pelo período de um ano, como chefe da Divisão do Registo de Associação e Fundação destes Serviços, nos termos dos artigos 5.º da Lei n.º 15/2009 e 8.º do Regulamento Administrativo n.º 26/2009, por possuir capacidade de gestão e experiência profissional adequadas para o exercício das suas funções, a partir de 1 de Março de 2022.

Declaração

Para os devidos efeitos se declara que Fong Soi Chu, adjunta-técnica principal especialista, 1.º escalão, do quadro do pessoal destes Serviços, foi desligada do serviço, para efeitos de aposentação voluntária, nos termos do artigo 263.º, n.º 1, alínea *a)*, do ETAPM, vigente, a partir de 17 de Janeiro de 2022.

Direcção dos Serviços de Identificação, aos 18 de Janeiro de 2022. — A Directora dos Serviços, *Wong Pou Ieng.*

退 休 基 金 會

批 示 摘 錄

退休/撫卹金的訂定

按照行政法務司司長於二零二二年一月十二日作出的批示：

（一）教育及青年發展局第十一職階幼兒教育及小學教育一級教師Felizbina Carmelita Gomes，退休及撫卹制度會員編號97276，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十三年工作年數作計算，由二零二二年一月四日開始

FUNDO DE PENSÕES

Extractos de despachos

Fixação de pensões

Por despacho do Ex.mo Senhor Secretário para a Administração e Justiça, de 12 de Janeiro de 2022:

1. Felizbina Carmelita Gomes, docente dos ensinos infantil e primário de nível 1, 11.º escalão, da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude, com o número de subscritor 97276 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 4 de Janeiro de 2022, uma pensão mensal correspondente ao índice 610 da tabela em vigor, calculada

以相等於現行薪俸索引表內的610點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

按照行政法務司司長於二零二二年一月十三日作出的批示：

（一）審計署第二職階首席顧問高級技術員鄭維娜，退休及撫卹制度會員編號153206，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十一年工作年數作計算，由二零二二年一月五日開始以相等於現行薪俸索引表內的535點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）海關第四職階一等關員周凌子，退休及撫卹制度會員編號110434，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十年工作年數作計算，由二零二二年一月四日開始以相等於現行薪俸索引表內的250點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）海關第三職階副關務總長殷鎮玄，退休及撫卹制度會員編號130974，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款b）項，而申請自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十一年工作年數作計算，由二零二二年一月六日開始以相等於現行薪俸索引表內的585點訂出，並在有關金額上加上五個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 33 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

Por despachos do Ex.mo Senhor Secretário para a Administração e Justiça, de 13 de Janeiro de 2022:

1. Cheang Vai Na, técnica superior assessora principal, 2.º escalão, do Comissariado da Auditoria, com o número de subscritor 153206 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 5 de Janeiro de 2022, uma pensão mensal correspondente ao índice 535 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 31 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Chau Leng Chi, verificadora de primeira alfandegária, 4.º escalão, dos Serviços de Alfândega, com o número de subscritor 110434 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 4 de Janeiro de 2022, uma pensão mensal correspondente ao índice 250 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 30 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Ian Chan Un, subintendente alfandegário, 3.º escalão, dos Serviços de Alfândega, com o número de subscritor 130974 do Regime de Aposentação e Sobrevivência, desligado do serviço de acordo com o artigo 263.º, n.º 1, alínea *b*), do ETAPM, em vigor, ou seja, aposentação voluntária por requerimento — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 6 de Janeiro de 2022, uma pensão mensal correspondente ao índice 585 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 31 anos de serviço, acrescida do montante relativo a 5 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）房屋局第二職階首席顧問高級技術員劉綺玲，退休及撫卹制度會員編號87076，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十四年工作年數作計算，由二零二二年一月四日開始以相等於現行薪俸索引表內的655點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）衛生局第四職階護士長李群紅，退休及撫卹制度會員編號142948，因符合現行《澳門公共行政工作人員通則》第二百六十二條第一款a）項，即已屆服務年齡上限而離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其二十六年工作年數作計算，由二零二一年十二月十八日開始以相等於現行薪俸索引表內的410點訂出，並在有關金額上加上五個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）海關第六職階關務督察譚華瑞，退休及撫卹制度會員編號91456，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款b）項，而申請自願離職退休。其每月的退休金是根據上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第一款a）項之規定，以其三十六年工作年數作計算，由二零二二年一月四日開始以相等於現行薪俸索引表內的540點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）法務局第四職階顧問翻譯員傅潔芳，退休及撫卹制度會員編號100390，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Lau I Leng, técnica superior assessora principal, 2.º escalão, do Instituto de Habitação, com o número de subscritor 87076 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 4 de Janeiro de 2022, uma pensão mensal correspondente ao índice 655 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 34 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Lei Kuan Hong, enfermeira-chefe, 4.º escalão, dos Serviços de Saúde, com o número de subscritor 142948 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 262.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação por limite de idade — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 18 de Dezembro de 2021, uma pensão mensal correspondente ao índice 410 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 26 anos de serviço, acrescida do montante relativo a 5 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Tam Wa Soi, inspector alfandegário, 6.º escalão, dos Serviços de Alfândega, com o número de subscritor 91456 do Regime de Aposentação e Sobrevivência, desligado do serviço de acordo com o artigo 263.º, n.º 1, alínea *b*), do ETAPM, em vigor, ou seja, aposentação voluntária por requerimento — fixada, com início em 4 de Janeiro de 2022, uma pensão mensal correspondente ao índice 540 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 1, alínea *a*), ambos do referido estatuto, por contar 36 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Fu Maria Fatima, intérprete-tradutora assessora, 4.º escalão, da Direcção dos Serviços de Assuntos de Justiça, com o número de subscritor 100390 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposen-

《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十二年工作年數作計算，由二零二二年一月四日開始以相等於現行薪俸索引表內的590點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）海關第四職階一等關員黃玉群，退休及撫卹制度會員編號110809，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十年工作年數作計算，由二零二二年一月四日開始以相等於現行薪俸索引表內的250點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）治安警察局已故一等警員薛輝之遺孀方慧珊、女兒薛雅尤、母親蘇紅宣及父親薛啓源，退休及撫卹制度會員編號109460，每月的撫卹金是根據十一月三十日第107/85/M號法令第一條第一款及按照現行《澳門公共行政工作人員通則》第二百六十四條第四款，並配合第二百七十一條第一款及第十款規定，由二零二一年九月十日開始以相等於現行薪俸索引表內的120點訂出，該撫卹金為死者所收取退休金的百分之五十金額，並在有關金額上加上五個根據第2/2011號法律第九條及第1/2014號法律第一條所指附表規定的年資獎金之百分之五十。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

按照行政法務司司長於二零二二年一月十四日作出的批示：

（一）衛生局第一職階首席特級行政技術助理員黎碧霞，退休及撫卹制度會員編號175676，因符合現行《澳門公共行政工作人員通則》第二百六十二條第一款a）項，即已屆服務年齡上限而離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其二十二年工作年數作計算，由二零二一年十二月三十一日開始以相等於現行薪俸索引表內的185點訂出，並在有關金額上加上四個根據第2/2011號法

tação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 4 de Janeiro de 2022, uma pensão mensal correspondente ao índice 590 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 32 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Vong Ioc Kuan, verificadora de primeira alfandegária, 4.º escalão, dos Serviços de Alfândega, com o número de subscritor 110809 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 4 de Janeiro de 2022, uma pensão mensal correspondente ao índice 250 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 30 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Fong Vai San, Sit Nga Iao, Sou Hong Sun e Sit Kai Un, viúva, filha, mãe e pai de Sit Fai, que foi guarda de primeira, do Corpo de Polícia de Segurança Pública, com o número de subscritor 109460 do Regime de Aposentação e Sobrevivência — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 10 de Setembro de 2021, uma pensão mensal a que corresponde o índice 120 correspondente a 50% da pensão do falecido, nos termos do artigo 264.º, n.º 4, conjugado com o artigo 271.º, n.os 1 e 10, do ETAPM, em vigor, a que acresce o montante relativo a 50% dos 5 prémios de antiguidade do mesmo, nos termos do artigo 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da Região Administrativa Especial de Macau.

Por despachos do Ex.mo Senhor Secretário para a Administração e Justiça, de 14 de Janeiro de 2022:

1. Lai Bic Har, assistente técnica administrativa especialista principal, 1.º escalão, dos Serviços de Saúde, com o número de subscritor 175676 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 262.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação por limite de idade — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 31 de Dezembro de 2021, uma pensão mensal correspondente ao índice 185 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 22 anos

律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）衛生局第四職階高級護士吳程志暉，退休及撫卹制度會員編號173061，因符合現行《澳門公共行政工作人員通則》第二百六十二條第一款a）項，即已屆服務年齡上限而離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其二十二年工作年數作計算，由二零二一年十二月二十八日開始以相等於現行薪俸索引表內的280點訂出，並在有關金額上加上四個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）衛生局第四職階顧問診療技術員蘇珊娜，退休及撫卹制度會員編號99724，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十二年工作年數作計算，由二零二二年一月三日開始以相等於現行薪俸索引表內的550點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

按照行政法務司司長於二零二二年一月十七日作出的批示：

（一）衛生局第二職階首席特級技術輔導員潘鳳儀，退休及撫卹制度會員編號180815，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十一年工作年數作計算，由二零二二年一月三日開始以相等於現行薪俸索引表內的365點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

de serviço, acrescida do montante relativo a 4 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Ng Cheng Chi Fai, enfermeira-graduada, 4.º escalão, dos Serviços de Saúde, com o número de subscritor 173061 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 262.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação por limite de idade — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 28 de Dezembro de 2021, uma pensão mensal correspondente ao índice 280 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 22 anos de serviço, acrescida do montante relativo a 4 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Susana Maria Xavier, técnica de diagnóstico e terapêutica assessora, 4.º escalão, dos Serviços de Saúde, com o número de subscritor 99724 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 3 de Janeiro de 2022, uma pensão mensal correspondente ao índice 550 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 32 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

Por despachos do Ex.mo Senhor Secretário para a Administração e Justiça, de 17 de Janeiro de 2022:

1. Pun Fong I, adjunta-técnica especialista principal, 2.º escalão, dos Serviços de Saúde, com o número de subscritor 180815 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 3 de Janeiro de 2022, uma pensão mensal correspondente ao índice 365 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 31 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

（一）衛生局第三職階主治醫生司徒健，退休及撫卹制度會員編號173843，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十年工作年數作計算，由二零二二年一月三日開始以相等於現行薪俸索引表內的585點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

1. Si Tou Kin, médica assistente, 3.º escalão, dos Serviços de Saúde, com o número de subscritor 173843 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 3 de Janeiro de 2022, uma pensão mensal correspondente ao índice 585 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 30 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

（一）海關第四職階一等關員韓慧敏，退休及撫卹制度會員編號106143，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十一年工作年數作計算，由二零二二年一月十日開始以相等於現行薪俸索引表內的260點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

1. Hon Wai Man, verificadora de primeira alfandegária, 4.º escalão, dos Serviços de Alfândega, com o número de subscritor 106143 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 10 de Janeiro de 2022, uma pensão mensal correspondente ao índice 260 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 31 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

（一）海關第四職階一等關員梁耀強，退休及撫卹制度會員編號110612，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十一年工作年數作計算，由二零二二年一月十日開始以相等於現行薪俸索引表內的260點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

1. Leong Io Keong, verificador de primeira alfandegário, 4.º escalão, dos Serviços de Alfândega, com o número de subscritor 110612 do Regime de Aposentação e Sobrevivência, desligado do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 10 de Janeiro de 2022, uma pensão mensal correspondente ao índice 260 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 31 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

（一）衛生局第二職階首席特級行政技術助理員陳美燕，退休及撫卹制度會員編號157252，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十年工作年數作計算，由二零二二年一月三日開始以相等於現行薪俸索引表內的270點訂

1. Chan Mei In, assistente técnica administrativa especialista principal, 2.º escalão, dos Serviços de Saúde, com o número de subscritor 157252 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 3 de Janeiro de 2022, uma pensão mensal correspondente ao índice 270 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo

出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）衛生局第四職階高級護士趙麗珠，退休及撫卹制度會員編號172510，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十年工作年數作計算，由二零二二年一月四日開始以相等於現行薪俸索引表內的380點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）海關第四職階一等關員黃子蛟，退休及撫卹制度會員編號110833，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十年工作年數作計算，由二零二二年一月十日開始以相等於現行薪俸索引表內的250點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）海關第四職階首席關員陳偉安，退休及撫卹制度會員編號110418，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據十一月三十日第107/85/M號法令第一條第一款及上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第二款之規定，以其三十一年工作年數作計算，由二零二二年一月十一日開始以相等於現行薪俸索引表內的290點訂出，並在有關金額上加上六個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

265.º, n.º 2, ambos do referido estatuto, por contar 30 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Chiu Lai Chu, enfermeira-graduada, 4.º escalão, dos Serviços de Saúde, com o número de subscritor 172510 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 4 de Janeiro de 2022, uma pensão mensal correspondente ao índice 380 da tabela em vigor, calculada nos termos do artigo 264.º, n.ºs 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 30 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Wong Chi Kao, verificador de primeira alfandegário, 4.º escalão, dos Serviços de Alfândega, com o número de subscritor 110833 do Regime de Aposentação e Sobrevivência, desligado do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 10 de Janeiro de 2022, uma pensão mensal correspondente ao índice 250 da tabela em vigor, calculada nos termos do artigo 264.º, n.ºs 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 30 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Chan Wai On, verificador principal alfandegário, 4.º escalão, dos Serviços de Alfândega, com o número de subscritor 110418 do Regime de Aposentação e Sobrevivência, desligado do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 11 de Janeiro de 2022, uma pensão mensal correspondente ao índice 290 da tabela em vigor, calculada nos termos do artigo 264.º, n.ºs 1 e 4, conjugado com o artigo 265.º, n.º 2, ambos do referido estatuto, por contar 31 anos de serviço, acrescida do montante relativo a 6 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

按照行政法務司司長於二零二二年一月十八日作出的批示：

（一）房屋局第四職階首席特級技術輔導員何敏儀，退休及撫卹制度會員編號22322，因符合現行《澳門公共行政工作人員通則》第二百六十三條第一款a）項，而聲明自願離職退休。其每月的退休金是根據上述《通則》第二百六十四條第一及第四款，並配合第二百六十五條第一款a）項之規定，以其三十六年工作年數作計算，由二零二二年一月十三日開始以相等於現行薪俸索引表內的495點訂出，並在有關金額上加上七個根據第2/2011號法律第七至九條及第1/2014號法律第一條所指附表規定的年資獎金。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

（一）前澳門監獄退休勤雜人員余偉雄之遺孀陳少蓮，退休及撫卹制度會員編號13102，每月的撫卹金是根據十一月三十日第107/85/M號法令第一條第一款及按照現行《澳門公共行政工作人員通則》第二百六十四條第四款，並配合第二百七十一條第一款及第十款規定，由二零二一年十一月十四日開始以相等於現行薪俸索引表內的80點訂出，該撫卹金為死者所收取退休金的百分之五十金額，並在有關金額上加上六個根據第2/2011號法律第九條及第1/2014號法律第一條所指附表規定的年資獎金之百分之五十。

（二）有關所訂金額的支付，全數由澳門特別行政區政府負責。

權益歸屬比率的訂定

按照行政法務司司長於二零二二年一月十二日作出的批示：

教育及青年發展局重型車輛司機謝煥強，供款人編號6013650，根據現行第8/2006號法律第十三條第一款（一）項之規定，自二零二一年十二月二十六日起註銷其在公積金制度之登記。其在公積金制度下之供款時間滿三十六年，根據同一法律第十四條第一款及第三十九條第六款之規定，訂定其在公積金制度下有權取得「個人供款帳戶」、「澳門特別行政區供款帳戶」及「特別帳戶」之權益歸屬比率為百分之一百。

市政署勤雜人員李靈基，供款人編號6056944，根據現行第8/2006號法律第十三條第一款（一）項之規定，自二零二一年十二月十六日起註銷其在公積金制度之登記。其在公積金制度下之供款時間滿三十三年，根據同一法律第十四條第一款及第三十九條第六款之規定，訂定其在公積金制度下有權取得「個人供款帳

Por despachos do Ex.mo Senhor Secretário para a Administração e Justiça, de 18 de Janeiro de 2022:

1. Ho Maria de Lurdes, adjunta-técnica especialista principal, 4.º escalão, do Instituto de Habitação, com o número de subscritor 22322 do Regime de Aposentação e Sobrevivência, desligada do serviço de acordo com o artigo 263.º, n.º 1, alínea *a*), do ETAPM, em vigor, ou seja, aposentação voluntária por declaração — fixada, com início em 13 de Janeiro de 2022, uma pensão mensal correspondente ao índice 495 da tabela em vigor, calculada nos termos do artigo 264.º, n.os 1 e 4, conjugado com o artigo 265.º, n.º 1, alínea *a*), ambos do referido estatuto, por contar 36 anos de serviço, acrescida do montante relativo a 7 prémios de antiguidade, nos termos dos artigos 7.º a 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da RAEM.

1. Chan Sio Lin, viúva de U Wai Hong, que foi auxiliar, aposentado do então Estabelecimento Prisional de Macau, com o número de subscritor 13102 do Regime de Aposentação e Sobrevivência — fixada, nos termos do artigo 1.º, n.º 1, do Decreto-Lei n.º 107/85/M, de 30 de Novembro, com início em 14 de Novembro de 2021, uma pensão mensal a que corresponde o índice 80 correspondente a 50% da pensão do falecido, nos termos do artigo 264.º, n.º 4, conjugado com o artigo 271.º, n.os 1 e 10, do ETAPM, em vigor, a que acresce o montante relativo a 50% dos 6 prémios de antiguidade do mesmo, nos termos do artigo 9.º da Lei n.º 2/2011 e da tabela a que se refere o artigo 1.º da Lei n.º 1/2014.

2. O encargo com o pagamento do valor fixado cabe, na totalidade, ao Governo da Região Administrativa Especial de Macau.

Fixação das taxas de reversão

Por despachos do Ex.mo Senhor Secretário para a Administração e Justiça, de 12 de Janeiro de 2022:

Che Wun Keong, motorista de pesados da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude, com o número de contribuinte 6013650, cancelada a inscrição no Regime de Previdência em 26 de Dezembro de 2021, nos termos do artigo 13.º, n.º 1, alínea *1)*, da Lei n.º 8/2006, em vigor — fixadas as taxas de reversão a que tem direito no âmbito do Regime de Previdência, correspondentes a 100% dos saldos da «Conta das Contribuições Individuais», da «Conta das Contribuições da RAEM» e da «Conta Especial», por completar 36 anos de tempo de contribuição no Regime de Previdência, nos termos dos artigos 14.º, n.º 1, e 39.º, n.º 6, do mesmo diploma.

Lei Leng Kei, auxiliar do Instituto para os Assuntos Municipais, com o número de contribuinte 6056944, cancelada a inscrição no Regime de Previdência em 16 de Dezembro de 2021, nos termos do artigo 13.º, n.º 1, alínea *1)*, da Lei n.º 8/2006, em vigor — fixadas as taxas de reversão a que tem direito no âmbito do Regime de Previdência, correspondentes a 100% dos saldos da «Conta das Contribuições Individuais», da «Conta das Contribuições da RAEM» e da

戶」、「澳門特別行政區供款帳戶」及「特別帳戶」之權益歸屬比率為百分之一百。

衛生局一級護士李瑩茵，供款人編號6271802，根據現行第8/2006號法律第十三條第一款之規定，自二零二一年十二月十七日起註銷其在公積金制度之登記。其在公積金制度下之供款時間少於五年，根據同一法律第十四條第一款之規定，訂定其在公積金制度下有權取得「個人供款帳戶」之權益歸屬比率為百分之一百及無權取得「澳門特別行政區供款帳戶」的任何結餘。

按照行政法務司司長於二零二二年一月十四日作出的批示：

衛生局一般服務助理員梁德輝，供款人編號6004316，根據現行第8/2006號法律第十三條第一款（一）項之規定，自二零二一年十二月二十八日起註銷其在公積金制度之登記。其在公積金制度下之供款時間滿三十四年，根據同一法律第十四條第一款及第三十九條第六款之規定，訂定其在公積金制度下有權取得「個人供款帳戶」、「澳門特別行政區供款帳戶」及「特別帳戶」之權益歸屬比率為百分之一百。

市政署重型車輛司機林維光，供款人編號6010405，根據現行第8/2006號法律第十三條第一款（一）項之規定，自二零二一年十二月二十三日起註銷其在公積金制度之登記。其在公積金制度下之供款時間滿三十七年，根據同一法律第十四條第一款及第三十九條第六款之規定，訂定其在公積金制度下有權取得「個人供款帳戶」、「澳門特別行政區供款帳戶」及「特別帳戶」之權益歸屬比率為百分之一百。

體育局勤雜人員黃中棠，供款人編號6015709，根據現行第8/2006號法律第十三條第一款（三）項之規定，自二零二一年十二月十七日起註銷其在公積金制度之登記。根據同一法律第十四條第一款及第二款，以及第三十九條第六款之規定，訂定其在公積金制度下有權取得「個人供款帳戶」、「澳門特別行政區供款帳戶」及「特別帳戶」之權益歸屬比率為百分之一百。

警察總局勤雜人員劉惠群，供款人編號6026387，根據現行第8/2006號法律第十三條第一款（一）項之規定，自二零二一年十二月二十四日起註銷其在公積金制度之登記。其在公積金制度下之供款時間滿三十五年，根據同一法律第十四條第一款及第三十九條第六款之規定，訂定其在公積金制度下有權取得「個人供款帳戶」、「澳門特別行政區供款帳戶」及「特別帳戶」之權益歸屬比率為百分之一百。

«Conta Especial», por completar 33 anos de tempo de contribuição no Regime de Previdência, nos termos dos artigos 14.º, n.º 1, e 39.º, n.º 6, do mesmo diploma.

Li Yingyin, enfermeira de grau I dos Serviços de Saúde, com o número de contribuinte 6271802, cancelada a inscrição no Regime de Previdência em 17 de Dezembro de 2021, nos termos do artigo 13.º, n.º 1, da Lei n.º 8/2006, em vigor — fixada a taxa de reversão a que tem direito no âmbito do Regime de Previdência, correspondente a 100% do saldo da «Conta das Contribuições Individuais» e sem direito ao saldo da «Conta das Contribuições da RAEM», por contar menos de 5 anos de tempo de contribuição no Regime de Previdência, nos termos do artigo 14.º, n.º 1, do mesmo diploma.

Por despachos do Ex.mo Senhor Secretário para a Administração e Justiça, de 14 de Janeiro de 2022:

Leong Tak Fai, auxiliar de serviços gerais dos Serviços de Saúde, com o número de contribuinte 6004316, cancelada a inscrição no Regime de Previdência em 28 de Dezembro de 2021, nos termos do artigo 13.º, n.º 1, alínea *1)*, da Lei n.º 8/2006, em vigor — fixadas as taxas de reversão a que tem direito no âmbito do Regime de Previdência, correspondentes a 100% dos saldos da «Conta das Contribuições Individuais», da «Conta das Contribuições da RAEM» e da «Conta Especial», por completar 34 anos de tempo de contribuição no Regime de Previdência, nos termos dos artigos 14.º, n.º 1, e 39.º, n.º 6, do mesmo diploma.

Lam Wai Kuong, motorista de pesados do Instituto para os Assuntos Municipais, com o número de contribuinte 6010405, cancelada a inscrição no Regime de Previdência em 23 de Dezembro de 2021, nos termos do artigo 13.º, n.º 1, alínea *1)*, da Lei n.º 8/2006, em vigor — fixadas as taxas de reversão a que tem direito no âmbito do Regime de Previdência, correspondentes a 100% dos saldos da «Conta das Contribuições Individuais», da «Conta das Contribuições da RAEM» e da «Conta Especial», por completar 37 anos de tempo de contribuição no Regime de Previdência, nos termos dos artigos 14.º, n.º 1, e 39.º, n.º 6, do mesmo diploma.

