

第 33/2014 號行政長官公告

Aviso do Chefe do Executivo n.º 33/2014

中華人民共和國是國際海事組織的成員國及一九七四年十一月一日訂於倫敦的《國際海上人命安全公約》（下稱“公約”）的締約國；

國際海事組織海上安全委員會於一九八三年六月十七日透過第MSC.6(48)號決議通過了公約的修正案；

中華人民共和國於一九九九年十二月十三日以照會通知聯合國秘書長，經修訂的公約自一九九九年十二月二十日起適用於澳門特別行政區；

基於此，行政長官根據澳門特別行政區第3/1999號法律第六條第一款的規定，命令公佈包含上指修正案的MSC.6(48)號決議的中文及英文正式文本。

公約英文正式文本及葡文譯本已刊登於一九九九年十二月六日《澳門特別行政區公報》第四十九期第一組。

二零一四年八月八日發佈。

行政長官 崔世安

Considerando que a República Popular da China é um Estado Membro da Organização Marítima Internacional, bem como Estado Contratante da Convenção Internacional para a Salvaguarda da Vida Humana no Mar, concluída em Londres em 1 de Novembro de 1974, adiante designada por Convenção;

Considerando igualmente que, em 17 de Junho de 1983, o Comité de Segurança Marítima da Organização Marítima Internacional, através da sua resolução MSC.6(48), adoptou emendas à Convenção;

Considerando ainda que a República Popular da China, por nota datada de 13 de Dezembro de 1999, notificou o Secretário-Geral das Nações Unidas sobre a aplicação da Convenção, tal como emendada, na Região Administrativa Especial de Macau, a partir de 20 de Dezembro de 1999;

O Chefe do Executivo manda publicar, nos termos do n.º 1 do artigo 6.º da Lei n.º 3/1999 da Região Administrativa Especial de Macau, a resolução MSC.6(48), que contém as referidas emendas, nos seus textos autênticos em línguas chinesa e inglesa.

O texto autêntico da Convenção em língua inglesa, acompanhado da tradução para a língua portuguesa, encontra-se publicado no *Boletim Oficial* da Região Administrativa Especial de Macau n.º 49, I Série, de 6 de Dezembro de 1999.

Promulgado em 8 de Agosto de 2014.

O Chefe do Executivo, *Chui Sai On*.

海安會決議 MSC.6 (48)

(1983年6月17日通過)

通過 1974 年國際海上人命安全公約的修正條款

海上安全委員會，

注意到 1974 年國際海上人命安全公約（以下簡稱“公約”）有關公約附則（不包括附則的第一章在內）修正程序的第八條第二款，

還注意到 公約賦予海上安全委員會審議並通過公約修正案的職能，

已在其第四十八屆會議上審議了公約的建議修正案，並根據公約第八條第二款第（一）項的規定將修正案分發，

1 根據公約第八條第二款第（四）項的規定通過公約第 II-1 章、第 II-2 章、第 III 章、第 IV 章和第 VII 章的修正條款，其文字見本決議的附件；

2 根據公約第八條第二款第（六）項第 2 目第（2）段的規定作出決定：第 II-1 章、第 II-2 章、第 III 章、第 IV 章和第 VII 章的修正條款將被視為已在 1986 年 1 月 1 日得到接受，除非在該日期前，本公約有三分之一以上的締約國政府或其商船隊的總噸位不少於世界商船隊總噸位 50% 的締約國政府已發出通知反對這些修正條款；

3 請各締約國政府注意，根據公約第八條第二款第（七）項第 2 目，在按上述第 2 段規定得到接受後，公約第 II-1 章、第 II-2 章、第 III 章、第 IV 章和第 VII 章的修正條款將於 1986 年 7 月 1 日生效；

4 要求秘書長根據公約第八條第二款第（五）項的規定，將本決議和附件中修正條款文本的核證無誤的副本發給 1974 年國際海上人命安全公約的所有締約國；

5 還要求秘書長把本決議和附件的副本發給不是公約締約國的本組織成員國。

1. 海上安全委員會於 1983 年 6 月在其第四十八屆會議上通過了 1974 年國際海上人命安全公約（SOLAS）的修正條款。公約三十三個締約國的代表出席了該屆會議，所有的修正條款的文本皆按第八條第二款第（四）項規定的程序獲得了通過。

2. 該屆會議通過的修正條款包括第 III 章和第 VII 章的新文本以及第 II-1 章、第 II-2 章和第 IV 章的修正條款。

3. 在第 II-1 章、第 II-2 章、第 III 章和第 VII 章中採用了十進位編號制。除通用的海制單位被認為更適宜之處外，公制和英制單位均已被國際標準單位替代。

4. 相互參照皆以簡明形式給出，例如，第 II-2/10.4 條意即第 II-2 章第 10 條之 4。

5. 公約及其修正條款中所有的腳註係指公約所附的有關建議及其他國際公認的標準。海上安全委員會指出，這些腳註並不構成公約的一部分，之所以加上是為了參閱方便。這些腳註可以改動，以反映它們所提及的決議、建議或文件的修改。所提及的將由大會第十三屆常會審議的決議草案，將由大會通過後的已正式編號的決議替代。

第一部分

第 II-1 章

構造 - 分艙與穩性、機電設備

用附於決議 MSC.1 (XLV) 內的 1974 年國際海上人命安全公約的第 II-1 章修正條款的文本替代公約的第 II-1 章，並作如下進一步修訂：

第 1 條

適用範圍

第 1.1 段第 3 行：把“1984 年 9 月 1 日”改為“1986 年 7 月 1 日”。

第 1.3.2 段第 2 行：把“1984 年 9 月 1 日”改為“1986 年 7 月 1 日”。

把整個第 2 段改為：

“除非另有明文規定，對 1986 年 7 月 1 日之前建造的船舶，主管機關應保證使之符合經決議 MSC.1 (XLV) 修正的 1974 年國際海上人命安全公約第 II-1 章中所適用的要求。”

刪去腳註。

第 3 段第 4 行和第 9 行：把“1984 年 9 月 1 日”改為“1986 年 7 月 1 日”。

刪去第 5 段，把第 6 段改為第 5 段。

第 3 條

與 C、D 和 E 部分有關的定義

把第 19 段更改如下：

“‘化學品液貨船’是指建造或改造用於散裝運輸下述文件所列任何一種液貨的貨船，以適用者為準：

- .1 經海安會決議 MSC.4(48)通過的、可由本組織加以修訂的《國際散裝運輸危險化學品船舶構造和設備規則》(以下簡稱《國際散裝化學品規則》)的第十七章；或
- .2 經本組織大會決議 A.212(VII)通過的、本組織已作修訂或可加修訂的《散裝運輸危險化學品船舶構造和設備規則》(以下簡稱《散裝化學品規則》)的第六章。”

把第 20 段改為：

“‘氣體運輸船’是指建造或改建用於散裝運輸下述文件所列任何液化氣體或其他產品的貨船，以適用者為準：

- .1 經海安會決議 MSC.5(48)通過、可由本組織修訂的《國際散裝運輸液化氣體船舶構造和設備規則》(以下簡稱《國際氣體船規則》)的第十九章；或

- .2 經本組織大會決議 A.328 (IX) 通過、本組織已作修訂或可加修訂的《散裝運輸液化氣體船舶構造和設備規則》(以下簡稱《氣體船規則》) 的第十九章。”

第 5 條

客船滲透率

把第 4.1 段改為：

“4.1 若係第 6.5 條所要求的特種分艙，則位於機器處所之前或之後的整個部分的同一平均滲透率應為 $95-35b/V$ ，其中：

b = 位於機器處所以前或以後、限界線之下、肋板頂部之上（或內底之上、或艏尖艙之上，視情而定）、被指定為或用作為裝貨處所、煤或燃油艙、物料儲藏室、行李郵件室、錨鏈艙和淡水櫃等處所的總容積；

V = 船舶在限界線以下、機器處所以前或以後部分的總容積。”

第 6 條

客船許可艙長

將本條第 5 段的標題改為：“達到第 III 章第 20 條之 1.2 要求的船舶之特殊分艙標準。”

增加新的 5.3 和 5.4 如下：

“5.3 計算可浸長度曲線時應採用本章第 5 條之 4 所給出的關於滲透率的特種規定。

5.4 如主管機關在考慮了擬定的航程性質和條件後認為只要滿足第 II-2 章和本章的其他規定即已足夠，則可不必再符合本款的要求。”

第 41 條

主要電源和照明系統

第 1.3 段第 3 行，在“流向”後加上“交替”。

第 42 條

客船應急電源

本條之 2.1.1 修改如下：

“.1 第 III 章第 11 條之 4 和第 III 章第 15 條之 7 所要求的每一集合站、登乘站和舷外。”

增加新條文 2.1.2 如下：

“.2 第 III 章第 11 條之 5 所要求的通達集合站與登乘站的走廊、梯道和出入口。”

將 2.1.2 至 2.1.7 編號分別改為 2.1.2 至 2.1.8。

第 2.3.4 段第 2 行，將“手動失火報警器”改為“手工操作報警按鈕”。

第 43 條

貨船應急電源

本條之 2.1 修改如下：

“2.1 第 III 章第 11 條之 4 和第 III 章第 15 條之 8 所要求的每一集合站、登乘站和舷外的 3 小時應急照明。”

第 2.4.4 段第 2 行，將“手動失火報警器”改為“手工操作報警按鈕”。

第 49 條

在駕駛台對推進機器進行控制

第 3 段第 6 行，用“主要機器處所”代替“機器處所”。

用“主要機器控制艙室”代替“機器控制艙室”。

第 5 段第 3 行，“推力”前加上“推進器的”。

第二部分

第 II-2 章

構造 – 防火、探火和滅火

將附於決議 MSC.1 (XLV) 內的第 II-2 章的文本替代公約第 II-2 章，並作如下進一步修改：

第 1 條

適用範圍

本條之 1.1 中第 3 行，刪去“1984 年 9 月 1 日”，代以“1986 年 7 月 1 日”。

本條之 1.3.2 中第 2 行，刪去“1984 年 9 月 1 日”，代以“1986 年 7 月 1 日”。

本條之 2 全文改為：

“除另有明文規定外，對 1986 年 7 月 1 日之前建造的船舶，主管機關應保證使之符合決議 MSC.1 (XLV) 所修正的 1974 年國際海上人命安全公約第 II-2 章所適用的要求。”

本條之 3 中第 4 行及第 9 行，刪去“1984 年 9 月 1 日”，代以“1986 年 7 月 1 日”。

刪去腳註。

第 3 條

定義

本條之 30 改為：

“‘化學品液貨船’是指建造或改建用於散裝運輸下述規則之一（視何者適用而定）所列的任何易燃性液體產品的液貨船：

- .1 經海安會決議 MSC.4 (48) 通過的並可能由本組織修訂的《國際散裝運輸危險化學品船舶的構造和設備規則》（以下簡稱“國際散裝化學品規則”）中第十七章；或
- .2 經本組織大會決議案 A.212 (VII) 通過的並已經或可能由本組織修訂的《散裝運輸危險化學品船舶的構造和設備規則》（以下簡稱“散裝化學品規則”）的第六章。”

本條之 31 修改如下：

“‘氣體運輸船’是指建造或改建用於散裝運輸下述規則之一（視何者適用而定）所列的任何液化氣體或其他易燃性物質的液貨船：

- .1 經海安會決議 MSC.5 (48) 通過的並可能由本組織修訂的《國際散裝運輸液化氣體船舶的構造和設備規則》（以下簡稱“國際氣體運輸船規則”）的第十九章；或
- .2 經本組織決議 A.328 (IX) 通過的並已經或可能由本組織修訂的《散裝運輸液化氣體船舶的構造和設備規則》（以下簡稱“氣體運輸船規則”）中第十九章。”

新增 32 如下：

“32 ‘貨物區域’ 是指船上包含液貨艙、污油水艙和泵室的部分，包括液貨泵艙、隔離空艙、相鄰於液貨艙的壓載艙或空艙，以及這些區域上方的整個船寬和船長的甲板區域。”

第 4 條

消防泵、消防總管、消防栓和消防水帶

本條之 3.3.2.6 中第 3 行的“控制室”改為“控制站”。

第 7 條

機器處所的滅火設備

本條之 1.2 中第 1 行和第 2 行的“空氣泡沫裝置”改為“泡沫噴灑裝置”。

第 11 條

機器處所內的特別佈置

本條之 8 中第 1 行的“經認可的自動探火與報警系統”改為“固定式探火與報警系統”。

第 13 條

固定式探火和失火報警系統

本條之 2.1 中第 1、2、3 及 5 行的“手動報警按鈕”改為“人工操作報警按鈕”。

第 14 條

定期無人值班機器處所的固定式探火和失火報警系統

本條之 1 第 1 行改為“符合……的經認可類型的固定式探火和失火報警系統”。

第 15 條

燃油、滑油和其他易燃油類的佈置

新增 6 如下：

“6 艙尖艙內禁止載運易燃油類

艙尖艙不得載運燃油、滑油和其他易燃油類。”

第 20 條

消防控制圖表

本條文 1 第 14 行和第 15 行將“本國語言”改為“船旗國的官方語言”。

第 26 條

載運 36 名以上乘客的船舶艙壁及甲板的耐火完整性

本條文 2.2 (1) 第 4 行，將“防火控制及記錄站”改為“防火控制室及失火記錄站”。

第 27 條

載運不超過 36 人的船舶艙壁及甲板的耐火完整性

本條之 2.2 (1) 第 4 行，用“室”代替“站”。

本條之 27.1 表內第 2 行第 4 欄、第 3 行第 4 欄、第 4 行第 4 欄和第 4 行第 5 欄中，將 B-0^{sl}改為 A-0^{sl}

A-0^{sl}改為 A-0^{sl}

本條之 4 第 4 行，刪去“本章”改為“本節”。

第 32 條

通風系統

本條之 1.4.3.1，第 1 行，將“有限的”改為“低量的”。

第 36 條全文改為：

“第 36 條

固定式探火和失火報警系統，

自動噴水器、探火和失火報警系統

凡適用本部分所規定的任何船舶，除實質上沒有失火危險的處所如空室、盥洗室等處，在所有起居處所和服務處所以及主管機關認為必要時在控制站內，不論是垂直的還是水平的每一獨立分隔區中，均應普遍設置下列兩者之一：

- .1 符合本章第 13 條規定的一種認可型式的固定式探火和失火報警系統，其安裝和佈置足以探知上述處所內火災的發生；或
- .2 符合本章第 12 條規定的一種認可型式的自動噴水器、探火和失火報警系統，其設置和佈置足以保護上述處所；此外，還應有符合本章第 13 條規定的一種固定式探火和失火報警系統，其安裝和佈置應在起居處所的走廊、梯道和脫險通道內提供感煙式探測保護。”

第 37 條

特種處所的保護

本條之 1.4.1 全文修改如下：

“1.4.1 在特種處所內應保持有效的巡邏制度。在整個航行期間，未保持連續消防值班的任何上述處所內，應裝設符合本章第 13 條要求的固定式探火和失火報警系統。該固定式探火系統應能迅速探知火災的開始。探測器的間隔和位置應在考慮到通風和其他有關因素影響的情況下調試至使主管機關滿意。”

本條之 2.2.1 全文修改如下：

“2.2.1 在可預期集積可爆性蒸氣的任何車輛運載甲板或平台上（如設有），可能構成可燃蒸氣燃點源的設備，特別是電氣設備與電纜，應裝設在距甲板或平台 450 毫米以上之處，但具有足夠尺寸的開口，使汽油蒸氣能夠向下滲透的平台除外。裝設在距甲板或平台 450 毫米以上之處的電氣設備，應為封閉並受保護以防止火花外逸的類型。但是，如果主管當局確信電氣設備及電纜裝於距甲板或平台不足 450 毫米之外為船舶安全操作所必需時，電氣設備及電纜可如此裝設，但應為經認可而且能在可爆性汽油與空氣混合體中使用的類型。”

第 40 條

消防巡邏、探火、失火報警和廣播系統

本條之 1 和 2 改為：

“1 應設置符合本章第 13 條要求的人工操作報警按鈕。”

“2 應設置經認可類型的固定式探火和失火報警系統。”

第 49 條

可燃材料的使用限制

本條之 3 全文修改如下：

“甲板基層敷料如在起居處所、服務處所和控制站內塗敷，則應為不易着火的，或在高溫下不致產生有毒氣體或爆炸危險的認可材料。**”

第 51 條

生活用氣體燃料的佈置

將“其佈置、儲存、分配和利用應……”改為“其儲存、分配和利用的佈置應……”。

第 52 條

固定式探火和失火報警系統，

自動噴水器、探火和失火報警系統

本條之 1、2、3 全文修改如下：

“1 採用 I C 法的船舶，應設有符合本章第 13 條要求的一種認可型的固定式探火和失火報警系統，其安裝和佈置應在起居處所的所有走廊、梯道和脫險通道內提供感煙式探測保護和人工操作報警按鈕。

2 採用 II C 法的船舶，應設有符合本章第 12 條要求的一種認可型的自動噴水器、探火和失火報警系統，其安裝和佈置應能保護起居處所、廚房和其他服務處所，但實質上沒有失火危險的處所（如空室、盥洗室等）除外。此外，還應設有符合本章第 13 條要求的固定式探火和失火報警系統，其安裝和佈置應在起居處所的所有走廊、梯道和脫險通道內提供感煙式探測保護和人工操作報警按鈕。

3 採用 III C 法的船舶，應設有符合本章第 13 條要求的一種認可型的固定式探火和失火報警系統，其安裝和佈置應在所有起居處所和服務處所內能探知火災的發生，但實質上沒有失火危險的處所（如空室、盥洗室等）除外。”

刪去本條之 4。

第 53 條

裝貨處所內的防火安排

本條之 2.1 中第 1 行的“應裝設一個經認可的自動探火和失火報警系統”改為“應裝設一個固定式探火和失火報警系統”。

本條之 2.4.2 全文改為：

“.2 在通風系統的設計為、並在運轉中能夠在裝載車輛時提供連續貨物區域通風，換氣率達每小時 10 遍的條件下，在甲板和在除具有足夠尺寸的開口，能夠允許汽油蒸氣向下滲透的平台之外的每一設置的載車平台 450 毫米高度以上，可允許封閉及受保護以防止火花外逸類型的電氣設備作為一種替代方法。”

第 54 條

載運危險貨物船舶的特殊要求

在表 54.2 的註 f 中，將“除本表所列舉的特殊考慮外”改為“除符合本表所列舉的各項要求外”。

本條之 2.3，第 1 行改為：“在所有封閉貨物區域，包括封閉車輛甲板區域，應裝設經認可類型的固定式探火和失火報警系統。”

第 55 條

適用範圍

本條之 2 全文改為：

“如果旨在載運上述 1 所指貨物以外的液體貨物或能引起額外失火危險的液化氣體，應採取使主管機關滿意的額外安全措施，並應根據情況需要，適當注意到國際散裝化學品規則、散裝化學品規則、國際氣體運輸船規則和氣體運輸船規則的有關規定。”

本條之 6 全文改為：

“除配備有使主管機關滿意的選擇性和補充性裝置者外，化學品液貨船和氣體運輸船應符合本部分的各項規定，並應根據情況需要，適當注意到國際散裝化學品規則、散裝化學品規則、國際氣體運輸船規則和氣體運輸船規則的有關規定。”

第 56 條

各處所的位置和分隔

本條全文改為：

“1 機器處所應位於貨油艙和污水艙的後方，也應位於貨油泵艙和隔離空艙的後方，但不必位於燃油艙的後方。任何機器處所均應以隔離空艙、貨油泵艙、燃油艙或固定壓載艙同貨油艙和污水艙隔

開。凡設有供壓載相鄰於貨油艙和污油水艙處所的泵及其附件的泵艙和設有燃油駁運泵的泵艙，均應認為與本條內的貨油泵艙等效，但這些泵艙所具有的安全標準應與貨油泵艙所要求者相同。然而，貨油泵艙的下部可以凹入 A 類機器處所，以備安置貨油泵，其條件是凹入部分的頂板高度一般不超過龍骨上面型深的 1/3，但載重噸不超過 25,000 噸的船舶除外。在這種船上，如能證明為便於進入壁凹部分和妥善佈置管系的需要，上述深度下能做到時，則主管機關可准許凹入部分超過上述高度，但不得超過龍骨上面型深的一半。

2 起居處所，貨油主控制站、控制站和服務處所（獨立的起貨設備儲藏室除外）均應位於所有貨油艙、污油水艙、貨油泵艙和用以隔開貨油艙或污油水艙與機器處所的隔離空艙的後方，但不必位於燃油艙的後方。在確定這些處所的位置時，不必計及本條之 1 所述的壁凹部分。

3 如認為必要時，起居處所、控制站、A 類以外的機器處所以及服務處所可允許位於裝貨區域的前方，但是這些處所應以隔離空艙、貨油泵艙、燃油艙或固定壓載艙同貨油艙和污油水艙隔開，並須具備經主管機關認為等效的安全標準和具有足夠的滅火裝置。此外，如認為船舶的安全或航行之需要，主管機關可允許設有功率大於 375 KW 並不作為主推進機械的內燃機的機器處所位於貨物區域的前方，但其佈置應符合本款的規定。

4 僅適用於混裝船：

- .1 污油水艙應以隔離空艙圍隔，但如污油水艙在乾貨航程中可能載運污油水，且其限界面為船體、主貨物甲板、貨油泵艙艙壁或燃油艙者則可除外。這些隔離空艙不得向雙層

底、管隧、泵艙或其他封閉處所開孔。應設有向隔離空艙灌排水的裝置。如污油水艙的限界面為貨油泵艙艙壁時，該泵艙不得向雙層底、管隧或其他封閉處所開口，但可以允許設有氣密螺栓蓋的開口。

- .2 應提供設施以切斷連接泵艙和本條之 4.1 所述污油水艙的管系。切斷設施應包括一隻閘後接雙環盲板法蘭或具有適當盲板法蘭的短管。此項裝置應鄰接於污油水艙，但若此種佈置不合理或不可行時，可以設置在泵艙內直接位於貫穿艙壁的管系之後方。應設有獨立的泵及管系裝置，以便當船舶從事於乾貨運輸時將污油水艙內的污物直接經開敞甲板排放。
- .3 污油水艙的艙口和艙櫃清洗開口只允許設在開敞甲板上，並應配備關閉裝置。這些關閉裝置應有鎖緊設施，並由負責的高級船員控制，但如具有螺栓板而螺栓間距保證水密者可以除外。
- .4 如設有邊貨艙時，甲板下的貨油管系應設在這些邊艙內。但主管機關可允許貨油管系設在能充分清洗和通風的特別管道內，其佈置應使主管機關滿意。倘若未設邊貨艙，則甲板下的貨油管系應設在特別管道內。

5 如經證明有必要把駕駛室佈置在貨油艙區域的上方，則此處所只能用於駕駛目的，並且必須用一個高度至少為 2 米的開敞空間使之與貨油艙甲板隔開。此外，這種駕駛室的防火還應符合本部分第 58 條之 1 和第 58 條之 2 對控制處所的要求，以及本部分中可適用的其他規定。

6 應設有使甲板上溢油與起居和服務區域隔開的設施。該設施可以是安裝一個有適當高度並延伸至兩舷的連續的固定擋板。對於具有尾部裝油設施的船舶，此項擋油佈置應予特別考慮。

7 環圍起居處所的上層建築和甲板室的外部限界面包括支承這些起居處所的任何懸架甲板，其面向貨油艙的全部限界面及前方限界面之後 3 m 之內，應隔離至“A-60”級標準。對於這種上層建築和甲板室的各個側面，此項分隔應達到主管機關認為必要高的級別。

8.1 通往起居處所、服務處所和控制站的入口、空氣進口和開口不得面向貨物區域。它們應位於不面向貨物區域的橫向艙壁上，或位於上層建築或甲板室的外檔一側，距離至少為船舶長度的 4%，但距離面向貨物區域的上層建築或甲板室的末端不少於 3 m。然而，這個距離毋須超過 5 m。

8.2 在上述 8.1 所指的限制範圍之內不准設門，但不能通往起居處所、服務處處所和控制站的處所之門，主管機關可准許設置。這些處所可以為貨物控制站、食物庫和物料庫。如上述門為在貨物區域後方的處所之門，則該處所的限界面應分隔至“A-60”級標準，但面向貨物區域的限界面除外。在上述 8.1 所指的限制範圍之內可設置螺栓緊固的板門，作為拆移機器之用。操舵室的門窗可以位於上述 8.1 所規定的限制範圍之內，只要它們的設計能保證駕駛室迅速而有效地達到氣密和蒸汽密。

8.3 面向貨物區域和在上述 8.1 所指的限制範圍內上層建築及甲板室側邊上的舷窗應為永閉（不能開啟）型。在主甲板上第一層的這種舷窗應裝有鋼質或其他等效材料製成的內部罩蓋。”

第 58 條

艙壁和甲板的耐火完整性

在表 1 註 b 中，將第 1 行的“b”改為“b/”。

本條之 4，第 4 行，將“這些要求”改為“這部分”。

第 59 條

透氣、清除、除氣和通風

本條之 2，第 16 行，將“氣”改為“蒸汽”。

第 18 行，將“氣”改為“蒸氣”。

第 16、17 和 18 行，“當……水平”是本條之 2 的一部分，必須移到本條之 2 的空白處。

本條之 3.3 修改如下：

在第三句中，將“第 56 條之 1”改為“第 56 條之 4”。

在第四句中，將“貨油艙區域”改為“貨物區域”。

第 61 條

固定式甲板泡沫系統

本條之 1 中，將“貨油艙區域”改為“貨油艙甲板區域”。

本條之 2 的第二句中，將“貨油艙區域”改為“貨物區域”。

本條之 3.1 中，將“貨艙甲板面積”改為“貨油艙甲板區域”。

本條之 7 的第一和第二句中，將“貨艙甲板”改為“貨油艙甲板”。

本條之 8 的第 3 行中，將“400 L”改為“400 L/min”。在第四句中，將“貨油艙甲板的任何區域”改為“貨油艙甲板區域的任何部分”。

第 62 條

惰性氣體系統

本條之 9.1 中第 2 和第 3 行，將“19.2”和“19.3”分別改為“19.3”和“19.4”。

本條之 10.2 中，將“貨油艙區域”改為“貨物區域”。

本條之 14.1 改為：

“14.1 應設有一個或多個壓力 - 真空防護裝置，以防止貨油艙遭受到：

- .1 在以最大速率裝貨油而所有其他出氣口被關閉時，產生一個超過貨油艙的試驗壓力的正壓；或
- .2 在以貨油泵的最大額定排量卸貨油而惰性氣體鼓風機失靈時，產生一個超過 700 毫米水柱壓力的負壓。

上述防護裝置如果不設在第 59 條之 1.1 所要求的通氣系統上，或者不設在個別貨油艙上，就應設在惰性氣體總管上。”

本條之 20.1 中最後一行改為 “10.2、10.7、10.9、11.3、11.4、12、13.1、13.2、13.4.2、14.2 及 19.8；”

本條之 20.2 中最後一行改為 “12、13.1、13.2 和 14.2。”

第三部分

第 III 章

第 III 章的現行條文用下文代替：

救生設備與裝置

A 部分

通則

第 1 條

適用範圍

1 除有明文規定者外，本章應適用於在 1986 年 7 月 1 日或以後，安放龍骨或處於相似建造階段的船舶。

2 本章內，“相似建造階段”係指在該階段：

- .1 開始可確定為是一艘具體船舶的建造；並
- .2 該船已動工裝配至少 50 噸，或 1%全部結構材料的估計重量，取其小者。

3 本章內：

- .1 “建造的船舶”係指“已安放龍骨或處於相似建造階段的船舶”；
- .2 “一切船舶”係指“在 1986 年 7 月 1 日以前，之日，或以後建造的船舶”；“一切客船”和“一切貨船”係指按此建造者；

- .3 不論何時建造的貨船，改裝為客船者應作為在改裝開始之日建造的客船對待。

4 對於 1986 年 7 月 1 日以前建造的船舶，主管機關應：

- .1 以 4.2 段和 4.3 段的規定為前提，確使達到 1974 年國際海上人命安全公約第 III 章中所規定的那些在 1986 年 7 月 1 日前便有效、適用於新船或現有船的要求；
- .2 對船沒有達到 4.1 段要求的救生設備與裝置加以考慮，以便在合理、可行的情況下確使它們儘早地基本達到那些要求；
- .3 當這些船舶更換救生設備或裝置，或當這些船舶進行要涉及到更換或增設救生設備或裝置的重大修理、改裝或改建時，在合理可行的情況下，要確使這些救生設備和裝置達到本章要求。但是，如果更換的只是救生艇筏而不包括降艇設備，或是更換的只是降艇設備而不包括救生艇筏的話，救生艇筏或降艇設備是可以與被更換者是相同類型的；
- .4 審批按本條第 6 段配備的救生設備，對於 1991 年 7 月 1 日前在船上配備的救生設備，如能保持良好狀況，主管機關可允許它們不完全達到本章要求；
- .5 除 4.3 段所述的那些救生艇筏和降艇設備外，要保證在 1991 年 7 月 1 日或以後更換或安裝的救生設備確實根據第 4 條和第 5 條的要求得到鑑定、測試和批准。

5 至於 1986 年 7 月 1 日之前建造的船舶，第 8、9、10、18 和 25 條的要求適用，而且在其所述的範圍內，第 19 條也適用。

6 第 6 條之 2.3、第 6 條之 2.4、第 21 條之 3、第 21 條之 4、第 26 條之 3、第 27 條之 2、第 27 條之 3 和第 30 條之 2.7，應在 1991 年 7 月 1 日以前適用於在 1986 年 7 月 1 日以前建造的船舶。

第 2 條

免除

1 主管機關如考慮到航程的遮蔽性及條件，認為實施本章的任何具體要求為不合理或不必要時，可對在航程中駛距最近陸地不超過 20 海哩的個別船舶或某類船舶，免除這些要求。

2 客船用於特種業務，例如朝山進香，載運大量特種業務旅客者，主管機關如認為實施本章要求為不切實際時，可對此類船舶免除這些要求，但此類船舶完全符合下列規則的規定：

- .1 1971 年特種業務客船協定的附則；與
- .2 1973 年特種業務客船艙室要求議定書所附的規則。

第 3 條

定義

除另有明文規定者外，本章內的定義如下：

1 執證人員係指執有主管機關按照生效的海員培訓、發證和值班標準的國際公約要求，授權發給的或承認有效的精通救生艇筏業務證書的人員；或執有非該公約締約國家的主管機關為與該公約證書有相同目的而簽發的或承認有效的證書的人員。

2 探測係指倖存者或救生艇筏位置的測定。

3 登乘梯係指設置在救生艇筏登乘站以供安全登入降落下水後的救生艇筏的梯子。

4 漂浮脫開降落係指艇筏從下沉中船舶自動脫開並立即可用的救生艇筏下水方法。

5 自由下降降落係指載足全部乘員和屬具的艇筏在船上脫開並在沒有任何制約裝置的情況下，任其下降到海面的救生艇筏下水方法。

6 保暖救生服係指減少在水中穿著該服人員體熱損失的保護服。

7 氣脹式設備係指依靠非剛性的充氣室作浮力，而且在使用前通常保持不充氣狀態的設備。

8 充氣式設備係指依靠非剛性的充氣室作浮力，而且無論何時均保持充氣狀態的立即可用的設備。

9 降落設備或裝置係指將救生艇筏或救助艇從其存放位置，安全地轉移到水上的工具。

10 長度係指在位於自龍骨上面量得最小型深的 85%的水線上的總長度的 96%，或在較長時，在該水線上從船艏柱前面量到舵桿中心線的長度。船舶設計具有傾斜龍骨者，作為測量本長度的水線應平行於設計水線。

11 型深

- .1 型深是指從龍骨上面量到在船舷處的乾舷甲板樑上面的垂直距離，對木質船舶和鐵木混合結構船舶，垂直距離是從龍骨槽的下緣量起。凡船舶中央橫剖面的下部具有凹形，或裝有厚龍骨翼板者，垂直距離是從船底平坦部分向內引伸與龍骨側面相交的一點量起。
- .2 具有圓舷形舷邊的船舶，型深應量到甲板型線和船舶外板型線相交之點，這些線的引伸是把該舷邊看作是設計為角形的。
- .3 凡乾舷甲板為階形甲板並且其升高部分延伸過決定型深的點以上者，型深應量到自甲板較低部分延伸而與升高部分平行的參考線。

12 新穎救生設備或裝置係指具有未被本章各規定所充分說及的新特徵，但提供同等的或更高的安全標準的救生設備或裝置。

13 救助艇係指為救助遇險人員及集結救生艇筏而設計的小艇。

14 找回係指倖存者或艇筏的安全找回。

15 逆向反光材料係指光束射到後，向射入的相反方向反射出去的材料。

16 短程國際航行係指在該航線中，船舶距離能夠安全安置旅客和航員的港口或地點不超過 200 海哩的國際間航行。啟航國最後停靠港至最終目的港之間距離與返航航次均不得超過 600 海哩。最終目的港係指船舶開始返航回到啟程國的計劃航次中的最後停靠港。

- 17 救生艇筏係指從棄船時候起能維持遇險人員生命的艇筏。
- 18 保温用具係指採用低導熱率的防水材料製成的袋子或衣服。

第 4 條

救生設備與裝置的鑑定、試驗及認可

1 除按照本條之 5 和 6 的規定外，本章所規定的救生設備與裝置應經主管機關認可。

2 在救生設備與裝置予以認可之前，主管機關應確使該項救生設備與裝置：

- .1 按照海事組織的建議書*加以試驗，證實符合本章的要求；
或
- .2 在主管機關滿意的情況下，成功地經受基本上等效於該項建議書所規定的試驗。

3 在新穎救生設備或裝置予以認可之前，主管機關應確證該項設備或裝置：

- .1 提供至少等效於本章所規定的安全標準，並按照海事組織的建議書**加以鑑定和試驗；或

* 參閱海事組織所通過的決議 A.[……] (XIII) 所制定的“救生設備的試驗建議書”。

** 參閱海事組織所通過的決議 A.[……] (XIII) 所制定的“原型新穎救生設備與裝置的鑑定、試驗與認可實施規則”。

- .2 在主管機關滿意的情況下，成功地經受基本上等效於該項建議書的鑑定和試驗。
- 4 主管機關所採用的認可程序尚應包括繼續認可或撤銷認可的條件。
- 5 在接受主管機關從前未加認可的救生設備與裝置之前，主管機關應證實該救生設備與裝置符合本章的要求。
- 6 本章所規定的救生設備的詳細技術要求未列入第三節者，應滿足主管機關的要求。

第 5 條

生產試驗

主管機關應要求，救生設備必須經受必要的生產試驗，以確使這些救生設備是按與認可的原型設備的同一標準進行製造的。

B 部分

船舶要求

第 I 節

客船與貨船

第 6 條

通信

1 第 2.3 和 2.4 段適用於所有船舶。對於 1986 年 7 月 1 日前建造的船舶，第 2.3 和 2.4 段應在不遲於 1991 年 7 月 1 日適用。

2 無線電救生設備

2.1 救生艇筏用手提式無線電設備

2.1.1 應配備達到第 IV 章第十四條要求的救生艇筏用的手提式無線電設備。該手提式無線電設備應保存在有保護、易於到達、在緊急情況下能隨時移到任何一隻救生艇筏上去的位置。對於救生艇遠遠地分置於船艙和船艙的船舶則允許例外；在這種船上，該手提式無線電設備應保存在離船上主發報機最遠的救生艇的附近。

2.1.2 如果達到第 IV 章第十三條要求的無線電設備是裝在船舶每舷的救生艇內或裝在第 26 條之 1.2.1 所說的從艙部降落的救生艇上的話，可不必按 2.1.1 段的要求辦。

2.1.3 如果由於船舶航行時間較短，主管機關認為救生艇筏用的手提式無線電設備是不必要的話，主管機關可以允許免除這種設備。

2.2 救生艇用無線電報裝置

在從事非短途國際航行的客船上：

- .1 如果船上的總人數在 199 人以上但不足 1,500 人的話，第 20 條之 1.1.1 段要求的救生艇中至少有一隻要裝有達到第

IV 章第十三條要求的無線電報設備；

- .2 如果船上的總人數為 1,500 人或 1,500 人以上的話，每舷至少有一隻救生艇要裝有此無線電設備。

2.3 救生艇筏應急示位無線電標

船舶每舷應配備一達到第 IV 章第十四條第一款要求的手動激發應急示位無線電標。它們應存放在能迅速搬入第 26 條之 1.4 所要求的救生艇筏以外的任何救生艇筏上。

2.4 雙向無線電話設備

2.4.1 應配備符合第 IV 章第十四條第三款要求的雙向無線電話設備，以供救生艇筏之間，救生艇筏與船舶之間，和船舶與救助艇之間的通信聯繫。沒有必要每艘救生艇筏都配備一具此項設備；但無論如何，每艘船舶應至少配備三具此項設備。本要求亦適用於船上的其他設備，但該設備必須符合第 IV 章第十四條第三款的相應要求。

2.4.2 對於 1986 年 7 月 1 日以前建造的船舶，此類設備僅要求符合第 IV 章第十四條第三款的頻率要求。

3 遇險火焰信號

應配備不少於 12 支符合第 35 條要求的火箭降落傘火焰信號，並應保存在駕駛台或其附近。

4 船上通信與報警系統

4.1 應配備一套固定式或手提式設備或兩種型式設備的應急設備，供船上應變管制站、集合和登乘地點與要害位置之間的雙向通信聯繫使用。

4.2 應配備符合第 50 條要求的通用緊急報警系統，以供召集旅客與船員至集合地點和採取應變部署表所列行動之用。該系統尚應以有線廣播系統或其他適宜的通信設施作為補充。

第 7 條

個人救生設備

1 救生圈

1.1 符合第 31 條之 1 要求的救生圈：

- .1 應分放在船舶兩舷容易拿到之處，並在可行範圍內，分放在所有延伸到船舷的露天甲板上；至少有 1 個應放在船尾附近；
- .2 其存放應能迅速取下，並不得以任何方式使永久緊固。

1.2 船舶每舷至少有一個救生圈應裝有符合第 31 條之 4 要求的可浮救生索，其長度不少於其存放處在最輕載航行水線以上高度的 2 倍，或 30 m，取其大者。

1.3 不少於總數一半的救生圈應設有符合第 31 條之 2 要求的自亮浮燈；不少於 2 個的此項救生圈尚應設有符合第 31 條之 3 要求的自發煙霧信號，並應能自駕駛室迅速拋投；設有自亮浮燈的，和設有自亮浮燈及自發煙霧信號的救生圈應相等地分佈在船舶兩舷，並不應是按上面 1.2 段要求的裝有救生索的救生圈。

1.4 每個救生圈應以粗體羅馬字母標明其所屬船名和船籍港。

2 救生衣

2.1 應為船上每個人員配備一件符合第 32 條之 1 或第 32 條之 2 要求的救生衣並，另外：

- .1 尚應配備船上旅客人數至少 10% 的適合兒童穿用的救生衣，或按可能規定為每個兒童配備 1 件救生衣的更多數量；
- .2 尚應配備供值班人員使用的，並供設置在很遠的救生艇筏地點使用的足夠數量救生衣。

2.2 救生衣應存放在容易到達之處，其位置應加明顯標誌。凡由於船舶的特殊佈置，按上面 2.1 段要求配備的救生衣變得無法拿到時，可制定滿足主管機關要求的變通規定，可以包括增加配備救生衣的數量。

3 浸沒服

3.1 每個指派為救助艇艇員的人員應配備一件適當尺碼的、符合第 33 條要求的浸沒服。

第 8 條

應變部署表與應變須知

- 1 本條適用於一切船舶。
- 2 應為船上每個人員配備一份在萬一應變時必須遵循的明確的須知。
- 3 符合第 53 條要求的應變部署表應展示在全船各明顯之處，包括駕駛台、機艙和各船員起居處所。

