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著 者：邱永芳、王毓正、張富東、黃茂信

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船舶不當排放壓艙水而導入外來生物種，對於目的地海域之生態環境、人類健康造成重大的威脅及嚴重的經濟損失已引起國際社會重視，為此，國際海事組織已於 2004 年通過《國際船舶壓艙水及沈積物控管公約》。國際間亦已有若干國家制訂相關管理制度並有相當程度的執行經驗。可見船舶壓艙水問題之解決確實需要透過法律制度作為依據，此一法規範面之需求已受到聯合國以及先進國家的重視。 本研究之目的在於台灣壓艙水管理之法制化，故先針對壓艙水國際公約發展現狀與國際相關法規進行介紹與分析比較，並透過訪談與專家諮詢之方式以瞭解港務機關及船舶相關之權益關係人對壓艙水管理之需求與意見，以作為研擬壓艙水管理法草案架構之參考，再透過舉辦參與式管理座談會以瞭解權益關係人對草案架構之修正建議，供為管理法草案最後修正之參考。 目前研究結果顯示，在壓艙水處置與管理方式上發現船舶裝置船用壓艙水處理設備是航運公司接受度最高且已在規劃中的壓艙水處置方式，而在管理方式部份發現我國港口國官員人力與專業度的限制，需要建立船舶壓艙水風險評估系統與建置(或選定)壓艙水採樣檢驗實驗室，以協助港口國官員有效執法。至於在法規的建構上，本研究認為單以商港法第 75 條作為管理依據則規範不足，若要單獨訂立一部管理壓艙水之專屬法規本研究亦採取保留之立場，目前傾向的修法方向是針對現行海洋污染防治法及商港法進行修正，把壓艙水列為海洋汙染物質並確認商港內外的壓艙水管理與執行機關，同時由環保署、航港局、海巡署等相關機關會同，共同訂定具法規命令性質之壓艙水管理辦法和壓艙水排放標準。 本研究成果效益以及後續應用包含有：(1)完成壓艙水國際公約發展現狀與美澳相關法制及其實踐情形之調查比較，可做為未來相關管理程序之參考依據；(2)瞭解港務機關及船舶相關之權益關係人對壓艙水管理與規範需求之意見；(3)完成座談會舉辦並歸納各方對之壓艙水管理意見；(4)完成壓艙水管理法草案架構，未來法制化可依此朝修正現行法令的方向前進。			
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Marine transportation becomes a main pathway for the introduction of exotic species to our ocean and coastal waters. During the ocean transits, ballast water is drawn from the departing port to stabilize the ship and subsequently discharges into the port of call while loading cargo, resulting in the dispersion of exotic species into a new habitat well beyond their natural distribution range. The international maritime organization (IMO) adopted the "International Convention for the Control and Management of Ships' Ballast Water and Sediments" in 2004. This instrument intends to better manage such adversely exotic intrusion episodes such that their influences on the marine resources, properties, and public health, can be minimized or prevented. This study intends to explore the ballast water management in Taiwan under the existing legal mandate. Document analysis, in-depth interview and a workshop with stakeholders were conducted to gather various opinions during the study. A framework of legal institution for the future ballast water management was then proposed in this report. Current results indicate that vessel based ballast water treatment systems are highly acceptable among the shipping industry when compared with the land-based ones. In term of future enforcement, the current PSC is under staffed and requires more training. Establishment of a risk evaluation system for ballast water is necessary, as well as the ballast water sampling and analysis protocols. As for the future legal system, we noticed that the adoption of Article 75 in the Commercial Port Act as the sole source for ballast water management is not necessary. We are more inclined to revise the current Marine Pollution Control Act and Commercial Port Act instead of installing a new law. The revision calls for recognizing the ballast water as a pollutant in both Acts and the lead agencies for law enforcement inside and outside the commercial ports. In additions, competent authorities should set up the ballast water management regulation and discharge standards. The achievement and future application of the study includes: (1) provide a comparison of ballast water management in other countries; (2) obtain opinions from ballast water management related stakeholders through in-depth interview and workshop; (3) propose a legal framework for future ballast water management.			
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第一章 前言

1.1 研究動機及目的

船舶不當排放壓艙水而導入外來生物種，對於目的地海域之生態環境、人類健康造成重大的威脅及嚴重的經濟損失已引起國際社會重視，國際上除了有《國際船舶壓艙水及沈積物控管公約》已於 2004 年通過，並有若干國家在公約生效前，為維護自身的海域環境已制訂相關管理制度並有相當程度的執行經驗。可見船舶壓艙水問題之解決確實需要透過法律制度作為依據。然而，船舶壓艙水管理在國內仍屬新興議題，對於船舶壓艙水對於我國海域的影響、相關管理辦法與需求的討論都缺乏資料。因此，本研究將透過分析比較壓艙水國際公約發展現狀與國際相關法規，並以訪談與專家諮詢之方式來瞭解港務機關及船舶相關之權益關係人對壓艙水管理之需求與意見，綜整出符合我國需求之壓艙水管理措施，盼能提出適宜的壓艙水管理法草案架構，並舉辦參與式管理座談會以瞭解權益關係人對草案架構之修正建議，供為管理法草案最後修正之參考，提供我國未來管理船舶壓艙水有利的參考。

1.2 研究範圍與對象

本計畫研究範圍首先將先由對《國際船舶壓艙水及底泥控管公約》內容以及國際上相關管理法規之內容進行研究分析，進而針對我國法律規定與管理需求研擬壓艙水管理草案架構，除法律文獻外，並將訪談國內壓艙水管理相關之權益關係人作為研究對象。

1.3 研究內容及工作項目

為期達成研究目的，本計畫本年度(102 年)之工作項目如下：

1. 國際公約發展現狀與趨勢評估；
2. 壓艙水管理之國際法制及實踐；
3. 針對船商、船舶代理商、海事公司等權益關係人訪談其對壓艙水管理之反應；
4. 政府部門涉及海洋環境污染、保育、航政及港口國管制等權責機關深度訪談。

第二章 研究背景分析

2.1 船舶壓艙水規範之需求與國際公約之簡史

在 1900 年以前，船舶所使用的固體壓艙物一般為石塊、砂子和泥土，並在目的地裝貨時將壓艙物卸下，由於固體壓艙物可能含有植物種子或樹幹，使得此時期之侵襲物種大多是植物。在 20 世紀後，開始廣泛地使用壓艙水作為船舶壓艙之物，特別是美國五大湖航道開通後，大量的外來種、浮游動植物移入五大湖流域，壓艙水成為外來種導入的原因之一。因壓艙水含有許多散佈在各區域中的多種生物，許多生物具有浮游體的生命週期以至於能透過壓艙水而傳遞(McGee et al., 2006)，其中因船舶運輸而意外導入的水生物種(Aquatic nuisance species, ANS)或外來種(Non-indigenous species, NIS)，如：舊金山灣的亞洲蛤(Asia Clam, *Potamocorbula*)、美國聖勞倫斯五大湖的斑馬貽貝(Zebra mussels, *Dreissena polymorpha*) 以及黑海的櫛水母(Comb jelly, *Mnemiopsis leidyi*)都是相當著名的例子(Carlton and Geller, 1993)。目前更有研究指出壓艙水能運送珊瑚病原體(Aquirre-Macado et al., 2008)。此外，壓艙水櫃還能運送浮游植物囊胞體(Cyst-forming Phytoplankton)，致使壓艙水成為有害藻華增生的原因之一(Smayda, 2007)，例如 Bolch and Salas(2007)便以分子技術驗證 *G. Catenatum* 是從日本瀨戶內海經由船舶壓艙水倒入紐西蘭和澳洲東南方海域，證實壓艙水具有裝載運送動植物的能力。而伴隨著航運發展與壓艙水的使用，促使國際間因船舶壓艙水導入外來種之情形日漸嚴重，亦使得外來種所造成之生態或經濟衝擊更為廣泛。

1980 年以來，聯合國與國際海事組織開始重視海洋環境保護問題，制定了一系列公約、大會決議案和指導性文件，加強船舶壓艙水控制與管理，例如：1982 年《聯合國海洋法公約》(United Nations Convention of the Law Of the Sea, UNCLOS)；1992 年「生物多樣性公約」(Convention on Biological Diversity, CBD)；聯合國環境與發展大會

要求國際海事組織(International Maritime Organization, IMO)考慮制定有關壓艙水排放規則；1993 年 IMO A. 774(18)號決議，將解決有害生物和病原體傳播置於重要地位；1997 年，國際海事組織制定「關於控制與管理船舶壓艙水，減少有害水生物和病原體傳播的指導方針」；2004 年，於英國倫敦召開國際海事組織大會，通過《國際船舶壓艙水和沉積物控管公約》(The International Convention for the Control and Management of Ship Ballast Water&Sediments, BWM Convention)(如附錄一、二)為壓艙水及其底泥的管理和控制提供了具有法律約束力的規範。本公約自 2004 年 6 月 1 日起至 2005 年 5 月 31 日在國際海事組織總部開放供各國簽署，之後繼續開放供各國加入，且將在世界商船總噸位 35%以上，且至少 30 個國家簽署、批准、接受、核准後，即可於 12 個月後正式生效，截至目前為止(2013 年 6 月 3 日) 已有 36 個國家簽署，總噸位占 29.07%。

2.2 適於我國之壓艙水處置方式

為使《國際船舶壓艙水和沉積物控管公約》能切實可行，海洋環境保護委員會(MEPC)在 2005 年制訂了 14 套壓艙水管理技術規範對於壓艙水公約的實施具有相當重要的參考性。這 14 套技術規範中提出了壓艙水處置方式可分為船上處置與岸上處置。美國環保署對於壓艙水處置的研討相同思維進行討論，若未於各步驟確實進行壓艙水管理將導致外來種入侵的結果。本研究團隊曾根據壓艙水公約中所建議之壓艙水處置方式對於適於我國之壓艙水處置方式進行研究，以下將簡述本團隊之研究成果。

2.2.1 進港船舶運輸型態分析

船舶壓艙水為外來種生物傳播之主要途徑，而壓艙水的排放是目前船舶排水項目中尚未管理卻嚴重影響港域水質原因之一，全球每日初估約有 3,000-4,000 種生物經由航運擴散至全球各地區，可見港域生態與水質變化明顯受船舶壓艙水之影響。商港內各船舶的航運型態，

亦成為壓艙水後續監測的重要依據。

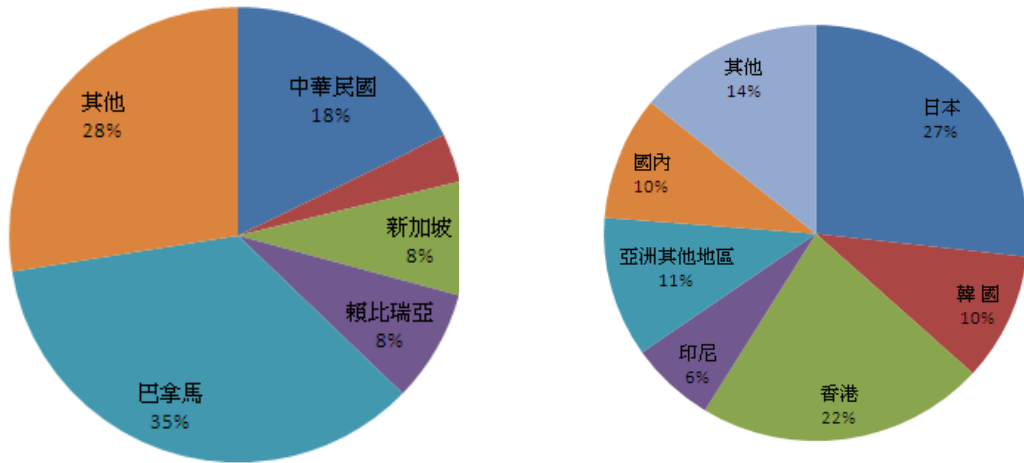


圖 2.1 臺中港93-96年進港船舶船旗國(左)與前一港來源比例圖(右)

本團隊先蒐集 93-96 年間臺中港區域進港船舶之航運資料，並將以國外地區航線為主進行運輸型態分析，包括船舶種類、船旗國、前一港來源地區等分佈與變化情形(交通部運輸研究所，2009)。研究結果顯示船旗國部分是巴拿馬為最大的來源國；船舶前一個停靠港是以亞洲為主，其中又以日本占了最大的比例。(圖 2.1)。船舶所裝載及排放之壓艙水來源遍佈世界各地，航行於各國港口間之船舶隨著進出口貿易型態的差異、船舶種類、進港次數或頻率、壓艙水來源港等差異而有多元的變化。掌握港口航運型態特性有助於壓艙水侵襲風險之評估與掌握。

2.2.2 外來侵襲物種資料庫建置

外來物種種類繁多，公約本身亦未對外來種做詳細之定義，然而公約中曾以舉例方式指出藻類為易藉由壓艙水侵襲之外來種，且有害藻類之入侵易造成重大環境影響，而藻類之生態資料亦相對較容易收集，故本研究主要著重於浮游動植物。研究結果發現由曾爆發藻華之地區亦為我國入港船舶上一港常造訪之港口，整理出 38 種有害物種中，其中 12 種已登記入臺灣物種名錄中，如甲藻門產生麻痺性貝毒的

Gyrodinium sp.；其餘 26 種未被列入名錄中(表 2-1)，未來針對高風險船舶進行採樣研究，調查壓艙水中是否含有此 26 類未被列入名錄的物種並進行追蹤，以進一步防範其入侵(交通部運輸研究所，2010)。

表2-1 可能入侵臺灣之外來生物種

物種	門
<i>Alexandrium catenella</i>	Pyrrophytya
<i>Chattonella antiqua</i>	Ochrophyta
<i>Chattonella marina</i>	Ochrophyta
<i>Cochlodinium</i>	Myxozoa
<i>Cochlodinium polykrikoides</i>	Myxozoa
<i>Cochlodinium sp.</i>	Dinophyta
<i>Gonyaulax polygramma</i>	Dinophyta
<i>Dactyliosolen fragilissimus</i>	Bacillariophyta
<i>Fibrocapsa japonica</i>	Ochrophyta
<i>Gymnodinium catenatum</i>	Myxozoa
<i>Gymnodinium mikimotoi</i>	Dinophyta
<i>Gymnodinium sp.</i>	Dinoflagellata
<i>Heterocapsa circularisquama</i>	Dinophyta
<i>Heterosigma akashiwo</i>	Ochrophyta
<i>Karenia digitata</i>	Dinophyta
<i>Peridinium sp.</i>	Dinophyta
	Haptophyta
<i>Polykrikoides</i>	Dinophyta
<i>Prorocentrum dentatum</i>	Dinophyta
<i>Prorocentrum sp.</i>	
<i>Protoperidinium quinquecorne</i>	
<i>Prymnesium saltans</i>	Haptophyta
<i>Prymnesium parvum</i>	Haptophyta
<i>Pseudonitzschia pungens</i>	Bacillariophyta
<i>Rhizosolenia fragillissima</i>	Ochrophyta
<i>Scrippsiella trochoidea</i>	Dinophyta

2.2.3 壓艙水風險評估系統建立

為了提高港口國官員的有效檢查率，本團隊以三階段篩選出高風險船舶 (圖 2.2) (交通部運輸研究所，2011)。第一階段使用 2009-2010 年勞氏港口指南內之港口海水密度，並經過轉換將港口分類，比對全球各來源港口與臺中港海域內溫度與鹽度之相似程度進行初步篩選，以相似程度之高低區分吻合之國家海域或港口，並加入航程分析，藉

以了解距離對外來種存活的影响；第二階段篩選使用美國海洋暨大氣總署(National Oceanic and Atmospheric Administration，NOAA)之國家海洋資料中心(National Oceanographic Data Center，NODC) 海上觀測站測量所得之各經緯度溫度與鹽度的長期觀測資料，利用此較為精確之溫度與鹽度資料以群集分析法(Cluster Analysis)中的階層分析法(Hierarchical Clustering Procedure)，進一步將被評為極度風險之港口做分類。第三階段篩選則利用航運型態分析，使用航程、船旗國、壓艙水量、進港次數與藻華發生地區等五項因素篩選船舶，以權重相等之積分方式，更進一步判斷這些船舶所帶來侵襲風險高低，藉以篩選出高風險船舶，以利港口國管制官員檢查。

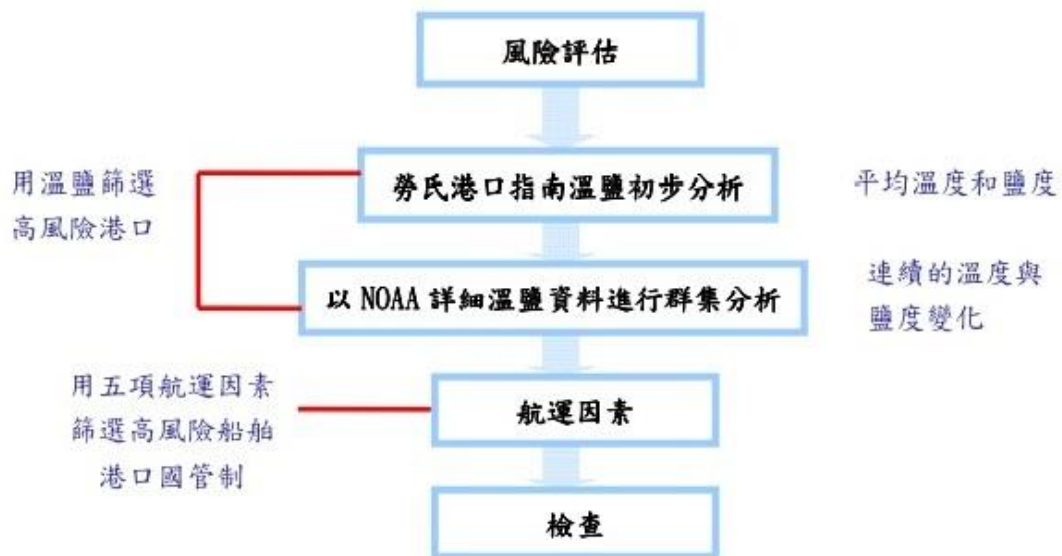


圖2.2 船舶壓艙水風險評估流程圖

以 98 年臺中港入港船舶為例統計(圖 2.3)，透過壓艙水風險評估系統，將原始進港船舶由艘數 1,422 艘，經過三階段篩選，最後列出高風險船舶 132 艘，僅占原始艘數的 9.3%。將此結果與現有之港口國管制系統結合，既可達到壓艙水管理目的並能提高港口國官員行政效率。

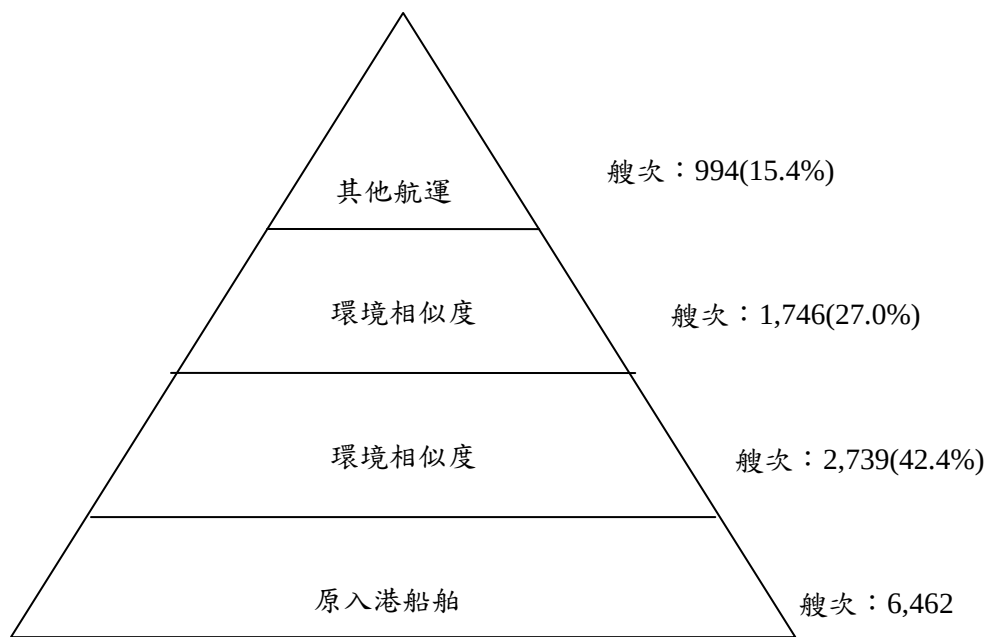


圖2.3 臺中港98年度進港船舶壓艙水風險評估結果

2.2.4 臺中港壓艙水於船舶或岸上處置設施之規劃

由壓艙水公約中所建議之「船用壓艙水管理系統」、「岸上壓艙水收受設施」進行討論。以電子問卷方式向國內規模較大三家航運公司進行調查(以下稱甲、乙、丙公司)，問卷發放期間為 2012 年 5 月 4 日至 5 月 25 日，調查船舶數為營運中船舶數 199 艘，建造中船舶數 50 艘(交通部運輸研究所，2012)。

研究結果顯示，目前並無任何營運中船舶已裝設壓艙水及其底泥沉積物之處理設備，但有 22.1%之船舶已預留了裝置壓艙水設備的空間，而建造中的船舶將裝置壓艙水處理設備率高達 76%，並有 10%建造中船隻已預留裝置壓艙水設備的空間(圖 2.4)。而對於岸上壓艙水管理系統之使用意願，三家航商意願都在「低度」以下(圖 2.5)，而影響使用意願的主要原因為「作業流程」、「船舶本身已配有壓艙水管理系統」，其次為「安全性」、「經濟效益」。

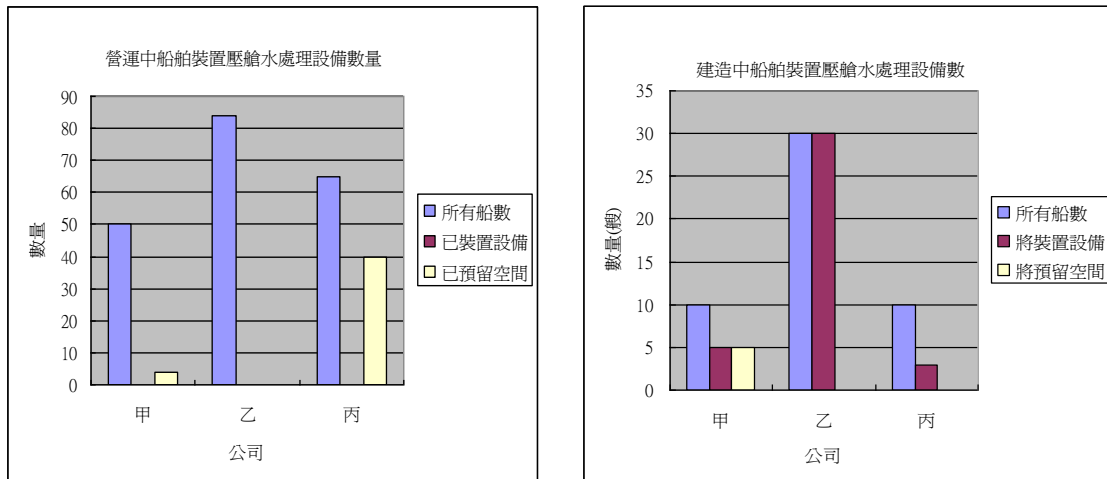


圖2.4 營運中船舶(左圖)與建造中船舶(右圖)裝置壓艙水處置設備率

研究結果顯示我國航商幾乎都傾向採用船用壓艙水管理系統，而對於使用岸上處置設備的意願較低，主要考量因素是對使用該設備可能會對作業流程造成影響，而使用船上壓艙水管理系統處置正具備了彌補這樣缺點的方便性，因而成為航運公司較傾向採用的方式。但因實務面上許多的不確定性，造成現有船何時安裝設備、選擇何套設備的觀望態度。因此我國公部門應積極研擬船舶使用船用壓艙水管理系統的各項檢查配套措施並提供相關可靠資訊，以協助業者配合時施政府管理政策。而岸上壓艙水收受設施由於技術問題仍有待克服以及目前國際上使用的案例極為少數，但其安全性高且較具公信力，因此可列為未來港口技術開發項目之一，尤以駁船式設備為較可行的應用。

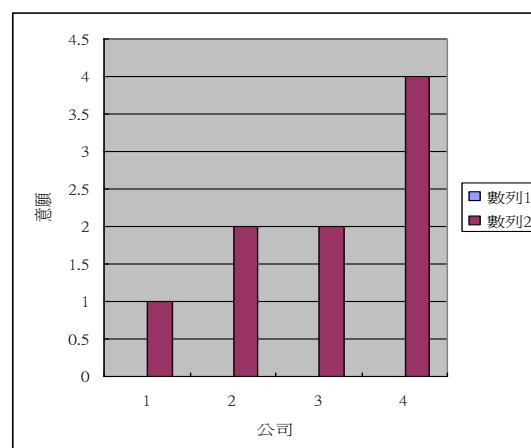


圖2.5 岸上壓艙水管理系統使用意願

2.3 國內壓艙水管理相關法規之現況

壓艙水管理在國內為新興議題，為瞭解我國現有的法規對於船舶壓艙水管理上之規範狀況與密度，以提供未來國內壓艙水管理法制檢討與建構之參考，本團隊擬就現有的法規中與船舶壓艙水相關者逐項進行檢視與分析(交通部運輸研究所，2012)。

2.3.1 海洋污染防治法相關法制

《海洋污染防治法》中第六章「防止船舶對海洋污染」就所規範的對象而言，應是與船舶壓艙水最直接相關的條文。

第二十六條，「船舶應設置防止污染設備，並不得污染海洋。」若前述之「污染海洋」亦將壓艙水所帶來之外來種生物威脅包含在內，則可依據此條文要求船舶設置船上壓艙水處理設備。但外來種生物所引發的海域生態環境改變並非一時可察，難以立即判斷一船舶所排放的壓艙水是否已對海洋造成污染，因此會有執法上的困難。

第二十七條，「船舶對海洋環境有造成污染之虞者，港口管理機關得禁止其航行或開航。」本條文使用「對海洋環境有造成污染之虞者」一詞對於壓艙水管理有正面的支持性。但 1982 年之《聯合國海洋法公約》當中並未賦予港口國得對於載有高風險壓艙水的船舶禁止航行或開航之權力；儘管如此，目前美、澳的作法是對於未符合該國壓艙水管理規定的船舶即禁止進入該國水域，並限制船舶排放壓艙水。但實施如此嚴格的管制將會影響港口的競爭力，是否值得參採，仍需在環境保護與經濟發展中進一步衡量。

第二十八條第一項，「港口管理機關或執行機關於必要時，得會同中央主管機關查驗我國及外國船舶之海洋污染防治證明書或證明文件、操作手冊、油、貨紀錄簿及其他經指定之文件。」本條文中所規定之「海洋污染防治證明書或證明文件」或是概括條款中所謂「其他經指定之文件」，皆可提供作為權責機關查驗船舶壓艙水資料申報之法律依據，亦即港口國官員登船進行一般文件檢驗時，尚可以前開兩

項條文依據作為附加查驗壓艙水紀錄相關文件(如：壓艙水紀錄簿)的規範依據。

第二十九條第一項，「船舶之廢、污、水、油、廢棄物或其他污染物質，除依規定得排洩於海洋者外，應留船上或排洩於岸上收受設施。」若所謂「污染」亦包含生物性污染，則壓艙水自可包含於本條文所謂之「其他污染物質」，因此本條文即可作為壓艙水管理方面可適用的規定。至於具體的作法則是適用本條文以限制船舶排放高風險壓艙水，或參考壓艙水公約之建議，要求船舶使用岸上壓艙水或底泥收受設施。但壓艙水所造成的外來生物種污染不同於其他污染物質是明顯有害、有毒而造成即刻性的後果，因此或可參考國際公約制定壓艙水水質排放標準，作為執法基準。

綜合上述，《海洋污染防治法》能否用以作為壓艙水管理之法源的關鍵點乃在於第二十九條「其他污染物質」是否可將壓艙水包括在內。倘若上述成立，如此環保署將為壓艙水管理之主管機關。源此基礎，關於船舶壓艙水之申報、登船檢查、排放限制、裝置處理設備等技術規範都以本法規範，由環保部門主管，並由港口機關配合執行。

另一問題爭議點在於，上述條文中之相關補充規定已由海洋污染防治法施行細則第十九條進一步定義：「本法第二十六條有關設置船舶防止污染設備、第二十七條有關船舶對海洋環境有造成污染之虞者之認定、第二十九條有關船舶之排洩及第三十條所稱船舶之適當防制排洩措施，依船舶法、商港法及航政主管機關之相關規定與國際公約或慣例辦理。」

根據前開規定，有關船舶造成海洋污染之認定及排放限制等，乃依「船舶法、商港法及航政主管機關之相關規定與國際公約或慣例辦理。」因此仍須進一步從交通部所主管之法規——《船舶法》、《商港法》進行檢視與探討。

2.3.2 商港法相關法制

新《商港法》於 2011 年 12 月 06 日三讀通過，並於 2012 年 3 月 1 日公布實行，此修正案對於港口機關在海洋污染之管轄範圍的界定上有重大改變。其中對於海洋污染行為的規範有重大調整。這可由新舊商港法第一條規定證明之；舊《商港法》第一條，「商港之規劃、建設、管理、經營及安全，依本法之規定；本法未規定者，依其他有關法律之規定。」新商港法第一條，「商港之規劃、建設、管理、經營、安全及污染防治，依本法之規定。」兩者間的差異在於新商港法新增了「污染防治」項目。

在立法院的修法理由上說明：「為提高商港區域污染防治業務之執行效能，將污染防治納入本法規範範圍，並酌作文字修正。」亦即過去由於「污染防治」未納入本法規範範圍，因此造成一旦船舶造成有害物質「入海」而使污染海水受污染的情節，港口機關根據「海水管理規則」必須進行管制。

新《商港法》將「污染防治」納入規範範圍，如此便可明確界定港口機關所需管理的船舶造成海洋污染的行為，根據新《商港法》第三十七條「商港區域內，不得為下列污染港區行為：一、船舶排洩有毒液體、有毒物質、有害物質、污油水或其他污染物之行為。二、船舶之建造、修理、拆解、清艙或打撈，致污染之行為。三、裝卸、搬運、修理或其他作業，致污染海水或棄置廢棄物之行為。四、船舶排煙、裝卸作業、輸送、車輛運輸或於堆置區，發生以目視方式，即可得見粒狀污染物排放或逸散於空氣中之行為。」港口機關只有權管轄在「商港區域內」的污染行為。而海水污染管理規則所根據的「商港法第三十五條之一」在新《商港法》生效後，已不存在。「海水污染管理規則」失去立法根據，是否仍可作為執法根據有待商榷。

2.3.3 船舶法相關法制

《船舶法》規範範圍可見於第一條：「為確保船舶航行及人命安

全，落實船舶國籍證書、檢查、丈量、載重線及設備之管理，特制定本法。」

與壓艙水較為相關者應屬第五章「排水設備」，對於七種設備進行規範，分別為：油水分離設備；油類排洩偵測管制系統；油水分界面偵測器；原油洗艙系統；污水處理設備及污水溶化消毒系統；標準排洩接頭；含油、污水；垃圾溶化粉碎器。上述設備並無法將壓艙水處理設備納入其中。未來若要求船舶需裝置船上壓艙水處理設備，需另立新法規範之。

第一〇一條為附則說明未盡事宜之辦理方法：「其他有關船舶技術與管理規則或辦法，主管機關得參照有關國際公約或協定及其附約所訂標準、建議、辦法或程式，予以採用，並發布施行。」因此可知僅根據船舶法雖可對於船舶技術與管理有所規定，但無法對於船舶造成海洋環境污染進行管制，且船舶法之適用對象亦僅限於我國籍船舶，無法要求外國籍船舶之船舶配備符合壓艙水處置相關規範。

2.3.4 小結

表2-2 與壓艙水管理相關之法制討論

	海洋污染防治法相關法制	商港法相關法制	船舶法相關法制
主管機關	環保部門	交通部門	交通部門
適用範圍	防治海洋污染，保護海洋環境	港區內之污染行為	我國籍船舶配備、技術等
爭議點	1.壓艙水是否被認定為「污染物質」(29 條)待商榷。 2.壓艙水不屬「海洋棄置物質」，因此壓艙水交換無法適用海洋棄置區法規。	可管制港區內船舶所造成之污染行為(37 條)，但港區外之船舶污染則無權管轄。	可對我國籍船舶設備加以規定，但無法對其他國籍規定。

船舶壓艙水管理規範範圍廣泛，包括壓艙水水質標準的建立與追蹤、申報制度與資料整理分析、處理設備的驗證核可等等項目，管理

對象包含進入我國港口的本國籍與外國籍船舶，由於《船舶法》只能對本國籍船舶進行規範，《商港法》僅能對「商港區域內的污染行為」進行管理，因此我國若要建立船舶壓艙水之法制管理，最相近之母法應為《海洋污染防治法》。但壓艙水目前尚無法明確定義為《海洋污染防治法》中的「其他污染物質」，環保署也無法據此進行壓艙水管理。表 2-2 為與壓艙水管理相關法制之整理。因此，為要實施船舶壓艙水管理亟需在法制上給予具有外來種入侵風險之壓艙水明確的定位。

第三章 調查壓艙水國際公約發展現狀與國際法制 及其實踐情形

3.1 國際控管船舶壓艙水及沉澱物公約之內容與現狀

為了防止、控制因船舶壓艙水所帶來的外來種入侵問題以減少目的地港口之海域生態環境、人類健康及經濟損失，國際海事組織(International Maritime Organization, IMO) 於2004年2月13日通過《船舶壓艙水和沉積物控管國際公約》(International Convention for the Control and Management of Ships Ballast Water and Sediments, BWM)，並於2006年海洋環境保護委員會(Marine Environment Protection Committee, MEPC)第55次會議通過了五個決議案作為公約附錄規則，合稱為《船舶壓艙水和底泥控管規則》(Regulations for The Control and Management of Ships' Ballast Water and Sediments)。為使壓艙水公約能切實可行，海洋環境保護委員會(MEPC)並陸續制訂了14套壓艙水管理技術規範(Technical Guidelines)，目前所有規範都已通過，對於壓艙水公約的實施具有相當重要的指導性。本節就公約正文、附錄規則、技術規範三方面說明公約內容，最後將說明公約目前的簽署現狀。