Vong Chong Tong, auxiliar do Instituto do Desporto, com o número de contribuinte 6015709, cancelada a inscrição no Regime de Previdência em 17 de Dezembro de 2021, nos termos do artigo 13.º, n.º 1, alínea *3)*, da Lei n.º 8/2006, em vigor — fixadas as taxas de reversão a que tem direito no âmbito do Regime de Previdência, correspondentes a 100% dos saldos da «Conta das Contribuições Individuais», da «Conta das Contribuições da RAEM» e da «Conta Especial», nos termos dos artigos 14.º, n.os 1 e 2, e 39.º, n.º 6, do mesmo diploma.

Lao Wai Kuan, auxiliar dos Serviços de Polícia Unitários, com o número de contribuinte 6026387, cancelada a inscrição no Regime de Previdência em 24 de Dezembro de 2021, nos termos do artigo 13.º, n.º 1, alínea *1)*, da Lei n.º 8/2006, em vigor — fixadas as taxas de reversão a que tem direito no âmbito do Regime de Previdência, correspondentes a 100% dos saldos da «Conta das Contribuições Individuais», da «Conta das Contribuições da RAEM» e da «Conta Especial», por completar 35 anos de tempo de contribuição no Regime de Previdência, nos termos dos artigos 14.º, n.º 1, e 39.º, n.º 6, do mesmo diploma.

市政署勤雜人員鄧北源，供款人編號6053031，根據現行第8/2006號法律第十三條第一款（一）項之規定，自二零二一年十二月十四日起註銷其在公積金制度之登記。根據上述法律第十五條第四款及現行第15/2006號行政法規第二十六條，以及上述法律第十四條第一款（一）項之規定，訂定其在公積金制度下有權取得「個人供款帳戶」之權益歸屬比率為百分之一百。

衛生局一級護士黃明詩，供款人編號6271896，根據現行第8/2006號法律第十三條第一款之規定，自二零二一年十二月二十三日起註銷其在公積金制度之登記。其在公積金制度下之供款時間少於五年，根據同一法律第十四條第一款之規定，訂定其在公積金制度下有權取得「個人供款帳戶」之權益歸屬比率為百分之一百及無權取得「澳門特別行政區供款帳戶」的任何結餘。

摘錄自行政法務司司長於二零二一年十一月三十日的批示：

根據第15/2009號法律《領導及主管人員通則的基本規定》第五條及第26/2009號行政法規《領導及主管人員通則的補充規定》第八條之規定，何志良因具備適當專業能力和工作經驗履行職務，故其在本會擔任公積金供款管理處處長的定期委任，自二零二二年二月一日起續期一年。

按行政管理委員會主席於二零二一年十二月二十九日作出的批示：

根據經第2/2021號法律修改的第12/2015號法律《公共部門勞動合同制度》第四條及第六條第四款之規定，黃耀華在本會擔任第十職階輕型車輛司機的長期行政任用合同，自二零二二年一月二十九日起續期三年。

根據經第2/2021號法律修改的第12/2015號法律《公共部門勞動合同制度》第四條及第六條第一款之規定，馮顯峰在本會擔任第二職階輕型車輛司機的行政任用合同，自二零二二年二月一日起續期一年。

摘錄自行政法務司司長於二零二一年十二月三十日的批示：

根據第15/2009號法律《領導及主管人員通則的基本規定》第二條第三款（二）項、第四條及第五條，以及第26/2009號行政法規《領導及主管人員通則的補充規定》第二條、第三條第二款、第五條及第七條，結合第180/2019號行政命令第一款之規定，以定期委任方式委任曹嘉賢為公積金供款人輔助處處長，自二零二二年二月一日起為期一年。

Tang Pak Un, auxiliar do Instituto para os Assuntos Municipais, com o número de contribuinte 6053031, cancelada a inscrição no Regime de Previdência em 14 de Dezembro de 2021, nos termos do artigo 13.º, n.º 1, alínea *1)*, da Lei n.º 8/2006, em vigor — fixada a taxa de reversão a que tem direito no âmbito do Regime de Previdência, correspondente a 100% do saldo da «Conta das Contribuições Individuais», nos termos do artigo 15.º, n.º 4, da referida lei, artigo 26.º do Regulamento Administrativo n.º 15/2006, em vigor, e artigo 14.º, n.º 1, alínea *1)*, da referida lei.

Wong Meng Si, enfermeira de grau I dos Serviços de Saúde, com o número de contribuinte 6271896, cancelada a inscrição no Regime de Previdência em 23 de Dezembro de 2021, nos termos do artigo 13.º, n.º 1, da Lei n.º 8/2006, em vigor — fixada a taxa de reversão a que tem direito no âmbito do Regime de Previdência, correspondente a 100% do saldo da «Conta das Contribuições Individuais» e sem direito ao saldo da «Conta das Contribuições da RAEM», por contar menos de 5 anos de tempo de contribuição no Regime de Previdência, nos termos do artigo 14.º, n.º 1, do mesmo diploma.

Por despacho do Ex.mo Senhor Secretário para a Administração e Justiça, de 30 de Novembro de 2021:

Ho Chi Leong — renovada a comissão de serviço, pelo período de um ano, como chefe da Divisão de Gestão das Contribuições para o Regime de Previdência, nos termos dos artigos 5.º da Lei n.º 15/2009 (Disposições Fundamentais do Estatuto do Pessoal de Direcção e Chefia) e 8.º do Regulamento Administrativo n.º 26/2009 (Disposições complementares do estatuto do pessoal de direcção e chefia), por possuir competência e experiência profissionais adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Por despachos da presidente do Conselho de Administração, de 29 de Dezembro de 2021:

Wong Io Wa — renovado o contrato administrativo de provimento de longa duração, pelo período de três anos, como motorista de ligeiros, 10.º escalão, neste Fundo, nos termos dos artigos 4.º e 6.º, n.º 4, da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), alterada pela Lei n.º 2/2021, a partir de 29 de Janeiro de 2022.

Fong Hin Fong — renovado o contrato administrativo de provimento, pelo período de um ano, como motorista de ligeiros, 2.º escalão, neste Fundo, nos termos dos artigos 4.º e 6.º, n.º 1, da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), alterada pela Lei n.º 2/2021, a partir de 1 de Fevereiro de 2022.

Por despacho do Ex.mo Senhor Secretário para a Administração e Justiça, de 30 de Dezembro de 2021:

Chou Ka In — nomeada, em comissão de serviço, pelo período de um ano, chefe da Divisão de Apoio aos Contribuintes do Regime de Previdência do Fundo de Pensões, nos termos dos artigos 2.º, n.º 3, alínea *2)*, 4.º e 5.º da Lei n.º 15/2009 (Disposições Fundamentais do Estatuto do Pessoal de Direcção e Chefia), e 2.º, 3.º, n.º 2, 5.º e 7.º do Regulamento Administrativo n.º 26/2009 (Disposições Complementares do Estatuto do Pessoal de Direcção e Chefia), conjugados com o n.º 1 da Ordem Executiva n.º 180/2019, a partir de 1 de Fevereiro de 2022.

按照第15/2009號法律第五條第二款的規定，現刊登委任理由及獲委任人的學歷和專業簡歷如下：

委任理由：

——職位出缺；

——曹嘉賢的個人履歷顯示其具備專業能力及才幹擔任公積金供款人輔助處處長一職。

學歷：

——澳門大學工商管理學士（市場學）

專業簡歷：

——2008年8月至2012年3月——退休基金會二等技術輔導員；

——2012年3月至2014年4月——退休基金會一等技術輔導員；

——2014年4月至2016年10月——退休基金會二等技術員；

——2016年10月至2018年11月——退休基金會一等技術員；

——2018年11月至2021年1月——退休基金會首席技術員；

——2021年1月至今——退休基金會特級技術員；

——2021年8月至2022年1月——公積金供款人輔助處代處長。

按行政管理委員會主席於二零二二年一月十八日作出的批示：

根據經第2/2021號法律修改的第12/2015號法律《公共部門勞動合同制度》第四條及第六條第一款之規定，羅禮堅在本會擔任第三職階顧問高級技術員的行政任用合同，自二零二二年二月一日起續期一年。

———

二零二二年一月二十日於退休基金會

行政管理委員會主席　沙蓮達

Ao abrigo do artigo 5.º, n.º 2, da Lei n.º 15/2009 é publicada a nota relativa aos fundamentos da respectiva nomeação e o currículo académico e profissional da nomeada:

Fundamentos da nomeação:

— Vacatura do cargo;

— Chou Ka In possui competência profissional e aptidão para o exercício do cargo de chefe da Divisão de Apoio aos Contribuintes do Regime de Previdência do Fundo de Pensões, o que se demonstra pelo *curriculum vitae*.

Currículo académico:

— Licenciatura em Gestão de Empresas pela Universidade de Macau (especialização em Marketing)

Currículo profissional:

— De Agosto de 2008 a Março de 2012 – adjunta-técnica de 2.ª classe do Fundo de Pensões;

— De Março de 2012 a Abril de 2014 – adjunta-técnica de 1.ª classe do Fundo de Pensões;

— De Abril de 2014 a Outubro de 2016 – técnica de 2.ª classe do Fundo de Pensões;

— De Outubro de 2016 a Novembro de 2018 – técnica de 1.ª classe do Fundo de Pensões;

— De Novembro de 2018 a Janeiro de 2021 – técnica principal do Fundo de Pensões;

— De Janeiro de 2021 até à presente data – técnica especialista do Fundo de Pensões;

— De Agosto de 2021 a Janeiro de 2022 – chefe da Divisão de Apoio aos Contribuintes do Regime de Previdência, substituta, do Fundo de Pensões.

Por despacho da presidente do Conselho de Administração, de 18 de Janeiro de 2022:

Lo Lai Kin — renovado o contrato administrativo de provimento, pelo período de um ano, como técnico superior assessor, 3.º escalão, neste Fundo, nos termos dos artigos 4.º e 6.º, n.º 1, da Lei n.º 12/2015 (Regime do Contrato de Trabalho nos Serviços Públicos), alterada pela Lei n.º 2/2021, a partir de 1 de Fevereiro de 2022.

———

Fundo de Pensões, aos 20 de Janeiro de 2022. — A Presidente do Conselho de Administração, *Ermelinda M. C. Xavier.*

經 濟 及 科 技 發 展 局

批 示 摘 錄

按照經濟財政司司長於二零二一年十二月十七日之批示：

根據第15/2009號法律第二條第三款（二）項及第五條，並配合第26/2009號行政法規第二條、第三條第二款、第五條及第七

DIRECÇÃO DOS SERVIÇOS DE ECONOMIA E DESENVOLVIMENTO TECNOLÓGICO

Extractos de despachos

Por despachos do Ex.mo Senhor Secretário para a Economia e Finanças, de 17 de Dezembro de 2021:

Chiu Weng Ieng — nomeada, em comissão de serviço, pelo período de um ano, chefe da Divisão de Registo de Marcas desta Direcção de Serviços, nos termos dos artigos 2.º, n.º 3,

條，以及第45/2020號行政法規之規定，以定期委任方式委任趙詠瑩擔任本局商標註冊處處長，自二零二二年二月一日起，為期一年。

按照第15/2009號法律第五條第二款的規定，現刊登委任理由及獲委任人的學歷和專業簡歷如下：

1. 委任理由：

——職位出缺及因本局的職責有需要填補空缺；

——趙詠瑩憑藉以下個人履歷，被認定具有專業能力及才幹擔任本局商標註冊處處長一職。

2. 學歷：

——倫敦大學理學碩士（財務管理）學位；

——澳門大學社會科學學士（經濟學）學位。

3. 職業培訓：

——公務人員領導力培訓班（第一屆）；

——晉級培訓——達標式培訓課程——顧問高級技術員；

——運用調解技巧處理工作間的投訴課程（個別會談及個別會談實務演練）；

——取得財貨及提供勞務制度入門課程；

——公職法律制度課程——人事管理範疇入門；

——計量器具應用課程；

——行政程序課程；

——會展的組織及統籌課程；

——中國公共行政及管理課程；

——中層公務人員基本培訓課程研修班；

——中層公務員管理技巧發展課程；

——公務人員基本培訓課程——技術員及高級技術員組別；

——策略與創意思維課程；

alínea *2*), e 5.º da Lei n.º 15/2009, conjugados com os artigos 2.º, 3.º, n.º 2, 5.º e 7.º do Regulamento Administrativo n.º 26/2009 e com referência ao disposto no Regulamento Administrativo n.º 45/2020, a partir de 1 de Fevereiro de 2022.

Ao abrigo do artigo 5.º, n.º 2, da Lei n.º 15/2009, é publicada a nota relativa aos fundamentos da respectiva nomeação e ao currículo académico e profissional da nomeada:

1. Fundamentos da nomeação:

— Vacatura do cargo e necessidade do seu preenchimento face às atribuições cometidas à Direcção dos Serviços de Economia e Desenvolvimento Tecnológico;

— Reconhecida competência profissional e aptidão para o exercício do cargo de chefe da Divisão de Registo de Marcas destes Serviços por parte de Chiu Weng Ieng, o que se demonstra pelo seguinte *curriculum vitae*.

2. Currículo académico:

— Mestrado em Ciência na variante de Gestão Financeira da *University of London*;

— Licenciatura em Ciências Sociais na variante de Economia da Universidade de Macau.

3. Formação profissional:

— Curso de Formação de Liderança para os Trabalhadores dos Serviços Públicos (1.ª Edição);

— Formação para efeitos de acesso — Acção de formação em regime de aproveitamento — Técnico Superior Assessor;

— Curso de Tratamento de Queixas no Trabalho através de Técnicas de Mediação na Reunião Individual e Simulação de Reunião Individual;

— Curso sobre Introdução ao Regime Jurídico de Aquisição de Bens e Serviços;

— Curso sobre o Regime Jurídico da Função Pública — Introdução à Gestão de Administração de Pessoal;

— *Application of The Measuring Instruments*;

— Curso de Procedimento Administrativo;

— Curso de Organização e Coordenação de Convenções e Exposições;

— Curso de Administração e Gestão Pública Chinesa;

— Programa de Estudos Essenciais para Funcionários Públicos de Nível Intermédio;

— Programa de Desenvolvimento das Técnicas de Gestão para Funcionários Públicos de Nível Intermédio;

— Programa de Formação Essencial para os Funcionários Públicos — Grupo de pessoal técnico e técnico superior;

— Curso de Desenvolvimento do Pensamento Estratégico e Criativo;

——世界貿易組織舉辦的區域貿易政策課程及多項與貿易協議和貿易政策相關的課程；

——普通話及英語課程。

4. 專業簡歷：

——2003年2月至今——本局高級技術員；

——2016年3月至2017年1月——本局產地來源證簽發處代處長；

——2017年1月至2018年1月——本局行政及財政處代處長；

——2021年2月至今——本局商標註冊處代處長。

根據第15/2009號法律第二條第三款（二）項及第五條，並配合第26/2009號行政法規第二條、第三條第二款、第五條及第七條，以及第45/2020號行政法規之規定，以定期委任方式委任黃淑慧擔任本局專利及著作權處處長，自二零二二年二月一日起，為期一年。

按照第15/2009號法律第五條第二款的規定，現刊登委任理由及獲委任人的學歷和專業簡歷如下：

1. 委任理由：

——職位出缺及因本局的職責有需要填補空缺；

——黃淑慧憑藉以下個人履歷，被認定具有專業能力及才幹擔任本局專利及著作權處處長一職。

2. 學歷：

——香港大學醫療科學碩士學位；

——台灣大學藥學學士學位。

3. 職業培訓：

——中華人民共和國專利代理人資格證書；

——中國知識產權培訓中心遠程教育《專利代理實務》、《著作權》及《知識產權法律基礎》課程；

——世界知識產權組織《知識產權基本課程》；

——世界貿易組織舉辦的基礎課程及知識產權相關課程；

— Curso de Política Comercial Regional organizado pela Organização Mundial do Comércio e vários cursos relacionados com acordos comerciais e política comercial;

— Cursos de Mandarim e Inglês.

4. Currículo profissional:

— Desde Fevereiro de 2003 até à presente data — técnica superior destes Serviços;

— De Março de 2016 a Janeiro de 2017 — chefe da Divisão de Emissão de Documentos de Certificação de Origem, substituta, destes Serviços;

— De Janeiro de 2017 a Janeiro de 2018 — chefe da Divisão Administrativa e Financeira, substituta, destes Serviços;

— Desde Fevereiro de 2021 até à presente data — chefe da Divisão de Registo de Marcas, substituta, destes Serviços.

Vong Sok Wai — nomeada, em comissão de serviço, pelo período de um ano, chefe da Divisão de Patentes e de Direitos de Autor desta Direcção de Serviços, nos termos dos artigos 2.º, n.º 3, alínea *2*), e 5.º da Lei n.º 15/2009, conjugados com os artigos 2.º, 3.º, n.º 2, 5.º e 7.º do Regulamento Administrativo n.º 26/2009 e com referência ao disposto no Regulamento Administrativo n.º 45/2020, a partir de 1 de Fevereiro de 2022.

Ao abrigo do artigo 5.º, n.º 2, da Lei n.º 15/2009, é publicada a nota relativa aos fundamentos da respectiva nomeação e ao currículo académico e profissional da nomeada:

1. Fundamentos da nomeação:

— Vacatura do cargo e necessidade do seu preenchimento face às atribuições cometidas à Direcção dos Serviços de Economia e Desenvolvimento Tecnológico;

— Reconhecida competência profissional e aptidão para o exercício do cargo de chefe da Divisão de Patentes e de Direitos de Autor destes Serviços por parte de Vong Sok Wai, o que se demonstra pelo seguinte *curriculum vitae*.

2. Currículo académico:

— *Master of Medical Sciences of the University of Hong Kong*;

— *Bachelor of Pharmacy of the University of Taiwan*.

3. Formação profissional:

— Certificado de Qualificação de Agente de Patentes da República Popular da China;

— Cursos de ensino à distância sobre «práticas de agente de patentes», «direitos de autor» e «noções fundamentais de direitos de propriedade intelectual» do Centro de Formação da Propriedade Intelectual da China;

— Curso básico sobre direitos de propriedade intelectual organizado pela Organização Mundial da Propriedade Intelectual;

— Curso básico e curso relacionado com direitos de propriedade intelectual organizados pela Organização Mundial do Comércio;

——晉級培訓——達標式培訓課程——顧問高級技術員；

——危機管理工作坊；

——一般行政檔案保存期及最終用途實務課程；

——公開招標課程；

——中文演講辭寫作技巧課程；

——中文公文寫作課程；

——前線服務人員培訓課程；

——公務人員基本培訓課程——技術員及高級技術員組別；

——中層公務人員基本培訓課程研修班；

——香港生物科技研究院有限公司的多項培訓課程。

4. 專業簡歷：

——2004年11月至今——本局高級技術員；

——2021年2月至今——本局專利及著作權處代處長。

根據第15/2009號法律第二條第三款（二）項及第五條，並配合第26/2009號行政法規第二條、第三條第二款、第五條及第七條，以及第45/2020號行政法規之規定，以定期委任方式委任李兆生擔任本局經濟分析處處長，自二零二二年二月一日起，為期一年。

按照第15/2009號法律第五條第二款的規定，現刊登委任理由及獲委任人的學歷和專業簡歷如下：

1. 委任理由：

——職位出缺及因本局的職責有需要填補空缺；

——李兆生憑藉以下個人履歷，被認定具有專業能力及才幹擔任本局經濟分析處處長一職。

2. 學歷：

——美國加州大學柏克萊分校應用數學及經濟學學士學位。

3. 職業培訓：

——世界貿易組織“經濟貿易政策分析進階課程”（日內瓦）；

— Formação para Efeitos de Acesso — Acção de Formação em Regime de Aproveitamento — Técnico Superior Assessor;

— *Workshop* sobre a Gestão de Crises;

— Curso Prático sobre Prazos de Conservação e Destino Final dos Arquivos Administrativos de Natureza Comum;

— Curso para Concurso Público;

— Curso de Técnicas de Redacção de Discursos em Língua Chinesa;

— Curso de Chinês Funcional;

— Programa de Formação para os Trabalhadores da Linha da Frente;

— Programa de Formação Essencial para os Funcionários Públicos — Grupo de Pessoal Técnico e Técnico Superior;

— Programa de Estudos Essenciais para Funcionários Públicos de Nível Intermédio;

— Vários cursos de formação organizados pelo *Hong Kong Institute of Biotechnology Ltd*.

4. Currículo profissional:

— Desde Novembro de 2004 até à presente data — técnica superior destes Serviços;

— Desde Fevereiro de 2021 até à presente data — chefe da Divisão de Patentes e de Direitos de Autor, substituta, destes Serviços.

Lei Sio Sang — nomeado, em comissão de serviço, pelo período de um ano, chefe da Divisão de Análise Económica desta Direcção de Serviços, nos termos dos artigos 2.º, n.º 3, alínea *2*), e 5.º da Lei n.º 15/2009, conjugados com os artigos 2.º, 3.º, n.º 2, 5.º e 7.º do Regulamento Administrativo n.º 26/2009 e com referência ao disposto no Regulamento Administrativo n.º 45/2020, a partir de 1 de Fevereiro de 2022.

Ao abrigo do artigo 5.º, n.º 2, da Lei n.º 15/2009, é publicada a nota relativa aos fundamentos da respectiva nomeação e ao currículo académico e profissional do nomeado:

1. Fundamentos da nomeação:

— Vacatura do cargo e necessidade do seu preenchimento face às atribuições cometidas à Direcção dos Serviços de Economia e Desenvolvimento Tecnológico;

— Reconhecida competência profissional e aptidão para o exercício do cargo de chefe da Divisão de Análise Económica destes Serviços por parte de Lei Sio Sang, o que se demonstra pelo seguinte *curriculum vitae*.

2. Currículo académico:

— *Bachelor of Arts with Majors in Applied Mathematics and Economics of the University of California, Berkeley.*

3. Formação profissional:

— Curso avançado sobre análise das políticas económicas e comerciais da Organização Mundial do Comércio (Genebra);

——政務微信分享工作坊；

——公務人員基本培訓課程——技術員及高級技術員組別。

4. 專業簡歷：

——2016年10月至今——本局經濟研究顧問；

——2021年2月至今——本局經濟分析處代處長。

根據第15/2009號法律第二條第三款（二）項及第五條，並配合第26/2009號行政法規第二條、第三條第二款、第五條及第七條，以及第45/2020號行政法規之規定，以定期委任方式委任徐秀玲擔任本局牌照及監管處處長，自二零二二年二月一日起，為期一年。

按照第15/2009號法律第五條第二款的規定，現刊登委任理由及獲委任人的學歷和專業簡歷如下：

1. 委任理由：

——職位出缺及因本局的職責有需要填補空缺；

——徐秀玲憑藉以下個人履歷，被認定具有專業能力及才幹擔任本局牌照及監管處處長一職。

2. 學歷：

——澳門大學中文法學碩士學位；

——台灣大學法學學士學位；

——澳門大學澳門法律導論課程。

3. 職業培訓：

——國家行政學院澳門旅遊休閒企業國情研修班；

——中國浦東幹部學院澳門旅遊休閒產業研修班；

——領事保護工作坊（普通話）；

——外交部第六期國際法強化培訓課程；

——澳門特區法律顧問研修考察團；

——行政程序課程；

——法律草擬課程；

— *Workshop*: Técnicas de Produção de Wechat;

— Programa de Formação Essencial para os Funcionários Públicos — Grupo de Pessoal Técnico e Técnico Superior.

4. Currículo profissional:

— Desde Outubro de 2016 até à presente data — consultor em estudos económicos destes Serviços;

— Desde Fevereiro de 2021 até à presente data — chefe da Divisão de Análise Económica, substituto, destes Serviços.