4 應在客房張貼，並在集合地點及其他旅客處所明顯地展示，用適當文字書寫的圖解和應變須知，向旅客通告：

- .1 他們的集合地點；
- .2 應變時必須採取的必要行動；
- .3 救生衣的穿著方法。

第 9 條

操作須知

- 1 本條適用於一切船舶。
- 2 應在救生艇筏的及其降落操縱器的上面或附近，設置告示或標誌，它們應：
 - .1 說明此操縱器的用途及此項設備的操作程序，並提出有關須知或注意事項；
 - .2 在應急照明情況下，容易看清；
 - .3 使用符合海事組織建議要求的符號。

第 10 條

救生艇筏的配員與監督

- 1 本條適用於一切船舶。
- 2 船上應有足夠人數的受過訓練的人員來召集和協助未受訓練的人員。
- 3 船上應有足夠人數的船員（他們可以是駕駛員或執證人員）來操作船上總人數棄船所需要的救生艇筏及其降落裝置。
- 4 每艘必須使用的救生艇筏，應由一名駕駛員或執證人員負責指揮。但主管機關經適當考慮到航程的性質、船上人數和船舶的特點，可以准許精通救生筏的降放、回收和操作的人員來代替具有上述資格的人員負責指揮救生筏。救生艇尚應指派 1 名副指揮。
- 5 負責人應有一份該救生艇筏船員名單，並應確保在其指揮下的船員是熟悉他們的各項任務的。救生艇的副指揮亦應有一份該救生艇艇員名單。
- 6 每艘按第 6 條之 2.2 要求配備無線電報設備的救生艇，應指派 1 名能操作該設備的人員。
- 7 每艘機動救生艇筏應指派 1 名能操作該發動機和進行小調整的人員。
- 8 船長應確使 2.3 和 4 段所指人員妥善地分配到船舶救生艇筏中。

第 11 條

救生艇筏集合與登乘佈置

1 備有認可降落裝置的救生艇和救生筏，應存放在儘可能靠近起居和服務處所的地方。

2 集合地點應設在緊靠登乘站的地方。每個集合地點應有足夠的場所容納指定在該地點集合的所有人員。

3 集合與登乘地點均應設在容易從起居和工作處所通往的地方。

4 根據情況，集合與登乘地點應使用第 II-1 章第 42 條或第 43 條按所要求的應急電源供電的照明系統，給予足夠的照明。

5 通往集合與登乘地點的通道、梯道和出口應加照明。該照明系統應能根據情況由第 II-1 章第 42 條或第 43 條所規定的應急電源供電。

6 吊艇架降落的救生艇筏集合與登乘地點的佈置，應能使擔架病人搬進救生艇筏。

7 每處降落地點或每兩處相鄰的降落地點應設置符合第 48 條之 7 要求的登乘梯一具，每一個登乘梯在不利的縱傾情況下和在船舶向任何一舷橫傾不少於 15° 時，可從該甲板延伸到最輕載航海水線。但無論如何，在船舶每舷應至少設有 1 具登乘梯的情況下，主管機關可准許以供登入在水面上的救生艇筏的認可裝置來代替這些梯子。第 26 條之 1.4 所規定的救生筏可准許用其他登乘設施。

8 凡有必要者，應設置將吊艇架降落的救生艇筏貼靠並繫留在船舷的裝置，以便人員能安全登乘。

第 12 條

降艇站

降艇站的位置應確使安全降落水中，應該特別注意離開推進器及船體陡斜懸空部分，除救生艇筏專門設計為自由下降降落者外，應儘可能使救生艇筏能從船舷平直部分降落下水。如設置於船的前部，則應設置在防碰壁後面有遮蔽的地方，對此，主管機關應對吊艇架的強度給予特別的考慮。

第 13 條

救生艇筏的存放

- 1 每艘救生艇筏的存放應：
 - .1 使該救生艇筏及其存放裝置均不得干擾置在任一其他降艇站的任一其他救生艇筏或救助艇的操作；
 - .2 在安全和可行的情況下儘可能靠近水面，而且，不用於拋出船外降落的救生艇筏，應處於這樣的位置，即：在登乘位置上的救生艇筏，當滿載船舶在不利縱傾情況下向任何一舷橫傾達 20° 或橫傾到船舶露天甲板的邊緣浸入水中的

角度(以三者中較小角度者為準)時,應離水線不少於 2 m。

- .3 處在持續使用準備狀態,使 2 名艇員能在少於 5 min 內完成登乘準備工作;
- .4 配齊本章所規定的裝備;
- .5 在可行範圍內,在安全的並有遮蔽的地方,並加保護免受火災和爆炸引起的傷害。

2 順船舷降落的救生艇應存放在推進器之前可行範圍內儘量遠的地方。在船舶的長度為 80 m 及 80 m 以上但少於 120 m 的貨船上,救生艇應存放在使救生艇尾端至少在推進器之前不少於救生艇長度的地方。在船舶的長度為 120 m 或 120 m 以上的貨船與 80 m 及 80 m 以上的客船上,救生艇應存放在使救生艇尾端至少在推進器之前不少於一倍半救生艇長度的地方。凡合適者,船舶的佈置應對在存放位置的救生艇加以保護使其免受巨浪引起的損害。

3 救生艇的存放應附連於降落設備。

4 救生筏不僅要達到第 23 條和第 29 條的要求,其存放還要做到能用人工將救生筏從其繫固裝置上解脫開來。

5 吊筏架降落的救生筏應存放在吊筏鉤可到達的範圍內,除備有在 1.2 段所規定的縱傾和橫傾範圍內或由於船舶擺動而不致造成無法操作的某些轉移設施者外。

6 用於拋出舷外降落的救生筏的存放應能容易地轉移到船舶的任何一舷以便降落,除船舶每舷已存放第 26 條之 1 所要求的必須能在任何一舷降落的總容量的救生筏者外。

第 14 條

救助艇的存放

救助艇的存放應：

- .1 處在少於 5 min 以內進行降落下水的持續使用準備狀態；
- .2 在適宜於降落並收回的地方；
- .3 使該救助艇及其裝置不干擾置在任一其他降落地點的任一其他救生艇筏的操作；
- .4 如救助艇兼作救生艇者，符合第 13 條要求。

第 15 條

救生艇筏降落與回收裝置

- 1 一切救生艇筏應配有符合第 48 條要求的降落裝置，除非：
 - .1 從最輕載航海水線以上少於 4.5 m 的甲板上登乘的救生艇筏，而且：
 - .1.1 救生艇筏的質量不大於 185 kg；或
 - .1.2 救生艇筏是存放在處於不利的縱傾達 10° 和船舶向任何一舷橫傾不少於 20° 時，直接從存放地點降落下水；
 - .2 質量不大於 185 kg 的救生艇筏，並且是按船上總人數 200% 的數目來配備的救生艇筏。

2 每艘救生艇應配有一台能降落和收回該救生艇的設備。

3 降落與回收裝置應使該設備的操作人員在救生筏降落期間的無論何時，以及在救生艇收回期間的無論何時，能在船上觀察到救生艇筏。

4 船上所配備的類似救生艇筏僅應使用一種型號的脫開機械裝置。

5 在任一降艇站，救生艇筏的準備工作和操作應不干擾任一其他降艇站的任一救生艇筏或救助艇的迅速準備工作和操作。

6 凡使用者，吊艇索的長度應於船舶最輕載航海在不利縱傾情況下及船舶向任何一舷橫傾不小於 20° 時，促使救生艇到達海面。

7 在準備和降落過程中，救生艇筏、它的降落設備以及必須降落的水面，根據情況應使用第 II-1 章第 42 條或第 43 條所要求的應急電源供電的照明系統給以足夠的照明。

8 應備有在棄船過程中，防止船舶的任何排水排到救生艇筏上。

9 如救生艇筏有被船舶防搖翼造成損壞的危險者，則應備有由應急電源驅動的能將防搖翼收回船內的裝置；駕駛室應設有應急電源運轉的指示防搖翼位置的指示器。

10 如配備符合第 42 條或第 43 條要求的救生艇者，應裝設吊艇架橫張索，在其上設置不少於二根足夠長度的救生索，能於船舶最輕載航海在不利的縱傾情況下及船舶向任何一舷橫傾不小於 20° 時到達水平。

第 16 條

救助艇的登乘、降落與回收裝置

1 救助艇的登乘與降落裝置應在儘可能最短的時間內，使能登上並降落救助艇。

2 如救助艇是船舶救生艇筏中一艘者，其登乘佈置與降落地點尚應符合第 11 條和第 12 條各項要求。

3 降落裝置應符合第 15 條要求。但無論如何，一切救助艇應能在船舶於平靜水面前進航速達到 5 節時降落下水，凡有必要者可利用艇艙纜。

4 應能迅速地收回載足全部乘員及屬具的救助艇。如救助艇兼作救生艇者，應能迅速地收回載足救生艇屬具並經認可的至少 6 人的額定乘員的救助艇。

第 17 條

拋繩設備

應配備一具符合第 49 條要求的拋繩設備。

第 18 條

棄船訓練與演習

1 本條適用於一切船舶。

2 手冊

每間船員餐室及文娛室，或每間船員房應配有一份符合第 51 條要求的訓練手冊。

3 集合演習與操練

3.1 每個船員每月應至少參加一次棄船演習和一次消防演習。若有 25% 以上的船員未參加該特定船上的上個月棄船和消防演習者，應在該船離港後 24 h 內舉行該兩項船員演習。如果某類船舶這樣做是不可行的話，主管機關可同意至少是相當的其他安排。

3.2 在從事非短程國際航行的客船上，應在旅客上船後 24 小時內舉行旅客集合演習。應向旅客講授救生衣的用法和應變時採取的行動。如在已舉行過應變演習後，只有少數旅客在港口上船，則應請這些旅客注意第 8 條之 2 和第 8 條之 4 所規定的應變須知就足夠了，不必進行另一次集合演習。

3.3 在從事短程國際航行的船舶上，如在離港後不舉行旅客集合演習者，則應請旅客注意第 8 條之 2 和 4 所規定的應變須知。

3.4 每次棄船演習應包括：

.1 使用第 6 條之 4.2 所規定的報警系統，召集旅客和船員至

集合地點，並確使他們了解應變部署表中所規定的棄船命令；

- .2 向集合地點匯報，並準備執行應變部署表所述的任務；
- .3 查看旅客和船員穿著是否合適；
- .4 查看是否正確地穿好救生衣；
- .5 在完成任何必要的降落準備工作後，至少降下一艘救生艇；
- .6 起動並運轉救生艇發動機；
- .7 運轉降落救生筏所用的吊筏架。

3.5 不同的救生艇應在可行的範圍內按第 3.4.5 段的要求，在逐次演習中降下。

3.6 演習應儘可能按實際應變情況進行。

3.7 每隻救生艇至少每 3 個月在一次棄船演習中要載着經指定的操作船員降入水中開動。對於從事短程國際航行的船舶，如果由於港口泊位的安排和營運格局不允許救生艇在某一舷降落下水者，主管機關可准許救生艇不在該舷降落下水。但無論如何，所有這些救生艇應至少每 3 個月下降一次並每年降落下水一次。

3.8 除兼作救助艇的救生艇外，救助艇應在合理和可行的範圍內，每個月載指派的艇上艇員後降落下水並在水上進行操縱。在一切情況下，應至少每 3 個月按此要求進行一次。

3.9 如救生艇與救助艇的降落下水演習是在船舶前進航行中進行者，因為涉及危險，該項演習應在有遮蔽的水域並在有此項演習經驗

的駕駛員監督下進行演習。

3.10 在每次棄船演習時，應試驗集合與棄船所用的應急照明系統。

4 船上訓練與授課

4.1 應儘可能快地，但不遲於船員上船後兩星期內，進行船舶救生設備（包括救生艇筏屬具）用法的船上訓練。但無論如何，如船員是定期安排輪流派上船者，應在不遲於第一次上船後兩星期內，進行此項訓練。

4.2 應進行講授船舶救生設備的用法和海上救生須知方面的課程，其間隔期與演習間隔期相同。每一課程內容可以是關於船舶救生設備系統中各個不同部分的，但在任一個 2 個月周期內，課程內容應包括全部船舶救生屬具與設備。每個船員均應聽課，課程應包括但沒有必要僅限於：

- .1 船舶氣脹式救生筏的操作與使用；
- .2 低溫保護問題，低溫急救護理和其他合適的急救程序；
- .3 在惡劣氣候和惡劣海況中，船舶救生設備使用所需要的其他專門課程。

4.3 在每艘裝設吊筏架降落救生筏的船舶上，應在不超過 4 個月的間隔期，舉行此項設備用法的船上訓練。每當可行時，此項訓練應包括充氣與降下救生筏。這隻救生筏可以是訓練專用救生筏，而不是船舶救生設備的組成部分；這隻專用救生筏應加顯著標記。

5 記錄

舉行應變演習的日期、棄船演習與消防演習的細節、其他救生設備演習以及海上訓練應記載於主管機關可能規定的航海日誌內。若在指定時間未舉行全部應變集合、演習或訓練項目時，則應在航海日誌內記述其原因和已舉行的集合、演習或訓練項目的範圍。

第 19 條

使用準備狀態、維護保養與檢查

1 本條適用於一切船舶。1986 年 7 月 1 日以前建造的船舶應在可行範圍內符合本條之 3 和本條之 6.2 的要求。

2 使用準備狀態

在船舶離港前及在整個航行時間內，一切救生設備應處於可用狀態，並準備立即使用。

3 維護保養

3.1 應備有符合第 52 條要求的救生設備船上維護保養須知，並應按須知進行維護保養。

3.2 主管機關可以同意用列在第 52 條要求中的船上計劃維護保養表來代替本條之 3.1 所規定的須知。

4 吊艇索的保養

應將降落所用的吊艇索的兩索端掉轉，間隔不超過 30 個月，由於吊艇索變質而有必要時，或在不超過 5 年的間隔期中，應予換新，取

其較早者。

5 備件與修理設備

救生設備及其易損或易耗而必須定期更換的部件應配有備件與修理設備。

6 每周檢查

每周應進行下列的試驗和檢查：

- .1 一切救生艇筏、救助艇及降落設備應進行外觀檢查，以確保立即可用；
- .2 只要環境溫度在啟動發動機所規定的最低溫度以上，一切救生艇和救助艇的發動機應進行正車和倒車運轉，總時間不少於 3 min。對於 1986 年 7 月 1 日以前建造的船舶，作為特例，主管機關可不堅持此項要求；
- .3 應試驗通用緊急報警系統。

7 月度檢查

每月應使用第 52 條之 1 所規定的檢查表檢查救生設備（包括救生屬具），確保完整無缺並處於可用狀態。檢查報告應載入航海日誌。

8 氣脹式救生筏、氣脹式救生衣與充氣式救助艇的檢修

8.1 每隻氣脹式救生筏與每件氣脹式救生衣應加檢修：

- .1 間隔期限不得超過 12 個月，但無論如何，凡外觀正常和合情合理者，主管機關可展期到 17 個月；
- .2 在認可的檢修站進行檢修，該檢修站是勝任檢修該筏的，

備有正規的檢修器具，並僅僱用受過正規訓練的人員。*

8.2 一切充氣式救助艇的修理和維護保養，應按照製造商的說明書進行。可以在船上進行應急修理，但無論如何，應在認可檢修站完成其永久性修理。

9 液壓脫開裝置的定期檢修

液壓脫開裝置應加檢修：

- .1 間隔期限不得超過 12 個月，但無論如何，凡外觀正常和合情合理者，主管機關可展期到 17 個月；
- .2 在認可的檢修站進行檢修，該檢修站是勝任檢修該裝置的，備有正規檢修器具，並僅僱用受過正規訓練的人員。

第 II 節

客船（附加要求）

第 20 條

救生艇筏與救助艇

1 救生艇筏

1.1 從事非短程國際航行的客船應配備：

* 參閱海事組織所通過的決議 A.333 (IX) 所制定的“氣脹式救生筏檢修站的認可條件建議書”。

- .1 符合第 42 條、第 43 條或第 44 條要求的救生艇，其在每舷的總容量應為不少於船上人員總數的 50%。主管機關可准以相等總容量的救生筏來代替救生艇，但是，船舶每舷應配備足夠容納不少於船上人員總數 37.5%的救生艇。該救生筏應符合第 39 條或第 40 條要求，而且應使用相等地分佈在船舶每舷的降落設備；並且
- .2 另外，總容量應為船上人員總數至少 25%的符合第 39 條或第 40 條要求的救生筏。這些救生筏應使用至少 1 台設在每舷的降落設備，該設備可以是按本條之 1.1.1 要求裝設的設備，或是能在兩舷均可使用的等效認可設備。但無論如何，這些救生筏的存放沒有必要符合第 13 條之 5 的要求。

1.2 從事短程國際航行而且符合第 II-1 章第 6 條之 5 規定的分艙特種標準的客船應配備：

- .1 在可行範圍內，相等地分佈在船舶每舷的符合第 42、43 或 44 條要求的救生艇總容量應為船上人員總數至少 30%，而且符合第 39 條或第 40 條要求的救生筏總容量連同救生艇容量的救生艇筏應為船上人員總人數。這些救生筏應使用相等地分佈在船舶每舷的降落設備；並且
- .2 另外，符合第 39 或 40 條要求的救生筏總容量應為船上人員總數至少 25%。這些救生筏應使用至少 1 台設在每舷的降落設備，該設備可以是按本條之 1.2.1 要求裝設的設備，或是能在兩舷均可使用的等效認可設備。但這些救生筏的存放沒有必要符合第 13 條之 5 的要求。

1.3 從事短程國際航行而且不符合第 II-1 章第 6 條之 5 規定的分艙特種標準的客船，應按本條之 1.1 要求配備救生艇筏。

1.4 為船上人員總數棄船所需要配備的一切救生艇筏在載足全部乘員及屬具後，應能在從發出棄船信號後 30 min 內，全部降落水中。

1.5 為代替滿足本條之 1.1、1.2 或 1.3 的要求，500 總噸以下的客船，凡船上人員總數少於 200 人者，可遵照下列要求：

- .1 船舶每舷所配備的符合第 39 條或第 40 條要求的救生筏總容量應能容納船上人員總數。
- .2 除非 1.5.1 段所要求的救生筏是能迅速地轉移到任何一舷降落的，否則，應配備附加救生筏，使每舷的總容量為船上人員總數 150%。
- .3 如本條之 2.2 所要求的救助艇亦是符合第 42、43 或 44 條要求的救生艇，則可計入本條之 1.5.1 段所要求的總容量，但是船舶任何一舷的總容量至少是船上人員總數的 150%。
- .4 在任何一隻救生艇筏掉失或不能使用時，每舷可供使用的救生艇筏應能足夠容納船上的所有人員。

2 救助艇

2.1 500 總噸及 500 總噸以上的客船應在船舶每舷至少配備 1 艘符合第 47 條要求的救助艇。

2.2 500 總噸以下的客船應至少配備一艘符合第 47 條要求的救助艇。

2.3 倘若救生艇也符合救助艇的要求，則可同意將此救生艇當作救助艇。

3 救生筏的集結

3.1 客船應配備足夠數量的救生艇及救助艇，確使為了夠船上全體人員棄船時使用而需要每艘救生艇或救助艇配備的救生筏不多於 6 隻。

3.2 從事短程國際航行而且符合第 II-1 章第 6 條之 5 規定的分艙特種標準的客船應配備足夠數量的救生艇及救助艇，確使為了夠船上全體人員棄船時使用而需要每艘救生艇或救助艇配備的救生筏不多於 9 隻。

第 21 條

個人救生設備

1 救生圈

1.1 一艘客船應配備符合第 7 條之 1 和第 31 條要求的救生圈，其數量應不少於下表所規定的數量：

船長 (m)	最少救生圈數
60 以下	8
60 至 120 以下	12

120 至 180 以下	18
180 至 240 以下	24
240 及 240 以上	30

1.2 不論第 7 條之 1.3 如何規定，長度為 60 m 以下的客船應配備不少於 6 個設以自亮浮燈的救生圈。

2 救生衣

除第 7 條之 2 規定的救生衣外，每艘客船應配備供不少於船上人員總數 5%用的救生衣。這些救生衣應存放在甲板上或集合地點顯明易見的地方。

3 救生衣浮燈

3.1 本款適用於一切客船，本款應不遲於 1991 年 7 月 1 日適用於 1986 年 7 月 1 日以前建造的客船。

3.2 在從事國際航行而非短程國際航行的客船上，每件救生衣應設有一盞符合第 32 條之 3 要求的浮燈。

4 保溫救生服與保溫用具

4.1 本款適用於一切客船。本款應不遲於 1991 年 7 月 1 日適用於 1986 年 7 月 1 日以前建造的客船。

4.2 客船應為每艘船上的救生艇配備至少 3 件符合第 33 條要求的保溫救生服，此外，應為容納在救生艇中而沒有配備保溫救生服的每一個人配備 1 件符合第 34 條要求的保溫用具。在下列情況下，沒有必要配備這些保溫救生服與保溫用具：

- .1 容納在全封閉或部分封閉救生艇中的人員；或
- .2 如船舶一直在溫暖氣候航區航行，主管機關認為保溫用具為不必要者。

4.3 4.2.1 段的規定還應適用於配備在 1986 年 7 月 1 日以前建造的船舶上不符合第 42、43 或 44 條要求的全封閉或部分封閉救生艇。

第 22 條

救生艇筏與救助艇的登乘佈置

- 1 在客船上，救生艇筏登乘佈置的設計，應適於：
 - .1 所有從存放處直接登乘並降落，或者從登乘甲板登乘並降落（但非從兩處登乘並降落）的救生艇；
 - .2 從存放處一個緊鄰的位置登乘並降落的或從按第 13 條之 5 的要求在降落前移至的位置登乘並降落的吊架降落救生艇筏。

2 救助艇的佈置應為，救助艇可在存放處直接登乘，並在救助艇定員船員載足的情況下直接降落。儘管有 1.1 段的要求，如救助艇也是救生艇，並且其他救生艇為從登乘甲板登乘及降落者，其安排則應為，救助艇也能從登乘甲板登乘並降落。

第 23 條

救生筏的存放

在客船上，每一救生筏存放時，其艙纜應固定地繫連在船上並設有符合第 38 條之 6 要求的漂浮脫開裝置，使救生筏在船舶沉沒時，在可行的情況下能漂浮脫開，如為氣脹式，還能自動充氣。

第 24 條

集合站

除符合第 11 條要求外，每艘客船應設有旅客集合站，該站應：

- .1 設在登乘站附近，並可使旅客易於到達登乘站，與登乘站設在同一處者除外；
- .2 有集結和指揮旅客用寬敞場地。

第 25 條

演習

- 1 本條適用於一切客船。
- 2 客船每周應舉行一次棄船演習和消防演習。

第 III 節

貨船（附加要求）

第 26 條

救生艇筏與救助艇

1 救生艇筏

1.1 貨船應配備：

- .1 船舶每舷一艘或多艘符合第 44 條要求的救生艇，其總容量應能容納船上人員總數。但是，主管機關可准許在有利氣候條件下和在適宜航區內營運的貨船（除油船、化學品液貨船和氣體運輸船外）配備符合第 43 條要求的救生艇，但營運航區的界限要註明在貨船安全設備證書內；並且
- .2 另外，一隻或多隻符合第 39 或 40 條要求並能在船舶任何一舷降落下水的救生筏，其總容量應能容納船上人員總數。如該救生筏或多隻救生筏為不能容易地移到船舶任何一舷以降落下水者，則每舷所有的總容量應能容納船上人員總數。

1.2 為代替滿足 1.1 段的要求，貨船可配備：

- .1 一艘或多艘符合第 44 條要求而能在船尾自由下降降落下

水的救生艇，其總容量應能容納船上人員總數；並且

- .2 另外，船舶每舷一隻或多隻符合第 39 或 40 條要求的救生筏，總容量應能容納船上人員總數。至少在船舶一舷的救生筏應使用降落裝置。

1.3 除油船、化學品液貨船和氣體運輸船外，長度為 85 m 以下的貨船可按照下列要求，來代替滿足 1.1 或 1.2 段的要求：

- .1 船舶每舷配備一隻或多隻符合第 39 或 40 條要求的救生筏，其總容量應能容納船上人員總數。
- .2 除非 1.3.1 段所規定的救生筏能迅速地轉移到任何一舷降落下水，否則應配備附加救生筏使每舷可用的總容量能容納船上人員總數的 150%。
- .3 如本條之 2 所規定的救助艇亦是符合第 43 或 44 條要求的救生艇，則該艇可列入 1.3.1 段所規定的總容量，但船舶每舷可用的總容量至少是船上人員總數的 150%。
- .4 在萬一任何一艘救生艇筏掉失或不能使用的情況下，每舷可供使用的救生艇筏應能容納船上人員總數。

1.4 凡救生艇筏存放地點距船艏或船艉超過 100 m 的貨船，除配備 1.1.2 和 1.2.2 段所規定的救生筏外，尚應配備 1 隻救生筏，在合理和可行範圍內，儘量靠前或靠後放置，或 1 隻儘量靠前和另一隻儘量靠後放置。不管第 29 條如何要求，此隻或多隻救生筏可按能用人力脫解的方式繫牢，並不必要是能用認可降落設備降落的型式。

1.5 除第 15 條之 1.1 所提到的救生艇筏外，為船上人員總數棄船所需要配備的一切救生艇筏在載足全部人員及屬具後，應能在從發出

棄船信號後 10 min 內，全部降落水中。

1.6 運載散發有毒蒸氣或毒氣的貨物*的液體化學品船和氣體運輸船，應配備符合第 45 條要求的救生艇，來代替符合第 43 或 44 條要求的救生艇。

1.7 油船、化學品液貨船和氣體運輸船裝載閃點不超過 60°C（閉杯試驗）的貨物者應配備符合第 46 條要求的救生艇，來代替符合第 43 或 44 條要求的救生艇。

2 救助艇

貨船應至少配備 1 艘符合第 47 條要求的救助艇。若救生艇亦符合救助艇的要求，可以同意將此艇作為救助艇。

3 1986 年 7 月 1 日以前建造的貨船，除其救生艇外，應不遲於 1991 年 7 月 1 日配備：

- .1 一隻或多隻救生筏，總容量應能容納船上人員總數。這隻或多隻救生筏應採用能與下沉中船舶自動脫開的制牢救生筏的綁繫方法或等效設施；
- .2 凡救生艇筏存放地點距船艏或船艉超過 100 m 者，除配備 3.1 段規定的救生筏外，1 隻救生筏在合理和可行範圍內，儘量靠前或後放置，或一隻儘量靠前，另一隻儘量靠後，不管 3.1 段如何要求，此救生筏可按能用人力脫解的方式繫牢。

* 參閱海上安全委員會決議 MSC.4（48）所通過的國際散裝危險化學品船建造與設備規則第十七章中和海上安全委員會決議 MSC.5（48）所通過的國際液化氣體船建造與設備規則第十九章中緊急逃脫需加呼吸保護的產品。

第 27 條

個人救生設備

1 救生圈

1.1 貨船應配備符合第 7 條之 1 和第 31 條要求的救生圈，其數量應不少於下表所規定的數量：

船長 (m)	最少救生圈數
100 以下	8
100 至 150 以下	10
150 至 200 以下	12
200 至 200 以上	14

1.2 第 7 條之 1.3 所規定配在油船上的救生圈用自亮浮燈，應是電池型。

2 救生衣浮燈

2.1 本款適用於一切貨船。本款應不遲於 1991 年 7 月 1 日適用於 1968 年 7 月 1 日以前建造的貨船。

2.2 在貨船上，每件救生衣應設有一盞符合第 32 條之 3 要求的浮燈。

3 保溫救生服與保溫用具

3.1 本款適用於一切貨船。本款應不遲於 1991 年 7 月 1 日適用於

1986年7月1日以前建造的貨船。

3.2 貨船應為船上每艘救生艇至少配備3件符合第33條要求的保温救生服，或如主管機關認為必須和可行時，則為船上每人配備1件符合第33條要求的保温救生服；但是，船舶除應配備第38條之5.1.24、第41條之8.31和第47條之2.2.13所規定的保温用具外，尚應為船上未配有浸水服的人員配備符合第34條要求的保温器材。如該船符合下列要求，則沒有必要配備這些浸水服和保温器材：

- .1 船舶每舷配有全封閉救生艇，其總容量能容納船上人員總數；或
- .2 配有能在該船船艙自由下降降落下水的全封閉救生艇，總容量能容納船上人員總數，而且是能從存放地方直接登上和降落下水的救生艇，同時船舶每舷救生筏總容量能容納船上人員總數；或
- .3 經常從事溫暖航區航行，主管機關認為浸水服為不必要者。

3.3 符合第26條之1.3要求的貨船，應為船上每個人配備符合第33條要求的保温救生服，除非該船：

- .1 配有吊筏架降落救生筏；或
- .2 配有使用能在船舶兩舷均可利用的等效設備的救生筏，且為不需先進入水中再登筏者；
- .3 經常從事溫暖氣候航區航行，主管機關認為浸水服為不必要者。

3.4 可用本條所規定的浸水服來滿足第 7 條之 3 的要求。

3.5 1986 年 7 月 1 日以前建造的貨船所配備的本條 3.2.1 和 3.2.2 段所指的全封閉救生艇，不必符合第 44 條的要求。

第 28 條

救生艇筏的登乘和降落佈置

1 貨船救生艇筏的登乘佈置應設計為，救生艇可從存放處直接登乘和降落，吊架降落救生筏可從存放處旁一緊鄰位置或按第 13 條之 5 的規定將救生筏於降放前移至的位置登乘和降落。

2 總噸為 20,000 噸及 20,000 噸以上的貨船，其救生艇應能在大船於靜水中以 5 節速度前進時降放，必要時可利用艇艙纜。

第 29 條

救生筏的存放

在貨船上，除第 26 條之 1.4 所要求的救生筏外，每隻救生筏存放時，其艙纜應固定地繫連在船上，並設有符合第 38 條之 6 要求的漂浮脫開裝置，使救生筏在船舶沉沒時，能漂浮脫開，如其為氣脹式，還能自動充氣。

C 部分

救生設備要求

第 I 節

通則

第 30 條

救生設備一般要求

1 2.7 段適用於一切船舶。2.7 段應不遲於 1991 年 7 月 1 日適用於在 1986 年 7 月 1 日以前建造的船舶。

2 除另有明文規定或主管機關經考慮船舶所經常從事的特殊航程，認為其他要求為宜者外，本節所規定的一切救生設備應：

- .1 以恰當的工藝和材料製成；
- .2 在-30°C 至+65°C 的空氣溫度範圍內存放而不致損壞；
- .3 如其在使用中，可能浸沒在海水中，則在-1°C 至+30°C 的海水溫度範圍內使用；
- .4 凡適用者，皆防腐爛，耐腐蝕，並不受海水、原油或霉菌侵襲的過度影響；
- .5 如暴露在日光下，有抗變質力；

- .6 在一切有助於探測的部位具有鮮明易見的顏色；
- .7 在有助於探測的位置裝貼逆向反光材料，並與海事組織的建議相一致*；
- .8 如必須在風浪中使用，則能在該環境中令人滿意地工作。

3 主管機關應確定會老化變質救生設備的可用期限。這類救生設備應標明確定其壽命的方法或必須更換的日期。

第 II 節

個人救生設備

第 31 條

救生圈

1 救生圈技術規格

每隻救生圈：

- .1 應具有不大於 800 mm 的外徑及不少於 400 mm 的內徑；
- .2 應採用自然浮力材料製成；它的浮力應不得依靠燈心草、軟木刨片或軟木粒、任何其他鬆散的粒狀材料或任何依靠充氣的空氣室；

* 參閱海事組織所通過的決議 A.274 (VII) 所制定的“救生設備逆向反光帶建議”。

- .3 應能在淡水中支承不少於 14.5 kg 的鐵塊達 24 h 之久；
- .4 應具有不少於 2.5 kg 的質量；
- .5 應在被火完全包圍 2 S 後，不至燃燒或繼續熔化；
- .6 其構造，應能經受從最輕載航海水線以上至存放位置的高度或 30 m（取其大者）處投落下水而不致損害救生圈或其附件的操作性能；
- .7 如救生圈為用來操動為自發煙霧信號及自亮浮燈所配備的迅速拋投裝置者，應具有足以操動此項迅速拋投裝置的質量或 4 kg，取其大者；
- .8 應設有直徑不小於 9.5 mm 及長度不少於救生圈體外直徑 4 倍的把手索 1 根。把手索應繞救生圈的周圍，制牢在四個等距點，形成四個相等的索環。

2 救生圈自亮浮燈

第 7 條之 1.3 所規定的自亮浮燈應：

- .1 不致被水所熄滅；
- .2 能向上半球的所有方向，不論是連續發出發光強度不小於 2 cd 的亮光，或是發出至少相稱的發光強度，每分鐘不少於 50 閃速率的閃光（放出閃光）；
- .3 配有使用至少 2 h 並能滿足 2.2 段要求的能源；
- .4 能經受 1.6 段所要求的投落試驗。

3 救生圈自發煙霧信號

第 7 條之 1.3 所規定的自發煙霧信號應：

- .1 在平靜水面漂浮時，均速噴出鮮明易見顏色的煙霧不少於 15 min；
- .2 在信號噴出煙霧的整個期間中，不會爆炸般地點燃，或不噴出任何火焰；
- .3 在海浪中，不致淹沒；
- .4 當完全浸沒在水下時，繼續噴出煙霧至少 10 s；
- .5 能經受 1.6 段所要求的投落試驗。

4 可浮救生索

第 7 條之 1.2 所規定的可浮救生索應：

- .1 不打紐結；
- .2 具有不小於 8 mm 的直徑；
- .3 具有不少於 5 KN 的破斷強度。

第 32 條

救生衣

1 救生衣的一般要求

- 1.1 救生衣應在被火完全包圍 2 s 後，不至燃燒或繼續熔化。

1.2 每件救生衣的結構應：

- .1 經示範後，在無幫助情況下一個人能在 1 *min* 內正確地穿好救生衣；
- .2 能反穿或顯然只能以一種穿法穿用，並儘可能不至被錯誤地穿著；
- .3 穿著舒適；
- .4 任由穿著者從至少 4.5 *m* 高度跳入水中不致受傷，而且救生衣不移位也不損壞。

1.3 每件救生衣在平靜淡水中，應具有足夠的浮力與穩性：

- .1 將筋疲力盡或失去知覺人員的嘴部托出水面不低於 120 *mm*，其身體向後傾斜與垂向成不少於 20° 並不大於 50° 的角度；
- .2 將水中失去知覺人員從任何姿勢轉成為嘴部高出水面的姿勢，不超過 5 *s*。

1.4 救生衣應具有的浮力，在浸入淡水中 24 *h* 後，不得降低 5% 以上。

1.5 救生衣應使穿著的人員可作短距離的游泳，並登上救生艇筏。

1.6 每件救生衣應備有用細索繫牢的哨笛。

2 氣脹式救生衣

依靠充氣作浮力的救生衣應具有不少於兩個獨立充氣室，而且符合本條 1 款的要求，並應：

- .1 浸水後自動充氣，配有用單一人工動作充氣的裝置，並能用嘴來充氣；
- .2 在萬一任何一個空氣室失去浮力時，仍能符合 1.2、1.3 和 1.5 段的要求；
- .3 使用自動機械裝置充氣後，仍符合 1.4 段的要求。

3 救生衣浮燈

3.1 每個救生衣浮燈應：

- .1 具有不小於 0.75 cd 的發光強度；
- .2 具有能提供 0.75 cd 發光強度至少達 8 h 的能源；
- .3 當繫在救生衣時，可在上半球的可行最大球缺上看到亮光。

3.2 如 3.1 段所指的浮燈是閃光燈，該燈還應：

- .1 配有手動操作開關；
- .2 不得裝設聚光的透鏡或弧形反射器；
- .3 以每分鐘不少於 50 閃的速率閃光，其有效發光強度至少為 75 cd 。

第 33 條

保温救生服

1 保温救生服的一般要求

1.1 保温救生服應採用防水材料製成，並應：

- .1 在無幫助情況下，能在 2 分鐘內將它拆包並穿好，如保温救生服必須連同救生衣一起穿著，則要考慮到任何有關聯的衣服*和救生衣；
- .2 在被火完全包圍 2 s 後，不至燃燒或繼續熔化；
- .3 遮蓋除臉部以外整個身體，雙手也應遮蓋，配有永久性附連的手套者除外；
- .4 備有儘量排除或減少保温救生服腿部內面自由空氣的佈置；
- .5 從不少於 4.5 m 高度跳進水中後，不至有過分的水進入保温救生服。

1.2 保温救生服亦符合第 32 條要求者，則可歸類為救生衣。

1.3 保温救生服應使穿著保温救生服（如保温救生服必須連同救生衣一起穿著，則加穿救生衣）的人員能：

- .1 爬上並爬下長度至少為 5 m 的垂直梯子；
- .2 在棄船時，執行正常的任務；

* 參考本組織以決議 A.…… (VIII) 通過的“關於救生設備試驗的建議”的 3.1.3.1 段。

.3 從不少於 4.5 m 高度跳入水中，保溫救生服不損壞或不移位，或人員不受傷；並且

.4 在水中作短距離游泳並登上救生艇筏。

1.4 具有浮力而且設計為不須加穿救生衣的浸水服應設有符合第 32 條之 3 要求的浮燈及第 32 條之 1.6 所規定的笛哨。

1.5 如保溫救生服必須連同救生衣一起穿著，救生衣應穿在保溫救生服外面。穿著保溫救生服的人員應能在無幫助的情況下穿上救生衣。

2 保溫救生服的熱性能要求

2.1 非自然保溫材料製成的保溫救生服：

.1 應標明必須連同保暖衣服一起穿著的須知；

.2 其構造應為：在穿著者連同保暖衣服一起穿著時，或如保溫救生服必須連同救生衣一起穿著，則加穿救生衣後，從 4.5 m 高度跳入水中一次後，保溫救生服能繼續提供足夠的熱保護，確使穿著者在平靜流通水中，水溫為 5°C，歷時 1 小時後，體溫降低不超過 2°C。

2.2 自然保溫材料製成的保溫救生服，在穿著者在單獨穿著保溫救生服，或如保溫救生服必須連同救生衣一起穿著，則加穿救生衣後，從 4.5 m 高度跳入水中一次後，應能繼續提供足夠的熱保護，確使穿著者在平靜流通水中，水溫為 0°C 與 2°C 之間，歷時 6 h 後，體溫降低不超過 2°C。

2.3. 保溫救生服應可使兩手受到包裹的穿著者，浸在 5°C 水中，

歷時 1 h 後，可拿起鉛筆並寫字。

3 浮力要求

穿著符合第 32 條要求的保溫救生服，或保溫救生服與救生衣一起穿著的人員，應在淡水中，在不超過 5 s 內，從臉部朝下姿勢翻轉成臉部朝上姿勢。

第 34 條

保溫用具

1 保溫用具應採用導熱率於大於 $0.25 \text{ W}/(\text{m}\cdot\text{K})$ 的防水材料製成，並且其結構在用來包裹人員時，應減少被包裹者體溫的對流性和蒸發性熱損失。

2 保溫用具：

- .1 應包裹穿著救生衣人員除面部以外的整個身體，雙手也應包裹，除配有永久性附連的手套者外；
- .2 應能在救生艇筏或救助艇中，在無人幫助的情況下將它拆包並容易穿著；
- .3 如保溫用具妨礙游泳，應可使穿著者在 2 分鐘內在水中把它脫掉。

3 保溫用具在氣溫 -30°C 至 $+20^{\circ}\text{C}$ 範圍內，功能應正常。

第 III 節

視覺信號

第 35 條

火箭降落傘火焰信號

- 1 火箭降落傘火焰信號應：
 - .1 裝在防水外殼內；
 - .2 在外殼上，印有清楚闡明火箭降落傘火焰信號用法的簡明須知或圖解；
 - .3 具有整體的點燃裝置；
 - .4 設計成：在按製造廠的操作須知使用時，人員握持外殼而不致感到不舒適。

- 2 當垂直發射時，火箭應達到不少於 300 *m* 的高度，在其彈道頂點處，或在接近其彈道頂點處，火箭應射出降落傘火焰，該火焰應：
 - .1 發出明亮紅光；
 - .2 燃燒均勻，平均發光強度不少於 30,000 *cd*；
 - .3 具有不小於 40 *s* 的燃燒時間；
 - .4 具有不大於 5 *m/s* 的降落速度；
 - .5 在燃燒時不燒損降落傘或附件。