3.1.1 正文

公約本文共有 22 條，包括一般性的法律條款以及壓艙水管理上的技術性條款。

一般性的法律條款包括公約中專有名詞的定義(Art.1)、締約國的義務(Art.2)、爭議的解決(Art.15)、與國際法和其他協議的關係(Art.16)、各國成為公約締約國之簽署、批准、接受、核准和加入的條件(Art.17)、公約生效的條件(Art.18)、公約修正的程序(Art.19)、締約國的退出(Art.20)、公約之保存(Art.21)與公約正本的語言(Art.22)等項目。在定義部分的重要名詞包括「壓艙水」為「控制船舶橫傾、縱傾、吃水、穩性或應力而加裝到船上的水及懸浮物質」；「壓艙水管理」係指「用機

械、物理、化學和生物方法，單獨或聯合使用以清除、使無害、或避免加裝和排放壓艙水和沉積物中的有害水生物和病原體」；「證書」係指「國際壓艙水管理證書」；「有害水生物或病原體」係指「該水生物和病原體一旦進入海水，包括河口或進入淡水水體中，會危害環境、人類健康、財產及資源，影響生物多樣性及該種水域的其他合理利用」；而攜載壓艙水的工具—「船舶」係指「在水域環境中運行的任何類型的船舶，包括潛水船、水上船艇、浮動平臺、浮動式儲存裝置和浮動式生產、儲存和卸貨裝置」，但對於設計或建造為無需壓艙水或為密封型壓艙水之船舶、僅在一締約國水域內及公海上營運之船舶以及軍艦、海軍輔助艦、非商用公務船等本公約並不適用。公約於達雙重生效條件的 12 個月後生效，而生效條件為至少 30 個國家簽署且商船總噸位總和不少於世界商船總噸位之 35%。

壓艙水管理上的技術性條款，首先規定公約適用範圍(Art.3)，包括「有權懸掛締約國國旗的船舶」與「無權懸掛締約國國旗，但在該締約國的權力下營運的船舶」，但對於不攜帶有壓艙水的船舶或永久不排放壓艙水的船舶以及在特定水域內操作的船舶並不適用。為了控制藉由船舶壓艙水和沉積物所帶來的有害水生物和病原體，公約要求締約國遵守公約及其包括附錄規則所規定之標準與要求，並考慮國家情形與能力制定適用於其管轄水域和港口的國家政策，策略或項目，以促進公約目標的實現(Art.4)，並需在進行壓艙清洗或維修的港口和碼頭提供船舶沉積物收受設施(Art.5)。為確保船舶依公約規定實施壓艙水管理，對於進港船舶公約授權締約國可進行船舶檢查，包括三項內容：有效證書、壓艙水記錄簿與壓艙水採樣，但樣品的分析時間不應作為延誤船舶營運、行動或離港的理由(Art.9)，並規定對於船舶的核對與認證以及所有的壓艙水管理措施，都不得對船舶造成不當延誤(Art.7)(Art.12)。若是船舶造成違規的事實，可對違規船提起法律訴訟、將所發生違規事件的情況和證據提供給該船的主管機關(Art.8)或將違規船舶的相關資訊通知下一港口(Art.11)，締約國間也可對於違規船舶的調查與公約的實施進行合作(Art.10)。此外，對於壓艙水管理的科學

和技術研究及監測(Art.6)、技術支援等(Art.13)、資訊交流(Art.14)等，公約建議各國能進行合作，尤其是在具有保護環境、人類健康、財產及資源共同利益之地理區的締約國間。

3.1.2 附錄規則

公約附錄規則《船舶壓艙水和底泥控管規則》(Regulations for The Control and Management of Ships' Ballast Water and Sediments)，共包括五部分內容，分別為「A 總則」、「B 船舶管理和控制要求」、「C 某些區域的特殊要求」、「D 壓艙水管理的標準」、「E 壓艙水管理的檢驗與發證要求」，提供了對於壓艙水管理詳細的規定要求。

「A 總則」部分首先對於附錄規則中的專有名詞加以定義，其中由於公約中壓艙水管理的實施時程會因船舶的建造日期有所不同，因此需特別注意「建造」的定義，公約中的「建造」包括一艘船的四種建造階段：(1)安放龍骨；(2)可辨認出某一具體船舶的建造開始；(3)或該船已經裝配了至少為 50 噸或為所有結構材料估算品質的 1%的材料，取其較小者；(4)船舶正在進行重大改建(Regulation A-1.4)。此外，公約中對於壓艙水管理系統也有規定的認證標準，而對於「活性物質」的定義為「對有害水生微生物和病原體具有一般或特殊作用的一種物質或微生物，包括病毒或真菌」。「定義」條文後，便是對於公約的一般適用(Regulation A-2)、例外情形(Regulation A-3)、當事國的特殊許可(Regulation A-4)與等效要求(Regulation A-5)等規定。

「B 船舶管理和控制要求」部分對於船舶如何進行壓艙水管理與控制提供詳細的說明。首先，每艘船舶需備有經主管機關批准的「壓艙水管理計畫」(Regulation B-1)，內容應包含根據公約要求所擬定的壓艙水管理程序、實施壓艙水管理所採取的行動、沉積物在海上及在岸上的處理程序、負責壓艙水管理計畫實施的船員、公約所規定的船舶報告要求。其次，每艘船舶需備有「壓艙水記錄簿」(Regulation B-2)，型式上可以是電子記錄系統或是船上其他記錄簿或系統的一部分，內容須包含船舶基本資料及壓艙容量，汲取壓艙水的時間、距離港口的

位置與深度、水量，為壓艙水管理之目的而處置壓艙水的時間與水量，排放壓艙水入海的時間與水量，排放壓艙水到收受設施的時間與水量，意外或例外性以外的汲取或排放壓艙水的時間、位置與水量等等項目(Appendix II)。與壓艙水管理計畫不同的是壓艙水記錄簿需要及時將壓艙水管理的相關作業詳細記錄，每項記錄應由高級船員或負責操作的人員簽名，且每記完一頁應由船長簽字，最後一項記錄在完成後在船上至少保留兩年，之後再由船公司保存至少三年。第三，對於船舶壓艙水管理明確地依照船舶建造日期與壓艙容量來規定實施日期(Regulation B-3)，如表 3-1 所示。在 2009 年之前建造的船舶，如壓艙容量在 1500 至 5000 立方公尺之間並包括 1500 和 5000 立方公尺的船舶，需在 2014 年前須滿足或超過第 D-1 或 D-2 條規定標準的壓艙水管理，在此時間之後，須滿足或超過第 D-2 條規定的標準；如壓艙容量小於 1500 立方公尺和壓艙容量大於 5000 立方公尺的船舶，在 2016 年前須滿足或超過第 D-1 或 D-2 條規定標準的壓艙水管理，在此時間之後，須滿足或超過第 D-2 條規定的標準。在 2009 年或之後建造的船舶，壓艙容量小於 5000 立方公尺，須進行滿足或超出第 D-2 條規定標準的壓艙水管理。在 2009 年或之後但在 2012 年之前建造的船舶，壓艙容量等於或大於 5000 立方公尺的船舶，在 2016 年前須滿足或超過第 D-1 或 D-2 條規定標準的壓艙水管理，在此時間之後，須滿足或超過第 D-2 條規定的標準。在 2012 年或之後建造的船舶，壓艙容量達到或超過 5000 立方公尺，須進行滿足或超出第 D-2 條規定標準的壓艙水管理。

表 3-1 壓艙水管理實施時程(黃余得，2013)

建造年分 (西元年)	壓艙水容量 (立方公尺)	2009	2010	2011	2012	2013	2014	2015	2016
2009 以前	1500~5000	D1 或 D2					D2		
	<1500 or >5000	D1 或 D2							D2
2009 以後	<5000	D2*							
2009-2011	≥ 5000	D1 或 D2							D2
2012 以後		-----			D2				

註：依 A.1005(25)：2009 年建造者，2011/12/31 前應改為 D2。

第四，壓艙水交換位置的規定(Regulation B-4)。如果可能，船舶應在距離最近陸地至少 200 海浬和水深至少 200 公尺以上的位置依公約規定進行壓艙水交換，若上述情形無法達到，須盡可能地遠離陸地，在任何情況下距離最近陸地不得少於 50 海浬和水深不得少於 200 公尺。如果仍無法找到滿足上述條件的海域，港口國可藉由諮詢鄰國或其他締約國，指定船舶可以進行壓艙水交換的適當區域。但在任何會影響船舶安全、穩定性而對船員或乘客構成威脅的情況下，就不受上述壓艙水交換位置的限制。第五，船舶沉積物管理的規定(Regulation B-5)，係指船舶應對壓艙中的沉積物進行清除和處理，並提供安全通道以進行沉積物的清除和採樣。第六，高級船員和船員應熟悉壓艙水管理計畫(Regulation B-6)。

「C 某些區域的特殊要求」，這是讓締約國可依其區域特殊性，要求船舶達到額外標準的根據。

「D 壓艙水管理的標準」，作為「B 船舶管理和控制要求」的實施標準，首先規定壓艙水交換標準(Regulation D-1)，這是對於壓艙水體積交換率的明確規定。船舶如使用連續交換法應達到 95%的體積交換率，如使用稀釋交換法(磊吸法)則應注入排出三倍於壓艙容積的水量。其次規定壓艙水性能標準(Regulation D-2)，意為經過壓艙水管理系統處置過之壓艙水中的生物量必須達到該標準，才能排放入海，標準列出

如下(中國驗船中心譯文，2009)：

1. 壓艙水所含有的可存活生物，其尺寸在大於或等於 50 微米時，每立方公尺要少於 10 個，其尺寸小於 50 微米時，但大於或等於 10 微米時，每毫升要小於 10 個指標微生物。
2. 每 100 毫升要少於 1 個 CFU (colony forming unit 菌落形成單位)的有毒霍亂弧菌(*Vibrio cholera*)，或每公克要少於 1 個 CFU 的浮游生物樣品。
3. 每 100 毫升要少於 250 個 CFU 的大腸桿菌(*E. Coli*)。
4. 每 100 毫升要少於 100 個 CFU 的腸球菌(*Enterococci*)。

「E 壓艙水管理的檢驗與發證要求」，對於船總噸在 400 噸及以上的船舶有五類的檢驗(BWM Convention E-1)，分別為初次檢驗、換證檢驗、期間檢驗、年度檢驗、附加檢驗(Regulation E-1)，通過的船舶主管機關應保證為其簽發證書。

3.1.3 技術規範

公約之技術規範並非強制性要求，而是提供各國對於壓艙水管理在技術上的指導，從壓艙水的採樣、交換，到風險評估、建立收受設施、劃設交換範圍等，使得壓艙水管理有其規則可循，表 3-2 為各技術規範標題與通過日期。

**表 3-2 《壓艙水公約》之技術規範
(website of IMO, The Technical Guidelines)**

編號	標題	通過日期
G1	沉積物收受設施規範(Guidelines for sediments reception facilities)	2006/10/13
G2	壓艙水採樣規範(Guidelines for Ballast Water Sampling)	2008/10/10
G3	壓艙水管理等效符合規範(Guidelines for ballast water management equivalent compliance)	2005/07 /22
G4	壓艙水管理和壓艙水管理計畫制定規範(Guidelines for Ballast Water Management and Development of Ballast Water Management Plans)	2005/07 /22
G5	壓艙水收受設施規範(Guidelines for ballast water reception facilities)	2006/10/13
G6	壓艙水交換規範(Guidelines for Ballast Water Exchange)	2005/07 /22
G7	《壓艙水公約》第 A-4 條規定內的風險評估規範(Guidelines for Risk Assessment under Regulation A-4)	2007/07/13
G8	壓艙水管理系統認證規範(Guidelines for approval of Ballast Water Management Systems)	2008/10/10
G9	使用活性物質的壓艙水管理系統的認證流程(Procedure for Approval of BWM systems that make use of Active Substances)	2008/04/04
G10	原型壓艙水處理技術流程認證和監督規範(Guidelines for approval and oversight of prototype ballast water treatment technology programs)	2006/03/24
G11	壓艙水交換的設計和構造標準規範(Guidelines for Ballast Water Exchange Design and Construction Standards)	2006/10 /13
G12	便於船舶沉積物控制的設計和構造規範(Guidelines on Design and Construction to Facilitate Sediment Control on Ship)	2006/10 /13
G13	壓艙水管理(包括緊急情況)的附加措施規範(Guidelines for additional measures including emergency situations)	2007/07/13
G14	指定壓艙水交換區域規範(Guidelines on designation of areas for ballast water exchange)	2006/10/13

技術規範一「沉積物收受設施規範」(G1)為環境保護委員會第五十五屆會議第152號決議案(Resolution MEPC.152(55))，根據公約正文第5條規定締約國應於進行壓艙清洗或修理的港口或碼頭提供充分的設施來接收沉積物所制定的技術規範，旨在鼓勵這些設施和船舶之間能有全球統一的界面，而並非被限定於岸上的特定收受設施。對於沉積物收受設施的提供，已收受之沉積物的處理、裝卸和處置，收受設施的能力，操作人員的培訓等項目都有細節的規範與建議。

技術規範二「壓艙水採樣規範」(G2)為環境保護委員會第五十八屆會議第173號決議案(Resolution MEPC. 173(58))，根據公約正文第9條對於船舶檢查的規定中提及的壓艙水採樣項目，對於港口國之監督主管機關提出對於實施取樣和分析的技術指導與基本建議，與法律要求無關。需要注意的是對於壓艙水交換標準(D-1)與壓艙水處理標準(D-2)的參數是不同的，因此取樣方式也有所不同。對於壓艙水交換是否符合標準的檢查的取樣，可以經由深管或空氣管和人孔，使用泵、取樣瓶或其他容器進行艙內取樣，也可以從排放管線來取樣。然而對於壓艙水處理是否符合標準的檢查取樣則沒有對取樣點的要求，因為上述的採樣位置不能得到準確的生物密度檢測值，因此原則上應在壓艙水排放時，從排放管線中盡可能靠近排放點處取樣，如果因壓艙系統的設計不能從排放管路取樣，則需有其他的取樣安排，在對於壓艙水管理系統的認證規範(G8)中便要求系統需提供採樣的裝置。壓艙水的取樣和分析具有相當的複雜性與技術性，因此技術規範中鼓勵各國持續研發新的壓艙水取樣和分析方法。

技術規範三「壓艙水管理等效符合規範」(G3)為環境保護委員會第五十三屆會議第123號決議案(Resolution MEPC. 123(53))，是為主管機關判斷船舶是否符合公約附錄規則第A-5條對於長度小於50公尺、壓艙水滿載量為8立方公尺之娛樂、競賽專用遊艇或搜救船艇的符合條款，其中總長度是指船殼長度，並不包括船首斜桅、木桁、滑車掛杆，控制室等。對此類船舶的壓艙水排放可以根據第D-4條在排放前要求換水或者根據主管機關的要求予以處理，沉積物部分也需定期清

理、清除。

技術規範四「壓艙水管理和壓艙水管理計畫制定規範」(G4) 為環境保護委員會第五十三屆會議第127號決議案(Resolution MEPC. 127(53))，根據公約正文第 A-2條要求船舶只能按照公約所規定之壓艙水管理進行壓艙水排放，以及附錄規則第 B-1條規定，每艘船舶須在船上備有並實施主管機關核准的壓艙水管理計畫所制定。本技術規範由兩部分組成：A 部分「壓艙水管理規範」和 B 部分「制訂壓艙水管理計畫的規範」。A 部分「壓艙水管理規範」，包括對壓艙水管理的一般性原則指導，對於船舶的操作程序有細節的說明，首先是預防性的實施作法，船舶可選擇避免不必要的排放壓艙水，或者考量汲取位置以減少打上有害的水生有機物體、病菌和沉積物的可能性；然後對於壓艙水管理共提共四種選項，分別為壓艙水交換、使用壓艙水管理系統、排放到壓艙水收受設施、原形壓艙水處理技術；最後也對沉積物管理提供建議。B 部分「制訂壓艙水管理計畫的規範」，包括對公約附錄規則第 B-1條要求的壓艙水管理計畫之架構和內容的指導，要注意的是公約附錄規則第 B-1條對於「計畫」的概念是一個簡單的文件，是由船上從事船舶壓艙水管理的操作人員使用的檔，因此，計畫必須使用船員的工作語言，且在締約國授權的官員檢查時即可得到。在架構與內容上須包括壓艙水處理程式(如壓艙水汲取、使用壓艙水管理系統的步驟程式和次序、任何操作性或安全性限制)、沉積物的處理常式和具體情況、壓艙水記錄簿(包括給予免除的詳細記錄)、其他(前言、船舶基本資料、壓艙水取樣點資料、船員培訓和熟悉情況資料)。本技術規範也提供了壓艙水管理計畫的標準格式(Standard Format For The Ballast Water Management Plan)。

技術規範五「壓艙水收受設施規範」(G5) 為環境保護委員會第五十五屆會議第153號決議案(Resolution MEPC. 153(55))，根據公約附錄規則第 B-3.6 條所規定的壓艙水接收設施提供技術性指導，但並非強制性要求締約國提供此類設施，而是鼓勵這些設施和船舶之間的全球統一界面，但不限定於岸上的特定接收設施。收受設施的提供包括管

線、總管、異徑管節、設備和其他資源，盡可能使所有希望在港內排放壓艙水的船舶使用該設備，並應提供給使用該設備的船舶足夠的系泊設備及安全的錨地。所收受經處理的壓艙水如要排放到水生環境中，應至少滿足公約附錄規則第 D-2 條規定的性能標準。

技術規範六「壓艙水交換規範」(G6) 為環境保護委員會第五十三屆會議第124號決議案(Resolution MEPC. 124(53))，根據公約附錄規則第 B-4 條與第 D-1條提及之壓艙水交換要求提供船東和經營人關於制定船舶實施壓艙水置換程式一般性指導，但壓艙水交換可能會影響船舶及船員的安全，且船舶種類各不相同，無法對每種船舶類型提供具體的指導，船東應考慮其船舶的各種不定因素(如船舶的型號和尺寸、壓艙構造及其水泵系統、航行線路和天氣情況、港口國的要求和人員配備等)規畫適宜的壓艙水交換程式。為滿足公約附錄第 D-1條中對於壓載水交換應到達95%體積的交換率或對於使用泵吸法進行壓艙水排放的船舶，注入與排出量應超過每個壓艙三倍容量的水泵，可選擇的壓艙水交換方法有三種：連續交換法(注入頂出法)、溢流法和稀釋法，其中連續交換法和稀釋法被認為是泵吸法。三者分述如下：連續交換法—清空承載壓艙水的壓艙，重新注入替代壓艙水，以此到達95%體積壓載水的置換率。溢流法—將新的壓艙水注入原有的壓載水，同時也讓水流溢出或做其他安排。稀釋法—將新的壓艙水從承載有壓載水的壓艙頂部注入艙中，同時從艙底以相同的流速排放壓艙水，並在置換過程中保持艙內一定的水量。

技術規範七「《壓艙水公約》第 A-4 條規定內的風險評估規範」(G7) 為環境保護委員會第五十六屆會議第162號決議案(Resolution MEPC. 162(56))，基於在公約附錄規則第 A-4 條所規定的免除規定，提供關於三種風險評估的原則和方法以及所需的資料建議和資訊等，分別為環境相似風險評估法、物種生物地理風險評估法、特定物種風險評估法。環境相似風險評估法是對環境條件，將壓艙水來源港口和目的港口之間的溫度和鹽度進行比較，兩個地點之間的相似度可顯示出生物種生存的可能性以及地點之間轉移可能性。物種生物地理風險評估法是對

照目前存在於來源港口、目的港口和生態地理區的非本土、隱秘性和有害本土物種的生物地理分佈。特定物種風險評估法則是以生物的生活史和生理適應的資料來來評估一個物種的生理極限，藉此預測其在目的港口的環境中存活或完成生命週期的可能性，從而確定其轉移和存活的可能性。

技術規範八「壓艙水管理系統認證規範」(G8)為環境保護委員會第五十八屆會議第174號決議案(Resolution MEPC. 174(58))，基於公約附錄規則第 A-2條 和第 B-3條規定，船上排放的壓艙水必須滿足公約附錄規則第 D-2條標準，以及公約正文第9 條規定之港口國監督採樣的需求所制定的技術規範。須注意系統認可不能保證某一系統適用於所有船舶或所有情況，為達公約要求，檢查船舶壓艙水排放須以符合公約附錄規則第 D-2條為原則。「壓艙水管理系統」(Ballast Water Management System, BWMS)包括壓艙水處理設備、所有相關的控制、監測和採樣設備。在此技術規範中提供了對於壓艙水管理系統、壓艙水處理設備和控制和監測設備的技術規範，以及提交供認可的檔說明、認可和發證程式、安裝要求(壓艙水管理系統應設有採樣裝置，其位置應能採集到船上具有代表性的壓艙水樣品)、安裝核對總和啟用程式等項目。在各方面都符合規定的壓艙水管理系統，主管機關可對其船上安裝給予認可，簽發「壓艙水管理系統型式認可證書」(Type Approval Certificate Of Ballast Water Management System)。本技術規範並提供五個附件作為細節性的指導：系統檔測試前評估規範、壓艙水管理系統認可的測試和性能規範、壓艙水管理系統認可的環境測試規範、確定壓艙水中生物組成的樣品分析方法、壓艙水管理系統型式認可證書。

技術規範九「使用活性物質的壓艙水管理系統的認證流程」(G9)為環境保護委員會第五十七屆會議第169號決議案(Resolution MEPC. 169(57))，根據公約附錄規則第 D-3.2條對於使用活性物質的壓艙水管理系統應經國際海事組織的批准通過的規定所制定的規範。「活性物質」是指一種物質或生物，包括病毒或真菌，其對有害水生物和病原

體具有一般或特定的作用或抑制，而「製備劑」是指含有一種或多種活性物質(包括任何添加劑)的商業配方。活性物質和製備劑會與船舶壓艙水和沉積物中的有害水生物和病原體發生作用而達到殺菌的目的，但是如果處理過的壓艙水仍有毒而排放至水域中，將對其中的生物造成不可承受的傷害，因此活性物質或製備劑以及壓艙水的排放都必須經過毒性檢測，以保護接收環境或人類健康免於受到壓艙水排放造成的毒性影響並確保活性物質和製備劑的永續使用性。本技術規範中包括對於使用活性物質的壓艙水管理系統的一般性要求、風險特徵描述(包括持久性、生物積累和毒性篩檢，經處理過後的壓艙水毒性測試，風險特徵描述和分析)、評估核准、活性物質和製備劑的使用規定(包括活性物質和製備劑的處理，危險物質的記錄和標籤，程式和使用)以及認可(基本認可與最終認可)等項目。

技術規範十「原型壓艙水處理技術流程認證和監督規範」(G10) 為環境保護委員會第五十四屆會議第140號決議案(Resolution MEPC.140(54))，基於公約附錄規則第D-4條，對有可能符合或超出公約第D-2條規定的性能標準並具有良好前景的船上壓艙水處理技術進行試驗和評估提供機會，並且隨著壓艙水管理知識、經驗和技術的持續發展，相關規範也將不斷更新。本技術規範中對於原型壓艙水處理技術程式應三個主要步驟，分別為(1)程式的申、提交和認可，(2)安裝核對總和符合聲明，(3)性能評估和報告。

技術規範十一「壓艙水交換的設計和構造標準規範」(G11) 為環境保護委員會第五十五屆會議第149號決議案(Resolution MEPC.149(55))，本技術規範是為符合公約附錄規則第D-1條壓艙水交換標準所提出對於船舶設計和建造的建議，包括設計和建造方面的考慮與加強管理、控制和操作對策的設計考慮。

技術規範十二「便於船舶沉積物控制的設計和構造規範」(G12) 為環境保護委員會第五十五屆會議第150號決議案(Resolution MEPC.150(55))，根據公約附錄規則第B-5.2條的要求，在不損害安全和操作效率的前提下，船舶的設計和構造應考慮以最大限度減少沉積物的汲

取和不良積聚，便於清除沉積物並為沉積物的清除和取樣提供秘密頻道所制定的規範。這是由於船舶所汲取的壓艙水可能含有某些固體淤積物質，當水在船舶壓艙內靜止下來，這些物質便會在艙底或其他內部結構上沉積，而水生物也能從壓艙水中沉積下來並能在沉積物中繼續存活，可能對目的港口之環境、人類健康、財產和資源造成傷害或破壞，因此本技術規範對於減少沉積物積聚的船體設計提供具體指導。

技術規範十三「壓艙水管理(包括緊急情況)的附加措施規範」(G13) 為環境保護委員會第五十六屆會議第161號決議案(Resolution MEPC. 161(56))，根據公約附錄規則第 C-1 條規定所制定，當締約國有意引入附加措施，應考慮本技術規範，對於其要引入的附加措施需進行評估，包括其需求和性質上的評估、附加措施須明確定義(如精確座標區域、有效時間等)、引入建議措施的效果和影響、建立附加措施所遵循的程式等項目，或當一國有緊急情況或疫情時，亦可制定附加措施來解決、控制。

技術規範十四「指定壓艙水交換區域規範」(G14) 為環境保護委員會第五十五屆會議第151號決議案(Resolution MEPC. 151(55))，根據公約附錄規則第 B-4.2 條允許港口國無法滿足公約附錄規則第 B-4.1 條與第 B-4.2 條的參數時，可視情形與鄰國或其他國家協商，指定船舶可以進行壓艙水交換的區域。本技術規範提供劃設指定壓艙水交換區域的三個步驟：識別、評估和指定。識別是指確定壓艙水交換的潛在區域，需要考量法律問題、重要資源和保護區域以及航行局限性。評估是指對已確定的區域從各方面進行評估，包括海洋學(例如水流、水深)、物理學與化學(例如鹽度、營養、溶氧量、葉綠素 A)、生物學(例如有害水生物和病原體的存在，包括孢囊、生物密度)、環境學(例如人類活動的污染)、重要資源(如漁業捕撈區、海產養殖場)、壓艙水操作(如數量、來源、頻度)。最後才能指定壓艙水交換的區域，並且需要定期進行監測和複審。

3.1.4 公約現狀

《船舶壓艙水和沉積物控管國際公約》的最新簽署情形為 38 個國家簽署，總噸數達全球商船噸數之 30.38% (截至 2013 年 9 月 30 日)，已達到雙重門檻之一(BWM Convention Art.17)，公約生效指日可待。

目前已簽署的國家為安地卡及巴布達(Antigua and Barbuda)、巴貝多(Barbados)、巴西(Brazil)、加拿大(Canada)、科克群島(Cook Islands)、克羅埃西亞(Croatia)、埃及(Egypt)、法國(France)、伊朗(Islamic Republic of Iran)、肯亞(Kenya)、基里巴斯共和國(Kiribati)、黎巴嫩(Lebanon)、馬來西亞(Malaysia)、馬爾地夫(Maldives)、馬紹爾群島(Marshall Islands)、墨西哥(Mexico)、蒙古(Mongolia)、(Montenegro)、荷蘭(Netherlands)、奈及利亞(Nigeria)、紐鄂島(Niue)、挪威(Norway)、帕勞(Palau)、南韓(Republic of Korea)、俄羅斯(Russian Federation)、聖基茨(Saint Kitts)、尼維斯(Nevis)、獅子山共和國(Sierra Leone)、南非(South Africa)、西班牙(Spain)、瑞典(Sweden)、敘利亞(Syrian Arab Republic)、千里達和托巴哥共和國 (Trinidad and Tobago)、吐瓦魯(Tuvalu)等國。

3.2 美國之船舶壓艙水管理法制及其實踐現況

3.2.1 美國之船舶壓艙水管理法制

美國壓艙水管理法制之是源自於 1990 年的《外來有害水生生物防止和控制法》(US Nonindigenous Aquatic Nuisance Prevention and Control Act, NANPCA)以及之後針對 1990 年法案在 1996 年訂出的修正案《國家入侵物種法》(National Invasive Species Act of 1996, NISA)，故為追本溯源以下將針對 1996 年的修正案中與壓艙水規制有關之法案進行介紹，其內容共分成四個大標題(TITLE I-IV)而其中的 **TITLE I** 又分為五個副標題(**Subtitle A-E**)，其中與壓艙水有關的為 **Subtitle A**，如表 3-3 所示。

表 3-3 TITLE I~ IV 與壓艙水有關的法案

標題		標題名稱
TITLE I		水中有害生物的預防和控制(AQUATIC NUISANCE PREVENTION AND CONTROL)
Subtitle	A	總則(General Provisions)
	B	非原生水生生物無意間引入之預防(Prevention of Unintentional Introductions of Nonindigenous Aquatic Species)
	C	水中有害生物傳播之預防與控制(Prevention and Control of Aquatic Nuisance Species Dispersal)
	D	撥款授權(Authorizations of Appropriation)
	E	共同的環境分析(Cooperative Environmental Analyses)
TITLE II		五大湖魚類和野生動物復育(GREAT LAKES FISH AND WILDLIFE RESTORATION)
TITLE III		濕地(WETLANDS)
TITLE IV		五大湖原油污染的研究結果與開發(GREAT LAKES OIL POLLUTION RESEARCH AND DEVELOPMENT)

Subtitle A 之內容為一般原則，內容包含了本法案之名稱以及對國內外來種入侵與壓艙水關係的調查，並藉此點明管控壓艙水的必要性，在調查結果中認為排放未處理的壓艙水會在無意間把非原生種生物引入淡水、非鹹水區及鹹水區的環境中，且當所處環境對非原生種是適合的時候，非原生種會對原生種產生競爭或捕食的現象，也可能攜帶影響本土種之疾病或寄生蟲並破壞周遭環境及造成經濟上的影響，而為了解決以上水中有害生物的相關問題，依法聯邦及州政府將會參與及合作並在發展出預防方法上進行投資。而在本段同樣也點出了施行的目的，是為了預防非原生種透過壓艙水處理及其他處理方法入侵與擴散到美國水域，並協調聯邦政府的執行、資助、研究授權、預防控制、資訊傳播及其他關於水中有害生物的行為，同時開發及執行對環境無害的方法來預防、監控及控制非原生種生物從壓艙水以外途徑的入侵，最後則試圖盡可能的減少已入侵之非原生種生物對於環

境及經濟的影響。另外在本標題中也對過來在法案中使用之名詞作出解釋，使閱讀者能夠明白法條中規定的意涵，以下就對於重要的名詞部分作出介紹：「部長」是指現任海岸巡防局的部長，「副局長」則指商務部中的海洋與大氣部門中的副局長，「副部長」指的是陸軍部土木工程處副部長，「主管」是指美國魚類和野生動物服務處之主管，「非原生種生物」指進入到超出其原先活動範圍之任何生物或其他活的生物原料，包含任何從一個國家傳到另一國家的生物，「專案小組」指由本法成立之水中有害生物專案小組。

Subtitle B 則是為了預防非原生種在無意間被引入美國本土而制定，其內容主要包含有 sec1101-sec1104，規定的內涵眾多首先是 sec1101，為了管制美國水域的水中有害生物而要求部長在以船隻及其乘客的安全為前提下制定出相關準則，來預防非原生種生物透過壓艙水的排放入侵到包含五大湖區在內的美國水域，同時在本節中也規定了執行人員的權力範圍以及相關人士所應注意與遵守之事項，並定出了在一般情況與特定情況下的豁免規定，使船隻在遇到危險時可以不必遵守壓艙水的相關排放規定而直接排放，最後也明定違背本規定的罰則，雖有一天開罰上限 25,000 美元之規定，但若船隻不加以改善相關情況則可以按天數連續開罰。

Sec1102 則是關於壓艙水處理資訊的整合及應用，在本段中首先是透過法律規定來要求政府單位執行關於水中有害生物透過船隻入侵之研究，除了評估壓艙水在美國河口、海洋、淡水區等原生種豐富及複雜的地區交換所造成的影響並鑑定在美國境內的水域及專屬經濟區，是否有地區進行壓艙水交換不會造成外來種入侵或散播的威脅之外，也要求對於水中有害生物可能的入侵途徑以及對經濟、周邊環境與生態等造成的影響進行調查並對國會定期提出報告，最後則要求研擬出相關的應對方法與管制規定來阻止外來種透過壓艙水入侵。

最後 sec1103 及 sec1104 則分別是武裝部隊的壓艙水方案及壓艙水管理之實證項目，在前項的部分分別是針對國防部與海岸巡防局的船隻作出特別的規定，其要求國防部部長在諮詢過本部部長、專責小組

及國際海運組織後，應該實施一個針對國防部海上船隻的壓艙水管理計畫，而對海岸巡防局也提出了相同的要求，來降低非原生種生物透過壓艙水入侵的可能。而在後項的部分的規定則是為了使壓艙水管制的相關技術能夠應用在現行船隻上而制定，其要求在技術與做法上作出展示並要求不同的單位進行協商與合作。

Subtitle C 的內容是關於水中有害生物的預防及控制，法條中重要的內容包含了 sec1201-1206，首先是 sec1201，此法條的內容使專責小組得以成立，同時規定專責小組的成員該由哪些人組成，以及專責小組這個組織的結構與如何執行其工作等，而 sec1202 則是關於水中有害生物應對方案的制定，在本規定中要求專責小組應該為美國水域制定及實施預防水中有害生物入侵和擴散之方案，以監視、控制及研究這些物種，並傳播相關的訊息，而這個方案的內容要能夠確定水中有害生物預防、監測、控制、教育及研究之目標、優先順序及方法。另外，專責小組應該建立及落實相關措施以盡可能降低水中有害生物入侵美國水域之風險，同時控制已入侵之水中有害生物並把其對於環境、公眾福利與健康的傷害風險減到最低，而此控制的行動包含根除入侵種、減少其數量、適應人類活動方法的處理、配合處理入侵種的公共設施、預防入侵種從現有地區散佈到其他地區。專案小組應提供機會給不屬於專案小組中之受影響的聯邦機構、國家和地區政府組織、地方和其他團體了解相關的專門知識，以便參與控制計畫。如果這些其他的機構或團體擁有足夠的權力或管轄權及專門知識，使其在參與控制計畫上更有效率，則可將部分執行責任交給這些團體或機構，最後，主管、部長和副局長如認為有必要時可以頒布規則與條款以執行本條文之內容。

sec1203 則是關於區域協調的事宜，其要求在各地區成立不同的地區小組用以回報各地外來種入侵的狀況並對專案小組提出控制外來種生物的相關建議，而在 sec1204 中是國家水中有害生物的管理計畫，其中包含了洲及洲際間對入侵種的管理計畫，它要求各洲的州政府給專案小組一個全面的管理計畫以核定這些計畫所牽涉的區域及範圍是在