Choi Sao Leng — nomeada, em comissão de serviço, pelo período de um ano, chefe da Divisão de Licenciamento e de Supervisão desta Direcção de Serviços, nos termos dos artigos 2.º, n.º 3, alínea *2*), e 5.º da Lei n.º 15/2009, conjugados com os artigos 2.º, 3.º, n.º 2, 5.º e 7.º do Regulamento Administrativo n.º 26/2009 e com referência ao disposto no Regulamento Administrativo n.º 45/2020, a partir de 1 de Fevereiro de 2022.

Ao abrigo do artigo 5.º, n.º 2, da Lei n.º 15/2009, é publicada a nota relativa aos fundamentos da respectiva nomeação e ao currículo académico e profissional da nomeada:

1. Fundamentos da nomeação:

— Vacatura do cargo e necessidade do seu preenchimento face às atribuições cometidas à Direcção dos Serviços de Economia e Desenvolvimento Tecnológico;

— Reconhecida competência profissional e aptidão para o exercício do cargo de chefe da Divisão de Licenciamento e de Supervisão destes Serviços por parte de Choi Sao Leng, o que se demonstra pelo seguinte *curriculum vitae*.

2. Currículo académico:

— Mestrado em Direito em Língua Chinesa da Universidade de Macau;

— Licenciatura em Direito da Universidade de Taiwan;

— Curso de Introdução ao Direito de Macau da Universidade de Macau.

3. Formação profissional:

— Curso de Estudo sobre os Assuntos Nacionais acerca de Empresas de Turismo e Lazer de Macau ministrado pelo Instituto Nacional de Administração da República Popular da China;

— Curso de Estudo sobre a Indústria de Turismo e Lazer de Macau ministrado pela *China Executive Leadership Academy, Pudong*;

— *Workshop* de Protecção Consular (em Mandarim);

— 6.ª Edição do Curso Aprofundado na Área do Direito Internacional, ministrado pelo Ministério dos Negócios Estrangeiros;

— Programa de Estudos para Juristas da RAEM;

— Curso de Procedimento Administrativo;

— Curso de Produção Legislativa;

——推動環保採購、帶動綠色文化環保採購培訓課程；

——中層公務員管理技巧發展課程——高級技術員；

——第二期法律範疇葡語進修計劃；

——法學士擔任行政訴訟及行政判決執行之代理課程；

——行政合同法律制度課程；

——紀律懲處法課程；

——公務人員基本培訓課程——技術員及高級技術員組別；

——仲裁入門課程；

——國家行政學院中層公務人員基本培訓課程研修班；

——Curso de Língua Portuguesa no nível Avançado, Universidade de Lisboa；

——“生動演說技巧”培訓課程；

——電腦應用課程。

4. 專業簡歷：

——2000年3月至2004年2月——檢察長辦公室技術輔導員；

——2005年12月至2006年12月——檢察長辦公室技術員；

——2006年12月至2009年12月——法務局高級技術員；

——2009年12月至2012年12月——環境保護局高級技術員；

——2011年9月至2012年12月——環保與節能基金行政管理委員會成員；

——2012年12月至2015年2月——廉政公署高級技術員；

——2015年3月至2018年1月——個人資料保護辦公室高級技術員；

——2018年1月至2019年3月——本局高級技術員；

——2020年12月至今——本局高級技術員；

——2021年8月至今——本局牌照及監管處代處長。

— Curso de «Promover a Eco-Aquisição, Cultivar um Estilo de Vida Amigo do Ambiente»;

— Programa de Desenvolvimento das Técnicas de Gestão para Funcionários Públicos de Nível Intermédio — Técnicos Superiores;

— 2.ª Edição do Programa de Aperfeiçoamento de Língua Portuguesa na Área Jurídica;

— Curso sobre o Patrocínio Judiciário por Licenciados em Direito no Âmbito do Processo Administrativo Contencioso e Execução de Sentenças Administrativas;

— Curso sobre o Regime Jurídico dos Contratos Administrativos;

— Curso de Direito Disciplinar;

— Programa de Formação Essencial para os Funcionários Públicos — Grupo de Pessoal Técnico e Técnico Superior;

— Curso de Formação Inicial de Arbitragem;

— Programa de Estudos Essenciais para Funcionários Públicos de Nível Intermédio, ministrado pelo Instituto Nacional de Administração da República Popular da China;

— Curso de Língua Portuguesa de nível Avançado da Universidade de Lisboa;

— Curso de «Formação sobre as Técnicas de Apresentação»;

— Curso de aplicações informáticas.

4. Currículo profissional:

— De Março de 2000 a Fevereiro de 2004 — adjunta-técnica do Gabinete do Procurador;

— De Dezembro de 2005 a Dezembro de 2006 — técnica do Gabinete do Procurador;

— De Dezembro de 2006 a Dezembro de 2009 — técnica superior da Direcção dos Serviços de Assuntos de Justiça;

— De Dezembro de 2009 a Dezembro de 2012 — técnica superior da Direcção dos Serviços de Protecção Ambiental;

— De Setembro de 2011 a Dezembro de 2012 — membro do Conselho Administrativo do Fundo para a Protecção Ambiental e a Conservação Energética;

— De Dezembro de 2012 a Fevereiro de 2015 — técnica superior do Comissariado contra a Corrupção;

— De Março de 2015 a Janeiro de 2018 — técnica superior do Gabinete para a Protecção de Dados Pessoais;

— De Janeiro de 2018 a Março de 2019 — técnica superior destes Serviços;

— Desde Dezembro de 2020 até à presente data — técnica superior destes Serviços;

— Desde Agosto de 2021 até à presente data — chefe da Divisão de Licenciamento e de Supervisão, substituta, destes Serviços.

聲 明

為著應有之效力，茲聲明趙詠瑩，自動終止本局不具期限行政任用合同第三職階顧問高級技術員之職務，自二零二二年二月一日在本局以定期委任方式擔任商標註冊處處長之日起生效。

為著應有之效力，茲聲明黃淑慧，自動終止本局不具期限行政任用合同第三職階顧問高級技術員之職務，自二零二二年二月一日在本局以定期委任方式擔任專利及著作權處處長之日起生效。

為著應有之效力，茲聲明李兆生，自動終止本局個人勞動合同經濟研究顧問之職務，自二零二二年二月一日在本局以定期委任方式擔任經濟分析處處長之日起生效。

為著應有之效力，茲聲明徐秀玲，自動終止本局行政任用合同第三職階顧問高級技術員之職務，自二零二二年二月一日在本局以定期委任方式擔任牌照及監管處處長之日起生效。

二零二二年一月十九日於經濟及科技發展局

局長　戴建業

Declarações

Para os devidos efeitos se declara que Chiu Weng Ieng, técnica superior assessora, 3.º escalão, em regime de contrato administrativo de provimento sem termo, destes Serviços, cessa, automaticamente, as suas funções, a partir de 1 de Fevereiro de 2022, data em que é nomeada em comissão de serviço para o cargo de chefe da Divisão de Registo de Marcas destes Serviços.

— Para os devidos efeitos se declara que Vong Sok Wai, técnica superior assessora, 3.º escalão, em regime de contrato administrativo de provimento sem termo, destes Serviços, cessa, automaticamente, as suas funções, a partir de 1 de Fevereiro de 2022, data em que é nomeada em comissão de serviço para o cargo de chefe da Divisão de Patentes e de Direitos de Autor destes Serviços.

— Para os devidos efeitos se declara que Lei Sio Sang, consultor em estudos económicos, em regime de contrato individual de trabalho, destes Serviços, cessa, automaticamente, as suas funções, a partir de 1 de Fevereiro de 2022, data em que é nomeado em comissão de serviço para o cargo de chefe da Divisão de Análise Económica destes Serviços.

— Para os devidos efeitos se declara que Choi Sao Leng, técnica superior assessora, 3.º escalão, em regime de contrato administrativo de provimento, destes Serviços, cessa, automaticamente, as suas funções, a partir de 1 de Fevereiro de 2022, data em que é nomeada em comissão de serviço para o cargo de chefe da Divisão de Licenciamento e de Supervisão destes Serviços.

Direcção dos Serviços de Economia e Desenvolvimento Tecnológico, aos 19 de Janeiro de 2022. — O Director dos Serviços, *Tai Kin Ip*.

財 政 局

批 示 摘 錄

按照經濟財政司司長於二零二一年十一月十七日之批示：

Maria Isabel Marques Soares——其在本局擔任第一職階首席顧問高級技術員職務的個人勞動合同獲續期一年，自二零二二年一月九日起。

Lívio Leonel dos Reis Borges——其在本局擔任第一職階首席顧問高級技術員職務的個人勞動合同獲續期一年，自二零二二年二月一日起。

麥詠珠——其在本局擔任第一職階顧問高級技術員職務的個人勞動合同獲續期一年，自二零二二年二月二十二日起。

DIRECÇÃO DOS SERVIÇOS DE FINANÇAS

Extractos de despachos

Por despachos do Ex.mo Senhor Secretário para a Economia e Finanças, de 17 de Novembro de 2021:

Maria Isabel Marques Soares — renovado o contrato individual de trabalho, pelo período de um ano, como técnica superior assessora principal, 1.º escalão, nestes Serviços, a partir de 9 de Janeiro de 2022.

Lívio Leonel dos Reis Borges — renovado o contrato individual de trabalho, pelo período de um ano, como técnico superior assessor principal, 1.º escalão, nestes Serviços, a partir de 1 de Fevereiro de 2022.

Mak Weng Chu — renovado o contrato individual de trabalho, pelo período de um ano, como técnico superior assessor, 1.º escalão, nestes Serviços, a partir de 22 de Fevereiro de 2022.

按照本局代局長於二零二一年十一月二十二日之批示：

陳永雄及余詠芝——根據經第4/2017號法律修改的第14/2009號法律第十三條及第12/2015號法律第四條之規定，以附註形式修改其在本局擔任職務的行政任用合同第三條款，轉為收取相等於第二職階二等技術輔導員，薪俸點為275點，自二零二一年十一月十七日起生效。

根據經第4/2017號法律修改的第14/2009號法律第十三條及第12/2015號法律第四條之規定，以附註形式修改下列工作人員在本局擔任職務的不具期限的行政任用合同第三條款，職級、薪俸點及生效日期分別如下：

郭鳳萍——自二零二一年十一月十二日起轉為第三職階首席特級督察，薪俸點為520點；

郭敏燕及鄧素儀——自二零二一年十一月十四日起轉為第二職階首席特級技術輔導員，薪俸點為465點。

按本簽署人於二零二一年十二月三日之批示：

應黃少瑩的請求，在本局擔任第三職階特級技術輔導員職務的不具期限的行政任用合同自二零二二年一月十七日起予以解除。

按照經濟財政司司長於二零二一年十二月十七日之批示：

陳偉健——根據經第21/2021號行政法規修改並重新公佈的第14/2016號行政法規第五十二條至第五十四條，以及經第2/2021號法律修改的第12/2015號法律第五條第三款（五）項及第六條第一款之規定，以行政任用合同方式聘用其在本局擔任第二職階特級技術員之職務，薪俸點525，為期兩年，自二零二二年一月十六日起生效。

按照本局副局長於二零二二年一月四日之批示：

根據經第4/2017號法律修改的第14/2009號法律第十三條及第12/2015號法律第四條之規定，以附註形式修改下列工作人員在本局擔任職務的行政任用合同第三條款，職級、薪俸點及生效日期分別如下：

何雪儀、曾欣如、吳曉榮及梁少文——自二零二二年一月一日起轉為第二職階二等技術輔導員，薪俸點為275點；

歐陽萬東——自二零二二年一月二日起轉為第二職階二等技術輔導員，薪俸點為275點。

按本簽署人於二零二二年一月十七日之批示：

José Augusto Ieong de Sousa——根據經第4/2017號法律修改的第14/2009號法律第十四條及第12/2015號法律第四條

Por despachos da directora dos Serviços, substituta, de 22 de Novembro de 2021:

Chan Weng Hong e U Weng Chi — alterada, por averbamento, a cláusula 3.ª dos seus contratos administrativos de provimento, passando a vencer pelo índice 275, correspondente à categoria de adjunto-técnico de 2.ª classe, 2.º escalão, nestes Serviços, nos termos dos artigos 13.º da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, e 4.º da Lei n.º 12/2015, a partir de 17 de Novembro de 2021.

Os trabalhadores abaixo mencionados — alterada, por averbamento, a cláusula 3.ª dos seus contratos administrativos de provimento sem termo para as categorias, índices e a partir das datas a cada um a seguir indicados, nos termos dos artigos 13.º da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, e 4.º da Lei n.º 12/2015:

Kuok Fong Peng, para inspector especialista principal, 3.º escalão, índice 520, a partir de 12 de Novembro de 2021;

Kwok Man Yin e Tang Sou U, para adjuntos-técnicos especialistas principais 2.º escalão, índice 465, a partir de 14 de Novembro de 2021.

Por despacho do signatário, de 3 de Dezembro de 2021:

Wong Sio Ieng — rescindido, a seu pedido, o contrato administrativo de provimento sem termo nas funções de adjunto-técnico especialista, 3.º escalão, nesta Direcção de Serviços, a partir de 17 de Janeiro de 2022.

Por despacho do Ex.mo Senhor Secretário para a Economia e Finanças, de 17 de Dezembro de 2021:

Chan Wai Kin — contratado por contrato administrativo de provimento, pelo período de dois anos, como técnico especialista, 2.º escalão, índice 525, nestes Serviços, nos termos dos artigos 52.º a 54.º do Regulamento Administrativo n.º 14/2016, alterado e republicado pelo Regulamento Administrativo n.º 21/2021, conjugados com a alínea *5*) do n.º 3 do artigo 5.º e o n.º 1 do artigo 6.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir de 16 de Janeiro de 2022.

Por despachos da subdirectora dos Serviços, de 4 de Janeiro de 2022:

Os trabalhadores abaixo mencionados — alterada, por averbamento, a cláusula 3.ª dos seus contratos administrativos de provimento para as categorias, índices e a partir das datas a cada um a seguir indicados, nos termos do artigo 13.º da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, e do artigo 4.º da Lei n.º 12/2015:

Ho Sut I, Chang Ian U, Ng Hio Weng e Leung Sio Man, para adjuntos-técnicos de 2.ª classe, 2.º escalão, índice 275, a partir de 1 de Janeiro de 2022;

Ouyang Wandong, para adjunto-técnico de 2.ª classe, 2.º escalão, índice 275, a partir de 2 de Janeiro de 2022.

Por despachos do signatário, de 17 de Janeiro de 2022:

José Augusto Ieong de Sousa — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento sem termo com referência à categoria de técnico especia-

之規定，以附註形式修改其在本局擔任職務的不具期限的行政任用合同第三條款，轉為第一職階首席特級技術員，薪俸點為560。

黃杏盈——根據經第4/2017號法律修改的第14/2009號法律第十四條及第12/2015號法律第四條之規定，以附註形式修改其在本局擔任職務的長期行政任用合同第三條款，轉為第一職階一等技術輔導員，薪俸點為305。

霍凱欣——根據經第4/2017號法律修改的第14/2009號法律第十四條及第12/2015號法律第四條之規定，以附註形式修改其在本局擔任職務的行政任用合同第三條款，轉為第一職階一等技術輔導員，薪俸點為305。

lista principal, 1.º escalão, índice 560, nestes Serviços, nos termos dos artigos 14.º da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, e 4.º da Lei n.º 12/2015.

Wong Hang Ieng — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento de longa duração com referência à categoria de adjunto-técnico de 1.ª classe, 1.º escalão, índice 305, nestes Serviços, nos termos dos artigos 14.º da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, e 4.º da Lei n.º 12/2015.

Fok Hoi Ian — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento com referência à categoria de adjunto-técnico de 1.ª classe, 1.º escalão, índice 305, nestes Serviços, nos termos dos artigos 14.º da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, e 4.º da Lei n.º 12/2015.

聲明書
Declarações

摘要
Extrato

行政當局投資與發展開支計劃
Plano de Investimentos e Despesas de Desenvolvimento da Administração

2021年財政年度
Ano Económico de 2021

根據第2/2018號行政法規第五十二條及第五十三條的規定，茲公佈下列（行政當局投資與發展開支計劃/二零二一）款項轉帳：

Nos termos dos artigos 52.º e 53.º do Regulamento Administrativo n.º 2/2018, publicam-se as seguintes transferências de verbas (PIDDA/2021):

分類 Classificação				名稱 Designação	追加/登錄 Reforços/ Inscrições	註銷 Anulações
部門編號 N.º Serv.	功能 Função	活動 Acção	經濟分類 Económica			
60121000				**土地工務運輸局** **Direcção dos Serviços de Solos, Obras Públicas e Transportes**		
	8-05-1	10017005	41-01-04-01-00	路橋及航道 Estradas e pontes, e canais de navegação	452,250.00	
	8-05-1	17072005	41-01-04-01-00	路橋及航道 Estradas e pontes, e canais de navegação		452,250.00
				總額 Total	452,250.00	452,250.00
核准依據: Referente à autorização :				30/12/2021之運輸工務司司長批示 Despacho do Exm.º Sr. Secretário para os Transportes e Obras Públicas de 30/12/2021		

摘要
Extrato

行政當局投資與發展開支計劃
Plano de Investimentos e Despesas de Desenvolvimento da Administração

2021年財政年度
Ano Económico de 2021

根據第2/2018號行政法規第五十二條及第五十三條的規定，茲公佈下列（行政當局投資與發展開支計劃/二零二一）款項轉帳：

Nos termos dos artigos 52.º e 53.º do Regulamento Administrativo n.º 2/2018, publicam-se as seguintes transferências de verbas (PIDDA/2021):

分類 Classificação				名稱 Designação	追加/登錄 Reforços/ Inscrições	註銷 Anulações
部門編號 N.º Serv.	功能 Função	活動 Acção	經濟分類 Económica			
60171900				市政署 **Instituto para os Assuntos Municipais**		
	8-04-7	15049002	41-01-03-00-00	樓宇及場所 Edifícios e estabelecimentos	390,808.11	
	8-04-8	21033001	41-01-04-01-00	路橋及航道 Estradas e pontes, e canais de navegação		390,808.11
				總額 Total	390,808.11	390,808.11
核准依據: Referente à autorização :				31/12/2021之行政法務司司長批示 Despacho do Exm.º Sr. Secretário para a Administração e Justiça de 31/12/2021		

摘要
Extrato

新聞局——部門預算
Gabinete de Comunicação Social — Orçamento do Serviço

二零二二年財政年度第一次預算修改
1.ª alteração orçamental do ano económico de 2022

根據第2/2018號行政法規第五十二條及第五十三條第五款的規定，茲公佈下列（澳門特別行政區財政預算/二零二二）款項轉移：

Nos termos do artigo 52.º e do n.º 5 do artigo 53.º do Regulamento Administrativo n.º 2/2018, publicam-se as seguintes transferências de verbas (Orçamento da RAEM/2022):

分類 Classificação			名稱 Designação	追加/登錄 Reforços/ Inscrições	註銷 Anulações
組織 Orgân.	功能 Func.	經濟 Económica			
21200100			**新聞局－部門預算** **Gabinete de Comunicação Social - Orçamento do Serviço**		
	7-06-0	31-01-01-01-00	編制人員 Pessoal dos quadros		776,000.00
	7-06-0	31-01-01-99-00	其他－薪俸、報酬及工資 Outros - Vencimentos, remunerações e salários	676,000.00	
	7-06-0	31-02-01-07-00	職務終止補償 Compensação em cessação definitiva de funções	100,000.00	
			總額 Total	776,000.00	776,000.00
核准依據: Referente à autorização :			10/01/2022之財政局局長批示 Despacho do Exm.º Sr. Director dos Serviços de Finanças de 10/01/2022		

摘要
Extrato

澳門特別行政區海關——部門預算
Serviços de Alfândega da Região Administrativa Especial de Macau — Orçamento do Serviço

二零二二年財政年度第一次預算修改
1.ª alteração orçamental do ano económico de 2022

根據第2/2018號行政法規第五十二條及第五十三條第五款的規定，茲公佈下列（澳門特別行政區財政預算/二零二二）款項轉移：

Nos termos do artigo 52.º e do n.º 5 do artigo 53.º do Regulamento Administrativo n.º 2/2018, publicam-se as seguintes transferências de verbas (Orçamento da RAEM/2022):

分類 Classificação			名稱 Designação	追加/登錄 Reforços/ Inscrições	註銷 Anulações
組織 Orgân.	功能 Func.	經濟 Económica			
51000100			**澳門特別行政區海關－部門預算** **Serviços de Alfândega da Região Administrativa Especial de Macau - Orçamento do Serviço**		
	2-02-0	31-01-01-01-00	編制人員 Pessoal dos quadros		900,000.00
	2-02-0	31-02-01-07-00	職務終止補償 Compensação em cessação definitiva de funções	900,000.00	
			總額 Total	900,000.00	900,000.00
核准依據: Referente à autorização :			17/01/2022之財政局局長批示 Despacho do Exm.º Sr. Director dos Serviços de Finanças de 17/01/2022		

二零二二年一月十九日於財政局——局長　容光亮

Direcção dos Serviços de Finanças, aos 19 de Janeiro de 2022. — O Director dos Serviços, *Iong Kong Leong.*

旅 遊 局

准 照 摘 錄

一級餐廳，其中文名稱為“樂怡軒”，葡文名稱為“Restaurante Lok Yee Hin”和英文名稱為“Restaurant Lok Yee Hin”，在二零二一年十二月二十二日獲發第0808/2021號牌照，持牌人為“澳門羅斯福酒店有限公司”，葡文名稱為“Companhia de Hotel Roosevelt Macau Limitada”和英文名稱為“Roosevelt Macau Hotel Company Limited”。場所位於澳門氹仔東亞運大馬路924及998號，“澳門羅斯福酒店”一樓02號舖。

（是項刊登費用為 $499.00）

一級餐廳，其中文名稱為“摩珀斯L30”，葡文名稱為“Morfeu L30”和英文名稱為“Morpheus L30”，在二零二一年十二月二十二日獲發第0809/2021號牌照，持牌人為“新濠天地度假村有限公司”，葡文名稱為“COD Resorts Limitada”和英文名稱為“COD Resorts Limited”。場所位於路氹填海區，霍英東博士大馬路（新濠天地），“摩珀斯”酒店二十七樓（L30）。

（是項刊登費用為 $454.00）

一級餐廳，其中文名稱為“昔客堡”，葡文名稱為“Restaurante Shake Shack”和英文名稱為“Shake Shack”，在二零二一年十二月二十九日獲發第0810/2021號牌照，持牌人為“昔客堡（香港）有限公司——澳門分公司”和英文名稱為“Shake Shack (Hong Kong) Limited — Macau Branch”。場所位於路氹城，路氹連貫公路第5及6部分，“澳門倫敦人酒店”，第2層（L2），2200號舖位。

（是項刊登費用為 $488.00）

———

二零二二年一月十八日於旅遊局

局長　文綺華

DIRECÇÃO DOS SERVIÇOS DE TURISMO

Extractos de licenças

Foi emitida a licença n.º 0808/2021, em 22 de Dezembro de 2021, à sociedade «澳門羅斯福酒店有限公司» em chinês, «Companhia de Hotel Roosevelt Macau Limitada» em português e «Roosevelt Macau Hotel Company Limited» em inglês, para o restaurante de 1.ª classe e denominado «樂怡軒» em chinês, «Restaurante Lok Yee Hin» em português e «Restaurant Lok Yee Hin» em inglês, sito na Avenida dos Jogos da Ásia Oriental, n.os 924 e 998, piso 1 (L01), loja 2 do «Hotel Roosevelt Macau», Taipa, em Macau.

(Custo desta publicação $ 499,00)

Foi emitida a licença n.º 0809/2021, em 22 de Dezembro de 2021, à sociedade «新濠天地度假村有限公司» em chinês, «COD Resorts Limitada» em português e «COD Resorts Limited» em inglês, para o restaurante de 1.ª classe e denominado «摩珀斯L30» em chinês, «Morfeu L30» em português e «Morpheus L30» em inglês, sito na Avenida Doutor Henry Fok («City of Dreams»), piso 27 (L30) do Hotel «Morfeu», Cotai.