第 36 條

手持火焰信號

- 1 手持火焰信號應：
 - .1 裝在防水外殼內；
 - .2 在外殼上，印有清楚闡明手持火焰信號用法的簡明須知或圖解；
 - .3 具有自備的點燃裝置；
 - .4 設計成：在按製造廠的操作須知使用時，人員握持外殼而不致感到不舒適，燃燒中的或未熄滅的渣滓不致危害救生艇筏。

- 2 手持火焰信號應：
 - .1 發出明亮紅光；
 - .2 燃燒均勻，平均發光強度不少於 15,000 *cd*；
 - .3 具有不小於 1 *min* 的燃燒時間；
 - .4 浸入 100 *mm* 深的水下，歷時 10 秒鐘後，仍繼續燃燒。

第 37 條

可浮發煙信號

- 1 可浮發煙信號應：
 - .1 裝在防水外殼內；
 - .2 在按製造廠的操作須知使用時，不會爆炸般地點燃；
 - .3 在外殼上，印有清楚闡明可浮發煙信號用法的簡明須知或圖解。

- 2 可浮發煙信號應：
 - .1 在平靜水面漂浮時，勻速地噴出鮮明易見顏色的煙霧；持續時期不少於 3 *min*；
 - .2 在整個噴出煙霧期間，不噴出任何火焰；
 - .3 在海浪中，不致淹沒；
 - .4 在浸入 100 *mm* 水深下，歷時 10 s 後，仍繼續噴出煙霧。

第 IV 節

救生艇筏

第 38 條

救生筏的一般要求

1 救生筏的構造

1.1 每隻救生筏的構造，應能經受在一切海況下暴露漂浮達 30 天。

1.2 救生筏的構造應為從 18 m 高度投落下水後，救生筏及其屬具能符合使用要求。如救生筏必須存放在最輕載航海水線以上超過 18 m 高度的地方，則該救生筏應是曾從至少該高度處進行過滿意的投落試驗的型式。

1.3 在頂篷撐起和未撐起的情況下，漂浮的救生筏應能經受從筏底以上至少 4.5 m 的高度反覆多次跳登。

1.4 救生筏及其舢裝件的構造應使救生筏在載足全部乘員及屬具並放下 1 隻海錨後，在平靜水中，能被拖帶，航速達 3 節。

1.5 救生筏應設有保護乘員免受暴露的頂篷，該頂篷在救生筏降落中和到水面時自動撐起。該頂篷應符合下列要求：

- .1 頂篷應採用以空氣間隙隔開的雙層材料或其他等效設施來防熱及禦寒。應設有防止水分聚集在空氣間隙內的設施；

- .2 頂篷內面的顏色應不致使乘員感到不舒適；
- .3 每個進口處應有鮮明的標誌，並設有有效的可調整關閉裝置，在筏內外兩面均能容易而迅速地開啟該裝置，以利於通空氣且可防止海水、風和冷氣的侵入。容納 8 人以上的救生筏應設有不少於兩個正相對面的進口處；
- .4 即使當進口處關閉時，頂篷無論何時都應通入足夠乘員需要的空氣；
- .5 頂篷應設有不少於一個的瞭望窗；
- .6 頂篷應設有收集雨水的設施；
- .7 坐在頂篷下面各處的乘員，應有足夠的頭上空間。

2 救生筏的最小乘員定額與質量

2.1 按第 39 條之 3 或第 40 條之 3 的要求算出的乘員定額少於 6 人的救生筏，概不得認可。

2.2 除必須使用符合第 48 條要求的認可降落設備降落的救生筏及不要求是便攜式的救生筏外，其他救生筏的容器及其屬具的總質量不得超過 185 kg。

3 救生筏艙裝件

3.1 救生筏應沿筏體外圍及內側牢固地裝設鏈環狀把手索。

3.2 救生筏應設有把第 6 條之 2.1 所要求的手提式無線電設備所配的天線適宜地安裝和制牢在操作地點的裝置。

3.3 救生筏應設一根有效的艙纜，其長度應不少於從存放處到最

輕載航海水線的距離的 2 倍或 15 m，取其長者。

4 吊筏架降落救生筏

4.1 除符合上述要求外，使用認可降落設備的救生筏應：

- .1 當救生筏載足全部乘員及屬具後，能經受碰撞速度不小於 3.5 m/s 之碰撞船舷的水平撞擊力，並再從不小於 3 m 高度投落下水後，不得有影響其性能的損壞；
- .2 設置在登乘期間能可靠地將救生筏貼緊並繫留在登乘甲板的裝置。

4.2 每隻客船的吊筏架降落救生筏的佈置應使救生筏的全部乘員能迅速地登上救生筏。

4.3 每隻貨船的吊筏架降落救生筏的佈置應使救生筏的全部乘員能在發出登筏指示的時間起不超過 3 min 內登上救生筏。

5 屬具

5.1 每隻救生筏的正常屬具應包括：

- .1 繫有不少於 30 m 長浮索的可浮救生環一個；
- .2 裝有可浮柄的非折疊式小刀 1 把，繫以短繩並存放在頂篷外面靠近艙纜與救生筏繫連處的袋子內。另外，乘員定額為 13 人或 13 人以上的救生筏應加配一把不必是非折疊式的小刀；
- .3 乘員定額不超過 12 人的救生筏配可浮水瓢 1 隻。乘員定額為 13 人或 13 人以上的救生筏配可浮水瓢 2 隻；

- .4 海綿 2 塊；
- .5 海錨 2 隻，每隻配有耐衝擊錨索及收錨索各 1 根，一隻備用，另一隻固定地繫於救生筏上，其繫固方法應使海錨在救生筏充氣或到水面時，總是使救生筏以非常穩定的方式頂風。每隻海錨及其錨索和收錨索應具有足以適於一切海況的強度。海錨收錨索的每端都應設有旋轉環，並應是不可能在其支索之間外轉的一種類型；
- .6 可浮手划槳 2 隻；
- .7 開罐頭刀 3 把。帶特殊開罐頭葉片的安全小刀可滿足本要求；
- .8 急救藥包 1 套，置於使用後可再蓋緊的水密箱內；
- .9 哨笛或等效的音響號具 1 隻；
- .10 符合第 35 條要求的火箭降落傘火焰信號 4 支；
- .11 符合第 36 條要求的手持火焰信號 6 支；
- .12 符合第 37 條要求的可浮發煙信號 2 個；
- .13 適於摩氏通信的防水手電筒 1 隻，連同備用電池 1 副及備用燈泡 1 隻，裝在同一水密容器內；
- .14 有效的雷達反射器 1 具；
- .15 日光信號鏡 1 面，連同與船舶和飛機通信用法須知；
- .16 印在防水硬紙上，或裝在水密容器內的第五章第十六條所指的救生信號圖解說明表 1 張；

- .17 釣魚用具 1 套；
- .18 總數為救生筏額定乘員每個人不少於 10,000 KJ 的口糧，口糧應保存於氣密包裝內並收存於水密容器內；
- .19 水密容器數個，內裝總數為救生筏額定乘員每個人 1.5 l 的淡水，其中每個人所需的 0.5 l 可用 2 天內能生產等量淡水的海水除鹽器來代替；
- .20 不銹飲料量杯 1 個；
- .21 救生筏額定乘員每個人配防暈船藥 6 片和清潔袋一個；
- .22 救生須知；
- .23 緊急行動須知；
- .24 足供 10%救生筏額定乘員用的符合第 34 條要求的保溫器材或 2 件，取其大者。

5.2 在根據 5.1 段配備的救生筏上，第 39 條之 7.3.5 和第 40 條之 7.7 所要求的標誌應是以印刷體大寫羅馬字母標明的“SOLAS A PACK”字樣。

5.3 從事短程國際航行的客船，如主管機關在考慮到航程性質與時間後認為 5.1 段所規定的全部項目不都是必要時，主管機關可准許這些船上所載的救生筏配備 5.1.1 至 5.1.6 段、5.1.8 段、5.1.9 段、5.1.13 至 5.1.16 段和 5.1.21 至 5.1.24 段所規定的屬具以及 5.1.10 至 5.1.12 段所規定的屬具的半數。在這些救生筏上，第 39 條之 7.3.5 和第 40 條之 7.7 所要求的標誌應是以印刷體大寫羅馬字母標明的“SOLAS A PACK”字樣。

5.4 屬具，凡適宜者，應收存在容器內，如容器不是救生筏的整體部分或固定地附於救生筏上的，則容器應存放並制牢在救生筏內，並能在水面漂浮至少 30 min，不至損壞其內存屬具。

6 救生筏漂浮脫開裝置

6.1 艙纜系統

救生筏艙纜系統應在船舶與救生筏之間起連接作用，其佈置應確使救生筏在脫開時（氣脹式救生筏則在充氣時）不至被下沉中的船舶拖沒。

6.2 薄弱環

如漂浮脫開裝置使用薄弱環者，薄弱環應：

- .1 不至被從救生筏容器內拉艙纜所需的力拉斷；
- .2 在適用時有足夠強度使救生筏充氣；
- .3 在張力為 2.2 ± 0.4 KN 時斷開。

6.3 靜水壓力脫開裝置

漂浮脫開裝置中使用靜水壓力脫開裝置者，該脫開裝置：

- .1 應採用兼容的材料製成，以防止該裝置發生故障。不得接受在靜水壓力脫開裝置的部件上鍍鋅或其他形式的金屬鍍層；
- .2 在水深不超過 4 m 處，應自動脫開救生筏；
- .3 應設有防止水分在該裝置處在正常位置時聚積在靜水壓力室內的洩水器；

- .4 其結構，當海浪拍擊時，應不至脫開；
- .5 在其外部應耐久地標明其型號與出廠號；
- .6 應附有證件或產品銘牌，說明其製造日期、型號與出廠號；
- .7 每件連接艙纜系統的部件的強度應不小於對艙纜所要求的強度。

第 39 條

氣脹式救生筏

1 氣脹式救生筏應符合第 38 條的要求，此外，應符合本條的要求。

2 氣脹式救生筏的構造

2.1 主浮力艙應分成不少於 2 個的獨立隔艙，每個隔艙通過各自的止回充氣閥充氣。浮力艙的安排應是在任一隔艙萬一損壞或充氣失效時，未損傷的隔艙應能支持該筏的額定乘員而且救生筏整個周圍都是正的乾舷。每個乘員的質量以 75 kg 計並且都坐在規定的座位上。

2.2 救生筏的筏底應為水密，並應充分絕緣以禦寒冷，不論是：

- .1 採用一個或幾個隔艙（這個或這幾個隔艙能由乘員充氣或自動充氣，並能由乘員洩氣並再充氣的方法；或
- .2 採用不依靠充氣的其他等效設施。

2.3 救生筏應使用無毒氣體充氣，環境溫度為 18°C 至 20°C 之間時在 1 *min* 內，環境溫度為 -30°C 時在 3 *min* 內，完全充足。充氣後，救生筏載足全部乘員和屬具後應保持其形狀不變。

2.4 每個充氣隔艙應能經受至少等於 3 倍工作壓力的超壓，並應不論使用安全閥或限制供氣方法，均能防止其壓力超過 2 倍工作壓力。應設有安裝 10.1.2 段所要求的充氣泵或充氣器的設備，用以保持工作壓力。

3 氣脹式救生筏的乘員定額

氣脹式救生筏的乘員定額應等於下列各數中較小者：

- .1 充氣後，其主浮胎（不包括篷柱以及橫座位在內，如設有時）的容量以 m^3 計時除以 0.096 後所得的最大整數；或
- .2 救生筏的內水平橫剖面面積（可包括一個或多個橫座位在內，如設有時）量至浮胎的最內邊，以 m^2 計時除以 0.372 後所得的最大整數；或
- .3 可足夠舒適地坐下並有足夠的頭上空間而且不致妨礙任何救生筏屬具操作的人數；這些人全部穿著救生衣，每個人的質量以 75 *kg* 計。

4 進入氣脹式救生筏的通道

4.1 至少一個進口處應設有半剛性登筏跳板以便人員能從海面登入救生筏，跳板的佈置要防止一旦跳板損壞，使救生筏明顯洩氣。設有一個以上的進口處的吊筏架降落救生筏應在拉近索與登乘設施對面的進口處設有登筏跳板。

4.2 未設有登筏跳板的進口處應備有登筏梯，其最下一級踏板應位於救生筏的最輕水線以下不小於 0.4 m 處。

4.3 救生筏內面應有有助於水中的人員把自己從登筏梯拉進救生筏的設施。

5 氣脹式救生筏的穩性

5.1 每隻氣脹式救生筏的構造在充氣脹滿並且頂篷撐到最高位置而漂浮時，在風浪中應當穩定。

5.2 救生筏處於翻覆位置的穩性應為，在風浪中及在平靜水面上，均能由 1 個人扶正。

5.3 救生筏載足全部乘員和屬具後的穩性，應為能在平靜水面被拖帶，航速達到 3 節。

6 氣脹式救生筏艙裝件

6.1 除第 38 條之 6 所要求的薄弱環外，艙纜系統包括其繫連於救生筏上設施的破斷強度，救生筏的乘員定額為 9 人或 9 人以上者，應不小於 10.0 KN；其他救生筏應不小於 7.5 KN。救生筏應能由一個人充氣。

6.2 救生筏頂篷的頂部應裝設一盞人工控制燈，在晴朗天氣的黑夜，距離至少 2 海哩處可看到燈光，使用時間不少於 12 h。如是閃光燈，該燈在 12 h 使用時間的初始 2 h 內的閃光速率，每分鐘應不少於 50 閃。該燈應由海水電池或化學乾電池供電，並應在救生筏充氣時自動發光。該電池應為不因其存放所在救生筏內的潮濕或濕氣而變質的類型。

6.3 救生筏內面應裝設一盞人工控制燈，該燈應能連續使用至少 12 h。應在救生筏充氣時自動發光，並有足夠光強以供閱讀救生和屬具用法須知。

7 氣脹式救生筏的容器

7.1 氣脹式救生筏應裝在容器內，該容器：

- .1 其結構在所能遇到的海上各種條件下，能經久耐用；
- .2 有充裕的自然浮力，當裝有救生筏及其屬具時，船舶如沉沒，能從內部拉艙纜並拉動充氣裝置；
- .3 應是切合實際地水密，容器底部洩水孔除外。

7.2 救生筏在其容器內的包裝方法，應確使救生筏從容器破裂脫開後，在水面充氣時，儘可能地處於正浮位置。

7.3 容器上應標明：

- .1 製造廠名或商標；
- .2 出廠號碼；
- .3 認可機關名稱和乘員定額；
- .4 SOLAS；
- .5 內裝應急袋的型號；
- .6 最近一次檢修日期；
- .7 艙纜長度；

- .8 水線以上最大許可存放高度（根據跌落試驗高度和艙纜長度）；
- .9 降落須知。

8 氣脹式救生筏上的標誌

救生筏上應標明：

- .1 製造廠名或商標；
- .2 出廠號碼；
- .3 製造日期（年月）；
- .4 認可機關名稱；
- .5 最近一次檢修的檢修站名稱和地點；
- .6 每個進口處上面寫明乘員定額，字高不小於 100 mm，字色與救生筏顏色有明顯的差異。

9 吊筏架降落氣脹式救生筏

9.1 除上述的要求外，使用認可降落設備的救生筏，當懸掛在吊筏鉤或吊筏索時，應能受下列負荷：

- .1 在環境溫度和穩定的救生筏溫度為 $20^{\circ}\text{C}\pm 3^{\circ}\text{C}$ 而且不使用所有安全閥的情況下，全部乘員和屬具質量的 4 倍。及
- .2 在環境溫度和穩定的救生筏溫度為 -30°C 而且使用所有安全閥的情況下，全部乘員和屬具質量的 1.1 倍。

9.2 必須使用降落設備降落的救生筏的剛性容器，應加以制牢，以防止該容器或其部件在所裝的救生筏充氣和降落下水過程中及以後，墜落下海。

10 氣脹式救生筏的附加屬具

10.1 除第 38 條之 5 所要求的屬具外，每隻氣脹式救生筏應配備：

- .1 修補浮力分隔艙破洞的修補工具一套；
- .2 充氣泵或充氣器 1 具。

10.2 第 38 條之 5.1.2 所要求的小刀應是安全小刀。

第 40 條

剛性救生筏

1 剛性救生筏應符合第 38 條的要求，此外，應符合本條的要求。

2 剛性救生筏的構造

2.1 救生筏的浮力應由認可的自然浮力材料提供，置於儘可能靠近救生筏的周圍處。浮力材料應是阻燃的，或用阻燃的覆蓋加以保護。

2.2 救生筏的筏底應能防止海水進入，並應有效地支持乘員離開水面並禦寒。

3 剛性救生筏的乘員定額

每隻剛性救生筏的乘員定額應等於下列各數中較小者：

- .1 浮力材料以 m^3 計的體積乘一個系數，系數為 1 減去浮力材料比重，除以 0.096 所得的最大整數；或
- .2 救生筏筏底的水平橫剖面面積，以 m^2 計時，除以 0.372 所得到的最大整數；或
- .3 可足夠舒適地坐下並有足夠的頭上空間而且不致妨礙救生筏任何屬具操作的人數，這些人員全部穿著救生衣，每個人的質量以 75 kg 計。

4 進入剛性救生筏的通道

4.1 至少有一個進口處應設有剛性登筏跳板以便人員能從海面登上救生筏。設有一個以上進口處的吊筏架降落救生筏應在拉近與登乘設備對面的進口處設有登筏跳板。

4.2 未設有登筏跳板的進口處應設有登筏梯，其最下一級踏板應位於救生筏的最輕水線以下不小於 0.4 m 處。

4.3 救生筏內應有有助於水中的人員把自己從登筏梯拉進救生筏的設施。

5 剛性救生筏的穩性

5.1 除救生筏以任何一面漂浮時都能安全使用者外，救生筏的強度與穩性應為能自行扶正，或在風浪中及平靜水面上，均能由一人扶正。

5.2 救生筏載足全部乘員和屬具後的穩性，應為能在平靜水面被拖帶，航速達到 3 節。

6 剛性救生筏艙裝件

6.1 救生筏應設有一根有效的艙纜。除第 38 條之 6 所要求的薄弱環外，艙纜系統包括其繫連於救生筏上設施的破斷強度，救生筏的乘員定額為 9 人或 9 人以上者，應不小於 10.0 kN；其他救生筏應不小於 7.5 kN。

6.2 救生筏頂篷的頂部應裝設一盞人工控制燈，在晴朗天氣的黑夜，距離至少 2 海哩處可看到燈光，使用時間不少於 12 h。如是閃光燈，該燈在 12 h 使用時間的初始 2 h 的閃光速率，每分鐘應不少於 50 閃。該燈應由海水電池或化學乾電池供電，並應在救生筏頂篷撐起時自動發光。該電池應為不因其存放所在救生筏的潮濕或濕氣而變質的類型。

6.3 救生筏內面應裝設一盞人工控制燈，能連續使用至少 12 h。該燈應在頂篷撐起時自動發光，並有足夠光強以供閱讀救生和屬具用法須知。

7 剛性救生筏上的標誌

救生筏上應標明：

- .1 所從屬的船舶名稱和船籍港；
- .2 製造廠名或商標；
- .3 出廠號碼；
- .4 認可機關的名稱；
- .5 每個進口處上面寫明乘員定額，字高不小於 100 mm，字色與救生筏顏色有顯著的差異；

- .6 SOLAS ;
- .7 內裝應急袋的型號 ;
- .8 艙纜長度 ;
- .9 水線以上最大許可存放高度 (投落試驗高度) ;
- .10 降落須知。

8 吊筏架降落剛性救生筏

除上述的要求外，使用認可降落設備的剛性救生筏，當懸掛在吊筏鉤或吊筏索時，應能承受全部乘員和屬具質量的 4 倍。

第 41 條

救生艇的一般要求

1 救生艇的構造

1.1 一切救生艇均應建造恰當，其形狀及尺度比例應使其在海浪中具有充裕的穩性，並在載足全部乘員及屬具後，具有足夠的乾舷。一切救生艇應有剛性艇體，而且當在平靜水面處於正浮位置，並載足全部乘員及屬具時，以及在水線以下任何部位破孔，假設沒有掉失浮力材料及其他損傷時，能保持正穩性。

1.2 一切救生艇應具有足夠的強度：

- .1 使其在載足全部乘員及屬具後能安全降落水中；

.2 當船舶在平靜水中以 5 節航速前進時，能降落水中並被拖帶。

1.3 艇體及剛性頂蓋應是阻燃的或不燃的。

1.4 橫座板、長凳或儘可能置於艇內低處的固定椅上面應設有座位，其構造應能支承其乘員人數，每個人的體重以 100 kg 計，其座位按 2.2.2 段的要求提供。

1.5 每艘救生艇應具有足夠強度使其經受下列負荷，在卸去負荷後無剩餘變形：

- .1 對於金屬艇體的救生艇，救生艇載足全部乘員及屬具後的總質量的 1.25 倍；或
- .2 對於其他救生艇，救生艇載足全部乘員及屬具後的總質量的 2 倍。

1.6 每艘救生艇應具有足夠的強度，使其在載足全部乘員和屬具以及處在一定位置的滑橈或護舷材（如適用）時，能經受碰撞速度至少 3.5 m/s 的船舷水平撞擊力，並能經受從至少 3 m 高度投落下水。

1.7 從超過 50%艇底面積的艇底表面到封閉蓋或頂篷內面的垂直距離應：

- .1 對於乘員定額為 9 人或 9 人以下的救生艇，不少於 1.3 m；
- .2 對於乘員定額為 24 人或 24 人以上的救生艇，不少於 1.7 m；
- .3 對於乘員定額為 9 人至 24 人的救生艇，不少於以線性內插法確定的介於 1.3 m 與 1.7 m 之間長度的距離。

2 救生艇的乘員定額

2.1 容納人數超過 150 人的救生艇，概不得予以認可。

2.2 救生艇的乘員定額應等於下列各數中的較小者：

- .1 以正常姿勢坐着時不致妨礙推進裝置或任何救生艇屬具操作的人數，每個人的平均質量為 75 kg，全部穿著救生衣；或
- .2 按照圖 1 要求的座位設置所能提供的座位的數目。倘若擱腳板已固定，有足夠腿部活動空間而且上下座位之間垂直距離不少於 350 mm，則各座位形狀可以交搭如圖所示。

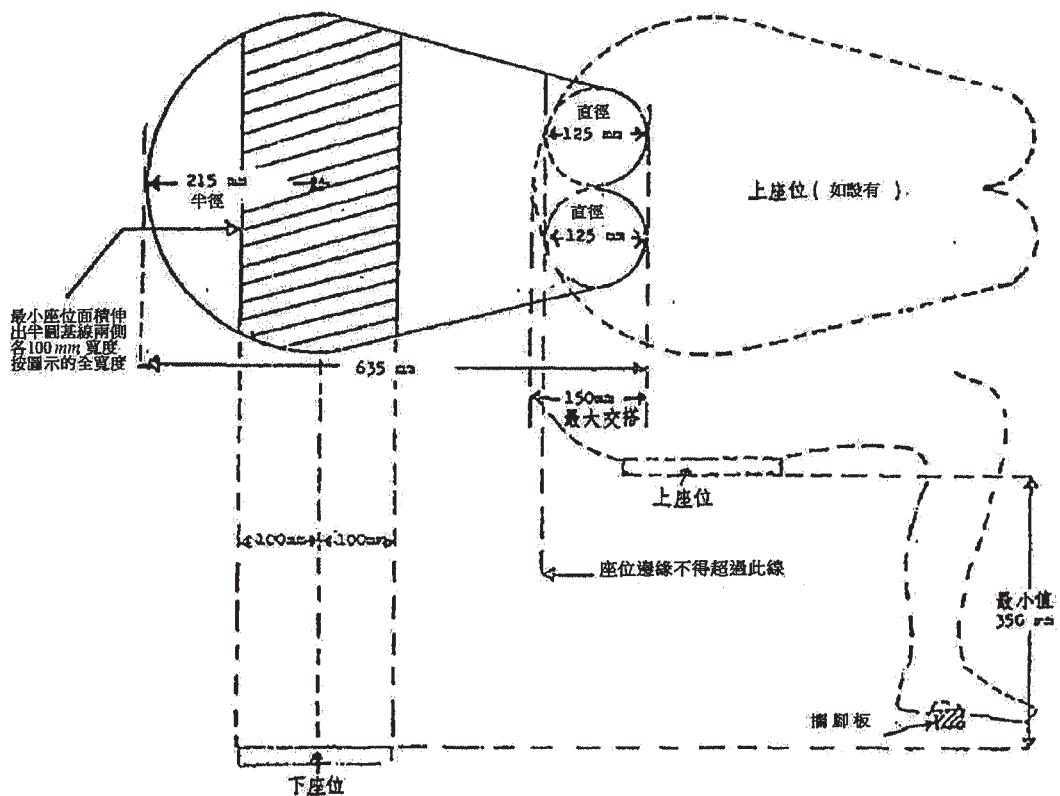


圖 1

2.3 應在救生艇內明確地標出每個座位位置。

3 進入救生艇

3.1 每艘客船救生艇的佈置，應使其全部乘員能迅速登艇，而且能迅速離艇。

3.2 每艘貨船救生艇的佈置，應使其全部乘員在從發出登艇指示時間起不超過 3 min 登艇完畢。尚應可能迅速離艇。

3.3 救生艇應備有在救生艇任何一舷均可使用的登乘梯，以便水中人員能夠登艇。該梯子的最下一級踏板應位於救生艇輕水線以下不小於 0.4 m 處。

3.4 救生艇的佈置，應能把失去自助能力的人員從海上或者從所躺的擔架上抬進救生艇。

3.5 人員可能行走的所有表面應有防滑層。

4 救生艇浮力

一切救生艇應具有自然浮力，或應設有必須不受海水、原油或石油產品不利影響的自然浮力材料，當艇內浸水和破漏通海時，仍足以將滿載一切屬具的救生艇浮起。每個救生艇額定乘員應配備相等於 280 N 浮力的附加自然浮力材料。除非是上述要求的浮力材料以外的浮力材料，否則浮力材料不得設置在救生艇的艇體外面。

5 救生艇乾舷和穩性

當 50% 乘員定額的乘員以正常姿勢坐在艇中心線一側時，一切救

生艇的乾舷應至少為救生艇長度的 1.5%，或 100 mm，取其大者，乾舷是從水線量至救生艇可能變成浸水狀態的最低開口處。

6 救生艇推進裝置

6.1 每艘救生艇應由壓燃式發動機驅動。其燃料的閃點為 43°C 或 43°C 以下（閉杯試驗）的發動機，概不得供任何救生艇使用。

6.2 發動機應既可設有手起動系統，也可使用兩個獨立的可再次充電的電源的起動系統。尚應配備任何必要的起動輔助設施。除主管機關考慮到配備救生艇的船舶所經常從事的特殊航行，認為另一種最低溫度較為適宜外，發動機起動裝置和輔助設施在環境溫度 -15°C 中，應在發動機起動操作程序開始後 2 min 內起動發動機。發動機的罩殼、橫座板或其他障礙物均不得妨礙起動裝置。

6.3 發動機應能在離水的救生艇冷起動後運轉不少於 5 min。

6.4 當救生艇艇內浸水浸到曲軸中心線處時，發動機應仍能運轉。

6.5 螺旋槳軸系的佈置應可使螺旋槳從發動機脫開。應設有救生艇正車和倒車裝置。

6.6 廢氣管的佈置應防止水進入處在正常運轉狀態的發動機。

6.7 一切救生艇的設計應充分考慮在水中人員的安全和漂流物損壞推進系統的可能性。

6.8 當載足全部乘員和屬具，並且所有發動機驅動的輔助裝置均運轉時，救生艇在平靜水中前進航速應至少為 6 節，而當拖帶 1 隻載足全部乘員和屬具或其相等負載的 25 人救生筏時，救生艇在平靜水中前進的航速應至少為 2 節。應配備適用於船舶營運航區預期溫度範

圍內的燃料，而且應足夠供滿載的救生艇以 6 節的航速運轉不少於 24 h。

6.9 救生艇發動機、傳動裝置和發動機的附件，應採用阻燃罩殼或其他提供類似保護的適當裝置加以圍蔽。這些裝置尚應保護人員不至意外地接觸到發熱和轉動的部件，並保護發動機免於暴露在風雨和海浪中。應裝設減低發動機噪聲的適宜裝置。起動裝置電池應設有圍繞電池底部和各側面形成水密圍壁的箱子。電池箱應有緊密的並裝有必要通氣孔的預蓋。

6.10 救生艇發動機和附件的設計，應限制電磁波的發射，使發動機運轉時不致干擾在救生艇內使用的無線電救生設備的運轉。

6.11 所有起動發動機用的電池、無線電用的電池和探照燈用的電池都應配備有再充電的設備。無線電用的電池應不得用作起動發動機的動力。應裝有從船舶電源供電的救生艇電池再充電設施，電源電壓不超過 55 V，並可在救生艇登乘位置斷開。

6.12 應備有起動和操作發動機的防水須知，並張貼在發動機起動控制器附近明顯處。

7 救生艇艙裝件

7.1 一切救生艇應在靠近艇體內最低點處裝設至少 1 個的排水閥，該排水閥在救生艇不在水面時自動開啟，使水從艇體內排出，並且在救生艇在水面時自動關閉，以防水浸入。每個排水閥應配有 1 隻蓋閉排水閥的蓋子或塞子，以短繩、鏈條或其他適宜方法繫於救生艇上。排水閥應位於救生艇內容易到達之處，並且其位置應明顯標示。

7.2 一切救生艇應裝有舵和舵柄。當加設舵輪或其他遙控操舵機械裝置時，舵柄應在萬一操舵機械發生故障時仍能控制舵葉。舵應固定地附連在救生艇上。舵柄應固定地安裝或連接在舵柱上；但如救生艇設有遙控操舵機械裝置，舵柄可以是可拆裝式，並可靠地存放在舵柱附近。舵和舵柄的佈置，應不致因脫開機械裝置的操作或螺旋槳的運轉而遭到損壞。

7.3 除在舵和螺旋槳附近部位外，應沿救生艇外面裝設鏈環狀可浮救生索。

7.4 翻覆時不能自行扶正的救生艇，應在艇體底部裝設供人員攀附救生艇的適宜扶手。扶手固連在救生艇的方式，應在受到足以把扶手從救生艇上打掉的衝擊力時，打掉扶手而不損壞救生艇。

7.5 一切救生艇應設置的水密櫃或艙室，足供貯存本條第 8 款所要求的細小屬具、水和口糧。應備有貯存所收集到雨水的設施。

7.6 每艘必須用單根或多根吊艇索降落的救生艇應設置符合下列要求的脫開機械裝置：

- .1 該裝置的佈置應能同時脫開所有吊艇鉤；
- .2 該裝置應具有下列兩種脫開能力：
 - 2.1 正常脫開能力，當救生艇浮在水面或吊艇鉤無負荷時，它總會把救生艇脫開；
 - 2.2 受載脫開能力，在吊艇鉤有負荷時它總會把救生艇脫開。此脫開的佈置應使救生艇在有任何負荷的情況下，從漂浮在水面上救生艇的受載情況到等於救

生艇載足全部乘員及屬具後總質量的 1.1 倍的負荷情況，都能脫開。此種脫開能力要得到足夠的保護，使在意外和過早使用時不會脫開。

- .3 脫開控制手柄應有明顯標誌，標誌顏色與手柄周圍顏色有明顯的差異。
- .4 該裝置的設計應取安全系數等於 6，按所選用材料的極限強度計算，假設救生艇質量是相等分佈在兩吊艇索的。

7.7 每艘救生艇應裝設脫開裝置，使能脫開拉緊的前艙纜。

7.8 每艘救生艇應設有固定設置的地線接頭和把第 6 條之 2.1 所要求的手持式無線電設備所配的天線適宜地安裝和制牢在操作地點的裝置。

7.9 用於順船舷降落下水的救生艇應設置便於救生艇降落和防止損壞所必不可少的滑橈和護舷材。

7.10 頂篷或封閉蓋的頂部應裝設一盞人工控制燈，該燈在晴朗天氣的黑夜，在距離至少 2 海哩處可看到燈光，使用時間不少於 12 h。如是閃光燈者，該燈在 12 h 使用時間的初始 2 h 的閃光速率，每分鐘應不少於 50 閃。

7.11 救生艇內應裝設一盞燈或一個光源，提供照明不少於 12 h，使人能閱讀救生須知和屬具用法須知；但不准使用燃油燈作此用途。

7.12 除另有說明外，每艘救生艇應配備有效的舀水設施或自動的舀水設施。

7.13 每艘救生艇的佈置應為能在控制與操舵位置提供足夠的向

前、向後和向兩舷的視域，以便安全地降放和操縱救生艇。

8 救生艇屬具

除帶鈎艇篙應散置，以供撐開救生艇外，一切本款或本章各處所要求的各項救生艇屬具應採用綁紮的方式、貯存在櫃內或艙室內的方式、貯存在托架內或類似的支架裝置的方式或其他適宜的方式繫牢於救生艇內。屬具的繫縛方式應不致妨礙任何棄船步驟。各項救生艇屬具應儘可能小巧輕便並應包裝合適而緊湊。除另有說明者外，每艘救生艇的正常屬具應包括：

- .1 足夠的數量的可浮槳，以供在平靜海面划槳前進。所配備的每支槳應配齊槳架、槳叉或等效裝置。槳架或槳叉應以短繩或鏈條繫於艇上；
- .2 帶鈎艇篙 2 支；
- .3 可浮水瓢 1 隻，水桶 2 隻；
- .4 救生手冊 1 本；
- .5 內裝塗有發光劑或具有適宜照明裝置的有效羅經的羅經櫃一具，在全封閉救生艇，該羅經櫃應固定地設置在操舵位置；在任何其他救生艇，該羅經櫃應配有適當的支架裝置；
- .6 適當尺度的海錨 1 隻，配有浸濕時還可用手緊握的耐沖擊錨索和收錨索各 1 根。海錨、錨索和收錨索的強度在一切海況中，均應是適用的；
- .7 有效的艙纜 2 根，其長度不小於從救生艇存放位置到最輕載航海水線距離的 2 倍或 15 m，取其長者。1 根附連在第

41 條之 7.7 所要求的脫開裝置的艙纜應設置在救生艇的前端，而另一根艙纜應繫固於救生艇艇艙或艇艙附近，以備使用；

- .8 太平斧 2 把，救生艇每端各 1 把；
- .9 水密容器數個，內裝總數為救生艇額定乘員每個人 3 l 的淡水，其中每個人 1 l 的淡水可用 2 天內能生產等量淡水的海水除鹽器來代替；
- .10 附有短繩的不銹水勺 1 個；
- .11 不銹飲料量杯 1 個；
- .12 總數為救生艇額定乘員每個人不少於 10,000 kJ 的口糧，口糧應保存於氣密包裝內並收存在水密容器內；
- .13 符合第 35 條要求的火箭降落傘火焰信號 4 支；
- .14 符合第 36 條要求的手持火焰信號 6 支；
- .15 符合第 37 條要求的可浮發煙信號 2 個；
- .16 適於摩氏通信的防水手電筒 1 隻，連同備用電池 1 副及備用燈泡 1 隻，裝在水密容器內；
- .17 日光信號鏡 1 面，連同與船舶和飛機通信用法須知；
- .18 印在防水硬紙上，或裝在水密容器內的第五章第十六條所規定的救生信號圖解說明表 1 張；
- .19 哨笛或等效的音響號具 1 隻；
- .20 急救藥包一套，置於使用後可蓋緊的水密箱內；

- .21 每個人配防暈船藥 6 劑和清潔袋 1 個；
- .22 以短繩繫於艇上的水手刀 1 把；
- .23 開罐頭刀 3 把；
- .24 繫有長度不小於 30 *m* 浮索的可浮救生環 2 個；
- .25 手搖泵 1 具；
- .26 釣魚用具 1 套；
- .27 足夠數量的發動機和其附件的小調整用工具；
- .28 適用撲滅油類火災的手持滅火器 1 具；
- .29 探照燈 1 具，可在黑夜對距離 180 *m* 處寬度為 18 *m* 的淺色物體有效照明總共達 6 小時，並至少能連續使用不少於 3 *h*；
- .30 有效的雷達反射器 1 具；
- .31 足供不少於救生艇額定乘員 10%用的符合第 34 條要求的保溫器材或 2 件，取其大者；
- .32 如主管機關在考慮該船所從事的航程性質與時間認為 8.12 和 8.26 段所規定的屬具為不必要者，主管機關可准予免配。

9 救生艇標記

9.1 在救生艇上應以經久的顯明字跡標明其尺度和乘員定額。

9.2 救生艇所從屬的船舶名稱及船籍港應以粗體羅馬字母標明於艇艙兩側。

9.3 識別救生艇所從屬船舶和救生艇號碼措施的標誌方法，應使在空中可看清。

第 42 條

部分封閉救生艇

1 部分封閉救生艇應符合第 41 條的要求，另外，並應符合本條的要求。

2 每艘部分封閉救生艇應裝設有效的舀水設施或是自動的自舀水設施。

3 部分封閉救生艇應裝設固定附連的從艇艙延伸不少於 20%的該救生艇長度和從該救生船最後端延伸不少於 20%的該救生艇長度的剛性頂蓋。該救生艇應設固定附連的可折式頂篷，可折式頂篷連同剛性頂蓋形成一個能擋風雨的遮蔽把該救生艇乘員完全罩住，使其免受風吹雨打。頂篷的佈置：

- .1 應設有合適的剛性型材或條板，以便撐起頂篷；
- .2 應能由不多於 2 個人即可容易地撐起頂篷；
- .3 頂篷應採用空氣間隙隔開的不少於兩層的材料或其他等效設施來隔熱，以保護乘員不受寒熱的侵害。應設有防止水分聚集在空氣間隙內的設施；

- .4 頂篷外面應是鮮明易見的顏色，頂篷內面的顏色要不致使乘員感到不舒適；
- .5 頂篷兩端及兩舷應有進口處，進口處設有有效的可調整關閉裝置，在內外兩面均能容易而迅速地開啟和關閉該裝置，既可通空氣又可防止海水、風和冷氣的侵入；應設有把進口處牢固地固定在開啟和關閉位置的設施；
- .6 進口處關閉後，頂篷應無論何時仍有足供乘員所需的空氣進入；
- .7 頂篷應有收集雨水的設備；
- .8 萬一救生艇翻覆時，乘員應能逃出。

4 救生艇內面應有鮮明易見顏色。

5 第 6 條之 2.2 所要求的無線電報設備應安裝在足以容納該項設備和使用人員的艙室內。如救生艇的構造提供滿足主管機關要求的遮蔽處所者，則不要求安裝在獨立艙室。

第 43 條

自行扶正部分封閉救生艇

1 自行扶正部分封閉救生艇應符合第 41 條的要求，另外，尚應符合本條的要求。

2 封閉蓋

2.1 應裝設固定附連的從該救生艇艇艙延伸不少於 20%救生艇長度的並從該救生艇最後端延伸不少於 20%救生艇長度的剛性頂蓋。

2.2 這兩個頂蓋應形成兩個遮蓋。如遮蓋具有艙壁者，則應有足夠尺寸的開口，以使每個穿著保溫救生服或保暖衣服和救生衣的人員容易進入。遮蓋的內高度應足夠供人員容易地進入設在救生艇艇艙和艇艙的座位。

2.3 剛性頂蓋的佈置應包括窗口或半透明板，使足夠的日光射進在開口或頂篷關閉後的救生艇內部，以使沒有必要採用人工光。

2.4 剛性頂蓋應裝有扶手供在救生艇外部活動的人員安全抓手用。

2.5 救生艇開敞部分應裝設固定附連的可折式頂篷，其佈置應：

- .1 能由不多於 2 個人在不超過 2 min 以內即可容易地撐起的頂篷；
- .2 頂篷應採用空氣間隙隔開的不少於兩層材料或其他等效辦法來絕熱，為乘員禦寒。