洲或洲際區域;以及除此以外相關的公共設施，另外還有對於用以消除或減少水中有害生物對環境的公共健康和安全風險之技術、執法、或財政援助。此外，每一個計畫應盡可能的去找出那些將可進行以減少水中有害生物感染之管理及鑑定方法。

sec1205 則規定本法案與其他法律之關係，它規定這個 subpart 中的任何內容都不應影響任何國家的權力或政治分支去採用或實施水中有害生物的控制措施，以及減少或影響任何國家管轄的魚類和野生動物物種。在任何州或政治分支的控制和根除措施中，有關水中有害生物的部分不得免除在此標題的規定下任何有責任去遵守的人之責任。

最後的 sec1206 則是關於國際合作的部分，它要求專責小組應對國務卿(外長)在水中有害生物於其他國家交界水域的出沒上提供即時的建議，同時，國務卿在與專案小組的諮詢下，要主動地去和其他國家政府啟動關於水中有害生物在危害共享的水資源上之預防、監測、研究、教育和相關的控制程序計畫及實施上的協商。

根據上述 1990 年的《外來有害水生生物防止和控制法》以及 1996 年訂出的修正案《國家入侵物種法》之內容授權，美國制定了用以規制壓艙水相關事宜法案 33(導航及通航水域) CFR part151-《攜帶原油、液態有毒物質、垃圾和商業或市政廢棄物以及壓艙水之船隻》(如附錄三，本法並非只專為攜帶壓艙水之船隻而制定，其規定的內容尚包含了攜帶原油、液態有毒物質、垃圾和商業或市政廢棄物的處理規範，而本法共分成 **Subpart A-E** 五部分，其中與船隻攜帶壓艙水有關的是 **Subpart C** 和 **D** 部分，如表 3-4 所示。

表 3-4 導航及通航水域中與壓艙水有關的法

標題	標題名稱
Subpart A	防止船舶污染公約的執行和南極條約中與船舶造成污染相關的環境保護議定書(Implementation of MARPOL 73/78 and the Protocol on Environmental Protection to the Antarctic Treaty as it Pertains to Pollution from Ships)
Subpart B	市政和商業廢棄物的運輸(Transportation of Municipal and Commercial Waste)
Subpart C	為控制在五大湖區和哈德孫河的非原生物種之壓艙水處理辦法(Ballast Water Management for Control of Nonindigenous Species in the Great Lakes and Hudson River)
Subpart D	為控制美國水域中非原生種生物之壓艙水處理辦法(Ballast Water Management for Control of Nonindigenous Species in Waters of the United States)
Subpart E	在海洋廢棄物研究、預防和削減法案之目的中關於海洋廢棄物的定義(Definition of Marine Debris for the Purposes of the Marine Debris Research, Prevention, and Reduction Act)

以下將分別介紹這兩部分之內涵。首先是 **Subpart C**，其標題是用以控制外來物種進入五大湖及哈德孫河之壓艙水處理辦法，而本法適用於所有配備有壓艙水艙並在非經濟區外之港口進行過壓艙水交換後進入馬賽那的斯內爾鎖、紐約或在哈德孫河之喬治華盛頓橋的北方以及其他位在美國與加拿大境內之港口之美國、外國及非娛樂性使用之船隻，而在本法一開始就先對不同的名詞做出解釋，以下就針對其中重要的名詞進行介紹：「AMS(Alternate management system)」指一個由其他國家根據壓艙水管理公約之標準並且滿足所有美國法令規定的用以代替壓艙水交換而訂出的壓艙水處理系統，「BWMS(Ballast water management system)」指任何用來處理壓艙水以把其中之生物殺死、使之無害、移除之系統，BWMS 包含所有壓艙水處理設備以及周邊所有用以監視、控制之設備，「COTP(Captain of the Port)」指海岸巡防局在水牛城、紐約、海事檢查區內被設計成 COTP，「指揮官」指海岸巡防局之指揮官或其授權代表。

接著在法條中則是做出對於船隻壓艙水的處理要求，規定船隻的

船主根據本節應採用下列其中一種壓艙水處理的方法：

1. 在 EEZ(專屬經濟區)外之水體進行壓艙水交換，且是在距離岸邊至少 200 海哩，水深至少 2,000m 之處進行，除了採用壓艙水處理系統外之船隻是依照 151.1512(b)之標準外，其他船隻在交換結束後任何艙室中的水之鹽分濃度至少要達到千分之三十。
2. 把壓艙水保留在船上。如果採用此壓艙水處理方法，COTP 可在船隻行經五大湖或哈德孫河、華盛頓橋北方的航程中密封任何艙室或 把壓艙水保留在船上。
3. 安裝及操作經過海岸巡防局認可之 BWMS。隨著 BWMS 的安裝，船主、船長、操作者、代理人或船隻負責人必須要確保 BWMS 符合所有的製造商規格。
4. 只使用從 U.S 公眾水系統(PWS)之水。使用 PWS 中之水作為壓艙水之船隻，必須要保留從 PWS 接收水的紀錄、收據、單據或其他從 PWS 發出用以表示水是來自此系統之文件。

另外在本法中也訂出了壓艙水排放的標準：

1. 在每立方公尺的壓艙水中 $\geq 50\text{mm}$ 之活體生物的數目要少於 10。
2. 在每毫升(ml)的壓艙水中 $< 50\text{mm}$ 但 $\geq 10\text{mm}$ 之活體生物數目要少於 10。
3. 指標微生物不能超過：
 - (1)對毒性霍亂弧菌的標準：其濃度為每 100ml 少於 1cfu(菌落形成單位)。
 - (2)對大腸桿菌的標準：其濃度為每 100ml 少於 250cfu。
 - (3)對腸球菌的標準：其濃度為每 100ml 少於 100cfu。

同時也依據不同的船隻訂出了壓艙水處理辦法之執行時間表，如表 3-5 所示：

表 3-5 壓艙水處理辦法之執行時間表

	船隻的壓艙水容量	製造日	船隻的遵守日期
新船	全部(不限容量)	自 2013.12/1 開始或之後製造之船隻	交貨日
現有船隻	少於 1500 m ³	在 2013.12/1 之前製造之船隻	第一個時間表是從 2016.1/1 後開始
	1500-5000 m ³	在 2013.12/1 之前製造之船隻	第一個時間表是從 2014.1/1 後開始
	多於 5000 m ³	在 2013.12/1 之前製造之船隻	第一個時間表是從 2016.1/1 後開始

最後則為了確保船隻有遵守本法之規定，而訂出相關的監控措施與罰則，在監控措施上主要是以文件審查為主，文件上要登記有下列船隻之資訊：

1. 船名、登記之港口、原始碼或標記符號。
2. 船主之名字。
3. 是否有攜帶壓艙水。
4. 在交換前的原先所在地和汲取壓艙水所在地的鹽度(如果知道的話)。
5. 任何進行過壓艙水交換之時間、日期、地點。
6. 預定要排放入美國水域之任何壓艙水之鹽度。
7. 預計要排放壓艙水的港口和要進行所攜帶之沉積物處理的美國水域(如果這兩者有要被排放的話)。

8. 船長之簽名，以證明所提供之訊息為真並願意遵守本條文之規定。

在罰則的部分，若有人違背本條文之規範，將會受到總計不超過 27,500 美元之罰款，並會隨著違背天數的增加而連續開罰，一般船隻在運轉中違背本條文之規範，同樣也會受到相同的處罰，此外，若是明知而故意違犯本條文規定之人，則會被當成是犯了 C 級重罪來處理。

Subpart D 部分則是用以控制美國水域中非原生種生物之壓艙水處理辦法，其在內容上與 **Subpart C** 互補，共同構成了一道防止外來種透過壓艙水入侵的防線，此外，在名詞定義、壓艙水處理的要求、標準與相關罰則上其內容均與 **Subpart C** 一致，故以下將就其與 **Subpart C** 不同之處加以介紹，首先在本節中訂出了豁免規定，使具有特殊條件或處於特定情況的船隻得以不必遵守本法相關規定：

1. 可以免除本部分的任何要求之船隻：

(1)任何由 1990 年的非原生中水中生物預防及控制法案 sec1103 規

定的國防部或海岸巡防局船隻或任何由聯邦水污染控制法所定義之武裝部隊的船隻（它們遵守的是武裝部隊的國際統一排放標準）。

(2)任何軍艦、海軍輔助船艦或由外國國家擁有或操作的其他用於非商業用途之船隻。

2. 可免於本部分中 151.2025、151.2060、151.2070 的要求之船隻：

(1)從事沿岸貿易之原油油輪。

(2)只在 1 個 COTP 區內運作之船隻。

3. 可免於本部分中 151.2025 之要求之船隻：

(1)在一個以上的 COTP 區運作但不會在專屬經濟區外運作之噸數

小於或等於 1,600 總登記噸或者小於或等於 3,000 總噸之海船。

(2)非海洋航行之船隻。

(3)只專門在一個 COTP 區排放與抽取壓艙水之船隻。

另外則是在特殊狀況下對壓艙水排放的特別規定：

1. 海岸巡防局允許船長、船主、操作者、代理人或船隻主管在實際上無法滿足本法的要求下或者是因為其航程而沒有把船帶離到超過岸邊 200 海浬以上以及船隻持續把壓艙水攜帶在船上或因為船長為了安全或穩定因素的考量，而在五大湖區及華盛頓橋以北的哈德孫河區外排放壓艙水。
2. 如果按照本部分所要求而安裝的 BWMS 在航程中停止運作了或是船隻的 BWM 方法因意外而不能施行，指揮船隻移動的人必須要確保此問題有被盡快地傳達給最近的 COTP 或地區指揮官，船隻可以依 COTP 或地區指揮官的指示繼續航行到下一個停靠港。

除上述規定之外，在本規定中也提出了對於壓艙水排放區域的額外要求，以避免壓艙水被排放入海洋保留區、海洋保護區、海洋公園或珊瑚礁之海域或可能影響上述區域之海域內，同時也禁止船隻在特定海域汲取壓艙水以防止船隻把可能的病原體或污染物帶入船內再攜帶到其他國家中。

最後，則是關於壓艙水報告的要求，除了 **Subpart C** 內提供的資訊外，在此處規定船長還必須要提供下列資訊：

1. 航程訊息：包含到達港口及日期、船隻代理人、上個到達的港口和拜訪的國家以及下一個要拜訪的港口及國家。
2. 全部的壓艙水資訊：包含全部壓艙水的量、在船上的可容納的全部壓艙水容量、壓艙水艙的全部數量、用來壓艙的壓艙水艙的全部數量，所使用的測量單位例如噸(MT)、立方米(m³)、長噸(LT)

和短噸(ST)。

3. 壓艙水處理辦法: 包含要排入美國水域或從美國水域汲取水的壓艙水總數目:

(1) 如果有使用替代性壓艙水處理辦法, 則請標出使用替代性方法之艙的數量以及要使用哪一種方法

(2) 不論船隻上是否有壓艙水處理計畫和 IMO 指導原則, 也不論壓艙水處理計畫是否被使用都需要標示出來(上述資訊)

4. 在壓艙水艙上關於排放入美國水域或接收設施的資訊要包含有:

(1) 壓艙水的來源, 此資訊要包含日期、地點、容量、溫度(如果艙曾經交換過, 則要列出壓艙水在交換的過程中曾經排放的裝載港口)

(2) 壓艙水進行交換或其他操作的日期、地點、容量、方法、以及進行交換的完成度和交換進行時的浪高

(3) 預計日期、地點、容量、任何被排放入美國水域或接收設施之壓艙水的鹽度。

5. 沉積物的排放: 如果沉積物要在美國的管轄區排放則要包含有棄置的位置和設施的位置。

6. 精確訊息的認證: 包含船主、船長、操作者、負責人或負責公司的名字、稱號和簽名以證明所提供資訊的正確性以及證明符合本節之要求。

此外, 包含上述資訊的表格之副本必須要在船上保存長達兩年的時間, 以利海岸巡防局的相關人員進行查核。

3.2.2美國之船舶壓艙水管理簡史與實踐現況

美國外來種的入侵事件可追溯至八〇年代初期的壓艙水排放引起斑馬貽貝由大湖區水域入侵，因此於 1990 年頒布《外來有害水生生物防止和控制法》(US Nonindigenous Aquatic Nuisance Prevention and Control Act, NANPCA)，此法立意雖佳，但因未能進行有效的壓艙水管制，外來種入侵的情形在九〇年代仍時有耳聞，因此於 1996 年又頒布了《國家入侵物種法》(National Invasive Species Act of 1996, NISA)，並授權由美國海岸警衛隊(the U.S. Coast Guard, USCG)建立國家自願壓艙水管理的指導方針(USCG, 2011)，並於隔年成立「國家壓艙水資訊交換中心」(National ballast information clearinghouse, NBIC)，負責壓艙水資料的彙整與研究分析。1998 年 USCG 開始實施初步性全國性壓艙水自願監督計劃，但因目標達成率不足，於 2004 年實施強制性的壓艙水管理規則(33 CFR 151 subparts C and D)，檢討多年的實施成果並配合現有的技術發展，於 2012 年 3 月 23 日公布最新管理規則：《船舶壓艙水排放在美國水域之活物種標準；最終規則》(Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters; Final Rule) (USCG, 2012)，並於公布後三個月—2012 年 6 月 21 日生效。

美國對於壓艙水管理在聯邦層級上主要有兩個機關，即海岸警衛隊(USCG)與環境保護署(EPA)，兩者的關係密切(The National Academies Press Research council, 2011)，於 2010 年 9 月公佈審核壓艙水處理系統的協議，將對審核通過的處理系統頒發「環境技術驗證」(Environmental Technology Verification, ETV) (EPA, 2010)，以確保各船舶上所安裝的壓艙水處理系統能符合所規定之壓艙水排放標準，並於 2011 年兩機關間並簽署合作備忘錄以共同管理船舶排放。此外，為配合最終規則中對於壓艙水管理系統的要求，設有獨立實驗室(Independent Laboratories, ILs)作為國家授權的單位受理製造商所申請的壓艙水管理系統的認證與測試。

根據《船舶壓艙水排放在美國水域之活物種標準；最終規則》，美國在壓艙水管理上之實施現況如下述：

1. 壓艙水管理要求 (§151.2025 Ballast water management requirements)

對於船長、船東、航運公司、代理商或裝有壓艙船舶的負責人在美國水域被要求必須採取以下的其中一個壓艙水管理方法：

- (1) 裝置並操作由海岸警衛隊根據 46 CFR part 162 的規定所認可的壓艙水管理系統(Ballast Water Management System, BWMS)，並符合§ 151.2030 所規定之壓艙水排放標準 (Ballast water discharge standard, BWDS)。
- (2) 使用美國公共水系統(public water system, PWS)的水作為壓艙水。
- (3) 使用替代性管理系統(Alternate management system, AMS)。
- (4) 在美國水域內不排放壓艙水。
- (5) 將壓艙水排放至岸上設施(或駁船設施)。

2. 壓艙水排放標準 (§151.2030 Ballast water discharge Standard, BWDS)

進入美國水域的船舶被要求使用由海岸警衛隊認可的壓艙水管理系統(BWMS)來處置壓艙水應符合壓艙水排放標準(BWDS)如表 3-6 所示：

表 3-6 美國壓艙水排放標準(BWDS)

生物尺寸	USCG
≥ 50 微米(μm)	< 10 個微生物(organisms)/ m ³
10-50 微米(μm)	< 10 個微生物(organisms)/ml
指標生物	--
有毒霍亂弧菌(<i>toxicogenic Vibrio cholera</i>)	< 1CFU/100ml
大腸桿菌(<i>Escherichia coli</i>)	< 250 CFU /100ml
腸球菌(<i>intestinal enterococci</i>)	< 100 CFU /100ml

3. 獲認可的壓艙水管理方式的實施時程 (§151.2035 Implementation schedule for approved ballast water management)

進入美國水域的船舶被要求使用由海岸警衛隊認可的壓艙水管理系統(BWMS)來處置壓艙水以符合壓艙水排放標準(BWDS)，依船舶建造日期與壓艙容積有不同的實施時程，如表 3-7 所示。

**表 3-7 美國獲認可的壓艙水管理方式的實施時程
(Final Rule, Table 151.2035(b))**

船分類	壓艙容積 (立方公尺)	建造日期	實施日期
新造船	所有船	2013 年 12 月 1 日以後(含)	即日生效
現有船	< 1500	在 2013 年 12 月 1 日前	2016 年 1 月 1 日以後的第一次進塢
	1500-5000	在 2013 年 12 月 1 日前	2014 年 1 月 1 日以後的第一次進塢
	> 5000	在 2013 年 12 月 1 日前	2016 年 1 月 1 日以後的第一次進塢

4. 申報要求 (§ 151.2060 Reporting requirements)

進入美國水域的船舶無論是否已在專屬經濟海域(the Exclusive Economic Zone, EEZ))換水都需在抵港前 24 小時向指定主管機關申報「壓艙水申報表格」(The Ballast Water Reporting Form)，內容包括船舶資料、航程資料、壓艙水資料、壓艙水管理資料、將排放至美國水域或收受設施的壓艙資料、沉積物排放資料、資料正確的認可等七部分 (§ 151.2070)。

(1)船舶資料(Vessel information)，包含船舶、IMO 編號或官方號碼、船東、船噸數、船名、船旗國。

(2)航程資料(Voyage information)，包含抵達日期與港口、代理航商、上一造訪港口與國家、下一造訪港口與國家。

(3)所有壓艙水資料(Total ballast water information)，包含壓艙水總容量、船上壓艙水總體積、壓艙總數、使用中的壓艙數。

(4)壓艙水管理資料(Ballast water management, BWM) ，包含將要排放入美國水域或收受設施的壓艙總數。

(5)將排放至美國水域或收受設施的壓艙資料(Information on ballast water tanks that are to be discharged into the waters of the United States or to a reception facility) ，包含壓艙水的來源與壓艙水進行交換或其他管理方式的日期、位置、體積、交換百分比以及預定排入美國水域或收受設施的日期、位置、體積、鹽度。

(6)沉積物排放資料(Discharge of sediment) ，包含棄置沉積物的設施名稱與地點(如果沉積物將在美國管轄區內被排放)。

(7)資料正確的認可(Certification of accurate information) ，包含船東、操作人、代理行、負責人或負責官員的姓名(名稱)、職稱、簽名以證明所提供資料的準確性。

5. 罰則 (§ 151.2080 Penalties)

違反規定者依民事賠償最高可罰 35,000 美元 (§ 151.2080) 且可按日連續處罰，若蓄意違反本規則者，可判處 C 級刑事重罪。

6. 替代性管理系統 (§151.2026 Alternate management systems)

取得各國主管機關型式認可符合《壓艙水公約》標準的壓艙水管理系統(BWMS)可向海岸警衛隊申請作為替代性管理系統(AMS)，並需於安裝後的五年內滿足壓艙水管理方式的實施時程 (§151.2035) 要求。目前已取得 USCG 認可的替代性管理系統如表 3-8 所示。

表 3-8 獲得海岸警衛隊認可的替代性管理系統 (USCG, 2013)

製造商	機型	型號	認可日期
Alfa Laval Tumba AB	PureBallast	Models 250 to 2500	2013/4/15
Alfa Laval Tumba AB	PureBallast	Models 2.0 and 2.0Ex	2013/4/15
Ecochlor Inc.	Ecochlor	Series 75, 100, 150, 200, 250, and 300	2013/4/15
Hyde	Guardian	HG-60, -100, -150, -200, -250, -300, -400, -450, -500, -600, -700, -800, -900, -1000, -1250, -1350, -1400, -1488, -1600, -2000, -2500, -2975, -4000, -5000, and -6000	2013/4/15
NK Company, Ltd	BlueBallast	NK-O3-010, -015, -030, -040, -050, -075, -100, -150, -200, -250, -300, and -400	2013/4/15
Panasia Co., Ltd	GloEn-Patrol	P-50, -150, -250, -300, -350, -500, -700, -750, -800, -900, -1000, -1200, -1500, -2000, -2500, -3000, -3500, -4000, -4500, -5000, -6000	2013/4/29
. Qingdao Headway Technology Company, Ltd.	OceanGuard™	OceanGuard™	2013/4/15
RWO GmbH Marine Water Technology, Veolia Water Solutions and Technologies	CleanBallast	CleanBallast® -150, -200, -250, -300, -350, -400, -450, -500, -500-1, -750, -1000, -1250, -1500, -1750, -2000, -2250, -2500, -2750, -3000, -3250, -3500, and -3750	2013/4/15
Severn Trent De Nora, LLC	BalPure	Models BP-500, -675, -1000, -2000, -2650, -3000, -4000, and -5000	2013/4/15
SunRui	BalClor	BC-300, -500, -1000, -1500, -2000, -2500, -3000, -3500, -4000, -5000, -6000, and -7000	2013/5/1

3.3 澳洲之船舶壓艙水管理法制及其實踐現況

3.3.1 澳洲之船舶壓艙水管理法制

目前在澳洲的壓艙水管理要求的法源基礎是來自於《澳大利亞檢疫法 1908》(the Australian Quarantine Act 1908)而從檢疫法中 part I.5 名詞解釋的部分可以得知在澳洲檢疫法中的壓艙水是包含了底泥在內，同時在本法中它是把壓艙水視同於其他需檢疫之貨物看待，並在原則

上是準用於與貨物檢疫相同之規定，故由此透過船隻進入澳洲的壓艙水可以由政府當局進行抽樣查驗，而壓艙水與一般貨物在檢驗上仍有些許不同，在《澳大利亞檢疫法 1908》中規定壓艙水在特定的情況下可以豁免部分的檢驗或要求，相關的規定有 78A(2)、78AA(2)，在 78A(2) 中規定，如果檢疫局有合理的理由相信船隻或其上的裝置是處在不衛生的狀況下或有可能攜帶疾病或病害蟲時，檢疫局可對船主或船長或者是對其裝置的特定處理方式及特定安裝地點提出改善之方向，而壓艙水可規避掉在此處檢疫局的指導。另外在 78AA(2) 中規定，船隻或其上裝置接受檢疫時檢疫局可以給船長或對其裝置的特定處理方式及特定安裝地點提出改善方向，同樣的，對壓艙水的處理也可以規避掉此處的改善方向。

前面可以規避掉的原因並非澳洲政府不重視如何處理壓艙水，而是因為有另訂的《澳洲壓艙水處理要求》來規定相關事宜並作為依循的原則，此原則的制定依據是來自於《澳大利亞檢疫法 1908》中 87 的授權：總督可以在不牴觸本法的前提下訂出規則來規範本法中必要的或本法准許訂定或對於使本法發揮影響力或執行上而言是必要的或可以使之更加便利的所有事項，而這些事項包含有：規範船上任何物品的轉移或排放例如壓艙水和底泥以及其他在運送過程中可能攜帶的動植物或其他貨物。

接著要談到的內容是依據檢疫法授權而訂定出的《澳洲壓艙水處理要求》(如附錄四)，其主要的目的是透過強制性的壓艙水處理來降低有害水中生物透過國際船隻之壓艙水進入澳洲水域環境的風險，而主要負責的單位是 AQIS(Australian Quarantine and Inspection Service) 它是由澳洲政府對於國際船隻所使用的壓艙水定出之規範中的一個領導機構，AQIS 負責確保意圖排放至澳洲海域的外國壓艙水是已經依照澳洲的要求而被處理過的。

關於船隻壓艙水管制的內容上，在本要求中首先對壓艙水進行分類，做出高低風險壓艙水的分別，凡是位在澳洲管轄區外港口(或沿岸水域外)之海水是被視為高風險的，因為其可能把國外的有害水中生物

引入澳洲，而從市政供水系統中抽取出的飲用水、已經在大洋中(mid-ocean)經被認可之方法交換過之壓艙水、壓艙水中至少有 95%是從大洋中(mid-ocean)汲取的、壓艙水中至少有 95%是從澳洲領海汲取的，均被視為是低風險的壓艙水，在此高風險的壓艙水是禁止在澳洲海域內排放的。

其次，本要求則依據 IMO 的規定再加上部分額外的修正，提出了壓艙水處理的選項，共有三種方式：

1. 高風險壓艙水在澳洲港口或水域的不排放

不排放任何壓艙水到澳洲水域之船隻，不需要進行任何國外壓艙水的處理程序，船長要注意到高風險的壓艙水在任何環境下都不會獲得排放的許可。故當有必要在澳洲水域上排放壓艙水時，必須要小心的處理所有在船上管線中的壓艙水。

船長會被告知那就是 AQIS 只會在船隻與船員有可見的立即安全風險，並且船隻安全的轉移到澳洲領海外進行排放是不可能的情況下，授予權限去排放高風險壓艙水進入澳洲水域。AQIS 會依照個案的不同情況進行判別以決定是否授權。

如果船隻將要排放壓艙水進入澳洲水域時，船長會被建議在船上處理所有的壓艙水。在意外狀況發生而導致必須排放出部分的壓艙水時，船長必須要在排放任何壓艙水前先得到 AQIS 的書面許可。這個許可可以因船隻提出在正確的處理壓艙水上有問題而在到達澳洲前發出。

2. 艙對艙傳送

在一艘船內把高風險壓艙水進行艙內傳輸是被允許的，當船主在執行此程序時必須要警戒以確保未經許可壓艙水排放的風險是可被適當的預測及處理的。

3. 全壓艙水在海中交換，交換方式又分為以下三種：

(1)連續的交換(倒空/再填滿)方法

此方法在確保再填滿深海中的乾淨海水前，需要把高風險壓艙水的倒空艙放在海中，此方式最重要的是確保混合後的壓艙水中，其所含高風險壓艙水的比例不超過 5%，再"倒空階段"要結束時，艙所處的深度要被記錄下來，如此才可以在到達洲港口後有助於 AQIS 對壓艙水的核對。因為安全因素的緣故，並非每艘船都能倒空壓艙水艙，船主應該要確保在連續交換步驟中船隻的安全。另外，船長必須要在進行連續的交換(倒空/再填滿)方法時注意以下事項：艙的深度和相對應的殘留容量必須要在全滿階段的最後被記錄下來，這樣一來最終要被排放到澳中水域的壓艙水混合物才能夠在抵達澳洲港口時被 AQIS 所測量，壓艙水排放的可接受標準是在混合後至少有 95%為被處理過之水，5%為沒被處理過之水。

(2)流動通過方法(flow through)

比艙內容積多 3 倍之來自深海的乾淨海水必須被抽到每個艙以達到 95%容積交換之標準即使當"流動通過法"剛開始運轉之時，艙內僅有部分裝有高風險壓艙水，仍要抽入比容積多 3 倍的海水以滿足澳洲的要求，而 3 倍容積的測定是在水剛開始流入艙內所測得的，至於在"流動通過法"操作之始而未完全填滿的艙室，3 倍容積仍會在幫浦開動時開始進行測定，而不是當艙式的水開始溢出時，AQIS 會試圖確認壓艙水交換是在符合法規的情況下進行，證明的步驟是對壓艙水交換操作紀錄(由船上攜帶)的檢驗。而船長必須要在指揮"流動通過法"交換時，注意以下事項：

- a.一次只能沖洗一個或類似的一對船艙，舉例來說：雙層底艙 1Port 和右舷可能會同時利用同一個幫浦注滿。一起注滿一對不一樣的艙是不被接受的(ex:DBT 1P 和 DBT 2S)其理由是因為不一樣的艙被用同一個幫浦一起注滿，會從幫浦接收到不一樣的水量。

- b.估計流動過每個艙的水量(包含估計壓艙幫浦的傳送速度和測定這些幫浦運作的時間)。應該要注意的是幫浦可能不會提供定量傳送容積(根據幫浦的磨損和管道等)船主應該要確定在交換步驟中所使用的幫浦傳送率是最近一次使用過的壓艙水操作中所使用的。
- c.實際的幫浦運輸率可以由觀察它抽入已知容積的水所花的時間來測定。
- d.船長應該要確定在使用流動通過法時壓艙沒有在設計規格外被加壓。

(3)稀釋法

部分船隻會使用額外的抽取安排來配合，在部分的這些船隻當中，壓艙水會被抽入艙的一邊然後同時從艙的另一邊出來。另外，使用兩個幫浦注入水是被允許的，如同 flow-through 一樣，在被容許的交換中每個艙室必須抽取 3 倍容積。

最後則是要求有攜帶壓艙水的船隻要在進港前的 12-96 小時前提出書面報告 QPAR(Quarantine Pre- Arrival Report)給 AQIS 進行查核，若船長沒有提交 QPAR 給 AQIS 則不會獲得正式的檢疫通關以進入港口，這會對船隻行程造成延遲且船隻會收到 AQIS 的額外收費。

書面報告應該要附上的內容除了船隻細節、人員健康狀況外，重要的是必須要提供關於壓艙水抽取港、大洋交換和預計要在澳洲排放壓艙水的地點之細節以及壓艙水排放的理由和使用的處理方法，最後，這份表格要保存在船上 2 年並在 AQIS 要求查驗時出示，同時 AQIS 也會對船上的壓艙水進行採樣以查核該船隻是否有符合澳洲壓艙水處理方法的要求。

3.3.2澳洲之船舶壓艙水管理簡史與實踐現況

澳大利亞澳洲衛生檢疫局(Australian Quarantine and Inspection Service, AQIS) 作為澳大利亞壓艙水管理之主管機關自 1990 年首度實施自願性壓艙水檢疫規範，並於 2001 年 7 月實施《澳大利亞檢疫法 1908》(the Australian Quarantine Act 1908)，作為強制性壓艙水管理規則，以保護澳大利亞的水域生態、經濟、漁業、水產養殖業免於受到有害水生物種與病原體之入侵危險。

目前所有國際線船舶在抵澳前的最後一個停靠港或進入澳大利亞水域之前需申報壓艙水資料，這些資料將由澳大利亞壓艙水決策支援系統(Australian Ballast Water Decision Support System, DSS)進行評估，對各船舶的壓艙水作出「高風險」或「低風險」的評等，低風險的壓艙水就無需處理可進入澳洲水域，高風險的壓艙水就要到抵澳前進行處置，包括以下的幾種方式：(1)在澳大利亞港口或水域時完全不排放高風險壓艙水，(2)在艙間換水以避免排放壓艙水，(3)在大洋中使用順序交換法(Sequential Method, BWE-S)或溢流法(Flow Through Method, BWE-F)或稀釋法(Dilution Method)進行壓艙水交換。並且各船舶必須提供安全的壓艙水取樣點，協助檢疫官員完成安全的壓艙水採樣工作(IMO,2000)。

為使整個管理架構能發揮功效，壓艙水申報乃是關鍵的環節。壓艙水決策支援系統(DSS)並不取代原有的「抵港前檢疫報告」(Quarantine Pre- Arrival Report, QPAR)(the Quarantine Act 1908 section 27A)。這是所有從國際水域要進入澳洲海域的船舶都必須在進入澳洲水域前的 12-96 個小時內向澳大利亞檢疫及檢查服務處(AQIS)提出，不繳交「抵港前檢疫報告」的船舶，將無法取得檢疫通關以進入港口，且這將可能耽延船舶行程且船舶可能需要負擔額外的費用。抵港前檢疫報告包含一系列關於檢疫的問題，其中只有一個題目是與壓艙水有關。自 2010 年 7 月 1 日起澳大利亞檢疫及檢查服務處(AQIS)執行海港計劃(National Seaports Program Australian Ballast Water Management Requirements)(DAFF, 2011)，並為整合大於 25 米之國際線船舶所有抵

港前活動而設立了「海上國家協調中心」(Maritime National Coordination Centre, MNCC)，作為所有抵港前資訊整合的單位以及船務代理商、營運商等向官方的聯絡單位，並依航線區域陸續將申報系統完全轉換為電子申報系統(eQPAR)。

除了抵港前檢疫報告以外，如果船舶將在澳大利亞港口排放壓艙水，也需遞交「壓艙水管理摘要」(AQIS Ballast Water Management Summary, ABWMS)，此為船舶壓艙水管理的詳細記錄，包括在海上所進行之壓艙水管理的實況記錄、壓艙水汲取港口、大洋交換和預定在澳大利亞排放壓艙水位置等資訊；但並非強制性繳交。一旦海上國家協調中心(Maritime National Coordination Centre, MNCC)收到船舶所遞交的壓艙水管理摘要(ABWMS)，就會由澳大利亞檢疫及檢查服務處(AQIS)官員上船進行驗證該船所提供給AQIS的資訊是否正確。如果通過登船驗證，澳大利亞檢疫及檢查服務處(AQIS)就會給予可在澳洲海域內排放壓艙水的書面許可。如果船舶未在抵港前隨同「抵港前檢疫報告」(QPAR)繳交壓艙水管理摘要(ABWMS)，就將不會被許可在澳洲海域內排放壓艙水。

在澳洲領海內和國內港口的壓艙水管理，則由港口所在位置的地方政府機關主管。以維多利亞州為例(DAFF, 2011)，維多利亞州政府環保署(Victorian State Government Environment Protection Authority, EPA)根據《環境保護法案 1970》(the Environment Protection Act 1970)的授權，對於來自澳洲境內水域的壓艙水進行管理。要求船舶需要繳交壓艙水申報表格以及註明船舶壓艙水來源的日誌，若沒有維多利亞州環保署的批准，即使是汲取自國內水域的壓艙水也不可在維多利亞州水域排放。然而，澳大利亞檢疫及檢查服務處(AQIS)仍保有對汲取自澳洲領海外之壓艙水的監管責任。因此，對每一個造訪澳洲的船隻，船東有責任在澳洲所有港口航行時滿足澳大利亞檢疫及檢查服務處(AQIS)的規定，並且要確定各洲政府是否有額外的壓艙水管理規定。