(Custo desta publicação $ 454,00)

Foi emitida a licença n.º 0810/2021, em 29 de Dezembro de 2021, à sociedade «昔客堡（香港）有限公司——澳門分公司» em chinês e «Shake Shack (Hong Kong) Limited — Macau Branch» em inglês, para o restaurante de 1.ª classe e denominado «昔客堡» em chinês, «Restaurante Shake Shack» em português e «Shake Shack» em inglês, sito em Cotai, Estrada do Istmo, parcelas 5 e 6, loja 2200, piso 2 (L2) do hotel «O Hotel Londrino Macau».

(Custo desta publicação $ 488,00)

———

Direcção dos Serviços de Turismo, aos 18 de Janeiro de 2022. — A Directora dos Serviços, *Maria Helena de Senna Fernandes.*

博 彩 監 察 協 調 局

批 示 摘 錄

摘錄自簽署人於二零二一年十一月二十六日作出的批示：

根據現行第14/2009號法律第十三條第一款一項及第三款，以及第12/2015號法律第四條第二款及第三款的規定，以附註形式修改Daniela Patrícia de Assis Passeira在本局擔任職務的不具期限的行政任用合同的第三條款，轉為第三職階首席顧問高級技術員，薪俸點710，並根據《行政程序法典》第一百一十八條第二款a）項的規定，追溯自二零二一年十一月九日起生效。

DIRECÇÃO DE INSPECÇÃO E COORDENAÇÃO DE JOGOS

Extractos de despachos

Por despachos do signatário, de 26 de Novembro de 2021:

Daniela Patrícia de Assis Passeira — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento sem termo com referência à categoria de técnico superior assessor principal, 3.º escalão, índice 710, nesta Direcção de Serviços, nos termos do artigo 13.º, n.os 1, alínea *1),* e 3, da Lei n.º 14/2009, vigente, conjugado com o artigo 4.º, n.os 2 e 3, da Lei n.º 12/2015, com efeitos retroactivos a partir de 9 de Novembro de 2021, ao abrigo do artigo 118.º, n.º 2, alínea *a)*, do CPA.

根據現行第14/2009號法律第十三條第一款二項，以及第12/2015號法律第四條第二款及第三款的規定，以附註形式修改譚家慧在本局擔任職務的不具期限的行政任用合同的第三條款，轉為第三職階特級行政技術助理員，薪俸點330，並根據《行政程序法典》第一百一十八條第二款a）項的規定，追溯自二零二一年十一月二十二日起生效。

摘錄自簽署人於二零二一年十一月三十日作出的批示：

根據第12/2015號法律第四條第二款、第三款及第六條第一款的規定，何嘉俊在本局擔任第三職階特級行政技術助理員職務的行政任用合同續期一年，自二零二二年二月五日起生效。

根據第12/2015號法律第四條第二款、第三款及第六條第四款的規定，下列人員在本局擔任職務的長期行政任用合同續期三年，自二零二二年一月三十日起生效：

鄭詠雅，第三職階特級行政技術助理員；

布米高、譚穎儀、任燕霞、趙美婷及傅明謙，第一職階首席行政技術助理員。

聲 明

為有關效力，茲聲明本局以確定委任方式擔任第三職階顧問督察Alexandre Herculano da Luz，自二零二一年十一月十六日起因達年齡上限，根據現行《澳門公共行政工作人員通則》第四十四條第一款c）項的規定，終止其在本局之職務。

二零二二年一月十九日於博彩監察協調局

局長　何浩瀚

Tam Ka Wai — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento sem termo com referência à categoria de assistente técnico administrativo especialista, 3.º escalão, índice 330, nesta Direcção de Serviços, nos termos do artigo 13.º, n.º 1, alínea *2)*, da Lei n.º 14/2009, vigente, conjugado com o artigo 4.º, n.os 2 e 3, da Lei n.º 12/2015, com efeitos retroactivos a partir de 22 de Novembro de 2021, ao abrigo do artigo 118.º, n.º 2, alínea *a)*, do CPA.

Por despachos do signatário, de 30 de Novembro de 2021:

Ho Ka Chun — renovado o contrato administrativo de provimento, por mais um ano, como assistente técnico administrativo especialista, 3.º escalão, nesta Direcção de Serviços, nos termos dos artigos 4.º, n.os 2, e 3, e 6.º, n.º 1, da Lei n.º 12/2015, a partir de 5 de Fevereiro de 2022.

Os trabalhadores abaixo mencionados — renovados os contratos administrativos de provimento de longa duração, pelo período de três anos, nesta Direcção de Serviços, nos termos dos artigos 4.º, n.os 2 e 3, e 6.º, n.º 4, da Lei n.º 12/2015, a partir de 30 de Janeiro de 2022:

Cheang Weng Nga, como assistente técnico administrativo especialista, 3.º escalão;

Nuno Miguel Dias Martins Morais Borges, Tam Weng I, Iam In Ha, Chio Mei Teng e Luis Fu, como assistentes técnicos administrativos principais, 1.º escalão.

Declaração

Para os devidos efeitos se declara que Alexandre Herculano da Luz, inspector assessor, 3.º escalão, de nomeação definitiva, cessou as suas funções nesta Direcção de Serviços, por atingir o limite de idade, nos termos do artigo 44.º, n.º 1, alínea *c)*, do ETAPM, vigente, a partir de 16 de Novembro de 2021.

Direcção de Inspecção e Coordenação de Jogos, aos 19 de Janeiro de 2022. — O Director, *Adriano Marques Ho.*

勞 工 事 務 局

批 示 摘 錄

摘錄自代局長於二零二一年十二月三十日作出的批示：

根據第14/2009號法律第十三條第二款（三）項連同第12/2015號法律第四條的規定，以附註方式修改李子俊在本局擔任職務的不具期限的行政任用合同第三條款，改為第六職階勤雜人員，薪俸點為160點，由二零二一年十二月三十日起生效。

二零二二年一月十三日於勞工事務局

局長　黃志雄

DIRECÇÃO DOS SERVIÇOS PARA OS ASSUNTOS LABORAIS

Extracto de despacho

Por despacho do director, substituto, destes Serviços, de 30 de Dezembro de 2021:

Lei Chi Chon — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento sem termo para auxiliar, 6.º escalão, índice 160, nestes Serviços, nos termos do artigo 13.º, n.º 2, alínea *3*), da Lei n.º 14/2009, conjugado com o artigo 4.º da Lei n.º 12/2015, a partir de 30 de Dezembro de 2021.

Direcção dos Serviços para os Assuntos Laborais, aos 13 de Janeiro de 2022. — O Director dos Serviços, *Wong Chi Hong.*

科學技術發展基金

批示摘錄

按經濟財政司司長於二零二二年一月十日作出的批示：

根據經第1/2021號行政法規修改的第14/2004號行政法規《科學技術發展基金》第八條第二款及現行《澳門公共行政工作人員通則》第三十四條的規定，繼續徵用行政公職局第一職階首席顧問高級技術員陳幗婷在本基金擔任同一職級及職階的職務，為期一年，由二零二二年一月二十六日起產生效力。

———

二零二二年一月十四日於科學技術發展基金

行政委員會主席　陳允熙

FUNDO PARA O DESENVOLVIMENTO DAS CIÊNCIAS E DA TECNOLOGIA

Extracto de despacho

Por despacho do Ex.mo Senhor Secretário para a Economia e Finanças, de 10 de Janeiro de 2022:

Chan Kok Teng, técnica superior assessora principal, 1.º escalão, da Direcção dos Serviços de Administração e Função Pública — prorrogada a sua requisição, pelo período de um ano, para desempenhar funções na mesma categoria e escalão, neste Fundo, nos termos do n.º 2 do artigo 8.º do Regulamento Administrativo n.º 14/2004 (Fundo para o Desenvolvimento das Ciências e da Tecnologia), alterado pelo Regulamento Administrativo n.º 1/2021, e artigo 34.º do ETAPM, vigente, a partir de 26 de Janeiro de 2022.

———

Fundo para o Desenvolvimento das Ciências e da Tecnologia, aos 14 de Janeiro de 2022. — O Presidente do Conselho de Administração, *Chan Wan Hei.*

統計暨普查局

聲明

為著有關效力，茲聲明本局確定委任之第二職階首席顧問高級技術員Alfredo dos Passos Cunha Barros Amorim，因自願退休而離職，自二零二二年一月十八日起生效。

———

二零二二年一月十八日於統計暨普查局

局長　楊名就

DIRECÇÃO DOS SERVIÇOS DE ESTATÍSTICA E CENSOS

Declaração

Para os devidos efeitos se declara que Alfredo dos Passos Cunha Barros Amorim, técnico superior assessor principal, 2.º escalão, de nomeação definitiva, destes Serviços, foi desligado do serviço para efeitos de aposentação voluntária, a partir de 18 de Janeiro de 2022.

———

Direcção dos Serviços de Estatística e Censos, aos 18 de Janeiro de 2022. — O Director dos Serviços, *Ieong Meng Chao.*

治安警察局

批示摘錄

根據保安司司長於二零二一年十二月九日所作出之第111/SS/2021號批示，根據第13/2021號法律第二百零四條第二款規定，對第116/2019號紀律程序行使第182/2019號行政命令第一款及《澳門保安部隊軍事化人員通則》第二百一十一條所指之附件G表所賦予的權限，並根據《澳門保安部隊軍事化人員通則》第二百一十九條g）項、第二百二十四條、第二百二十八條、第二百三十八條第一款、第二款f）項及n）項、第二百四十條a）項及c）項的規定，決定對治安警察局一等警員編號238921黃志杰，處以撤職處分，由二零二一年十二月十八日起執行。

CORPO DE POLÍCIA DE SEGURANÇA PÚBLICA

Extractos de despachos

Por Despacho do Ex.mo Senhor Secretário para a Segurança n.º 111/SS/2021, de 9 de Dezembro de 2021, nos termos do n.º 2 do artigo 204.º da Lei n.º 13/2021, exarado no uso da competência que lhe advém do disposto no Anexo G ao artigo 211.º do Estatuto dos Militarizados das Forças de Segurança de Macau e, bem assim, do n.º 1 da Ordem Executiva n.º 182/2019, respeitante ao Processo Disciplinar n.º 116/2019, pune o guarda de primeira n.º 238921 Wong Chi Kit, do CPSP, com a pena de demissão, nos termos das disposições conjugadas da alínea *g)* do artigo 219.º, artigo 224.º, artigo 228.º, n.º 1 e alíneas *f)* e *n)* do n.º 2 do artigo 238.º, alíneas *a)* e *c)* do artigo 240.º, todos os normativos citados do EMFSM, a partir do dia 18 de Dezembro de 2021.

根據保安司司長於二零二一年十二月九日所作出之第112/SS/2021號批示，根據第13/2021號法律第二百零四條第二款規定，對第116/2019號紀律程序行使第182/2019號行政命令第一款及《澳門保安部隊軍事化人員通則》第二百一十一條所指之附件G表所賦予的權限，並根據《澳門保安部隊軍事化人員通則》第二百一十九條g）項、第二百二十四條、第二百二十八條、第二百三十八條第一款、第二款f）項及n）項、第二百四十條a）項及c）項的規定，決定對治安警察局一等警員編號196951梁建錦，處以撤職處分，由二零二一年十二月十八日起執行。

二零二二年一月十日於治安警察局

局長　吳錦華警務總監

Por Despacho do Ex.mo Senhor Secretário para a Segurança n.º 112/SS/2021, de 9 de Dezembro de 2021, nos termos do n.º 2 do artigo 204.º da Lei n.º 13/2021, exarado no uso da competência que lhe advém do disposto no Anexo G ao artigo 211.º do Estatuto dos Militarizados das Forças de Segurança de Macau e, bem assim, do n.º 1 da Ordem Executiva n.º 182/2019, respeitante ao Processo Disciplinar n.º 116/2019, pune o guarda de primeira n.º 196951 Leong Kin Kam, do CPSP, com a pena de demissão, nos termos das disposições conjugadas da alínea *g)* do artigo 219.º, artigo 224.º, artigo 228.º, n.º 1 e alíneas *f)* e *n)* do n.º 2 do artigo 238.º, alíneas *a)* e *c)* do artigo 240.º, todos os normativos citados do EMFSM, a partir do dia 18 de Dezembro de 2021.

Corpo de Polícia de Segurança Pública, aos 10 de Janeiro de 2022. — O Comandante, *Ng Kam Wa*, superintendente-geral.

司 法 警 察 局

批 示 摘 錄

摘錄自本人於二零二二年一月七日作出的批示：

鄭逸漢及鄭英偉，司法警察局不具期限的行政任用合同第二職階首席技術輔導員。根據現行第14/2009號法律第十四條第一款（二）項及第二款，經第21/2021號行政法規修改並重新公佈的第14/2016號行政法規第五條，現行第12/2015號法律《公共部門勞動合同制度》第四條，並聯同經第14/2020號法律修改的第5/2006號法律第十一條第一款之規定，以附註形式修改其不具期限的行政任用合同第三條款，晉級為第一職階特級技術輔導員，薪俸點為400點，自本批示摘錄公佈日起生效。

梁碧桃，司法警察局確定委任之第二職階首席行政技術助理員。根據現行第14/2009號法律第十四條第一款（二）項及第二款，經第21/2021號行政法規修改並重新公佈的第14/2016號行政法規第五條，現行《澳門公共行政工作人員通則》第十九條、第二十條第一款a）項及第二十二條第八款a）項，並聯同經第14/2020號法律修改的第5/2006號法律第十一條第一款及第二十條，以及第35/2020號行政法規第三十八條第一款（八）項、第二款及第三十九條之規定，獲確定委任為本局人員編制內行政技術助理員職程之第一職階特級行政技術助理員，薪俸點為305點，自本批示摘錄公佈日起生效。

李嘉美及蕭靜嫻，司法警察局行政任用合同第二職階一等行政技術助理員。根據現行第14/2009號法律第十四條第一款（二）項及第二款，經第21/2021號行政法規修改並重新公佈的第14/2016號行政法規第五條，現行第12/2015號法律《公共部門勞動合同制度》第四條，並聯同經第14/2020號法律修改的第

POLÍCIA JUDICIÁRIA

Extractos de despachos

Por despachos do signatário, de 7 de Janeiro de 2022:

Cheang Iat Hon e Cheang Ieng Wai, adjuntos-técnicos principais, 2.º escalão, em regime de contrato administrativo de provimento sem termo, da Polícia Judiciária — alterada, por averbamento, a cláusula 3.ª dos seus contratos administrativos de provimento sem termo ascendendo à categoria de adjunto-técnico especialista, 1.º escalão, índice 400, nos termos dos artigos 14.º, n.os 1, alínea *2)*, e 2, da Lei n.º 14/2009, vigente, 5.º do Regulamento Administrativo n.º 14/2016, alterado e republicado pelo Regulamento Administrativo n.º 21/2021, e 4.º da Lei n.º 12/2015, Regime do Contrato de Trabalho nos Serviços Públicos, vigente, conjugados com o artigo 11.º, n.º 1, da Lei n.º 5/2006, alterada pela Lei n.º 14/2020, a partir da data da publicação do presente extracto de despacho.

Liang Bitao, assistente técnica administrativa principal, 2.º escalão, de nomeação definitiva da Polícia Judiciária — nomeada, definitivamente, assistente técnica administrativa especialista, 1.º escalão, índice 305, da carreira de assistente técnico administrativo do quadro do pessoal desta Polícia, nos termos dos artigos 14.º, n.os 1, alínea *2)*, e 2, da Lei n.º 14/2009, vigente, 5.º do Regulamento Administrativo n.º 14/2016, alterado e republicado pelo Regulamento Administrativo n.º 21/2021, e 19.º, 20.º, n.º 1, alínea *a)*, e 22.º, n.º 8, alínea *a)*, do ETAPM, vigente, conjugados com os artigos 11.º, n.º 1, e 20.º da Lei n.º 5/2006, alterada pela Lei n.º 14/2020, e 38.º, n.os 1, alínea *8)*, e 2, e 39.º do Regulamento Administrativo n.º 35/2020, a partir da data da publicação do presente extracto de despacho.

Lei Ka Mei e Siu Cheng Han, assistentes técnicas administrativas de 1.ª classe, 2.º escalão, em regime de contrato administrativo de provimento, da Polícia Judiciária — alterada, por averbamento, a cláusula 3.ª dos seus contratos administrativos de provimento ascendendo à categoria de assistente técnico administrativo principal, 1.º escalão, índice 265, nos termos dos artigos 14.º, n.os 1, alínea *2)*, e 2, da Lei n.º 14/2009, vigen-

5/2006號法律第十一條第一款之規定，以附註形式修改其行政任用合同第三條款，晉級為第一職階首席行政技術助理員，薪俸點為265點，自本批示摘錄公佈日起生效。

二零二二年一月十九日於司法警察局

局長　薛仲明

te, 5.º do Regulamento Administrativo n.º 14/2016, alterado e republicado pelo Regulamento Administrativo n.º 21/2021, e 4.º da Lei n.º 12/2015, Regime do Contrato de Trabalho nos Serviços Públicos, vigente, conjugados com o artigo 11.º, n.º 1, da Lei n.º 5/2006, alterada pela Lei n.º 14/2020, a partir da data da publicação do presente extracto de despacho.

Polícia Judiciária, aos 19 de Janeiro de 2022. — O Director, *Sit Chong Meng*.

懲 教 管 理 局

批 示 摘 錄

摘錄自人力資源處處長於二零二一年十一月二十二日作出的批示：

林池勝，第一職階二等高級技術員，屬臨時委任——根據現行《澳門公共行政工作人員通則》第二十條第一款a）項、第二十二條第一款及第二款的規定，其臨時委任獲續期一年，自二零二二年一月六日起生效。

羅嘉恩，第一職階二等技術輔導員，屬臨時委任——根據現行《澳門公共行政工作人員通則》第二十條第一款a）項、第二十二條第一款及第二款的規定，其臨時委任獲續期一年，自二零二二年一月六日起生效。

摘錄自懲教管理局代副局長於二零二一年十二月三十日作出的批示：

梁少玲，第三職階勤雜人員——根據現行第12/2015號法律第四條第二款及第三款，以及第六條第四款的規定，其長期行政任用合同獲續期三年，自二零二二年三月六日起生效。

聲 明

懲教管理局第四職階警員Krishna Sharan Karki及Jitendra K C，屬行政任用合同——應其要求自二零二二年一月六日起終止其合同。

懲教管理局第四職階警員Yukta Bhandari及Ramesh Jung Thapa，屬行政任用合同——應其要求自二零二二年一月七日起終止其合同。

懲教管理局第四職階警員Nguyen Trong Tuan及Do The Anh，屬行政任用合同——應其要求自二零二二年一月十二日起終止其合同。

二零二二年一月十四日於懲教管理局

局長　趙崇遠副局長代行

DIRECÇÃO DOS SERVIÇOS CORRECCIONAIS

Extractos de despachos

Por despachos do chefe da Divisão de Recursos Humanos, de 22 de Novembro de 2021:

Lam Chi Seng, técnico superior de 2.ª classe, 1.º escalão — autorizada a recondução da nomeação provisória, pelo período de um ano, nos termos dos artigos 20.º, n.º 1, alínea *a*), e 22.º, n.os 1 e 2, do ETAPM, vigente, a partir de 6 de Janeiro de 2022.

Lo Ka Ian, adjunta-técnica de 2.ª classe, 1.º escalão — autorizada a recondução da nomeação provisória, pelo período de um ano, nos termos dos artigos 20.º, n.º 1, alínea *a*), e 22.º, n.os 1 e 2, do ETAPM, vigente, a partir de 6 de Janeiro de 2022.

Por despacho da subdirectora da DSC, substituta, de 30 de Dezembro de 2021:

Leong Sio Leng, auxiliar, 3.º escalão — renovado o contrato administrativo de provimento de longa duração, pelo período de três anos, nos termos dos artigos 4.º, n.os 2 e 3, e 6.º, n.º 4, da Lei n.º 12/2015, vigente, a partir de 6 de Março de 2022.

Declarações

Krishna Sharan Karki e Jitendra K C, guardas, 4.º escalão, em regime de contrato administrativo de provimento — rescindidos, a seus pedidos, os referidos contratos, a partir de 6 de Janeiro de 2022.

— Yukta Bhandari e Ramesh Jung Thapa, guardas, 4.º escalão, em regime de contrato administrativo de provimento — rescindidos, a seus pedidos, os referidos contratos, a partir de 7 de Janeiro de 2022.

— Nguyen Trong Tuan e Do The Anh, guardas, 4.º escalão, em regime de contrato administrativo de provimento — rescindidos, a seus pedidos, os referidos contratos, a partir de 12 de Janeiro de 2022.

Direcção dos Serviços Correccionais, aos 14 de Janeiro de 2022. — Pel'O Director dos Serviços, *Chio Song Un*, subdirector.

澳門保安部隊事務局

批示摘錄

摘錄自保安司司長於二零二二年一月七日作出之批示：

根據第13/2021號法律《保安部隊及保安部門人員通則》第二百零六條第二款，以及現行《澳門公共行政工作人員通則》第三十三條第三款之規定，自二零二二年一月十六日起終止首席警員黃秀銘及一等警員廖炳權以派駐方式在本局提供服務，並於同日返回治安警察局。

摘錄自簽署人於二零二二年一月七日之批示：

根據第14/2009號法律第十三條第一款（二）項，以及第12/2015號法律第四條之規定，以附註方式修改下列工作人員在本局擔任職務的行政任用合同第三條款，職級、薪俸點及生效日期分別如下：

自二零二一年十二月三日起：

——周文聰、丁傑、孫振圓及陳永勝晉階至第二職階特級技術輔導員，薪俸點為415；

——楊碧儀、黎耀祖、歐陽偉業、陳佩芯、區芷菱及余逸強晉階至第二職階首席技術輔導員，薪俸點為365；

——林志強晉階至第二職階首席技術稽查，薪俸點為320。

自二零二一年十二月十七日起：

——馮佩芝晉階至第二職階一等技術員，薪俸點為420；

——Lou Belisa晉階至第二職階一等公關督導員，薪俸點為320。

自二零二一年十二月二十日起：

——尹家其晉階至第三職階特級技術員，薪俸點為545；

——方玉燕及何志峰晉階至第三職階特級技術輔導員，薪俸點為430。

根據第14/2009號法律第十三條第二款（二）項，以及第12/2015號法律第四條之規定，以附註方式修改下列工作人員在本局擔任職務的行政任用合同第三條款，職級、薪俸點及生效日期分別如下：

自二零二一年十二月三十一日起：

——楊炳源、吳尾、阮表揚、羅宇新、梁銘富及廖奮志晉階至第四職階技術工人，薪俸點為180。

DIRECÇÃO DOS SERVIÇOS DAS FORÇAS DE SEGURANÇA DE MACAU

Extractos de despachos

Por despachos do Ex.mo Senhor Secretário para a Segurança, de 7 de Janeiro de 2022:

Wong Sao Meng, guarda principal e Liu Peng Kun, guarda de primeira — cessaram o destacamento para desempenho de funções na Direcção dos Serviços das Forças de Segurança de Macau, a partir de 16 de Janeiro de 2022, regressando no mesmo dia ao Corpo de Polícia de Segurança Pública, nos termos do n.º 2 do artigo 206.º da Lei n.º 13/2021 (Estatuto dos agentes das Forças e Serviços de Segurança) e do n.º 3 do artigo 33.º do ETAPM, vigente.