2.6 剛性頂蓋和頂篷所形成的遮蓋的佈置應做到：

- .1 在任一乘員不離開遮蓋的情況下，應能完成降落和回收操作；
- .2 在兩端和每舷均應設有進口處，進口處設有在內外兩面均能迅速開啟和關閉的有效可調整關閉裝置，以便既能通空氣又可防止海水、風和冷氣侵入；應設有把進口牢固地固定在開啟和關閉位置的設施；

- .3 頂篷撐起和關閉所有進口後，應仍有足供乘員所需的空氣進入；
- .4 應設有收集雨水的設施；
- .5 剛性頂蓋和頂篷外面和救生艇被頂篷覆蓋部分的內面應有鮮明易見的顏色。遮蓋內面的顏色應不致使乘員感到不舒適。
- .6 應能划動救生艇。

3 翻覆與扶正

3.1 每個標明的座位處應設有 1 根安全帶。安全帶的設計應在救生艇處於翻覆位置時能將質量為 100 kg 的人員牢固地縛在原處。

3.2 救生艇的穩性在裝載全部或部分乘員及屬具，而且全部乘員都用安全帶縛牢後，應是自然或自動地自行扶正的。

4 推進裝置

4.1 應在舵工位置控制發動機和傳動裝置。

4.2 發動機及發動機裝置應能在翻覆過程中任何位置運轉，並在救生艇轉回到正浮後仍繼續運轉，或在翻覆後，能自動停車，並在救生艇轉回到正浮狀態而且水已從救生艇洩出後易於再起動。燃油及潤滑油系統的設計要做到在翻覆過程中，能防止從發動機流失燃油或流失超過 250 ml 的潤滑油。

4.3 空氣冷卻式發動機應設有從救生艇外面吸進冷氣並把它排出救生艇外面的空氣管系統。應設有手動調節風門，使可從救生艇內面吸進冷氣並把它排到救生艇內面。

5 結構與護舷材

5.1 不管第 41 條之 1.6 如何規定，自行扶正部分封閉救生艇的結構與護舷材，應保證救生艇在載足全部乘員及屬具後以不小於 3.5 m/s 的碰撞速度碰撞船舷時，提供免受由於救生艇碰撞而產生的有害加速度的影響的保護裝置。

5.2 救生艇應為自動的自舀水型。

第 44 條

全封閉救生艇

1 全封閉救生艇應符合第 41 條的要求，另外，尚應符合本條的要求。

2 封閉蓋

每艘全封閉救生艇應設有完全罩住救生艇的剛性水密封閉蓋。封閉蓋的佈置：

- .1 應保護乘員，使其不受冷、熱的侵害；
- .2 應採用通道蓋提供進入救生艇的通道，通道蓋可關閉以使救生艇水密；
- .3 通道蓋應位於任何乘員在無須離開圍蔽區域的情況下，能完成降落和回收操作的地方；
- .4 在內外兩面應均能開啟和關閉通道蓋，並設有可靠地把通

道蓋夾住在開啟位置的設施；

- .5 使能划動救生艇；
- .6 當救生艇處於翻覆位置、通道蓋關閉且無顯著漏水時，封閉蓋應能支持救生艇（包括全部屬具、機械和全部乘員）的全部質量；
- .7 封閉蓋的兩舷應設有窗口或半透明板，使足夠的日光射進進口蓋關閉後的救生艇內部，以使沒有必要採用人工光；
- .8 封閉蓋外面應是鮮明易見的顏色，而內面的顏色不致使乘員感到不舒適；
- .9 應設有扶手供在救生艇外部活動的人員安全抓手用，並幫助登艇和離艇；
- .10 人員應能從進口處無須跨過橫座板或其他障礙物而到達他們的座位；
- .11 應保護乘員免受救生艇發動機可能造成的危險的負大氣壓的影響。

3 翻覆與扶正

3.1 每個標明的座位處應設有 1 根安全帶。安全帶的設計應在救生艇處於翻覆位置時能將質量為 100 kg 的人員牢固地縛在原處。

3.2 救生艇在穩性上做到當救生艇在裝載全部或部分乘員及屬具、所有進口處和開口都是關閉成水密而且全部乘員都用安全帶縛牢時，能自然或自動地自行扶正。

3.3 救生艇應在救生艇處於第 41 條之 1.1 所規定的損壞情況時，能支持其全部乘員及屬具，並且其穩性在萬一翻覆時，應使救生艇自動地處於為乘員提供在水面上逃出的位置。

3.4 一切發動機排氣管、空氣管和其他開口，在設計上做到應在救生艇翻覆和扶正時，使水不至進入發動機。

4 推進裝置

4.1 應在舵工位置控制發動機和傳動裝置。

4.2 發動機及發動機裝置應能在翻覆過程中任何位置運轉並在救生艇轉回到正浮後仍繼續運轉，或在翻覆後能自動停車並在救生艇轉回到正浮時易於再起動。燃油及潤滑油系統在設計上做到在翻覆過程中，能防止從發動機流失燃油或流失超過 250 ml 的潤滑油。

4.3 空氣冷卻式發動機應設有從救生艇外面吸進冷氣並把它排出救生艇外面的空氣管系統。應設有手動調節風門，使可從救生艇內面吸進冷氣並把它排到救生艇內面。

5 結構與護舷材

不管第 41 條之 1.6 如何規定，全封閉救生艇的結構與護舷材，應保證救生艇在載足全部乘員及屬具後以不小於 3.5 m/s 的碰撞速度碰撞船舷時，提供免受由於救生艇碰撞而產生的有害加速度的影響的保護裝置。

6 自由降落救生艇

用於自由下降的救生艇，在構造上要做到使救生艇能提供免受在載足全部乘員及屬具後，至少從最大設計的水線以上存放處高度降落

下水所產生的有害加速度的影響的保護裝置；該水線是最輕載的船舶在不利的縱傾達 10° 的情況下和向任何一舷橫傾達 20° 的水線。

第 45 條

具有獨立供氣系統的救生艇

除應符合第 41 條和第 44 條的要求外，具有獨立供氣系統的救生艇在佈置上要做到當救生艇在一切進口處和開口均關閉的情況下航行時，救生艇內空氣保持安全和適宜於呼吸，而且發動機正常運轉時間不少於 10 min。在此期間，救生艇內大氣壓應不得降到艇外大氣壓以下，也不得超過艇外大氣壓 20 mbar 以上。該系統應有視覺指示器，無論何時均可指示送風壓力。

第 46 條

耐火救生艇

1 除符合第 41 條、第 44 條和第 45 條的要求外，耐火救生艇在水面時，應能保護其額定乘員經受持續油火包圍該救生艇不少於 8 min。

2 噴水系統

裝有噴水防火系統的救生艇，應符合下列要求：

.1 應使用自吸式馬達泵從海裏抽水為該系統供水。該系統應可

“開”和“關”灑到救生艇外面的水流；

- .2 海水吸入口在佈置上應做到能防止從海面吸入易燃液體；
- .3 該系統在佈置上應做到能用淡水沖洗，並完全排清積水。

第 V 節

救助艇

第 47 條

救助艇

1 一般要求

1.1 除本條所規定者外，所有救助艇均應符合第 41 條之 1 至第 41 條之 7.4 以及第 41 條之 7.6、第 41 條之 7.7、第 41 條之 7.9、第 41 條之 7.12 和第 41 條之 9 的要求。

1.2 救助艇可以是剛性或充氣結構，或兩者的混合結構，並且：

- .1 其長度應不小於 3.8 m，不大於 8.5 m；
- .2 應至少能乘載 5 個坐下的人員和 1 個躺下的人員。

1.3 剛性與充氣混合結構的救助艇，應符合本條中合適的要求，使主管機關感到滿意。

1.4 除具有足夠舷弧的救助艇外，救助艇應設有延伸不少於 15%

該艇長度的艇艙蓋。

1.5 救助艇應能以航速達到 6 節進行操縱，並保持此航速至少 4 h。

1.6 救助艇應在海浪中具有充分的機動性和操縱性，使能從水中拯救人員，集結救生筏能以至少 2 節航速拖帶船舶所配備的載足全部乘員及屬具或相當重量的最大救生筏。

1.7 救助艇應裝設舷內發動機或舷外發動機。如裝設舷外發動機，舵與舵柄可以是該機的組成部分。不管第 41 條之 6.1 如何要求，救助艇可以裝設具有認可燃油系統的汽油驅動舷外發動機，但燃油櫃要加特殊的防火和防爆炸保護。

1.8 拖帶裝置應永久地安裝在救助艇上，其強度應足夠集結或拖帶 1.6 段所要求的救生筏。

1.9 救助艇應設有貯存細小屬具的防風雨貯存處。

2 救助艇屬具

2.1 除帶鈎艇篙應不加固定以供撐開救助艇外，各項救助艇屬具應通過採用索具、通過貯存在櫃內或艙室內、貯存在托盤或類似支架裝置內，或通過採取其他適宜辦法，固定在救助艇內。屬具的繫縛方式應不致妨礙任何降落和收回作業。一切救助艇屬具應儘可能小巧輕便，並應包裝合適而緊湊。

2.2 每艘救助艇通常的屬具應包括：

- .1 足夠數量的可浮槳或手划槳，以供在平靜海面划槳前進。每支槳應配齊槳架、槳叉或等效裝置。槳架或槳叉應以短繩或鏈條繫於艇上；

- .2 可浮水瓢 1 隻；
- .3 內裝有塗有發光劑或具有適宜照明裝置的有效羅經的羅經櫃 1 具；
- .4 海錨 1 個和收錨繩 1 條，配有足夠強度的錨索，其長度不少於 10 m；
- .5 足夠長度和強度的艀纜 1 根，附連在符合第 41 條之 7.7 要求的脫開裝置，並設置在救助艇的前端；
- .6 長度不少於 50 m 的可浮索 1 根，具有足夠拖帶 1.6 段的要求救生筏的強度；
- .7 適於摩氏通信的防水手電筒 1 隻，連同備用電池 1 副及備用燈泡 1 隻，裝在水密容器內；
- .8 哨笛或等效的音響號具 1 隻；
- .9 急救藥包 1 套，置於使用後可蓋緊的水密箱內；
- .10 繫有長度不小於 30 m 浮索的可浮救生環 2 個；
- .11 探照燈 1 具，可在黑夜對距離 180 m 處寬度為 18 m 的淺色物體有效照明總共達 6 h，並至少能連續使用不少於 3 h；
- .12 一個有效的雷達反射器；
- .13 足供 10%救助艇額定乘員用的符合第 34 條要求的保溫器材或 2 件，取其大者。

2.3 除 2.2 段所要求的屬具外，每艘剛性救助艇通常的屬具應包括：

- .1 帶鈎艇篙 1 支；
- .2 水桶 1 隻；
- .3 小刀或太平斧 1 把。

2.4 除 2.2 段所要求的屬具外，每艘充氣式救助艇通常的屬具應包括：

- .1 可浮安全小刀 1 把；
- .2 海綿 2 塊；
- .3 有效的手動充氣器或充氣泵 1 具；
- .4 裝在適當容器內的修補破洞的修補工具 1 套；
- .5 安全艇篙 1 支。

3 充氣式救助艇的附加要求

3.1 第 41 條之 1.3 和第 41 條之 1.5 的要求不適用於充氣式救助艇。

3.2 充氣式救助艇在構造上要做到當充氣式救生艇被懸掛在吊艇鈎或吊艇索時：

- .1 其強度和剛性應足使救助艇載足全部乘員和屬具後能降落和收回；
- .2 其強度在環境溫度為 $20^{\circ}\text{C}\pm 3^{\circ}\text{C}$ ，不使用所有安全閥的情況下，應足夠經受其全部乘員及屬具質量 4 倍的負荷；

- .3 其強度在環境溫度為 -30°C ，使用所有安全閥的情況下，應足夠經受其全部乘員及屬具質量 1.1 倍的負荷。

3.3 充氣式救助艇的構造，應能經受下列暴露：

- .1 在海上當存放在船舶開敞甲板時；
- .2 在一切海況下漂浮達 30 d。

3.4 除第 41 條之 9 的要求外，充氣式救助艇應標明其出廠號碼、製造廠名或商標和製造日期。

3.5 充氣式救助艇的浮力應或者由至少有 5 個約為等體積的獨立隔艙分隔的單胎，或者 2 個均不得超過 60%總體積的獨立胎提供。浮力胎的佈置在任一隔艙萬一損壞時，未損傷的隔艙應仍能支持該救助艇的額定乘員而且救助艇整個周圍都是正的乾舷，每個乘員質量以 75 kg 計，而且坐在規定的座位上。

3.6 成為充氣式救助艇邊界的浮力胎充氣後應為每個救助艇額定乘員提供不少於 0.17 m^3 的體積。

3.7 每個浮力艙應設有一個供人力充氣用的止回閥和放氣設備。尚應設有 1 個安全釋放閥，除主管機關認為此閥為不必要者外。

3.8 充氣式救助艇的艇底下面和外面易受傷害部位，應加設主管機關滿意的防擦板條。

3.9 凡裝有艇艙板者，該艇艙板應不得嵌入超過救助艇總長的 20%。

3.10 應設有合適的加強片以便繫牢艇艙纜和艇艙纜以及艇內外兩面的鏈環狀把手索。

3.11 無論何時，充氣式救助艇均應維持滿充氣狀態。

第 VI 節

降落與登乘設備

第 48 條

降落與登乘設備

1 一般要求

1.1 每具降落設備連同一切降落和回收索具的佈置，應能在縱傾達到 10° 並向任何一舷橫傾達到 20° 時，在下列情況下安全降落它所配屬的滿配備的救生艇筏或救助艇：

- .1 按第 22 條或第 28 條所要求，登上全部乘員後；
- .2 不載人員的救生艇筏或救助艇。

1.2 不管 1.1 段如何規定，按經有關的 1978 年議定書修改後的 1973 年國際防止船舶造成污染公約和海事組織的建議*（如果適用）計算的最後橫傾角超過 20° 的油船、化學品液貨船和氣體運輸船上所配備的救生艇降落設備應能在該船舶處於最後橫傾角的情況下，在較低舷進行操作。

* 參閱海上安全委員會以決議 MSC.4（48）通過的《國際散裝運輸危險化學品船舶構造和設備規則》和海上安全委員會以決議 MSC.5（48）通過的《國際散裝運輸液化氣體船舶構造和設備規則》關於破損穩性的要求。

1.3 降落設備不得依靠除重力或不依賴船舶動力的任何儲存機械動力以外的任何方式來降落其所配屬的處於滿載、滿配備狀態和輕載狀態的救生艇筏或救助艇。

1.4 降落機械裝置的佈置應可由 1 個人自船舶甲板上某一位置，或自救生艇筏或救助艇內面某一位置，來開動；在甲板上操作降落機械裝置的人員應能看到救生艇筏。

1.5 每具降落設備的構造，應僅需要最少的日常維護量。一切需要船員進行定期維護的部件，應容易接近和容易維護。

1.6 降落設備的絞車制動器的強度，應足以經受：

- .1 試驗負荷不少於 1.5 倍最大工作負荷的靜負荷試驗；
- .2 試驗負荷不少於 1.1 倍最大工作負荷在最大下降速度時的動負荷試驗。

1.7 降落設備及其附屬設備的強度，除絞車制動器外，應足以經受試驗時不少於最大工作負荷 2.2 倍的靜力試驗負荷。

1.8 設計構件和一切滑車、吊艇索、眼板、鏈環、緊固件和其他一切用作連接降落設備的配件所用的安全系數應大於根據規定的最大工作負荷和結構所選用材料的極限強度而取用的最小安全系數。適用於一切吊艇架和構件的最小安全系數應為 4.5，適用於吊艇索、吊艇鏈、鏈環和滑車的最小安全系數應為 6。

1.9 每具降落設備應在結冰情況下在可行範圍內保持有效。

1.10 救生艇降落設備應能收回載有艇員的救生艇。

1.11 降落設備的佈置，應能使人員按第 38 條之 4.2、第 38 條之 4.3、第 41 條之 3.1 和第 41 條之 3.2 的要求安全地登上救生艇筏。

2 使用吊艇索和絞車的降落設備

2.1 吊艇索應是防旋轉及耐腐蝕的鋼絲索。

2.2 除設置有效的補償裝置者外，對於多捲筒絞車，吊艇索的佈置應使在降落時，以相同的速率從各捲筒捲出，並在吊起時，以相同的速率均勻地捲到各捲筒上。

2.3 每具救助艇降落設備應裝設動力驅動的絞車馬達，該馬達的功率能從水中吊起載足全部乘員及屬具的救助艇。

2.4 應設有收回每艘救生艇筏和救助艇的有效的手動裝置。在救生艇筏和救助艇下降時，或使用動力吊起時，絞車的轉動部分應不使手動裝置手柄或手輪旋轉。

2.5 凡使用動力收回吊艇架吊臂者，應裝設安全裝置，在吊艇架吊臂回到原位限制器之前要自動地切斷動力，以防止吊艇索或吊艇架受到過度應力，除馬達的設計是能防止此過度應力者外。

2.6 救生艇筏或救助艇降落下水的速度，應不小於由下列公式得出的速度：

$$S=0.4+ (0.02\times H)$$

式中 S=下降速度（以 m/s 計）

並且 H=從吊艇架頂部到最輕載航海水線的距離（以 m 計）。

2.7 經過考慮救生艇筏或救助艇的設計、乘員的防止過度力的保

護裝置以及把在急剎車過程中的慣性力考慮進去的降落裝置強度後，主管機關應制定出最大下降速度。降落設備應同時採取其他某些措施，以確保不得超過此速度。

2.8 每具救助艇降落設備應能以不少於 0.3 m/s 的速度吊起載足全部救助艇乘員及屬具的救助艇。

2.9 每具降落設備應設有制動器，使載足全部乘員及屬具的救生艇筏或救助艇在降落中能剎住並可靠地繫留住；凡有必要者，制動帶應加防水和防油的保護。

2.10 手控制動器的佈置，應始終處於制動狀態，除非操作者或操作者操作的機械裝置把制動控制器保持在“脫開”的位置上。

3 漂浮脫開降落

凡需要降落設備的救生艇筏也設計為漂浮脫開者，救生艇筏從其存放地點漂浮脫開應是自動的。

4 自由下降降落

除符合本條之 1 中適用的要求外，每具使用斜面的自由下降降落設備尚應符合下列要求：

- 1 該降落設備的佈置應使救生艇筏的乘員在降落過程中不至感受到過度力。
- 2 該降落設備應是具有足夠斜角和長度的剛性結構，保證救生艇筏有效地離開船舶。
- 3 該降落設備應加有效防腐蝕保護，而且其構造在救生艇筏降落過程中應防止發生摩擦火花或碰擊火花。

5 撇離滑梯降落和登乘

除符合本條之 1 適用的要求外，每具撇離滑梯降落設備尚應符合下列要求：

- .1 撇離滑梯應能由 1 個人在登乘位置展開；
- .2 撇離滑梯應能在強風和海浪中使用。

6 救生筏降落設備

除關於利用重力旋出降落設備，在存放地點登乘，並收回滿載的救生筏者外，每具救生筏降落設備應符合 1 和 2 段的要求。該降落設備的佈置，應防止在降落過程中過早脫開，並應使救生筏在水面時脫開。

7 登乘梯

7.1 為確保從甲板到登乘梯頂部，或從登乘梯頂部到甲板的安全過渡，應設有扶手。

7.2 登乘梯的踏板：

- .1 應採用沒有節疤或其他凹凸不平外形的硬質木製成，而且加工平滑並無銳利稜邊和毛刺，或採用其他等效性質的適用材料製成；
- .2 應具有有效的防滑表面，可以採用縱向槽紋，也可以敷鋪認可的防滑覆蓋物；
- .3 其長度應不少於 480 mm；寬度應不少於 115 mm，並且厚度應不少於 25 mm，不把任何防滑表面或覆蓋計算在

內；

- .4 間距應相等，間隔不少於 300 mm，也不大於 380 mm，並且其繫固方法要使其保持水平狀態。

7.3 登乘梯每邊的邊繩應由兩根裸露的白棕繩組成，其周長不小於 65 mm。每根邊繩在頂端踏板之下應為整根而無接頭。可以採用其他材料，但尺度、破斷應力、風化性能、伸縮性能和緊握性能均須至少相當於白棕繩的性能。所有繩端均應紮牢以防鬆散。

第 VII 節

其他救生設備

第 49 條

拋繩設備

- 1 每具拋繩設備應：
 - .1 能相當準確地將繩拋射出；
 - .2 包括不少於 4 個拋繩體，每個能在無風天氣中將繩拋射至少 230 m 遠；
 - .3 包括不少於 4 根拋射繩，每根拋射繩具有破斷張力不少於 2 KN；
 - .4 備有簡要說明書或圖解闡明拋繩設備的用法。

2 手槍發射的火箭，或火箭與拋射繩組成整體的組件，應裝在防水的外殼內。此外，對於手槍發射的火箭、拋射繩和火箭以及引燃器材應貯存在抗風雨的容器內。

第 50 條

通用緊急報警系統

通用緊急報警系統應能以船舶號笛或汽笛，並另加以由船舶主電源及第 II-1 章第 42 條或第 II-1 章第 43 條所要求的應急電源(如果適合)供電的電動鈴或小型振膜電警笛或其他等效警報系統，發出由 7 個或 7 個以上的短聲繼以一長聲組成的通用緊急報警信號。除了鳴響船舶號笛外，該系統應能自船舶駕駛室和其他要害位置進行操作。全船所有起居處所及正常船員工作處所均應能聽到該系統的報警。

第 VIII 節

其他

第 51 條

訓練手冊

訓練手冊可分成若干分冊，此手冊應包括關於船上所配備的救生

設備和最佳救生方法的須知和資料，用易懂措詞（凡有可能者加以圖解）進行說明。這些資料的任何部分都可以用聽 - 視輔助教材形式來代替。下列各項應加詳細解釋：

- .1 救生衣與保溫救生服的穿著法（如果適用）；
- .2 在指定地點集合；
- .3 救生艇筏和救助艇的登乘、降落、和離開；
- .4 在救生艇筏內降落的方法；
- .5 從降落設備上脫開；
- .6 降落區域內防護方法與防護設備的用法（如果適用）；
- .7 降落區域的照明；
- .8 一切救生屬具的用法；
- .9 一切探測裝備的用法；
- .10 （用圖解說明）無線電救生設備的用法；
- .11 海錨的用法；
- .12 發動機及其附件的用法；
- .13 救生艇筏和救助艇的回收（包括存放和制牢）；
- .14 暴露的危險和穿用保暖衣服的必要性的；
- .15 為救生而最佳使用救生艇筏設備；
- .16 拯救的方法，包括直升飛機救助裝置（吊繩、吊籃和吊擔架）、連褲救生圈、海岸救生工具和船舶拋繩設備的用法；

- .17 應變部署表與應變部置指令所列出的所有職責；
- .18 救生設備應急修理須知。

第 52 條

船上維護保養須知

救生設備的船上維護保養須知應是易懂的，凡有可能者應加以圖解說明，並且如果適用，每種設備應包括下列各項：

- .1 進行第 19 條之 7 所要求的檢驗時所用的核對表；
- .2 維護保養與修理須知；
- .3 定期維護保養計劃；
- .4 潤滑點示意圖，並註明建議用的潤滑劑；
- .5 可替換部件一覽表；
- .6 備件來源一覽表；
- .7 檢驗和維護保養記錄簿。

第 53 條

應變部署表與應變須知

1 應變部署表應寫明第 50 條所規定的通用緊急報警信號的細則，並應規定發出警報時船員和旅客必須採取的行動。應變部署表尚應寫明棄船命令將如何發出。

2 應變部署表應寫明分派給各種船員的任務，包括：

- .1 船上水密門、防火門、閘門、流水孔、船舷小窗、天窗、舷窗和其他類似開口的關閉；
- .2 救生艇筏和其他救生設備的裝備；
- .3 救生艇筏的準備工作和降落；
- .4 其他救生設備的一般準備工作；
- .5 集合旅客；
- .6 通信設備的用法；
- .7 指定處理火災的消防隊人員的配備；
- .8 指定有關使用消防設備及裝置方面的專門任務。

3 應變部署表應指明那些駕駛員負責保證維護救生設備使其處於完好狀態，並立即可用。

4 應變部署表應指明關鍵人員受傷後的替換者，要考慮到不同應變情況要求不同的行動。

5 應變部署表應指明在應變時，指定給船員的與旅客有關的各項任務。

這些任務應包括：

- .1 向旅客告警；
- .2 查看旅客是否適當地穿好衣服，以及是否正確地穿好救生衣；
- .3 召集旅客於各集合地點；
- .4 維持通道及梯道上的秩序，並一般地控制旅客的動向；
- .5 保證把毛毯送到救生艇筏上。

6 應變部署表應在船舶出航以前制定。在應變部署表制定後，如船員有所變動而必須更改應變部署表時，船長應修訂該表，或者制定新表。

7 客船用應變部署表的格式應經認可。

第四部分

第 IV 章

無線電報與無線電話

第二條

名詞與定義

增加下列新款：

“九. ‘應急無線電示位標’ 係指用於移動業務的電台，其發射的電波旨在便於搜尋和救助作業。”

增加下列新條：

“第十四條甲

救生艇筏應急無線電示位標

一. 第 III 章第 6 條之 2.3 要求在救生艇筏上配備的救生艇筏應急無線電示位標應發射能使航空器測定救生艇筏位置的電波，並可發射用於報警目的的電波。

二. 救生艇筏應急無線電示位標應至少能在 121.5 兆赫和 243.0 兆赫頻率上，交替發射或同時發射符合國際民用航空組織有關標準和推薦慣例的信號。

三. 救生艇筏應急無線電示位標應：

- (一) 顏色顯而易見，其設計應能使非熟練人員使用，其構造應易於試驗和維修。在考慮到試驗裝置的情況下，電池在 12 個月內應無須更換；
- (二) 水密，能夠飄浮，而且能從高度至少為 20 m 處投入水中而不致損壞；
- (三) 只能手工啟動和停止；
- (四) 便於攜帶，重量輕而且結構緊密；
- (五) 設有表明正在發射信號的指示器；
- (六) 其能源來自系裝置組成部分的並具有使裝置工作 48 小時之足夠容量的電池。發射可為間歇性的。在決定工作循環時，應考慮到進行適當引航的可能性、避免頻率擁擠的必要性以及符合國際民用航空組織要求的必要性；和
- (七) 經過試驗，如果必要，在不超過 12 個月的時間內更換其能源。

第十四條乙

應急無線電示位標的定期檢驗和試驗

按照第 III 章第 6 條之 2.3 配備的應急無線電示位標應在不超過 12 個月的時間內進行檢查和試驗，如果必要，更換其能源。但是，在適當和合理的情況下，主管機關可把此時間延長至 17 個月。

第十四條丙

救生艇筏用雙向無線電話設備

一. 第 III 章第 6 條之 2.4 所要求的設備的設計應能使非熟練人員在緊急情況下使用。

二. 設備應便於攜帶，並能用於船上通信。

三. 設備應符合無線電規則中有關用於海上移動業務的船上通信設備的要求，並應能在無線電規則所規定的和主管機關所要求的那些頻道上工作。如果設備正在甚高頻波段內進行工作，應採取措施防止能在甚高頻 16 頻道上進行工作的設備誤選該頻道。

四. 設備應使用具有足夠容量的電池，在收發為 1：9 的情況下，應能保證工作 4 小時。

五. 當船舶在海上時，設備應保持處於良好狀態，而且在必要時，應將電池充足電或者換新。”

第五部分

第 VII 章

危險貨物的裝運

第 VII 章的現行條文用下文代替：

A 部分

包裝或固體散裝形式的危險貨物的裝運

第 1 條

適用範圍

- 1 除另有明文規定外，本節適用於現行條款所適用的一切船舶以及小於 500 總噸貨船裝運的包裝或固體散裝形式的、按本部分第 2 條分類的危險貨物（以下簡稱危險貨物）。
- 2 本部分的規定不適用於船用物料和設備。
- 3 除非符合本部分的規定，禁止裝運危險貨物。
- 4 為補充本部分的規定，各締約國政府應頒佈或促使頒佈關於危險貨物安全包裝及積載的細則，該細則應包括與其他貨物有關的必要

預防措施*。

第 2 條

分類

危險貨物應分為如下類別：

- | | |
|---------|---------------|
| 1 類 | 爆炸品 |
| 2 類 | 壓縮、液化或加壓溶解的氣體 |
| 3 類 | 易燃液體 |
| 4 類 (1) | 易燃固體 |
| 4 類 (2) | 易於自燃的物質 |
| 4 類 (3) | 遇水發生易燃氣體的物質 |
| 5 類 (1) | 氧化劑 |
| 5 類 (2) | 有機過氧化物 |
| 6 類 (1) | 有毒的 (毒性的) 物質 |
| 6 類 (2) | 感染性物質 |
| 7 類 | 放射性物質 |

* 參閱本組織以決議 A.81 (IV) 通過的《國際海上危險貨物規則》，以及本組織以決議 A.434 (XI) 通過並已由海上安全委員會修正或可能修正的《固體散裝貨物安全實施規則》附錄 B 的有關部分和有關章節。

- 8 類 腐蝕性物質
- 9 類 雜類危險物質（即經驗已證明或可能證明按其危險性質必須應用本部分規定的任何其他物質）。

第 3 條

包裝

- 1 危險貨物的包裝應是：
 - .1 堅固而完好；
 - .2 包裝的內表面可能與貨物相接觸者，應不致受所裝貨物的嚴重影響；
 - .3 能經受得住裝卸及海運的一般危險。
- 2 如包裝液體容器按常例採用具有吸收性或減震性的材料時，此種材料應為：
 - .1 能減少此液體可能引起的危險；
 - .2 其佈置應能防止移動，並確保該容器保持圍襯狀態；
 - .3 如為合理與可能，應具有足夠的數量，以便在容器萬一破裂時能吸收液體。
- 3 裝盛危險液體的容器，應在灌注溫度下留有在正常裝運過程中最高溫度所需的足夠膨脹空隙。

4 壓縮氣體的盛瓶或容器，應為構造合適、經過試驗、維護良好以及正確充灌者。

5 除非已經採用適當的措施以消除任何危險性，曾用於裝運危險貨物的未清洗的空容器，應按本部分關於灌裝容器的規定處理。

第 4 條

標記、標誌和標誌牌

1 盛裝危險貨物的包裝件，應以正確的學名（不應單獨使用商品名稱）加以耐久標記。

2 危險貨物包裝件應根據需要，加上明顯的標誌或簽條板或標誌牌，以表明所裝盛的貨物的危險性質。

3 在危險貨物包裝件上標學名、貼標誌或加簽條板或固定標誌牌的方法，應使包裝件上的內容在海中浸沒至少 3 個月後依然可以辨認。在考慮採用合適的標記、標誌和標誌牌時，應考慮到所用材料的耐久性和包裝件的表面。

4 危險貨物包裝件應照此加以標記和標誌，但是：

- .1 危險程度低或包裝數量有限的危險貨物包裝件*，或
- .2 特殊情況許可時，用標誌或標誌牌識別的成組堆放和裝卸的包裝件*；可以免除標誌要求。

* 參考《國際海上危險貨物規則》中所訂的特殊免除。

第 5 條

單據

1 在有關海運危險貨物的所有單據中，貨物名稱應使用正確學名（不應單獨使用商品名稱）並按本部分第 2 條所列類別加以正確說明。

2 由托運人預備的托運單據，應包括或附有經簽署的證明書或聲明書，註明所交運的貨物業已按情況需要正確地作了包裝、標記、標誌或加上了標誌牌，並處於合適的裝運狀態。

3 每一艘裝運危險貨物的船舶，須具有按照本部分第 2 條的分類規定載明船上所裝危險貨物及其位置的特殊清單或艙單。標明所有危險貨物的類別並註明其在船上位置的詳細配載圖，可以代替此特殊清單或艙單。

第 6 條

堆裝要求

1 危險貨物應按其性質安全地和適當地予以堆裝。性質互不相容的貨物，應彼此分開。

2 具有嚴重危險性的爆炸品（彈藥除外），應堆裝於在航行中須保持嚴密封閉的火藥庫內。這類爆炸品應與雷管分開。裝運爆炸品的任

何艙室內的電氣設備及電纜，其設計與使用應能使火災或爆炸的危險減至最小程度。

3 會產生危險氣體的包裝形式的危險貨物，應堆裝於機械通風的處所或甲板上。會產生危險氣體的散裝固體危險貨物，應堆裝於通風良好的處所。

4 裝運易燃液體或易燃氣體的船舶，在有必要防止火災或爆炸的處所，應採取特殊的預防措施。

5 在未經採取足夠的預防措施以減小火災發生的可能性以前，不得裝運易於自熱或自燃的物質。

第 7 條

客船上的爆炸品

1 在客船上僅可裝運如下爆炸品：

- .1 安全彈藥和安全引信；
- .2 總淨重不超過 10 kg 的少量爆炸品；
- .3 船舶或飛機使用的遇險信號，其總重量不超過 1000 kg 者；
- .4 不致發生猛烈爆炸的花炮，但裝運統艙無床位旅客的船舶除外。

2 雖在本條第 1 款有所規定，但在具有經主管機關認可的特殊安全措施의客船上，可載運額外數量或其他類型的爆炸品。

B 部分

散裝運輸危險化學品船舶的構造和設備

第 8 條

定義

除另有明文規定外，在本部分中：

1 “國際散裝化學品規則”係指本組織海安會決議 MSC. 4 (48) 通過的《國際散裝運輸危險化學品船舶構造和設備規則》，此規則可能由本組織進行修正，但此項修正應為根據現行公約第八條對附則（第一章除外）的修正程序實施並已得到通過、生效和執行者。

2 “化學品液貨船”係指建造或改建用於運輸《國際散裝化學品規則》第十七章所列的任何液體產品的貨船。

3 在第 9 條內，“建造的船舶”係指安放龍骨或處於相應建造階段的船舶。

4 “處於相應建造階段”是指在這樣的階段：

- .1 可認為某一具體船舶建造開始；
- .2 該船業已開始的裝配量至少為 50 噸或為所有結構材料估算重量的 1%，以較小者為準。

第 9 條

化學品液貨船的適用範圍

1 除另有明文規定外，本節適用於 1986 年 7 月 1 日或以後建造的化學品液貨船，包括小於 500 總噸者。此類化學品液貨船除符合本公約任何其他可適用的要求外，也應符合本部分的要求。

2 任何化學品液貨船，不論其建造日期如何，當進行修理、改裝、改建以及與之有關的舾裝時，至少應繼續符合該船原先適用的要求。這種船舶如係在 1986 年 7 月 1 日之前建造者，一般應至少達到該船在進行修理、改裝、改建或舾裝之前，已經履行該日期及以後建造船舶要求的同等程度。重大的修理、改裝、改建以及與之有關的舾裝，在主管機關認為合理和可行的範圍內，應滿足對 1986 年 7 月 1 日或以後建造船舶的要求。

3 不論其建造日期如何，當船舶改建成化學品液貨船時，應作為在該船改建開始之日建造的化學品液貨船處理。

第 10 條

化學品液貨船的要求

1 化學品液貨船應符合國際散裝化學品規則的要求，並且除了符合本公約附則第一章第八、九、十條的規定以外，還要根據該規則進行檢驗及發證。在本條範圍內，該規則的要求作為法定要求處理。

2 持有根據本條之 1 要求所發證書的化學品液貨船，應受本公約附則第一章第十九條所確定的監督。為此，此項證書應被作為根據附則第一章第十二條或第十三條要求而頒發的證書處理。

C 部分

散裝運輸液化氣體船舶的構造和設備

第 11 條

定義

除另有明文規定外，在本部分中：

1 “國際液化氣體船舶規則”係指本組織海安會決議 MSC.5(48) 通過的國際散裝運輸液化氣體船舶的構造和設備規則，此規則可能由本組織進行修正，但此項修正應為根據現行公約第八條對附則（第一章除外）的修正程序實施並已得到通過、生效和執行者。

2 “氣體運輸船”係指建造或改建用於運輸國際氣體運輸船舶規則第十九章所列的任何散裝液化氣體或其他物質。

3 在第 12 條內，“建造的船舶”係指安放龍骨或處於相應建造階段的船舶。

4 “處於相應建造階段”是指這樣的階段：

.1 可認為某一具體船舶建造開始；

- .2 該船業已開始的裝配量至少為 50 噸或為所有結構材料估算重量的 1%，以較小者為準。

第 12 條

氣體運輸船舶的適用範圍

1 除另有明文規定外，本部分適用於 1986 年 7 月 1 日或以後建造的氣體運輸船舶，包括小於 500 總噸者。此類氣體運輸船舶除符合本公約任何其他可適用的要求外，還應符合本部分的要求。

2 任何氣體運輸船，不論其建造日期如何，當進行修理、改裝、改建以及與之有關的舾裝時，至少應繼續符合該船原先適用的要求。這種船舶如係在 1986 年 7 月 1 日之前建造者，一般應至少達到該船在進行修理、改裝、改建或舾裝之前，已經履行該日期及以後建造船舶要求的同等程度。重大的修理、改裝、改建以及與之有關的舾裝，在主管機關認為合理和可行的範圍內，應滿足對 1986 年 7 月 1 日或以後建造船舶的要求。

3 不論其建造日期如何，當船舶改建成氣體運輸船時，應作為在該船改建開始之日建造的氣體運輸船處理。

第 13 條

氣體運輸船的要求

1 氣體運輸船應符合國際氣體運輸船規則的要求，並且除了符合本公約附則第一章第八、九和十條的規定以外，還要根據該規則進行檢驗及發證。在本條範圍內，該規則的要求作為法定要求處理。

2 持有根據本條之 1 要求所發證書的氣體運輸船，應按照第一章第十九條的要求營運。因此，這樣的證書應作為按照第一章第十二條或第一章第十三條的要求而頒發的證書看待。

**RESOLUTION MSC.6(48)
adopted on 17 June 1983**

**ADOPTION OF AMENDMENTS TO THE
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT
SEA, 1974**

THE MARITIME SAFETY COMMITTEE,

NOTING article VIII(b) of the International Convention for the Safety of Life at Sea, 1974, hereafter referred to as "the Convention", concerning the procedure for amending the Annex to the Convention, other than the provisions of chapter I thereof,

NOTING FURTHER the functions which the Convention confers upon the Maritime Safety Committee for the consideration and adoption of amendments to the Convention,

HAVING CONSIDERED at its forty-eighth session amendments to the Convention proposed and circulated in accordance with article VIII(b)(i) thereof,

1 ADOPTS in accordance with article VIII(b)(iv) of the Convention amendments to chapters II-1, II-2, III, IV and VII of the Convention, the texts of which are given in the Annex to the present resolution;

2 DETERMINES in accordance with article VIII(b)(vi)(2)(bb) of the Convention that the amendments to chapters II-1, II-2, III, IV and VII shall be deemed to have been accepted on 1 January 1986 unless prior to this date more than one third of 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 to chapters II-1, II-2, III, IV and VII shall enter into force on 1 July 1986 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 texts of the amendments contained in the Annex to all Contracting Governments to the International Convention for the Safety of Life at Sea, 1974;

5 FURTHER REQUESTS the Secretary-General to transmit copies of the resolution and its Annex to Members of the Organization which are not Contracting Governments to the Convention.

1. At its forty-eighth session held in June 1983, the Maritime Safety Committee adopted amendments to the International Convention for the Safety of Life at Sea, 1974 (SOLAS). Thirty-three Contracting Governments to the Convention were present at the session and all the texts of the amendments were adopted in accordance with the procedure specified in Article VIII(b)(iv).
2. The amendments adopted at the session consist of complete replacement texts of Chapters III and VII and amendments to Chapters II-1, II-2 and IV.
3. The decimal numbering system has been used in Chapters II-1, II-2, III and VII. Metric and Imperial units have been replaced with those of the *Système International (SI Units)*, except where conventionally accepted nautical units were considered more appropriate.
4. Cross references are given in a concise form, e.g. Regulation II-2/10.4 meaning paragraph 4 of Regulation 10 of Chapter II-2.
5. Footnotes given throughout the Convention, as well as amendments thereto, refer to the relevant recommendations annexed to the Convention and other internationally accepted standards. The Maritime Safety Committee has emphasized that these footnotes do not form part of the Convention and are only inserted for ease of reference. The footnotes are to be altered to reflect any changes which may be made to the resolutions, recommendations or documents on which they are based. References to draft resolutions to be considered by the Assembly at its thirteenth regular session are to be replaced by the definitive numbers of the resolutions as adopted by the Assembly.