第四章 瞭解港務機關及船舶相關之權益關係人

對壓艙水管理與規範需求之意見

4.1 界定權益關係人及其相互關係

權益關係人分析法是近年來在制定管理規範與政策時所普遍採用的一種方式，不同學者對於權益關係人的定義有所不同，如Freeman(1984)認為權益關係人是指連繫與建立組織的個人或團體，其可影響該組織的未來，Rui et al. (2006) 則指出權益關係人是擁有發言權影響以致決策及成敗的人等。本研究將壓艙水管理之權益關係人定義為：會影響壓艙水管理規範的制定與將受到該規範影響的人，可分為四大群組，分別為公部門、航運公司、船舶設備產業、外部機構，其相互關係可見圖 1 所示。公部門中包括交通部航港單位、國營港務公司、環保單位，屬於對壓艙水管理具有直接影響者，包括相關法規之制定與執法；航運公司主要為國內各航商，屬於將受到壓艙水管理規範直接影響者；船舶設備產業包括驗船機構、船舶設備代理商與造船廠三類，屬於將受到壓艙水管理規範間接影響者；外部機構為民間環保團體與學術界，包括海洋環境、船舶設備、海事、法律等各界學者，其發言與研究對壓艙水管理可能有所影響。

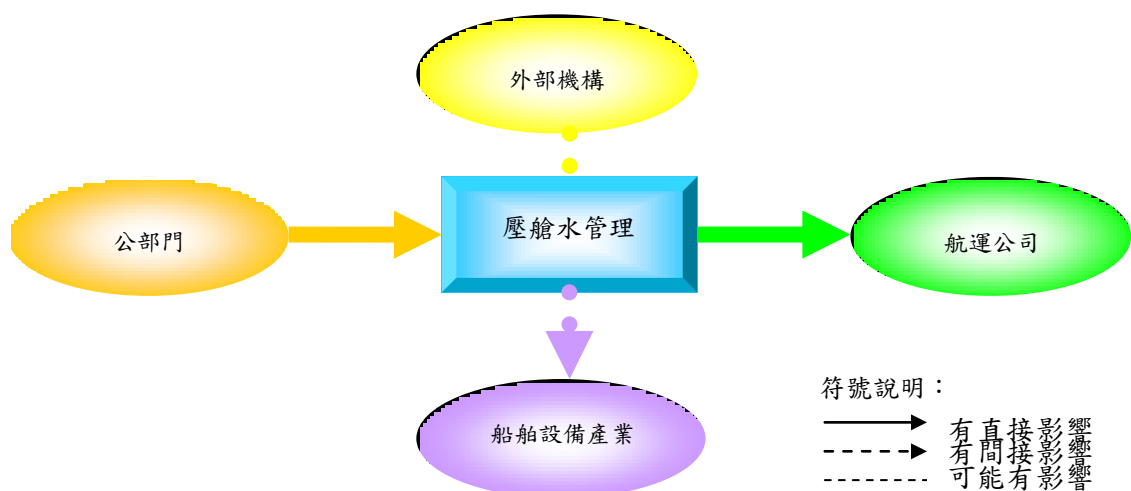


圖 4-1 船舶壓艙水管理權益關係人示意圖

由於壓艙水管理在國內屬新興議題，為了對於壓艙水管理議題有全面性的討論，本研究訪談對象含括上述四個群組，共邀請 24 組受訪者，以蒐集並瞭解各權益關係人對於我國實施壓艙水管理的看法與需求。訪談對象編號如表 1 所示，公部門為群組 a，依單位屬性再分為交通航港單位為群組 a1，國營港務公司為群組 a2，環保單位為群組 a3，航運公司為群組 b，船舶設備產業為群組 c，外部機構為群組 d，訪談時間主要為 2013 年 1 月至 4 月。

表 4-1 訪談對象編號

群組	所屬機關	職稱	編號	訪 談 數
公部門	交通部航港單位	科長*	a1-1	14
	交通部航港單位	港口國官員**	a1-2	
	交通部航港單位	課長	a1-3	
	交通部航港單位	港口國官員**	a1-4	
	交通部航港單位	港口國官員**	a1-5	
	交通部航港單位	港口國官員**	a1-6	
	國營港務公司	處長*	a2-1	
	國營港務公司	副處長**	a2-2	
	國營港務公司	港務長**	a2-3	
	國營港務公司	經理	a2-4	
	國營港務公司	督導	a2-5	
	環保單位	技正*	a3-1	
	環保單位	技士	a3-2	
	環保單位	科長	a3-3	
航運公司	船公司(甲)	專案課長	b-1	8
	船公司(乙)	三副	b-2	
	船公司(丙)	經理	b-3	
	船公司(丁)	副理**	b-4	
	船公司(戊)	經理**	b-5	
	船公司(己)	船長**	b-6	
	船公司(庚)	船長	b-7	
	船公司(庚)	大管輪	b-8	
船舶設備 產業	驗船機構	副處長	c-1	3
	海事服務公司	總經理	c-2	
	造船公司	工程師	c-3	

表 4-1 訪談對象編號(續)

外部機構	大學海洋科技系所	助理教授	d-1	6
	大學海洋環境系所	教授	d-2	
	大學環境安全系所	教授	d-3	
	大學法律系所	助理教授	d-4	
	大學輪機工程系所	副教授	d-5	
	環保團體	理事長	d-6	
總計				31

註：*受訪時間為 2012 年 4-7 月。**受訪者為二人以上，因同為一單位觀點相同，因此只計算為一次訪談次數，並以職等最高者來註記。

4.2 質性訪談重要權益關係人

林金定等(2005)指出「所有種類的深入訪談基本上以半結構式或開放式的研究問題為主，而其訪談的技巧是類似的，訪談中可以以較客觀的角度來了解受訪者的真正觀點與想法」。所謂半結構式訪談係將訪談模式之連續性分類，「主要是研究者利用較寬廣的研究問題作為訪談的依據，導引訪談的進行；訪談指引（interview guide）或訪談表通常在訪談開始前被設計出來，做為訪談的架構」。本研究所使用之訪談題綱乃基於第二章至第四章所得之資料分析結果，將壓艙水管理議題分為生態、經濟、管理、技術等四大面向，各面向下有 2-3 個小題作為導引訪談進行的依據，並作為訪談結果分析的基礎。訪談題綱內容及問題內涵見表 5-2。生態面向包含兩小題，A1 是一般性的瞭解受訪者對壓艙水議題的認知程度，A2 則是針對壓艙水問題對於台灣近岸海域環境的影響瞭解受訪者的看法。經濟面向包含兩小題，B1 是對於各群組受訪者詢問《壓艙水公約》對其所管理之業務有何影響，B2 則是詢問當《壓艙水公約》國內法化後，就受訪者的認知對於國內各相關產業、單位有何影響。管理面向包含兩小題，C1 是就壓艙水管理的法制詢問受訪者對於壓艙水管理是否有需要立專法管理及對主管機關的歸屬的看法，C2 則是詢問受訪者對於國內執法壓艙水管理將可能面臨的問題及解決之道。技術面向包含三小題，根據《壓艙水公約》中所提及的三種壓艙水處置方式在國內的可行性進行討論，D1 小題即公約第 D-1

條中的換水標準，D-2 小題即為了達到公約第 D-2 條中的壓艙水排放標準，所需要裝置壓艙水處理設備的相關檢驗技術，D3 小題是公約技術規範五中所建議港口國可以提供岸上壓艙水收受設施進行討論。

訪談前以電子郵件方式與正式公文進行邀約，對於願意受訪者再確認訪談時間與地點，為使訪談結果達成研究目的，訪談進行均為面對面訪談，訪談時間控制於一個小時內，以訪談題綱為基本架構與流程，使受訪者能切中題項內容、避免冗長無重點之談話，對於受訪者較為熟悉的議題可有較深入、廣泛的討論。訪談時由研究者進行錄音與現場筆錄，力求資料完整性。

表 4-2 船舶壓艙水管理權益關係人深入訪談題綱

問題 屬性	編號	問題	問題內涵
生態	A1	不當排放壓艙水對於海域環境是否造成影響？若有，是何種影響？是否需要對壓艙水進行管制？	受訪者對壓艙水管理的認知程度。
	A2	在壓艙水對海域環境會造成影響的前提下，若船舶壓艙水若未受管制，對臺灣近岸海域之生態影響如何？對於生物多樣性有何影響？	對於壓艙水在臺灣海域不當排放之嚴重性認知。
經濟	B1	《壓艙水公約》生效後對您所管理之業務上將對造成的怎樣衝擊？	國際公約對各權益關係人之衝擊。
	B2	我國若實施壓艙水管理，公部門、航商、船舶設備產業、學術界等在經濟面上受到影響為何？	我國實施壓艙水管理對相關公部門、產業等之影響。
管理	C1	依我國現有的法規與船舶操作需求，壓艙水管理是否有擬定專法、劃分專責管理機構之必要？	壓艙水管理之法制。
	C2	我國在壓艙水管理之執法上，將有何困難點？突破之道為何？	壓艙水管理之執法面。

表 4-2 船舶壓艙水管理權益關係人深入訪談題綱(續)

技術	說明：技術面問題，包含設備技術與執行技術。		
	D1	若於我國近岸海域劃設指定壓艙水交換區，要求入港船舶需於該區完成壓艙水交換之可行性如何？	指定壓艙水交換區之可行性。
	D2	船用壓艙水處理系統目前在市面上種類繁多、效能不一，港務單位如何檢驗處理系統效能合乎標準？	檢驗船用壓艙水處理效能之技術。
	D3	在我國各港口設置岸上壓艙水處置設施的可行性如何？	岸上壓艙水處置設施之可行性。

4.3 權益關係人觀點比較分析

將訪談結果以各面向作為架構進行整理，由此可比較、分析出各群組權益關係人對於壓艙水議題各面向的看法。

4.3.1 對於生態面向的看法

1. 受訪者對壓艙水管理的認知程度(問題 A1)

所有受訪者都同意不當排放壓艙水對海域環境會造成影響，且是生物性、生態改變的影響。並都能說明壓艙水引發外來種入侵的基本原理且能舉出國際間著名的事件為證。也都同意需要對壓艙水進行管制。顯示受訪對象對壓艙水管理議題的都有基本、相同的認知程度。

2. 對於壓艙水在臺灣海域不當排放之嚴重性認知(問題 A2)

(1)認為壓艙水排放對臺灣四周海域環境有影響，其中，

a. 半數受訪者認為政府相關部門有必要進行科學調查並提

大眾科學 調查的結果，作為國內壓艙水管理立法的基礎。

「臺灣目前有沒有外來種入侵，希望專門單位作些研究。」【a1-3】

「壓艙水是要管制，但在臺灣如果沒有案例調查、數據支持而要立法管理，這對航商、政府部門都難說服。」
【a2-2】

「國際法規一定要實行。只是我們國內立法要執行，需有調查，才比較有說服力。」【b-5】

「海域陸域常常在發生，但因陸域跟我們息息相關如紅火蟻，海域並非沒有，這個可能要用國家力量來調查。我相信一定會有…外來種入侵需要本土資料庫，到底什麼是外來種，連公約都沒規定。這需要各國有自己的資料。」【d-2】

- b. 半數受訪者認為即使未能掌握充分證據，仍應順應國際趨勢對壓艙水進行管制。

「壓艙水外來種問題不是只有針對我國，船是全世界在跑…國際公約的規範是全面性的，外來物種的破壞都有文獻分析，法規既規範好了，大家都應照遊戲規則走，至少會降低外來種入侵風險。」【b-1】

「針對臺灣，我們也認為需要管制，需要有預防，否則一旦發生生態改變，是不可逆轉。就像福壽螺就是一種外來種，無法改變了。」【b-3】

「影響一定有，國內比較沒有大規模田野調查。各國都有調查，都有影響我們一定也是有受到影響。」【b-4】

「我想對國外有影響，對我們一定也有影響。聯合國IMO 列舉的十大外來種，有魚有蝦有病菌。臺灣比較知道的是陸域上外來種入侵，如福壽螺。但海洋的資料就缺少。我認為會影響，且需要管制，且需要調查，才會知道我們受害多嚴重，包括幾個大港，甚至海岸線都要調查。」【c-1】

「只要發生一次就夠了，並不在於可能性多大，影響不是後續可彌補的…。兩岸經濟聯結強，未來壓艙水問題愈趨嚴重。因為從大陸到臺灣時間不長，且中國沿岸藻華問題隔段時間就有，香港也發生過了。」【d-1】

「壓艙水既是對生物多樣性影響，是慢性的，我們沒有過去的資料的比對，所以不知道影響如何，可能以併入膏肓，也不知道…。應有個客觀的基本的資料和背景，否則兩方對話會失焦。」【d-3】

- c. 一位受訪者認為即使未能掌握充分的證據，但比照疾管局在航空站對於生物入境的嚴格把關程度，應對壓艙水所帶進港區之大量外生生物有同樣重視。

「如果我們對於生物傳遞或生物入侵認為這是一個問題，答案就很清楚，當然會對環境影響。不要說船舶是這樣大量壓艙水帶入的生物，光是看生物入境把關是很嚴格，包括飛機場管制連一個水果都很嚴格，對於傳染病很嚴格，疾管局在機場把關嚴格，但對於港口管制目前來說是很大的矛盾。就算我們無法實際量化有多少影響或證據，但就管制外來種的嚴格度的角度，帶來的影響可能是帶來生物多樣性破壞、生態的改變，那怎麼能說對於壓艙水這麼大量怎麼能放鬆。」

【d-5】

- (2)少數受訪者認為壓艙水排放可能對於臺灣四周海域環境的影響不大。

「臺灣原本生物多樣性就很高，臺灣海域原本就處在多種不同環境交會處，生物多樣性就很高，這麼多種生物達到的平衡，單一生物應該很難去影響所達到的平衡狀態。也許排出的生物馬上會死掉，對環境根本沒有影響。」【a3-2】

「船舶只要有排放壓艙水，多少會有影響，總是有風險在，但台灣應該沒有人家這麼嚴重…台灣港口情況比較不同，我們的港區也小、兩邊海流都強，我們沒有物產，不像澳洲有煤鐵礦，人家是空船去、壓艙水壓滿，所以壓艙水都排在哪裡，來台灣港口的船壓艙水會全排的情況很少。尤其散裝船都是在台灣卸貨，幾乎沒排什麼壓艙水…」【b-6】

「壓艙水對我國區域的影響如何目前並沒有相關的調查資料，應該在調查後有了證據才立法，要說服人家需要提出有力的說明…。我國的港口都是緊臨外海，並非像美澳還有接到半封閉的內水，且臺灣近岸海流也強，所以壓艙水對於我國的港口地區生態造成影響，我是存疑的。」【b-7】

「因為台灣不是以出口為主，通常散裝輪是重載回來，壓艙水排放的量較少，我認為影響會較少。」【b-8】

4.3.2 對於經濟面向的看法

1. 國際公約對各權益關係人之衝擊(問題 B1)

本問題係對各權益相關人群組詢問《壓艙水公約》對其所管理之業務上的衝擊，因此依各群組分析其訪談結果如下：

(1)公部門：多數受訪者的回達較為保留，認為要視日後壓艙水管

理法規的制定與機關間的權責分配才能確知對其業務的衝擊。

「未來如果公約生效，檢查證書就會納入就可和一般項目一併檢查，PSCO 上船檢查時，可能增加檢查壓艙水設備證書，如果要抽樣可能需要和港務公司或港區環保局合作，且要有設備。」【a1-2】

「我們承辦商港法業務，可以從商港法 37 條把壓艙水列為其他污染。但需要把壓艙水定義清楚…。」【a1-3】

「港區的環保稽查業務目前是由我們巡查，對港區內污染行為進行蒐證、舉發，例如，空污用目測判定。再交由航港局(航務中心)開單、開罰，用污染港區行為那一條。所以未來法規通過，我們目前還是有增加業務量，只是看執行程度如何。」【a2-2】

「國內要立法生效不知道要幾年，對我的業務會否有衝擊，就看最後在國內立法中是立在哪一個法，且要看各部會下執行單位為何。現在中央地方的分工對應很清楚。但目前是沒什麼影響。」【a3-2】

(2)航運公司：所受到的衝擊最大，主要為設備成本的增加與裝置設備的流程安排，對於船員會增加工作量。

「所有國際公約中壓艙水對於航運公司的成本影響最大，現有船舶進塢裝置設備也要花很長時間裝。」【b-1】

「USCG 對於 IMO 所認可的設備不完全認同，所以有自己的認證系統，所以現在若裝，只有拿到五年認證。如果到時候不符合 USCG 標準，就要改裝否則就要重裝。變成美國標準沒出來，對於船公司會有疑慮。怕會裝到不符合他們標準的船舶。」【b-1】

「對於航運界的衝擊主要應是採購設備的成本問題，但對於船員本身的影響不太，反正我們就是照著標準流程操作。」【b-2】

「要裝設備，對於航商不是很容易的事，除了會有額外費用，裝置設備本身就有難度，一方面是市面上很多設備，很難選擇，各家都是照現在的法規標準，符合法規需求，但實際上好不好用，都不清楚…還要配

合船期，所以現在是希望安排在塢修的時間進行安裝。公約就是要求某個日期就要看到裝備，對於船東這是很複雜的一件事。」【b-3】

「對我們的衝擊就是增加設備，現在 D1 是換水，D2 就要買設備。現有船跟新造船都要裝，增加設備就要增加費用。」【b-5】

「現在是 D-1 標準，不太有影響，等到了 D-2 時就要採購設備、成本增加。」【b-6】

「就船舶操作而言，並不是很困難的事情…稀釋換水法就會影響到我們船上的其他的作業…但如果是現在裝壓艙水設備處理，船員負擔就會減輕很多。」【b-7】

「對於航商影響最大，要付出成本。」【b-7】

「對於我們船員，就是工時會增加，例如換水的區域有限制的水深、經緯度位置、航速等，如果船開到那裡，即使是半夜，我們就要起來操作。」【b-8】

「衝擊最大是對業者，必須付出設備成本。」【d-2】

「對於船公司成本比較大，因為有設備、維修、營運。」【a1-2】

「航商當然花費、支出會增加。」【a3-2】

「對航業界成本花費較大。所以不只設備要錢、改裝費用、且可能影響船期。」【c-1】

「航商要購買設備，成本應該是還可以接受…比較擔心的是選購設備的問題，因為現在即使裝了，也不知道到底好不好用。」【c-3】

(3)船舶設備產業界：公約中關於壓艙水處理設備的規定，為船舶設備產業界帶來商機、增加業務，因此是正面影響。

「除了船公司是付出成本外，會創造岸上相關產業的利機。」【b-6】

「對驗船機構就是多一個檢驗項目、將來也會多發一張證書。」【c-1】

「對我們是增加工作機會、商機，但對船公司是增加成本，對設備製造商大家都爭相去搶市場。國際海事組織已規定一定要裝置壓艙水處理設備，包括 Ballast water management system、Ballast water treatment system。」【c-2】

「生效後，對我們業務一定有影響，特別現有船部分，會找我們修船、裝設備，會增加業務量、有利機… 會擔心公約何時一通過，船東就會要求造船廠要把設備裝好，到時候一下子量很大，對我們會有交船的壓力。公約生效後，所有現有船要裝設備，但船塢有限，可能會塞車。」【c-3】

(4)外部機構：影響很小或無幾乎無直接影響。

「這是我的研究興趣。這不算是衝擊。」【d-3】

「對我的影響最主要就是教學，就是要更新資料，進一步作點研究，到底會有各種層面的影響，把這些用於教學。學術單位很單純。」【d-5】

2. 我國實施壓艙水管理對相關公部門、產業等之影響(問題 B2)

本題依國內若實施壓艙水管理所將引起的影響分為三方面進行分析討論。

(1)對於港口競爭力的影響。

a. 不會對港口競爭力造成負面影響。

「對於港口競爭力不會影響。」【b-1】

「如果我們管得嚴格，可能會影響港口競爭力，人家就不一定會想來我們的港口了。所以如果制定標準就照國際公約標準。」【b-3】

「可能港口競爭力受影響、港口開發成本增加。但這還不是主要的，一個港口繁榮與否主要是看國家競爭力，不會因為管制壓艙水就讓船公司不來一個港口…因為公約已經要求…並非我們國家的額外要求。」【c-2】

「如果成為公約、各國普遍都管，鄰進國家都管，如果我們不管或比較鬆，我們就可能對某些船成為避風港…」【d-5】

b. 會有負面影響。

「會不會影響港口競爭力在於會不會影響船舶進出時間，如果不會拖延，就不會影響。」【a1-2】

「執法嚴格程度對於船舶來港意願當然會有影響。我們目前排名第 13 名，前 12 名如上海、深峻、香港、釜山、東京、新加坡等港口，都是我們競爭對象。我們的觀點就是要以港口經營為考量。」【a2-2】

「港口競爭力多少會有影響。」【b-5】

「對於航運公司當然是港口管得愈少愈好，如果我們的…法規像歐美那樣嚴格要求，是會影響到港口利機。如果國際法通過了，我們也不能不要求也不行，但執行上、認定上，不要去造成航商的困難。這要拿捏得好。」【b-6】

「港口競爭力不應受壓艙水影響。臺灣從立法到執行往往需要一段時間，事實上，可能那時公約已通過，所以執法壓力不在我們，而是國際性要求。」【d-1】

(2)國內法制的建立與執行的需求。

- a. 國內法制建立的需求。公部門群組對於主管機關歸屬、法源根據問題較為關心。
- b. 國內法制執行的需求。航運公司、船舶相關產業與外部機構群組對於壓艙水管理國內法化都表示支持態度，但對於未來主管單位的執法力以及完善的配套措施的建立。

「對於航運公司，船全球跑，原則上我們都會遵守公約規範。」【b-1】

「我們都是跟著法規走，法規怎麼規定，就照作，不會提出什麼要求。我們是使用者，法規要求，我們就配合，而且這都是國際公約的規定，是大家形成共識，然後去執行，只是執行成果還要再看。但出發點、立意是好的，希望能環保、能減少這些外來種的污染。」【b-3】

「政府的執法決心和公信力很重要，國內航商應該都是跟著國際規範遵守，所以政府主要是要能管理外國進入我們港口的船。否則，我們都會遵守規定，但對於某些船會變成是自願性的規則。」【b-4】

「如果在公約前要有要求，就必須提出證據。巴西、美國都是一定要去的港口，無可避免，所以可以對船舶嚴格要求。但臺灣的港口較有替代性。如果 IMO 通過，臺灣就 follow，比較沒有爭議性。」【b-5】

「因此台灣是可以立法管理壓艙水，只是需要執法需要要有公信力…執法單位要提早通知何時實施…讓航運公司有準備的時間…壓艙水處理設備裝好後，公部門誰要驗證 …最難的就是要求外國船籍船舶也要遵守。」【b-5】

「臺灣國際線船舶分本國籍和外國籍，我們的船出去，人家要管制，要求一定會符合國際標準…國際公約生效，我們的船都會符合規定。所以問題是我們要不要管外國船舶。」【c-1】

4.3.3 對於管理面向的看法

1. 壓艙水管理之法制(問題 C1)

(1)多數受訪者認為立法之先要先確定權責機關。

「現在就是權責分配，可參考油污染的分權方式，對於不同等級的污染，由不同層級單位來執法…要瞭解壓艙水的排放方式，在什麼位置、有什麼紀錄。」【d-2】

「無論是專法或專職管理機構，我認為這是更上位問題，要回歸到海洋環境專責機關的決定。比較多是討論專責機關的問題，或是海洋污染防治法修正的方向。」【d-4】

「先要確定專責機關，然後才擬定專法。制法要避免模糊，否則模糊地帶就沒有人要作。」【d-5】

(2)對於壓艙水管理是否需要擬定專法的看法：

a. 需要擬定專法。

「壓艙水主要是微生物問題，會造成生態上改變，是個特別的項目，需要格外立法。」【b-7】

「我覺得有必要擬定專法，海洋污染防治法雖有相關，但規定得很廣泛，比較不是針對壓艙水。壓艙水是造成外來種入侵，跟生態比較有關，是另一種問題。要立法的話，可以根據 IMO，將來國際公約通過，對於船舶進行要求應該不會有困難。」【c-3】

「我個人傾向有專法，從擬定法案到立法院這是個漫長的路。這有跨部會業務上的重疊，權責劃分一向都是需要時間工作，大家都是依法行政。專法如果很慢，那我們可以考慮把公約與國內法切割。把現有的相關法去修改，改條文會比立專法快得多。」【d-3】

「如果真的要管，可能是要有個專法。」【d-5】

b. 不需要擬定專法，而在現有相關法規中增修訂條文。

「建議在船舶法去修比較好。因為商港法比較是經營面、關於商港的經營。如果處理設備是裝在船上，這樣就船舶法去規範。但水質規範可以是環保署來訂。」【a2-2】

「設立專法不容易，應在現有的法規中補充說明。」【d-1】

「用海污法修正會比重新立法快。」【d-2】

「我認為不會走專法，可能會在商港法或船舶法之類有相關設備，在海污法定排放標準。」【d-6】

c. 《壓艙水公約》生效後，以公告方式採行。

「如果國際公約生效後，還需要定國內法嗎？我記得海污法有規定如果國際公約生效，國內就是依其規定辦理。」【a1-3】

「有關船舶應設置之壓艙水處理設施規定，由交通部(規定)主政。按交通部船舶法第 101 條(有關船舶技術

與管理規則之訂定)規定，有關船舶技術與管理規則或辦法，主管機關得參照有關國際公約或協定及其附約所訂標準、建議、辦法或程式，予以採用、並發布施行。」【a3-1】

「國際公約是全球適用，臺灣只要 follow 就可以…應該不用再自己訂什麼法規，除非有區域性特殊的要求。」【b-1】

「就照 IMO 法規走就好。他們就是針對全世界，我們不用格外再立法，除非是規避法規之外的船隻，才要格外立法。」【b-3】

「因為交通部要修的法太多了，所以交通部只要公告採用，宣布船舶都要遵守規定。就定 IMO 標準就好，不用另外去定，可以把那個標準寫在國內法上。最快的方法是用公告方式，只是一定要用中文版。行政公告，例如高速船的管理也是用公告。」【c-1】

(3)對於壓艙水管理之權責機關歸屬問題，將各群組的看法整理如下：

- a. 由交通部門主管。公部門環保單位群組受訪者都認為應由交通部門主管，其他群組部分受訪者亦有少數受訪有此看法，但對於部分壓艙水管理事務(如壓艙水化驗)仍應由環保單位協助辦理。

「其可行處理方式含船舶加裝處理設施、於外海 200 海浬水深 200 公尺海域進行壓艙水交換，或於港口設置收設處理設施。相關事項屬船舶設備操作管理及港務工作，屬交通部權責。」【a3-1】

「海洋污染防治法第 29 條規定，環保機關主要管制船舶排出的廢(污)水、油、廢棄物或其他污染物質。另依海洋污染防治法細則第 19 條規定『本法第 29 條有關

船舶之排洩，依船舶法、商港法及航政主管機關之相關規定與國際公約或慣例辦理』，倘船舶排放之壓艙水含油、廢棄物、化學品等，應符合前述規定。」【a3-1】

「船舶管理是由交通部航港局來管…環保單位在實務上要對一艘船強制執行會有困難，在我們並非港口機關看來是如此。也許對港務機關很容易。」【a3-2】

「一般潔淨的壓艙水中所含的生物種目前是不在海洋污染防治法管理的方向之內。未來如果將壓艙水公約國內法話不知道會放在哪個法下。除非有辦法證明壓艙水中是有污染物質，才會有海污法主管機關才有可能去管。」【a3-2】

「船舶排放的污染物，還留在船上應該是交通部管，因為設備在船上、證書在船上。應是由交通部管…但當壓艙水排放入海，造成污染，可能環保署管。港口是交通部管，但污染是環保署管。惟一負責採樣化驗的是誰？國外是 PSC 管，這是交通部門，如果我們要環保署管，也不是不可以，就要授權環保署人員可登船化驗。」【c-1】

「我認為應由交通部來管、由交通部訂法，至於已經排到海上了可算環保署，或乾脆取樣化驗也歸交通部，可能 PSCO 要受訓，化驗可交由實驗室化驗。我的看法是如此。」【c-1】

- b. 由環保部門主管，但港口機關可配合執行。提出此看法的多為公部門交通單位的受訪者。

「航港部門可管的就是船舶設備與港口，其他對於海洋環境的污染事宜應事由環保部門主管，而交通航港部門配合執行。」【a1-1】

「如果公約過了，就看兩部如何協商。」【a1-2】

「我們比較關心的標準怎麼定，還有是否有具公信力、據能力的單位作檢驗。要有相關的認證實驗室。」【a1-3】

「就法規而言，商港法、海污法是彼此配合。港區內用商港法，包括離岸五海浬，港區外就用海污法。我們跟海巡單位也有此默契，五海浬內屬我們，但可用行政支援方式請海巡幫忙，五海浬外就是環保署跟海巡署搭配。目前外海的主政是環保署。災害應變主管機關是環保署。依壓艙水問題屬性而言，壓艙水打五百噸出去，這對航運安全無關，所以不屬交通部，但對環境有影響 所以應屬環保署。」【a2-1】

「要不要建立法的部分，以港務公司層次是負責經營港口，我們只有依法配合而已。」【a2-2】

「從管制角度來看，抽檢合不合格可由環保署來做。其他相關配套由港務機關來做。」【d-3】

c. 由檢疫或衛生部門主管。少數受訪者提出此看法。

「可能與農委會水產試驗所、或衛生局疾管局較有關。」【a1-2】

「按壓艙水排放標準之管制項目含生物量、病原體霍亂菌、大腸菌及腸球菌，主要為防止外來生物入侵。行政院國家永續發展委員會生物多樣性組工作會議中曾討論船舶壓艙水排放問題，委員建議請交通部依壓艙水公約評估對臺灣之影響並研議可行之方案，並請交通部加強壓艙水公約保育教育宣導。」【a3-1】

「應該是屬於環保法規或是農業法檢疫方面，因為…壓艙水主要是微生物問題，會造成生態上改變，是個

特別的項目…」【b-7】

(4)相對於公部門受訪者，其他群組受訪者對於權責機關歸屬較無定見，但對我國公部門各單位間能建立合作機制、完善管理壓艙水問題寄予期許。

「政府任何單位如要針對壓艙水管理必須瞭解設備、技術、流程等。任何東西都有破解之道，鑽漏洞的人一定有，如果比別人熟，才能確實執法。」【b-1】

「我國在執法上需要公部門能互相配合…無論是現有的海巡署或 PSC 只要受訓就好…國際公約通過了，就是可以依標準要求，就看公部門的魄力。」【b-4】

「壓艙水管理跟很多單位都有相關，不是說一個機關就可以做所有的事，不可能一個人什麼都懂。所以執法上執行就看現有各單位的業務，各作各的業務，但要有個標準流程…」【b-6】

2. 壓艙水管理之執法面(問題 C2)

(1)就壓艙水管理在執法上的操作步驟，將各群組看法整理如下：

a. 壓艙水資料申報。

「目前不太可能要求船舶申報壓艙水資料，除非公約有明確規定，港口國才能要求入港船舶申報。公約若通過，也要商港法隨之修法，我國才能要求船舶申報。但我國非公約締約國，立場上還是不易對入港船舶如此要求。」【a1-1】

「登船檢查是的 PSC，但船是到港務公司接洽，從 20 海浬就跟港務公司申報，港務公司安排停靠位置，然後 PSC 決定檢查哪艘船，就去碼頭檢查。…需要建立起合作機制，以後才容易公事公辦。」【a2-1】

「目前進出船申報部分，都會用無線電連繫，我們會知道船舶何時進出港。壓艙水的申報應是在航港局。例如艙底水也要排放也要申報，目前是港務公司代管，統計好後再報到環保署…技術上不難，只要有法源根據。只是壓艙水要報給哪個單位，就看法規根據。」

【a2-2】

b. 登船檢查。

「因為船舶是國土延伸，要上船必須有依據，以前我們用商港法 49 條為依據上船，否則完全沒有法源。」

【a2-1】

「目前我國港口國官員主要配合巴黎與東京備忘錄的要項進行抽樣檢查。要將壓艙水風險列入船舶檢查點數的困難是要提出船舶壓艙水具有高風險的基礎何在?必須有明確的證據，執法時才不至受到質疑。」

「執法上需要的配合：(1)制定排放標準，(2)有檢驗機構，(3)有採樣人員。因為壓艙水排放開口是在船底，所以要從管道取，又不能混到其他海水，不太可能從人孔道直接取樣，且港口國官員主要是作一般性的稽查工作，不太可能同時進行採樣工作，因此需要有可以隨時配合採樣、檢驗的團隊。」【a1-3】

「船舶在稽查上有其專業性及獨特性，非港口國管制官員，不易對國際船舶進行稽查。」【a3-1】

「應該不會有執法上的困難，因為裝備使用時就會記錄，是全自動的記錄器，在哪裡排放、排放的生物濃度多少都有記載。如果有疑問，就抽樣檢查看是不是符合記錄。」【b-3】

「採樣、化驗要有公信力…國家可以蒐集資料、進行

研究。作為立法依據。」【b-5】

「一般我們進行換水都會紀錄經緯度位置、船速等(手寫的)，這就是壓艙水紀錄簿，官員會先看紀錄，有問題再去採樣，如果化驗結果不合格，就會被扣船、罰款，是如果沒有照規定才會這樣。」【b-8】

「原則上港口國官員上船是先看證書，如果有明顯違反的證據，才可以扣船、化驗。因此除非是很明顯的違規，才會去檢查。否則光取樣就很麻煩，如何取樣、如何化驗、放太久可能會孳生細菌，如果我們國家要管制壓艙水，就要有相關的檢驗設備…最大問題是我們有否實驗室。如果沒有，我們頂多能檢查證書、設備而已。」【c-1】

「如果我們真要實施，可能需要籌建化驗實驗室，或委託學術單位增加設備處理。如果我們訂了壓艙水管理法，就要有配套措施。否則訂了規範，給人家知道我們無法化驗，那就只是做個樣子而已。」【c-1】