Por despachos da signatária, de 7 de Janeiro de 2022:

Os trabalhadores abaixo mencionados — alterada, por averbamento, a cláusula 3.ª dos seus CAP para as categorias, índices e datas indicados, nestes Serviços, nos termos do artigo 13.º, n.º 1, alínea *2*), da Lei n.º 14/2009, conjugado com o artigo 4.º da Lei n.º 12/2015:

A partir de 3 de Dezembro de 2021:

— Chau Man Chung, Ting Chieh, Sun Chan Un e Chan Weng Seng progridem para adjuntos-técnicos especialistas, 2.º escalão, índice 415;

— Ieong Pek I, Lai Io Chou, Ao Ieong Wai Ip, Chan Pui Sam, Ao Chi Leng e U Iat Keong progridem para adjuntos-técnicos principais, 2.º escalão, índice 365;

— Lam Chi Keong progride para fiscal técnico principal, 2.º escalão, índice 320.

A partir de 17 de Dezembro de 2021:

— Fong Pui Chi progride para técnica de 1.ª classe, 2.º escalão, índice 420;

— Lou Belisa progride para assistente de relações públicas de 1.ª classe, 2.º escalão, índice 320.

A partir de 20 de Dezembro de 2021:

— Van Ka Kei progride para técnico especialista, 3.º escalão, índice 545;

— Fong Iok In e Ho Chi Fong progridem para adjuntos-técnicos especialistas, 3.º escalão, índice 430.

Os trabalhadores abaixo mencionados — alterada, por averbamento, a cláusula 3.ª dos seus CAP para as categorias, índices e datas indicados, nestes Serviços, nos termos do artigo 13.º, n.º 2, alínea *2*), da Lei n.º 14/2009, conjugado com o artigo 4.º da Lei n.º 12/2015:

A partir de 31 de Dezembro de 2021:

— Ieong Peng Un, Ng Mei, Un Pio Ieong, Lo U San, Leong Meng Fu e Lio Fan Chi progridem para operários qualificados, 4.º escalão, índice 180.

根據第14/2009號法律第十三條第二款（四）項及第三款，以及第12/2015號法律第四條之規定，以附註方式修改下列工作人員在本局擔任職務的行政任用合同第三條款，職級、薪俸點及生效日期分別如下：

自二零二一年十二月二十三日起：

——吳振華、吳志榮及余錦明晉階至第九職階勤雜人員，薪俸點為220。

二零二二年一月十二日於澳門保安部隊事務局

局長　郭鳳美關務總監

Os trabalhadores abaixo mencionados — alterada, por averbamento, a cláusula 3.ª dos seus CAP para as categorias, índices e datas indicados, nestes Serviços, nos termos do artigo 13.º, n.os 2, alínea *4*), e 3, da Lei n.º 14/2009, conjugado com o artigo 4.º da Lei n.º 12/2015:

A partir de 23 de Dezembro de 2021:

— Ng Chan Wa, Ng Chi Weng e U Kam Meng progridem para auxiliares, 9.º escalão, índice 220.

Direcção dos Serviços das Forças de Segurança de Macau, aos 12 de Janeiro de 2022. — A Directora dos Serviços, *Kok Fong Mei,* superintendente-geral alfandegária.

澳門保安部隊高等學校

批示摘錄

摘錄自保安司司長於二零二一年九月十四日作出之批示：

根據第13/2021號法律第二十一條第二款之規定，與以下學員簽訂為期一年之行政任用合同及按照同一法律第三十四條第一款所指之附件四收取相應報酬，並自二零二一年九月十五日起生效，以修讀警官/消防官/關務官培訓課程：

課程名稱	學員姓名	薪俸點
第十七屆警官培訓課程	鄭志恆	310
	岑衛俊	310
	劉志輝	310
	李振洪	310
	陳家星	310
	陳毅堅	310
	林瑞龍	310
	黎振輝	310
	謝文滔	310
	張振輝	310
第十八屆警官培訓課程	鄭偉馳	250
	楊坤培	250
	陳嘉穎	250
	林智健	250
	黃詠欣	250
	張政良	250
	梁兆倫	250

ESCOLA SUPERIOR DAS FORÇAS DE SEGURANÇA DE MACAU

Extractos de despachos

Por despachos do Ex.mo Senhor Secretário para a Segurança, de 14 de Setembro de 2021:

Os alunos abaixo mencionados — contratados por contratos administrativos de provimento, pelo período de um ano, para a frequência do Curso de Formação de Oficiais, nos termos do n.º 2 do artigo 21.º da Lei n.º 13/2021, e auferem a correspondente remuneração nos termos do Anexo IV a que se refere o n.º 1 do artigo 34.º da mesma lei, a partir de 15 de Setembro de 2021.

Designação do Curso	Nome do aluno	Índice de vencimento
17.º Curso de Formação de Oficiais destinado ao CPSP	Cheang Chi Hang	310
	Sam Wai Chon	310
	Lao Chi Fai	310
	Lei Chan Hong	310
	Chan Ka Seng	310
	Chan Ngai Kin	310
	Lam Soi Long	310
	Lai Chan Fai	310
	Che Man Tou	310
	Cheong Chan Fai	310
18.º Curso de Formação de Oficiais destinado ao CPSP	Cheang Wai Chi	250
	Ieong Kuan Pui	250
	Chan Ka Weng	250
	Lam Chi Kin	250
	Wong Weng Ian	250
	Cheong Cheng Leong	250
	Leong Sio Lon	250

課程名稱	學員姓名	薪俸點
第十八屆警官培訓課程	李永雄	250
	周豪杰	250
	沈家輝	250
第十八屆消防官培訓課程	雲暉欽	250
	李瀚華	250
	杜嘉謙	250
	梁家樂	250
	鄭志豐	250

摘錄自保安司司長於二零二二年一月四日作出之批示：

根據第13/2021號法律第二條及第四十一條第二款之規定，治安警察局警司陳國藝，自二零二二年一月十五日起以一般定期委任方式在澳門保安部隊高等學校提供服務，並根據同一法律第四十四條（一）項之規定，上述人員自同日起於治安警察局轉為“附於編制”之狀況。

二零二二年一月十八日於澳門保安部隊高等學校

校長　黃子暉警務總監

Designação do Curso	Nome do aluno	Índice de vencimento
18.º Curso de Formação de Oficiais destinado ao CPSP	Lei Weng Hong	250
	Chao Hou Kit	250
	Sam Ka Fai	250
18.º Curso de Formação de Oficiais destinado ao CB	Wan Fai Iam	250
	Lei Hon Wa	250
	Tou Ka Him	250
	Leong Ka Lok	250
	Chiang Chi Fong	250

Por despacho do Ex.mo Senhor Secretário para a Segurança, de 4 de Janeiro de 2022:

Chan Kuok Ngai, comissário do CPSP — presta serviço, em regime de comissão de serviço normal, na Escola Superior das Forças de Segurança de Macau, nos termos dos artigos 2.º e 41.º, n.º 2, da Lei n.º 13/2021, a partir de 15 de Janeiro de 2022, e passa para a situação de «adido ao quadro» do CPSP, nos termos do artigo 44.º, alínea *1)*, da mesma lei, desde a mesma data.

Escola Superior das Forças de Segurança de Macau, aos 18 de Janeiro de 2022. — O Director, *Wong Chi Fai*, superintendente-geral.

教育及青年發展局

批示摘錄

摘錄自社會文化司司長二零二二年一月五日批示：

根據經第4/2017號法律及第2/2021號法律修改的第14/2009號法律附件一表二、以及經第2/2021號法律修改的第12/2015號法律第四條及第六條第二款（一）項的規定，本局下列行政任用合同人員修改為長期行政任用合同，為期三年：

何智穎及羅念玲，第二職階二等技術輔導員，薪俸點為275，自二零二一年十二月一日起生效。

摘錄自本人二零二二年一月七日批示：

應高雪芝的請求，其在本局以不具期限的行政任用合同擔任第一職階一等高級技術員的職務，自二零二二年一月十日起予以終止。

摘錄自社會文化司司長二零二二年一月十二日批示：

根據第12/2010號法律第三條、第五條、第七條及第十七條，經第4/2017號及第2/2021號法律修改的第14/2009號法律第十條第二款，經第23/2017號行政法規和第21/2021號行政法規修改的第14/2016號行政法規第五十二條至第五十五條，以及經第

DIRECÇÃO DOS SERVIÇOS DE EDUCAÇÃO E DE DESENVOLVIMENTO DA JUVENTUDE

Extractos de despachos

Por despachos da Ex.ma Senhora Secretária para os Assuntos Sociais e Cultura, de 5 de Janeiro de 2022:

O seguinte pessoal de contrato administrativo de provimento, destes Serviços — alterado para o regime de contrato administrativo de provimento de longa duração, pelo período de três anos, nos termos do mapa 2 do anexo I da Lei n.º 14/2009, alterada pelas Leis n.os 4/2017 e 2/2021, e dos artigos 4.º e 6.º, n.º 2, alínea *1)*, da Lei n.º 12/2015, alterada pela Lei n.º 2/2021:

Ho Chi Weng e Lo Nim Leng, como adjuntos-técnicos de 2.ª classe, 2.º escalão, índice 275, a partir de 1 de Dezembro de 2021.

Por despacho do signatário, de 7 de Janeiro de 2022:

Kou Sut Chi — cessou, a seu pedido, o contrato administrativo de provimento sem termo, como técnica superior de 1.ª classe, 1.º escalão, destes Serviços, a partir de 10 de Janeiro de 2022.

Por despacho da Ex.ma Senhora Secretária para os Assuntos Sociais e Cultura, de 12 de Janeiro de 2022:

Nos termos dos artigos 3.º, 5.º, 7.º e 17.º da Lei n.º 12/2010, 10.º, n.º 2 da Lei n.º 14/2009, com as alterações introduzidas pelas Leis n.os 4/2017 e 2/2021, 52.º a 55.º do Regulamento Administrativo n.º 14/2016, alterado pelos Regulamentos Administrativos

2/2021號法律修改的第12/2015號法律第四條、第五條及第六條的規定，以行政任用合同制度聘用老柏生為第十一職階中學教育一級教師，薪俸點為765，為期兩年，自二零二二年二月一日起生效。

摘錄自社會文化司司長二零二二年一月十四日批示：

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第三條第一款的規定，本局丁少雄副局長因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第三條第一款的規定，本局阮佩賢副局長因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第六條的規定，本局教育研究及規劃廳廳長黃健武因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第九條的規定，本局教育資源廳廳長馮若梅因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第十三條的規定，本局高等教育廳廳長許嘉路因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第二十條的規定，本局學生廳廳長陳旭偉因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第二十二條的規

n.os 23/2017 e 21/2021, e 4.º, 5.º e 6.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, é contratado, Lou Pak Sang, como docente do ensino secundário de nível 1, 11.º escalão, índice 765, em regime de contrato administrativo de provimento, pelo período de dois anos, a partir de 1 de Fevereiro de 2022.

Por despachos da Ex.ma Senhora Secretária para os Assuntos Sociais e Cultura, de 14 de Janeiro de 2022:

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 3.º, n.º 1, do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Teng Sio Hong, como subdirector destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 3.º, n.º 1, do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Iun Pui Iun, como subdirectora destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 6.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Wong Kin Mou, como chefe do Departamento de Estudos e Planeamento Educativos destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 9.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Fong Ieok Mui, como chefe do Departamento de Recursos Educativos destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 13.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Carlos Roberto Xavier, como chefe do Departamento do Ensino Superior destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 20.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Chan Iok Wai, como chefe do Departamento de Estudantes destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 22.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de

定，本局青年廳廳長張敏輝因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第二十四條的規定，本局行政廳廳長林文達因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第七條的規定，本局課程發展及評核處處長鄭錫杰因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第八條的規定，本局教育規劃及設施處處長黃超然因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第十條的規定，本局教研人員發展處處長黃達財因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第十一條的規定，本局資訊及科技處處長黎玉燕因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第十四條的規定，本局高教合作交流處處長馮家健因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第十五條的規定，本局素質保證處處長岑曉東因具備適當經驗及專業能力履

serviço de Cheong Man Fai, como chefe do Departamento de Juventude destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 24.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Lam Man Tat, como chefe do Departamento de Administração destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 7.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Cheang Sek Kit, como chefe da Divisão de Desenvolvimento Curricular e Avaliação destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 8.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Wong Chio In, como chefe da Divisão de Planeamento e Instalações Educativas destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 10.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Wong Tat Choi, como chefe da Divisão de Desenvolvimento de Pessoal Docente e Pessoal de Investigação destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 11.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Lai Iok In, como chefe da Divisão de Informação e Tecnologias destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 14.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Fong Ka Kin, como chefe da Divisão de Cooperação e Intercâmbio do Ensino Superior destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 15.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Sam Hio Tong, como chefe da Divisão de

行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第十七條的規定，本局中學教育處處長梁怡安因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第二十六條的規定，本局人事處處長梁麗卿因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第二條第三款（二）項、第四條及第五條、第26/2009號行政法規第二條、第三條第二款、第五條、第七條及第九條、第40/2020號行政法規第十二條的規定，以定期委任方式委任鄭嘉瑜為本局資源及福利處處長，為期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條第二款的規定，刊登委任理由及獲委任人的學歷和專業簡歷如下：

1. 委任理由

——職位出缺；

——鄭嘉瑜的個人履歷顯示其具備專業能力及才幹擔任資源及福利處處長一職。

2. 學歷

——澳門大學工商管理學士學位（管理資訊系統）；

——澳門大學工商管理碩士學位（電子商務）；

——國家行政學院公共管理碩士學位（公共管理）。

3. 專業簡歷

——2004年至2019年　教育暨青年局高級技術員；

——2011年至2012年　教育暨青年局社會暨教育輔助處代處長；

——2018年至2019年　教育暨青年局會計科職務主管；

——2019年至2021年　教育暨青年局財政暨財產管理處處長；

Garantia da Qualidade destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 17.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Leong I On, como chefe da Divisão de Ensino Secundário destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 26.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Leong Lai Heng, como chefe da Divisão de Gestão de Pessoal destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Nos termos dos artigos 2.º, n.º 3, alínea *2*), 4.º e 5.º da Lei n.º 15/2009, 2.º, 3.º, n.º 2, 5.º, 7.º e 9.º do Regulamento Administrativo n.º 26/2009, e 12.º do Regulamento Administrativo n.º 40/2020, é nomeada, em comissão de serviço, Chiang Ka U, como chefe da Divisão de Recursos e Acção Social destes Serviços, pelo período de um ano, a partir de 1 de Fevereiro de 2022.

Ao abrigo do artigo 5.º, n.º 2, da Lei n.º 15/2009, é publicada a nota relativa aos fundamentos da respectiva nomeação e o currículo académico e profissional da nomeada:

1. Fundamentos da nomeação

— Vacatura do cargo;

— Chiang Ka U possui competência profissional e aptidão para o exercício do cargo de chefe da Divisão de Recursos e Acção Social, que se demonstra pelo seu *curriculum vitae*.

2. Currículo académico

— Licenciatura em Gestão de Empresas (Informática de Gestão) pela Universidade de Macau;

— Mestrado em Gestão de Empresas (Comércio Electrónico) pela Universidade de Macau;

— Mestrado em Administração Pública pelo Instituto Nacional de Administração da China.

3. Currículo profissional:

— Técnica superior da Direcção dos Serviços de Educação e Juventude, de 2004 a 2019;

— Chefe, substituta, da Divisão de Apoios Sócio-Educativos da Direcção dos Serviços de Educação e Juventude, de 2011 a 2012;

— Chefia funcional da Secção de Contabilidade da Direcção dos Serviços de Educação e Juventude, de 2018 a 2019;

— Chefe da Divisão de Gestão Financeira e Patrimonial da Direcção dos Serviços de Educação e Juventude, de 2019 a 2021;

——2021年至今　教育及青年發展局財政財產處處長。

根據第15/2009號法律第二條第三款（二）項、第四條及第五條、第26/2009號行政法規第二條、第三條第二款、第五條、第七條及第九條、第40/2020號行政法規第十九條的規定，以定期委任方式委任譚惠嬌為本局持續教育處處長，為期一年，自二零二二年二月一日起生效。

按照第15/2009號法律第五條第二款的規定，刊登委任理由及獲委任人的學歷和專業簡歷如下：

1. 委任理由：

——職位出缺；

——譚惠嬌的個人履歷顯示其具備專業能力及才幹擔任持續教育處處長一職。

2. 學歷：

——澳門大學英文（傳意）學士學位。

3. 專業簡歷：

——2011年至2021年　教育暨青年局技術員；

——2020年至2021年　教育暨青年局黑沙環青年活動中心代主任；

——2021年至今　教育及青年發展局技術員；

——2021年至今　教育及青年發展局持續教育處代處長。

摘錄自社會文化司司長二零二二年一月十九日批示：

根據第15/2009號法律第五條第一款，第26/2009號行政法規第八條及第九條，以及第40/2020號行政法規第十六條規定，本局非高等教育廳廳長黃嘉祺因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，自二零二二年二月一日起生效。

— Chefe da Divisão Financeira e Patrimonial da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude, de 2021 até à presente data.

Nos termos dos artigos 2.º, n.º 3, alínea *2*), 4.º e 5.º da Lei n.º 15/2009, 2.º, 3.º, n.º 2, 5.º, 7.º e 9.º do Regulamento Administrativo n.º 26/2009, e 19.º do Regulamento Administrativo n.º 40/2020, é nomeada, em comissão de serviço, Tam Wai Kio, como chefe da Divisão de Educação Contínua destes Serviços, pelo período de um ano, a partir de 1 de Fevereiro de 2022.

Ao abrigo do artigo 5.º, n.º 2, da Lei n.º 15/2009, é publicada a nota relativa aos fundamentos da respectiva nomeação e ao currículo académico e profissional da nomeada:

1. Fundamentos da nomeação

— Vacatura do cargo;

— Tam Wai Kio possui competência profissional e aptidão para o exercício do cargo de chefe da Divisão de Educação Contínua, que se demonstra pelo seu *curriculum vitae*.

2. Currículo académico

— Licenciatura em Estudos Ingleses (Comunicação) pela Universidade de Macau.

3. Currículo profissional:

— Técnica da Direcção dos Serviços de Educação e Juventude, de 2011 a 2021;

— Directora, substituta, do Centro de Actividades Juvenis da Areia Preta da Direcção dos Serviços de Educação e Juventude, de 2020 a 2021;

— Técnica da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude, de 2021 até à presente data;

— Chefe, substituta, da Divisão de Educação Contínua, da Direcção dos Serviços de Educação e de Desenvolvimento da Juventude, de 2021 até à presente data.

Por despacho da Ex.ma Senhora Secretária para os Assuntos Sociais e Cultura, de 19 de Janeiro de 2022:

Nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, 8.º e 9.º do Regulamento Administrativo n.º 26/2009 e 16.º do Regulamento Administrativo n.º 40/2020, é renovada a comissão de serviço de Wong Ka Ki, como chefe do Departamento do Ensino Não Superior destes Serviços, pelo período de um ano, por possuir experiência e competência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

聲 明

茲聲明應薛榮滔的要求，其擔任本局資源及福利處處長的定期委任到期限屆滿而終止，根據第15/2009號法律第十七條第一款（一）項及現行《澳門公共行政工作人員通則》第二十三條第

Declaração

Declara-se que cessou, a seu pedido, no termo do seu prazo, a comissão de serviço de Sit Weng Tou, como chefe da Divisão de Recursos e Acção Social destes Serviços, passando a exercer funções de técnico superior assessor principal, 2.º escalão, índice 685, do quadro do pessoal destes Serviços, nos termos

六款的規定，擔任本局編制內第二職階首席顧問高級技術員，薪俸點為685，自二零二二年二月一日起生效。

二零二二年一月二十日於教育及青年發展局

局長　老柏生

dos artigos 17.º, n.º 1, alínea *1*), da Lei n.º 15/2009 e 23.º, n.º 6, do «Estatuto dos Trabalhadores da Administração Pública de Macau» vigente, a partir de 1 de Fevereiro de 2022.

Direcção dos Serviços de Educação e de Desenvolvimento da Juventude, aos 20 de Janeiro de 2022. — O Director dos Serviços, *Lou Pak Sang.*

體 育 局

批 示 摘 錄

摘錄自本件簽署人於二零二一年十一月四日作出的批示：

根據現行《澳門公共行政工作人員通則》第二十二條第三款的規定，本局臨時委任第一職階二等技術輔導員陳箱箱及楊迅燊，自二零二一年十一月二十日起獲確定委任出任該職位。

根據經第2/2021號法律修改的第12/2015號法律第四條及第六條第四款的規定，李海陽在本局擔任第三職階技術工人的長期行政任用合同，自二零二一年十一月十五日起續期三年。

摘錄自本件簽署人於二零二二年一月十九日作出的批示：

根據現行《澳門公共行政工作人員通則》第二十二條第三款的規定，本局臨時委任第一職階二等技術輔導員謝家欣、黃小艷、江翠珊及黃偉龍，自二零二二年一月十五日起獲確定委任出任該職位。

根據經第4/2017號法律及第2/2021號法律修改的第14/2009號法律第十三條第一款（二）項，以及經第2/2021號法律修改的第12/2015號法律第四條的規定，以附註方式修改阮富華在本局擔任職務的行政任用合同第三條款，晉階至第二職階二等高級技術員，薪俸點為455點，自二零二二年一月十四日起生效。

根據經第4/2017號法律及第2/2021號法律修改的第14/2009號法律第十四條第一款（二）項、第二款和第四款，以及現行《澳門公共行政工作人員通則》第二十二條第八款a）項的規定，二等技術輔導員謝家欣、黃小艷、江翠珊及黃偉龍獲確定委任為本局人員編制技術輔導員職程第一職階一等技術輔導員，自公佈日起生效。

根據經第4/2017號法律及第2/2021號法律修改的第14/2009號法律第十四條第一款（二）項、第二款和第四款，以及經第2/2021號法律修改的第12/2015號法律第四條的規定，以附註方式修改阮富華在本局擔任職務的行政任用合同第三條款，晉升為第一職階一等高級技術員，薪俸點為485點，自公佈日起生效。

INSTITUTO DO DESPORTO

Extractos de despachos

Por despachos do signatário, de 4 de Novembro de 2021:

Chan Seong Seong e Ieong Son San, adjuntos-técnicos de 2.ª classe, 1.º escalão, de nomeação provisória, deste Instituto — nomeados, definitivamente, para os mesmos lugares, nos termos do artigo 22.º, n.º 3, do ETAPM, em vigor, a partir de 20 de Novembro de 2021.

Lei Hoi Ieong — renovado o contrato administrativo de provimento de longa duração, pelo período de três anos, como operário qualificado, 3.º escalão, neste Instituto, nos termos dos artigos 4.º e 6.º, n.º 4, da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir de 15 de Novembro de 2021.

Por despachos do signatário, de 19 de Janeiro de 2022:

Che Ka Ian, Huang Xiaoyan, Kong Choi San e Vong Wai Long, adjuntos-técnicos de 2.ª classe, 1.º escalão, de nomeação provisória, deste Instituto — nomeados, definitivamente, para os mesmos lugares, nos termos do artigo 22.º, n.º 3, do ETAPM, em vigor, a partir de 15 de Janeiro de 2022.

Un Fu Wa — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento progride para técnico superior de 2.ª classe, 2.º escalão, índice 455, neste Instituto, nos termos dos artigos 13.º, n.º 1, alínea *2)*, da Lei n.º 14/2009, alterada pelas Leis n.os 4/2017 e 2/2021, e 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir de 14 de Janeiro de 2022.

Che Ka Ian, Huang Xiaoyan, Kong Choi San e Vong Wai Long, adjuntos-técnicos de 2.ª classe — nomeados, definitivamente, adjuntos-técnicos de 1.ª classe, 1.º escalão, da carreira de adjunto-técnico do quadro do pessoal deste Instituto, nos termos do artigo 14.º, n.os 1, alínea *2)*, 2 e 4, da Lei n.º 14/2009, alterada pelas Leis n.os 4/2017 e 2/2021, conjugado com o artigo 22.º, n.º 8, alínea *a)*, do ETAPM, em vigor, a partir da data da publicação.