Part 1**CHAPTER II-1****CONSTRUCTION – SUBDIVISION AND STABILITY,
MACHINERY AND ELECTRICAL INSTALLATIONS**

Chapter II-1 of the Convention is replaced by the text of chapter II-1 annexed to resolution MSC.1(XLV), further amended as follows:

Regulation 1*Application*

In paragraph 1.1 line 3 delete “1 September 1984” and insert “1 July 1986”.

In paragraph 1.3.2 line 2 delete “1 September 1984” and insert “1 July 1986”.

Replace the whole of paragraph 2 by:

“Unless expressly provided otherwise, for ships constructed before 1 July 1986 the Administration shall ensure that the requirements which are applicable under chapter II-1 of the International Convention for the Safety of Life at Sea, 1974, as amended by resolution MSC.1(XLV), are complied with.”

Delete the footnote.

In paragraph 3 lines 4 and 9 delete “1 September 1984” and insert “1 July 1986”.

Delete paragraph 5 and renumber paragraph 6 as paragraph 5.

Regulation 3*Definitions relating to Parts C, D and E*

In paragraph 18 delete “fiire” and insert “fire”.

Amend paragraph 19 as follows:

“ ‘Chemical tanker’ is a cargo ship constructed or adapted and used for the carriage in bulk of any liquid product listed in either:

- .1 chapter 17 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk adopted by the Maritime Safety Committee by resolution MSC.4(48), hereinafter referred to as ‘the International Bulk Chemical Code’, as may be amended by the Organization; or

- .2 chapter VI of the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk adopted by the Assembly of the Organization by resolution A.212(VII), hereinafter referred to as 'the Bulk Chemical Code', as has been or may be amended by the Organization;

whichever is applicable.”

Amend paragraph 20 to read:

“ ‘Gas carrier’ is a cargo ship constructed or adapted and used for the carriage in bulk of any liquefied gas or other products listed in either:

- .1 chapter 19 of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk adopted by the Maritime Safety Committee by resolution MSC.5(48) hereinafter referred to as ‘the International Gas Carrier Code’, as may be amended by the Organization; or
- .2 chapter XIX of the Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk adopted by the Assembly of the Organization by resolution A.328(IX), hereinafter referred to as ‘the Gas Carrier Code’, as has been or may be amended by the Organization;

whichever is applicable.”

Regulation 4

Floodable length in passenger ships

Paragraph 1, line 3 delete “andd” and insert “and”.

Regulation 5

Permeability in passenger ships

Amend paragraph 4.1 to read:

“4.1 In the case of special subdivision required in regulation 6.5, the uniform average permeability throughout the portion of the ship forward of or abaft the machinery space shall be $95-35 \frac{b}{v}$ where:

b = the volume of the spaces below the margin line and above the tops of floors, inner bottom, or peak tanks, as the case may be, which are appropriated to and used as cargo spaces, coal or oil fuel bunkers, store-rooms, baggage and mail rooms, chain lockers and fresh water tanks, forward of or abaft the machinery space; and

v = the whole volume of the portion of the ship below the margin line forward of or abaft the machinery space.”

Regulation 6

Permissible length of compartments in passenger ships

Paragraph 2.2, line 2 delete “seervice” and insert “service”.

Replace the heading of section 5 by “Special subdivision standards for ships complying with regulation III/20.1.2.”

Insert new paragraphs 5.3 and 5.4 as follows:

“5.3 The special provisions regarding permeability given in regulation 5.4 shall be employed when calculating the floodable length curves.

5.4 Where the Administration is satisfied that, having regard to the nature and conditions of the intended voyages compliance with the other provisions of this chapter and of chapter II-2 is sufficient, the requirements of this paragraph need not be complied with.”

Regulation 41

Main source of electrical power and lighting systems

Paragraph 1.3, line 3 insert “of rotation” after “direction”.

Regulation 42

Emergency source of electrical power in passenger ships

Amend sub-paragraph 2.1.1 to read:

“1 at every muster and embarkation station and over the sides as required by regulations III/11.4 and III/15.7”.

Insert new sub-paragraph 2.1.2 to read:

“2 in alleyways, stairways and exits giving access to the muster and embarkation stations, as required by regulation III/11.5”.

Renumber sub-paragraphs 2.1.2 to 2.1.7 to read 2.1.3 to 2.1.8.

Paragraph 2.3.4 line 2 delete “manual fire alarms” and insert “manually operated call points”.

Regulation 43

Emergency source of electrical power in cargo ships

Paragraph 1.3, line 10 delete “sppace” and insert “space”.

Amend paragraph 2.1 to read:

“2.1 For a period of 3 h, emergency lighting at every muster and embarkation station and over the sides as required by regulations III/11.4 and III/15.7.”

Paragraph 2.4.4, line 2 delete “manual fire alarms” and insert “manually operated call points”.

Regulation 49

Control of propulsion machinery from the navigating bridge

Paragraph 3, line 6 delete “the machinery space” and insert “the main machinery space”

delete “the machinery control room” and insert “the main machinery control room”.

Paragraph 5, line 3 insert “of the propeller” after “thrust”.

Paragraph 6.1, line 1 delete “in case” and insert “in the case”.

Paragraph 6.2, line 1 delete “in case” and insert “in the case”.

Part 2**CHAPTER II-2****CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION
AND FIRE EXTINCTION**

Chapter II-2 of the Convention is replaced by the text of chapter II-2 annexed to resolution MSC.1 (XLV), further amended as follows:

Regulation 1*Application*

In paragraph 1.1 line 3 delete “1 September 1984” and insert “1 July 1986”

In paragraph 1.3.2 line 2 delete “1 September 1984” and insert “1 July 1986”.

Replace the whole of paragraph 2 by:

“Unless expressly provided otherwise, for ships constructed before 1 July 1986 the Administration shall ensure that the requirements which are applicable under chapter II-2 of the International Convention for the Safety of Life at Sea, 1974, as amended by resolution MSC.1 (XLV), are complied with.”

In paragraph 3 lines 4 and 9 delete “1 September 1984” and insert “1 July 1986”.

Delete the footnote.

Regulation 3*Definitions*

In paragraph 12 correct “main and specie rooms” to read “mail and specie rooms”.

Paragraph 30, amend to:

“‘Chemical tanker’ is a tanker constructed or adapted and used for the carriage in bulk of any liquid product of a flammable nature listed in either:

- .1 chapter 17 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk adopted by the Maritime Safety Committee by resolution MSC.4(48), hereinafter referred to as ‘the International Bulk Chemical Code’, as may be amended by the Organization; or

- .2 chapter VI of the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk adopted by the Assembly of the Organization by resolution A.212(VII), hereinafter referred to as ‘the Bulk Chemical Code’, as has been or may be amended by the Organization;

whichever is applicable.”

Paragraph 31 amend to:

“ ‘Gas carrier’ is a tanker constructed or adapted and used for the carriage in bulk of any liquefied gas or other products of a flammable nature listed in either:

- .1 chapter 19 of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk adopted by the Maritime Safety Committee by resolution MSC.5(48), hereinafter referred to as ‘the International Gas Carrier Code’, as may be amended by the Organization; or
- .2 chapter XIX of the Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk adopted by the Assembly of the Organization by resolution A.328(IX), hereinafter referred to as ‘the Gas Carrier Code’, as has been or may be amended by the Organization;

whichever is applicable.”

Add an additional paragraph to read:

“32 ‘Cargo area’ is that part of the ship that contains cargo tanks, slop tanks and cargo pump rooms including pump rooms, cofferdams, ballast 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.”

Regulation 4

Fire pumps, fire mains, hydrants and hoses

In paragraph 3.3.2.6 line 3 delete “room” and insert “station”.

Regulation 5

Fixed gas fire-extinguishing systems

In paragraph 2.2 line 2 delete “quantity” and insert “volume”.

In paragraph 2.2 line 3 delete “quantities” and insert “volumes”.

Regulation 6*Fire extinguishers*

In paragraph 7 line 2 delete “provideed” and insert “provided”.

Regulation 7*Fire-extinguishing arrangements in machinery spaces*

In paragraph 1,2 lines 1 and 2 delete “air foam equipment” and insert “foam applicator unit”.

Regulation 11*Special arrangements in machinery spaces*

In the first line of paragraph 8 amend “An approved automatic fire detection and alarm system” to read “A fixed fire detection and alarm system”.

Regulation 12*Automatic sprinkler, fire detection and fire alarm systems*

In paragraph 3 correct “sppaced” to read “spaced”.

Regulation 13*Fixed fire detection and fire alarm systems*

In paragraph 2.1 lines 1, 2, 3 and 5 delete “Manual” and insert “Manually operated”.

Regulation 14*Fixed fire detection and fire alarm systems for periodically unattended machinery spaces*

In paragraph 1, line 1 amend to read “A fixed fire detection and fire alarm system of an approved type in accordance with the”.

Regulation 15

Arrangements for oil fuel, lubricating oil and other flammable oils

Insert a new paragraph 6 to read:

“6 *Prohibition of carriage of flammable oils in forepeak tanks*

Oil fuel, lubricating oil and other flammable oils shall not be carried in forepeak tanks”.

Regulation 20

Fire control plans

Paragraph 1, lines 14 and 15 delete “national language” and insert “official language of the flag State”.

Regulation 26

Fire integrity of bulkheads and decks in ships carrying more than 36 passengers

Paragraph 2.2, line 1 delete “for the purpose of” and insert “For”.
line 10 delete “number”.

Paragraph 2.2(1), line 4 delete “fire control and recording stations” and insert “fire control rooms and fire-recording stations”.

Paragraph 2.2(5), line 3 delete “Air space” and insert “Air spaces”.

Table 26.2, line 5 delete “space” and insert “spaces”.

Regulation 27

Fire integrity of bulkheads and decks in ships carrying not more than 36 passengers

Paragraph 2.2(1), line 4 delete “stations” and insert “rooms”.

In Table 27.1, line 2, column 4
line 3, column 4
line 4, column 4
line 4, column 5

replace B-0^{e/} by A-0^{a/}
A-0^{a/} B-0^{e/}.

Paragraph 4, line 4 delete “this chapter” and insert “this part”.

Regulation 32

Ventilation systems

Paragraph 1.4.3.1, line 1 delete "restricted" and insert "low".

Replace Regulation 36 by:

"Regulation 36

Fixed fire detection and fire alarm systems Automatic sprinkler, fire detection and fire alarm systems

In any ship to which this part applies, there shall be installed throughout each separate zone, whether vertical or horizontal, in all accommodation and service spaces and, where it is considered necessary by the Administration, in control stations, except spaces which afford no substantial fire risk such as void spaces, sanitary spaces, etc., either:

- .1 a fixed fire detection and fire alarm system of an approved type and complying with the requirements of regulation 13 and so installed and arranged as to detect the presence of fire in such spaces; or
- .2 an automatic sprinkler, fire detection and fire alarm system of an approved type and complying with the requirements of regulation 12 and so installed and arranged as to protect such spaces and in addition a fixed fire detection and fire alarm system of an approved type complying with the requirements of regulation 13 so installed and arranged as to provide smoke detection in corridors, stairways and escape routes within accommodation spaces."

Regulation 37

Protection of special category spaces

Amend the text of paragraph 1.4.1 to read:

"1.4.1 An efficient patrol system shall be maintained in special category spaces. In any such space in which the patrol is not maintained by a continuous fire watch at all times during the voyage there shall be provided a fixed fire detection and fire alarm system of an approved type complying with the requirements of regulation 13. The fixed fire detection system shall be capable of rapidly detecting the onset of fire. The spacing and location of detectors shall be tested to the satisfaction of the Administration taking into account the effects of ventilation and other relevant factors."

Amend the text of paragraph 2.2.1 to read:

“2.2.1 On any deck or platform, if fitted, on which vehicles are carried and on which explosive vapours might be expected to accumulate, except platforms with openings of sufficient size permitting penetration of petrol gases downwards, equipment which may constitute a source of ignition of flammable vapours and, in particular, electrical equipment and wiring, shall be installed at least 450 mm above the deck or platform. Electrical equipment installed at more than 450 mm above the deck or platform shall be of a type so enclosed and protected as to prevent the escape of sparks. However, if the Administration is satisfied that the installation of electrical equipment and wiring at less than 450 mm above the deck or platform is necessary for the safe operation of the ship, such electrical equipment and wiring may be installed provided that it is of a type approved for use in an explosive petrol and air mixture.”

Regulation 40

Fire patrols, detection, alarms and public address systems

Amend paragraphs 1 and 2 to read:

“1. Manually operated call points complying with the requirements of regulation 13 shall be installed”.

“2. A fixed fire detection and fire alarm system of an approved type shall be provided”.

Regulation 42

Structure

In paragraph 1, second line, amend “deck” to read “decks”.

Regulation 49

Restricted use of combustible materials

Amend the text of paragraph 3 to read:

“Primary deck coverings, if applied within accommodation and service spaces and control stations, shall be of approved material which will not readily ignite, or give rise to toxic or explosive hazards at elevated temperatures.**”

Regulation 51

Arrangements for gaseous fuel for domestic purposes

Delete comma and insert “for the” after “arrangements”.

Regulation 52

Fixed fire detection and fire alarm systems Automatic sprinkler, fire detection and fire alarm systems

Amend the first three paragraphs to read:

“1 In ships in which method IC is adopted, a fixed fire detection and fire alarm system of an approved type complying with the requirements of regulation 13 shall be so installed and arranged as to provide smoke detection and manually operated call points in all corridors, stairways and escape routes within accommodation spaces.

2 In ships in which method IIC is adopted, an automatic sprinkler, fire detection and fire alarm system of an approved type complying with the relevant requirements of regulation 12 shall be so installed and arranged as to protect accommodation spaces, galleys and other service spaces, except spaces which afford no substantial fire risk such as void spaces, sanitary spaces, etc. In addition, a fixed fire detection and fire alarm system of an approved type complying with the requirements of regulation 13 shall be so installed and arranged as to provide smoke detection and manually operated call points in all corridors, stairways and escape routes within accommodation spaces.

3 In ships in which method IIIC is adopted, a fixed fire detection and fire alarm system of an approved type complying with the requirements of regulation 13 shall be so installed and arranged as to detect the presence of fire in all accommodation spaces and service spaces, except spaces which afford no substantial fire risk such as void spaces, sanitary spaces, etc.”

Delete paragraph 4.

Regulation 53

Fire protection arrangements in cargo spaces

In paragraph 1.3, line 4, delete “by” and insert “with”.

Amend the first sentence of paragraph 2.1 to read: “There shall be provided a fixed fire detection and fire alarm system of an approved type.”

Replace paragraph 2.4.2 by the following:

“2 Above a height of 450 mm from the deck and from each platform for vehicles, if fitted, except platforms with openings of sufficient size permitting penetration of petrol gases downwards, electrical equipment of a type so enclosed and protected as to prevent the escape of sparks shall be permitted as an alternative on condition that the ventilating system is so designed and operated as to provide continuous ventilation of the cargo spaces at the rate of at least 10 air changes per hour whenever vehicles are on board.”

Regulation 54

Special requirements for ships carrying dangerous goods

In table 54.2, note f, amend “. . . in addition to those enumerated . . .” to read “. . . in addition to meeting the requirements enumerated . . .”.

Amend the first sentence in paragraph 2.3 to read: “A fixed fire detection and fire alarm system of an approved type shall be fitted to all enclosed cargo spaces including closed vehicle deck spaces.”

Regulation 55

Application

Amend paragraph 2 to read:

“Where liquid cargoes other than those referred to in paragraph 1 or liquefied gases which introduce additional fire hazards are intended to be carried, additional safety measures shall be required to the satisfaction of the Administration, having due regard to the provisions of the International Bulk Chemical Code, the Bulk Chemical Code, the International Gas Carrier Code and the Gas Carrier Code, as appropriate.”

Amend paragraph 6 to read:

“Chemical tankers and gas carriers shall comply with the requirements of this part, except where alternative and supplementary arrangements are provided to the satisfaction of the Administration, having due regard to the provisions of the International Bulk Chemical Code, the Bulk Chemical Code, the International Gas Carrier Code and the Gas Carrier Code, as appropriate.”

Regulation 56

Location and separation of spaces

Replace the text of the whole regulation by:

“1 Machinery spaces shall be positioned aft of cargo tanks and slop tanks; they shall also be situated aft of cargo pump rooms and cofferdams, but not necessarily aft of the oil fuel bunker tanks. Any machinery space shall be isolated from cargo tanks and slop tanks by cofferdams, cargo pump rooms, oil fuel bunker tanks or permanent ballast tanks. Pump rooms containing pumps and their accessories for ballasting those spaces situated adjacent to cargo tanks and slop tanks and pumps for oil fuel transfer shall be considered as equivalent to a cargo pump room within the context of this regulation, provided that such pump rooms have the same safety standard as that required for cargo pump rooms. However, the lower portion of the pump room may be recessed into machinery spaces of category A to accommodate pumps, provided that the deck head of the recess is in general not more than one third of the moulded depth above the keel, except that in the case

of ships of not more than 25,000 tonnes deadweight, where it can be demonstrated that for reasons of access and satisfactory piping arrangements this is impracticable, the Administration may permit a recess in excess of such height, but not exceeding one half of the moulded depth above the keel.

2 Accommodation spaces, main cargo control stations, control stations and service spaces (excluding isolated cargo handling gear lockers) shall be positioned aft of all cargo tanks, slop tanks, cargo pump rooms and cofferdams which isolate cargo or slop tanks from machinery spaces but not necessarily aft of the oil fuel bunker tanks. A recess provided in accordance with paragraph 1 need not be taken into account when the position of these spaces is being determined.

3 However, where deemed necessary, accommodation spaces, control stations, machinery spaces other than those of category A, and service spaces may be permitted forward of the cargo area, provided they are isolated from the cargo tanks and slop tanks by cofferdams, cargo pump rooms, oil fuel bunker tanks or permanent ballast tanks and subject to an equivalent standard of safety and appropriate availability of fire-extinguishing arrangements being provided to the satisfaction of the Administration. In addition, where deemed necessary for the safety or navigation of the ship, the Administration may permit machinery spaces containing internal combustion machinery not being main propulsion machinery having an output greater than 375 kW to be located forward of the cargo area provided the arrangements are in accordance with the provisions of this paragraph.

4 In combination carriers only:

- 1 The slop tanks are to be surrounded by cofferdams except where the boundaries of the slop tanks where slop may be carried on dry cargo voyages are the hull, main cargo deck, cargo pump room bulkhead or oil fuel bunker tank. These cofferdams shall not be open to a double bottom, pipe tunnel, pump room or other enclosed space. Means shall be provided for filling the cofferdams with water and for draining them. Where the boundary of a slop tank is the cargo pump room bulkhead the pump room shall not be open to the double bottom, pipe tunnel or other enclosed space, however, openings provided with gastight bolted covers may be permitted.
- 2 Means shall be provided for isolating the piping connecting the pump room with the slop tanks referred to in paragraph 4.1. The means of isolation shall consist of a valve followed by a spectacle flange or a spool piece with appropriate blank flanges. This arrangement shall be located adjacent to the slop tanks, but where this is unreasonable or impracticable it may be located within the pump room directly after the piping penetrates the bulkhead. A separate pumping and piping arrangement shall be provided for discharging the contents of the slop tanks directly over the open deck when the ship is in the dry cargo mode.
- 3 Hatches and tank cleaning openings to slop tanks shall only be permitted on the open deck and shall be fitted with closing arrangements. Except where they consist of bolted plates with bolts at watertight spacing, these closing arrangements shall be provided with locking arrangements which shall be under the control of the responsible ship's officer.

4 Where cargo wing tanks are provided, cargo oil lines below deck shall be installed inside these tanks. However, the Administration may permit cargo oil lines to be placed in special ducts which shall be capable of being adequately cleaned and ventilated and be to the satisfaction of the Administration. Where cargo wing tanks are not provided cargo oil lines below deck shall be placed in special ducts.

5 Where the fitting of a navigation position above the cargo area is shown to be necessary, it shall be for navigation purposes only and it shall be separated from the cargo tank deck by means of an open space with a height of at least 2 m. The fire protection of such a navigation position shall in addition be as required for control spaces in regulation 58.1 and 58.2 and other provisions, as applicable, of this part.

6 Means shall be provided to keep deck spills away from the accommodation and service areas. This may be accomplished by provision of a permanent continuous coaming of a suitable height extending from side to side. Special consideration shall be given to the arrangements associated with stern loading.

7 Exterior boundaries of superstructures and deckhouses enclosing accommodation and including any overhanging decks which support such accommodation, shall be insulated to 'A-60' standard for the whole of the portions which face the cargo area and for 3 m aft of the front boundary. In the case of the sides of those superstructures and deckhouses, such insulation shall be carried as high as is deemed necessary by the Administration.

8.1 Entrances, air inlets and openings to accommodation spaces, service spaces and control stations shall not face the cargo area. They shall be located on the transverse bulkhead not facing the cargo area or on the outboard side of the superstructure or deckhouse at a distance of at least 4% of the length of the ship but not less than 3 m from the end of the superstructure or deckhouse facing the cargo area. This distance, however, need not exceed 5 m.

8.2 No doors shall be fitted within the limits specified in paragraph 8.1 except that doors to spaces not having access to accommodation spaces, service spaces and control stations may be permitted by the Administration. Such spaces may be cargo control stations, provision rooms and store-rooms. Where such doors are fitted to spaces located aft of the cargo area, the boundaries of the space shall be insulated to 'A-60' standard, with the exception of the boundary facing the cargo area. Bolted plates for removal of machinery may be fitted within the limits specified in paragraph 8.1. Wheelhouse doors and wheelhouse windows may be located within the limits specified in paragraph 8.1 so long as they are designed to ensure that the wheelhouse can be made rapidly and efficiently gas and vapour tight.

8.3 Windows and sidescuttles facing the cargo area and on the sides of the superstructures and deckhouses within the limits specified in paragraph 8.1 shall be of the fixed (non-opening) type. Such windows and sidescuttles in the first tier on the main deck shall be fitted with inside covers of steel or other equivalent material."

Regulation 58*Fire integrity of bulkheads and decks*

In table 1, note b/, line 1 – delete “b” and insert “b/”.

Paragraph 4, line 4 delete “these Requirements” and insert “this part”

Regulation 59*Venting, purging, gas freeing and ventilation*

Paragraph 2, line 16 delete “gas” and insert “vapour”.

line 18 delete “gas” and insert “vapour”.

lines 16, 17 and 18 “When . . . level.” forms part of paragraph 2 and must be moved to that paragraph’s margin.

Amend paragraph 3.3 as follows:

In the third sentence amend “referred to in Regulation 56.1” to read “referred to in regulation 56.4”.

In the fourth sentence amend “cargo tank area” to read “cargo area”.

Regulation 61*Fixed deck foam systems*

In paragraph 1 amend “cargo tank area” to read “cargo tanks deck area”.

In paragraph 2 amend “cargo tank area” to read “cargo area” in the second sentence.

In paragraph 3.1 amend “cargo deck area” to read “cargo tanks deck area”.

In paragraph 7 in the first and second sentence amend “cargo deck” to read “cargo tank deck”.

In paragraph 8, third line, amend “400ℓ” to read “400ℓ/min”. In the fourth sentence amend “any cargo tank deck area” to read “any part of the cargo tanks deck area”.

Regulation 62

Inert gas systems

In paragraph 1 delete “non flammable” and insert “non flammable”.

In paragraph 9.1, lines 2 and 3 delete “19.2” and “19.3” and insert “19.3” and “19.4” respectively.

In paragraph 10.2 amend “cargo tank area” to read “cargo area”.

Replace paragraph 14.1 by:

“14.1 One or more pressure vacuum breaking devices shall be provided to prevent the cargo tanks from being subject to:

- .1 a positive pressure in excess of the test pressure of the cargo tank if the cargo were to be loaded at the maximum rated capacity and all other outlets are left shut; and
- .2 a negative pressure in excess of 700 mm water gauge if cargo were to be discharged at the maximum rated capacity of the cargo pumps and the inert gas blowers were to fail.

Such devices shall be installed on the inert gas main unless they are installed in the venting system required by regulation 59.1.1 or on individual cargo tanks.”

In paragraph 20.1 amend the last line to read “10.2, 10.7, 10.9, 11.3, 11.4, 12, 13.1, 13.2, 13.4.2, 14.2 and 19.8;”

In paragraph 20.2 amend the last line to read “12, 13.1, 13.2 and 14.2.”

Part 3**CHAPTER III**

The existing text of chapter III is replaced by the following:

LIFE-SAVING APPLIANCES AND ARRANGEMENTS**PART A – GENERAL****Regulation 1***Application*

- 1 Unless expressly provided otherwise, this chapter shall apply to ships the keels of which are laid or which are at a similar stage of construction on or after 1 July 1986.
- 2 For the purpose of this chapter the term “a similar stage of construction” means the stage at which:
 - .1 construction identifiable with a specific ship begins; and
 - .2 assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is less.
- 3 For the purpose of this chapter:
 - .1 the expression “ships constructed” means “ships the keels of which are laid or which are at a similar stage of construction”;
 - .2 the expression “all ships” means “ships constructed before, on or after 1 July 1986”; the expressions “all passenger ships” and “all cargo ships” shall be construed accordingly;
 - .3 a cargo ship, whenever built, which is converted to a passenger ship shall be treated as a passenger ship constructed on the date on which such a conversion commences.
- 4 For ships constructed before 1 July 1986, the Administration shall:
 - .1 ensure that, subject to the provisions of paragraph 4.2 and 4.3, the requirements which are applicable under chapter III of the International Convention for the Safety of Life at Sea, 1974, in force prior to 1 July 1986 to new or existing ships as prescribed by that chapter are complied with;

- .2 consider the life-saving appliances and arrangements in ships which do not comply with the requirements referred to in paragraph 4.1, with a view to securing, so far as this is reasonable and practicable and as early as possible, substantial compliance with those requirements;
 - .3 ensure that when life-saving appliances or arrangements on such ships are replaced or such ships undergo repairs, alterations or modifications of a major character which involve replacement of, or any addition to, their existing life-saving appliances or arrangements, such life-saving appliances or arrangements, in so far as is reasonable and practicable, comply with the requirements of this chapter. However, if a survival craft is replaced without replacing its launching appliance, or vice versa, the survival craft or launching appliance may be of the same type as that replaced;
 - .4 approve the life-saving appliances to be provided in compliance with paragraph 6. The Administration may permit those life-saving appliances provided on board ships prior to 1 July 1991 not to comply fully with the requirements of this chapter as long as they remain in a satisfactory condition;
 - .5 except as provided for survival craft and launching appliances referred to in paragraph 4.3, ensure that life-saving appliances replaced or installed on or after 1 July 1991 are evaluated, tested and approved in accordance with the requirements of regulations 4 and 5.
- 5 With respect to ships constructed before 1 July 1986 the requirements of regulations 8, 9, 10, 18 and 25 and, to the extent prescribed therein, regulation 19 shall apply.
- 6 With respect to ships constructed before 1 July 1986 the requirements of regulations 6.2.3, 6.2.4, 21.3, 21.4, 26.3, 27.2, 27.3 and 30.2.7 shall apply not later than 1 July 1991.

Regulation 2

Exemptions

- 1 The Administration may, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this chapter unreasonable or unnecessary, exempt from those requirements individual ships or classes of ships which, in the course of their voyage, do not proceed more than 20 miles from the nearest land.
- 2 In the case of passenger ships which are employed in special trades for the carriage of large numbers of special trade passengers, such as the pilgrim trade, the Administration, if satisfied that it is impracticable to enforce compliance with the requirements of this chapter, may exempt such ships from those requirements, provided that such ships comply fully with the provisions of:
 - .1 the rules annexed to the Special Trade Passenger Ships Agreement, 1971; and

- .2 the rules annexed to the Protocol on Space Requirements for Special Trade Passenger Ships, 1973.

Regulation 3

Definitions

For the purpose of this chapter, unless expressly provided otherwise:

- 1 *Certificated person* is a person who holds a certificate of proficiency in survival craft issued under the authority of, or recognized as valid by, the Administration in accordance with the requirements of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, in force; or a person who holds a certificate issued or recognized by the Administration of a State not a Party to that Convention for the same purpose as the convention certificate.
- 2 *Detection* is the determination of the location of survivors or survival craft.
- 3 *Embarkation ladder* is the ladder provided at survival craft embarkation stations to permit safe access to survival craft after launching.
- 4 *Float-free launching* is that method of launching a survival craft whereby the craft is automatically released from a sinking ship and is ready for use.
- 5 *Free-fall launching* is that method of launching a survival craft whereby the craft with its complement of persons and equipment on board is released and allowed to fall into the sea without any restraining apparatus.
- 6 *Immersion suit* is a protective suit which reduces the body heat-loss of a person wearing it in cold water.
- 7 *Inflatable appliance* is an appliance which depends upon non-rigid, gas filled chambers for buoyancy and which is normally kept uninflated until ready for use.
- 8 *Inflated appliance* is an appliance which depends upon non-rigid, gas filled chambers for buoyancy and which is kept inflated and ready for use at all times.
- 9 *Launching appliance or arrangement* is a means of transferring a survival craft or rescue boat from its stowed position safely to the water.
- 10 *Length* is 96% of the total length on a waterline at 85% of the least moulded depth measured from the top of the keel, or the length from the fore-side of the stem to the axis of the rudder stock on that waterline, if that be greater. In ships designed with a rake of keel the waterline on which this is measured shall be parallel to the designed waterline.
- 11 *Moulded depth*
 - .1 The moulded depth is the vertical distance measured from the top of the keel to the top of the freeboard deck beam at side. In wood and composite ships the distance is measured from the lower edge of the keel rabbet. Where the form at the lower part of the midship section is of

a hollow character, or where thick garboards are fitted, the distance is measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel.

- .2 In ships having rounded gunwales, the moulded depth shall be measured to the point of intersection of the moulded lines of the deck and side shell plating, the lines extending as though the gunwale were of angular design.
- .3 Where the freeboard deck is stepped and the raised part of the deck extends over the point at which the moulded depth is to be determined, the moulded depth shall be measured to a line of reference extending from the lower part of the deck along a line parallel with the raised part.

12 *Novel life-saving appliance or arrangement* is a life-saving appliance or arrangement which embodies new features not fully covered by the provisions of this chapter but which provides an equal or higher standard of safety.

13 *Rescue boat* is a boat designed to rescue persons in distress and to marshal survival craft.

14 *Retrieval* is the safe recovery of survivors.

15 *Retro-reflective material* is a material which reflects in the opposite direction a beam of light directed on it.

16 *Short international voyage* is an international voyage in the course of which a ship is not more than 200 miles from a port or place in which the passengers and crew could be placed in safety. Neither the distance between the last port of call in the country in which the voyage begins and the final port of destination nor the return voyage shall exceed 600 miles. The final port of destination is the last port of call in the scheduled voyage at which the ship commences its return voyage to the country in which the voyage began.

17 *Survival craft* is a craft capable of sustaining the lives of persons in distress from the time of abandoning the ship.

18 *Thermal protective aid* is a bag or suit made of waterproof material with low thermal conductivity.

Regulation 4

Evaluation, testing and approval of life-saving appliances and arrangements

1 Except as provided in paragraphs 5 and 6, life-saving appliances and arrangements required by this chapter shall be approved by the Administration.

2 Before giving approval to life-saving appliances and arrangements, the Administration shall ensure that such life-saving appliances and arrangements:

- .1 are tested, to confirm that they comply with the requirements of this chapter, in accordance with the recommendations of the Organization;* or
 - .2 have successfully undergone, to the satisfaction of the Administration, tests which are substantially equivalent to those specified in those recommendations.
- 3 Before giving approval to novel life-saving appliances or arrangements, the Administration shall ensure that such appliances or arrangements:
- .1 provide safety standards at least equivalent to the requirements of this chapter and have been evaluated and tested in accordance with the recommendations of the Organization;** or
 - .2 have successfully undergone, to the satisfaction of the Administration, evaluation and tests which are substantially equivalent to those recommendations.
- 4 Procedures adopted by the Administration for approval shall also include the conditions whereby approval would continue or would be withdrawn.
- 5 Before accepting life-saving appliances and arrangements that have not been previously approved by the Administration, the Administration shall be satisfied that life-saving appliances and arrangements comply with the requirements of this chapter.
- 6 Life-saving appliances required by this chapter for which detailed specifications are not included in part C shall be to the satisfaction of the Administration.

Regulation 5

Production tests

The Administration shall require life-saving appliances to be subjected to such production tests as are necessary to ensure that the life-saving appliances are manufactured to the same standard as the approved prototype.

* Reference is made to the "Recommendation on testing of life-saving appliances" to be submitted to the Assembly of the Organization at its thirteenth session for adoption.

** Reference is made to the "Code of practice for the evaluation, testing and acceptance of prototype novel life-saving appliances and arrangements" to be submitted to the Assembly of the Organization at its thirteenth session for adoption.

PART B – SHIP REQUIREMENTS

SECTION I – PASSENGER SHIPS AND CARGO SHIPS

Regulation 6

Communications

1 Paragraphs 2.3 and 2.4 apply to all ships. With respect to ships constructed before 1 July 1986, paragraphs 2.3 and 2.4 shall apply not later than 1 July 1991.

2 *Radio life-saving appliances*2.1 *Portable radio apparatus for survival craft*

2.1.1 A portable radio apparatus for survival craft complying with the requirements of regulation IV/14 shall be provided. The portable radio apparatus shall be stowed in a protected and easily accessible position ready to be moved to any survival craft in an emergency, except that in the case of a ship with lifeboats stowed in widely separated positions fore and aft, the portable radio apparatus shall be stowed in the vicinity of the lifeboats which are furthest away from the ship's main transmitter.

2.1.2 The requirements of paragraph 2.1.1 need not be complied with if a radio installation complying with the requirements of regulation IV/13 is fitted in a lifeboat on each side of the ship or in the stern-launched lifeboat referred to in regulation 26.1.2.1.

2.1.3 On ships engaged on voyages of such duration that in the opinion of the Administration portable radio apparatus for survival craft is unnecessary, the Administration may allow such equipment to be dispensed with.

2.2 *Radiotelegraph installation for lifeboats*

On passenger ships engaged on international voyages which are not short international voyages:

- .1 where the total number of persons on board is more than 199 but less than 1,500, a radiotelegraph installation complying with the requirements of regulation IV/13 shall be fitted in at least one of the lifeboats required by regulation 20.1.1.1;
- .2 where the total number of persons on board is 1,500 or more, at least one lifeboat on each side shall be so fitted.

2.3 *Survival craft emergency position-indicating radio beacons*

One manually activated emergency position-indicating radio beacon complying with the requirements of regulation IV/14-1 shall be carried on each side of the ship. They shall be so stowed that they can be rapidly placed in any survival craft other than the liferaft or liferafts required by regulation 26.1.4.

2.4 *Two-way radiotelephone apparatus*

2.4.1 Two-way radiotelephone apparatus complying with the requirements of regulation IV/14-3 shall be provided for communication between survival craft, between survival craft and ship and between ship and rescue boat. An apparatus need not be provided for every survival craft; however, at least three apparatus shall be provided on each ship. This requirement may be complied with by other apparatus used on board provided such apparatus is not incompatible with the appropriate requirements of regulation IV/14-3.

2.4.2 For ships constructed before 1 July 1986 such apparatus need only comply with the frequency requirements of regulation IV/14-3.

3 *Distress flares*

Not less than 12 rocket parachute flares, complying with the requirements of regulation 35, shall be carried and be stowed on or near the navigating bridge.

4 *On-board communications and alarm systems*

4.1 An emergency means comprised of either fixed or portable equipment or both shall be provided for two-way communications between emergency control stations, muster and embarkation stations and strategic positions on board.

4.2 A general emergency alarm system complying with the requirements of regulation 50 shall be provided and shall be used for summoning passengers and crew to muster stations and to initiate the actions included in the muster list. The system shall be supplemented by either a public address system or other suitable means of communication.

Regulation 7

Personal life-saving appliances

1 *Lifebuys*

1.1 Lifebuys complying with the requirements of regulation 31.1 shall be:

1. so distributed as to be readily available on both sides of the ship and as far as practicable on all open decks extending to the ship's side; at least one shall be placed in the vicinity of the stern;
2. so stowed as to be capable of being rapidly cast loose, and not permanently secured in any way.

1.2 At least one lifebuoy on each side of the ship shall be fitted with a buoyant lifeline complying with the requirements of regulation 31.4 equal in length to not less than twice the height at which it is stowed above the waterline in the lightest seagoing condition, or 30 m, whichever is the greater.

1.3 Not less than one half of the total number of lifebuoys shall be provided with self-igniting lights complying with the requirements of regulation 31.2; not less than two of these shall also be provided with self-activating smoke signals complying with the requirements of regulation 31.3 and be capable of quick release from the navigating bridge; lifebuoys with lights and those with lights and smoke signals shall be equally distributed on both sides of the ship and shall not be the lifebuoys provided with lifelines in compliance with the requirements of paragraph 1.2.

1.4 Each lifebuoy shall be marked in block capitals of the Roman alphabet with the name and port of registry of the ship on which it is carried.

2 *Lifejackets*

2.1 A lifejacket complying with the requirements of regulation 32.1 or 32.2 shall be provided for every person on board the ship and, in addition:

- .1 a number of lifejackets suitable for children equal to at least 10% of the number of passengers on board shall be provided or such greater number as may be required to provide a lifejacket for each child;
- .2 a sufficient number of lifejackets shall be carried for persons on watch and for use at remotely located survival craft stations.

2.2 Lifejackets shall be so placed as to be readily accessible and their position shall be plainly indicated. Where, due to the particular arrangements of the ship, the lifejackets provided in compliance with the requirements of paragraph 2.1 may become inaccessible, alternative provisions shall be made to the satisfaction of the Administration which may include an increase in the number of lifejackets to be carried.

3 *Immersion suits*

3.1 An immersion suit, of an appropriate size, complying with the requirements of regulation 33 shall be provided for every person assigned to crew the rescue boat.

Regulation 8

Muster list and emergency instructions

- 1 This regulation applies to all ships.
- 2 Clear instructions to be followed in the event of an emergency shall be provided for every person on board.
- 3 Muster lists complying with the requirements of regulation 53 shall be exhibited in conspicuous places throughout the ship including the navigating bridge, engine-room and crew accommodation spaces.
- 4 Illustrations and instructions in appropriate languages shall be posted in passenger cabins and be conspicuously displayed at muster stations and other passenger spaces to inform passengers of:

- .1 their muster station;
- .2 the essential actions they must take in an emergency;
- .3 the method of donning lifejackets.

Regulation 9

Operating instructions

- 1 This regulation applies to all ships.
- 2 Posters or signs shall be provided on or in the vicinity of survival craft and their launching controls and shall:
 - .1 illustrate the purpose of controls and the procedures for operating the appliance and give relevant instructions or warnings;
 - .2 be easily seen under emergency lighting conditions;
 - .3 use symbols in accordance with the recommendations of the Organization.

Regulation 10

Manning of survival craft and supervision

- 1 This regulation applies to all ships.
- 2 There shall be a sufficient number of trained persons on board for mustering and assisting untrained persons.
- 3 There shall be a sufficient number of crew members, who may be deck officers or certificated persons, on board for operating the survival craft and launching arrangements required for abandonment by the total number of persons on board.
- 4 A deck officer or certificated person shall be placed in charge of each survival craft to be used. However, the Administration, having due regard to the nature of the voyage, the number of persons on board and the characteristics of the ship, may permit persons practised in the handling and operation of liferafts to be placed in charge of liferafts in lieu of persons qualified as above. A second-in-command shall also be nominated in the case of lifeboats.
- 5 The person in charge of the survival craft shall have a list of the survival craft crew and shall see that the crew under his command are acquainted with their duties. In lifeboats the second-in-command shall also have a list of the lifeboat crew.
- 6 Every lifeboat required to carry a radiotelegraph installation complying with the requirements of regulation 6.2.2 shall have a person assigned who is capable of operating the equipment.