「所以登船檢查的人必須瞭解壓艙水設備才能執行。」【c-2】

「採樣的部分，是執行上最困難的部分。因為是要驗證水質中的微生物量，抽樣不難，但要準確驗證、有公信力比較難。」【c-3】

「第一是檢查文件、包括船上系統證書。如果作到這一步也還可以，後面的採樣可以慢慢作，需要慢慢訓練，包括人力、檢驗結果等要有水準，才能說服人。」【d-5】

c. 壓艙水排放標準的制定與查核。

「可以從商港法 37 條把壓艙水列為其他污染。但需要

把壓艙水定義清楚，我們現在所討論的清潔壓艙水，不含油…壓艙水用肉眼看是看不出來有污染，這又和其他油、廢污水不同，所以是否能制定排放標準也有疑問。」【a1-3】

「港區的環保稽查業務目前是由我們(國營港務公司)巡查，對港區內污染行為進行蒐證、舉發，例如，空污用目測判定。再交由航港局(航務中心)開單、開罰，用污染港區行為那一條…對於港區內之污染行為只能用肉眼看、拍照存證…但壓艙水管線都是在底下。用肉眼看不出來。」【a2-2】

「抽測應該是環保署委外進行。應該這不是現行可判斷的，有樣本分析的需求。可以委外辦理。」【d-3】

「對於其他生物種濃度目前檢測公司應該都尚無檢測方法可依據，需要環保署、或衛生署來訂依據。可能有學術單位有此技術，但尚未有標準規範。」【a3-2】

「壓艙水最主要是針對外來種，至於病原體，水本來就是髒的，應該不是檢驗病原體。所以台灣也要列出自己的外來種，才能定化驗的標準。」【b-6】

「效能上執法單位應該只要制定排放標準就好，設備就看船東要裝什麼。檢查排放標準的應該是專門機構如環保部門或航港局…登船檢查官員需要有專業能力，且要考慮人力多寡，要有完整配套。」【b-7】

「設備中有一項是用電解的，殺完水中生物後，水是有毒的，因此要注入中合劑，處理過的壓艙水要等decay完成後，過幾天才能排掉。所以未來檢查上，也要注意船舶排出的水是否已經decay完畢。」【c-3】

(2)除上述的執行細節問題外，公部門群組對於本題有較多的討論，就目前各單位的業務現況提出如果加入壓艙水管理業務可能會面臨的問題，整理如下：

a. 交通航港單位受訪者表示港口國官員人力不足與專業能力的訓練。

「港口國管制官員需要培訓，並非通才。包括船員、港口國管制官員都是有必要培訓。像檢查壓艙水證書，需要瞭解交換量、幫浦速度、航程可以計算出來，才知道有沒有寫錯，還有經緯度有沒有寫錯，如沒有經過該區卻有寫。但這都需要經過專業的訓練才會知道這些背景知識。」【a1-2】

「因局組織法未能於去年通過，因此今年的高普考尚未能大量開缺，目前人手上較不足。」【a1-1】

「現在光是目前的業務，執行能量都已不夠，要抽檢高風險船舶，依船旗國等音速進行篩選。目標檢查率要達 15%，但現在還達不到 10%。因為人力有限…」【a2-1】

「人力。港口國官員在現有業務外再增加壓艙水業務不容易。」【a3-2】

「所以最大的困難點是人力，這不是一般人力，需要有具備國際經驗的人力。」【d-5】

「港口國管制人力、制度都是問題。」【d-6】

b. 由於登船採樣壓艙水及後續的檢驗可能無法由港口國官員獨力完成，因此交通航港單位受訪者表示如要委外經營將有經費預算問題。

「進行抽樣檢查不太可能。抽樣檢查要外送出去化驗，對於公務部門而言需要提報預算才可能作這事，時程上往往不易配合。除非像財團法人機構，有充足資金可隨時送交化驗。」【a1-1】

c. 環保單位受訪者表示其在船舶檢查上的困難。

「船舶在稽查上有其專業性及獨特性，非港口國管制官員，不易對國際船舶進行稽查。」【a3-1】

「壓艙水應該是要上船採樣。因此需要國家立法授權才能上船採樣，但實際上他們帶我們去採什麼，需要對船夠瞭解的人才能執行。對於壓艙水採樣需要有專業的技術。」【a3-2】

4.3.4 對於技術面向的看法

1. 指定壓艙水交換區之可行性(問題 D1)

(1)多數受訪者認為在我國近岸海域劃設指定壓艙水交換區是不可行的，原因如下：

a. 會影響船舶航線。

「各個船舶航線不同，北中南東要怎麼劃指定區域，會有困難。」【b-5】

b. 對於短航程的船舶，要完成換水要求不易達到。

「對於短航程船舶檢查記錄沒有問題，但要求短航線的船遵守換水規定會有困難，採樣也會有困難。因為航程時間太短。」【a1-2】

「遠洋船舶比較沒問題，在太平洋就可交換，但短航程的船舶，如香港來高雄，不到一天就到了，該如何做？」【a2-2】

「對於遠洋航線比較有可能完成交換，東南亞等短航線會比較可能困難一點。」【b-4】

「我們的航行區域都很近，航程很短，可能一天不到就抵達了，水都還沒換完。如果要停下來換，就會影響航程。」【b-7】

c. 監測管理不易。

「若設定指定交換區，在管理上所需花費的人力、財力成本都相當大，並非小事。」【a1-1】

「目前沒有 24 小時監控系統，像油水分離器就有監控系統，什麼開什時關，都有電腦自動記錄，才有可能監控。」【a1-2】

「一指定區域下去就有執法問題，誰要去監管，如果規定了，卻難執行，就形同虛設。且若都在該區集中排放，就可能要作環評。」【a2-2】

「不太可行。臺灣的監督系統很弱。」【d-6】

(2)少數受訪者認為可行。

「可行，就看要不要執行。美國是執法嚴格，規範出來，線都劃出來，船就會照規範走。」【b-1】

「雖然公約規定至少 50 海浬，但總要有除外條款。台灣可以指定區域。例如在錨區換水，只要不在港區內就可以…」【b-6】

「在菲律賓跟台灣之間有一個區域夠深、夠遠，應該可以換水，北邊的話要查海圖找水深 200 公尺的地方，這個就是船上主管根據自己航線找位置來換。」【b-8】

「不困難，不要讓船偏航。至於壓艙水交換現在正實施，位置 IMO 有規定，要離岸 2000 海浬水深 200 公尺，不然就要指定交換區。從北來，就在東海換，不要太靠近琉球。東方來，更沒問題，就在太平洋換。南方來，就在巴士海峽換。」【c-1】

- (3) 有受訪者認為在《壓艙水公約》中 D-1 換水標準要求僅是過渡措施，等到進入 D-2 後，船舶都需安裝壓艙水處理設備，以我國的立法速度而言，屆時可能已進入到公約 D-2 時程，因此並不需要針對 D-1 換水標準制定規則。

「目前是過渡時期，到了 2016 年就不用了。依照我們國家立法的速度，屆時可能壓艙水的管理直接規定船舶安裝設備、不需要考量指定交換區了。」【c-1】

2. 檢驗船用壓艙水處理效能之技術(問題 D2)

- (1)所有受訪者都認同船用壓艙水處理系統是實施壓艙水管理最可行且最有效的辦法。

「其實環保是一個全球趨勢，且無法走回頭路，壓艙水處理設備等 10-20 年後就像其他設備之後就是船上設備的一部分，只是現在是剛開始要裝。環保是優質企業的企業責任，對於貨主也會對企業有所選擇，這是市場關係。」【b-4】

「兩岸之間只有 D-2 是可行的。只是法規實施的時間點，到底何時要裝，要給航商時間點，不然的話不可能在時間之內安裝。」【b-5】

- (2)對於設備效能的檢驗的建議如下：

「公部門在執法上就是要看壓艙水管理記錄簿，現在都自動化了，都會有記錄，官員只要看是否記錄完整、經緯度位置是否合理等。有所懷疑，就需要採樣化驗。」

【b-4】

「根據我們的經驗來說，第一是先檢查證書和記錄簿，看合不合理。再來，可以要求船員現場操作，來證實船員有熟悉操作流程，就像 PSC 檢查其他的船舶設備檢驗一樣，這也是一個判斷依據。採樣是最後的措施，因為比較麻煩。」【b-6】

「國際公約通過後，要求船舶裝置壓艙水處理設備就沒有問題，現在的設備就應該都有自動記錄，官員可以先檢查紀錄簿，有問題再去採樣，船員可以幫忙取樣，化驗的部份就要官員自己來。」【b-8】

3. 岸上壓艙水處置設施之可行性【問題 D3】

多數受訪者認為岸上壓艙水收受設施是三種處置方式中最不可行的，原因如下：

(1)技術問題。

「技術上困難，因為壓艙水量太大。」【a1-2】

「一艘船要處理的壓艙水量太大，我看技術上不太可行。而且還有收費問題。」【b-1】

「技術上不可行。壓艙水量是幾百噸、幾千噸，且要接管線到岸上，這樣處理會耽誤船期。且對於港口單位要投資也是個問題。」【b-4】

「技術上不可行。5000 噸的水要多大，還有處理的時間。」【b-5】

「不太可行 因為水量太多，污水廢油水是少量還可以抽，但大的水量就難了。」【b-6】

「比較困難是電力供應的問題，如果一台幫浦可以抽 250-300kgwater/hr，一個大艙約要抽 4-5 小時，小艙也要抽一個小時。全部要處理，可能要花時間。」【b-8】

「技術尚不太可行。主要是時間上會耽誤。」【c-1】

「不可行。目前也無此案例。岸上要收水的話，需要有大幫浦，但要怎麼把水從船上打上岸是個問題。」【c-3】

「且壓艙水量太大，這是主要處理上的問題。」【d-3】

(2)成本、收費問題。

「岸上設施會有成本效應，光是每年的成本與維修費用會對本公司造成負擔…。使用者要收費問題，這對航商本身也是問題。」【a2-2】

「如果我們港口裝，那我們有十個國際港都要設置，那設備不少錢，還要有人操作、維修、換零件，可能花費比設置實驗室還貴。」【c-1】

「作示範碼頭可以，但要全部碼頭都作有困難，因為碼頭有既有設施，要改裝有困難。政府要花錢，之後向船舶收費。以長遠考量，這是一項投資」【c-2】

(3)場地問題。

「需要場地，用地很大會有抗爭等問題，不太可行。像高雄港有 122 個碼頭，不可能一一安裝。」【a1-2】

「壓艙水本身是很機動的動作。要在裝卸貨過程中調整，會比較方便。貨櫃船通常只停六個鐘頭，如果用岸上收受設施會有排隊問題。」【a2-2】

「第一要找出地方、要投資就是一個大問題」【d-5】

(4)需求不高。

「因為船舶不太會換壓艙水，為了平衡壓艙水會在艙間打來打去，除非去程重載、回程空櫃，這時才會打壓艙水。因此港口提供設施的需求性並不高。」【a2-1】

第五章 座談會記錄摘要與意見歸納

5.1 座談會辦理緣由

本研究彙整具體之相關環境背景資料及壓艙水管理法規草案架構，並以港務局及相關權責機關人員為對象，舉行深度討論之座談會。藉此，使相關權益人能夠詳盡明白目前及未來所可能遇到的問題，並使其瞭解初擬之管理法制構想，以及未來法規可能採取之管理方式。其目的除了可使權益關係人能夠得知未來可能會受何種限制以及受此限制之原因外，並可就壓艙水管理法規之基本構想是否適當及是否具可行性，提出建議與看法，以作為進一步法規研擬上之參考。

5.2 座談會記錄摘要

本研究將此次座談會之各部會立場整理如下(詳細會議記錄請參閱本研究附錄五):

1.交通部航政司:

對管理事項部分，認為最大的問題在於管制標準及流程，對於壓艙水的標準認為需要由環保署協助才能訂定，而在訂定上也希望這個標準能夠盡量與國際要求一致以避免影響其他外國船隻進入台灣港口的意願;而在權責機關上，則想多了解鄰近國家在壓艙水的管制上究由哪些單位負責。懲處上則希望處罰或管制方式能夠多元化以因應各種不同的狀況，同時也加入其他單位一同執行以補足可能缺漏的部分;最後在立法手段上，認為現行海商法 75 條有其限制，建議修正現行法律以把壓艙水列入管制範圍內。

2.交通部航港局:

就管理事項上，希望環保署能夠訂出壓艙水管制的標準，如此才能夠執行後端的查驗工作，而在管理流程上則認為與現在主要職掌的工作內容有所差異，故還是希望能先有一個標準出來，而在之後的權責機關與懲處議題上，認為若根據現今法令航港局本身沒有開罰的權

力，即便訂定出查驗的標準與流程，之後要進行相關查驗也勢必需要各部會互相配合才能順利執行，最後在立法方式上提出分階段執行的概念以因應未來法制化的時間壓力問題。

3.環保署:

環保署在管理事項的部分想參照 IMO 之管理標準與模式，而在管理流程上也不同於其他部會，認為岸上設施在不影響居民的前提下是可以考慮採納的選項；另外，在權責機關與懲處手段方面，環保署目前並無把壓艙水列入海污法的管制範圍內，並且希望實際的管制和壓艙水檢驗、流程等能由航政司、航港局的港口國官員負責，最後的立法方式上則沒有特別意見。

4.海巡署:

對全部議題沒有意見，但表示在未來壓艙水的管制上願意配合及協助各部會的執行。

5.航運公司:

對管理事項部分，各航運公司基本上是採配合的態度，政策一旦訂下就會跟隨相關規定做出改變，目前旗下的遠洋船也已經依照他國壓艙水的限制作出相關的改裝，而針對管制政策也均表示會全力配合，至於對權責機關、立法方式等則沒有意見。

6.台灣港務股份有限公司:

對管理事項部分，擔心我方壓艙水相關規定的寬嚴問題，希望能夠訂定適合的標準以避免我國港口競爭力降低，同時這個訂定出來的標準要有足夠的依據來支持，並配套相關的罰則以利相關單位執行，對岸上設施的看法則根據過去經驗，認為可能會因地方政府施政產生衝突等因素而不可行。在管制流程上提出壓艙水處理的可能方向，認為可由處理船來針對國外船隻內的壓艙水先做處理後再進港排放，以避免壓艙水中的外來種進入本國海域，而對權責機關議題，則贊同航政司的看法，希望能夠多了解鄰近各國對壓艙水的管制方式，同時也

希望未來壓艙水管理法制化時能夠保留適當彈性以利其他單位的參與，最後在立法方式上，則希望未來在講解法制化時，最好能以圖示、體系化的方式呈現，以使閱聽者能夠迅速了解以進入狀況。

7. 中國驗船中心

認為岸上設施不可行因為對船東而言必須要改裝現有船隻來配合會使其付出更多成本，同時也有船期的問題。另外關於管制方面，提出國際航線與國內航線船隻的差異，並認為或許可使用不同的管制標準來加以規範，至於其他方面則沒有特別意見。

5.3 座談會意見歸納

各組權益關係人基於不同的立場與背景對於船舶壓艙水議題所涉及之多重面向有各種不同的看法，本節根據上述之訪談資料彙整出各組權益關係人對於壓艙水管理所提出之建議，作為本研究所舉行之座談會的討論議題基礎及未來關於壓艙水管理之立法參考。

5.3.1 管理事項

依據目前《壓艙水公約》的規定，有關壓艙水管理可以採取的管制手段包括有三方面：指定壓艙水交換區、船用壓艙水處理設備以及岸上收受設施。各權益關係人群組對於使用對這三種處置方式管理進入我國港口船舶的可行性看法大致相同。使用船用壓艙水處理設備被視為最適於我國的壓艙水處置方式，其次為指定壓艙水交換區，而岸上收受設施被認為最不可行。未來我國制定壓艙水管理法規時應考慮所規定的辦法是否可行。

1. 岸上壓艙水收受設施

岸上壓艙水收受設施被所有受訪者視可行性最低。主要原因是多數受訪者認為技術上有困難，雖然以水處理技術而言，要消除壓艙水中的生物種並不是困難的技術，但因船舶壓艙水每次要處理的水量遠大於目前的污水處理設備可容納的水量，且要將壓艙水由船上抽至岸上處理，需要大型的幫浦以及可適用各種船型的接口、夠大的管徑

等，都有其困難性。並且岸上收受設施對於港口經營者是一項鉅額投資，包括成本與投資報酬率，以及後續的維修保養、操作人員訓練等，這也涉及航商的使用意願與願付代價。岸上收設施還有難解的場地規劃問題，例如廣設於各碼頭恐窒礙難行，但若設施設置不普及，如只有在某些特定碼頭設置，可能影響船舶進出港流程與作業時間。另有受訪者提出岸上收受設施就我國港口貨物流通的特性而言需求並不高，因為通常來訪船舶是載貨重載而來，會排出壓艙水的情況較少，尤其是散裝輪通常是從其他地區滿載回來，壓艙水攜載量很少或甚至沒有，貨櫃輪因裝卸貨需求，可能會排放壓艙水，但多數情況下僅是部份壓艙作調整，不至於全數排放，因此對岸上收受設施的需求並不高。

2. 壓艙水指定交換區

多數受訪者認為在我國近岸海域劃設指定壓艙水交換區是不可行的，原因包括會影響船舶航線，還有對於短航程的船舶，如往來於兩岸的船舶，要在其航程時間內完成換水要求不易達到。再者是受訪者認為指定壓艙水交換區會有監測管理不易的問題。在《壓艙水公約》中 D-1 換水標準要求僅是過渡措施，等到進入 D-2 後，船舶都需安裝壓艙水處理設備，以我國的立法速度而言，屆時可能已進入到公約 D-2 時程，因此有受訪者認為並不需要針對 D-1 換水標準制定規則。

3. 船用壓艙水處理設備

所有受訪者均認同最為可行的壓艙水處置方式是要求船舶裝置船用壓艙水處理系統，航運公司均視此為國際社會的趨勢，因此新造船都已安裝設備或已預留空間，現有船待公約生效就會安裝設備，對於國內未來是否要實施壓艙水管理，表示肯定與樂觀其成的態度；未來管理單位對於壓艙水處理設備的效能需要透過壓艙水採樣、化驗的方式來確認，為此研擬具體可行之查核驗證程序。

5.3.2 管理流程

對於欲進入我國港域並載有壓艙水之船舶，在不影響船期的前提

下，應如何規劃壓艙水管理流程？綜整各權益關係人所提出具體的建議如下圖：

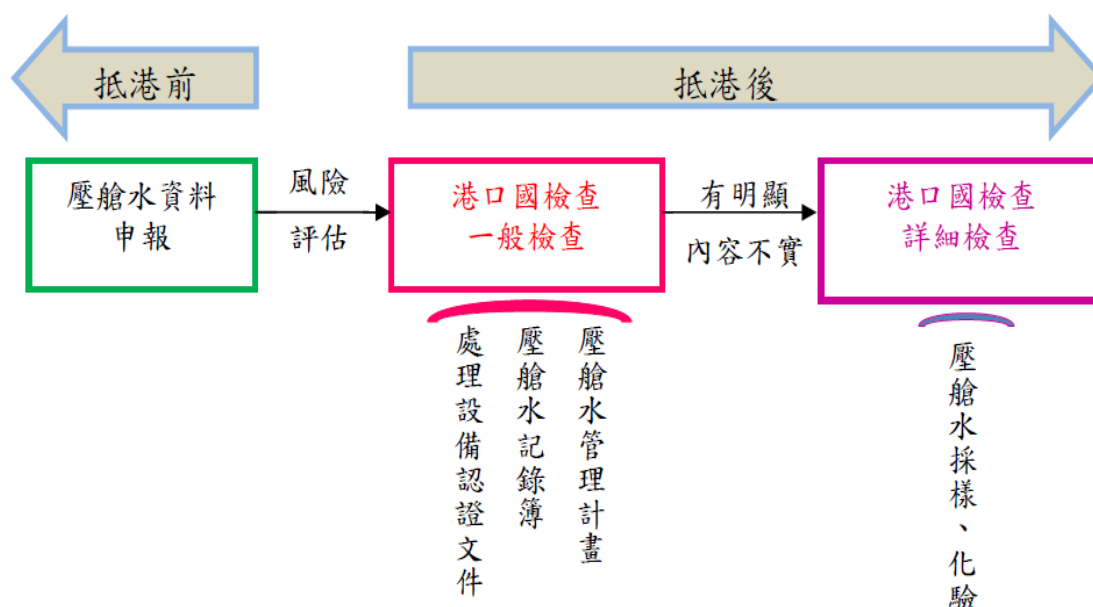


圖 5-1 進入我國港口的船舶將接受到的壓艙水管理流程示意圖

1. 壓艙水資料申報

交通航政單位受訪者表示公約有明確規定，港口國才能要求入港船舶申報，公約若通過，也要商港法隨之修法，我國才能要求船舶申報。但我國非公約締約國，立場上還是不易對入港船舶如此要求。港務公司受訪者表示目前船舶的進出港申報是以無線電方式向港務公司進行通報，使港務公司能掌握船舶進出港時間。對於其他船舶資料，目前是由港務公司代管，港務公司再依各相關法規向各主管機關報告，如艙底水排放，是向環保署報告，船舶安全資料是向航港局報告。因此壓艙水資料的申報須有法規依據，港務公司才依法向其主管機關報告。壓艙水資料申報後的彙整、分析工作，也視未來主管機關要有怎樣的執法密度。

2.港口國檢查

船舶被視為一國的領土延伸，只有港口國官員有權登船進行各種檢查。因此《壓艙水公約》中關於壓艙水管理計畫、壓艙水記錄簿的檢驗，多數受訪者都認為無庸置疑地須由我國港口國官員執行。

《壓艙水公約》規定當港口國檢查相關證書後，認為有明顯證據的情況下，可對船舶實施壓艙水採樣與化驗。受訪者對此項目的看法，與其對於船舶配備的認制，如壓艙水的採樣點與採樣方法，以及對水質化驗程序的認識有關。原則上，受訪者都認為壓艙水的採樣與化驗是所有執行步驟中較為困難的項目，交通航政單位受訪者表示港口國官員可以登船進行「一般檢查」，內容主要是文件上的檢查，包括壓艙水管理計畫、壓艙水記錄簿以及壓艙水處理設備認證文件。至於進一步的壓艙水採樣與化驗應是在「一般檢查」後，發現有明顯內容不實者，才會進行的「詳細檢查」，以確認處置過的壓艙水是否符合「壓艙水排放標準」。壓艙水採樣與化驗具有較高的技術性，需要有可以配合執行的機關在港口國官員的陪同下登船進行，執行的機關可由環保署或以外包化驗機構的方式實施。但也有受訪者認為壓艙水的採樣檢驗因涉及水質的污染問題，應由環保單位人員負責執行。環保單位的受訪者對此表示船舶設備的採樣具有一定的專業性，就目前環保人員的專業而言恐無法勝任。

3.壓艙水排放標準的制定與查核

《壓艙水公約》要求船舶壓艙水經過處理後需要符合 D-2 標準，因此需要訂定壓艙水的排放標準使查核者有法可循。多數受訪者認為我國可直接參照 IMO 所規定的壓艙水排放標準，無須另立更高的標準，但在部分先進國家對於排放標準的制定是根據科學研究的基礎考量各種生物種入侵的可能性而設定標準(Lee et al., 2013)。在查核的步驟上，由於壓艙水不同於其他目前已受管制的船舶排放，無法以目視法辨識是否合於標準，惟有透過登船採樣、檢驗的方式來確認壓艙水是否符合標準，然而對於壓艙水的採樣與化驗目前仍是具有高技術門檻，如何取得具有公信力、具代表性的樣本對於管理單位仍是一項新

的挑戰，有待各國繼續投入技術開發以克服之(Carney et al.,2013; Frazier et al.,2013)。

5.3.3 權責機關

參考目前已開始實施船舶壓艙水管理的國家，其權責機關依其國情與法制架構而有所不同，例如美國以國土安全部下的海岸警衛隊(USCG, United States Coast Guard)為第一線的管制單位，同時在各個重要港口設置USCG之管制窗口，並指派人員進駐，但於制定相關規定時會整合各部會成立專案小組，以研議相關法制問題。而澳洲則以隸屬於洲政府農業、漁業暨林業部之下的檢疫單位(AQIS, Australian Quarantine and Inspection Service)為主要的管制單位。

對於我國實施船舶壓艙水管理的權責機關，各權益關係人的看法差異很大。公部門群組中環保單位受訪者因壓艙水在《海洋污染防治法》中尚未能定義為「污染物質」，表示目前壓艙水的管理並非屬於環保業務，除非其中含有廢油、污水等已公告的污染物質。且環保單位要對船舶執法較有困難性，認為船舶設備的管理應由航政單位主政較為適合。公部門群組中交通航港單位受訪者認為壓艙水問題就屬性而言，與航運安全無關，但對環境有影響，所以應由環保單位主管，但港口機關可配合執行。船舶設備產業群組受訪者認為船舶排放的污染物，還留在船上應由交通部管理，因為船舶設備、證書等均為交通管的管理職責，但當壓艙水排放入海，造成污染時，環保署可能就有管理的需要。至於登船採樣化驗該交由何單位，需要單位之間協調、釐清。另有少數受訪者認為壓艙水造成的外來種入侵問題是屬於生態問題，應由農業部門或檢疫部門來主管。航運公司群組與外部機構群組的各受訪者對於本題並無一致性的看法，與各受訪者對於政府機關間的運作認知程度有關。但無論其看法如何，都對我國公部門各單位間能建立合作機制、完善管理壓艙水問題寄予期許。

5.3.4 懲處手段

《壓艙水公約》正文第八條對於任何違反公約要求的行為，不論其發生在何處，都予以禁止並授權給各締約國之主管機關之法律給予制裁。即使目前公約尚未生效，但已開始實施壓艙水管理的國家為防止船隻規避管制，均在壓艙水管理辦法中制定了罰則，例如美澳針對違反相關文件檢驗之法定義務船隻將處以罰款，美國對於知情而故意違反規定者，並處以刑法制裁。

港口國官員受訪者作為第一線的執法者也提出設置懲處手段的需求，因為若無完整的管理辦法、配套措施，作為港口國官員只能對於違規船隻關切、警告、舉證，如果無法可罰、也不扣船，這樣港口國官員後續就很難再去檢核。

現今對壓艙水的檢驗仍須一定的時間(最快約 2-3 天)，故會出現在等待檢驗結果時船隻卻已經出港之情形，為避免船隻以船期為由規避相關之檢驗與開罰，可透過建立黑名單之方式或是累計開罰，使得違反之船隻在下次入港時會遭受到懲處或更嚴格之檢驗，情形嚴重時甚至可強制扣留等。

5.3.5 修法方式

對於未來船舶壓艙水管理法制化之建構方式主要有三種：

1. 設立專法

亦即透過立法院三讀通過所制定之一部完整獨立之法律，藉以管理壓艙水排放之事宜。例如美國的立法方式是使壓艙水管理法令體系獨立而完整，其是把壓艙水排放作為一個需要特別管制之事項看待，但因台美兩地之自然環境與經濟因素考量，若要參照其內容則需要將其本土化，創設與修正部分之內容使其可以在台灣發揮管制之功效。

較多數受訪者對此表示肯定，認為壓艙水管理涉及多面，包括抵港前壓艙水資料的申報、壓艙水排放標準的制定與檢驗、壓艙水處理設備的認證與查核等，就目前各相關單位的業務而言有重疊之處或權

責劃分不明確的地方，因此需要擬定專法或專章以完善管理。也有受訪者認為壓艙水管理需要專法的原因是因壓艙水所造成的生態問題與其他形式的污染不同，因此有必要以專法形式制定規範。

2.修改現行法律

以澳洲為例，是將壓艙水視同於貨物，直接適用於原有的檢疫法規定。就我國而言，《海洋污染防治法》第 29 條第 1 項「船舶之廢（污）水、油、廢棄物或其他污染物質，除依規定得排洩於海洋者外，應留存船上或排洩於岸上收受設施。」與《商港法》第 38 條第 1 項「商港區域內，船舶之廢油、廢棄物或其他污染物質，應留存船上或排洩於岸上收受設施。」或可參照澳洲之作法透過修正「其他污染物質」的認定，把壓艙水也納入現行法規中加以管制。

部分受訪者認為壓艙水管理可比照其他船舶污染的管理方式，只要在現有相關法規中增修訂條文即可，例如對於壓艙水處理設備，可在《船舶法》中與船舶設備相關的章節增修條文；對於抵港前壓艙水資料申報，可在《商港法》中與船舶進出港申報規範中增修條文；對於壓艙水排放標準，可參考《海洋污染防治法》體系的放流水標準相關規範增修訂條文。

3.參照國際公約直接公告

根據我國商港法第 75 條：「商港安全及管理事項涉及國際事務者，主管機關得參照國際公約或協定及其附約所定規則、辦法、標準、建議或程式，採用施行」本條文提供我國有參照國際壓艙水公約來制定壓艙水規範的權力與空間。

有受訪者提出《壓艙水公約》生效後，以公告方式採行的看法，認為有關船舶應設置之壓艙水處理設施規定，可參照有關國際公約或協定及其附約所訂標準、建議、辦法或程序，予以採用、並發布施行，國內並不需要另外擬定專法，可直接依公約規範採行。對此，已涉及「國際公約國內法化」的討論，根據「國際公約國內法化的實踐」研究計畫之報告書(法務部，2009)中的結論「對於一元論國家而言，條

約已有國內法效力」，「對於二元論國家而言，國際條約即使經過批准或加入，亦無國內法效力，因此需要制定國內法以實踐國際條約，而且其所採的方式是逐一制定國內法以實踐個別條約。」而我國因特殊之國家困境，國際公約國內法的方式較上述的兩類更為複雜。因此壓艙水管理是否能直接以公告採行國際公約的方式作為國內壓艙水管理的執法根據，仍有待釐清。此外，縱使採取此立場者，某程度似乎亦承認必須「立法」，因為所謂「立法」在行政法規當中，應包含憲法第 170 條所規定之「立法院三讀通過」之法律，以及法律授權行政機關發布之「法規命令」。而論者所謂參照 BWM 公約所訂之標準、建議、辦法或程序，予以採用、並發布施行，倘若商港法第 75 條被視為是「法律授權之依據」，則其所發布施行者，其實就是法規命令。再者，國際公約為尊重各國家之主權，不可能鉅細靡遺地進行規範，因此各國仍須視各自國家之狀況與情形，訂定個別之管制程序以及細節事項之規範內容，所以第三種類型之法制化方式其實即是「依據法律授權訂定法規命令」，在此必須先予以釐清。

若把目光轉回來商港法本身之規定上，首先，若依照商港法 1 到 5 條而言，其所能管制的範圍僅限於商港內，但若要使壓艙水的管制措施能夠完全發揮阻絕外來種進入台灣的结果，就必須要能夠在船隻進入港口前開始發動管制的措施，故即便依商港法 75 條規定參照了國際公約，仍無法完全解決壓艙水管制上的問題。再者，壓艙水管制需要制定出檢驗標準、檢驗流程等，而管理商港的政府機關是否具有有處理污染物的充足經驗並擁有足夠能力來訂定這些管制措施，也是值得存疑的一點。最後，商港法 75 條雖然給了我國得以參照國際公約的依據，但國際壓艙水公約本身並沒有針對違反壓艙水規定設立相關的罰則，這個部分仍需要透過修法來制定，以使受管制之船隻能夠確實遵守相關規定，避免外來種透過壓艙水入侵我國海域。

故我們可看出來不論未來採取上述何種立法方式，在管制壓艙水上，修法均是無法避免的過程，如何訂出適合台灣現有環境的壓艙水管制法令，將是過來我們要面對的重點事項，這部分有賴各機關間的協調與合作，方能夠應對壓艙水公約執行後的新環境，同時解決台灣海域外來種入侵的隱患。

第六章 壓艙水管理法草案架構之研擬

6.1 依據商港法 75 條規定管理可行性之分析

首先必須先釐清的問題是，國際公約是否可以作為我國行政管制之法源，此已涉及「國際公約國內法化」的討論，根據「國際公約國內法化的實踐」研究計畫之報告書（法務部，2009）中的結論「對於一元論國家而言，條約已有國內法效力」，「對於二元論國家而言，國際條約即使經過批准或加入，亦無國內法效力，因此需要制定國內法以實踐國際條約，而且其所採的方式是逐一制定國內法以實踐個別條約」。多數學說皆認為儘管憲法並未明文規定，但基本上「一元論」未能符合憲法第 23 條及第 170 條之規範精神。此外大法官釋字第 329 號解釋亦表示國際條約或國際公約「除經法律授權或事先經立法院同意簽訂，或其內容與國內法律相同者外，條約、公約或協定附有批准條款者，應送立法院審議」，由此可見亦採取「二元論」之立場，換言之，直接以 BWM 公約作為我國壓艙水管理之行政管制的法源依據，顯然不可行。因此，進一步要探討的問題是，商港法第 75 條是否即為大法官釋字第 329 號解釋中所謂「經法律授權或事先經立法院同意簽訂」之情形？實則不然，因為該號解釋所針對的是我國「簽訂國際公約或國際條約」的情形，其在經法律授權或事先經立法院同意時，就可以直接生效產生法源之效力。但事實上，就台灣目前的國際處境來看，未來成為 BWM 公約的締約國之可能性仍舊不高，因此縱使將商港法第 75 條解釋為釋字第 329 號中所謂「經法律授權」之情形，亦無法直接以 BWM 公約作為我國壓艙水管理之行政管制的法源依據。

其次，縱使以商港法第 75 條為訂定法規命令之授權依據，是否即可直接以 BWM 公約的規範內容作為商港內壓艙水管理之依據？似乎亦存有疑問。類似商港法之規定者，例如航業法第 60 條「本法未規定事項，涉及國際事務者，主管機關得參照有關國際公約或協定及其附約所訂規則、辦法、標準、建議或程式，採用發布施行」，在學說上一

般認為係屬國際公約「須經制定或修正法規始能適用」之類型，換言之，並無所謂直接依據國際公約為行政管制之情形。首先，法律係授權主管機關「參照」，而非「遵照」，換言之，相關國際公約的條文究竟全部或部分為主管機關採納，受管制人民或事業並無法事先知悉，此與憲法上之「法律明確原則」的要求並不符合，因此仍須透過法規命令制定的方式與流程，於發布生效後方能施行，作為管制之法源依據。