Un Fu Wa — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento ascende a técnico superior de 1.ª classe, 1.º escalão, índice 485, neste Instituto, nos termos dos artigos 14.º, n.os 1, alínea *2)*, 2 e 4, da Lei n.º 14/2009, alterada pelas Leis n.os 4/2017 e 2/2021, e 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir da data da publicação.

根據經第2/2021號法律修改的第12/2015號法律第四條及第六條第四款的規定，歐錦、陳友源及麥劍文在本局擔任第三職階技術工人的長期行政任用合同，自二零二二年一月二十八日起續期三年。

Ao Kam, Chen Youyuan e Mak Kim Man — renovados os contratos administrativos de provimento de longa duração, pelo período de três anos, como operários qualificados, 3.º escalão, neste Instituto, nos termos dos artigos 4.º e 6.º, n.º 4, da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir de 28 de Janeiro de 2022.

聲 明

根據經第4/2009號行政法規修改的第30/2001號行政法規第三條第一款（十）項及第三款的規定，由獲認可的體育總會指定十名體育領導人員為體育委員會委員的選舉已於二零二二年一月九日進行。為著有關效力，指定下列人士擔任體育委員會委員，任期自二零二二年一月二十七日至二零二四年一月二十六日，為期兩年：

陳榮中、陳永傑、鄭國恆、趙文杜、鍾漢權、馬兆祥、何力輝、何偉權、賴百齡、李家鴻。

Declaração

Para os devidos efeitos declaro que, tendo decorrido no dia 9 de Janeiro de 2022 o acto eleitoral para a designação de dez dirigentes desportivos como membros do Conselho do Desporto pelas associações desportivas reconhecidas, nos termos do artigo 3.º, n.os 1, alínea *10)*, e 3, do Regulamento Administrativo n.º 30/2001, na redacção dos Regulamentos Administrativos n.º 4/2009, foram designados, pelo período de dois anos, a partir de 27 de Janeiro de 2022 até 26 de Janeiro de 2024, as seguintes individualidades:

Chan Veng Chong, Chan Weng Kit de Noronha, Cheang Kuok Hang, Chio Man Tou, Chung Hon Kun, De Jesus, Eurico, Ho Lek Fai, Ho Wai Kun, Lai Pak Leng, Ribeiro, Herculano Francisco Gomes.

更 正

因刊登於二零二二年一月五日第一期《澳門特別行政區公報》第二組第23頁本局的批示摘錄中文文本有不正確之處，現更正如下：

原文為：“……謝佩佩……”

應改為：“……謝珮珮……”。

二零二二年一月二十日於體育局

局長　潘永權

Rectificação

Tendo-se verificado inexactidão na versão chinesa do extracto de despacho do Instituto do Desporto, publicado no *Boletim Oficial da RAEM* n.º 1/2022, II Série, de 5 de Janeiro, a páginas 23, se rectifica o seguinte:

Onde se lê: «……謝佩佩……»

deve ler-se: «……謝珮珮……».

Instituto do Desporto, aos 20 de Janeiro de 2022. — O Presidente do Instituto, *Pun Weng Kun*.

衛 生 局

批 示 摘 錄

摘錄自社會文化司司長於二零二一年八月十三日的批示：

根據第8/99/M號法令第十八條第二款、第10/2010號法律附件表二、現行《澳門公共行政工作人員通則》第二十條第一款b）項、第二十三條第一款a）項及第二款b）項規定，本局以下專科培訓的實習醫生獲以定期委任方式續任，自下述日期起生效：

胡茵穎，自二零二一年九月一日起至二零二二年四月三十日。

SERVIÇOS DE SAÚDE

Extractos de despachos

Por despacho da Ex.ma Senhora Secretária para os Assuntos Sociais e Cultura, de 13 de Agosto de 2021:

O interno do internato complementar abaixo mencionado, destes Serviços — renovada a comissão de serviço, nos termos dos artigos 18.º, n.º 2, do Decreto-Lei n.º 8/99/M, mapa 2 do anexo à Lei n.º 10/2010, 20.º, n.º 1, alínea *b*), 23.º, n.os 1, alínea *a*), e 2, alínea *b*), do ETAPM, vigente, a partir da data a seguir indicada:

Wu Ian Weng, a partir de 1 de Setembro de 2021 a 30 de Abril de 2022.

摘錄自本局局長於二零二一年八月二十六日作出的批示：

根據經第2/2021號法律修改之第12/2015號法律第四條及第9/2010號法律第七條第一款（三）項的規定，勞愛弟在本局擔任行政任用合同第四職階一般服務助理員，以附註形式修改合同第三條款，轉為第五職階一般服務助理員，並按十月十一日第57/99/M號法令核准的《行政程序法典》第一百一十八條第二款a）項，追溯自二零二一年八月十九日起生效。

根據經第2/2021號法律修改之第12/2015號法律第四條及第9/2010號法律第七條第一款（三）項的規定，吳麗娥及黃雪梅在本局擔任行政任用合同第四職階一般服務助理員，以附註形式修改合同第三條款，轉為第五職階一般服務助理員，並按十月十一日第57/99/M號法令核准的《行政程序法典》第一百一十八條第二款a）項，追溯自二零二一年八月九日起生效。

根據經第2/2021號法律修改之第12/2015號法律第四條及第9/2010號法律第七條第一款（二）項的規定，朱詠芹在本局擔任行政任用合同第二職階一般服務助理員，以附註形式修改合同第三條款，轉為第三職階一般服務助理員，並按十月十一日第57/99/M號法令核准的《行政程序法典》第一百一十八條第二款a）項，追溯自二零二一年二月二十八日起生效。

根據經第2/2021號法律修改之第12/2015號法律第四條及第9/2010號法律第七條第一款（一）項的規定，林文耀、梁瑋儀、吳有源及陳鳳苑在本局擔任行政任用合同第一職階一般服務助理員，以附註形式修改合同第三條款，轉為第二職階一般服務助理員，並按十月十一日第57/99/M號法令核准的《行政程序法典》第一百一十八條第二款a）項，追溯自二零二一年八月十二日起生效。

摘錄自局長於二零二一年十月二十日的批示：

黃潤怡及歐陽冠強——根據經第2/2021號法律修改的第12/2015號法律第三條第二款、第五條第一款及第六條第二款（二）項的規定，自二零二一年十一月十五日起，以不具期限的行政任用合同方式獲聘用為第一職階二等技術員，試用期六個月。

摘錄自局長於二零二一年十月二十八日的批示：

應周文慧的要求，其在本局擔任第三職階特級行政技術助理員的不具期限的行政任用合同，自二零二一年十二月十三日起予以解除。

Por despachos do director dos Serviços, de 26 de Agosto de 2021:

Lou Oi Tai, auxiliar de serviços gerais, 4.º escalão, contratado por contrato administrativo de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª do contrato com referência à categoria de auxiliar de serviços gerais, 5.º escalão, nos termos dos artigos 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, e 7.º, n.º 1, alínea *3)*, da Lei n.º 9/2010, com efeitos retroactivos a partir de 19 de Agosto de 2021, ao abrigo do artigo 118.º, n.º 2, alínea *a)*, do Código do Procedimento Administrativo, aprovado pelo Decreto-Lei n.º 57/99/M, de 11 de Outubro.

Ng Lai Ngo e Wong Sut Mui, auxiliares de serviços gerais, 4.º escalão, contratados por contratos administrativos de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª dos contratos com referência à categoria de auxiliar de serviços gerais, 5.º escalão, nos termos dos artigos 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, e 7.º, n.º 1, alínea *3)*, da Lei n.º 9/2010, com efeitos retroactivos a partir de 9 de Agosto de 2021, ao abrigo do artigo 118.º, n.º 2, alínea *a)*, do Código do Procedimento Administrativo, aprovado pelo Decreto-Lei n.º 57/99/M, de 11 de Outubro.

Chu Wing Kan, auxiliar de serviços gerais, 2.º escalão, contratado por contrato administrativo de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª do contrato com referência à categoria de auxiliar de serviços gerais, 3.º escalão, nos termos dos artigos 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, e 7.º, n.º 1, alínea *2)*, da Lei n.º 9/2010, com efeitos retroactivos a partir de 28 de Fevereiro de 2021, ao abrigo do artigo 118.º, n.º 2, alínea *a)*, do Código do Procedimento Administrativo, aprovado pelo Decreto-Lei n.º 57/99/M, de 11 de Outubro.

Lam Man Io, Leong Wai I, Ung Iao Un e Chan Fong Un, auxiliares de serviços gerais, 1.º escalão, contratados por contratos administrativos de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª dos contratos com referência à categoria de auxiliar de serviços gerais, 2.º escalão, nos termos dos artigos 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, e 7.º, n.º 1, alínea *1)*, da Lei n.º 9/2010, com efeitos retroactivos a partir de 12 de Agosto de 2021, ao abrigo do artigo 118.º, n.º 2, alínea *a)*, do Código do Procedimento Administrativo, aprovado pelo Decreto-Lei n.º 57/99/M, de 11 de Outubro.

Por despachos do director dos Serviços, de 20 de Outubro de 2021:

Vong Ion I e Ao Ieong Kun Keong — contratados por contratos administrativos de provimento sem termo, por um período experimental de seis meses, como técnicos de 2.ª classe, 1.º escalão, nos termos dos artigos 3.º, n.º 2 , 5.º, n.º 1, e 6.º, n.º 2, alínea *2*), da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir de 15 de Novembro de 2021.

Por despacho do director dos Serviços, de 28 de Outubro de 2021:

Chow Man Wai — rescindido, a seu pedido, o contrato administrativo de provimento sem termo, como assistente técnico administrativo especialista, 3.º escalão, nestes Serviços, a partir de 13 de Dezembro de 2021.

摘錄自局長於二零二一年十一月一日的批示：

應林梓琪的要求，其在本局擔任第一職階一級護士的行政任用合同，自二零二一年十二月一日起予以解除。

摘錄自本局局長於二零二一年十一月五日作出的批示：

根據經第2/2021號法律修改的第12/2015號法律第四條及經第2/2021號法律修改之第14/2009號法律第十三條第一款（二）項的規定，黎彩霞在本局擔任行政任用合同第一職階首席行政技術助理員，以附註形式修改合同第三條款，轉為第二職階首席行政技術助理員，並按十月十一日第57/99/M號法令核准的《行政程序法典》第一百一十八條第二款a）項，追溯自二零二一年八月二十八日起生效。

摘錄自局長於二零二一年十一月二十四日的批示：

陳瑜——根據經第2/2021號法律修改的第12/2015號法律第三條第二款、第五條第一款及第六條第二款（一）項的規定，自二零二一年十二月十四日起，以長期行政任用合同方式獲聘用為第一職階主治醫生，為期三年，試用期六個月。

摘錄自本局局長於二零二一年十一月二十六日作出的批示：

根據經第2/2021號法律修改的第12/2015號法律第四條及經第2/2021號法律修改之第14/2009號法律第十三條第二款（二）項的規定，黃健強在本局擔任行政任用合同第二職階重型車輛司機，以附註形式修改合同第三條款，轉為第三職階重型車輛司機，自二零二一年十二月一日起生效。

根據經第2/2021號法律修改的第12/2015號法律第四條及經第2/2021號法律修改之第14/2009號法律第十三條第二款（二）項的規定，鄧志豪在本局擔任行政任用合同第二職階重型車輛司機，以附註形式修改合同第三條款，轉為第三職階重型車輛司機，自二零二一年十二月九日起生效。

根據經第2/2021號法律修改的第12/2015號法律第四條及經第2/2021號法律修改之第14/2009號法律第十三條第一款（二）項的規定，許傑文在本局擔任行政任用合同第二職階特級技術輔導員，以附註形式修改合同第三條款，轉為第三職階特級技術輔導員，自二零二一年十二月二十日起生效。

根據經第2/2021號法律修改的第12/2015號法律第四條及經第2/2021號法律修改之第14/2009號法律第十三條第一款（二）項的規定，吳盛倫及鄧勝游在本局擔任行政任用合同第一職階

Por despacho do director dos Serviços, de 1 de Novembro de 2021:

Lam Chi Kei — rescindido, a seu pedido, o contrato administrativo de provimento, como enfermeiro de grau I, 1.º escalão, nestes Serviços, a partir de 1 de Dezembro de 2021.

Por despacho do director dos Serviços, de 5 de Novembro de 2021:

Lai Choi Ha, assistente técnico administrativo principal, 1.º escalão, contratado por contrato administrativo de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª do contrato com referência à categoria de assistente técnico administrativo principal, 2.º escalão, nos termos dos artigos 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, e 13.º, n.º 1, alínea *2)*, da Lei n.º 14/2009, alterada pela Lei n.º 2/2021, com efeitos retroactivos a partir de 28 de Agosto de 2021, ao abrigo do artigo 118.º, n.º 2, alínea *a)*, do Código do Procedimento Administrativo, aprovado pelo Decreto-Lei n.º 57/99/M, de 11 de Outubro.

Por despacho do director dos Serviços, de 24 de Novembro de 2021:

Chan U — contratado por contrato administrativo de provimento de longa duração, pelo período de três anos, como médico assistente, 1.º escalão, por um período experimental de seis meses, nos termos dos artigos 3.º, n.º 2, 5.º, n.º 1, e 6.º, n.º 2, alínea *1*), da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir de 14 de Dezembro de 2021.

Por despachos do director dos Serviços, de 26 de Novembro de 2021:

Wong Kin Keung, motorista de pesados, 2.º escalão, contratado por contrato administrativo de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª do contrato com referência à categoria de motorista de pesados, 3.º escalão, nos termos dos artigos 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, e 13.º, n.º 2, alínea *2)*, da Lei n.º 14/2009, alterada pela Lei n.º 2/2021, a partir de 1 de Dezembro de 2021.

Tang Chi Hou, motorista de pesados, 2.º escalão, contratado por contrato administrativo de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª do contrato com referência à categoria de motorista de pesados, 3.º escalão, nos termos dos artigos 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, e 13.º, n.º 2, alínea *2)*, da Lei n.º 14/2009, alterada pela Lei n.º 2/2021, a partir de 9 de Dezembro de 2021.

Hui Kit Man, adjunto-técnico especialista, 2.º escalão, contratado por contrato administrativo de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª do contrato com referência à categoria de adjunto-técnico especialista, 3.º escalão, nos termos dos artigos 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, e 13.º, n.º 1, alínea *2)*, da Lei n.º 14/2009, alterada pela Lei n.º 2/2021, a partir de 20 de Dezembro de 2021.

Ng Seng Lon e Tang Seng Iao, adjuntos-técnicos de 2.ª classe, 1.º escalão, contratados por contratos administrativos de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª dos contratos com referência à categoria de adjunto-

二等技術輔導員，以附註形式修改合同第三條款，轉為第二職階二等技術輔導員，自二零二一年十二月十六日起生效。

摘錄自局長於二零二一年十二月六日的批示：

根據現行第12/2015號法律第十二條第一款（三）項的規定，本局第一職階一級護士劉昶顯，其行政任用合同自二零二一年十二月七日起失效，並於同日起終止在本局的職務。

摘錄自局長於二零二一年十二月七日的批示：

應余詠嫦的要求，其在本局擔任第一職階一級護士的行政任用合同，自二零二一年十二月十七日起予以解除。

應李潔茵的要求，其在本局擔任第一職階一級護士的行政任用合同，自二零二一年十二月十七日起予以解除。

應吳麗欣的要求，其在本局擔任第一職階一級護士的行政任用合同，自二零二一年十二月二十日起予以解除。

應黃明詩的要求，其在本局擔任第一職階一級護士的行政任用合同，自二零二一年十二月二十三日起予以解除。

按照二零二二年一月十一日本局社區醫療衛生範疇副局長的批示：

梁煒潮、余穎琛——獲准許從事護士職業，牌照編號分別是：E-3551、E-3552。

（是項刊登費用為 $329.00）

摘錄自社會文化司司長於二零二二年一月十二日的批示：

根據按第18/2009號法律第十三條第五款、現行《澳門公共行政工作人員通則》第二十二條第八款a）項、第三十六條第一款d）項及第三十七條第一款，經第4/2017號法律修改的第14/2009號法律第十四條第二款以及經第23/2017號行政法規修改的第14/2016號行政法規第三十七條第一款的規定，在二零二一年十一月二十四日第四十七期《澳門特別行政區公報》第二組內公佈以有限制及透過審查文件，專業面試及公開討論履歷方式進行晉級開考，以填補衛生局人員編制護士職程第一職階護士長十三缺的最後成績名單分別排名第一名至第十三名的合格投考人黃綺雯、馬倩瑜、楊少明、廖佩雯、楊秀娟、譚佩雯、李紅梅、何煥嫦、陳偉兒、馮燕虹、高潤培、蕭成璧及洪麗姬，獲確定委任為本局人員編制內護士職程第一職階護士長，自本批示摘錄於《澳門特別行政區公報》公佈的日期起生效。

-técnico de 2.ª classe, 2.º escalão, nos termos dos artigos 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, e 13.º, n.º 1, alínea *2)*, da Lei n.º 14/2009, alterada pela Lei n.º 2/2021, a partir de 16 de Dezembro de 2021.

Por despacho do director dos Serviços, de 6 de Dezembro de 2021:

Lau Chong Hin — cessou as funções de enfermeiro de grau I, 1.º escalão, em regime de contrato administrativo de provimento, nestes Serviços, nos termos do artigo 12.º, n.º 1, alínea *3)*, da Lei n.º 12/2015, a partir de 7 de Dezembro de 2021.

Por despachos do director dos Serviços, de 7 de Dezembro de 2021:

U Weng Seong — rescindido, a seu pedido, o contrato administrativo de provimento, como enfermeiro de grau I, 1.º escalão, nestes Serviços, a partir de 17 de Dezembro de 2021.

Li Yingyin — rescindido, a seu pedido, o contrato administrativo de provimento, como enfermeiro de grau I, 1.º escalão, nestes Serviços, a partir de 17 de Dezembro de 2021.

Ng Lai Ian — rescindido, a seu pedido, o contrato administrativo de provimento, como enfermeiro de grau I, 1.º escalão, nestes Serviços, a partir de 20 de Dezembro de 2021.

Wong Meng Si — rescindido, a seu pedido, o contrato administrativo de provimento, como enfermeiro de grau I, 1.º escalão, nestes Serviços, a partir de 23 de Dezembro de 2021.

Por despachos do subdirector dos Serviços da Área de Cuidados de Saúde Comunitários, de 11 de Janeiro de 2022:

Leong Wai Chio e U Weng Sam — concedidas autorizações para o exercício privado da profissão de enfermeiro, licenças n.os E-3551 e E-3552.

(Custo desta publicação $ 329,00)

Por despachos da Ex.ma Senhora Secretária para os Assuntos Sociais e Cultura, de 12 de Janeiro de 2022:

Wong I Man, Ma Sin U, Ieong Sio Meng, Liu Pui Man Maria, Ieong Sao Kun, Tam Pui Man, Lei Hong Mui, Ho Woon Sheung, Chan Vai I, Fong In Hong, Kou Ion Pui, Sio Seng Pek e Hong Lai Kei, 1.º a 13.º classificados, respectivamente, no concurso de acesso, condicionado, documental, entrevista profissional e discussão pública de currículo, para o preenchimento de treze vagas de enfermeiro-chefe, 1.º escalão, da carreira de enfermagem do quadro destes Serviços, a que se refere a lista classificativa final inserta no *Boletim Oficial da RAEM* n.º 47/2021, II Série, de 24 de Novembro — nomeados, definitivamente, enfermeiros-chefes, 1.º escalão, da carreira de enfermagem do quadro destes Serviços, nos termos dos artigos 13.º, n.º 5, da Lei n.º 18/2009, 22.º, n.º 8, alínea *a)*, 36.º, n.º 1, alínea *d)*, 37.º, n.º 1, do ETAPM, vigente, 14.º, n.º 2, da Lei n.º 14/2009, alterada pela Lei n.º 4/2017, 37.º, n.º 1, do Regulamento Administrativo n.º 14/2016, alterado pelo Regulamento Administrativo n.º 23/2017, a partir da data da publicação do presente extracto de despacho no *Boletim Oficial da RAEM*.

摘錄自局長於二零二二年一月十二日的批示：

根據經第2/2021號法律修改的第14/2009號法律第十四條第一款（二）項、第二款、經第21/2021號行政法規重新公佈和重新編號的第14/2016號行政法規第五條以及現行《澳門公共行政工作人員通則》第二十二條第八款a）項的規定，第二職階二等高級技術員梁子晴，獲確定委任為本局人員編制內高級技術員職程第一職階一等高級技術員，自本批示摘錄於《澳門特別行政區公報》公佈的日期起生效。

根據經第2/2021號法律修改的第14/2009號法律第十四條第一款（二）項、第二款、經第21/2021號行政法規重新公佈和重新編號的第14/2016號行政法規第五條以及經第2/2021號法律修改的第12/2015號法律第四條的規定，盧康莉在本局擔任行政任用合同第二職階首席技術員，以附註形式修改合同第三條款，轉為第一職階特級技術員，自本批示摘錄於《澳門特別行政區公報》公佈的日期起生效。

根據經第2/2021號法律修改的第14/2009號法律第十四條第一款（二）項、第二款、經第21/2021號行政法規重新公佈和重新編號的第14/2016號行政法規第五條以及經第2/2021號法律修改的第12/2015號法律第四條的規定，林家威在本局擔任行政任用合同第二職階二等技術員，以附註形式修改合同第三條款，轉為第一職階一等技術員，自本批示摘錄於《澳門特別行政區公報》公佈的日期起生效。

根據經第2/2021號法律修改的第14/2009號法律第十四條第一款（二）項、第二款、經第21/2021號行政法規重新公佈和重新編號的第14/2016號行政法規第五條以及經第2/2021號法律修改的第12/2015號法律第四條的規定，林文遠和蘇嘉雯在本局擔任行政任用合同第二職階首席行政技術助理員，以附註形式修改合同第三條款，轉為第一職階特級行政技術助理員，自本批示摘錄於《澳門特別行政區公報》公佈的日期起生效。

根據經第2/2021號法律修改的第14/2009號法律第十四條第二款及第二十七條第四款、經第21/2021號行政法規重新公佈和重新編號的第14/2016號行政法規第五條以及經第2/2021號法律修改的第12/2015號法律第四條的規定，潘詠珊在本局擔任行政任用合同第二職階一等翻譯員，以附註形式修改合同第三條款，轉為第一職階首席翻譯員，自本批示摘錄於《澳門特別行政區公報》公佈的日期起生效。

Por despachos do director dos Serviços, de 12 de Janeiro de 2022:

Leong Chi Cheng, técnico superior de 2.ª classe, 2.º escalão — nomeado, definitivamente, técnico superior de 1.ª classe, 1.º escalão, da carreira de técnico superior do quadro destes Serviços, nos termos dos artigos 14.º, n.os 1, alínea *2*), e 2, da Lei n.º 14/2009, alterada pela Lei n.º 2/2021, 5.º do Regulamento Administrativo n.º 14/2016, republicado e renumerado pelo Regulamento Administrativo n.º 21/2021, e 22.º, n.º 8, alínea *a*), do ETAPM, vigente, a partir da data da publicação do presente extracto de despacho no *Boletim Oficial da RAEM*.

Lou Hong Lei, técnico principal, 2.º escalão, contratado por contrato administrativo de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª do contrato com referência à categoria de técnico especialista, 1.º escalão, nos termos dos artigos 14.º, n.os 1, alínea *2*), e 2, da Lei n.º 14/2009, alterada pela Lei n.º 2/2021, 5.º do Regulamento Administrativo n.º 14/2016, republicado e renumerado pelo Regulamento Administrativo n.º 21/2021, e 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir da data da publicação do presente extracto de despacho no *Boletim Oficial da RAEM*.