7 Every motorized survival craft shall have a person assigned who is capable of operating the engine and carrying out minor adjustments.

8 The master shall ensure the equitable distribution of persons referred to in paragraphs 2, 3 and 4 among the ship's survival craft.

Regulation 11

Survival craft muster and embarkation arrangements

1 Lifeboats and liferafts for which approved launching appliances are required shall be stowed as close to accommodation and service spaces as possible.

2 Muster stations shall be provided close to the embarkation stations. Each muster station shall have sufficient space to accommodate all persons assigned to muster at that station.

3 Muster and embarkation stations shall be readily accessible from accommodation and work areas.

4 Muster and embarkation stations shall be adequately illuminated by lighting supplied from the emergency source of electrical power required by regulation II-1/42 or II-1/43, as appropriate.

5 Alleyways, stairways and exits giving access to the muster and embarkation stations shall be lighted. Such lighting shall be capable of being supplied by the emergency source of electrical power required by regulation II-1/42 or II-1/43, as appropriate.

6 Davit-launched survival craft muster and embarkation stations shall be so arranged as to enable stretcher cases to be placed in survival craft.

7 An embarkation ladder complying with the requirements of regulation 48.7 extending, in a single length, from the deck to the waterline in the lightest seagoing condition under unfavourable conditions of trim and with the ship listed not less than 15° either way shall be provided at each launching station or at every two adjacent launching stations. However, the Administration may permit such ladders to be replaced by approved devices to afford access to the survival craft when waterborne, provided that there shall be at least one embarkation ladder on each side of the ship. Other means of embarkation may be permitted for the liferafts required by regulation 26.1.4.

8 Where necessary, means shall be provided for bringing the davit-launched survival craft against the ship's side and holding them alongside so that persons can be safely embarked.

Regulation 12

Launching stations

Launching stations shall be in such positions as to ensure safe launching having particular regard to clearance from the propeller and steeply overhanging portions of the hull and so that, as far as possible, survival craft, except survival

craft specially designed for free-fall launching, can be launched down the straight side of the ship. If positioned forward, they shall be located abaft the collision bulkhead in a sheltered position and, in this respect, the Administration shall give special consideration to the strength of the launching appliance.

Regulation 13

Stowage of survival craft

- 1 Each survival craft shall be stowed:
 - .1 so that neither the survival craft nor its stowage arrangements will interfere with the operation of any other survival craft or rescue boat at any other launching station;
 - .2 as near the water surface as is safe and practicable and, in the case of a survival craft other than a liferaft intended for throw-overboard launching, in such a position that the survival craft in the embarkation position is not less than 2 m above the waterline with the ship in the fully loaded condition under unfavourable conditions of trim and listed up to 20° either way, or to the angle at which the ship's weatherdeck edge becomes submerged, whichever is less;
 - .3 in a state of continuous readiness so that two crew members can carry out preparations for embarkation and launching in less than 5 min;
 - .4 fully equipped as required by this chapter;
 - .5 as far as practicable, in a secure and sheltered position and protected from damage by fire and explosion.
- 2 Lifeboats for lowering down the ship's side shall be stowed as far forward of the propeller as practicable. On cargo ships of 80 m in length and upwards but less than 120 m in length, each lifeboat shall be so stowed that the after end of the lifeboat is not less than the length of the lifeboat forward of the propeller. On cargo ships of 120 m in length and upwards and passenger ships of 80 m in length and upwards, each lifeboat shall be so stowed that the after end of the lifeboat is not less than 1.5 times the length of the lifeboat forward of the propeller. Where appropriate, the ship shall be so arranged that lifeboats, in their stowed positions, are protected from damage by heavy seas.
- 3 Lifeboats shall be stowed attached to launching appliances.
- 4 In addition to meeting the requirements of regulations 23 and 29, liferafts shall be so stowed as to permit manual release from their securing arrangements.
- 5 Davit-launched liferafts shall be stowed within reach of the lifting hooks, unless some means of transfer is provided which is not rendered inoperable within the limits of trim and list prescribed in paragraph 1.2 or by ship motion or power failure.

6 Liferrafts intended for throw-overboard launching shall be so stowed as to be readily transferable for launching on either side of the ship unless liferafts, of the aggregate capacity required by regulation 26.1 to be capable of being launched on either side, are stowed on each side of the ship.

Regulation 14

Stowage of rescue boats

Rescue boats shall be stowed:

- .1 in a state of continuous readiness for launching in not more than 5 min;
- .2 in a position suitable for launching and recovery;
- .3 so that neither the rescue boat nor its stowage arrangements will interfere with the operation of any survival craft at any other launching station;
- .4 if it is also a lifeboat, in compliance with the requirements of regulation 13.

Regulation 15

Survival craft launching and recovery arrangements

1 Launching appliances complying with the requirements of regulation 48 shall be provided for all survival craft except:

- .1 survival craft which are boarded from a position on deck which is less than 4.5 m above the waterline in the lightest seagoing condition and which either:
 - .1.1 have a mass of not more than 185 kg; or
 - .1.2 are stowed for launching directly from the stowed position under unfavourable conditions of trim of up to 10° and with the ship listed not less than 20° either way;
- .2 survival craft having a mass of not more than 185 kg and which are carried in excess of the survival craft for 200% of the total number of persons on board the ship.

2 Each lifeboat shall be provided with an appliance which is capable of launching and recovering the lifeboat.

3 Launching and recovery arrangements shall be such that the appliance operator on the ship is able to observe the survival craft at all times during launching and for lifeboats during recovery.

4 Only one type of release mechanism shall be used for similar survival craft carried on board the ship.

5 Preparation and handling of survival craft at any one launching station shall not interfere with the prompt preparation and handling of any other survival craft or rescue boat at any other station.

6 Falls, where used, shall be long enough for the survival craft to reach the water with the ship in its lightest seagoing condition, under unfavourable conditions of trim and with the ship listed not less than 20° either way.

7 During preparation and launching, the survival craft, its launching appliance, and the area of water into which it is to be launched shall be adequately illuminated by lighting supplied from the emergency source of electrical power required by regulation II-1/42 or II-1/43, as appropriate.

8 Means shall be available to prevent any discharge of water on to survival craft during abandonment.

9 If there is a danger of the survival craft being damaged by the ship's stabilizer wings, means shall be available, powered by an emergency source of energy, to bring the stabilizer wings inboard; indicators operated by an emergency source of energy shall be available on the navigating bridge to show the position of the stabilizer wings.

10 If lifeboats complying with the requirements of regulation 42 or 43 are carried, a davit span shall be provided, fitted with not less than two lifelines of sufficient length to reach the water with the ship in its lightest seagoing condition, under unfavourable conditions of trim and with the ship listed not less than 20° either way.

Regulation 16

Rescue boat embarkation, launching and recovery arrangements

1 The rescue boat embarkation and launching arrangements shall be such that the rescue boat can be boarded and launched in the shortest possible time.

2 If the rescue boat is one of the ship's survival craft, the embarkation arrangements and launching station shall comply with the requirements of regulations 11 and 12.

3 Launching arrangements shall comply with the requirements of regulation 15. However, all rescue boats shall be capable of being launched, where necessary utilizing painters, with the ship making headway at speeds up to 5 knots in calm water.

4 Rapid recovery of the rescue boat shall be possible when loaded with its full complement of persons and equipment. If the rescue boat is also a lifeboat, rapid recovery shall be possible when loaded with its lifeboat equipment and the approved rescue boat complement of at least six persons.

Regulation 17

Line-throwing appliances

A line-throwing appliance complying with the requirements of regulation 49 shall be provided.

Regulation 18

Abandon ship training and drills

1 This regulation applies to all ships.

2 *Manuals*

A training manual complying with the requirements of regulation 51 shall be provided in each crew messroom and recreation room or in each crew cabin.

3 *Practice musters and drills*

3.1 Each member of the crew shall participate in at least one abandon ship drill and one fire drill every month. The drills of the crew shall take place within 24 h of the ship leaving a port if more than 25% of the crew have not participated in abandon ship and fire drills on board that particular ship in the previous month. The Administration may accept other arrangements that are at least equivalent for those classes of ship for which this is impracticable.

3.2 On a ship engaged on an international voyage which is not a short international voyage, musters of the passengers shall take place within 24 h after their embarkation. Passengers shall be instructed in the use of the lifejackets and the action to take in an emergency. If only a small number of passengers embark at a port after the muster has been held it shall be sufficient, instead of holding another muster, to draw the attention of these passengers to the emergency instructions required by regulations 8.2 and 8.4.

3.3 On a ship engaged on a short international voyage, if a muster of the passengers is not held on departure, the attention of the passengers shall be drawn to the emergency instructions required by regulations 8.2 and 8.4.

3.4 Each abandon ship drill shall include.

- .1 summoning of passengers and crew to muster stations with the alarm required by regulation 6.4.2 and ensuring that they are made aware of the order to abandon ship specified in the muster list;
- .2 reporting to stations and preparing for the duties described in the muster list;
- .3 checking that passengers and crew are suitably dressed;
- .4 checking that lifejackets are correctly donned;

- .5 lowering of at least one lifeboat after any necessary preparation for launching;
- .6 starting and operating the lifeboat engine;
- .7 operation of davits used for launching liferafts.

3.5 Different lifeboats shall, as far as practicable, be lowered in compliance with the requirements of paragraph 3.4.5 at successive drills.

3.6 Drills shall, as far as practicable, be conducted as if there were an actual emergency.

3.7 Each lifeboat shall be launched with its assigned operating crew aboard and manoeuvred in the water at least once every 3 months during an abandon ship drill. The Administration may allow ships operating on short international voyages not to launch the lifeboats on one side if their berthing arrangements in port and their trading patterns do not permit launching of lifeboats on that side. However, all such lifeboats shall be lowered at least once every 3 months and launched at least annually.

3.8 As far as is reasonable and practicable, rescue boats other than lifeboats which are also rescue boats, shall be launched each month with their assigned crew aboard and manoeuvred in the water. In all cases this requirement shall be complied with at least once every 3 months.

3.9 If lifeboat and rescue boat launching drills are carried out with the ship making headway, such drills shall, because of the dangers involved, be practised in sheltered waters only and under the supervision of an officer experienced in such drills.

3.10 Emergency lighting for mustering and abandonment shall be tested at each abandon ship drill.

4 *On-board training and instructions*

4.1 On-board training in the use of the ship's life-saving appliances, including survival craft equipment, shall be given as soon as possible but not later than 2 weeks after a crew member joins the ship. However, if the crew member is on a regularly scheduled rotating assignment to the ship, such training shall be given not later than 2 weeks after the time of first joining the ship.

4.2 Instructions in the use of the ship's life-saving appliances and in survival at sea shall be given at the same interval as the drills. Individual instruction may cover different parts of the ship's life-saving system, but all the ship's life-saving equipment and appliances shall be covered within any period of 2 months. Each member of the crew shall be given instructions which shall include but not necessarily be limited to:

- .1 operation and use of the ship's inflatable liferafts;
- .2 problems of hypothermia, first-aid treatment for hypothermia and other appropriate first-aid procedures;

- 3 special instructions necessary for use of the ship's life-saving appliances in severe weather and severe sea conditions.

4.3 On-board training in the use of davit-launched liferafts shall take place at intervals of not more than 4 months on every ship fitted with such appliances. Whenever practicable this shall include the inflation and lowering of a liferaft. This liferaft may be a special liferaft intended for training purposes only, which is not part of the ship's life-saving equipment; such a special liferaft shall be conspicuously marked.

5 *Records*

The date when musters are held, details of abandon ship drills and fire drills, drills of other life-saving appliances and on-board training shall be recorded in such log-book as may be prescribed by the Administration. If a full muster, drill or training session is not held at the appointed time, an entry shall be made in the log-book stating the circumstances and the extent of the muster, drill or training session held.

Regulation 19

Operational readiness, maintenance and inspections

1 This regulation applies to all ships. The requirements of paragraphs 3 and 6.2 shall be complied with, as far as is practicable, on ships constructed before 1 July 1986.

2 *Operational readiness*

Before the ship leaves port and at all times during the voyage, all life-saving appliances shall be in working order and ready for immediate use.

3 *Maintenance*

3.1 Instructions for on-board maintenance of life-saving appliances complying with the requirements of regulation 52 shall be provided and maintenance shall be carried out accordingly.

3.2 The Administration may accept, in lieu of the instructions required by paragraph 3.1, a shipboard planned maintenance programme which includes the requirements of regulation 52.

4 *Maintenance of falls*

Falls used in launching shall be turned end for end at intervals of not more than 30 months and be renewed when necessary due to deterioration of the falls or at intervals of not more than 5 years, whichever is the earlier.

5 *Spares and repair equipment*

Spares and repair equipment shall be provided for life-saving appliances and their components which are subject to excessive wear or consumption and need to be replaced regularly.

6 *Weekly inspection*

The following tests and inspections shall be carried out weekly:

- .1 all survival craft, rescue boats and launching appliances shall be visually inspected to ensure that they are ready for use;
- .2 all engines in lifeboats and rescue boats shall be run ahead and astern for a total period of not less than 3 min provided the ambient temperature is above the minimum temperature required for starting the engine. In special cases the Administration may waive this requirement for ships constructed before 1 July 1986;
- .3 the general emergency alarm system shall be tested.

7 *Monthly inspections*

Inspection of the life-saving appliances, including lifeboat equipment, shall be carried out monthly using the checklist required by regulation 52.1 to ensure that they are complete and in good order. A report of the inspection shall be entered in the log-book.

8 *Servicing of inflatable liferafts, inflatable lifejackets and inflated rescue boats*

8.1 Every inflatable liferaft and inflatable lifejacket shall be serviced:

- .1 at intervals not exceeding 12 months. However, in cases where it appears proper and reasonable, the Administration may extend this period to 17 months;
- .2 at an approved servicing station which is competent to service them, maintains proper servicing facilities and uses only properly trained personnel.*

8.2 All repairs and maintenance of inflated rescue boats shall be carried out in accordance with the manufacturer's instructions. Emergency repairs may be carried out on board the ship; however, permanent repairs shall be effected at an approved servicing station.

* Reference is made to the "Recommendation on the conditions for the approval of servicing stations for inflatable liferafts" adopted by the Organization by resolution A.333(IX).

9 *Periodic servicing of hydrostatic release units*

Hydrostatic release units shall be serviced:

- .1 at intervals not exceeding 12 months. However, in cases where it appears proper and reasonable, the Administration may extend this period to 17 months;
- .2 at a servicing station which is competent to service them, maintains proper servicing facilities and uses only properly trained personnel.

SECTION II – PASSENGER SHIPS

(ADDITIONAL REQUIREMENTS)

Regulation 20

Survival craft and rescue boats

1 *Survival craft*

1.1 Passenger ships engaged on international voyages which are not short international voyages shall carry:

- .1 lifeboats complying with the requirements of regulation 42, 43, or 44 on each side of such aggregate capacity as will accommodate not less than 50% of the total number of persons on board. The Administration may permit the substitution of lifeboats by liferafts of equivalent total capacity provided that there shall never be less than sufficient lifeboats on each side of the ship to accommodate 37.5% of the total number of persons on board. The liferafts shall comply with the requirements of regulation 39 or 40 and shall be served by launching appliances equally distributed on each side of the ship; and
- .2 in addition, liferafts complying with the requirements of regulation 39 or 40 of such aggregate capacity as will accommodate at least 25% of the total number of persons on board. These liferafts shall be served by at least one launching appliance on each side which may be those provided in compliance with the requirements of paragraph 1.1.1 or equivalent approved appliances capable of being used on both sides. However, stowage of these liferafts need not comply with the requirements of regulation 13.5.

1.2 Passenger ships engaged on short international voyages and complying with the special standards of subdivision prescribed by regulation II-1/6.5 shall carry:

- .1 lifeboats complying with the requirements of regulation 42, 43 or 44 equally distributed, as far as practicable, on each side of the ship and of such aggregate capacity as will accommodate at least 30% of the total

number of persons on board and liferafts complying with requirements of regulation 39 or 40 of such aggregate capacity that, together with the lifeboat capacity, the survival craft will accommodate the total number of persons on board. The liferafts shall be served by launching appliances equally distributed on each side of the ship; and

- .2 in addition, liferafts complying with the requirements of regulation 39 or 40 of such aggregate capacity as will accommodate at least 25% of the total number of persons on board. These liferafts shall be served by at least one launching appliance on each side which may be those provided in compliance with the requirements of paragraph 1.2.1 or equivalent approved appliances capable of being used on both sides. However, stowage of these liferafts need not comply with the requirements of regulation 13.5.

1.3 Passenger ships engaged on short international voyages and not complying with the special standard of subdivision prescribed by regulation II-1/6.5, shall carry survival craft complying with the requirements of paragraph 1.1.

1.4 All survival craft required to provide for abandonment by the total number of persons on board shall be capable of being launched with their full complement of persons and equipment within a period of 30 min from the time the abandon ship signal is given.

1.5 In lieu of meeting the requirements of paragraph 1.1, 1.2 or 1.3, passenger ships of less than 500 tons gross tonnage where the total number of persons on board is less than 200, may comply with the following:

- .1 They shall carry on each side of the ship, liferafts complying with the requirements of regulation 39 or 40 and of such aggregate capacity as will accommodate the total number of persons on board.
- .2 Unless the liferafts required by paragraph 1.5.1 can be readily transferred for launching on either side of the ship, additional liferafts shall be provided so that the total capacity available on each side will accommodate 150% of the total number of persons on board.
- .3 If the rescue boat required by paragraph 2.2 is also a lifeboat complying with the requirements of regulation 42, 43 or 44, it may be included in the aggregate capacity required by paragraph 1.5.1, provided that the total capacity available on either side of the ship is at least 150% of the total number of persons on board.
- .4 In the event of any one survival craft being lost or rendered unserviceable, there shall be sufficient survival craft available for use on each side to accommodate the total number of persons on board.

2 *Rescue boats*

2.1 Passenger ships of 500 tons gross tonnage and over shall carry at least one rescue boat complying with the requirements of regulation 47 on each side of the ship.

2.2 Passenger ships of less than 500 tons gross tonnage shall carry at least one rescue boat complying with the requirements of regulation 47.

2.3 A lifeboat may be accepted as a rescue boat provided it also complies with the requirements for a rescue boat.

3 *Marshalling of liferafts*

3.1 The number of lifeboats and rescue boats that are carried on passenger ships shall be sufficient to ensure that in providing for abandonment by the total number of persons on board not more than six liferafts need be marshalled by each lifeboat or rescue boat.

3.2 The number of lifeboats and rescue boats that are carried on passenger ships engaged on short international voyages and complying with the special standards of subdivision prescribed by regulation II-1/6.5 shall be sufficient to ensure that in providing for abandonment by the total number of persons on board not more than nine liferafts need be marshalled by each lifeboat or rescue boat.

Regulation 21

Personal life-saving appliances

1 *Lifebuoys*

1.1 A passenger ship shall carry not less than the number of lifebuoys complying with the requirements of regulations 7.1 and 31 prescribed in the following table:

Length of ship in metres	Minimum number of lifebuoys
Under 60	8
60 and under 120	12
120 and under 180	18
180 and under 240	24
240 and over	30

1.2 Notwithstanding regulation 7.1.3, passenger ships of under 60 m in length shall carry not less than six lifebuoys provided with self-igniting lights.

2 *Lifejackets*

In addition to the lifejackets required by regulation 7.2, every passenger ship shall carry lifejackets for not less than 5% of the total number of persons on board. These lifejackets shall be stowed in conspicuous places on deck or at muster stations.

3 *Lifejacket lights*

3.1 This paragraph applies to all passenger ships. With respect to passenger ships constructed before 1 July 1986, the requirements of this paragraph shall apply not later than 1 July 1991.

3.2 On passenger ships engaged on international voyages which are not short international voyages each lifejacket shall be fitted with a light complying with the requirements of regulation 32.3.

4 *Immersion suits and thermal protective aids*

4.1 This paragraph applies to all passenger ships. With respect to passenger ships constructed before 1 July 1986, the requirements of this paragraph shall apply not later than 1 July 1991.

4.2 Passenger ships shall carry for each lifeboat on the ship at least three immersion suits complying with the requirements of regulation 33 and, in addition, a thermal protective aid complying with the requirements of regulation 34 for every person to be accommodated in the lifeboat and not provided with an immersion suit. These immersion suits and thermal protective aids need not be carried:

- .1 for persons to be accommodated in totally or partially enclosed lifeboats; or
- .2 if the ship is constantly engaged on voyages in warm climates where, in the opinion of the Administration, thermal protective aids are unnecessary.

4.3 The provisions of paragraph 4.2.1 also apply to totally or partially enclosed lifeboats not complying with the requirements of regulation 42, 43 or 44, provided they are carried on ships constructed before 1 July 1986.

Regulation 22

Survival craft and rescue boat embarkation arrangements

1 On passenger ships, survival craft embarkation arrangements shall be designed for:

- .1 all lifeboats to be boarded and launched either directly from the stowed position or from an embarkation deck but not both;
- .2 davit-launched liferafts to be boarded and launched from a position immediately adjacent to the stowed position or from a position to which, in compliance with the requirements of regulation 13.5, the liferaft is transferred prior to launching.

2 Rescue boat arrangements shall be such that the rescue boat can be boarded and launched directly from the stowed position with the number of persons assigned to crew the rescue boat on board. Notwithstanding the requirements of

paragraph 1.1, if the rescue boat is also a lifeboat and the other lifeboats are boarded and launched from an embarkation deck, the arrangements shall be such that the rescue boat can also be boarded and launched from the embarkation deck.

Regulation 23

Stowage of liferafts

On passenger ships, every liferaft shall be stowed with its painter permanently attached to the ship and with a float-free arrangement complying with the requirements of regulation 38.6 so that, as far as practicable, the liferaft floats free and, if inflatable, inflates automatically when the ship sinks.

Regulation 24

Muster stations

Every passenger ship shall, in addition to complying with the requirements of regulation 11, have passenger muster stations which shall:

- 1 be in the vicinity of, and permit ready access for the passengers to, the embarkation stations unless in the same location;
- 2 have ample room for marshalling and instruction of the passengers.

Regulation 25

Drills

- 1 This regulation applies to all passenger ships.
- 2 On passenger ships, an abandon ship drill and fire drill shall take place weekly.

SECTION III – CARGO SHIPS
(ADDITIONAL REQUIREMENTS)

Regulation 26

Survival craft and rescue boats

1 *Survival craft*

1.1 Cargo ships shall carry:

- .1 one or more lifeboats complying with the requirements of regulation 44 of such aggregate capacity on each side of the ship as will accommodate the total number of persons on board. The Administration may, however, permit cargo ships (except oil tankers, chemical tankers and gas carriers) operating under favourable climatic conditions and in suitable areas, to carry lifeboats complying with the requirements of regulation 43, provided the limits of the trade area are specified in the Cargo Ship Safety Equipment Certificate; and
- .2 in addition, a liferaft or liferafts, complying with the requirements of regulation 39 or 40, capable of being launched on either side of the ship and of such aggregate capacity as will accommodate the total number of persons on board. If the liferaft or liferafts cannot be readily transferred for launching on either side of the ship, the total capacity available on each side shall be sufficient to accommodate the total number of persons on board.

1.2 In lieu of meeting the requirements of paragraph 1.1, cargo ships may carry:

- .1 one or more lifeboats, complying with the requirements of regulation 44, capable of being free fall launched over the stern of the ship of such aggregate capacity as will accommodate the total number of persons on board; and
- .2 in addition, one or more liferafts complying with the requirements of regulation 39 or 40, on each side of the ship, of such aggregate capacity as will accommodate the total number of persons on board. The liferafts on at least one side of the ship shall be served by launching appliances.

1.3 In lieu of meeting the requirements of paragraph 1.1 or 1.2, cargo ships of less than 85 m in length other than oil tankers, chemical tankers and gas carriers, may comply with the following:

- .1 They shall carry on each side of the ship, one or more liferafts complying with the requirements of regulation 39 or 40 and of such aggregate capacity as will accommodate the total number of persons on board.
- .2 Unless the liferafts required by paragraph 1.3.1 can be readily transferred for launching on either side of the ship, additional liferafts shall be provided so that the total capacity available on each side will accommodate 150% of the total number of persons on board.

- .3 If the rescue boat required by paragraph 2 is also a lifeboat complying with the requirements of regulation 43 or 44, it may be included in the aggregate capacity required by paragraph 1.3.1, provided that the total capacity available on either side of the ship is at least 150% of the total number of persons on board.
- .4 In the event of any one survival craft being lost or rendered unserviceable, there shall be sufficient survival craft available for use on each side to accommodate the total number of persons on board.

1.4 Cargo ships where the survival craft are stowed in a position which is more than 100 m from the stem or stern shall carry, in addition to the liferafts required by paragraphs 1.1.2 and 1.2.2, a liferaft stowed as far forward or aft, or one as far forward and another as far aft, as is reasonable and practicable. Notwithstanding the requirements of regulation 29, such liferaft or liferafts may be securely fastened so as to permit manual release and need not be of the type which can be launched from an approved launching device.

1.5 With the exception of the survival craft referred to in regulation 15.1.1, all survival craft required to provide for abandonment by the total number of persons on board shall be capable of being launched with their full complement of persons and equipment within a period of 10 min from the time the abandon ship signal is given.

1.6 Chemical tankers and gas carriers carrying cargoes emitting toxic vapours or gases* shall carry, in lieu of lifeboats complying with the requirements of regulation 43 or 44, lifeboats complying with the requirements of regulation 45.

1.7 Oil tankers, chemical tankers and gas carriers carrying cargoes having a flash-point not exceeding 60°C (closed cup test) shall carry, in lieu of lifeboats complying with the requirements of regulation 43 or 44, lifeboats complying with the requirements of regulation 46.

2 *Rescue boats*

Cargo ships shall carry at least one rescue boat complying with the requirements of regulation 47. A lifeboat may be accepted as a rescue boat, provided that it also complies with the requirements for a rescue boat.

3 In addition to their lifeboats, cargo ships constructed before 1 July 1986 shall carry not later than 1 July 1991:

- .1 one or more liferafts of such aggregate capacity as will accommodate the total number of persons on board. The liferaft or liferafts shall be equipped with a lashing or an equivalent means of securing the liferaft which will automatically release it from a sinking ship;

* Reference is made to products for which emergency escape respiratory protection is required in chapter 17 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) adopted by the Maritime Safety Committee by resolution MSC.4(48) and in chapter 19 of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) adopted by the Maritime Safety Committee by resolution MSC.5(48).

- .2 where the survival craft are stowed in a position which is more than 100 m from the stem or stern, in addition to the liferafts required by paragraph 3.1, a liferaft stowed as far forward or aft, or one as far forward and another as far aft, as is reasonable and practicable. Notwithstanding the requirements of paragraph 3.1, such liferaft or liferafts may be securely fastened so as to permit manual release.

Regulation 27

Personal life-saving appliances

1 *Lifebuoy*s

1.1 Cargo ships shall carry not less than the number of lifebuoy's complying with the requirements of regulations 7.1 and 31 prescribed in the following table:

Length of ship in metres	Minimum number of lifebuoy's
Under 100	8
100 and under 150	10
150 and under 200	12
200 and over	14

1.2 Self-igniting lights for lifebuoy's on tankers required by regulation 7.1.3 shall be of an electric battery type.

2 *Lifejacket lights*

2.1 This paragraph applies to all cargo ships. With respect to cargo ships constructed before 1 July 1986, this paragraph shall apply not later than 1 July 1991.

2.2 On cargo ships, each lifejacket shall be fitted with a light complying with the requirements of regulation 32.3.

3 *Immersion suits and thermal protective aids*

3.1 This paragraph applies to all cargo ships. With respect to cargo ships constructed before 1 July 1986, this paragraph shall apply not later than 1 July 1991.

3.2 Cargo ships shall carry for each lifeboat on the ship at least three immersion suits complying with the requirements of regulation 33 or, if the Administration considers it necessary and practicable, one immersion suit complying with the requirements of regulation 33 for every person on board the ship; however, the ship shall carry in addition to the thermal protective aids required by regulations 38.5.1.24, 41.8.31 and 47.2.2.13, thermal protective aids complying with the

requirements of regulation 34 for persons on board not provided with immersion suits. These immersion suits and thermal protective aids need not be required if the ship:

- .1 has totally enclosed lifeboats on each side of the ship of such aggregate capacity as will accommodate the total number of persons on board; or
- .2 has totally enclosed lifeboats capable of being launched by free-fall over the stern of the ship of such aggregate capacity as will accommodate the total number of persons on board and which are boarded and launched directly from the stowed position, together with liferafts on each side of the ship of such aggregate capacity as will accommodate the total number of persons on board; or
- .3 is constantly engaged on voyages in warm climates where, in the opinion of the Administration, immersion suits are unnecessary.

3.3 Cargo ships complying with the requirements of regulation 26.1.3 shall carry immersion suits complying with the requirements of regulation 33 for every person on board unless the ship:

- .1 has davit-launched liferafts; or
- .2 has liferafts served by equivalent approved appliances capable of being used on both sides of the ship and which do not require entry into the water to board the liferaft; or
- .3 is constantly engaged on voyages in warm climates where, in the opinion of the Administration, immersion suits are unnecessary.

3.4 The immersion suits required by this regulation may be used to comply with the requirements of regulation 7.3.

3.5 The totally enclosed lifeboats referred to in paragraphs 3.2.1 and 3.2.2 carried on cargo ships constructed before 1 July 1986 need not comply with the requirements of regulation 44.

Regulation 28

Survival craft embarkation and launching arrangements

1 Cargo ship survival craft embarkation arrangements shall be so designed that lifeboats can be boarded and launched directly from the stowed position and davit-launched liferafts can be boarded and launched from a position immediately adjacent to the stowed position or from a position to which the liferaft is transferred prior to launching in compliance with the requirements of regulation 13.5.

2 On cargo ships of 20,000 tons gross tonnage and upwards, lifeboats shall be capable of being launched, where necessary utilizing painters, with the ship making headway at speeds up to 5 knots in calm water.

Regulation 29*Stowage of liferafts*

On cargo ships, every liferaft, other than those required by regulation 26.1.4, shall be stowed with its painter permanently attached to the ship and with a float-free arrangement complying with the requirements of regulation 38.6 so that the liferaft floats free and, if inflatable, inflates automatically when the ship sinks.

PART C – LIFE-SAVING APPLIANCE REQUIREMENTS**SECTION I – GENERAL****Regulation 30***General requirements for life-saving appliances*

1 Paragraph 2.7 applies to all ships. With respect to ships constructed before 1 July 1986, paragraph 2.7 shall apply not later than 1 July 1991.

2 Unless expressly provided otherwise or unless, in the opinion of the Administration having regard to the particular voyages on which the ship is constantly engaged, other requirements are appropriate, all life-saving appliances prescribed in this part shall:

- .1 be constructed with proper workmanship and materials;
- .2 not be damaged in stowage throughout the air temperature range -30°C to $+65^{\circ}\text{C}$;
- .3 if they are likely to be immersed in seawater during their use, operate throughout the seawater temperature range -1°C to $+30^{\circ}\text{C}$;
- .4 where applicable, be rot-proof, corrosion-resistant, and not be unduly affected by seawater, oil or fungal attack;
- .5 where exposed to sunlight, be resistant to deterioration;
- .6 be of a highly visible colour on all parts where this will assist detection;
- .7 be fitted with retro-reflective material where it will assist in detection and in accordance with the recommendations of the Organization*;
- .8 if they are to be used in a seaway, be capable of satisfactory operation in that environment.

* Reference is made to the "Recommendation on retro-reflective tapes on life-saving appliances" adopted by the Organization in resolution A.274(VIII).

3 The Administration shall determine the period of acceptability of life-saving appliances which are subject to deterioration with age. Such life-saving appliances shall be marked with a means for determining their age or the date by which they must be replaced.

SECTION II – PERSONAL LIFE-SAVING APPLIANCES

Regulation 31

Lifebuoy

1 *Lifebuoy specification*

Every lifebuoy shall:

- .1 have an outer diameter of not more than 800 mm and an inner diameter of not less than 400 mm;
- .2 be constructed of inherently buoyant material; it shall not depend upon rushes, cork shavings or granulated cork, any other loose granulated material or any air compartment which depends on inflation for buoyancy;
- .3 be capable of supporting not less than 14.5 kg of iron in fresh water for a period of 24 hr;
- .4 have a mass of not less than 2.5 kg;
- .5 not sustain burning or continue melting after being totally enveloped in a fire for a period of 2 s;
- .6 be constructed to withstand a drop into the water from the height at which it is stowed above the waterline in the lightest seagoing condition or 30 m, whichever is the greater, without impairing either its operating capability or that of its attached components;
- .7 if it is intended to operate the quick-release arrangement provided for the self-activated smoke signals and self-igniting lights, have a mass sufficient to operate the quick-release arrangement or 4 kg, whichever is the greater;
- .8 be fitted with a grabline not less than 9.5 mm in diameter and not less than 4 times the outside diameter of the body of the buoy in length. The grabline shall be secured at four equidistant points around the circumference of the buoy to form four equal loops.

2 *Lifebuoy self-igniting lights*

Self-igniting lights required by regulation 7.1.3 shall:

- .1 be such that they cannot be extinguished by water;

- .2 be capable of either burning continuously with a luminous intensity of not less than 2 cd in all directions of the upper hemisphere or flashing (discharge flashing) at a rate of not less than 50 flashes per minute with at least the corresponding effective luminous intensity;
- .3 be provided with a source of energy capable of meeting the requirement of paragraph 2.2 for a period of at least 2 hr;
- .4 be capable of withstanding the drop test required by paragraph 1.6.

3 *Lifebuoy self-activating smoke signals*

Self-activating smoke signals required by regulation 7.1.3 shall:

- .1 emit smoke of a highly visible colour at a uniform rate for a period of at least 15 min when floating in calm water;
- .2 not ignite explosively or emit any flame during the entire smoke emission time of the signal;
- .3 not be swamped in a seaway;
- .4 continue to emit smoke when fully submerged in water for a period of at least 10 s;
- .5 be capable of withstanding the drop test required by paragraph 1.6.

4 *Buoyant lifelines*

Buoyant lifelines required by regulation 7.1.2 shall:

- .1 be non-kinking;
- .2 have a diameter of not less than 8 mm;
- .3 have a breaking strength of not less than 5 kN.

Regulation 32

Lifejackets

1 *General requirements for lifejackets*

1.1 A lifejacket shall not sustain burning or continue melting after being totally enveloped in a fire for a period of 2 s.

1.2 A lifejacket shall be so constructed that:

- .1 after demonstration, a person can correctly don it within a period of 1 min without assistance;
- .2 it is capable of being worn inside-out or is clearly capable of being worn in only one way and, as far as possible, cannot be donned incorrectly;

- .3 it is comfortable to wear;
 - .4 it allows the wearer to jump from a height of at least 4.5 m into the water without injury and without dislodging or damaging the lifejacket.
- 1.3 A lifejacket shall have sufficient buoyancy and stability in calm fresh water to:
- .1 lift the mouth of an exhausted or unconscious person not less than 120 mm clear of the water with the body inclined backwards at an angle of not less than 20° and not more than 50° from the vertical position;
 - .2 turn the body of an unconscious person in the water from any position to one where the mouth is clear of the water in not more than 5 s.
- 1.4 A lifejacket shall have buoyancy which is not reduced by more than 5% after 24 h submersion in fresh water.
- 1.5 A lifejacket shall allow the person wearing it to swim a short distance and to board a survival craft.
- 1.6 Each lifejacket shall be fitted with a whistle firmly secured by a cord.

2 *Inflatable lifejackets*

A lifejacket which depends on inflation for buoyancy shall have not less than two separate compartments and comply with the requirements of paragraph 1 and shall:

- .1 inflate automatically on immersion, be provided with a device to permit inflation by a single manual motion and be capable of being inflated by mouth;
- .2 in the event of loss of buoyancy in any one compartment be capable of complying with the requirements of paragraphs 1.2, 1.3 and 1.5;
- .3 comply with the requirements of paragraph 1.4 after inflation by means of the automatic mechanism.

3 *Lifejacket lights*

3.1 Each lifejacket light shall:

- .1 have a luminous intensity of not less than 0.75 cd;
- .2 have a source of energy capable of providing a luminous intensity of 0.75 cd for a period of at least 8 h;
- .3 be visible over as great a segment of the upper hemisphere as is practicable when attached to a lifejacket.

3.2 If the light referred to in paragraph 3.1 is a flashing light it shall, in addition:

- .1 be provided with a manually operated switch;

- .2 not be fitted with a lens or curved reflector to concentrate the beam;
- .3 flash at a rate of not less than 50 flashes per minute with an effective luminous intensity of at least 0.75 cd.

Regulation 33

Immersion suits

1 *General requirements for immersion suits*

1.1 The immersion suit shall be constructed with waterproof materials such that:

- .1 it can be unpacked and donned without assistance within 2 min, taking into account any associated clothing*, and a lifejacket if the immersion suit is to be worn in conjunction with a lifejacket;
- .2 it will not sustain burning or continue melting after being totally enveloped in a fire for a period of 2 s;
- .3 it will cover the whole body with the exception of the face. Hands shall also be covered unless permanently attached gloves are provided;
- .4 it is provided with arrangements to minimize or reduce free air in the legs of the suit;
- .5 following a jump from a height of not less than 4.5 m into the water there is no undue ingress of water into the suit.

1.2 An immersion suit which also complies with the requirements of regulation 32 may be classified as a lifejacket.

1.3 An immersion suit shall permit the person wearing it, and also wearing a lifejacket if the immersion suit is to be worn in conjunction with a lifejacket, to:

- .1 climb up and down a vertical ladder at least 5 m in length;
- .2 perform normal duties during abandonment;
- .3 jump from a height of not less than 4.5 m into the water without damaging or dislodging the immersion suit, or being injured; and
- .4 swim a short distance through the water and board a survival craft.

1.4 An immersion suit which has buoyancy and is designed to be worn without a lifejacket shall be fitted with a light complying with the requirements of regulation 32.3 and the whistle prescribed by regulation 32.1.6.

* Reference is made to paragraph 3.1.3.1 of the "Recommendation on testing of life-saving appliances" to be submitted to the Assembly of the Organization at its thirteenth session for adoption.

1.5 If the immersion suit is to be worn in conjunction with a lifejacket, the lifejacket shall be worn over the immersion suit. A person wearing such an immersion suit shall be able to don a lifejacket without assistance.

2 *Thermal performance requirements for immersion suits*

2.1 An immersion suit made of material which has no inherent insulation shall be:

- .1 marked with instructions that it must be worn in conjunction with warm clothing;
- .2 so constructed that, when worn in conjunction with warm clothing, and with a lifejacket if the immersion suit is to be worn with a lifejacket, the immersion suit continues to provide sufficient thermal protection, following one jump by the wearer into the water from a height of 4.5 m, to ensure that when it is worn for a period of 1 h in calm circulating water at a temperature of 5°C, the wearer's body core temperature does not fall more than 2°C.

2.2 An immersion suit made of material with inherent insulation, when worn either on its own or with a lifejacket, if the immersion suit is to be worn in conjunction with a lifejacket, shall provide the wearer with sufficient thermal insulation, following one jump into the water from a height of 4.5 m, to ensure that the wearer's body core temperature does not fall more than 2°C after a period of 6 h immersion in calm circulating water at a temperature of between 0°C and 2°C.

2.3 The immersion suit shall permit the person wearing it with hands covered to pick up a pencil and write after being immersed in water at 5°C for a period of 1 h.

3 *Buoyancy requirements*

A person in fresh water wearing either an immersion suit complying with the requirements of regulation 32, or an immersion suit with a lifejacket, shall be able to turn from a face-down to a face-up position in not more than 5 s.

Regulation 34

Thermal protective aids

1 A thermal protective aid shall be made of waterproof material having a thermal conductivity of not more than 0.25 W/(m·K) and shall be so constructed that, when used to enclose a person, it shall reduce both the convective and evaporative heat loss from the wearer's body.