再者，非締約國家在透過自願實踐國際公約的過程當中，除可以採取最有利自己國家的立場，選擇就公約內容中對自己之部分遵守之外，亦得基於更高的環境保護要求之下，訂定更為嚴格的排放標準。另外，國際公約為尊重各國家之主權，不可能鉅細靡遺地進行規範，因此各國仍須視各自國家之狀況與情形，訂定個別之管制程序以及細節事項之規範內容，因此第三種類型之法制化方式其實即是「依據法律授權訂定法規命令」，

縱使以商港法第 75 條作為訂定壓艙水管理之法規命令的授權依據，但仍無法解決兩個問題。首先是管制範圍不足的問題，從商港法第 1 條至第 5 條之規定觀之，其管制範圍亦僅限於商港內，但若要使壓艙水的管制措施能夠完全發揮阻絕外來種威脅台灣海域環境的話，則須在船隻進入港口前即採取積極預防管制的措施，以免外來生物種入侵之預防僅侷限在商港之內，而造成更大的管制漏洞，因此即便依商港法第 75 條規定作為制定法規命令之授權依據，自然即不能超出母法本身之規範範圍，因此仍無法完全解決壓艙水所可能造成的環境問題。

商港法第 75 條必須面臨的第二個問題是欠缺罰則規定。BWM 公約第 8 條對於任何違反公約要求的行為，不論其發生在何處，都予以禁止並授權給各締約國之主管機關之法律給予制裁。國家內部違法行為之制裁權係屬國家主權中之核心權力，國際公約基本上必須給予最高度的尊重而留任由各國自行透過法規予以規範。為了確保壓艙水管

理法規仍被遵守，目前已開始實施壓艙水管理的國家為防止船隻規避管制，均在壓艙水管理法規中制定了罰則，例如美澳針對違反相關文件檢驗之法定義務船隻將處以罰款，美國對於知情而故意違反規定者，並處以刑法制裁。在本研究訪談過程中，作為港口管制第一線的執法者也表示懲處手段對於有效管理的必要性，若無完整的管理辦法、配套措施，作為港口國官員只能對於違規船隻關切、警告、舉證，如果無法可罰、也不扣船，這樣港口國官員後續就很難再去檢核。然而，依照目前法界通說，法律僅得就管制事項之構成要件、申請程序或資格等事項授權予行政機關以法規命令補充，但不得將違法之制裁效果亦一併授權與行政機關。另外，無論從國內行政實務或是國際間之實踐經驗來看，對於重大違反行政法令之行為處以刑罰制裁，實有其必要，而此類之刑罰制裁又同時涉及人民權利之重大侵害，因此依據目前法界通說以及大法官釋字第 443 號解釋之意旨，係屬必須嚴格保留由法律明訂之事項。就現行商港法觀之，並無就違反商港法第 75 條規定訂有罰則之規定。此將造成依據商港法第 75 條所訂定之法規命令欠缺違法效果之結果，導致有效管制上之不利。

6.2 壓艙水管理應包含之權責機關

參考目前已開始實施船舶壓艙水管理的國家，其權責機關依其國情與法制架構而有所不同，例如美國以國土安全部下的海岸警衛隊 (USCG, United States Coast Guard) 為第一線的管制單位，同時在各個重要港口設置 USCG 之管制窗口，並指派人員進駐，但於制定相關規定時會整合各部會成立專案小組，以研議相關法制問題。而澳洲則以隸屬於洲政府農業、漁業暨林業部之下的檢疫單位 (AQIS, Australian Quarantine and Inspection Service) 為主要的管制單位。另有少數受訪者認為壓艙水造成的外來種入侵問題是屬於生態問題，應由農業部門或檢疫部門來主管。航運公司群組與外部機構群組的各受訪者對於本題並無一致性的看法，與各受訪者對於政府機關間的運作認知程度有關。但無論其看法如何，都對我國公部門各單位間能建立合作機制、

完善管理壓艙水問題寄予期許。

透過本研究的研究可以發現，若將公約中之壓艙水管理機制放到內國法層次來看，其不僅將涉及港口管理機關之權責，同時亦必須將港口以外之海域管理機關一併納入，換言之，可能包含的有海洋環境保護管理機關以及海洋秩序與安全管理機關。而相對應地，就相關內國法而言，則主要可能涉及港口管理以及海洋環境保護等法律之修訂。就後者機關而言，BWM 公約所規定之 D1 管理模式，亦即壓艙水交換區域之設定以及相關之排放標準的訂定等規範事項，就我國目前相關行政機關之分工而言，行政院環境保護署確實屬業務較為直接相關之權責機關。再者，縱使目前 BWM 公約對於 D1 之管理模式訂於 2017 年退場，但事實上目前已有延後退場的高度可能性。再加上臺灣未來若採取自願性遵守 BWM 公約的方式，則在有必要的情形下，仍可繼續沿用壓艙水交換區域管理模式而不受 BWM 公約之影響。再從本研究之前已提及之壓艙水排放標準之訂定以及港口外違反壓艙水違法排放之採樣與取締等事項觀之，皆在在顯示環保署在壓艙水管理事項上的關係密切。

固然隨著行政事項之多元化與繁雜化，偶會出現某一行政事項單靠一特定行政機關之職能無法完全因應獲充分解決問題，壓艙水管理事項即屬此一典型，因為其在我國可能涉及航政主管機關、環保主管機關，以及海岸巡防機關間之協助與配合。對於此一現象，行政程序法第 19 條第 1 項即要求，「行政機關為發揮共同一體之行政機能，應於其權限範圍內互相協助」。亦即行政機關執行職務時，遇有因人員、設備不足等事實上之原因，不能獨自執行職務者；或執行職務所必要認定之事實，不能獨自調查者，皆得向無隸屬關係之其他機關請求協助（行政程序法第 19 條第 2 項第 2、3 款）。然而，另一方面被請求機關亦得依據行政程序法第 19 條第 5、6 項規定拒絕之。因此，為斧底抽薪解決此一問題，本研究建議應透過在法律層次的修法，例如仿效美國法的規範模式，所有權責機關之所應負責之工作事項予以確定與整合。

6.3 壓艙水管理規範需求面之分析

透過本研究之分析之後，可以確定的是，現行既有之法律規範係不足以因應壓艙水管理上之法規範需求，因此未來必須進一步研擬法制修正之工作。而所謂法制修正而言，事實上應包含有「法律」與「法規命令」兩個層次。換言之，若應增修的規範事項涉及「嚴格法律保留」之事項時，則自然必須透過法律的增修來因應；反之，若非屬前述所謂涉及「嚴格法律保留」之事項時，則僅須在相關法律當中訂定授權規定，由相關之行政機關訂定法規命令即可。如此既可確保不違反法律保留原則之要求，一方面亦可減少法制化方面的成本，以及另一方面善用法規命令之規範方式在規範彈性上之優點。

至於未來應透過法律修訂予以規範之事項包括有，

1. 法律適用範圍的明訂：若未來採取訂定專法的方式因應固無問題，但若是透過現行海洋污染防治法或商港法的修訂方式來因應的話，則必須明文規定或以授權的方式，將壓艙水管理明確納入兩部法律的適用範圍，以杜絕爭議。
2. 相關權責機關之確定與任務分配及整合：基於管轄法定主意之要求，行政業務應由那個行政機關主管或共管，應於法律當中明確規定，此不僅可以避免行政管轄發生積極競合或消極競合的問題之外，也可以避免受規範人民或事業無所適從；此外，海洋事務之管理往往必須有船舶配合執行任務之執行，因此亦應將掌有船舶設備之行政機關之執行協力義務，明確規定於法律當中。
3. 明確規定前述各該權責機關之管轄業務事項、會同管轄事項以及業務執行之協力事項。此一建議，在法律的層次主要係為了符合管轄法定主義的要求，而行政實務上亦同樣可以避免行政管轄發生積極競合或消極競合的問題之外，也可以避免受規範人民或事業無所適從。

4. 至於進一步有關行政管制流程或技術性與細節性事項，得由航政機關與環保署會同共同訂定之壓艙水管理辦法的方式來規範。對於此，即必須分別在兩部法律當中，明確增訂授權條款，亦即授權相關權責機關在有關哪些行政事項、管理目的與事項範圍之內，得訂定法規命令。
5. 最後，對於在商港內或商港外之違反壓艙水管理規範之行為，亦必須在法律層次明確訂定罰則規定，由各自主管機關據以執法。

至於其他壓艙水管理相關之行政管制流程、方法或技術性與細節性事項，以及應檢具接受檢查之文書種類與應記載事項，則得以法規命令的方式訂定。

6.4 立法模式之分析

透過以上之分析，本研究首先認為單以商港法第 75 條作為壓艙水管理之依據，在本質上存在有規範不足之現象。反之，是否必須透過制定一部專屬的法律以作為壓艙水管理之依據，本研究亦採取保留之立場。事實上，要回答是否應制定一部專屬的法律，應先釐清是否透過修訂現行法規之方式仍不足以因應，倘若是的話，再進一步思考制定一部專屬的法律。

然而，本研究若透過同時以下方式對於現行海洋污染防治法及商港法進行修正，未必不能找到理想的規範模式，亦即在兩部法律當中，

1. 明確將壓艙水納入「其他污染物」之項目；
2. 確立商港內航政機關為壓艙水管理之主管機關，商港以外環保署為壓艙水管理之主管機關，海洋巡防署則為協助業務之執行機關；
3. 明確規定環保署應會商航政機關指定壓艙水交換區域；
4. 分別在兩部法律當中增訂授權條款，授權航政機關與環保署會同共同訂定具法規命令性質之壓艙水管理辦法；
5. 在海洋污染防治法中增訂由環保署會同航政機關訂定壓艙水排放標準，但其他法律亦得訂定較嚴格之排放標準；
6. 在商港法中增訂航政主管機關得視商港內之水質情況，在必要時訂定較嚴格之排

放標準。7. 分別在兩部法律當中，對於在商港內或商港外之違反壓艙水管理規範之行為，明確訂定罰則規定，由各自主管機關據以執法。至於航政機關與環保署會同共同訂定之壓艙水管理辦法當中應包含，壓艙水管理方式、管理流程、應檢具接受檢查之文書種類與應記載事項，以及其他相關細節事項。

第七章 結論與建議

本研究透過分析比較壓艙水國際公約發展現狀與國際相關法規，並以專家學者諮詢的方式來瞭解港務公司及船舶相關之權益關係人對壓艙水管理之需求與意見，最後綜合各界的意見及建議，找出符合我國需求之壓艙水管理措施，盼能提出適宜的壓艙水管理法草案，提供我國未來管理船舶壓艙水有利的參考依據。

7.1 結論

1. 比較美國與澳洲兩國對於壓艙水法規的制定後，可以發現兩者各有其異同之處，我們在此可以把壓艙水國際公約的規範內容加進來作為一個參考的因素，就可以發現這三者的標準其實是極為接近的，由於規範的對象大部份為跨洋航行的船隻，在航行的過程中會經過不同的國家，若各國間要求的標準的差異過大，就有可能影響到這些船隻的船期甚至是對經濟上的利益造成破壞，故三者標準趨於一致是一個合理且可以想像的現象。
2. 在壓艙水的管制上美國是以外來種法案作為依據，並專對船隻上壓艙水的處理規範做出立法，其體系獨立而完整，而在現有的規定中，也並不單單只是為了配合國際壓艙水公約之規範而定，除了符合壓艙水公約中的大洋交換法外，也同樣考慮到交換法過渡期後的應變方式，要求針對壓艙水處理技術做出研發，並對這些在未來可能被使用的壓艙水處理設備做出相應的規範，總的來說，美國的壓艙水規範體系是完備且能夠應用於現在及之後的船隻管制上的。
3. 澳洲方面則不同於美國，並非把壓艙水作為一個獨立的規範事項加以立法，而是把壓艙水視同於貨物，直接適用於原有的檢疫法規定，儘管如此，在國際壓艙水公約的過渡期內澳洲的壓艙水相關管制仍可以適用於現在的船隻管制，只是對於過渡期後的管制措施尚未見到有

相關前瞻性之跡象，這是值得注意的部分。

4. 綜上所述，美澳的管制各有其優缺點，若台灣要制定相關壓艙水管制規定，則需要審慎考慮，評估其中規範的脈絡究竟以何者較適合於台灣的法律及生態環境，同時在必要的時候也要考量是否該針對台灣的壓艙水管制做出不同於上述二國的管制方式，以使在台灣針對壓艙水的管制能夠有效地進行，避免珍貴的天然生態環境與資源遭受到外來物種的破壞。

5. 由文獻分析與深入訪談結果討論國內可能之壓艙水處置與管理方式，在壓艙水之處置方式部份發現船舶裝置船用壓艙水處理設備是航運公司接受度最高且已在規劃中的壓艙水處置方式。在管理方式部份發現我國港口國官員人力與專業度的限制，需要建立船舶壓艙水風險評估系統與建置(或選定)壓艙水採樣化實驗室，以協助港口國官員有效執法，法規方面發現與船舶壓艙水管理較為相關的三大現行法規中，都涉及部分的壓艙水管理需求，但各有其侷限性，因此國內若要進行船舶壓艙水之管理有立定專法或增修現有相關法規的需求。

6. 在與國內現行法制與權責機關對照並分析後，目前結果顯示，台灣現行法令並無法提供對壓艙水管理的充分授權依據，同時也欠缺違反壓艙水管制的罰則。就海洋污染處理的歷史經驗而言，我國的處理方式並非如美國一般僅交由 USCG 單獨執行處理，而是由不同的數個機關依其管制的範圍彼此共同合作執行；故在壓艙水的管理法制化上，不論是管理程序或是罰則的制定，都需要各機關彼此討論並合作，才能夠使壓艙水法制化順利進行。

7.2 建議

1. 質性訪談國內壓艙水管理之權益關係人，結果發現在生態與技術面向各群組的看法相當一致：首先，各群組都認同不當排放壓艙水會造成生態環境的問題，需要予以管制，並且各群組都認為國內最可行的

處置方式是要求船舶裝置壓艙水處理設備，其次是要求船舶進行壓艙水交換，而岸上收受設施則被視為不可行。

2. 在經濟與管理面向各群組的看法差異較大：在經濟面向上，航運公司一致被認為所受到的衝擊最大；在管理面向上有法制面與執行面兩方面的討論，在法制面的看法上公部門群組中的環保單位受訪者認為國內壓艙水管理之主管機關應為交通部門較為適當，但交通單位受訪者對此則持相對的看法，其他群組受訪者則對於後續的執法能力較為關注。因此，對於國內壓艙水管理之法制化首要釐清主管機關之歸屬，並可參照各權益關係人群組之建議研擬符合我國情需求之管理辦法。

3. 部分訪談意見指出，可根據現行商港法第 75 條之規定，直接公告管制事項，作為直接參照 BWM 公約來制定壓艙水規範的權力與空間。但本研究發現，無論從憲法、大法官解釋或多數法學見解來看，皆認為基於我國係屬於「二元論」的國家，因此國際公約並不能直接作為我國行政管制之法源。而且在法規命令的規範內容方面，可以採取最有利自己國家的立場，選擇就公約內容中對自己之部分遵守之外，亦得基於更高的環境保護要求之下，訂定更為嚴格的排放標準。同時視我國行政法規與實務之狀況與情形，訂定個別之管制程序以及細節事項之規範內容。

4. 須注意的是，縱使以商港法第 75 條作為訂定壓艙水管理之法規命令的授權依據，但仍無法解決兩個問題。首先是管制範圍不足的問題，因為從商港法之適用範圍亦僅限於商港內，而依商港法第 75 條規定作為制定法規命令之授權依據，自然即不能超出母法本身之規範範圍，因此仍無法完全解決壓艙水所可能造成的環境問題。第二個問題是欠缺罰則規定，依照目前法界通說，法律僅得就管制事項之構成要件、申請程序或資格等事項授權予行政機關以法規命令補充，但不得將違法之制裁效果亦一併授權與行政機關。就現行商港法觀之，並無就違反商港法第 75 條規定訂有罰則之規定。此將造成依據商港法第 75 條所訂定之法規命令欠缺違法效果之結果，導致有效管制上之不利。

5. 在有關壓艙水管理之權責機關方面，參考目前已開始實施船舶壓艙水管理的國家，縱使其權責機關依其國情與法制架構而有所不同，但若將公約中之壓艙水管理機制放到內國法層次來看，其不僅將涉及港口管理機關之權責，同時亦必須將港口以外之海域管理機關一併納入。

6. 相對地，就相關內國法而言，則主要可能涉及港口管理以及海洋環境保護等法律之修訂。在欠缺一個常態性的行政機關協力的法定機制情形下，不僅難以確保壓艙水管理事務上之穩定與成效，同時也無法進行長期的人力與資源的規劃。因此，為釜底抽薪解決此一問題，本研究建議應透過在法律層次的修法，例如仿效美國法的規範模式，所有權責機關之所應負責之工作事項予以確定與整合。

7.3 成果效益與後續應用

1. 目前本計畫已完成壓艙水國際公約發展現狀與國際間相關法制及其實踐情形之調查，包含美國及澳洲二國，而透過比較前述二國之法制，使本研究團隊發現美國之壓艙水法制與管制程序體系完整，可做為未來修法與訂立台灣壓艙水相關管理程序之參考依據。

2. 本計畫在瞭解港務機關及船舶相關之權益關係人對壓艙水管理與規範需求之意見後，大致上已明白各方在壓艙水管制上之需求及執法上的困難點，而這些不同的狀況使得研究團隊得以擬定出未來壓艙水管制之方向。

3. 透過舉辦座談會並歸納各方對草案研擬之意見，得以從中知道各方對未來壓艙水管制上的疑慮與管制手段、程序上的限制，這些資訊決定了未來進行壓艙水法制化的方向，同時也讓研究團隊明白不同的政府機關其在壓艙水相關事務上可達到的執行程度，進而在壓艙水管理法案中得以劃分出各單位之權責範圍。

4. 經由壓艙水管理法草案架構之研擬與國內外法制的比較，使本研究得以了解國內各政府機關在海洋污染上的分工情形，並依此確立了未來法制化會朝修正現行法令的方向前進，同時也在草案架構中訂出商港內外的主管機關，並得出未來建立起壓艙水的管理程序與檢驗標準的可能方法。

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附錄一
國際船舶壓艙水和沉積物控管公約
(英文版)



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INTERNATIONAL CONFERENCE ON
BALLAST WATER MANAGEMENT FOR
SHIPS

Agenda item 8

BWM/CONF/36
16 February 2004
Original: ENGLISH

**ADOPTION OF THE FINAL ACT AND ANY INSTRUMENTS, RECOMMENDATIONS
AND RESOLUTIONS RESULTING FROM THE WORK OF THE CONFERENCE**

**INTERNATIONAL CONVENTION FOR THE CONTROL AND MANAGEMENT OF
SHIPS' BALLAST WATER AND SEDIMENTS, 2004**

Text adopted by the Conference

- 1 As a result of its deliberations, as recorded in the Record of Decisions of the Plenary (BWM/CONF/RD/2/Rev.1) and the Final Act of the Conference (BWM/CONF/37), the Conference adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004.
- 2 The above-mentioned Convention, as adopted by the Conference, is annexed hereto.

ANNEX

INTERNATIONAL CONVENTION FOR THE CONTROL AND MANAGEMENT OF SHIPS' BALLAST WATER AND SEDIMENTS, 2004**THE PARTIES TO THIS CONVENTION,**

RECALLING Article 196(1) of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which provides that “States shall take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the use of technologies under their jurisdiction or control, or the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto,”

NOTING the objectives of the 1992 Convention on Biological Diversity (CBD) and that the transfer and introduction of Harmful Aquatic Organisms and Pathogens via ships' ballast water threatens the conservation and sustainable use of biological diversity as well as decision IV/5 of the 1998 Conference of the Parties (COP 4) to the CBD concerning the conservation and sustainable use of marine and coastal ecosystems, as well as decision VI/23 of the 2002 Conference of the Parties (COP 6) to the CBD on alien species that threaten ecosystems, habitats or species, including guiding principles on invasive species,

NOTING FURTHER that the 1992 United Nations Conference on Environment and Development (UNCED) requested the International Maritime Organization (the Organization) to consider the adoption of appropriate rules on ballast water discharge,

MINDFUL of the precautionary approach set out in Principle 15 of the Rio Declaration on Environment and Development and referred to in resolution MEPC.67(37), adopted by the Organization's Marine Environment Protection Committee on 15 September 1995,

ALSO MINDFUL that the 2002 World Summit on Sustainable Development, in paragraph 34(b) of its Plan of Implementation, calls for action at all levels to accelerate the development of measures to address invasive alien species in ballast water,

CONSCIOUS that the uncontrolled discharge of Ballast Water and Sediments from ships has led to the transfer of Harmful Aquatic Organisms and Pathogens, causing injury or damage to the environment, human health, property and resources,

RECOGNIZING the importance placed on this issue by the Organization through Assembly resolutions A.774(18) in 1993 and A.868(20) in 1997, adopted for the purpose of addressing the transfer of Harmful Aquatic Organisms and Pathogens,

RECOGNIZING FURTHER that several States have taken individual action with a view to prevent, minimize and ultimately eliminate the risks of introduction of Harmful Aquatic Organisms and Pathogens through ships entering their ports, and also that this issue, being of worldwide concern, demands action based on globally applicable regulations together with guidelines for their effective implementation and uniform interpretation,

DESIRING to continue the development of safer and more effective Ballast Water Management options that will result in continued prevention, minimization and ultimate elimination of the transfer of Harmful Aquatic Organisms and Pathogens,

RESOLVED to prevent, minimize and ultimately eliminate the risks to the environment, human health, property and resources arising from the transfer of Harmful Aquatic Organisms and Pathogens through the control and management of ships' Ballast Water and Sediments, as well as to avoid unwanted side-effects from that control and to encourage developments in related knowledge and technology,

CONSIDERING that these objectives may best be achieved by the conclusion of an International Convention for the Control and Management of Ships' Ballast Water and Sediments,

HAVE AGREED as follows:

Article 1 *Definitions*

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

1 "Administration" means the Government of the State under whose authority the ship is operating. With respect to a ship entitled to fly a flag of any State, the Administration is the Government of that State. With respect to floating platforms engaged in exploration and exploitation of the sea-bed and subsoil thereof adjacent to the coast over which the coastal State exercises sovereign rights for the purposes of exploration and exploitation of its natural resources, including Floating Storage Units (FSUs) and Floating Production Storage and Offloading Units (FPSOs), the Administration is the Government of the coastal State concerned.

2 "Ballast Water" means water with its suspended matter taken on board a ship to control trim, list, draught, stability or stresses of the ship.

3 "Ballast Water Management" means mechanical, physical, chemical, and biological processes, either singularly or in combination, to remove, render harmless, or avoid the uptake or discharge of Harmful Aquatic Organisms and Pathogens within Ballast Water and Sediments.

4 "Certificate" means the International Ballast Water Management Certificate.

5 "Committee" means the Marine Environment Protection Committee of the Organization.

6 "Convention" means the International Convention for the Control and Management of Ships' Ballast Water and Sediments.

7 "Gross tonnage" means the gross tonnage calculated in accordance with the tonnage measurement regulations contained in Annex I to the International Convention on Tonnage Measurement of Ships, 1969 or any successor Convention.

8 “Harmful Aquatic Organisms and Pathogens” means aquatic organisms or pathogens which, if introduced into the sea including estuaries, or into fresh water courses, may create hazards to the environment, human health, property or resources, impair biological diversity or interfere with other legitimate uses of such areas.

9 “Organization” means the International Maritime Organization.

10 “Secretary-General” means the Secretary-General of the Organization.

11 “Sediments” means matter settled out of Ballast Water within a ship.

12 “Ship” means a vessel of any type whatsoever operating in the aquatic environment and includes submersibles, floating craft, floating platforms, FSUs and FPSOs.

Article 2 *General Obligations*

1 Parties undertake to give full and complete effect to the provisions of this Convention and the Annex thereto in order to prevent, minimize and ultimately eliminate the transfer of Harmful Aquatic Organisms and Pathogens through the control and management of ships’ Ballast Water and Sediments.

2 The Annex forms an integral part of this Convention. Unless expressly provided otherwise, a reference to this Convention constitutes at the same time a reference to the Annex.

3 Nothing in this Convention shall be interpreted as preventing a Party from taking, individually or jointly with other Parties, more stringent measures with respect to the prevention, reduction or elimination of the transfer of Harmful Aquatic Organisms and Pathogens through the control and management of ships’ Ballast Water and Sediments, consistent with international law.

4 Parties shall endeavour to co-operate for the purpose of effective implementation, compliance and enforcement of this Convention.

5 Parties undertake to encourage the continued development of Ballast Water Management and standards to prevent, minimize and ultimately eliminate the transfer of Harmful Aquatic Organisms and Pathogens through the control and management of ships’ Ballast Water and Sediments.

6 Parties taking action pursuant to this Convention shall endeavour not to impair or damage their environment, human health, property or resources, or those of other States.

7 Parties should ensure that Ballast Water Management practices used to comply with this Convention do not cause greater harm than they prevent to their environment, human health, property or resources, or those of other States.

8 Parties shall encourage ships entitled to fly their flag, and to which this Convention applies, to avoid, as far as practicable, the uptake of Ballast Water with potentially Harmful Aquatic Organisms and Pathogens, as well as Sediments that may contain such organisms, including promoting the adequate implementation of recommendations developed by the Organization.

9 Parties shall endeavour to co-operate under the auspices of the Organization to address threats and risks to sensitive, vulnerable or threatened marine ecosystems and biodiversity in areas beyond the limits of national jurisdiction in relation to Ballast Water Management.

Article 3 *Application*

1 Except as expressly provided otherwise in this Convention, this Convention shall apply to:

- (a) ships entitled to fly the flag of a Party; and
- (b) ships not entitled to fly the flag of a Party but which operate under the authority of a Party.

2 This Convention shall not apply to:

- (a) ships not designed or constructed to carry Ballast Water;
- (b) ships of a Party which only operate in waters under the jurisdiction of that Party, unless the Party determines that the discharge of Ballast Water from such ships would impair or damage their environment, human health, property or resources, or those of adjacent or other States;
- (c) ships of a Party which only operate in waters under the jurisdiction of another Party, subject to the authorization of the latter Party for such exclusion. No Party shall grant such authorization if doing so would impair or damage their environment, human health, property or resources, or those of adjacent or other States. Any Party not granting such authorization shall notify the Administration of the ship concerned that this Convention applies to such ship;
- (d) ships which only operate in waters under the jurisdiction of one Party and on the high seas, except for ships not granted an authorization pursuant to sub-paragraph (c), unless such Party determines that the discharge of Ballast Water from such ships would impair or damage their environment, human health, property or resources, or those of adjacent of other States;
- (e) any warship, naval auxiliary or other ship owned or operated by a State and used, for the time being, only on government non-commercial service. However, each Party shall ensure, by the adoption of appropriate measures not impairing operations or operational capabilities of such ships owned or operated by it, that such ships act in a manner consistent, so far as is reasonable and practicable, with this Convention; and
- (f) permanent Ballast Water in sealed tanks on ships, that is not subject to discharge.

3 With respect to ships of non-Parties to this Convention, Parties shall apply the requirements of this Convention as may be necessary to ensure that no more favourable treatment is given to such ships.

Article 4 *Control of the Transfer of Harmful Aquatic Organisms and Pathogens Through Ships' Ballast Water and Sediments*

1 Each Party shall require that ships to which this Convention applies and which are entitled to fly its flag or operating under its authority comply with the requirements set forth in this Convention, including the applicable standards and requirements in the Annex, and shall take effective measures to ensure that those ships comply with those requirements.

2 Each Party shall, with due regard to its particular conditions and capabilities, develop national policies, strategies or programmes for Ballast Water Management in its ports and waters under its jurisdiction that accord with, and promote the attainment of the objectives of this Convention.

Article 5 *Sediment Reception Facilities*

1 Each Party undertakes to ensure that, in ports and terminals designated by that Party where cleaning or repair of ballast tanks occurs, adequate facilities are provided for the reception of Sediments, taking into account the Guidelines developed by the Organization. Such reception facilities shall operate without causing undue delay to ships and shall provide for the safe disposal of such Sediments that does not impair or damage their environment, human health, property or resources or those of other States.

2 Each Party shall notify the Organization for transmission to the other Parties concerned of all cases where the facilities provided under paragraph 1 are alleged to be inadequate.

Article 6 *Scientific and Technical Research and Monitoring*

1 Parties shall endeavour, individually or jointly, to:

- (a) promote and facilitate scientific and technical research on Ballast Water Management; and
- (b) monitor the effects of Ballast Water Management in waters under their jurisdiction.

Such research and monitoring should include observation, measurement, sampling, evaluation and analysis of the effectiveness and adverse impacts of any technology or methodology as well as any adverse impacts caused by such organisms and pathogens that have been identified to have been transferred through ships' Ballast Water.

2 Each Party shall, to further the objectives of this Convention, promote the availability of relevant information to other Parties who request it on:

- (a) scientific and technology programmes and technical measures undertaken with respect to Ballast Water Management; and
- (b) the effectiveness of Ballast Water Management deduced from any monitoring and assessment programmes.

Article 7 *Survey and certification*

1 Each Party shall ensure that ships flying its flag or operating under its authority and subject to survey and certification are so surveyed and certified in accordance with the regulations in the Annex.

2 A Party implementing measures pursuant to Article 2.3 and Section C of the Annex shall not require additional survey and certification of a ship of another Party, nor shall the Administration of the ship be obligated to survey and certify additional measures imposed by another Party. Verification of such additional measures shall be the responsibility of the Party implementing such measures and shall not cause undue delay to the ship.

Article 8 *Violations*

1 Any violation of the requirements of this Convention shall be prohibited and sanctions shall be established under the law of the Administration of the ship concerned, wherever the violation occurs. If the Administration is informed of such a violation, it shall investigate the matter and may request the reporting Party to furnish additional evidence of the alleged violation. If the Administration is satisfied that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, it shall cause such proceedings to be taken as soon as possible, in accordance with its law. The Administration shall promptly inform the Party that reported the alleged violation, as well as the Organization, of any action taken. If the Administration has not taken any action within 1 year after receiving the information, it shall so inform the Party which reported the alleged violation.

2 Any violation of the requirements of this Convention within the jurisdiction of any Party shall be prohibited and sanctions shall be established under the law of that Party. Whenever such a violation occurs, that Party shall either:

- (a) cause proceedings to be taken in accordance with its law; or
- (b) furnish to the Administration of the ship such information and evidence as may be in its possession that a violation has occurred.

3 The sanctions provided for by the laws of a Party pursuant to this Article shall be adequate in severity to discourage violations of this Convention wherever they occur.

Article 9 *Inspection of Ships*

1 A ship to which this Convention applies may, in any port or offshore terminal of another Party, be subject to inspection by officers duly authorized by that Party for the purpose of determining whether the ship is in compliance with this Convention. Except as provided in paragraph 2 of this Article, any such inspection is limited to:

- (a) verifying that there is onboard a valid Certificate, which, if valid shall be accepted; and
- (b) inspection of the Ballast Water record book, and/or

- (c) a sampling of the ship's Ballast Water, carried out in accordance with the guidelines to be developed by the Organization. However, the time required to analyse the samples shall not be used as a basis for unduly delaying the operation, movement or departure of the ship.

2 Where a ship does not carry a valid Certificate or there are clear grounds for believing that:

- (a) the condition of the ship or its equipment does not correspond substantially with the particulars of the Certificate; or
- (b) the master or the crew are not familiar with essential shipboard procedures relating to Ballast Water Management, or have not implemented such procedures;

a detailed inspection may be carried out.

3 In the circumstances given in paragraph 2 of this Article, the Party carrying out the inspection shall take such steps as will ensure that the ship shall not discharge Ballast Water until it can do so without presenting a threat of harm to the environment, human health, property or resources.

Article 10 *Detection of Violations and Control of Ships*

1 Parties shall co-operate in the detection of violations and the enforcement of the provisions of this Convention.

2 If a ship is detected to have violated this Convention, the Party whose flag the ship is entitled to fly, and/or the Party in whose port or offshore terminal the ship is operating, may, in addition to any sanctions described in Article 8 or any action described in Article 9, take steps to warn, detain, or exclude the ship. The Party in whose port or offshore terminal the ship is operating, however, may grant such a ship permission to leave the port or offshore terminal for the purpose of discharging Ballast Water or proceeding to the nearest appropriate repair yard or reception facility available, provided doing so does not present a threat of harm to the environment, human health, property or resources.

3 If the sampling described in Article 9.1(c) leads to a result, or supports information received from another port or offshore terminal, indicating that the ship poses a threat to the environment, human health, property or resources, the Party in whose waters the ship is operating shall prohibit such ship from discharging Ballast Water until the threat is removed.

4 A Party may also inspect a ship when it enters the ports or offshore terminals under its jurisdiction, if a request for an investigation is received from any Party, together with sufficient evidence that a ship is operating or has operated in violation of a provision in this Convention. The report of such investigation shall be sent to the Party requesting it and to the competent authority of the Administration of the ship concerned so that appropriate action may be taken.

Article 11 *Notification of Control Actions*

1 If an inspection conducted pursuant to Article 9 or 10 indicates a violation of this Convention, the ship shall be notified. A report shall be forwarded to the Administration, including any evidence of the violation.

2 In the event that any action is taken pursuant to Article 9.3, 10.2 or 10.3, the officer carrying out such action shall forthwith inform, in writing, the Administration of the ship concerned, or if this is not possible, the consul or diplomatic representative of the ship concerned, of all the circumstances in which the action was deemed necessary. In addition, the recognized organization responsible for the issue of certificates shall be notified.

3 The port State authority concerned shall, in addition to parties mentioned in paragraph 2, notify the next port of call of all relevant information about the violation, if it is unable to take action as specified in Article 9.3, 10.2 or 10.3 or if the ship has been allowed to proceed to the next port of call.

Article 12 *Undue Delay to Ships*

1 All possible efforts shall be made to avoid a ship being unduly detained or delayed under Article 7.2, 8, 9 or 10.

2 When a ship is unduly detained or delayed under Article 7.2, 8, 9 or 10, it shall be entitled to compensation for any loss or damage suffered.