Lam Ka Wai, técnico de 2.ª classe, 2.º escalão, contratado por contrato administrativo de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª do contrato com referência à categoria de técnico de 1.ª classe, 1.º escalão, nos termos dos artigos 14.º, n.os 1, alínea *2*), e 2, da Lei n.º 14/2009, alterada pela Lei n.º 2/2021, 5.º do Regulamento Administrativo n.º 14/2016, republicado e renumerado pelo Regulamento Administrativo n.º 21/2021, e 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir da data da publicação do presente extracto de despacho no *Boletim Oficial da RAEM*.

Lam Man Un e Sou Ka Man, assistentes técnicos administrativos principais, 2.º escalão, contratados por contratos administrativos de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª dos contratos com referência à categoria de assistente técnico administrativo especialista, 1.º escalão, nos termos dos artigos 14.º, n.os 1, alínea *2*), e 2, da Lei n.º 14/2009, alterada pela Lei n.º 2/2021, 5.º do Regulamento Administrativo n.º 14/2016, republicado e renumerado pelo Regulamento Administrativo n.º 21/2021, e 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir da data da publicação do presente extracto de despacho no *Boletim Oficial da RAEM*.

Pun Weng San, intérprete-tradutor de 1.ª classe, 2.º escalão, contratado por contrato administrativo de provimento, destes Serviços — alterada, por averbamento, a cláusula 3.ª do contrato com referência à categoria de intérprete-tradutor de principal, 1.º escalão, nos termos dos artigos 14.º, n.º 2, e 27.º, n.º 4, da Lei n.º 14/2009, alterada pela Lei n.º 2/2021, 5.º do Regulamento Administrativo n.º 14/2016, republicado e renumerado pelo Regulamento Administrativo n.º 21/2021, e 4.º da Lei n.º 12/2015, alterada pela Lei n.º 2/2021, a partir da data da publicação do presente extracto de despacho no *Boletim Oficial da RAEM*.

按照二零二二年一月十二日本局社區醫療衛生範疇副局長的批示：

彭家麗——獲准許從事護士職業，牌照編號是：E-3553。

（是項刊登費用為 $306.00）

楊麗敏——恢復第T-0577號治療師（職業治療）執業牌照之許可。

（是項刊登費用為 $318.00）

周栩烘、梁晉康——獲准許從事治療師（職業治療）職業，牌照編號分別是：T-0865、T-0866。

（是項刊登費用為 $329.00）

呂悅珍、區焯賢——獲准許從事治療師（言語治療）職業，牌照編號分別是：T-0867、T-0868。

（是項刊登費用為 $329.00）

岑杰豪——獲准許從事治療師（物理治療）職業，牌照編號是：T-0869。

（是項刊登費用為 $318.00）

Por despachos do subdirector dos Serviços da Área de Cuidados de Saúde Comunitários, de 12 de Janeiro de 2022:

Pang Ka Lai — concedida autorização para o exercício privado da profissão de enfermeiro, licença n.º E-3553.

(Custo desta publicação $ 306,00)

Ieong Lai Man — concedida autorização para o reinício da profissão de terapeuta (terapia ocupacional), licença n.º T-0577.

(Custo desta publicação $ 318,00)

Chao Hoi Hong e Leong Chon Hong — concedidas autorizações para o exercício privado da profissão de terapeuta (terapia ocupacional), licenças n.os T-0865 e T-0866.

(Custo desta publicação $ 329,00)

Loi Ut Chan e Ao Cheok In — concedidas autorizações para o exercício privado da profissão de terapeuta (terapia da fala), licenças n.os T-0867 e T-0868.

(Custo desta publicação $ 329,00)

Sam Kit Hou — concedida autorização para o exercício privado da profissão de terapeuta (fisioterapia), licença n.º T-0869.

(Custo desta publicação $ 318,00)

聲 明

根據現行《澳門公共行政工作人員通則》第四十五條的規定，本局不具期限的行政任用合同第一職階特級行政技術助理員馮志偉，自二零二一年十二月二十三日起，即在財政局擔任職務的日起終止於本局的職務。

為有關效力，茲聲明本局以不具期限的行政任用合同方式擔任第三職階重型車輛司機郭觀維，自二零二一年十二月九日起因達年齡上限，根據現行《澳門公共行政工作人員通則》第四十四條第一款c）項及第12/2015號法律第十五條（一）項的規定，終止其在本局的職務。

為有關效力，茲聲明本局以不具期限的行政任用合同方式擔任第八職階一般服務助理員梁德輝，自二零二一年十二月二十八日起因達年齡上限，根據現行《澳門公共行政工作人員通則》第四十四條第一款c）項及第12/2015號法律第十五條（一）項的規定，終止其在本局的職務。

二零二二年一月十九日於衛生局

局長　羅奕龍

Declarações

Para os devidos efeitos se declara que Fong Chi Wai, assistente técnico administrativo especialista, 1.º escalão, em regime de contrato administrativo de provimento sem termo, cessou as suas funções nestes Serviços, nos termos do artigo 45.º do ETAPM, vigente, a partir de 23 de Dezembro de 2021, data em que iniciou funções na Direcção dos Serviços de Finanças.

— Para os devidos efeitos se declara que Kuok Kun Wai, motorista de pesados, 3.º escalão, em regime de contrato administrativo de provimento sem termo, nestes Serviços, rescindido o contrato, por atingir o limite de idade, nos termos do artigo 44.º, n.º 1, alínea *c),* do ETAPM, vigente, conjugado com o artigo 15.º, alínea *1),* da Lei n.º 12/2015, a partir de 9 de Dezembro de 2021.

— Para os devidos efeitos se declara que Leong Tak Fai, auxiliar de serviços gerais, 8.º escalão, em regime de contrato administrativo de provimento sem termo, nestes Serviços, rescindido o contrato, por atingir o limite de idade, nos termos do artigo 44.º, n.º 1, alínea *c),* do ETAPM, vigente, conjugado com o artigo 15.º, alínea *1),* da Lei n.º 12/2015, a partir de 28 de Dezembro de 2021.

Serviços de Saúde, aos 19 de Janeiro de 2022. — O Director dos Serviços, *Lo Iek Long.*

藥 物 監 督 管 理 局

批 示 摘 錄

按照局長於二零二二年一月十三日之批示：

核准向位元堂（澳門）有限公司發給“位元堂中藥房（第四分店）”准照，編號為第254號以及其營業地點為澳門路環路氹連貫公路第一地塊第三地段澳門巴黎人巴黎人購物中心1樓層3102號舖，總辦事處位於澳門氹仔路氹金光大道望德聖母灣大馬路澳門威尼斯人度假村酒店大運河購物中心2118號舖。

（是項刊登費用為 $454.00）

按照副局長於二零二二年一月十三日之批示：

應准照持有人順盈藥房有限公司的申請，取消編號為第364號以及商號名稱為“順盈藥房”的准照，該商號的登記營業地點為澳門友誼大馬路391-H號怡山、怡海地下E座。

（是項刊登費用為 $363.00）

按社會文化司司長於二零二二年一月十四日作出的批示：

黃威威原屬社會文化司司長辦公室不具期限的行政任用合同第二職階顧問高級技術員，根據第12/2015號法律第九條的規定，以相同職級及職階調職至本局工作，自二零二二年一月十七日起生效。

按照局長於二零二二年一月十七日之批示：

核准向品鶴一人有限公司發給藥物產品出入口及批發商號“品鶴”准照，編號為第320號以及其營業地點為澳門缸瓦巷18-A號信善大廈地下A座，總辦事處位於澳門嘉野度將軍街10號基成大廈3樓B座。

（是項刊登費用為 $420.00）

核准向德仁有限公司發給“國泰藥房（花城2店）”准照，編號為第397號以及其營業地點為澳門氹仔埃武拉街239號花城（利鴻大廈）地下Q座，總辦事處位於澳門賣草地街2-C號裕運大廈地下A座。

（是項刊登費用為 $386.00）

核准向善康國際（澳門）藥業有限公司發給藥物產品出入口及批發商號“善康國際（澳門）”准照，編號為第321號以及其營

INSTITUTO PARA A SUPERVISÃO E ADMINISTRAÇÃO FARMACÊUTICA

Extractos de despachos

Por despacho do presidente, de 13 de Janeiro de 2022:

Autorizada a emissão do alvará n.º 254 de farmácia chinesa «Wai Yuen Tong (Quarto Sucursal)», com o local de funcionamento na Estrada do Istmo, Lote 3 da Parcela 1, 1.º andar, Loja 3102, Shoppes at Parisian, O Parisiense Macau, Coloane-Macau, à Wai Yuen Tong (Macau) Limitada, com sede na Estrada da Baía de Nossa Senhora da Esperança, Loja 2118, 3.º andar, da Grand Canal Shoppes, The Venetian Macao-Resort-Hotel, Taipa-Macau.

(Custo desta publicação $ 454,00)

Por despacho do vice-presidente, de 13 de Janeiro de 2022:

Conforme o pedido do portador da titularidade, Son Ieng Farmácia Limitada, é cancelado o alvará n.º 364 da Farmácia «Son Ieng», com o local de funcionamento registado na Avenida da Amizade, n.º 391-H, Edifício I San, Edifício I Hoi, r/c «E», Macau.

(Custo desta publicação $ 363,00)

Por despacho da Ex.ma Senhora Secretária para os Assuntos Sociais e Cultura, de 14 de Janeiro de 2022:

Wong Wai Wai, técnico superior assessor, 2.º escalão, contratado por contrato administrativo de provimento sem termo, do Gabinete da Secretária para os Assuntos Sociais e Cultura — mudado para este Instituto, na mesma categoria e escalão, nos termos do artigo 9.º da Lei n.º 12/2015, a partir de 17 de Janeiro de 2022.

Por despachos do presidente, de 17 de Janeiro de 2022:

Autorizada a emissão do alvará n.º 320 da Firma de Importação, Exportação e Venda por Grosso de Produtos Farmacêuticos «Pin He», com o local de funcionamento na Travessa da Louça n.º 18-A, Edifício Son Sin, r/c «A», Macau, à Pin He Sociedade Unipessoal Limitada, com sede na Rua do General Galhardo n.º 10, Edifício Kei Seng, 3.º andar «B», Macau.

(Custo desta publicação $ 420,00)

Autorizada a emissão do alvará n.º 397 de Farmácia «Qualipharm (Sucursal Fa Seng 2)», com o local de funcionamento na Rua de Évora n.º 239, Fa Seng (Edifício Lei Hong) r/c «Q», Taipa-Macau, à De Ren Limitada, com sede na Rua da Palha n.º 2-C, Edifício U Van, r/c «A», Macau.

(Custo desta publicação $ 386,00)

Autorizada a emissão do alvará n.º 321 de Firma de Importação, Exportação e Venda por Grosso de Produtos Farmacêuticos «Sanko Internacional (MACAU)», com o local de funcionamento na Rua de S. José n.º 9-A, Edifício Tak

業地點為澳門三巴仔街9-A號德昌大廈地下C座，總辦事處位於澳門南灣大馬路241號德豐大廈7樓E座。

（是項刊登費用為 $420.00）

二零二二年一月二十一日於藥物監督管理局

局長　蔡炳祥

Cheong, r/c «C», Macau, à Companhia Farmacêutica Sanko Internacional (Macau) Limitada, com sede na Avenida da Praia Grande n.º 241, Edifício Tak Fong, 7.º andar «E», Macau.

(Custo desta publicação $ 420,00)

Instituto para a Supervisão e Administração Farmacêutica, aos 21 de Janeiro de 2022. — O Presidente do Instituto, *Choi Peng Cheong.*

社會保障基金

批示摘錄

摘錄自社會文化司司長於二零二二年一月十二日作出的批示：

根據第15/2009號法律第五條及第26/2009號行政法規第八條及第九條之規定，本基金下列主管人員因具備適當經驗及專業能力履行職務，其定期委任獲續期兩年，由二零二二年四月一日至二零二四年三月三十一日止。

楊婉麗擔任中央公積金制度廳廳長；

冼偉棠擔任組織及資訊處處長；

伍婉華擔任行政及財政處處長。

二零二二年一月十八日於社會保障基金

行政管理委員會主席　容光耀

FUNDO DE SEGURANÇA SOCIAL

Extracto de despacho

Por despachos da Ex.ma Senhora Secretária para os Assuntos Sociais e Cultura, de 12 de Janeiro de 2022:

O seguinte pessoal de chefia, deste FSS — renovadas as comissões de serviço, pelo período de dois anos, nos termos dos artigos 5.º da Lei n.º 15/2009 e 8.º e 9.º do Regulamento Administrativo n.º 26/2009, por possuírem competências profissionais e experiências adequadas para o exercício das suas funções, de 1 de Abril de 2022 a 31 de Março de 2024.

Ieong Iun Lai, como chefe do Departamento do Regime de Previdência Central;

Sin Vai Tong, como chefe da Divisão de Organização e Informática;

Ng Un Wa, como chefe da Divisão Administrativa e Financeira.

Fundo de Segurança Social, aos 18 de Janeiro de 2022. — O Presidente do Conselho de Administração, *Iong Kong Io.*

文化發展基金

批示摘錄

摘錄自社會文化司司長於二零二二年一月七日作出的批示：

根據第15/2009號法律第五條第一款和第26/2009號行政法規第八條的規定，本基金資助管理處處長許鑫源因具備適當經驗及專業能力履行職務，其定期委任自二零二二年一月十七日起獲續期一年。

二零二二年一月十八日於文化發展基金

行政委員會委員　王勁秋

FUNDO DE DESENVOLVIMENTO DA CULTURA

Extracto de despacho

Por despacho da Ex.ma Senhora Secretária para os Assuntos Sociais e Cultura, de 7 de Janeiro de 2022:

Hoi Kam Un — renovada a comissão de serviço, pelo período de um ano, como chefe da Divisão de Gestão de Apoio Financeiro deste Fundo, nos termos dos artigos 5.º, n.º 1, da Lei n.º 15/2009, e 8.º do Regulamento Administrativo n.º 26/2009, a partir de 17 de Janeiro de 2022, por possuir experiência e competência professional adequadas para o exercício das suas funções.

Fundo de Desenvolvimento da Cultura, aos 18 de Janeiro de 2022. — O Membro do Conselho de Administração, *Wong Keng Chao.*

土地工務運輸局

批示摘錄

摘錄自本局代局長於二零二一年十二月二十八日作出的批示：

根據現行第12/2015號法律第四條第二款及第三款，及第六條第四款之規定，本局第一職階首席技術員歐燁珉的長期行政任用合同，自二零二二年二月二十七日起續期三年。

聲明

為著有關效力，茲聲明，本局局長陳寶霞工程師因自願退休而離職，由二零二二年一月十五日起生效。

二零二二年一月二十日於土地工務運輸局

代局長　黃昭文

DIRECÇÃO DOS SERVIÇOS DE SOLOS, OBRAS PÚBLICAS E TRANSPORTES

Extracto de despacho

Por despacho do director, substituto, destes Serviços, de 28 de Dezembro de 2021:

Ao Ip Man, técnico principal, 1.º escalão, destes Serviços — renovado o seu contrato administrativo de provimento de longa duração, pelo período de três anos, nos termos dos artigos 4.º, n.os 2 e 3, e 6.º, n.º 4, da Lei n.º 12/2015, em vigor, a partir de 27 de Fevereiro de 2022.

Declaração

Para os devidos efeitos se declara que a engenheira Chan Pou Ha, directora destes Serviços, foi desligado do serviço, para efeitos de aposentação voluntária, a partir de 15 de Janeiro de 2022.

Direcção dos Serviços de Solos, Obras Públicas e Transportes, aos 20 de Janeiro de 2022. — O Director dos Serviços, substituto, *Wong Chiu Man*.

海事及水務局

批示摘錄

摘錄自代局長於二零二一年十二月十四日作出的批示：

根據第12/2015號法律第二十四條第三款（二）項的規定，與黃海鋒簽訂不具期限的行政任用合同，擔任第一職階二等高級技術員，自二零二二年二月十六日起生效。

摘錄自代局長於二零二一年十二月三十日作出的批示：

根據第12/2015號法律第六條第一款及第五款的規定，陳家豪在本局擔任第一職階技術工人職務的行政任用合同，自二零二二年三月一日起續期一年。

二零二二年一月十七日於海事及水務局

局長　黃穗文

DIRECÇÃO DOS SERVIÇOS DE ASSUNTOS MARÍTIMOS E DE ÁGUA

Extractos de despachos

Por despacho do director dos Serviços, substituto, de 14 de Dezembro de 2021:

Wong Hoi Fong, técnico superior de 2.ª classe, 1.º escalão — contratado em regime de contrato administrativo de provimento sem termo, nos termos do artigo 24.º, n.º 3, alínea *2)*, da Lei n.º 12/2015, a partir de 16 de Fevereiro de 2022.

Por despacho do director dos Serviços, substituto, de 30 de Dezembro de 2021:

Chan Ka Hou — renovado o contrato administrativo de provimento, pelo período de um ano, como operário qualificado, 1.º escalão, nestes Serviços, nos termos do artigo 6.º, n.os 1 e 5, da Lei n.º 12/2015, a partir de 1 de Março de 2022.

Direcção dos Serviços de Assuntos Marítimos e de Água, aos 17 de Janeiro de 2022. — A Directora dos Serviços, *Wong Soi Man*.

環 境 保 護 局

批 示 摘 錄

摘錄自運輸工務司司長於二零二一年十二月二十九日作出的批示：

根據第15/2009號法律第二條第三款（二）項、第四條及第五條，並配合第26/2009號行政法規第二條第二款、第三條第二款、第五條及第七條，以及經第38/2020號行政法規修改的第14/2009號行政法規第九條的規定，以定期委任方式委任徐成輝為本局環境污染防治處處長，自二零二二年二月一日起，為期一年。

按照第15/2009號法律第五條第二款的規定，現刊登委任理由及獲委任人的學歷和專業簡歷如下：

1. 委任理由：

——職位出缺；

——徐成輝的個人履歷顯示其具備專業能力及才幹擔任本局環境污染防治處處長一職。

2. 學歷：

——澳門大學土木工程學系學士；

——澳門大學土木工程學系碩士（環境及水力工程專業）；

——澳門大學工商管理碩士。

3. 專業簡歷：

——二零零九年十月至今，環境保護局高級技術員；

——二零二一年八月至今，環境保護局環境污染防治處代處長。

摘錄自環境保護局局長於二零二一年十二月二十九日作出的批示：

鄭彩珍——根據第12/2015號法律第四條第二款及第六條第一款規定，於本局擔任第二職階勤雜人員的行政任用合同獲續期一年，自二零二二年三月十日起生效。

摘錄自環境保護局局長於二零二二年一月七日作出的批示：

根據第12/2015號法律第四條第一款及第六條第一款的規定，以行政任用合同形式聘用施耿超在本局擔任第一職階二等高級技術員，薪俸點為430點，為期一年，自二零二二年二月二十三日起生效。

DIRECÇÃO DOS SERVIÇOS DE PROTECÇÃO AMBIENTAL

Extractos de despachos

Por despacho do Ex.mo Senhor Secretário para os Transportes e Obras Públicas, de 29 de Dezembro de 2021:

Choi Seng Fai — nomeado, em comissão de serviço, pelo período de um ano, chefe da Divisão de Prevenção da Poluição Ambiental destes Serviços, nos termos da alínea *2*) do n.º 3 do artigo 2.º e dos artigos 4.º e 5.º da Lei n.º 15/2009, conjugados com o n.º 2 do artigo 2.º, n.º 2 do artigo 3.º e artigos 5.º e 7.º do Regulamento Administrativo n.º 26/2009, e nos termos do artigo 9.º do Regulamento Administrativo n.º 14/2009, alterado pelo Regulamento Administrativo n.º 38/2020, a partir de 1 de Fevereiro de 2022.

Ao abrigo do n.º 2 do artigo 5.º da Lei n.º 15/2009, é publicada a nota relativa aos fundamentos da respectiva nomeação e ao currículo académico e profissional do nomeado:

1) Fundamentos da nomeação:

— Vacatura do cargo;

— Choi Seng Fai possui competência profissional e aptidão para o exercício do cargo de chefe da Divisão de Prevenção da Poluição Ambiental destes Serviços, o que se demonstra pelo *curriculum vitae*.

2) Currículo académico:

— Licenciatura em Engenharia Civil na Universidade de Macau;

— Mestrado em Engenharia Civil na variante de Engenharia Ambiental e Hidráulica na Universidade de Macau;

— Mestrado em Gestão de Empresas na Universidade de Macau.

3) Currículo profissional:

— De Outubro de 2009 até à presente data, técnico superior na Direcção dos Serviços de Protecção Ambiental;

— De Agosto de 2021 até à presente data, chefe, substituto, da Divisão de Prevenção da Poluição Ambiental na Direcção dos Serviços de Protecção Ambiental.

Por despacho do director da Direcção dos Serviços de Protecção Ambiental, de 29 de Dezembro de 2021:

Cheang Choi Chan — renovado o contrato administrativo de provimento, pelo período de um ano, como auxiliar, 2.º escalão, para exercer funções nestes Serviços, nos termos dos artigos 4.º, n.º 2, e 6.º, n.º 1, da Lei n.º 12/2015, a partir de 10 de Março de 2022.

Por despachos do director da Direcção dos Serviços de Protecção Ambiental, de 7 de Janeiro de 2022:

Si Kang Chio — provido por contrato administrativo de provimento, pelo período de um ano, como técnico superior de 2.ª classe, 1.º escalão, índice 430, nestes Serviços, nos termos do n.º 1 do artigo 4.º e do n.º 1 do artigo 6.º da Lei n.º 12/2015, a partir de 23 de Fevereiro de 2022.

根據第12/2015號法律第四條第一款及第六條第一款的規定，以行政任用合同形式聘用周俊宏在本局擔任第一職階二等高級技術員，薪俸點為430點，為期一年，自二零二二年三月一日起生效。

聲 明

為有關效力，茲聲明，本局行政任用合同第二職階顧問高級技術員余采風，應其要求，自二零二二年一月十九日起終止其在本局之職務。

二零二二年一月十九日於環境保護局

局長　譚偉文

Chao Chon Wang — provido por contrato administrativo de provimento, pelo período de um ano, como técnico superior de 2.ª classe, 1.º escalão, índice 430, nestes Serviços, nos termos do n.º 1 do artigo 4.º e do n.º 1 do artigo 6.º da Lei n.º 12/2015, a partir de 1 de Março de 2022.

Declaração

Para os devidos efeitos se declara que Iu Choi Fong, técnica superior assessora, 2.º escalão, contratada por contrato administrativo de provimento cessou, a seu pedido, as suas funções nestes Serviços, a partir de 19 de Janeiro de 2022.

Direcção dos Serviços de Protecção Ambiental, aos 19 de Janeiro de 2022. — O Director dos Serviços, *Tam Vai Man*.

交 通 事 務 局

批 示 摘 錄

摘錄自局長於二零二二年一月六日作出的批示：

根據現行第14/2009號法律第十三條第一款（二）項，以及現行第12/2015號法律第四條第二款及第三款的規定，以附註方式修改下列工作人員在本局擔任職務的行政任用合同第三條款如下：

梁卓文，晉階至第三職階特級技術員，薪俸點為545，自二零二一年十二月十二日起生效；

張展健及鄧雪媚，晉階至第三職階特級技術輔導員，薪俸點為430，自二零二一年十二月十二日起生效；

何靈楓，晉階至第二職階特級技術員，薪俸點為525，自二零二一年十二月二十五日起生效；

劉易思，晉階至第二職階首席技術員，薪俸點為470，自二零二一年十二月二十五日起生效。

摘錄自運輸工務司司長於二零二二年一月七日作出的批示：

根據第15/2009號法律第五條及第26/2009號行政法規第八條的規定，本局車輛及駕駛員事務廳廳長李穎康因具備適當經驗及專業能力履行職務，故其定期委任獲續期一年，由二零二二年二月十七日起生效。

DIRECÇÃO DOS SERVIÇOS PARA OS ASSUNTOS DE TRÁFEGO

Extractos de despachos

Por despachos do director dos Serviços, de 6 de Janeiro de 2022:

Os trabalhadores abaixo mencionados — alterada, por averbamento, a cláusula 3.ª dos seus contratos administrativos de provimento para exercerem funções nestes Serviços, nos termos dos artigos 13.º, n.º 1, alínea *2)*, da Lei n.º 14/2009, em vigor, e 4.º, n.os 2 e 3, da Lei n.º 12/2015, em vigor, conforme a seguir discriminados:

Leong Cheok Man, progride para técnico especialista, 3.º escalão, índice 545, a partir de 12 de Dezembro de 2021;

Cheong Chin Kin Arnaldo e Tang Sut Mei, progridem para adjuntos-técnicos especialistas, 3.º escalão, índice 430, a partir de 12 de Dezembro de 2021;

Ho Leng Fong, progride para técnica especialista, 2.º escalão, índice 525, a partir de 25 de Dezembro de 2021;

Lau Iek Si, progride para técnica principal, 2.º escalão, índice 470, a partir de 25 de Dezembro de 2021.