2 The thermal protective aid shall:

- .1 cover the whole body of a person wearing a lifejacket with the exception of the face. Hands shall also be covered unless permanently attached gloves are provided;

- .2 be capable of being unpacked and easily donned without assistance in a survival craft or rescue boat;
 - .3 permit the wearer to remove it in the water in not more than 2 min, if it impairs ability to swim.
- 3 The thermal protective aid shall function properly throughout an air temperature range -30°C to $+20^{\circ}\text{C}$.

SECTION III – VISUAL SIGNALS

Regulation 35

Rocket parachute flares

- 1 The rocket parachute flare shall:
 - .1 be contained in a water-resistant casing;
 - .2 have brief instructions or diagrams clearly illustrating the use of the rocket parachute flare printed on its casing;
 - .3 have integral means of ignition;
 - .4 be so designed as not to cause discomfort to the person holding the casing when used in accordance with the manufacturer's operating instructions.
- 2 The rocket shall, when fired vertically, reach an altitude of not less than 300 m. At or near the top of its trajectory, the rocket shall eject a parachute flare, which shall:
 - .1 burn with a bright red colour;
 - .2 burn uniformly with an average luminous intensity of not less than 30,000 cd;
 - .3 have a burning period of not less than 40 s;
 - .4 have a rate of descent of not more than 5 m/s;
 - .5 not damage its parachute or attachments while burning.

Regulation 36

Hand flares

- 1 The hand flare shall:
 - .1 be contained in a water-resistant casing;

- .2 have brief instructions or diagrams clearly illustrating the use of the hand flare printed on its casing;
 - .3 have a self-contained means of ignition;
 - .4 be so designed as not to cause discomfort to the person holding the casing and not endanger the survival craft by burning or glowing residues when used in accordance with the manufacturer's operating instructions.
- 2 The hand flare shall:
- .1 burn with a bright red colour;
 - .2 burn uniformly with an average luminous intensity of not less than 15,000 cd;
 - .3 have a burning period of not less than 1 min;
 - .4 continue to burn after having been immersed for a period of 10 s under 100 mm of water.

Regulation 37

Buoyant smoke signals

- 1 The buoyant smoke signal shall:
- .1 be contained in a water-resistant casing;
 - .2 not ignite explosively when used in accordance with the manufacturer's operating instructions;
 - .3 have brief instructions or diagrams clearly illustrating the use of the buoyant smoke signal printed on its casing.
- 2 The buoyant smoke signal shall:
- .1 emit smoke of a highly visible colour at a uniform rate for a period of not less than 3 min when floating in calm water;
 - .2 not emit any flame during the entire smoke emission time;
 - .3 not be swamped in a seaway;
 - .4 continue to emit smoke when submerged in water for a period of 10 s under 100 mm of water.

SECTION IV – SURVIVAL CRAFT

Regulation 38

*General requirements for liferafts*1 *Construction of liferafts*

1.1 Every liferaft shall be so constructed as to be capable of withstanding exposure for 30 days afloat in all sea conditions.

1.2 The liferaft shall be so constructed that when it is dropped into the water from a height of 18 m, the liferaft and its equipment will operate satisfactorily. If the liferaft is to be stowed at a height of more than 18 m above the waterline in the lightest seagoing condition, it shall be of a type which has been satisfactorily drop-tested from at least that height.

1.3 The floating liferaft shall be capable of withstanding repeated jumps on to it from a height of at least 4.5 m above its floor both with and without the canopy erected.

1.4 The liferaft and its fittings shall be so constructed as to enable it to be towed at a speed of 3 knots in calm water when loaded with its full complement of persons and equipment and with one of its sea-anchors streamed.

1.5 The liferaft shall have a canopy to protect the occupants from exposure which is automatically set in place when the liferaft is launched and waterborne. The canopy shall comply with the following:

- .1 it shall provide insulation against heat and cold by means of either two layers of material separated by an air gap or other equally efficient means. Means shall be provided to prevent accumulation of water in the air gap;
- .2 its interior shall be of a colour that does not cause discomfort to the occupants;
- .3 each entrance shall be clearly indicated and be provided with efficient adjustable closing arrangements which can be easily and quickly opened from inside and outside the liferaft so as to permit ventilation but exclude seawater, wind and cold. Liferafts accommodating more than eight persons shall have at least two diametrically opposite entrances;
- .4 it shall admit sufficient air for the occupants at all times, even with the entrances closed;
- .5 it shall be provided with at least one viewing port;
- .6 it shall be provided with means for collecting rain water;
- .7 it shall have sufficient headroom for sitting occupants under all parts of the canopy.

2 *Minimum carrying capacity and mass of liferafts*

2.1 No liferaft shall be approved which has a carrying capacity of less than six persons calculated in accordance with the requirements of regulation 39.3 or 40.3, as appropriate.

2.2 Unless the liferaft is to be launched by an approved launching appliance complying with the requirements of regulation 48 and is not required to be portable, the total mass of the liferaft, its container and its equipment shall not be more than 185 kg.

3 *Liferaft fittings*

3.1 Lifelines shall be securely becketed around the inside and outside of the liferaft.

3.2 The liferaft shall be provided with arrangements for adequately siting and securing in the operating position the antenna provided with the portable radio apparatus required by regulation 6.2.1.

3.3 The liferaft shall be fitted with an efficient painter of length equal to not less than twice the distance from the stowed position to the waterline in the lightest seagoing condition or 15 m whichever is the greater.

4 *Davit-launched liferafts*

4.1 In addition to the above requirements, a liferaft for use with an approved launching appliance shall:

- .1 when the liferaft is loaded with its full complement of persons and equipment, be capable of withstanding a lateral impact against the ship's side at an impact velocity of not less than 3.5 m/s and also a drop into the water from a height of not less than 3 m without damage that will affect its function;
- .2 be provided with means for bringing the liferaft alongside the embarkation deck and holding it securely during embarkation.

4.2 Every passenger ship davit-launched liferaft shall be so arranged that it can be rapidly boarded by its full complement of persons.

4.3 Every cargo ship davit-launched liferaft shall be so arranged that it can be boarded by its full complement of persons in not more than 3 min from the time the instruction to board is given.

5 *Equipment*

5.1 The normal equipment of every liferaft shall consist of:

- .1 one buoyant rescue quoit, attached to not less than 30 m of buoyant line;

- .2 one knife of the non-folding type having a buoyant handle and lanyard attached and stowed in a pocket on the exterior of the canopy near the point at which the painter is attached to the liferaft. In addition, a liferaft which is permitted to accommodate 13 persons or more shall be provided with a second knife which need not be of the non-folding type;
- .3 for a liferaft which is permitted to accommodate not more than 12 persons, one buoyant bailer. For a liferaft which is permitted to accommodate 13 persons or more, two buoyant bailers;
- .4 two sponges;
- .5 two sea-anchors each with a shock-resistant hawser and tripping line, one being spare and the other permanently attached to the liferaft in such a way that when the liferaft inflates or is waterborne it will cause the liferaft to lie oriented to the wind in the most stable manner. The strength of each sea-anchor and its hawser and tripping line shall be adequate for all sea conditions. The sea-anchors shall be fitted with a swivel at each end of the line and shall be of a type which is unlikely to turn inside-out between its shroud lines;
- .6 two buoyant paddles;
- .7 three tin openers. Safety knives containing special tin-opener blades are satisfactory for this requirement;
- .8 one first-aid outfit in a waterproof case capable of being closed tightly after use;
- .9 one whistle or equivalent sound signal;
- .10 four rocket parachute flares complying with the requirements of regulation 35;
- .11 six hand flares complying with the requirements of regulation 36;
- .12 two buoyant smoke signals complying with the requirements of regulation 37;
- .13 one waterproof electric torch suitable for Morse signalling together with one spare set of batteries and one spare bulb in a waterproof container;
- .14 an efficient radar reflector;
- .15 one daylight signalling mirror with instructions on its use for signalling to ships and aircraft;
- .16 one copy of the life-saving signals referred to in regulation V/16 on a waterproof card or in a waterproof container;
- .17 one set of fishing tackle;
- .18 a food ration totalling not less than 10,000 kJ for each person the liferaft is permitted to accommodate; these rations shall be kept in airtight packaging and be stowed in a watertight container;

- .19 watertight receptacles containing a total of 1.5ℓ of fresh water for each person the liferaft is permitted to accommodate, of which 0.5 ℓ per person may be replaced by a de-salting apparatus capable of producing an equal amount of fresh water in 2 days;
- .20 one rustproof graduated drinking vessel;
- .21 six doses of anti-seasickness medicine and one seasickness bag for each person the liferaft is permitted to accommodate;
- .22 instructions on how to survive;
- .23 instructions for immediate action;
- .24 thermal protective aids complying with the requirements of regulation 34 sufficient for 10% of the number of persons the liferaft is permitted to accommodate or two, whichever is the greater.

5.2 The marking required by regulations 39.7.3.5 and 40.7.7 on liferafts equipped in accordance with paragraph 5.1 shall be “SOLAS A PACK” in block capitals of the Roman alphabet.

5.3 In the case of passenger ships engaged on short international voyages of such a nature and duration that, in the opinion of the Administration, not all the items specified in paragraph 5.1 are necessary, the Administration may allow the liferafts carried on any such ships to be provided with the equipment specified in paragraphs 5.1.1 to 5.1.6 inclusive, 5.1.8, 5.1.9, 5.1.13 to 5.1.16 inclusive and 5.1.21 to 5.1.24 inclusive and one half of the equipment specified in paragraphs 5.1.10 to 5.1.12 inclusive. The marking required by regulations 39.7.3.5 and 40.7.7 on such liferafts shall be “SOLAS B PACK” in block capitals of the Roman alphabet.

5.4 Where appropriate the equipment shall be stowed in a container which, if it is not an integral part of, or permanently attached to, the liferaft, shall be stowed and secured inside the liferaft and be capable of floating in water for at least 30 min without damage to its contents.

6 *Float-free arrangements for liferafts*

6.1 *Painter system*

The liferaft painter system shall provide a connection between the ship and the liferaft and shall be so arranged as to ensure that the liferaft when released and, in the case of an inflatable liferaft, inflated is not dragged under by the sinking ship.

6.2 *Weak link*

If a weak link is used in the float-free arrangement, it shall:

- .1 not be broken by the force required to pull the painter from the liferaft container;
- .2 if applicable, be of sufficient strength to permit the inflation of the liferaft;
- .3 break under a strain of 2.2 ± 0.4 kN.

6.3 *Hydrostatic release units*

If a hydrostatic release unit is used in the float-free arrangements, it shall:

- .1 be constructed of compatible materials so as to prevent malfunction of the unit. Galvanizing or other forms of metallic coating on parts of the hydrostatic release unit shall not be accepted;
- .2 automatically release the liferaft at a depth of not more than 4 m;
- .3 have drains to prevent the accumulation of water in the hydrostatic chamber when the unit is in its normal position;
- .4 be so constructed as to prevent release when seas wash over the unit;
- .5 be permanently marked on its exterior with its type and serial number;
- .6 be provided with a document or identification plate stating the date of manufacture, type and serial number;
- .7 be such that each part connected to the painter system has a strength of not less than that required for the painter.

Regulation 39

Inflatable liferafts

1 Inflatable liferafts shall comply with the requirements of regulation 38 and, in addition, shall comply with the requirements of this regulation.

2 *Construction of inflatable liferafts*

2.1 The main buoyancy chamber shall be divided into not less than two separate compartments, each inflated through a non-return inflation valve on each compartment. The buoyancy chambers shall be so arranged that, in the event of any one of the compartments being damaged or failing to inflate, the intact compartments shall be able to support, with positive freeboard over the liferaft's entire periphery, the number of persons which the liferaft is permitted to accommodate, each having a mass of 75 kg and seated in their normal positions.

2.2 The floor of the liferaft shall be waterproof and shall be capable of being sufficiently insulated against cold either:

- .1 by means of one or more compartments that the occupants can inflate, or which inflate automatically and can be deflated and reinflated by the occupants; or
- .2 by other equally efficient means not dependent on inflation.

2.3 The liferaft shall be inflated with a non-toxic gas. Inflation shall be completed within a period of 1 min at an ambient temperature of between 18°C and 20°C and within a period of 3 min at an ambient temperature of –30°C. After inflation the liferaft shall maintain its form when loaded with its full complement of persons and equipment.

2.4 Each inflatable compartment shall be capable of withstanding a pressure equal to at least 3 times the working pressure and shall be prevented from reaching a pressure exceeding twice the working pressure either by means of relief valves or by a limited gas supply. Means shall be provided for fitting the topping-up pump or bellows required by paragraph 10.1.2 so that the working pressure can be maintained.

3 *Carrying capacity of inflatable liferafts*

The number of persons which a liferaft shall be permitted to accommodate shall be equal to the lesser of:

- .1 the greatest whole number obtained by dividing by 0.096 the volume, measured in cubic metres of the main buoyancy tubes (which for this purpose shall include neither the arches nor the thwarts if fitted) when inflated; or
- .2 the greatest whole number obtained by dividing by 0.372 the inner horizontal cross-sectional area of the liferaft measured in square metres (which for this purpose may include the thwart or thwarts, if fitted) measured to the innermost edge of the buoyancy tubes; or
- .3 the number of persons having an average mass of 75 kg, all wearing lifejackets, that can be seated with sufficient comfort and headroom without interfering with the operation of any of the liferaft's equipment.

4 *Access into inflatable liferafts*

4.1 At least one entrance shall be fitted with a semi-rigid boarding ramp to enable persons to board the liferaft from the sea so arranged as to prevent significant deflation of the liferaft if the ramp is damaged. In the case of a davit-launched liferaft having more than one entrance, the boarding ramp shall be fitted at the entrance opposite the bowing lines and embarkation facilities.

4.2 Entrances not provided with a boarding ramp shall have a boarding ladder, the lowest step of which shall be situated not less than 0.4 m below the liferaft's light waterline.

4.3 There shall be means inside the liferaft to assist persons to pull themselves into the liferaft from the ladder.

5 *Stability of inflatable liferafts*

5.1 Every inflatable liferaft shall be so constructed that, when fully inflated and floating with the canopy uppermost, it is stable in a seaway.

5.2 The stability of the liferaft when in the inverted position shall be such that it can be righted in a seaway and in calm water by one person.

5.3 The stability of the liferaft when loaded with its full complement of persons and equipment shall be such that it can be towed at speeds of up to 3 knots in calm water.

6 *Inflatable liferaft fittings*

6.1 The breaking strength of the painter system including its means of attachment to the liferaft, except the weak link required by regulation 38.6, shall be not less than 10.0 kN for a liferaft permitted to accommodate nine persons or more, and not less than 7.5 kN for any other liferaft. The liferaft shall be capable of being inflated by one person.

6.2 A manually controlled lamp visible on a dark night with a clear atmosphere at a distance of at least 2 miles for a period of not less than 12 h shall be fitted to the top of the liferaft canopy. If the light is a flashing light it shall flash at a rate of not less than 50 flashes per minute for the first 2 h of operation of the 12 h operating period. The lamp shall be powered by a sea-activated cell or a dry chemical cell and shall light automatically when the liferaft inflates. The cell shall be of a type that does not deteriorate due to damp or humidity in the stowed liferaft.

6.3 A manually controlled lamp shall be fitted inside the liferaft capable of continuous operation for a period of at least 12 h. It shall light automatically when the liferaft inflates and be of sufficient intensity to enable reading of survival and equipment instructions.

7 *Containers for inflatable liferafts*

7.1 The liferaft shall be packed in a container that is:

- .1 so constructed as to withstand hard wear under conditions encountered at sea;
- .2 of sufficient inherent buoyancy, when packed with the liferaft and its equipment, to pull the painter from within and to operate the inflation mechanism should the ship sink;
- .3 as far as practicable watertight, except for drain holes in the container bottom.

7.2 The liferaft shall be packed in its container in such a way as to ensure, as far as possible, that the waterborne liferaft inflates in an upright position on breaking free from its container.

7.3 The container shall be marked with:

- .1 maker's name or trade mark;
- .2 serial number;
- .3 name of approved authority and the number of persons it is permitted to carry;
- .4 SOLAS;
- .5 type of emergency pack enclosed;
- .6 date when last serviced;
- .7 length of painter;

- .8 maximum permitted height of stowage above waterline (depending on drop-test height and length of painter);
- .9 launching instructions.

8 *Markings on inflatable liferafts*

The liferaft shall be marked with:

- .1 maker's name or trade mark;
- .2 serial number;
- .3 date of manufacture (month and year);
- .4 name of approving authority;
- .5 name and place of servicing station where it was last serviced;
- .6 number of persons it is permitted to accommodate over each entrance in characters not less than 100 mm in height of a colour contrasting with that of the liferaft.

9 *Davit-launched inflatable liferafts*

9.1 In addition to complying with the above requirements, a liferaft for use with an approved launching appliance shall, when suspended from its lifting hook or bridle, withstand a load of:

- .1 4 times the mass of its full complement of persons and equipment, at an ambient temperature and a stabilized liferaft temperature of $20 \pm 3^{\circ}\text{C}$ with all relief valves inoperative; and
- .2 1.1 times the mass of its full complement of persons and equipment at an ambient temperature and a stabilized liferaft temperature of -30°C with all relief valves operative.

9.2 Rigid containers for liferafts to be launched by a launching appliance shall be so secured that the container or parts of it are prevented from falling into the sea during and after inflation and launching of the contained liferaft.

10 *Additional equipment for inflatable liferafts*

10.1 In addition to the equipment required by regulation 38.5, every inflatable liferaft shall be provided with:

- .1 one repair outfit for repairing punctures in buoyancy compartments;
- .2 one topping-up pump or bellows.

10.2 The knives required by regulation 38.5.1.2 shall be safety knives.

Regulation 40

Rigid liferafts

1 Rigid liferafts shall comply with the requirements of regulation 38 and, in addition, shall comply with the requirements of this regulation.

2 *Construction of rigid liferafts*

2.1 The buoyancy of the liferaft shall be provided by approved inherently buoyant material placed as near as possible to the periphery of the liferaft. The buoyant material shall be fire-retardant or be protected by a fire-retardant covering.

2.2 The floor of the liferaft shall prevent the ingress of water and shall effectively support the occupants out of the water and insulate them from cold.

3 *Carrying capacity of rigid liferafts*

The number of persons which a liferaft shall be permitted to accommodate shall be equal to the lesser of:

- 1 the greatest whole number obtained by dividing by 0.096 the volume, measured in cubic metres of the buoyancy material multiplied by a factor of 1 minus the specific gravity of that material; or
- 2 the greatest whole number obtained by dividing by 0.372 the horizontal cross-sectional area of the floor of the liferaft measured in square metres; or
- 3 the number of persons having an average mass of 75 kg, all wearing lifejackets, that can be seated with sufficient comfort and headroom without interfering with the operation of any of the liferaft's equipment.

4 *Access into rigid liferafts*

4.1 At least one entrance shall be fitted with a rigid boarding ramp to enable persons to board the liferaft from the sea. In the case of a davit-launched liferaft having more than one entrance, the boarding ramp shall be fitted at the entrance opposite to the bowing and embarkation facilities.

4.2 Entrances not provided with a boarding ramp shall have a boarding ladder, the lowest step of which shall be situated not less than 0.4 m below the liferaft's light waterline.

4.3 There shall be means inside the liferaft to assist persons to pull themselves into the liferaft from the ladder.

5 *Stability of rigid liferafts*

5.1 Unless the liferaft is capable of operating safely whichever way up it is floating, its strength and stability shall be such that it is either self-righting or can be readily righted in a seaway and in calm water by one person.

5.2 The stability of a liferaft when loaded with its full complement of persons and equipment shall be such that it can be towed at speeds of up to 3 knots in calm water.

6 *Rigid liferaft fittings*

6.1 The liferaft shall be fitted with an efficient painter. The breaking strength of the painter system, including its means of attachment to the liferaft, except the weak link required by regulation 38.6, shall be not less than 10.0 kN for liferafts permitted to accommodate nine persons or more, and not less than 7.5 kN for any other liferaft.

6.2 A manually controlled lamp visible on a dark night with a clear atmosphere at a distance of at least 2 miles for a period of not less than 12 h shall be fitted to the top of the liferaft canopy. If the light is a flashing light it shall flash at a rate of not less than 50 flashes per minute for the first 2 h of operation of the 12 h operating period. The lamp shall be powered by a sea-activated cell or a dry chemical cell and shall light automatically when the liferaft canopy is set in place. The cell shall be of a type that does not deteriorate due to damp or humidity in the stowed liferaft.

6.3 A manually controlled lamp shall be fitted inside the liferaft, capable of continuous operation for a period of at least 12 h. It shall light automatically when the canopy is set in place and be of sufficient intensity to enable reading of survival and equipment instructions.

7 *Markings on rigid liferafts*

The liferaft shall be marked with:

- .1 name and port of registry of the ship to which it belongs;
- .2 maker's name or trade mark;
- .3 serial number;
- .4 name of approving authority;
- .5 number of persons it is permitted to accommodate over each entrance in characters not less than 100 mm in height of a colour contrasting with that of the liferaft;
- .6 SOLAS;
- .7 type of emergency pack enclosed;
- .8 length of painter;
- .9 maximum permitted height of stowage above waterline (drop-test height);
- .10 launching instructions.

8 *Davit-launched rigid liferafts*

In addition to the above requirements, a rigid liferaft for use with an approved launching appliance shall, when suspended from its lifting hook or bridle, withstand a load of 4 times the mass of its full complement of persons and equipment.

Regulation 41

General requirements for lifeboats

1 *Construction of lifeboats*

1.1 All lifeboats shall be properly constructed and shall be of such form and proportions that they have ample stability in a seaway and sufficient freeboard when loaded with their full complement of persons and equipment. All lifeboats shall have rigid hulls and shall be capable of maintaining positive stability when in an upright position in calm water and loaded with their full complement of persons and equipment and holed in any one location below the waterline, assuming no loss of buoyancy material and no other damage.

1.2 All lifeboats shall be of sufficient strength to:

- .1 enable them to be safely lowered into the water when loaded with their full complement of persons and equipment; and
- .2 be capable of being launched and towed when the ship is making headway at a speed of 5 knots in calm water.

1.3 Hulls and rigid covers shall be fire-retardant or non-combustible.

1.4 Seating shall be provided on thwarts, benches or fixed chairs fitted as low as practicable in the lifeboat and constructed so as to be capable of supporting the number of persons each weighing 100 kg for which spaces are provided in compliance with the requirements of paragraph 2.2.2.

1.5 Each lifeboat shall be of sufficient strength to withstand a load, without residual deflection on removal of that load:

- .1 in the case of boats with metal hulls, 1.25 times the total mass of the lifeboat when loaded with its full complement of persons and equipment; or
- .2 in the case of other boats, twice the total mass of the lifeboat when loaded with its full complement of persons and equipment.

1.6 Each lifeboat shall be of sufficient strength to withstand, when loaded with its full complement of persons and equipment and with, where applicable, skates or fenders in position, a lateral impact against the ship's side at an impact velocity of at least 3.5 m/s and also a drop into the water from a height of at least 3 m.

1.7 The vertical distance between the floor surface and the interior of the enclosure or canopy over 50% of the floor area shall be:

- .1 not less than 1.3 m for a lifeboat permitted to accommodate nine persons or less;
- .2 not less than 1.7 m for a lifeboat permitted to accommodate 24 persons or more;
- .3 not less than the distance as determined by linear interpolation between 1.3 m and 1.7 m for a lifeboat permitted to accommodate between nine and 24 persons.

2 *Carrying capacity of lifeboats*

2.1 No lifeboat shall be approved to accommodate more than 150 persons.

2.2 The number of persons which a lifeboat shall be permitted to accommodate shall be equal to the lesser of:

- .1 the number of persons having an average mass of 75 kg, all wearing life-jackets, that can be seated in a normal position without interfering with the means of propulsion or the operation of any of the lifeboat's equipment; or
- .2 the number of spaces that can be provided on the seating arrangements in accordance with Figure 1. The shapes may be overlapped as shown, provided footrests are fitted and there is sufficient room for legs and the vertical separation between the upper and lower seat is not less than 350 mm.

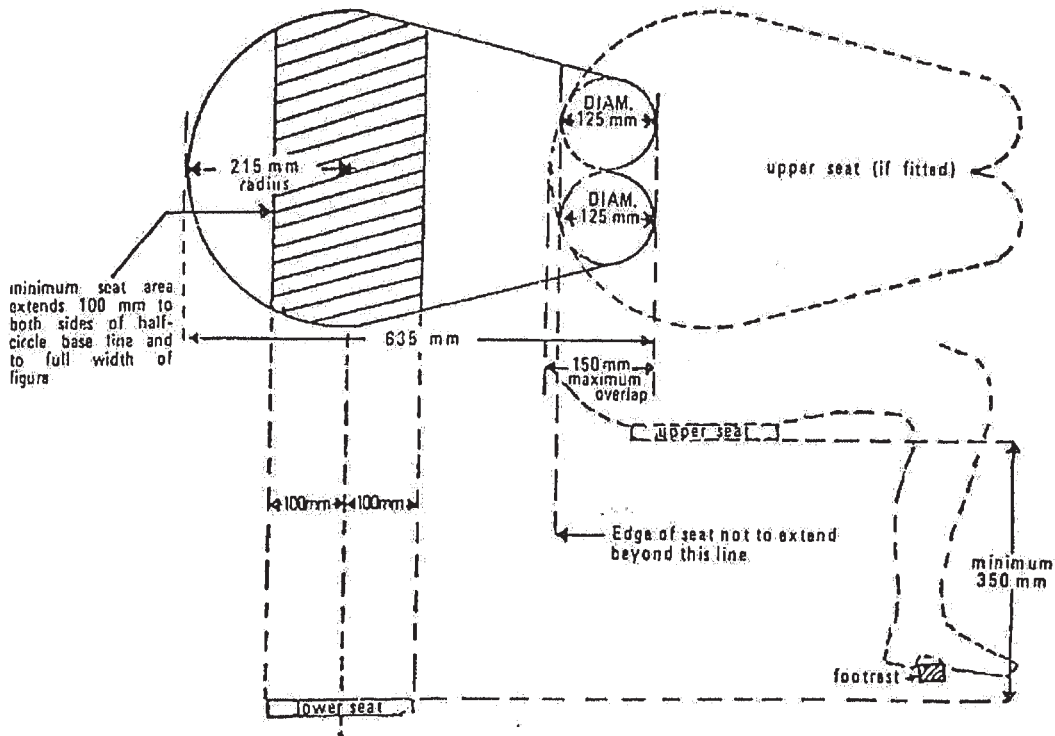


Figure 1

2.3 Each seating position shall be clearly indicated in the lifeboat.

3 *Access into lifeboats*

3.1 Every passenger ship lifeboat shall be so arranged that it can be rapidly boarded by its full complement of persons. Rapid disembarkation shall also be possible.

3.2 Every cargo ship lifeboat shall be so arranged that it can be boarded by its full complement of persons in not more than 3 min from the time the instruction to board is given. Rapid disembarkation shall also be possible.

3.3 Lifeboats shall have a boarding ladder that can be used on either side of the lifeboat to enable persons in the water to board the lifeboat. The lowest step of the ladder shall be not less than 0.4 m below the lifeboat's light waterline.

3.4 The lifeboat shall be so arranged that helpless people can be brought on board either from the sea or on stretchers.

3.5 All surfaces on which persons might walk shall have a non-skid finish.

4 *Lifeboat buoyancy*

All lifeboats shall have inherent buoyancy or shall be fitted with inherently buoyant material which shall not be adversely affected by seawater, oil or oil products, sufficient to float the lifeboat with all its equipment on board when flooded and open to the sea. Additional inherently buoyant material, equal to 280 N of buoyant force per person shall be provided for the number of persons the lifeboat is permitted to accommodate. Buoyant material, unless in addition to that required above, shall not be installed external to the hull of the lifeboat.

5 *Lifeboat freeboard and stability*

All lifeboats, when loaded with 50% of the number of persons the lifeboat is permitted to accommodate seated in their normal positions to one side of the centreline, shall have a freeboard, measured from the waterline to the lowest opening through which the lifeboat may become flooded, of at least 1.5% of the lifeboat's length or 100 mm, whichever is the greater.

6 *Lifeboat propulsion*

6.1 Every lifeboat shall be powered by a compression ignition engine. No engine shall be used for any lifeboat if its fuel has a flashpoint of 43°C or less (closed cup test).

6.2 The engine shall be provided with either a manual starting system, or a power starting system with two independent rechargeable energy sources. Any necessary starting aids shall also be provided. The engine starting systems and starting aids shall start the engine at an ambient temperature of -15°C within 2 min of commencing the start procedure unless, in the opinion of the Administration having regard to the particular voyages in which the ship carrying the lifeboat is constantly engaged, a different temperature is appropriate. The starting systems shall not be impeded by the engine casing, thwarts or other obstructions.

6.3 The engine shall be capable of operating for not less than 5 min after starting from cold with the lifeboat out of the water.

6.4 The engine shall be capable of operating when the lifeboat is flooded up to the centreline of the crank shaft.

6.5 The propeller shafting shall be so arranged that the propeller can be disengaged from the engine. Provision shall be made for ahead and astern propulsion of the lifeboat.

6.6 The exhaust pipe shall be so arranged as to prevent water from entering the engine in normal operation.

6.7 All lifeboats shall be designed with due regard to the safety of persons in the water and to the possibility of damage to the propulsion system by floating debris.

6.8 The speed of a lifeboat when proceeding ahead in calm water, when loaded with its full complement of persons and equipment and with all engine-powered auxiliary equipment in operation, shall be at least 6 knots and at least 2 knots when towing a 25-person liferaft loaded with its full complement of persons and equipment or its equivalent. Sufficient fuel, suitable for use throughout the temperature range expected in the area in which the ship operates, shall be provided to run the fully loaded lifeboat at 6 knots for a period of not less than 24 h.

6.9 The lifeboat engine, transmission and engine accessories shall be enclosed in a fire-retardant casing or other suitable arrangements providing similar protection. Such arrangements shall also protect persons from coming into accidental contact with hot or moving parts and protect the engine from exposure to weather and sea. Adequate means shall be provided to reduce the engine noise. Starter batteries shall be provided with casings which form a watertight enclosure around the bottom and sides of the batteries. The battery casings shall have a tight fitting top which provides for necessary gas venting.

6.10 The lifeboat engine and accessories shall be designed to limit electromagnetic emissions so that engine operation does not interfere with the operation of radio life-saving appliances used in the lifeboat.

6.11 Means shall be provided for recharging all engine-starting, radio and search-light batteries. Radio batteries shall not be used to provide power for engine starting. Means shall be provided for recharging lifeboat batteries from the ship's power supply at a supply voltage not exceeding 55 V which can be disconnected at the lifeboat embarkation station.

6.12 Water-resistant instructions for starting and operating the engine shall be provided and mounted in a conspicuous place near the engine starting controls.

7 *Lifeboat fittings*

7.1 All lifeboats shall be provided with at least one drain valve fitted near the lowest point in the hull, which shall automatically open to drain water from the hull when the lifeboat is not waterborne and shall automatically close to prevent entry of water when the lifeboat is waterborne. Each drain valve shall be provided with a cap or plug to close the valve, which shall be attached to the lifeboat by a lanyard, a chain, or other suitable means. Drain valves shall be readily accessible from inside the lifeboat and their position shall be clearly indicated.

7.2 All lifeboats shall be provided with a rudder and tiller. When a wheel or other remote steering mechanism is also provided the tiller shall be capable of controlling the rudder in case of failure of the steering mechanism. The rudder shall be permanently attached to the lifeboat. The tiller shall be permanently installed on, or linked to, the rudder stock; however, if the lifeboat has a remote steering mechanism, the tiller may be removable and securely stowed near the rudder stock. The rudder and tiller shall be so arranged as not to be damaged by operation of the release mechanism or the propeller.

7.3 Except in the vicinity of the rudder and propeller, a buoyant lifeline shall be becketed around the outside of the lifeboat.

7.4 Lifeboats which are not self-righting when capsized shall have suitable handholds on the underside of the hull to enable persons to cling to the lifeboat. The handholds shall be fastened to the lifeboat in such a way that, when subjected to an impact sufficient to cause them to break away from the lifeboat, they break away without damaging the lifeboat.

7.5 All lifeboats shall be fitted with sufficient watertight lockers or compartments to provide for the storage of the small items of equipment, water and provisions required by paragraph 8. Means shall be provided for the storage of collected rainwater.

7.6 Every lifeboat to be launched by a fall or falls shall be fitted with a release mechanism complying with the following requirements:

- .1 The mechanism shall be so arranged that all hooks are released simultaneously.
- .2 The mechanism shall have two release capabilities as follows:
 - .2.1 a normal release capability which will release the lifeboat when it is waterborne or when there is no load on the hooks;
 - .2.2 an on-load release capability which will release the lifeboat with a load on the hooks. This release shall be so arranged as to release the lifeboat under any conditions of loading from no-load with the lifeboat waterborne to a load of 1.1 times the total mass of the lifeboat when loaded with its full complement of persons and equipment. This release capability shall be adequately protected against accidental or premature use.
- .3 The release control shall be clearly marked in a colour that contrasts with its surroundings.
- .4 The mechanism shall be designed with a factor of safety of 6 based on the ultimate strength of the materials used, assuming the mass of the lifeboat is equally distributed between the falls.

7.7 Every lifeboat shall be fitted with a release device to enable the forward painter to be released when under tension.

7.8 Every lifeboat shall be provided with a permanently installed earth connection and arrangements for adequately siting and securing in the operating position the antenna provided with the portable radio apparatus required by regulation 6.2.1.

7.9 Lifeboats intended for launching down the side of a ship shall have skates and fenders as necessary to facilitate launching and prevent damage to the lifeboat.

7.10 A manually controlled lamp visible on a dark night with a clear atmosphere at a distance of at least 2 miles for a period of not less than 12 h shall be fitted to the top of the cover or enclosure. If the light is a flashing light, it shall initially flash at a rate of not less than 50 flashes per minute over the first 2 h of operation of the 12 h operating period.

7.11 A lamp or source of light shall be fitted inside the lifeboat to provide illumination for not less than 12 h to enable reading of survival and equipment instructions; however, oil lamps shall not be permitted for this purpose.

7.12 Unless expressly provided otherwise, every lifeboat shall be provided with effective means of bailing or be automatically self-bailing.

7.13 Every lifeboat shall be so arranged that an adequate view forward, aft and to both sides is provided from the control and steering position for safe launching and manoeuvring.

8 *Lifeboat equipment*

All items of lifeboat equipment, whether required by this paragraph or elsewhere in this chapter, with the exception of boat-hooks which shall be kept free for fending off purposes, shall be secured within the lifeboat by lashings, storage in lockers or compartments, storage in brackets or similar mounting arrangements or other suitable means. The equipment shall be secured in such a manner as not to interfere with any abandonment procedures. All items of lifeboat equipment shall be as small and of as little mass as possible and shall be packed in a suitable and compact form. Except where otherwise stated, the normal equipment of every lifeboat shall consist of:

- .1 sufficient buoyant oars to make headway in calm seas. Thole pins, crutches or equivalent arrangements shall be provided for each oar provided. Thole pins or crutches shall be attached to the boat by lanyards or chains;
- .2 two boat-hooks;
- .3 a buoyant bailer and two buckets;
- .4 a survival manual;
- .5 a binnacle containing an efficient compass which is luminous or provided with suitable means of illumination. In a totally enclosed lifeboat, the binnacle shall be permanently fitted at the steering position; in any other lifeboat, it shall be provided with suitable mounting arrangements;
- .6 a sea-anchor of adequate size fitted with a shock-resistant hawser and a tripping line which provides a firm hand grip when wet. The strength of the sea-anchor, hawser and tripping line shall be adequate for all sea conditions;
- .7 two efficient painters of a length equal to not less than twice the distance from the stowage position of the lifeboat to the waterline in the lightest

seagoing condition or 15 m, whichever is the greater. One painter attached to the release device required by regulation 41.7.7 shall be placed at the forward end of the lifeboat and the other shall be firmly secured at or near the bow of the lifeboat ready for use;

- .8 two hatchets, one at each end of the lifeboat;
- .9 watertight receptacles containing a total of 3 ℓ of fresh water for each person the lifeboat is permitted to accommodate, of which 1 ℓ per person may be replaced by a de-salting apparatus capable of producing an equal amount of fresh water in 2 days;
- .10 a rustproof dipper with lanyard;
- .11 a rustproof graduated drinking vessel;
- .12 a food ration totalling not less than 10,000 kJ for each person the lifeboat is permitted to accommodate; these rations shall be kept in airtight packaging and be stowed in a watertight container;
- .13 four rocket parachute flares complying with the requirements of regulation 35;
- .14 six hand flares complying with the requirements of regulation 36;
- .15 two buoyant smoke signals complying with the requirements of regulation 37;
- .16 one waterproof electric torch suitable for Morse signalling together with one spare set of batteries and one spare bulb in a waterproof container;
- .17 one daylight signalling mirror with instructions for its use for signalling to ships and aircraft;
- .18 one copy of the life-saving signals prescribed by regulation V/16 on a waterproof card or in a waterproof container;
- .19 one whistle or equivalent sound signal;
- .20 a first-aid outfit in a waterproof case capable of being closed tightly after use;
- .21 six doses of anti-seasickness medicine and one seasickness bag for each person;
- .22 a jack-knife to be kept attached to the boat by a lanyard;
- .23 three tin openers;
- .24 two buoyant rescue quoits, attached to not less than 30 m of buoyant line;
- .25 a manual pump;
- .26 one set of fishing tackle;
- .27 sufficient tools for minor adjustments to the engine and its accessories;

- .28 portable fire-extinguishing equipment suitable for extinguishing oil fires;
- .29 a searchlight capable of effectively illuminating a light-coloured object at night having a width of 18 m at a distance of 180 m for a total period of 6 h and of working for not less than 3 h continuously;
- .30 an efficient radar reflector;
- .31 thermal protective aids complying with the requirements of regulation 34 sufficient for 10% of the number of persons the lifeboat is permitted to accommodate or two, whichever is the greater.
- .32 In the case of ships engaged on voyages of such a nature and duration that, in the opinion of the Administration, the items specified in paragraphs 8.12 and 8.26 are unnecessary, the Administration may allow these items to be dispensed with.

9 *Lifeboat markings*

- 9.1 The dimensions of the lifeboat and the number of persons which it is permitted to accommodate shall be marked on it in clear permanent characters.
- 9.2 The name and port of registry of the ship to which the lifeboat belongs shall be marked on each side of the lifeboat's bow in block capitals of the Roman alphabet.
- 9.3 Means of identifying the ship to which the lifeboat belongs and the number of the lifeboat shall be marked in such a way that they are visible from above.

Regulation 42

Partially enclosed lifeboats

- 1 Partially enclosed lifeboats shall comply with the requirements of regulation 41 and in addition shall comply with the requirements of this regulation.
- 2 Every partially enclosed lifeboat shall be provided with effective means of bailing or be automatically self-bailing.
- 3 Partially enclosed lifeboats shall be provided with permanently attached rigid covers extending over not less than 20% of the length of the lifeboat from the stem and not less than 20% of the length of the lifeboat from the aftermost part of the lifeboat. The lifeboat shall be fitted with a permanently attached foldable canopy which together with the rigid covers completely encloses the occupants of the lifeboat in a weatherproof shelter and protects them from exposure. The canopy shall be so arranged that:
 - .1 it is provided with adequate rigid sections or battens to permit erection of the canopy;
 - .2 it can be easily erected by not more than two persons;

- .3 it is insulated to protect the occupants against heat and cold by means of not less than two layers of material separated by an air gap or other equally efficient means; means shall be provided to prevent accumulation of water in the air gap;
 - .4 its exterior is of a highly visible colour and its interior is of a colour which does not cause discomfort to the occupants;
 - .5 it has entrances at both ends and on each side, provided with efficient adjustable closing arrangements which can be easily and quickly opened and closed from inside or outside so as to permit ventilation but exclude seawater, wind and cold; means shall be provided for holding the entrances securely in the open and closed position;
 - .6 with the entrances closed, it admits sufficient air for the occupants at all times;
 - .7 it has means for collecting rainwater;
 - .8 the occupants can escape in the event of the lifeboat capsizing.
- 4 The interior of the lifeboat shall be of a highly visible colour.
- 5 The radiotelegraph installation required by regulation 6.2.2 shall be installed in a cabin large enough to accommodate both the equipment and the person using it. No separate cabin is required if the construction of the lifeboat provides a sheltered space to the satisfaction of the Administration.