Article 13 *Technical Assistance, Co-operation and Regional Co-operation*

1 Parties undertake, directly or through the Organization and other international bodies, as appropriate, in respect of the control and management of ships' Ballast Water and Sediments, to provide support for those Parties which request technical assistance:

- (a) to train personnel;
- (b) to ensure the availability of relevant technology, equipment and facilities;
- (c) to initiate joint research and development programmes; and
- (d) to undertake other action aimed at the effective implementation of this Convention and of guidance developed by the Organization related thereto.

2 Parties undertake to co-operate actively, subject to their national laws, regulations and policies, in the transfer of technology in respect of the control and management of ships' Ballast Water and Sediments.

3 In order to further the objectives of this Convention, Parties with common interests to protect the environment, human health, property and resources in a given geographical area, in particular, those Parties bordering enclosed and semi-enclosed seas, shall endeavour, taking into account characteristic regional features, to enhance regional co-operation, including through the conclusion of regional agreements consistent with this Convention. Parties shall seek to co-operate with the Parties to regional agreements to develop harmonized procedures.

Article 14 *Communication of information*

1 Each Party shall report to the Organization and, where appropriate, make available to other Parties the following information:

- (a) any requirements and procedures relating to Ballast Water Management, including its laws, regulations, and guidelines for implementation of this Convention;
- (b) the availability and location of any reception facilities for the environmentally safe disposal of Ballast Water and Sediments; and
- (c) any requirements for information from a ship which is unable to comply with the provisions of this Convention for reasons specified in regulations A-3 and B-4 of the Annex.

2 The Organization shall notify Parties of the receipt of any communications under the present Article and circulate to all Parties any information communicated to it under subparagraphs 1(b) and (c) of this Article.

Article 15 *Dispute Settlement*

Parties shall settle any dispute between them concerning the interpretation or application of this Convention by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements or other peaceful means of their own choice.

Article 16 *Relationship to International Law and Other Agreements*

Nothing in this Convention shall prejudice the rights and obligations of any State under customary international law as reflected in the United Nations Convention on the Law of the Sea.

Article 17 *Signature, Ratification, Acceptance, Approval and Accession*

1 This Convention shall be open for signature by any State at the Headquarters of the Organization from 1 June 2004 to 31 May 2005 and shall thereafter remain open for accession by any State.

2 States may become Parties to the Convention by:

- (a) signature not subject to ratification, acceptance, or approval; or
- (b) signature subject to ratification, acceptance, or approval, followed by ratification, acceptance or approval; or
- (c) accession.

3 Ratification, acceptance, approval or accession shall be effected by the deposit of an instrument to that effect with the Secretary-General.

4 If a State comprises two or more territorial units in which different systems of law are applicable in relation to matters dealt with in this Convention, it may at the time of signature, ratification, acceptance, approval, or accession declare that this Convention shall extend to all its territorial units or only to one or more of them and may modify this declaration by submitting another declaration at any time.

5 Any such declaration shall be notified to the Depositary in writing and shall state expressly the territorial unit or units to which this Convention applies.

Article 18 *Entry into Force*

1 This Convention shall enter into force twelve months after the date on which not less than thirty States, the combined merchant fleets of which constitute not less than thirty-five percent of the gross tonnage of the world's merchant shipping, have either signed it without reservation as to ratification, acceptance or approval, or have deposited the requisite instrument of ratification, acceptance, approval or accession in accordance with Article 17.

2 For States which have deposited an instrument of ratification, acceptance, approval or accession in respect of this Convention after the requirements for entry into force thereof have been met, but prior to the date of entry in force, the ratification, acceptance, approval or accession shall take effect on the date of entry into force of this Convention or three months after the date of deposit of instrument, whichever is the later date.

3 Any instrument of ratification, acceptance, approval or accession deposited after the date on which this Convention enters into force shall take effect three months after the date of deposit.

4 After the date on which an amendment to this Convention is deemed to have been accepted under Article 19, any instrument of ratification, acceptance, approval or accession deposited shall apply to this Convention as amended.

Article 19 *Amendments*

1 This Convention may be amended by either of the procedures specified in the following paragraphs.

2 Amendments after consideration within the Organization:

- (a) Any Party may propose an amendment to this Convention. A proposed amendment shall be submitted to the Secretary-General, who shall then circulate it to the Parties and Members of the Organization at least six months prior to its consideration.
- (b) An amendment proposed and circulated as above shall be referred to the Committee for consideration. Parties, whether or not Members of the Organization, shall be entitled to participate in the proceedings of the Committee for consideration and adoption of the amendment.

- (c) Amendments shall be adopted by a two-thirds majority of the Parties present and voting in the Committee, on condition that at least one-third of the Parties shall be present at the time of voting.
- (d) Amendments adopted in accordance with subparagraph (c) shall be communicated by the Secretary-General to the Parties for acceptance.
- (e) An amendment shall be deemed to have been accepted in the following circumstances:
 - (i) An amendment to an article of this Convention shall be deemed to have been accepted on the date on which two-thirds of the Parties have notified the Secretary-General of their acceptance of it.
 - (ii) An amendment to the Annex shall be deemed to have been accepted at the end of twelve months after the date of adoption or such other date as determined by the Committee. However, if by that date more than one-third of the Parties notify the Secretary-General that they object to the amendment, it shall be deemed not to have been accepted.
- (f) An amendment shall enter into force under the following conditions:
 - (i) An amendment to an article of this Convention shall enter into force for those Parties that have declared that they have accepted it six months after the date on which it is deemed to have been accepted in accordance with subparagraph (e)(i).
 - (ii) An amendment to the Annex shall enter into force with respect to all Parties six months after the date on which it is deemed to have been accepted, except for any Party that has:
 - (1) notified its objection to the amendment in accordance with subparagraph (e)(ii) and that has not withdrawn such objection; or
 - (2) notified the Secretary-General, prior to the entry into force of such amendment, that the amendment shall enter into force for it only after a subsequent notification of its acceptance.
- (g) (i) A Party that has notified an objection under subparagraph (f)(ii)(1) may subsequently notify the Secretary-General that it accepts the amendment. Such amendment shall enter into force for such Party six months after the date of its notification of acceptance, or the date on which the amendment enters into force, whichever is the later date.
- (ii) If a Party that has made a notification referred to in subparagraph (f)(ii)(2) notifies the Secretary-General of its acceptance with respect to an amendment, such amendment shall enter into force for such Party six months after the date of its notification of acceptance, or the date on which the amendment enters into force, whichever is the later date.

3 Amendment by a Conference:

- (a) Upon the request of a Party concurred in by at least one-third of the Parties, the Organization shall convene a Conference of Parties to consider amendments to this Convention.
- (b) An amendment adopted by such a Conference by a two-thirds majority of the Parties present and voting shall be communicated by the Secretary-General to all Parties for acceptance.
- (c) Unless the Conference decides otherwise, the amendment shall be deemed to have been accepted and shall enter into force in accordance with the procedures specified in paragraphs 2(e) and (f) respectively.

4 Any Party that has declined to accept an amendment to the Annex shall be treated as a non-Party only for the purpose of application of that amendment.

5 Any notification under this Article shall be made in writing to the Secretary-General.

6 The Secretary-General shall inform the Parties and Members of the Organization of:

- (a) any amendment that enters into force and the date of its entry into force generally and for each Party; and
- (b) any notification made under this Article.

Article 20 *Denunciation*

1 This Convention may be denounced by any Party at any time after the expiry of two years from the date on which this Convention enters into force for that Party.

2 Denunciation shall be effected by written notification to the Depositary, to take effect one year after receipt or such longer period as may be specified in that notification.

Article 21 *Depositary*

1 This Convention shall be deposited with the Secretary-General, who shall transmit certified copies of this Convention to all States which have signed this Convention or acceded thereto.

2 In addition to the functions specified elsewhere in this Convention, the Secretary-General shall:

- (a) inform all States that have signed this Convention, or acceded thereto, of:
 - (i) each new signature or deposit of an instrument of ratification, acceptance, approval or accession, together with the date thereof;
 - (ii) the date of entry into force of this Convention; and

- (iii) the deposit of any instrument of denunciation from the Convention, together with the date on which it was received and the date on which the denunciation takes effect; and
- (b) as soon as this Convention enters into force, transmit the text thereof to the Secretariat of the United Nations for registration and publication in accordance with Article 102 of the Charter of the United Nations.

Article 22 *Languages*

This Convention is established in a single original in the Arabic, Chinese, English, French, Russian and Spanish languages, each text being equally authentic.

DONE AT LONDON this thirteenth day of February, two thousand and four.

IN WITNESS WHEREOF the undersigned, being duly authorised by their respective Governments for that purpose, have signed this Convention.

ANNEX

**REGULATIONS FOR THE CONTROL AND MANAGEMENT OF SHIPS'
BALLAST WATER AND SEDIMENTS**

SECTION A - GENERAL PROVISIONS

Regulation A-1 *Definitions*

For the purposes of this Annex:

- 1 “Anniversary date” means the day and the month of each year corresponding to the date of expiry of the Certificate.
- 2 “Ballast Water Capacity” means the total volumetric capacity of any tanks, spaces or compartments on a ship used for carrying, loading or discharging Ballast Water, including any multi-use tank, space or compartment designed to allow carriage of Ballast Water.
- 3 “Company” means the owner of the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the owner of the ship and who on assuming such responsibility has agreed to take over all the duties and responsibilities imposed by the International Safety Management Code¹.
- 4 “Constructed” in respect of a ship means a stage of construction where:
 - .1 the keel is laid; or
 - .2 construction identifiable with the specific ship begins;
 - .3 assembly of the ship has commenced comprising at least 50 tonnes or 1 percent of the estimated mass of all structural material, whichever is less; or
 - .4 the ship undergoes a major conversion.
- 5 “Major conversion” means a conversion of a ship:
 - .1 which changes its ballast water carrying capacity by 15 percent or greater, or
 - .2 which changes the ship type, or
 - .3 which, in the opinion of the Administration, is projected to prolong its life by ten years or more, or
 - .4 which results in modifications to its ballast water system other than component replacement-in-kind. Conversion of a ship to meet the provisions of regulation D-1 shall not be deemed to constitute a major conversion for the purpose of this Annex.

¹ Refer to the ISM Code adopted by the Organization by resolution A.741(18), as amended.

- 6 “From the nearest land” means from the baseline from which the territorial sea of the territory in question is established in accordance with international law except that, for the purposes of the Convention, “from the nearest land” off the north-eastern coast of Australia shall mean from a line drawn from a point on the coast of Australia in

latitude 11°00′ S, longitude 142°08′ E
to a point in latitude 10°35′ S, longitude 141°55′ E
thence to a point latitude 10°00′ S, longitude 142°00′ E
thence to a point latitude 9°10′ S, longitude 143°52′ E
thence to a point latitude 9°00′ S, longitude 144°30′ E
thence to a point latitude 10°41′ S, longitude 145°00′ E
thence to a point latitude 13°00′ S, longitude 145°00′ E
thence to a point latitude 15°00′ S, longitude 146°00′ E
thence to a point latitude 17°30′ S, longitude 147°00′ E
thence to a point latitude 21°00′ S, longitude 152°55′ E
thence to a point latitude 24°30′ S, longitude 154°00′ E
thence to a point on the coast of Australia
in latitude 24°42′ S, longitude 153°15′ E.

- 7 “Active Substance” means a substance or organism, including a virus or a fungus, that has a general or specific action on or against Harmful Aquatic Organisms and Pathogens.

Regulation A-2 *General Applicability*

Except where expressly provided otherwise, the discharge of Ballast Water shall only be conducted through Ballast Water Management in accordance with the provisions of this Annex.

Regulation A-3 *Exceptions*

The requirements of regulation B-3, or any measures adopted by a Party pursuant to Article 2.3 and Section C, shall not apply to:

- 1 the uptake or discharge of Ballast Water and Sediments necessary for the purpose of ensuring the safety of a ship in emergency situations or saving life at sea; or
- 2 the accidental discharge or ingress of Ballast Water and Sediments resulting from damage to a ship or its equipment:
 - .1 provided that all reasonable precautions have been taken before and after the occurrence of the damage or discovery of the damage or discharge for the purpose of preventing or minimizing the discharge; and
 - .2 unless the owner, Company or officer in charge wilfully or recklessly caused damage; or
- 3 the uptake and discharge of Ballast Water and Sediments when being used for the purpose of avoiding or minimizing pollution incidents from the ship; or

- 4 the uptake and subsequent discharge on the high seas of the same Ballast Water and Sediments; or
- 5 the discharge of Ballast Water and Sediments from a ship at the same location where the whole of that Ballast Water and those Sediments originated and provided that no mixing with unmanaged Ballast Water and Sediments from other areas has occurred. If mixing has occurred, the Ballast Water taken from other areas is subject to Ballast Water Management in accordance with this Annex.

Regulation A-4 *Exemptions*

1 A Party or Parties, in waters under their jurisdiction, may grant exemptions to any requirements to apply regulations B-3 or C-1, in addition to those exemptions contained elsewhere in this Convention, but only when they are:

- .1 granted to a ship or ships on a voyage or voyages between specified ports or locations; or to a ship which operates exclusively between specified ports or locations;
- .2 effective for a period of no more than five years subject to intermediate review;
- .3 granted to ships that do not mix Ballast Water or Sediments other than between the ports or locations specified in paragraph 1.1; and
- .4 granted based on the Guidelines on risk assessment developed by the Organization.

2 Exemptions granted pursuant to paragraph 1 shall not be effective until after communication to the Organization and circulation of relevant information to the Parties.

3 Any exemptions granted under this regulation shall not impair or damage the environment, human health, property or resources of adjacent or other States. Any State that the Party determines may be adversely affected shall be consulted, with a view to resolving any identified concerns.

4 Any exemptions granted under this regulation shall be recorded in the Ballast Water record book.

Regulation A-5 *Equivalent compliance*

Equivalent compliance with this Annex for pleasure craft used solely for recreation or competition or craft used primarily for search and rescue, less than 50 metres in length overall, and with a maximum Ballast Water capacity of 8 cubic metres, shall be determined by the Administration taking into account Guidelines developed by the Organization.

SECTION B – MANAGEMENT AND CONTROL REQUIREMENTS FOR SHIPS

Regulation B-1 *Ballast Water Management Plan*

Each ship shall have on board and implement a Ballast Water Management plan. Such a plan shall be approved by the Administration taking into account Guidelines developed by the Organization. The Ballast Water Management plan shall be specific to each ship and shall at least:

- 1 detail safety procedures for the ship and the crew associated with Ballast Water Management as required by this Convention;
- 2 provide a detailed description of the actions to be taken to implement the Ballast Water Management requirements and supplemental Ballast Water Management practices as set forth in this Convention;
- 3 detail the procedures for the disposal of Sediments:
 - .1 at sea; and
 - .2 to shore;
- 4 include the procedures for coordinating shipboard Ballast Water Management that involves discharge to the sea with the authorities of the State into whose waters such discharge will take place;
- 5 designate the officer on board in charge of ensuring that the plan is properly implemented;
- 6 contain the reporting requirements for ships provided for under this Convention; and
- 7 be written in the working language of the ship. If the language used is not English, French or Spanish, a translation into one of these languages shall be included.

Regulation B-2 *Ballast Water Record Book*

1 Each ship shall have on board a Ballast Water record book that may be an electronic record system, or that may be integrated into another record book or system and, which shall at least contain the information specified in Appendix II.

2 Ballast Water record book entries shall be maintained on board the ship for a minimum period of two years after the last entry has been made and thereafter in the Company's control for a minimum period of three years.

3 In the event of the discharge of Ballast Water pursuant to regulations A-3, A-4 or B-3.6 or in the event of other accidental or exceptional discharge of Ballast Water not otherwise exempted by this Convention, an entry shall be made in the Ballast Water record book describing the circumstances of, and the reason for, the discharge.

4 The Ballast Water record book shall be kept readily available for inspection at all reasonable times and, in the case of an unmanned ship under tow, may be kept on the towing ship.

5 Each operation concerning Ballast Water shall be fully recorded without delay in the Ballast Water record book. Each entry shall be signed by the officer in charge of the operation concerned and each completed page shall be signed by the master. The entries in the Ballast Water record book shall be in a working language of the ship. If that language is not English, French or Spanish the entries shall contain a translation into one of those languages. When entries in an official national language of the State whose flag the ship is entitled to fly are also used, these shall prevail in case of a dispute or discrepancy.

6 Officers duly authorized by a Party may inspect the Ballast Water record book on board any ship to which this regulation applies while the ship is in its port or offshore terminal, and may make a copy of any entry, and require the master to certify that the copy is a true copy. Any copy so certified shall be admissible in any judicial proceeding as evidence of the facts stated in the entry. The inspection of a Ballast Water record book and the taking of a certified copy shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

Regulation B-3 *Ballast Water Management for Ships*

1 A ship constructed before 2009:

- .1 with a Ballast Water Capacity of between 1,500 and 5,000 cubic metres, inclusive, shall conduct Ballast Water Management that at least meets the standard described in regulation D-1 or regulation D-2 until 2014, after which time it shall at least meet the standard described in regulation D-2;
- .2 with a Ballast Water Capacity of less than 1,500 or greater than 5,000 cubic metres shall conduct Ballast Water Management that at least meets the standard described in regulation D-1 or regulation D-2 until 2016, after which time it shall at least meet the standard described in regulation D-2.

2 A ship to which paragraph 1 applies shall comply with paragraph 1 not later than the first intermediate or renewal survey, whichever occurs first, after the anniversary date of delivery of the ship in the year of compliance with the standard applicable to the ship.

3 A ship constructed in or after 2009 with a Ballast Water Capacity of less than 5,000 cubic metres shall conduct Ballast Water Management that at least meets the standard described in regulation D-2.

4 A ship constructed in or after 2009, but before 2012, with a Ballast Water Capacity of 5,000 cubic metres or more shall conduct Ballast Water Management in accordance with paragraph 1.2.

5 A ship constructed in or after 2012 with a Ballast Water Capacity of 5000 cubic metres or more shall conduct Ballast Water Management that at least meets the standard described in regulation D-2.

6 The requirements of this regulation do not apply to ships that discharge Ballast Water to a reception facility designed taking into account the Guidelines developed by the Organization for such facilities.

7 Other methods of Ballast Water Management may also be accepted as alternatives to the requirements described in paragraphs 1 to 5, provided that such methods ensure at least the same level of protection to the environment, human health, property or resources, and are approved in principle by the Committee.

Regulation B-4 *Ballast Water Exchange*

1 A ship conducting Ballast Water exchange to meet the standard in regulation D-1 shall:

- .1 whenever possible, conduct such Ballast Water exchange at least 200 nautical miles from the nearest land and in water at least 200 metres in depth, taking into account the Guidelines developed by the Organization;
- .2 in cases where the ship is unable to conduct Ballast Water exchange in accordance with paragraph 1.1, such Ballast Water exchange shall be conducted taking into account the Guidelines described in paragraph 1.1 and as far from the nearest land as possible, and in all cases at least 50 nautical miles from the nearest land and in water at least 200 metres in depth.

2 In sea areas where the distance from the nearest land or the depth does not meet the parameters described in paragraph 1.1 or 1.2, the port State may designate areas, in consultation with adjacent or other States, as appropriate, where a ship may conduct Ballast Water exchange, taking into account the Guidelines described in paragraph 1.1.

3 A ship shall not be required to deviate from its intended voyage, or delay the voyage, in order to comply with any particular requirement of paragraph 1.

4 A ship conducting Ballast Water exchange shall not be required to comply with paragraphs 1 or 2, as appropriate, if the master reasonably decides that such exchange would threaten the safety or stability of the ship, its crew, or its passengers because of adverse weather, ship design or stress, equipment failure, or any other extraordinary condition.

5 When a ship is required to conduct Ballast Water exchange and does not do so in accordance with this regulation, the reasons shall be entered in the Ballast Water record book.

Regulation B-5 *Sediment Management for Ships*

1 All ships shall remove and dispose of Sediments from spaces designated to carry Ballast Water in accordance with the provisions of the ship's Ballast Water Management plan.

2 Ships described in regulation B-3.3 to B-3.5 should, without compromising safety or operational efficiency, be designed and constructed with a view to minimize the uptake and undesirable entrapment of Sediments, facilitate removal of Sediments, and provide safe access to allow for Sediment removal and sampling, taking into account guidelines developed by the Organization. Ships described in regulation B-3.1 should, to the extent practicable, comply with this paragraph.

Regulation B-6 *Duties of Officers and Crew*

Officers and crew shall be familiar with their duties in the implementation of Ballast Water Management particular to the ship on which they serve and shall, appropriate to their duties, be familiar with the ship's Ballast Water Management plan.

SECTION C – SPECIAL REQUIREMENTS IN CERTAIN AREAS

Regulation C-1 *Additional Measures*

1 If a Party, individually or jointly with other Parties, determines that measures in addition to those in Section B are necessary to prevent, reduce, or eliminate the transfer of Harmful Aquatic Organisms and Pathogens through ships' Ballast Water and Sediments, such Party or Parties may, consistent with international law, require ships to meet a specified standard or requirement.

2 Prior to establishing standards or requirements under paragraph 1, a Party or Parties should consult with adjacent or other States that may be affected by such standards or requirements.

3 A Party or Parties intending to introduce additional measures in accordance with paragraph 1 shall:

- .1 take into account the Guidelines developed by the Organization.
- .2 communicate their intention to establish additional measure(s) to the Organization at least 6 months, except in emergency or epidemic situations, prior to the projected date of implementation of the measure(s). Such communication shall include:
 - .1 the precise co-ordinates where additional measure(s) is/are applicable;
 - .2 the need and reasoning for the application of the additional measure(s), including, whenever possible, benefits;
 - .3 a description of the additional measure(s); and
 - .4 any arrangements that may be provided to facilitate ships' compliance with the additional measure(s).

- .3 to the extent required by customary international law as reflected in the United Nations Convention on the Law of the Sea, as appropriate, obtain the approval of the Organization.

4 A Party or Parties, in introducing such additional measures, shall endeavour to make available all appropriate services, which may include but are not limited to notification to mariners of areas, available and alternative routes or ports, as far as practicable, in order to ease the burden on the ship.

5 Any additional measures adopted by a Party or Parties shall not compromise the safety and security of the ship and in any circumstances not conflict with any other convention with which the ship must comply.

6 A Party or Parties introducing additional measures may waive these measures for a period of time or in specific circumstances as they deem fit.

Regulation C-2 *Warnings Concerning Ballast Water Uptake in Certain Areas and Related Flag State Measures*

1 A Party shall endeavour to notify mariners of areas under their jurisdiction where ships should not uptake Ballast Water due to known conditions. The Party shall include in such notices the precise coordinates of the area or areas, and, where possible, the location of any alternative area or areas for the uptake of Ballast Water. Warnings may be issued for areas:

- .1 known to contain outbreaks, infestations, or populations of Harmful Aquatic Organisms and Pathogens (e.g., toxic algal blooms) which are likely to be of relevance to Ballast Water uptake or discharge;
- .2 near sewage outfalls; or
- .3 where tidal flushing is poor or times during which a tidal stream is known to be more turbid.

2 In addition to notifying mariners of areas in accordance with the provisions of paragraph 1, a Party shall notify the Organization and any potentially affected coastal States of any areas identified in paragraph 1 and the time period such warning is likely to be in effect. The notice to the Organization and any potentially affected coastal States shall include the precise coordinates of the area or areas, and, where possible, the location of any alternative area or areas for the uptake of Ballast Water. The notice shall include advice to ships needing to uptake Ballast Water in the area, describing arrangements made for alternative supplies. The Party shall also notify mariners, the Organization, and any potentially affected coastal States when a given warning is no longer applicable.

Regulation C-3 *Communication of Information*

The Organization shall make available, through any appropriate means, information communicated to it under regulations C-1 and C-2.

SECTION D - STANDARDS FOR BALLAST WATER MANAGEMENT

Regulation D-1 *Ballast Water Exchange Standard*

1 Ships performing Ballast Water exchange in accordance with this regulation shall do so with an efficiency of at least 95 percent volumetric exchange of Ballast Water.

2 For ships exchanging Ballast Water by the pumping-through method, pumping through three times the volume of each Ballast Water tank shall be considered to meet the standard described in paragraph 1. Pumping through less than three times the volume may be accepted provided the ship can demonstrate that at least 95 percent volumetric exchange is met.

Regulation D-2 *Ballast Water Performance Standard*

1 Ships conducting Ballast Water Management in accordance with this regulation shall discharge less than 10 viable organisms per cubic metre greater than or equal to 50 micrometres in minimum dimension and less than 10 viable organisms per millilitre less than 50 micrometres in minimum dimension and greater than or equal to 10 micrometres in minimum dimension; and discharge of the indicator microbes shall not exceed the specified concentrations described in paragraph 2.

2 Indicator microbes, as a human health standard, shall include:

- .1 Toxicogenic *Vibrio cholerae* (O1 and O139) with less than 1 colony forming unit (cfu) per 100 millilitres or less than 1 cfu per 1 gram (wet weight) zooplankton samples ;
- .2 *Escherichia coli* less than 250 cfu per 100 millilitres;
- .3 Intestinal Enterococci less than 100 cfu per 100 milliliters.

Regulation D-3 *Approval requirements for Ballast Water Management systems*

1 Except as specified in paragraph 2, Ballast Water Management systems used to comply with this Convention must be approved by the Administration taking into account Guidelines developed by the Organization.

2 Ballast Water Management systems which make use of Active Substances or preparations containing one or more Active Substances to comply with this Convention shall be approved by the Organization, based on a procedure developed by the Organization. This procedure shall describe the approval and withdrawal of approval of Active Substances and their proposed manner of application. At withdrawal of approval, the use of the relevant Active Substance or Substances shall be prohibited within 1 year after the date of such withdrawal.

3 Ballast Water Management systems used to comply with this Convention must be safe in terms of the ship, its equipment and the crew.

Regulation D-4 Prototype Ballast Water Treatment Technologies

1 For any ship that, prior to the date that the standard in regulation D-2 would otherwise become effective for it, participates in a programme approved by the Administration to test and evaluate promising Ballast Water treatment technologies, the standard in regulation D-2 shall not apply to that ship until five years from the date on which the ship would otherwise be required to comply with such standard.

2 For any ship that, after the date on which the standard in regulation D-2 has become effective for it, participates in a programme approved by the Administration, taking into account Guidelines developed by the Organization, to test and evaluate promising Ballast Water technologies with the potential to result in treatment technologies achieving a standard higher than that in regulation D-2, the standard in regulation D-2 shall cease to apply to that ship for five years from the date of installation of such technology.

3 In establishing and carrying out any programme to test and evaluate promising Ballast Water technologies, Parties shall:

- .1 take into account Guidelines developed by the Organization, and
- .2 allow participation only by the minimum number of ships necessary to effectively test such technologies.

4 Throughout the test and evaluation period, the treatment system must be operated consistently and as designed.

Regulation D-5 *Review of Standards by the Organization*

1 At a meeting of the Committee held no later than three years before the earliest effective date of the standard set forth in regulation D-2, the Committee shall undertake a review which includes a determination of whether appropriate technologies are available to achieve the standard, an assessment of the criteria in paragraph 2, and an assessment of the socio-economic effect(s) specifically in relation to the developmental needs of developing countries, particularly small island developing States. The Committee shall also undertake periodic reviews, as appropriate, to examine the applicable requirements for ships described in regulation B-3.1 as well as any other aspect of Ballast Water Management addressed in this Annex, including any Guidelines developed by the Organization.

2 Such reviews of appropriate technologies shall also take into account:

- .1 safety considerations relating to the ship and the crew;
- .2 environmental acceptability, i.e., not causing more or greater environmental impacts than they solve;
- .3 practicability, i.e., compatibility with ship design and operations;
- .4 cost effectiveness, i.e., economics; and

- .5 biological effectiveness in terms of removing, or otherwise rendering not viable, Harmful Aquatic Organisms and Pathogens in Ballast Water.

3 The Committee may form a group or groups to conduct the review(s) described in paragraph 1. The Committee shall determine the composition, terms of reference and specific issues to be addressed by any such group formed. Such groups may develop and recommend proposals for amendment of this Annex for consideration by the Parties. Only Parties may participate in the formulation of recommendations and amendment decisions taken by the Committee.

4 If, based on the reviews described in this regulation, the Parties decide to adopt amendments to this Annex, such amendments shall be adopted and enter into force in accordance with the procedures contained in Article 19 of this Convention.

SECTION E - SURVEY AND CERTIFICATION REQUIREMENTS FOR BALLAST WATER MANAGEMENT

Regulation E-1 *Surveys*

1 Ships of 400 gross tonnage and above to which this Convention applies, excluding floating platforms, FSUs and FPSOs, shall be subject to surveys specified below:

- .1 An initial survey before the ship is put in service or before the Certificate required under regulation E-2 or E-3 is issued for the first time. This survey shall verify that the Ballast Water Management plan required by regulation B-1 and any associated structure, equipment, systems, fitting, arrangements and material or processes comply fully with the requirements of this Convention.
- .2 A renewal survey at intervals specified by the Administration, but not exceeding five years, except where regulation E-5.2, E-5.5, E-5.6, or E-5.7 is applicable. This survey shall verify that the Ballast Water Management plan required by regulation B-1 and any associated structure, equipment, systems, fitting, arrangements and material or processes comply fully with the applicable requirements of this Convention.
- .3 An intermediate survey within three months before or after the second Anniversary date or within three months before or after the third Anniversary date of the Certificate, which shall take the place of one of the annual surveys specified in paragraph 1.4. The intermediate surveys shall ensure that the equipment, associated systems and processes for Ballast Water Management fully comply with the applicable requirements of this Annex and are in good working order. Such intermediate surveys shall be endorsed on the Certificate issued under regulation E-2 or E-3.
- .4 An annual survey within three months before or after each Anniversary date, including a general inspection of the structure, any equipment, systems, fittings, arrangements and material or processes associated with the Ballast Water Management plan required by regulation B-1 to ensure that they have been maintained in accordance with paragraph 9 and remain satisfactory for the service

for which the ship is intended. Such annual surveys shall be endorsed on the Certificate issued under regulation E-2 or E-3.

- .5 An additional survey either general or partial, according to the circumstances, shall be made after a change, replacement, or significant repair of the structure, equipment, systems, fittings, arrangements and material necessary to achieve full compliance with this Convention. The survey shall be such as to ensure that any such change, replacement, or significant repair has been effectively made, so that the ship complies with the requirements of this Convention. Such surveys shall be endorsed on the Certificate issued under regulation E-2 or E-3.

2 The Administration shall establish appropriate measures for ships that are not subject to the provisions of paragraph 1 in order to ensure that the applicable provisions of this Convention are complied with.

3 Surveys of ships for the purpose of enforcement of the provisions of this Convention shall be carried out by officers of the Administration. The Administration may, however, entrust the surveys either to surveyors nominated for the purpose or to organizations recognized by it.

4 An Administration nominating surveyors or recognizing organizations to conduct surveys, as described in paragraph 3 shall, as a minimum, empower such nominated surveyors or recognized organizations² to:

- .1 require a ship that they survey to comply with the provisions of this Convention; and
- .2 carry out surveys and inspections if requested by the appropriate authorities of a port State that is a Party.

5 The Administration shall notify the Organization of the specific responsibilities and conditions of the authority delegated to the nominated surveyors or recognized organizations, for circulation to Parties for the information of their officers.

6 When the Administration, a nominated surveyor, or a recognized organization determines that the ship's Ballast Water Management does not conform to the particulars of the Certificate required under regulation E-2 or E-3 or is such that the ship is not fit to proceed to sea without presenting a threat of harm to the environment, human health, property or resources such surveyor or organization shall immediately ensure that corrective action is taken to bring the ship into compliance. A surveyor or organization shall be notified immediately, and it shall ensure that the Certificate is not issued or is withdrawn as appropriate. If the ship is in the port of another Party, the appropriate authorities of the port State shall be notified immediately. When an officer of the Administration, a nominated surveyor, or a recognized organization has notified the appropriate authorities of the port State, the Government of the port State concerned shall give such officer, surveyor or organization any necessary assistance to carry out their obligations under this regulation, including any action described in Article 9.

² Refer to the guidelines adopted by the Organization by resolution A.739(18), as may be amended by the Organization, and the specifications adopted by the Organization by resolution A.789(19), as may be amended by the Organization.

7 Whenever an accident occurs to a ship or a defect is discovered which substantially affects the ability of the ship to conduct Ballast Water Management in accordance with this Convention, the owner, operator or other person in charge of the ship shall report at the earliest opportunity to the Administration, the recognized organization or the nominated surveyor responsible for issuing the relevant Certificate, who shall cause investigations to be initiated to determine whether a survey as required by paragraph 1 is necessary. If the ship is in a port of another Party, the owner, operator or other person in charge shall also report immediately to the appropriate authorities of the port State and the nominated surveyor or recognized organization shall ascertain that such report has been made.

8 In every case, the Administration concerned shall fully guarantee the completeness and efficiency of the survey and shall undertake to ensure the necessary arrangements to satisfy this obligation.

9 The condition of the ship and its equipment, systems and processes shall be maintained to conform with the provisions of this Convention to ensure that the ship in all respects will remain fit to proceed to sea without presenting a threat of harm to the environment, human health, property or resources.

10 After any survey of the ship under paragraph 1 has been completed, no change shall be made in the structure, any equipment, fittings, arrangements or material associated with the Ballast Water Management plan required by regulation B-1 and covered by the survey without the sanction of the Administration, except the direct replacement of such equipment or fittings.

Regulation E-2 *Issuance or Endorsement of a Certificate*

1 The Administration shall ensure that a ship to which regulation E-1 applies is issued a Certificate after successful completion of a survey conducted in accordance with regulation E-1. A Certificate issued under the authority of a Party shall be accepted by the other Parties and regarded for all purposes covered by this Convention as having the same validity as a Certificate issued by them.

2 Certificates shall be issued or endorsed either by the Administration or by any person or organization duly authorized by it. In every case, the Administration assumes full responsibility for the Certificate.

Regulation E-3 *Issuance or Endorsement of a Certificate by Another Party*

1 At the request of the Administration, another Party may cause a ship to be surveyed and, if satisfied that the provisions of this Convention are complied with, shall issue or authorize the issuance of a Certificate to the ship, and where appropriate, endorse or authorize the endorsement of that Certificate on the ship, in accordance with this Annex.