Por despacho do Ex.mo Senhor Secretário para os Transportes e Obras Públicas, de 7 de Janeiro de 2022:

Lei Veng Hong — renovada a comissão de serviço, pelo período de um ano, como chefe do Departamento de Assuntos de Veículos e Condutores destes Serviços, nos termos dos artigos 5.º da Lei n.º 15/2009 e 8.º do Regulamento Administrativo n.º 26/2009, por possuir competência profissional e experiência adequadas para o exercício das suas funções, a partir de 17 de Fevereiro de 2022.

摘錄自副局長於二零二二年一月七日作出的批示：

根據現行第12/2015號法律第四條第二款、第三款、第六條第二款（一）項及第三款的規定，本局第一職階一等高級技術員梁錦儀的行政任用合同修改為長期行政任用合同，自二零二一年十月三十一日起生效，為期三年。

摘錄自代局長於二零二二年一月十一日作出的批示：

根據現行第14/2009號法律第十三條第二款（三）項及第三款，以及現行第12/2015號法律第四條第二款及第三款的規定，以附註方式修改劉偉成、陳德文、蔡曉新、鄭德清及何進雄在本局擔任職務的行政任用合同第三條款，晉階至第六職階重型車輛司機，薪俸點為240，自二零二一年十二月十五日起生效。

根據現行第14/2009號法律第十三條第一款（一）項及第三款，以及現行第12/2015號法律第四條第二款及第三款的規定，以附註方式修改余妙菁在本局擔任職務的行政任用合同第三條款，晉階至第二職階首席特級行政技術助理員，薪俸點為355，自二零二一年十二月二十六日起生效。

根據現行第14/2009號法律第十四條第二款、第三款、第四款及第二十七條第四款、現行第14/2016號行政法規第五條，以及現行第12/2015號法律第四條第二款及第三款的規定，以附註方式修改麥潔鋒在本局擔任職務的行政任用合同第三條款，晉級至第一職階主任翻譯員，薪俸點為600，自公佈日起生效。

根據現行第14/2009號法律第十三條第一款（二）項，以及現行第12/2015號法律第四條第二款及第三款的規定，以附註方式修改下列工作人員在本局擔任職務的行政任用合同第三條款如下：

麥潔鋒，晉階至第二職階首席翻譯員，薪俸點為565，自二零二一年十二月二十五日起生效；

鍾樹邦，晉階至第二職階首席技術員，薪俸點為470，自二零二一年十二月二十五日起生效；

黃文康，晉階至第二職階首席技術輔導員，薪俸點為365，自二零二一年十二月二十五日起生效；

許偉成，晉階至第二職階首席車輛查驗員，薪俸點為365，自二零二一年十二月二十五日起生效；

陳健波，晉階至第三職階顧問高級技術員，薪俸點為650，自二零二一年十二月二十六日起生效；

梁美智及施松柏，晉階至第三職階特級技術員，薪俸點為545，自二零二一年十二月二十六日起生效；

Por despacho do subdirector dos Serviços, de 7 de Janeiro de 2022:

Leong Kam I, contratada por contrato administrativo de provimento, destes Serviços — alterado para o regime de contrato administrativo de provimento de longa duração, pelo período de três anos, como técnica superior de 1.ª classe, 1.º escalão, nos termos dos artigos 4.º, n.os 2 e 3, e 6.º, n.os 2, alínea *1)*, e 3, da Lei n.º 12/2015, em vigor, a partir de 31 de Outubro de 2021.

Por despachos do director dos Serviços, substituto, de 11 de Janeiro de 2022:

Lao Wai Seng, Chan Tak Man, Choi Hio San, Cheang Tak Cheng e Ho Chon Hong António — alterada, por averbamento, a cláusula 3.ª dos seus contratos administrativos de provimento progridem para motoristas de pesados, 6.º escalão, índice 240, nestes Serviços, nos termos dos artigos 13.º, n.os 2, alínea *3)*, e 3, da Lei n.º 14/2009, em vigor, e 4.º, n.os 2 e 3, da Lei n.º 12/2015, em vigor, a partir de 15 de Dezembro de 2021.

Yu Mio Cheng — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento progride para assistente técnica administrativa especialista principal, 2.º escalão, índice 355, nestes Serviços, nos termos dos artigos 13.º, n.os 1, alínea *1)*, e 3, da Lei n.º 14/2009, em vigor, e 4.º, n.os 2 e 3, da Lei n.º 12/2015, em vigor, a partir de 26 de Dezembro de 2021.

Mak Kit Na — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento ascendendo a intérprete-tradutora chefe, 1.º escalão, índice 600, nestes Serviços, nos termos dos artigos 14.º, n.os 2, 3 e 4, e 27.º, n.º 4, da Lei n.º 14/2009, em vigor, e 5.º do Regulamento Administrativo n.º 14/2016, em vigor, conjugados com o artigo 4.º, n.os 2 e 3, da Lei n.º 12/2015, em vigor, a partir da data da sua publicação.

Os trabalhadores abaixo mencionados — alterada, por averbamento, a cláusula 3.ª dos seus contratos administrativos de provimento para exercerem funções nestes Serviços, nos termos dos artigos 13.º, n.º 1, alínea *2)*, da Lei n.º 14/2009, em vigor, e 4.º, n.os 2 e 3, da Lei n.º 12/2015, em vigor, conforme a seguir discriminados:

Mak Kit Na, progride para intérprete-tradutora principal, 2.º escalão, índice 565, a partir de 25 de Dezembro de 2021;

Chong Su Pong, progride para técnico principal, 2.º escalão, índice 470, a partir de 25 de Dezembro de 2021;

Vong Man Hong, progride para adjunto-técnico principal, 2.º escalão, índice 365, a partir de 25 de Dezembro de 2021;

Hoi Wai Seng, progride para inspector de veículos principal, 2.º escalão, índice 365, a partir de 25 de Dezembro de 2021;

Chan Kin Po, progride para técnico superior assessor, 3.º escalão, índice 650, a partir de 26 de Dezembro de 2021;

Leung Mei Chi e Si Chong Pak, progridem para técnicos especialistas, 3.º escalão, índice 545, a partir de 26 de Dezembro de 2021;

鄒孝秋、趙善烽、鍾世傑、顏清艾及陳賢永，晉階至第三職階特級車輛查驗員，薪俸點為430，自二零二一年十二月二十六日起生效；

葉綺雯、潘小華、羅苑珊及林楚君，晉階至第三職階特級行政技術助理員，薪俸點為330，自二零二一年十二月二十六日起生效；

陳詠琛，晉階至第二職階二等技術輔導員，薪俸點為275，自二零二一年十二月二十九日起生效；

盧欣淇，晉階至第二職階特級技術輔導員，薪俸點為415，自二零二一年十二月三十日起生效。

根據現行第14/2009號法律第十四條第一款（二）項、第二款、第三款及第四款、現行第14/2016號行政法規第五條，以及現行第12/2015號法律第四條第二款及第三款的規定，以附註方式修改下列工作人員在本局擔任職務的行政任用合同第三條款，自公佈日起生效：

鍾樹邦，晉級至第一職階特級技術員，薪俸點為505；

陳嘉欣、羅雪兒及黃文康，晉級至第一職階特級技術輔導員，薪俸點為400；

許偉成，晉級至第一職階特級車輛查驗員，薪俸點為400；

陳詠琛，晉級至第一職階一等技術輔導員，薪俸點為305。

摘錄自代局長於二零二二年一月十二日作出的批示：

根據現行第14/2009號法律第十四條第一款（二）項、第二款、第三款及第四款、現行第14/2016號行政法規第五條，以及現行第12/2015號法律第四條第二款及第三款的規定，以附註方式修改劉易思在本局擔任職務的行政任用合同第三條款，晉級至第一職階特級技術員，薪俸點為505，自公佈日起生效。

更 正

茲因刊登於二零二一年十二月二十九日第五十二期《澳門特別行政區公報》第二組第19810頁及第19811頁之本局批示摘錄的中文文本有不正確之處，現更正如下：

原文為：“梁詠欣”

應改為：“梁詠怡”；

原文為：“蕭煥焜”

應改為：“蕭煥昆”。

二零二二年一月十七日於交通事務局

局長　林衍新

Chao Hao Chao, Chio Sin Fong, Chong Sai Kit, Ngan Cheng Ngai e Chan In Weng, progridem para inspectores de veículos especialistas, 3.º escalão, índice 430, a partir de 26 de Dezembro de 2021;

Ip I Man, Pun Sio Wa, Lo Un San e Lam Cho Kuan, progridem para assistentes técnicas administrativas especialistas, 3.º escalão, índice 330, a partir de 26 de Dezembro de 2021;

Chan Weng Sam, progride para adjunta-técnica de 2.ª classe, 2.º escalão, índice 275, a partir de 29 de Dezembro de 2021;

Lou Yan Kei, progride para adjunta-técnica especialista, 2.º escalão, índice 415, a partir de 30 de Dezembro de 2021.

Os trabalhadores abaixo mencionados — alterada, por averbamento, a cláusula 3.ª dos seus contratos administrativos de provimento para o exercício de funções nestes Serviços, nos termos dos artigos 14.º, n.os 1, alínea *2)*, 2, 3 e 4, da Lei n.º 14/2009, em vigor, e 5.º do Regulamento Administrativo n.º 14/2016, em vigor, conjugados com o artigo 4.º, n.os 2 e 3, da Lei n.º 12/2015, em vigor, a partir da data da sua publicação:

Chong Su Pong, ascendendo a técnico especialista, 1.º escalão, índice 505;

Chan Ka Ian, Lo Sui I e Vong Man Hong, ascendendo a adjuntos-técnicos especialistas, 1.º escalão, índice 400;

Hoi Wai Seng, ascendendo a inspector de veículos especialista, 1.º escalão, índice 400;

Chan Weng Sam, ascendendo a adjunta-técnica de 1.ª classe, 1.º escalão, índice 305.

Por despacho do director dos Serviços, substituto, de 12 de Janeiro de 2022:

Lau Iek Si — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento ascendendo a técnica especialista, 1.º escalão, índice 505, nestes Serviços, nos termos dos artigos 14.º, n.os 1, alínea *2)*, 2, 3 e 4, da Lei n.º 14/2009, em vigor, e 5.º do Regulamento Administrativo n.º 14/2016, em vigor, conjugados com o artigo 4.º, n.os 2 e 3, da Lei n.º 12/2015, em vigor, a partir da data da sua publicação.

Rectificações

Por ter saído inexactos, na versão chinesa, os extractos de despachos destes Serviços, publicado no *Boletim Oficial da RAEM* n.º 52/2021, II Série, de 29 de Dezembro, a páginas 19810 e 19811, procede-se às seguintes rectificações:

Onde se lê: «梁詠欣»

deve ler-se: «梁詠怡»;

Onde se lê: «蕭煥焜»

deve ler-se: «蕭煥昆».

Direcção dos Serviços para os Assuntos de Tráfego, aos 17 de Janeiro de 2022. — O Director dos Serviços, *Lam Hin San*.

郵 電 局

批 示 摘 錄

摘錄自運輸工務司司長於二零二一年十二月十七日作出的批示：

根據第15/2009號法律第二條第二款（二）項、第四條及第五條，並配合第26/2009號行政法規第二條、第七條及第九條的規定，自二零二二年二月一日起，以定期委任方式委任葉頌華為郵電局副局長，為期一年。而其資訊科技發展及資源管理廳廳長之定期委任根據第15/2009號法律第十七條第一款（二）項由同日起終止。

按照第15/2009號法律第五條第二款的規定，現刊登委任理由及獲委任人的學歷和專業簡歷如下：

1. 委任理由：

——職位出缺；

——葉頌華的個人履歷顯示其具備專業能力及才幹擔任本局副局長一職。

2. 學歷：

——土木工程學士 ；

——地質工程碩士。

3. 專業簡歷：

——2002年5月起加入公職，並在建設發展辦公室擔任職務；

——2003年5月至2005年10月在二零零五年東亞運動會體育設施的規劃、設計及興建工作小組擔任土木工程技術援助職務；

——2005年10月至2007年12月在體育、社會及公益設施工作小組擔任土木工程技術援助職務；

——2008年1月至2013年8月，土地工務運輸局高級技術員；

——2013年9月至2015年3月，郵政局高級技術員；

——2013年9月至2014年2月，供應、工程、車間及總務範圍代協調員；

——2014年3月至2015年3月，供應、工程、車間及總務範圍協調員；

DIRECÇÃO DOS SERVIÇOS DE CORREIOS E TELECOMUNICAÇÕES

Extracto de despacho

Por despacho do Ex.mo Senhor Secretário para os Transportes e Obras Públicas, de 17 de Dezembro de 2021:

Ip Chong Wa — nomeada, em comissão de serviço, pelo período de um ano, a partir de 1 de Fevereiro de 2022, subdirectora da Direcção dos Serviços de Correios e Telecomunicações, nos termos dos artigos 2.º, n.º 2, alínea *2*), 4.º e 5.º da Lei n.º 15/2009, conjugados com os artigos 2.º, 7.º e 9.º do Regulamento Administrativo n.º 26/2009, cessando nessa data a comissão de serviço como chefe do Departamento de Desenvolvimento das Tecnologias da Informação e Gestão de Recursos, para que foi nomeada originalmente, de acordo com o disposto no artigo 17.º, n.º 1, alínea *2*), da Lei n.º 15/2009.

Ao abrigo do artigo 5.º, n.º 2, da Lei n.º 15/2009, é publicada a nota relativa aos fundamentos da respectiva nomeação e ao currículo académico e profissional da nomeada:

1. Fundamentos da nomeação:

— Vacatura do cargo;

— Ip Chong Wa possui competência profissional e aptidão para assumir o cargo de subdirectora destes Serviços, o que se demonstra pelo *curriculum vitae*.

2. Currículo académico:

— Licenciatura em engenharia civil;

— Mestrado em engenharia geológica.

3. Currículo profissional:

— Ingresso na Administração Pública de Macau, em Maio de 2002, no Gabinete para o Desenvolvimento de Infra-estruturas;

— Funções de apoio técnico de engenharia civil, de Maio de 2003 a Outubro de 2005, no Grupo de Trabalho para coordenar os trabalhos de planeamento, concepção e construção das instalações desportivas dos Jogos da Ásia Oriental para o ano de 2005;

— Funções de apoio técnico de engenharia civil, de Outubro de 2005 a Dezembro de 2007, no Grupo de Trabalho para as Instalações Desportivas, Sociais e de Interesse Público;

— Técnica superior da Direcção dos Serviços de Solos, Obras Públicas e Transportes, de Janeiro de 2008 a Agosto de 2013;

— Técnica superior da Direcção dos Serviços de Correios, de Setembro de 2013 a Março de 2015;

— Coordenadora, substituta, da Área de Aprovisionamento, Obras, Oficinas e Serviços Gerais, de Setembro de 2013 a Fevereiro de 2014;

— Coordenadora da Área de Aprovisionamento, Obras, Oficinas e Serviços Gerais, de Março de 2014 a Março de 2015;

——2015年4月至2016年12月，工程暨支援處處長；

——2017年1月至2017年12月，工程、設施管理及總務處處長；

——2017年3月至2017年12月擔任優化《無線寬頻系統-Wifi任我行》工作組副組長；

——自2018年1月至5月，以代任方式擔任資訊科技發展及資源管理廳廳長；

——自2018年6月至今，資訊科技發展及資源管理廳廳長；

——自2021年5月至今，以代任方式擔任副局長。

二零二二年一月十四日於郵電局

局長　劉惠明

— Chefe da Divisão de Obras e Apoio, de Abril de 2015 a Dezembro de 2016;

— Chefe da Divisão de Obras, Gestão de Instalações e Serviços Gerais, de Janeiro de 2017 a Dezembro de 2017;

— Subchefia do Grupo de Trabalho de «Optimização do Sistema de Banda Larga Sem Fios — WiFi GO», de Março de 2017 a Dezembro de 2017;

— Chefe do Departamento de Desenvolvimento das Tecnologias da Informação e Gestão de Recursos, em regime de substituição, de Janeiro de 2018 a Maio de 2018;

— Chefe do Departamento de Desenvolvimento das Tecnologias da Informação e Gestão de Recursos, desde Junho de 2018 até à presente data;

— Subdirectora, em regime de substituição, desde Maio de 2021 até à presente data.

Direcção dos Serviços de Correios e Telecomunicações, aos 14 de Janeiro de 2022. — A Directora dos Serviços, *Lau Wai Meng.*

房 屋 局

批 示 摘 錄

摘錄自運輸工務司司長於二零二二年一月十三日作出的批示：

根據第15/2009號法律第五條及第26/2009號行政法規第八條之規定，郭惠嫻在房屋局擔任副局長因具備合適的管理能力及專業經驗，故其定期委任獲續期一年，自二零二二年二月一日起生效。

根據第15/2009號法律第五條及第26/2009號行政法規第八條之規定，陳君傑及許麗鳴，分別在房屋局擔任社會房屋處處長及組織處處長，因具備合適的管理能力及專業經驗，故其定期委任獲續期一年，自二零二二年一月二十九日起生效。

摘錄自簽署人於二零二二年一月十四日作出的批示：

根據第12/2015號法律第四條、第六條第二款（一）項及第三款，以及現行第14/2009號法律第十三條第一款（二）項和第四款的規定，以附註形式修改下列工作人員在房屋局擔任職務之行政任用合同第二條款及第三條款，修改為長期行政任用合同，為期

INSTITUTO DE HABITAÇÃO

Extractos de despachos

Por despachos do Ex.mo Senhor Secretário para os Transportes e Obras Públicas, de 13 de Janeiro de 2022:

Kuoc Vai Han — renovada a comissão de serviço, pelo período de um ano, como vice-presidente deste Instituto, nos termos dos artigos 5.º da Lei n.º 15/2009 e 8.º do Regulamento Administrativo n.º 26/2009, por possuir capacidade de gestão e experiência profissional adequadas para o exercício das suas funções, a partir de 1 de Fevereiro de 2022.

Chan Kuan Kit e Hui Lai Meng — renovadas as comissões de serviço, pelo período de um ano, respectivamente, como chefes da Divisão de Habitação Social e da Divisão de Organização deste Instituto, nos termos dos artigos 5.º da Lei n.º 15/2009 e 8.º do Regulamento Administrativo n.º 26/2009, por possuírem capacidade de gestão e experiência profissional adequadas para o exercício das suas funções, a partir de 29 de Janeiro de 2022.

Por despachos do signatário, de 14 de Janeiro de 2022:

Os trabalhadores abaixo mencionados — alteradas, por averbamento, as cláusulas 2.ª e 3.ª dos seus contratos administrativos de provimento para contratos administrativos de provimento de longa duração, pelo período de três anos, para o exercício de funções no Instituto de Habitação, progredindo para adjuntos-técnicos de 2.ª classe, 2.º escalão, índice 275, nos termos do artigo 4.º, da alínea *1*) do n.º 2 e do n.º 3 do

三年，並晉升至第二職階二等技術輔導員，薪俸點275，自下述日期起生效：

蔡淑儀、梁麗霞，自二零二一年十二月二十六日起生效；

陳潤歡、陳淑婷、梁人鳳、葉偉恆、吳婉婷、王耀銘、劉雪梅，自二零二二年一月六日起生效。

二零二二年一月二十日於房屋局

局長　山禮度

artigo 6.º da Lei n.º 12/2015, e da alínea *2*) do n.º 1 e do n.º 4 do artigo 13.º da Lei n.º 14/2009, vigente, a partir das datas a seguir indicadas:

Choi Sok I e Leong Lai Ha, a partir de 26 de Dezembro de 2021;

Chan Ion Fun, Chan Sok Teng, Liang Renfeng, Ip Wai Hang, Ng Un Teng, Wong Io Meng e Lao Sut Mui, a partir de 6 de Janeiro de 2022.

Instituto de Habitação, aos 20 de Janeiro de 2022. — O Presidente do Instituto, *Arnaldo Santos*.

建設發展辦公室

批示摘錄

摘錄自本辦公室主任於二零二二年一月四日作出的批示：

鄭鳳瑜——根據現行第14/2009號法律第十三條第一款（二）項及第四款，以及第12/2015號法律第四條第二款及第三款的規定，以附註形式修改其在本辦公室的行政任用合同第三條款，晉階至第二職階二等技術輔導員，薪俸點275，自二零二二年一月二日起生效。

摘錄自本辦公室主任於二零二二年一月十七日作出的批示：

高詠然——根據現行第14/2009號法律第十四條第一款（二）項、第二款，以及第12/2015號法律第四條的規定，以附註形式修改其在本辦公室的行政任用合同第三條款，轉為第一職階一等技術輔導員，薪俸點305，自本批示摘錄於《澳門特別行政區公報》公佈日起生效。

黃超文——根據現行第14/2009號法律第十四條第一款（二）項、第二款，以及第12/2015號法律第四條的規定，以附註形式修改其在本辦公室的不具期限的行政任用合同第三條款，轉為第一職階一等技術輔導員，薪俸點305，自本批示摘錄於《澳門特別行政區公報》公佈日起生效。

二零二二年一月十九日於建設發展辦公室

主任　林煒浩

GABINETE PARA O DESENVOLVIMENTO DE INFRA-ESTRUTURAS

Extractos de despachos

Por despacho do coordenador deste Gabinete, de 4 de Janeiro de 2022:

Cheang Fong U — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento progredindo para adjunto-técnico de 2.ª classe, 2.º escalão, índice 275, neste Gabinete, nos termos da alínea *2*) dos n.os 1 e 4 do artigo 13.º da Lei n.º 14/2009, em vigor, e do artigo 4.º, n.os 2 e 3, da Lei n.º 12/2015, a partir de 2 de Janeiro de 2022.

Por despachos do coordenador deste Gabinete, de 17 de Janeiro de 2022:

Kou Weng In — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento com referência à categoria de adjunto-técnico de 1.ª classe, 1.º escalão, índice 305, neste Gabinete, nos termos da alínea *2*) do n.º 1 e do n.º 2 do artigo 14.º da Lei n.º 14/2009, em vigor, conjugado com o artigo 4.º da Lei n.º 12/2015, a partir da data da publicação do presente extracto de despacho no *Boletim Oficial da RAEM*.

Wong Chio Man — alterada, por averbamento, a cláusula 3.ª do seu contrato administrativo de provimento sem termo com referência à categoria de adjunto-técnico de 1.ª classe, 1.º escalão, índice 305, neste Gabinete, nos termos da alínea *2*) do n.º 1 e do n.º 2 do artigo 14.º da Lei n.º 14/2009, em vigor, conjugado com o artigo 4.º da Lei n.º 12/2015, a partir da data da publicação do presente extracto de despacho no *Boletim Oficial da RAEM*.

Gabinete para o Desenvolvimento de Infra-estruturas, aos 19 de Janeiro de 2022. — O Coordenador do Gabinete, *Lam Wai Hou*.

下一頁 Página seguinte