Regulation 43

Self-righting partially enclosed lifeboats

1 Self-righting partially enclosed lifeboats shall comply with the requirements of regulation 41 and in addition shall comply with the requirements of this regulation.

2 *Enclosure*

2.1 Permanently attached rigid covers shall be provided extending over not less than 20% of the length of the lifeboat from the stem and not less than 20% of the length of the lifeboat from the aftermost part of the lifeboat.

2.2 The rigid covers shall form two shelters. If the shelters have bulkheads they shall have openings of sufficient size to permit easy access by persons each wearing an immersion suit or warm clothes and a lifejacket. The interior height of the shelters shall be sufficient to permit persons easy access to their seats in the bow and stern of the lifeboat.

2.3 The rigid covers shall be so arranged that they include windows or translucent panels to admit sufficient daylight to the inside of the lifeboat with the openings or canopies closed so as to make artificial light unnecessary.

2.4 The rigid covers shall have railings to provide a secure handhold for persons moving about the exterior of the lifeboat.

2.5 Open parts of the lifeboat shall be fitted with a permanently attached foldable canopy so arranged that:

- .1 it can be easily erected by not more than two persons in not more than 2 min;
- .2 it is insulated to protect the occupants against cold by means of not less than two layers of material separated by an air gap or other equally efficient means.

2.6 The enclosure formed by the rigid covers and canopy shall be so arranged:

- .1 as to allow launching and recovery operations to be performed without any occupant having to leave the enclosure;
- .2 that it has entrances at both ends and on each side, provided with efficient adjustable closing arrangements which can be easily and quickly opened and closed from inside or outside so as to permit ventilation but exclude seawater, wind and cold; means shall be provided for holding the entrances securely in the open and in the closed position;
- .3 that with the canopy erected and all entrances closed, sufficient air is admitted for the occupants at all times;
- .4 that it has means for collecting rainwater;
- .5 that the exterior of the rigid covers and canopy and the interior of that part of the lifeboat covered by the canopy is of a highly visible colour. The interior of the shelters shall be of a colour which does not cause discomfort to the occupants;
- .6 that it is possible to row the lifeboat.

3 *Capsizing and re-righting*

3.1 A safety belt shall be fitted at each indicated seating position. The safety belt shall be so designed as to hold a person of a mass of 100 kg securely in place when the lifeboat is in a capsized position.

3.2 The stability of the lifeboat shall be such that it is inherently or automatically self-righting when loaded with its full or a partial complement of persons and equipment and the persons are secured with safety belts.

4 *Propulsion*

4.1 The engine and transmission shall be controlled from the helmsman's position.

4.2 The engine and engine installation shall be capable of running in any position during capsize and continue to run after the lifeboat returns to the upright or shall automatically stop on capsizing and be easily restarted after the lifeboat returns to the upright and the water has been drained from the lifeboat. The design of the fuel

and lubricating systems shall prevent the loss of fuel and the loss of more than 250 ml of lubricating oil from the engine during capsize.

4.3 Air-cooled engines shall have a duct system to take in cooling air from, and exhaust it to, the outside of the lifeboat. Manually operated dampers shall be provided to enable cooling air to be taken in from, and exhausted to, the interior of the lifeboat.

5 *Construction and fendering*

5.1 Notwithstanding regulation 41.1.6, a self-righting partially enclosed lifeboat shall be so constructed and fendered as to ensure that the lifeboat renders protection against harmful accelerations resulting from an impact of the lifeboat, when loaded with its full complement of persons and equipment, against the ship's side at an impact velocity of not less than 3.5 m/s.

5.2 The lifeboat shall be automatically self-bailing.

Regulation 44

Totally enclosed lifeboats

1 Totally enclosed lifeboats shall comply with the requirements of regulation 41 and in addition shall comply with the requirements of this regulation.

2 *Enclosure*

Every totally enclosed lifeboat shall be provided with a rigid watertight enclosure which completely encloses the lifeboat. The enclosure shall be so arranged that:

- .1 it protects the occupants against heat and cold;
- .2 access to the lifeboat is provided by hatches which can be closed to make the lifeboat watertight;
- .3 hatches are positioned so as to allow launching and recovery operations to be performed without any occupant having to leave the enclosure;
- .4 access hatches are capable of being opened and closed from both inside and outside and are equipped with means to hold them securely in open positions;
- .5 it is possible to row the lifeboat;
- .6 it is capable, when the lifeboat is in the capsized position with the hatches closed and without significant leakage, of supporting the entire mass of the lifeboat, including all equipment, machinery and its full complement of persons;
- .7 it includes windows or translucent panels on both sides which admit sufficient daylight to the inside of the lifeboat with the hatches closed to make artificial light unnecessary;

- .8 its exterior is of a highly visible colour and its interior of a colour which does not cause discomfort to the occupants;
- .9 handrails provide a secure handhold for persons moving about the exterior of the lifeboat, and aid embarkation and disembarkation;
- .10 persons have access to their seats from an entrance without having to climb over thwarts or other obstructions;
- .11 the occupants are protected from the effects of dangerous subatmospheric pressures which might be created by the lifeboat's engine.

3 *Capsizing and re-righting*

3.1 A safety belt shall be fitted at each indicated seating position. The safety belt shall be designed to hold a person of a mass of 100 kg securely in place when the lifeboat is in a capsized position.

3.2 The stability of the lifeboat shall be such that it is inherently or automatically self-righting when loaded with its full or a partial complement of persons and equipment and all entrances and openings are closed watertight and the persons are secured with safety belts.

3.3 The lifeboat shall be capable of supporting its full complement of persons and equipment when the lifeboat is in the damaged condition prescribed in regulation 41.1.1 and its stability shall be such that in the event of capsizing, it will automatically attain a position that will provide an above-water escape for its occupants.

3.4 The design of all engine exhaust pipes, air ducts and other openings shall be such that water is excluded from the engine when the lifeboat capsizes and re-rights.

4 *Propulsion*

4.1 The engine and transmission shall be controlled from the helmsman's position.

4.2 The engine and engine installation shall be capable of running in any position during capsize and continue to run after the lifeboat returns to the upright or shall automatically stop on capsizing and be easily restarted after the lifeboat returns to the upright. The design of the fuel and lubricating systems shall prevent the loss of fuel and the loss of more than 250 ml of lubricating oil from the engine during capsize.

4.3 Air cooled engines shall have a duct system to take in cooling air from, and exhaust it to, the outside of the lifeboat. Manually operated dampers shall be provided to enable cooling air to be taken in from, and exhausted to, the interior of the lifeboat.

5 *Construction and fendering*

Notwithstanding regulation 41.1.6, a totally enclosed lifeboat shall be so constructed and fendered as to ensure that the lifeboat renders protection against harmful accelerations resulting from an impact of the lifeboat, when loaded with its full complement of persons and equipment, against the ship's side at an impact velocity of not less than 3.5 m/s.

6 *Free-fall lifeboats*

A lifeboat arranged for free-fall launching shall be so constructed that it is capable of rendering protection against harmful accelerations resulting from being launched, when loaded with its full complement of persons and equipment, from at least the maximum height at which it is designed to be stowed above the waterline with the ship in its lightest seagoing condition, under unfavourable conditions of trim of up to 10° and with the ship listed not less than 20° either way.

Regulation 45

Lifeboats with a self-contained air support system

In addition to complying with the requirements of regulations 41 and 44, a lifeboat with a self-contained air support system shall be so arranged that, when proceeding with all entrances and openings closed, the air in the lifeboat remains safe and breathable and the engine runs normally for a period of not less than 10 min. During this period the atmospheric pressure inside the lifeboat shall never fall below the outside atmospheric pressure nor shall it exceed it by more than 20 mbar. The system shall have visual indicators to indicate the pressure of the air supply at all times.

Regulation 46

Fire-protected lifeboats

1 In addition to complying with the requirements of regulations 41, 44 and 45, a fire-protected lifeboat when waterborne shall be capable of protecting the number of persons it is permitted to accommodate when subjected to a continuous oil fire that envelops the lifeboat for a period of not less than 8 min.

2 *Water spray system*

A lifeboat which has a water spray fire-protection system shall comply with the following:

- .1 water for the system shall be drawn from the sea by a self-priming motor pump. It shall be possible to turn "on" and turn "off" the flow of water over the exterior of the lifeboat;
- .2 the seawater intake shall be so arranged as to prevent the intake of flammable liquids from the sea surface;
- .3 the system shall be arranged for flushing with fresh water and allowing complete drainage.

SECTION V – RESCUE BOATS

Regulation 47

Rescue boats

1 *General requirements*

1.1 Except as provided by this regulation, all rescue boats shall comply with the requirements of regulations 41.1 to 41.7.4 inclusive and 41.7.6, 41.7.7, 41.7.9, 41.7.12 and 41.9.

1.2 Rescue boats may be either of rigid or inflated construction or a combination of both and shall:

- .1 be not less than 3.8 m and not more than 8.5 m in length;
- .2 be capable of carrying at least five seated persons and a person lying down.

1.3 Rescue boats which are a combination of rigid and inflated construction shall comply with the appropriate requirements of this regulation to the satisfaction of the Administration.

1.4 Unless the rescue boat has adequate sheer, it shall be provided with a bow cover extending for not less than 15% of its length.

1.5 Rescue boats shall be capable of manoeuvring at speeds up to 6 knots and maintaining that speed for a period of at least 4 h.

1.6 Rescue boats shall have sufficient mobility and manoeuvrability in a seaway to enable persons to be retrieved from the water, marshal liferafts and tow the largest liferaft carried on the ship when loaded with its full complement of persons and equipment or its equivalent at a speed of at least 2 knots.

1.7 A rescue boat shall be fitted with an inboard engine or outboard motor. If it is fitted with an outboard motor, the rudder and tiller may form part of the engine. Notwithstanding the requirements of regulation 41.6.1, petrol-driven outboard engines with an approved fuel system may be fitted in rescue boats provided the fuel tanks are specially protected against fire and explosion.

1.8 Arrangements for towing shall be permanently fitted in rescue boats and shall be sufficiently strong to marshal or tow liferafts as required by paragraph 1.6.

1.9 Rescue boats shall be fitted with weathertight stowage for small items of equipment.

2 *Rescue boat equipment*

2.1 All items of rescue boat equipment, with the exception of boat-hooks which shall be kept free for fending off purposes, shall be secured within the rescue boat by lashings, storage in lockers or compartments, storage in brackets or similar

mounting arrangements, or other suitable means. The equipment shall be secured in such a manner as not to interfere with any launching or recovery procedures. All items of rescue boat equipment shall be as small and of as little mass as possible and shall be packed in suitable and compact form.

2.2 The normal equipment of every rescue boat shall consist of:

- .1 sufficient buoyant oars or paddles to make headway in calm seas. Thole pins, crutches or equivalent arrangements shall be provided for each oar. Thole pins or crutches shall be attached to the boat by lanyards or chains;
- .2 a buoyant bailer;
- .3 a binnacle containing an efficient compass which is luminous or provided with suitable means of illumination;
- .4 a sea-anchor and tripping line with a hawser of adequate strength not less than 10 m in length;
- .5 a painter of sufficient length and strength, attached to the release device complying with the requirements of regulation 41.7.7 and placed at the forward end of the rescue boat;
- .6 one buoyant line, not less than 50 m in length, of sufficient strength to tow a liferaft as required by paragraph 1.6;
- .7 one waterproof electric torch suitable for Morse signalling, together with one spare set of batteries and one spare bulb in a waterproof container;
- .8 one whistle or equivalent sound signal;
- .9 a first-aid outfit in a waterproof case capable of being closed tightly after use;
- .10 two buoyant rescue quoits, attached to not less than 30 m of buoyant line;
- .11 a searchlight capable of effectively illuminating a light-coloured object at night having a width of 18 m at a distance of 180 m for a total period of 6 h and of working for at least 3 h continuously;
- .12 an efficient radar reflector.
- .13 thermal protective aids complying with the requirements of regulation 34 sufficient for 10% of the number of persons the rescue boat is permitted to accommodate or two, whichever is the greater.

2.3 In addition to the equipment required by paragraph 2.2, the normal equipment of every rigid rescue boat shall include:

- .1 a boat-hook;
- .2 a bucket;
- .3 a knife or hatchet.

2.4 In addition to the equipment required by paragraph 2.2 the normal equipment of every inflated rescue boat shall consist of:

- .1 a buoyant safety knife;
- .2 two sponges;
- .3 an efficient manually operated bellows or pump;
- .4 a repair kit in a suitable container for repairing punctures;
- .5 a safety boat-hook.

3 *Additional requirements for inflated rescue boats*

3.1 The requirements of regulations 41.1.3 and 41.1.5 do not apply to inflated rescue boats.

3.2 An inflated rescue boat shall be constructed in such a way that, when suspended by its bridle or lifting hook:

- .1 it is of sufficient strength and rigidity to enable it to be lowered and recovered with its full complement of persons and equipment;
- .2 it is of sufficient strength to withstand a load of 4 times the mass of its full complement of persons and equipment at an ambient temperature of $20 \pm 3^{\circ}\text{C}$ with all relief valves inoperative;
- .3 it is of sufficient strength to withstand a load of 1.1 times the mass of its full complement of persons and equipment at an ambient temperature of -30°C , with all relief valves operative.

3.3 Inflated rescue boats shall be so constructed as to be capable of withstanding exposure:

- .1 when stowed on an open deck on a ship at sea;
- .2 for 30 days afloat in all sea conditions.

3.4 In addition to complying with the requirements of regulation 41.9, inflated rescue boats shall be marked with a serial number, the maker's name or trade mark and the date of manufacture.

3.5 The buoyancy of an inflated rescue boat shall be provided by either a single tube subdivided into at least five separate compartments of approximately equal volume or two separate tubes neither exceeding 60% of the total volume. The buoyancy tubes shall be so arranged that, in the event of any one of the compartments being damaged, the intact compartments shall be able to support the number of persons which the rescue boat is permitted to accommodate, each having a mass of 75 kg, when seated in their normal positions with positive freeboard over the rescue boat's entire periphery.

3.6 The buoyancy tubes forming the boundary of the inflated rescue boat shall on inflation provide a volume of not less than 0.17 m^3 for each person the rescue boat is permitted to accommodate.

3.7 Each buoyancy compartment shall be fitted with a non-return valve for manual inflation and means for deflation. A safety relief valve shall also be fitted unless the Administration is satisfied that such an appliance is unnecessary.

3.8 Underneath the bottom and on vulnerable places on the outside of the inflated rescue boat, rubbing strips shall be provided to the satisfaction of the Administration.

3.9 Where a transom is fitted it shall not be inset by more than 20% of the overall length of the rescue boat.

3.10 Suitable patches shall be provided for securing the painters fore and aft and the becketed lifelines inside and outside the boat.

3.11 The inflated rescue boat shall be maintained at all times in a fully inflated condition.

SECTION VI – LAUNCHING AND EMBARKATION APPLIANCES

Regulation 48

Launching and embarkation appliances

1 *General requirements*

1.1 Each launching appliance together with all its lowering and recovery gear shall be so arranged that the fully equipped survival craft or rescue boat it serves can be safely lowered against a trim of up to 10° and a list of up to 20° either way:

- .1 when boarded, as required by regulation 22 or 28, by its full complement of persons;
- .2 without persons in the survival craft or rescue boat.

1.2 Notwithstanding the requirements of paragraph 1.1, lifeboat launching appliances for oil tankers, chemical tankers and gas carriers with a final angle of heel greater than 20° calculated in accordance with the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol related thereto and the recommendations of the Organization*, as applicable, shall be capable of operating at the final angle of heel on the lower side of the ship.

1.3 A launching appliance shall not depend on any means other than gravity or stored mechanical power which is independent of the ship's power supplies to launch the survival craft or rescue boat it serves in the fully loaded and equipped condition and also in the light condition.

* Reference is made to the damage stability requirements of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) adopted by the Maritime Safety Committee by resolution MSC.4(48) and the International Code for the Construction and Equipment of Ships carrying Liquefied Gases in Bulk (IGC Code) adopted by the Maritime Safety Committee by resolution MSC.5(48).

1.4 A launching mechanism shall be so arranged that it may be actuated by one person from a position on the ship's deck, and from a position within the survival craft or rescue boat; the survival craft shall be visible to the person on deck operating the launching mechanism.

1.5 Each launching appliance shall be so constructed that a minimum amount of routine maintenance is necessary. All parts requiring regular maintenance by the ship's crew shall be readily accessible and easily maintained.

1.6 The winch brakes of a launching appliance shall be of sufficient strength to withstand:

- .1 a static test with a proof load of not less than 1.5 times the maximum working load; and
- .2 a dynamic test with a proof load of not less than 1.1 times the maximum working load at maximum lowering speed.

1.7 The launching appliance and its attachments other than winch brakes shall be of sufficient strength to withstand a static proof load on test of not less than 2.2 times the maximum working load.

1.8 Structural members and all blocks, falls, padeyes, links, fastenings and all other fittings used in connection with launching equipment shall be designed with not less than a minimum factor of safety on the basis of the maximum working load assigned and the ultimate strength of the material used for construction. A minimum factor of safety of 4.5 shall be applied to all davit and winch structural members, and a minimum factor of safety of 6 shall be applied to falls, suspension chains, links and blocks.

1.9 Each launching appliance shall, as far as practicable, remain effective under conditions of icing.

1.10 A lifeboat launching appliance shall be capable of recovering the lifeboat with its crew.

1.11 The arrangements of the launching appliance shall be such as to enable safe boarding of the survival craft in accordance with the requirements of regulations 38.4.2, 38.4.3, 41.3.1 and 41.3.2.

2 *Launching appliances using falls and a winch*

2.1 Falls shall be of rotation-resistant and corrosion-resistant steel wire rope.

2.2 In the case of a multiple drum winch, unless an efficient compensatory device is fitted, the falls shall be so arranged as to wind off the drums at the same rate when lowering, and to wind on to the drums evenly at the same rate when hoisting.

2.3 Every rescue boat launching appliance shall be fitted with a powered winch motor of such capacity that the rescue boat can be raised from the water with its full complement of persons and equipment.

2.4 An efficient hand gear shall be provided for recovery of each survival craft and rescue boat. Hand gear handles or wheels shall not be rotated by moving parts of the winch when the survival craft or rescue boat is being lowered or when it is being hoisted by power.

2.5 Where davit arms are recovered by power, safety devices shall be fitted which will automatically cut off the power before the davit arms reach the stops in order to avoid overstressing the falls or davits, unless the motor is designed to prevent such overstressing.

2.6 The speed at which the survival craft or rescue boat is lowered into the water shall be not less than that obtained from the formula:

$$S = 0.4 + (0.02 \times H)$$

where S = speed of lowering in metres per second

and H = height in metres from davit head to the waterline at the lightest seagoing condition.

2.7 The maximum lowering speed shall be established by the Administration having regard to the design of the survival craft or rescue boat, the protection of its occupants from excessive forces, and the strength of the launching arrangements taking into account inertia forces during an emergency stop. Means shall be incorporated in the appliance to ensure that this speed is not exceeded.

2.8 Every rescue boat launching appliance shall be capable of hoisting the rescue boat when loaded with its full rescue boat complement of persons and equipment at a rate of not less than 0.3 m/s.

2.9 Every launching appliance shall be fitted with brakes capable of stopping the descent of the survival craft or rescue boat and holding it securely when loaded with its full complement of persons and equipment; brake pads shall, where necessary, be protected from water and oil.

2.10 Manual brakes shall be so arranged that the brake is always applied unless the operator, or a mechanism activated by the operator, holds the brake control in the "off" position.

3 *Float-free launching*

Where a survival craft requires a launching appliance and is also designed to float free, the float-free release of the survival craft from its stowed position shall be automatic.

4 *Free-fall launching*

Every free-fall launching appliance using an inclined plane shall, in addition to complying with the applicable requirements of paragraph 1, also comply with the following requirements:

- 1 The launching appliance shall be so arranged that excessive forces are not experienced by the occupants of the survival craft during launching.

- .2 The launching appliance shall be a rigid structure with a ramp angle and length sufficient to ensure that the survival craft effectively clears the ship.
- .3 The launching appliance shall be efficiently protected against corrosion and be so constructed as to prevent incendive friction or impact sparking during the launching of the survival craft.

5 *Evacuation-slide launching and embarkation*

Every evacuation-slide launching appliance shall, in addition to complying with the applicable requirements of paragraph 1, also comply with the following requirements:

- .1 The evacuation slide shall be capable of being deployed by one person at the embarkation station.
- .2 The evacuation slide shall be capable of being used in high winds and in a seaway.

6 *Liferaft launching appliances*

Every liferaft launching appliance shall comply with the requirements of paragraphs 1 and 2, except with regard to use of gravity for turning out the appliance, embarkation in the stowed position and recovery of the loaded liferaft. The launching appliance shall be so arranged as to prevent premature release during lowering and shall release the liferaft when waterborne.

7 *Embarkation ladders*

7.1 Handholds shall be provided to ensure a safe passage from the deck to the head of the ladder and vice versa.

7.2 The steps of the ladder shall be:

- .1 made of hardwood, free from knots or other irregularities, smoothly machined and free from sharp edges and splinters, or of suitable material of equivalent properties;
- .2 provided with an efficient non-slip surface either by longitudinal grooving or by the application of an approved non-slip coating;
- .3 not less than 480 mm long, 115 mm wide and 25 mm in depth, excluding any non-slip surface or coating;
- .4 equally spaced not less than 300 mm or more than 380 mm apart and secured in such a manner that they will remain horizontal.

7.3 The side ropes of the ladder shall consist of two uncovered manila ropes not less than 65 mm in circumference on each side. Each rope shall be continuous with no joints below the top step. Other materials may be used provided the dimensions, breaking strain, weathering, stretching and gripping properties are at least equivalent to those of manila rope. All rope ends shall be secured to prevent unravelling.

SECTION VII – OTHER LIFE-SAVING APPLIANCES

Regulation 49

Line-throwing appliances

- 1 Every line-throwing appliance shall:
 - .1 be capable of throwing a line with reasonable accuracy;
 - .2 include not less than four projectiles each capable of carrying the line at least 230 m in calm weather;
 - .3 include not less than four lines each having a breaking strength of not less than 2 kN;
 - .4 have brief instructions or diagrams clearly illustrating the use of the line-throwing appliance.
- 2 The rocket, in the case of a pistol fired rocket, or the assembly, in the case of an integral rocket and line, shall be contained in a water-resistant casing. In addition, in the case of a pistol-fired rocket, the line and rockets together with the means of ignition shall be stowed in a container which provides protection from the weather.

Regulation 50

General emergency alarm system

The general emergency alarm system shall be capable of sounding the general emergency alarm signal consisting of seven or more short blasts followed by one long blast on the ship's whistle or siren and additionally on an electrically operated bell or klaxon or other equivalent warning system, which shall be powered from the ship's main supply and the emergency source of electrical power required by regulation II-1/42 or II-1/43, as appropriate. The system shall be capable of operation from the navigating bridge and, except for the ship's whistle, also from other strategic points. The system shall be audible throughout all the accommodation and normal crew working spaces.

SECTION VIII – MISCELLANEOUS

Regulation 51

Training manual

The training manual, which may comprise several volumes, shall contain instructions and information, in easily understood terms illustrated wherever possible, on the life-saving appliances provided in the ship and on the best methods of survival. Any part of such information may be provided in the form of audio-visual aids in lieu of the manual. The following shall be explained in detail:

- .1 donning of lifejackets and immersion suits, as appropriate;
- .2 muster at the assigned stations;
- .3 boarding, launching, and clearing the survival craft and rescue boats;
- .4 method of launching from within the survival craft;
- .5 release from launching appliances;
- .6 methods and use of devices for protection in launching areas, where appropriate;
- .7 illumination in launching areas;
- .8 use of all survival equipment;
- .9 use of all detection equipment;
- .10 with the assistance of illustrations, the use of radio life-saving appliances;
- .11 use of drogues;
- .12 use of engine and accessories;
- .13 recovery of survival craft and rescue boats including stowage and securing;
- .14 hazards of exposure and the need for warm clothing;
- .15 best use of the survival craft facilities in order to survive;
- .16 methods of retrieval, including the use of helicopter rescue gear (slings, baskets, stretchers), breeches-buoy and shore life-saving apparatus and ship's line-throwing apparatus;
- .17 all other functions contained in the muster list and emergency instructions;
- .18 instructions for emergency repair of the life-saving appliances.

Regulation 52*Instructions for on-board maintenance*

Instructions for on-board maintenance of life-saving appliances shall be easily understood, illustrated wherever possible, and, as appropriate, shall include the following for each appliance:

- .1 a checklist for use when carrying out the inspections required by regulation 19.7;
- .2 maintenance and repair instructions;
- .3 schedule of periodic maintenance;
- .4 diagram of lubrication points with the recommended lubricants;
- .5 list of replaceable parts;
- .6 list of sources of spare parts;
- .7 log for records of inspections and maintenance.

Regulation 53*Muster list and emergency instructions*

1 The muster list shall specify details of the general emergency alarm signal prescribed by regulation 50 and also action to be taken by crew and passengers when this alarm is sounded. The muster list shall also specify how the order to abandon ship will be given.

2 The muster list shall show the duties assigned to the different members of the crew including:

- .1 closing of the watertight doors, fire doors, valves, scuppers, sidescuttles, skylights, portholes and other similar openings in the ship;
- .2 equipping of the survival craft and other life-saving appliances;
- .3 preparation and launching of survival craft;
- .4 general preparations of other life-saving appliances;
- .5 muster of passengers;
- .6 use of communication equipment;
- .7 manning of fire parties assigned to deal with fires;
- .8 special duties assigned in respect of the use of fire-fighting equipment and installations.

3 The muster list shall specify which officers are assigned to ensure that life-saving and fire appliances are maintained in good condition and are ready for immediate use.

4 The muster list shall specify substitutes for key persons who may become disabled, taking into account that different emergencies may call for different actions.

5 The muster list shall show the duties assigned to members of the crew in relation to passengers in case of emergency. These duties shall include:

- .1 warning the passengers;
- .2 seeing that they are suitably clad and have donned their lifejackets correctly;
- .3 assembling passengers at muster stations;
- .4 keeping order in the passageways and on the stairways and generally controlling the movements of the passengers;
- .5 ensuring that a supply of blankets is taken to the survival craft.

6 The muster list shall be prepared before the ship proceeds to sea. After the muster list has been prepared, if any change takes place in the crew which necessitates an alteration in the muster list, the master shall either revise the list or prepare a new list.

7 The format of the muster list used on passenger ships shall be approved.”

Part 4**CHAPTER IV****RADIOTELEGRAPHY AND RADIOTELEPHONY****Regulation 2***Terms and definitions*

The following new sub-paragraph is added:

- “(i) ‘Emergency position-indicating radio beacon’ means a station in the mobile service the emissions of which are intended to facilitate search and rescue operations.”

The following new regulations are added:

“Regulation 14-1*Survival craft emergency position-indicating radio beacons*

- (a) Survival craft emergency position-indicating radio beacons required by regulation III/6.2.3 to be carried in survival craft shall provide transmissions to enable aircraft to locate the survival craft and may also provide transmissions for alerting purposes.
- (b) Survival craft emergency position-indicating radio beacons shall, at least, be capable of transmitting alternately or simultaneously signals complying with the relevant standards and recommended practices of the International Civil Aviation Organization (ICAO) on the frequencies 121.5 MHz and 243.0 MHz.
- (c) Survival craft emergency position-indicating radio beacons shall:
- (i) be of a highly visible colour, so designed that they can be used by an unskilled person and so constructed that they may be easily tested and maintained. Batteries shall not require replacement at intervals of less than 12 months, taking into account testing arrangements;
 - (ii) be watertight, capable of floating and being dropped into the water without damage from a height of at least 20 m;
 - (iii) be capable only of manual activation and de-activation;
 - (iv) be portable, lightweight, and compact;
 - (v) be provided with an indication that signals are being emitted;

- (vi) derive their energy supply from a battery forming an integral part of the device and having sufficient capacity to operate the apparatus for a period of 48 h. The transmission may be intermittent. Determination of the duty cycle should take into account the probability of homing being properly carried out, the need to avoid congestion on the frequencies and the need to comply with the requirements of the International Civil Aviation Organization (ICAO); and
- (vii) be tested and, if necessary, have their source of energy replaced at intervals not exceeding 12 months.

Regulation 14-2

Periodic inspection and testing of emergency position-indicating radio beacons

Emergency position-indicating radio beacons provided in accordance with regulation III/6.2.3 shall at intervals not exceeding 12 months be inspected, tested and, if necessary, have their source of energy replaced. However, in cases where it appears proper and reasonable, the Administration may extend this period to 17 months.

Regulation 14-3

Two-way radiotelephone apparatus for survival craft

- (a) The apparatus required by regulation III/6.2.4 shall be so designed that it can be used in an emergency by an unskilled person.
- (b) The apparatus shall be portable and capable of being used for on-board communications.
- (c) The apparatus shall conform to the requirements laid down in the relevant Radio Regulations for equipment used in the maritime mobile service for on-board communications and shall be capable of operation on those channels specified by the Radio Regulations and as required by the Administration. If the apparatus is operating in the VHF band, precautions shall be taken to prevent the inadvertent selection of VHF channel 16 on equipment capable of being operated on that frequency.
- (d) The apparatus shall be operated from a battery of adequate capacity to ensure 4 h operation with a duty cycle of 1 : 9.
- (e) While at sea, the equipment shall be maintained in satisfactory condition, and, whenever necessary, the battery shall be brought to the fully charged condition or replaced.”

Part 5**CHAPTER VII****CARRIAGE OF DANGEROUS GOODS**

The existing text of chapter VII is replaced by the following:

**PART A – CARRIAGE OF DANGEROUS GOODS IN PACKAGED FORM
OR IN SOLID FORM IN BULK****Regulation 1***Application*

1 Unless expressly provided otherwise, this part applies to dangerous goods, classified under regulation 2 which are carried in packaged form or in solid form in bulk (hereinafter referred to as “dangerous goods”), in all ships to which the present regulations apply and in cargo ships of less than 500 tons gross tonnage.

2 The provisions of this part do not apply to ships’ stores and equipment.

3 The carriage of dangerous goods is prohibited except in accordance with the provisions of this part.

4 To supplement the provisions of this part, each Contracting Government shall issue, or cause to be issued, detailed instructions on safe packaging and stowage of dangerous goods which shall include the precautions necessary in relation to other cargo.*

Regulation 2*Classification*

Dangerous goods shall be divided into the following classes:

Class 1 – Explosives

Class 2 – Gases: compressed, liquefied or dissolved under pressure

* Reference is made to the International Maritime Dangerous Goods Code (IMDG Code) adopted by the Organization by resolution A.81(IV), and to the relevant sections and the related parts of Appendix B of the Code of Safe Practice for Solid Bulk Cargoes (BC Code) adopted by the Organization by resolution A.434(XI), as have been or may be amended by the Maritime Safety Committee.

- Class 3 – Flammable* liquids
- Class 4.1 – Flammable* solids
- Class 4.2 – Substances liable to spontaneous combustion
- Class 4.3 – Substances which, in contact with water, emit flammable gases
- Class 5.1 – Oxidizing substances
- Class 5.2 – Organic peroxides
- Class 6.1 – Poisonous (toxic) substances
- Class 6.2 – Infectious substances
- Class 7 – Radioactive materials
- Class 8 – Corrosives
- Class 9 – Miscellaneous dangerous substances, that is any other substance which experience has shown, or may show, to be of such a dangerous character that the provisions of this part shall apply to it.

Regulation 3

Packaging

- 1 The packaging of dangerous goods shall be:
 - .1 well made and in good condition;
 - .2 of such a character that any interior surface with which the contents may come in contact is not dangerously affected by the substance being conveyed; and
 - .3 capable of withstanding the ordinary risks of handling and carriage by sea.

- 2 Where the use of absorbent or cushioning material is customary in the packaging of liquids in receptacles, that material shall be:
 - .1 capable of minimizing the dangers to which the liquid may give rise;
 - .2 so disposed as to prevent movement and ensure that the receptacle remains surrounded; and
 - .3 where reasonably possible, of sufficient quantity to absorb the liquid in the event of breakage of the receptacle.

- 3 Receptacles containing dangerous liquids shall have an ullage at the filling temperature sufficient to allow for the highest temperature during the course of normal carriage.

* "Flammable" has the same meaning as "inflammable".

4 Cylinders or receptacles for gases under pressure shall be adequately constructed, tested, maintained and correctly filled.

5 Empty uncleaned receptacles which have been used previously for the carriage of dangerous goods shall be subject to the provisions of this part for filled receptacles, unless adequate measures have been taken to nullify any hazard.

Regulation 4

Marking, labelling and placarding

1 Packages containing dangerous goods shall be durably marked with the correct technical name; trade names alone shall not be used.

2 Packages containing dangerous goods shall be provided with distinctive labels or stencils of the labels, or placards, as appropriate, so as to make clear the dangerous properties of the goods contained therein.

3 The method of marking the correct technical name and of affixing labels or applying stencils of labels, or of affixing placards on packages containing dangerous goods, shall be such that this information will still be identifiable on packages surviving at least three months' immersion in the sea. In considering suitable marking, labelling and placarding methods, account shall be taken of the durability of the materials used and of the surface of the package.

4 Packages containing dangerous goods shall be so marked and labelled except that:

- .1 packages containing dangerous goods of a low degree of hazard or packed in limited quantities*; or
- .2 when special circumstances permit, packages that are stowed and handled in units that are identified by labels or placards*;

may be exempted from labelling requirements.

Regulation 5

Documents

1 In all documents relating to the carriage of dangerous goods by sea where the goods are named, the correct technical name of the goods shall be used (trade names alone shall not be used) and the correct description given in accordance with the classification set out in regulation 2.

2 The shipping documents prepared by the shipper shall include, or be accompanied by, a signed certificate or declaration that the shipment offered for carriage is properly packaged and marked, labelled or placarded, as appropriate, and in proper condition for carriage.

* Reference is made to the specific exemptions provided for in the International Maritime Dangerous Goods Code (IMDG Code).

3 Each ship carrying dangerous goods shall have a special list or manifest setting forth, in accordance with the classification set out in regulation 2, the dangerous goods on board and the location thereof. A detailed stowage plan which identifies by class and sets out the location of all dangerous goods on board may be used in place of such special list or manifest.

Regulation 6

Stowage requirements

1 Dangerous goods shall be stowed safely and appropriately in accordance with the nature of the goods. Incompatible goods shall be segregated from one another.

2 Explosives (except ammunition) which present a serious risk shall be stowed in a magazine which shall be kept securely closed while at sea. Such explosives shall be segregated from detonators. Electrical apparatus and cables in any compartment in which explosives are carried shall be so designed and used as to minimize the risk of fire or explosion.

3 Dangerous goods in packaged form which give off dangerous vapours shall be stowed in a mechanically ventilated space or on deck. Dangerous goods in solid form in bulk which give off dangerous vapours shall be stowed in a well ventilated space.

4 In ships carrying flammable liquids or gases, special precautions shall be taken where necessary against fire or explosion.

5 Substances which are liable to spontaneous heating or combustion shall not be carried unless adequate precautions have been taken to minimize the likelihood of the outbreak of fire.

Regulation 7

Explosives in passenger ships

1 In passenger ships the following explosives only may be carried:

- .1 safety cartridges and safety fuses;
- .2 small quantities of explosives not exceeding 10 kg total net mass;
- .3 distress signals for use in ships or aircraft, if the total mass of such signals does not exceed 1,000 kg;
- .4 except in ships carrying unberthed passengers, fireworks which are unlikely to explode violently.

2 Notwithstanding the provisions of paragraph 1, additional quantities or types of explosives may be carried in passenger ships in which special safety measures approved by the Administration are taken.

**PART B – CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING
DANGEROUS LIQUID CHEMICALS IN BULK**

Regulation 8

Definitions

For the purpose of this part, unless expressly provided otherwise:

1. “International Bulk Chemical Code” means the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk adopted by the Maritime Safety Committee of the Organization by resolution MSC.4(48), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.
2. “Chemical tanker” means a cargo ship constructed or adapted and used for the carriage in bulk of any liquid product listed in chapter 17 of the International Bulk Chemical Code.
3. For the purpose of regulation 9, “ship constructed” means a ship the keel of which is laid or which is at a similar stage of construction.
4. “At a similar stage of construction” means the stage at which:
 - .1 construction identifiable with a specific ship begins; and
 - .2 assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is less.

Regulation 9

Application to chemical tankers

1. Unless expressly provided otherwise, this part applies to chemical tankers constructed on or after 1 July 1986 including those of less than 500 tons gross tonnage. Such tankers shall comply with the requirements of this part in addition to any other applicable requirements of the present regulations.
2. Any chemical tanker, irrespective of the date of construction, which undergoes repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to the ship. Such a ship, if constructed before 1 July 1986, shall, as a rule, comply with the requirements for a ship constructed on or after that date to at least the same extent as before undergoing such repairs, alterations, modifications or outfitting. Repairs, alterations and modifications of a major character, and outfitting related thereto, shall meet the requirements for a ship constructed on or after 1 July 1986 in so far as the Administration deems reasonable and practicable.

3 A ship, irrespective of the date of construction, which is converted to a chemical tanker shall be treated as a chemical tanker constructed on the date on which such conversion commenced.

Regulation 10

Requirements for chemical tankers

1 A chemical tanker shall comply with the requirements of the International Bulk Chemical Code and shall, in addition to the requirements of regulations I/8, I/9, and I/10, as applicable, be surveyed and certified as provided for in that Code. For the purpose of this regulation, the requirements of the Code shall be treated as mandatory.

2 A chemical tanker holding a certificate issued pursuant to the provisions of paragraph I shall be subject to the control established in regulation I/19. For this purpose such certificate shall be treated as a certificate issued under Regulation I/12 or I/13.

PART C – CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING LIQUEFIED GASES IN BULK

Regulation 11

Definitions

For the purpose of this part, unless expressly provided otherwise:

1 “International Gas Carrier Code” means the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk as adopted by the Maritime Safety Committee of the Organization by resolution MSC.5(48), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.

2 “Gas carrier” means a cargo ship constructed or adapted and used for the carriage in bulk of any liquefied gas or other product listed in chapter 19 of the International Gas Carrier Code.

3 For the purpose of regulation 12, “ship constructed” means a ship the keel of which is laid or which is at a similar stage of construction.

4 “At a similar stage of construction” means the stage at which:

- .1 construction identifiable with a specific ship begins; and
- .2 assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is less.

Regulation 12

Application to gas carriers

1 Unless expressly provided otherwise, this part applies to gas carriers constructed on or after 1 July 1986 including those of less than 500 tons gross tonnage. Such gas carriers shall comply with the requirements of this part in addition to any other applicable requirements of the present regulations.

2 Any gas carrier, irrespective of the date of construction, which undergoes repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to the ship. Such a ship if constructed before 1 July 1986 shall, as a rule, comply with the requirements for a ship constructed on or after that date to at least the same extent as before undergoing such repairs, alterations, modifications or outfitting. Repairs, alterations and modifications of a major character, and outfitting related thereto, shall meet the requirements for a ship constructed on or after 1 July 1986 in so far as the Administration deems reasonable and practicable.

3 A ship, irrespective of the date of construction, which is converted to a gas carrier shall be treated as a gas carrier constructed on the date on which such conversion commenced.

Regulation 13

Requirements for gas carriers

1 A gas carrier shall comply with the requirements of the International Gas Carrier Code and shall, in addition to the requirements of regulations I/8, I/9 and I/10, as applicable, be surveyed and certified as provided for in that Code. For the purpose of this regulation, the requirements of the Code shall be treated as mandatory.

2 A gas carrier holding a certificate issued pursuant to the provisions of paragraph 1 shall be subject to the control established in regulation I/19. For this purpose such certificate shall be treated as a certificate issued under regulation I/12 or I/13.