2 A copy of the Certificate and a copy of the survey report shall be transmitted as soon as possible to the requesting Administration.

3 A Certificate so issued shall contain a statement to the effect that it has been issued at the request of the Administration and it shall have the same force and receive the same recognition as a Certificate issued by the Administration.

4 No Certificate shall be issued to a ship entitled to fly the flag of a State which is not a Party.

Regulation E-4 *Form of the Certificate*

The Certificate shall be drawn up in the official language of the issuing Party, in the form set forth in Appendix I. If the language used is neither English, French nor Spanish, the text shall include a translation into one of these languages.

Regulation E-5 *Duration and Validity of the Certificate*

1 A Certificate shall be issued for a period specified by the Administration that shall not exceed five years.

2 For renewal surveys:

- .1 Notwithstanding the requirements of paragraph 1, when the renewal survey is completed within three months before the expiry date of the existing Certificate, the new Certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing Certificate.
- .2 When the renewal survey is completed after the expiry date of the existing Certificate, the new Certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing Certificate.
- .3 When the renewal survey is completed more than three months before the expiry date of the existing Certificate, the new Certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of completion of the renewal survey.

3 If a Certificate is issued for a period of less than five years, the Administration may extend the validity of the Certificate beyond the expiry date to the maximum period specified in paragraph 1, provided that the surveys referred to in regulation E-1.1.3 applicable when a Certificate is issued for a period of five years are carried out as appropriate.

4 If a renewal survey has been completed and a new Certificate cannot be issued or placed on board the ship before the expiry date of the existing Certificate, the person or organization authorized by the Administration may endorse the existing Certificate and such a Certificate shall be accepted as valid for a further period which shall not exceed five months from the expiry date.

5 If a ship at the time when the Certificate expires is not in a port in which it is to be surveyed, the Administration may extend the period of validity of the Certificate but this extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so. No Certificate shall be extended for a period longer than three months, and a ship to which such extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such extension to leave that port without having a new Certificate. When

the renewal survey is completed, the new Certificate shall be valid to a date not exceeding five years from the date of expiry of the existing Certificate before the extension was granted.

6 A Certificate issued to a ship engaged on short voyages which has not been extended under the foregoing provisions of this regulation may be extended by the Administration for a period of grace of up to one month from the date of expiry stated on it. When the renewal survey is completed, the new Certificate shall be valid to a date not exceeding five years from the date of expiry of the existing Certificate before the extension was granted.

7 In special circumstances, as determined by the Administration, a new Certificate need not be dated from the date of expiry of the existing Certificate as required by paragraph 2.2, 5 or 6 of this regulation. In these special circumstances, the new Certificate shall be valid to a date not exceeding five years from the date of completion of the renewal survey.

8 If an annual survey is completed before the period specified in regulation E-1, then:

- .1 the Anniversary date shown on the Certificate shall be amended by endorsement to a date which shall not be more than three months later than the date on which the survey was completed;
- .2 the subsequent annual or intermediate survey required by regulation E-1 shall be completed at the intervals prescribed by that regulation using the new Anniversary date;
- .3 the expiry date may remain unchanged provided one or more annual surveys, as appropriate, are carried out so that the maximum intervals between the surveys prescribed by regulation E-1 are not exceeded.

9 A Certificate issued under regulation E-2 or E-3 shall cease to be valid in any of the following cases:

- .1 if the structure, equipment, systems, fittings, arrangements and material necessary to comply fully with this Convention is changed, replaced or significantly repaired and the Certificate is not endorsed in accordance with this Annex;
- .2 upon transfer of the ship to the flag of another State. A new Certificate shall only be issued when the Party issuing the new Certificate is fully satisfied that the ship is in compliance with the requirements of regulation E-1. In the case of a transfer between Parties, if requested within three months after the transfer has taken place, the Party whose flag the ship was formerly entitled to fly shall, as soon as possible, transmit to the Administration copies of the Certificates carried by the ship before the transfer and, if available, copies of the relevant survey reports;
- .3 if the relevant surveys are not completed within the periods specified under regulation E-1.1; or
- .4 if the Certificate is not endorsed in accordance with regulation E-1.1.

APPENDIX I

FORM OF INTERNATIONAL BALLAST WATER MANAGEMENT CERTIFICATE

INTERNATIONAL BALLAST WATER MANAGEMENT CERTIFICATE

Issued under the provisions of the International Convention for the Control and Management of Ships' Ballast Water and Sediments (hereinafter referred to as "the Convention") under the authority of the Government of

.....
(full designation of the country)

by
*(full designation of the competent person or
organization authorized under the provisions
of the Convention)*

Particulars of ship¹

Name of ship

Distinctive number or letters

Port of registry

Gross Tonnage

IMO number²

Date of Construction

Ballast Water Capacity (in cubic metres)

Details of Ballast Water Management Method(s) Used

Method of Ballast Water Management used

Date installed (if applicable)

Name of manufacturer (if applicable)

¹ Alternatively, the particulars of the ship may be placed horizontally in boxes.

² IMO Ship Identification Number Scheme adopted by the Organization by resolution A.600(15).

The principal Ballast Water Management method(s) employed on this ship is/are:

- ☐ in accordance with regulation D-1
- ☐ in accordance with regulation D-2
(describe)
- ☐ the ship is subject to regulation D-4

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with regulation E-1 of the Annex to the Convention; and

2 That the survey shows that Ballast Water Management on the ship complies with the Annex to the Convention.

This certificate is valid until subject to surveys in accordance with regulation E-1 of the Annex to the Convention.

Completion date of the survey on which this certificate is based: dd/mm/yyyy

Issued at
(Place of issue of certificate)

.....
(Date of issue) Signature of authorized official issuing the certificate)

(Seal or stamp of the authority, as appropriate)

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEY(S)

THIS IS TO CERTIFY that a survey required by regulation E-1 of the Annex to the Convention the ship was found to comply with the relevant provisions of the Convention:

Annual survey: Signed
(Signature of duly authorized official)

Place

Date.....

(Seal or stamp of the authority, as appropriate)

Annual*/Intermediate survey*: Signed
(Signature of duly authorized official)

Place

Date.....

(Seal or stamp of the authority, as appropriate)

Annual*/Intermediate survey*: Signed
(Signature of duly authorized official)

Place

Date.....

(Seal or stamp of the authority, as appropriate)

Annual survey: Signed
(Signature of duly authorized official)

Place

Date.....

(Seal or stamp of the authority, as appropriate)

* Delete as appropriate.

**ANNUAL/INTERMEDIATE SURVEY
IN ACCORDANCE WITH REGULATION E-5.8.3**

THIS IS TO CERTIFY that, at an annual/intermediate* survey in accordance with regulation E-5.8.3 of the Annex to the Convention, the ship was found to comply with the relevant provisions of the Convention:

Signed
(Signature of authorized official)

Place

Date.....

(Seal or stamp of the authority, as appropriate)

**ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID
FOR LESS THAN 5 YEARS WHERE REGULATION E-5.3 APPLIES**

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation E-5.3 of the Annex to the Convention, be accepted as valid until.....

Signed
(Signature of authorized official)

Place

Date.....

(Seal or stamp of the authority, as appropriate)

**ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN
COMPLETED AND REGULATION E-5.4 APPLIES**

The ship complies with the relevant provisions of the Convention and this Certificate shall, in accordance with regulation E-5.4 of the Annex to the Convention, be accepted as valid until

Signed
(Signature of authorized official)

Place

Date.....

(Seal or stamp of the authority, as appropriate)

* Delete as appropriate

**ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL
REACHING THE PORT OF SURVEY OR FOR A PERIOD OF GRACE
WHERE REGULATION E-5.5 OR E-5.6 APPLIES**

This Certificate shall, in accordance with regulation E-5.5 or E-5.6* of the Annex to the Convention, be accepted as valid until

Signed
(Signature of authorized official)

Place

Date.....

(Seal or stamp of the authority, as appropriate)

**ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE
WHERE REGULATION E-5.8 APPLIES**

In accordance with regulation E-5.8 of the Annex to the Convention the new Anniversary date is

Signed
(Signature of authorized official)

Place

Date.....

(Seal or stamp of the authority, as appropriate)

In accordance with regulation E-5.8 of the Annex to the Convention the new Anniversary date is

Signed
(Signature of duly authorized official)

Place

Date.....

(Seal or stamp of the authority, as appropriate)

* Delete as appropriate

APPENDIX II
FORM OF BALLAST WATER RECORD BOOK
INTERNATIONAL CONVENTION FOR THE CONTROL AND
MANAGEMENT OF SHIPS' BALLAST WATER AND SEDIMENTS

Period From: To:

Name of Ship

IMO number

Gross tonnage

Flag

Total Ballast Water capacity (in cubic metres)

The ship is provided with a Ballast Water Management plan ☐

Diagram of ship indicating ballast tanks:

1 Introduction

In accordance with regulation B-2 of the Annex to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, a record is to be kept of each Ballast Water operation. This includes discharges at sea and to reception facilities.

2 Ballast Water and Ballast Water Management

"Ballast Water" means water with its suspended matter taken on board a ship to control trim, list, draught, stability, or stresses of a ship. Management of Ballast Water shall be in accordance with an approved Ballast Water Management plan and taking into account Guidelines³ developed by the Organization.

3 Entries in the Ballast Water Record Book

Entries in the Ballast Water record book shall be made on each of the following occasions:

3.1 When Ballast Water is taken on board:

³ Refer to the Guidelines for the control and management of ships' ballast water to minimize the transfer of harmful aquatic organisms and pathogens adopted by the Organization by resolution A.868(20).

- .1 Date, time and location port or facility of uptake (port or lat/long), depth if outside port
 - .2 Estimated volume of uptake in cubic metres
 - .3 Signature of the officer in charge of the operation.
- 3.2 Whenever Ballast Water is circulated or treated for Ballast Water Management purposes:
- .1 Date and time of operation
 - .2 Estimated volume circulated or treated (in cubic metres)
 - .3 Whether conducted in accordance with the Ballast Water Management plan
 - .4 Signature of the officer in charge of the operation
- 3.3 When Ballast Water is discharged into the sea:
- .1 Date, time and location port or facility of discharge (port or lat/long)
 - .2 Estimated volume discharged in cubic metres plus remaining volume in cubic metres
 - .3 Whether approved Ballast Water Management plan had been implemented prior to discharge
 - .4 Signature of the officer in charge of the operation.
- 3.4 When Ballast Water is discharged to a reception facility:
- .1 Date, time, and location of uptake
 - .2 Date, time, and location of discharge
 - .3 Port or facility
 - .4 Estimated volume discharged or taken up, in cubic metres
 - .5 Whether approved Ballast Water Management plan had been implemented prior to discharge
 - .6 Signature of officer in charge of the operation
- 3.5 Accidental or other exceptional uptake or discharges of Ballast Water:
- .1 Date and time of occurrence
 - .2 Port or position of the ship at time of occurrence

- .3 Estimated volume of Ballast Water discharged
- .4 Circumstances of uptake, discharge, escape or loss, the reason therefore and general remarks.
- .5 Whether approved Ballast Water Management plan had been implemented prior to discharge
- .6 Signature of officer in charge of the operation

3.6 Additional operational procedure and general remarks

4 Volume of Ballast Water

The volume of Ballast Water onboard should be estimated in cubic metres. The Ballast Water record book contains many references to estimated volume of Ballast Water. It is recognized that the accuracy of estimating volumes of ballast is left to interpretation.

RECORD OF BALLAST WATER OPERATIONS

SAMPLE BALLAST WATER RECORD BOOK PAGE

Name of Ship:

Distinctive number or letters

Date	Item (number)	Record of operations/signature of officers in charge

Signature of master

附錄二
國際船舶壓艙水和沉積物控管公約
(中文版)

控制和管理船舶壓艙水和沉積物國際公約

前言

本公約各當事國，

憶及《1982 年聯合國海洋法公約》（UNCLOS）第 196（1）條，“各國應採取一切必要措施以防止、減少和控制由於在其管轄或控制下使用技術而造成的海洋環境污染，或由於故意或偶然在海洋環境某一特定部分引進外來的或新的物種致使海洋環境可能發生重大和有害的變化，”

注意到《1992 年生物多樣性公約》（CBD）的目標和有害水生物和病原體通過船舶壓艙水的轉移和引入對生物多樣性的保護和可持續使用造成的威脅及 1998 年生物多樣性公約當事國外交大會（COP4）VI/5 決議關於海洋和海岸生態系統的保護和可持續利用，以及 2002 年生物多樣性公約當事國外交大會（COP6）VI/23 決議關於外來物種對生態系統、棲息地和物種的威脅，包括對入侵物種的指導原則，

進一步注意到 1992 年聯合國環境與發展大會要求國際海事組織（本組織）考慮通過適當的壓艙水排放規定，

意識到在裏約環境與發展宣言第 15 條的規定，以及在 1995 年 9 月 15 日本組織海上環境保護委員會通過的 MEPC.67(37)決議提及的預防措施，

也意識到 2002 年世界可持續發展峰會實施計畫的 34(b)號召各方行動起來加快解決壓艙水引入外來生物問題措施的制定，

意識到船舶無控制地排放壓艙水和沉積物已經造成有害水生物和病原體的轉移，對環境、人類健康、財產和資源造成傷害或損害，

認識到本組織於 1993 年大會通過的 A.774(18)和 1997 年大會通過的 A.868(20)關於這一問題的兩個重要

決議，以解決有害水生物和病原體轉移的決心；

進一步認識到幾個國家已經採取單邊行動以防止、最大限度地減少並最終消除通過船舶進入其港口引入有害水生物和病原體的風險，並在同一問題上，引起全世界的廣泛關注，制定一個全球適用的規定以及導則使其得以有效實施並統一解釋，

希望繼續推進更安全和更有效的壓艙水管理方法的發展，從而繼續防止、最大限度地減少並最終消除有害水生物和病原體的轉移，

決心通過控制和管理船舶壓艙水和沉積物以防止、最大限度地減少並最終消除有害水生物和病原體的轉移造成的環境、人類健康、財產及資源風險，以及避免該種控制造成的不必要的消極影響並鼓勵相關知識和技術的發展，

考慮實現上述目標最好的辦法是制定控制和管理船舶壓艙水和沉積物國際公約。

茲協議如下：

第 1 條 定義

除非另有明文規定，就本公約而言：

- 1 “主管機關”系指船舶在其權力下運營的國家政府。對於有權懸掛某國國旗的船舶而言，主管機關係指該國政府。對於在沿海國行使自然資源勘探和開發主權的海岸附近水域從事海床和底土勘探和開發的浮動式平臺，包括浮動式儲存裝置和浮動式生產、儲存和卸貨裝置，主管機關係指相關沿海國的政府。
- 2 “壓艙水”系指為控制船舶橫傾、縱傾、吃水、穩性或應力而加裝到船上的水及懸浮物質。
- 3 “壓艙水管理”系指用機械、物理、化學和生物方法，單獨或聯合使用以清除、使無害、或避免加裝和排放壓艙水和沉積物中的有害水生物和病原體。

- 4 “證書”系指國際壓艙水管理證書。
- 5 “委員會”系指本組織的海上環境保護委員會。
- 6 “公約”系指控制和管理船舶壓艙水和沉積物國際公約。
- 7 “總噸位”系指根據《1969 年國際噸位丈量公約》附則 I 或任何後繼公約中的噸位丈量規定而計算出的總噸位。
- 8 “有害水生物或病原體”系指這樣的水生物和病原體，該水生物和病原體一旦進入海水，包括河口或進入淡水水體中，會危害環境、人類健康、財產及資源，影響生物多樣性及該種水域的其他合理利用。
- 9 “本組織”系指國際海事組織。
- 10 “秘書長”系指本組織的秘書長。
- 11 “沉積物”系指從船舶壓艙水中沉澱的物質。
- 12 “船舶”系指在水域環境中運行的任何類型的船舶，包括潛水船、水上船艇、浮動平臺、浮動式儲存裝置和浮動式生產、儲存和卸貨裝置 s。

第 2 條 一般義務

- 1 為了通過控制和管理船舶壓艙水和沉積物以防止、最大限度地減少和消除有害水生物和病原體的轉移，本公約各當事國承諾全面充分地實施本公約的規定、附則。
- 2 附則與本公約構成一個整體，除非另有明文規定，提及本公約同時意味著提及其附則。
- 3 本公約中的任何規定都不得被解釋為妨礙一當事國在符合國際法的前提下，單獨地或與其他當事國聯合就通過控制和管理船舶壓艙水和沉積物防止、減少或消除有害水生物和病原體的轉運採取更嚴格的措施。

- 4 當事國須為有效實施、符合和執行本公約進行通力合作。
- 5 當事國鼓勵繼續制定壓艙水管理和標準以通過控制和管理船舶壓艙水和沉積物以防止、最大限度地減少並最終消除有害水生物和病原體的轉移。
- 6 當事國依照本公約採取的措施不應影響或損害本國或其他國家的環境、人類健康、財產和資源。
- 7 當事國應確保為遵守本公約而實施的壓艙水管理的操作而對本國或其他國家的環境、人類健康、財產和資源造成的影響比預防措施小。
- 8 當事國應鼓勵懸掛其國旗的船舶，在本公約適用的情況下，盡可能地避免加裝可能含有有害水生物和病原體的壓艙水和沉積物，並促成本組織制定的建議案得到充分有效的實施。
- 9 各當事國應在本組織的倡議下對壓艙水管理進行通力合作，這種合作應不囿於國家管轄許可權的局限，以解決敏感的、脆弱的或受到威脅的海洋生態系統和生物多樣性資源的威脅和風險。

第 3 條 適用範圍

- 1 除非在本公約中另行指明，本公約適用於：

- (a) 有權懸掛當事國國旗的船舶；以及
- (b) 無權懸掛當事國國旗，但在該當事國的權力下營運的船舶。

- 2 本公約不適用於：

- (a) 設計和建造的不攜帶壓艙水的船舶；
- (b) 只在一當事國管轄水域內操作的該當事國的船舶，除非該當事國確定該船壓艙水排放將影響和損害毗鄰國家或其他國家環境、人類健康、財產及資源；
- (c) 一當事國的船舶只在另一當事國管轄的水域操作，經後一當事國授權的免除。如果授權將會影響

或損害該國、毗鄰國家或其他國家的環境、人類健康、財產和資源，當事國則不能進行上述授權。

未授權的國家應通知船舶主管機關上述船舶適用於本公約；

(d) 除根據第（c）款未被授權的船舶，且只在一當事國管轄的水域外或公海操作，除非該當事國確

定從這種船舶的壓艙水排放將影響或損害毗鄰國家或其他國家環境、人類健康、財產及資源。

(e) 軍艦、軍用輔助船舶或國家所擁有或營運的到目前為止只用於政府非商業服務目的的其他船舶。

然而，各當事國須通過採取不妨礙其所擁有和營運此類船舶的操作性能的適當措施，保證此類船舶在合理和可行時符合本公約。

(f) 裝載於封閉壓艙艙中的永久性壓艙水、且不排放壓艙水的船舶。

3 對於本公約非當事國的船舶，各當事國可在必要時適用本公約的要求，保證不給此種船舶以更優惠的待遇。

第 4 條 控制通過船舶壓艙水和沉積物轉移有害水生物和病原體

1 各當事國應要求懸掛其船旗或在其管轄下的運營的船舶遵守本公約的要求，包括附則的適用的標準和要求，並採取有效措施確保此類船舶符合上述要求。

2 各當事國應考慮到其特定情況和能力，根據本公約制定適用於其管轄水域和港口的國家政策，策略或項目，並促進本公約目標的實現。

第 5 條 沉積物接收設施

1 各當事國承諾保證，考慮到本組織制定的導則，在其進行壓載艙清洗或維修的港口和碼頭，為船舶沉積物提供充分的接收設施。此種接收設施的操作不應造成船舶的不當延誤，並對沉積物進行安全處理以不影響或損害環境、人類健康、財產和資源。

2 各當事國應將按本條 1 款規定設置的設備不足的情況通知本組織，以便轉告各有關當事國。

第 6 條 科學和技術研究及監測

1 各當事國應單獨地或聯合起來，致力於：

(a) 促進並推動壓艙水管理的科學和技術研究，及

(b) 在其管轄水域內監測壓艙水管理的效果。

這種研究和監測應當包括對任何技術和方法的有效性及不利影響的觀察、測量、採樣、評估和分析，以及被認為由船舶壓艙水轉運引入的生物和病原體造成的不利影響。

2 為了進一步達到本公約的目標，各當事國應向提出要求的其他當事國提供以下方面的相關資訊：

(a) 根據壓艙水管理所開展的科學和技術活動以及技術手段；和

(b) 通過監測和評估活動得出的壓艙水管理的效果。

第 7 條 核對總和認證

1 當事國應當確保懸掛其國旗或在其權力下營運並接受核對總和認證的船舶根據附則的規定進行核對總和認證。

2 依照第 2.3 條和附則 C 部分實施措施的當事國無權要求另一當事國的船舶接受附加核對總和認證，同時船舶的主管機關無承擔另一當事國施加的附加核對總和認證措施的義務。實施此類措施的當事國應負責上述附加措施的認證並不得對船舶造成不當延誤。

第 8 條 違章

1 任何違反本公約要求的行為，不論其發生在何處，都應予以禁止並根據主管機關的法律給予制裁。如果主管機關被告知有違章事件發生，經對事件進行調查，並可要求報告事件的當事國提供所指認違章的額外證據。如果主管機關確認有充分的證據可對被指認的違章事件予以起訴，則應按照其法律使這種起訴儘快進行。主管機關應將所採取的任何措施立即通知報告違章的當事國以及本組織。如果主管機關在接到資訊後 1 年內未採取任何行動，應通知曾報告指認違章的當事國。

2 在任一當事國管轄下的任何違反本公約的行為均應予以禁止並根據該當事國的法律予以制裁。在此類違章事件發生時，當事國須：

(a) 根據其法律提起起訴，或

(b) 將其可能掌握的關於已發生違章事件的情況和證據提供給該船的主管機關。

3 當事國的法律就本條所規定的處罰，其嚴厲程度須足以遏止對本公約的違反，無論其發生於何處。

第 9 條 船舶檢查

1 適用於本公約的船舶，在另一當事國的任何港口或近岸裝卸站時，應接受該當事國正式授權官員的檢查以確定其是否遵守本公約的要求。除本條（2）條規定以外，任何該種檢查應限於：

(a) 檢驗船上是否有有效的證書，如有效應被接受；和

(b) 檢查壓艙水記錄簿，和/或

(c) 根據本組織即將制定的導則對船舶的壓艙水進行採樣。但對樣品進行分析需要的時間不應作為延誤船舶營運、行動或離港的理由。

2 如果船舶未持有有效的證書或有確鑿證據表明：

(a) 船舶的狀況或設備實質上不符合證書資料，或

(b) 船長或船員不熟悉船上壓艙水管理的基本程式，或未執行該程式。

則可以進行具體的檢查。

3 根據本條第 2 款規定，進行檢查的當事國應採取措施保證船舶不排放壓艙水，除非該種排放對環境、人類健康、財產及資源不構成有害影響。

第 10 條 違章調查和船舶管理

1 當事國應在違章調查和實施本公約規定方面進行合作。

2 如果船舶被查處違反本公約，船旗國和/或在其港口或近岸裝卸站營運的當事國，除採取第 8 條的制裁或第 9 條的行動外，可以採取警告、滯留或遣散等措施。但是，在其港口或近海裝卸站進行船舶操作的當事國，應允許船舶離開港口和近岸裝卸站進行壓艙水置換或駛往就近的修船廠或可用的接收設施，前提是上述行為不應對環境、人類健康、財產及資源構成的有害影響。

3 如果按第 9.1 (c) 條所述採樣得到的結果，或從其他港口或近岸裝卸站得到可靠資訊，表明船舶對環境、人類健康、財產和資源構成威脅，則船舶在其水域進行營運的當事國應禁止上述船舶排放壓艙水制上述威脅被消除。

4 如果一當事國收到另一當事國請其進行調查的請求和有關某船正在或曾經違反本公約規定進行操作的充分證據，也可以在船舶進入其港口或近岸裝卸站時對該船進行調查。這種調查的報告應送交請求調查的當事國以及有關船舶的主管機關，以便根據本公約採取適當措施。

第 11 條

控制措施的通知

1 如果按第 9 條或第 10 條規定檢查發現船舶違反本公約，則應通知該船。同時應向主管機關提交一份包括違章證據在內的報告。

2 如果按第 9.3 條、第 10.2 條或 10.3 條規定採取了行動，採取上述行動的檢查官應隨後以書面形式通知船舶的主管機關，如不可行，則通知該船的領事或外交代表關於所採取的必要行動的相關事宜。另外，應當通知經認可的負責認證的組織。

3 除本條第 2 款提及的當事國外，相關的港口國當局如未能按第 9.3 條、第 10.2 條或 10.3 條採取行動，或船舶經准許航行至下一港口，應將該船違章的相關資訊通知下一港口。

第 12 條 對船舶的不當延誤

- 1 在執行本公約第 7.2、8、9 和 10 條時應盡力避免使船舶受到不當的滯留或延誤。
- 2 如果在執行本公約第 7.2、8、9 或 10 條時船舶受到不當滯留或延誤，該船有權要求對其受到的任何損失或損害予以賠償。

第 13 條 技術支持、合作和區域性合作

1 當事國可以應其他當事國請求，直接地或通過本組織和其他國際性機構等適當途徑，在控制和管理壓艙水和沉積物方面為其提供下述支援：

- (a) 人員培訓；
- (b) 確保相關技術、設備和設施隨時可用；
- (c) 設立聯合的研發專案；和
- (d) 以有效實施本組織相應制定的本公約及導則為目的的其他行為。

2 進行主動合作的當事國，在控制和管理壓艙水和沉積物方面的輸出行為受到其國家法律、法規和政策的制約。

3 為了進一步實施本公約，在某一地理區域具有保護環境、人類健康、財產及資源共同利益的當事國，特別是封閉海和半封閉海當事國，考慮到其地區特點，應致力於地區間的合作，該種合作包括形成與本公約相一致的地區協定。當事國應與加入地區協定的當事國合作，制定一套合理程式。

第 14 條 資訊交流

1 各當事國應向本組織報告，並以適當方式向其他當事國提供下列資訊：

- a) 任何與壓艙水管理相關的要求和程式，包括為實施本公約制定的法律、法規和導則；
- b) 為保證環境安全的壓艙水和沉積物接受處理設施的可用情況和位置；和
- c) 對出於本附則第 A-3 條和第 B-3 條提及的原因而無法遵守本公約的船舶的資訊要求。

2 本組織應按本條規定將收到的任何文件通知各當事國，並將按本條 1(b)和(c)的規定將收到的任何資料轉發所有當事國。

第 15 條 爭議的解決

當事國應以談判、調查、調停、和解、仲裁、司法解決、訴諸區域機構或安排或自己選擇的其他和

平方式解決它們之間對本公約的解釋或適用發生的爭議。

第 16 條 與國際法和其他協議的關係

本公約應根據《聯合國海洋法公約》的國際慣例而不得歧視任何國家的權利和義務。

第 17 條 簽署、批准、接受、核准和加入

1 本公約自 2004 年 6 月 1 日起至 2005 年 5 月 31 日在本組織總部開放供各國簽署，以後繼續開放供各國加入。

2 各國可按下列方式成為本公約的當事國：

(a) 簽署而無需批准、接受或核准；或

(b) 簽署但有待批准、接受或核准，隨後予以批准、接受或核准；或

(c) 加入。

3 批准、接受、核准或加入應以向本組織秘書長交存一份相應的檔。

4 如果一國由兩個或多個實行不同法律體系的行政區組成，則在簽署、批准、接受、核准和加入本公約時，該國可以聲明本公約適用於其所有的行政區或一個或多個行政區，並且可以在任何時間通過遞交另一份聲明對前述聲明進行修改。

5 任何此類聲明都應以書面形式通知秘書長，並申明本公約適用的行政區或區域。

第 18 條 生效

1 本公約將在合計商船總噸位不少於世界商船總噸位 35% 的至少 30 個國家按第 17 條簽署本公約並對批准、接受或核准無保留，或交存了必要的批准、接受、核准或加入檔 12 個月後生效。

2 對於在本公約的生效條件滿足後但在其生效日期前交存批准、接受、核准或加入檔的國家，其批准、接收、核准或加入將於公約的生效日期或交存上述檔三個月後生效，以晚者為準。

3 凡在本公約生效之日後交存批准、接受、核准或加入檔，應在上述檔交存之日起三個月後生效。

4 在本公約的某一修正案依照公約第 16 條視為已被接受之日後交存的任何批准、接受、核准或加入檔應適用於經修訂的本公約。

第 19 條 修正案

1 本公約可按下列各款中所規定的任一修正程式，予以修正。

2 經本組織審議後的修正案：

(a) 任一當事國都可向本公約提出修正建議。修正建議須提交給秘書長，秘書長則須至少在審議前六個月將其散發給當事國和本組織成員。

(b) 上述提交和散發的修正建議須提交委員會審議。各當事國，無論其是否為本組織成員，都有權參加委員會審議和通過修正案。

(c) 修正案須由出席委員會並投票的當事國三分之二多數通過，條件是投票時至少有三分之一的當事國出席。

(d) 按 (c) 款通過的修正案由秘書長髮給各當事國供接受。

(e) 在下述情況下視為修正案已被接受：

(i) 對本公約正文的修正案在三分之二的當事國通知秘書長其接受修正案之日視為已被接受。

(ii) 對本公約附則的修正案在通過之日 12 個月後或委員會確定的其他日期視為已被接受。但是，如果截至上述日期有三分之一的當事國通知秘書長反對該修正案，則視該修正案未被接受。

(f) 修正案在下述條件下生效：

(i) 對本公約正文的修正案在根據本條 (e) (i) 款確定的視為被接受之日六個月後對聲明接受修正案的當事國生效。

(ii) 對本公約附則的修正案，將在視為已被接受之日六個月後對所有當事國生效，但以下當事國除外：

i. 根據本條 (e) (ii) 通知了反對修正案，且後來沒有撤銷反對；

ii. 在修正案生效前通知秘書長，只有在其隨後通知接受修正案後該修正案才能對其生效。

(g) (i) 按本條 (f) (ii) (1) 款通知反對修正案的當事國可以隨後通知秘書長其接受該修正案。該修正案將於該接受通知六個月後或於其生效之日對該當事國生效，以晚者為準。

(ii) 如果做出了本條 (f) (ii) (2) 款所述通知或聲明的當事國通知秘書長其接受修正案，該修正案將於該接受通知六個月後或於其生效之日對該當事國生效，以晚者為準。

3 大會修正：

(a) 應一當事國要求並得到三分之一當事國同意，本組織須召開當事國外交大會來審議對本公約的修正案。

(b) 在此種外交大會上由出席並表決的當事國

經到會並投票的當事國三分之二多數票通過的經大會採納的每項修正案，應由秘書長通知所有當事國，以供接受。

(c) 除非會議另有決定，該修正案應按上述 2 (e) 和 (f) 款中規定的程式視為已被接受和生效。

4 不接受某一附則的一項修正案的當事國，僅就該修正案的應用而言，應視同非當事國。

5 根據本條所提出的任何通知，都應以書面通知秘書長。

6 秘書長應通知本組織的會員國和當事國：

(a) 任何生效的修正案及其生效日期和對各當事國的生效的日期。

(b) 根據本條做出的任何通知。

第 20 條

退出

1 任何當事國在本公約對其生效滿 2 年後可隨時退出本公約。

2 對公約的退出須以向秘書長提出書面通知來實現，在收到該通知一年後或通知中所指明的較此為長的一段時間後生效。

第 21 條

保存

1 本公約由秘書長保存，秘書長須將本公約核證無誤副本發給所有簽署本公約或加入本公約的國家。

2 除本公約具體規定的其他職能外，秘書長還應：

(a) 將下述情況通知所有簽署或加入本公約的國家：

(i) 每一新的簽署或批准、接受、核准或加入檔的交存及其日期；

(ii) 本公約的生效日期；和

(iii) 任何退出本公約檔的交存，以及該檔的收到日期和退出生效的日期；

(b) 本公約一經生效，即按照《聯合國憲章》第 102 條的規定，將其文本送聯合國秘書處登記並公佈。

第 22 條

文字

本公約正本一份，由阿拉伯文、中文、英文、法文、俄文和西班牙文寫成，每種文本具有同等效力。

控制和管理船舶壓艙水和沉積物規則

A 部分 總則

第 A-1 條 定義

就本附則而言：

1 “周年日”系指每年與國際壓艙水管理證書的失效日相對應的月份和日期。

2 “壓艙水容量”系指用於載運、加裝或排放壓艙水的船舶上的任何艙室、處所或間隔的容積總量，包括設計允許載運壓艙水的任何多用途艙、處所或間隔。

3 “公司”系指船舶所有人或任何其他組織或個人，例如管理者或光船租賃人，他們從船舶所有人那裏承擔了船舶運營責任且已同意接受《國際安全管理規則》所要求的所有責任與義務。

4 “建造”系指一條船的下述建造階段：

.1 安放龍骨；或

.2 可辨認出某一具體船舶的建造開始；或

.3 該船已經裝配了至少為 50t 或為所有結構材料估算品質的 1% 的材料，取其較小者；或

.4 船舶正在進行重大改建。

5 “重大改建”系指船舶的一種改建：

.1 改變了該船 15% 或更多的壓艙水載運容量，或

.2 改變了該船的類型，或

.3 根據主管機關的意見，為了延長船舶 10 年或更多的使用年限，或

.4 除了組成要素的置換，對壓艙水系統的修改。為達到規則 D-1 條的規定而進行的船舶改建不應認為構成為達到本附則的目的而進行的重大改建。

6 “最近陸地”系指該領土按照國際法據以劃定其領海的基線，但下述情況除外：就本公約而言，澳大利亞東北海面的“最近陸地”系指據澳大利亞海岸下述各點的連線：

自 11°00'S，142°08'E 的一點起至 10°35'S，141°55'E 的一點，

再至 10°00'S，142°00'E 的一點，再至 9°10'S，143°52'E 的一點，

再至 9°00'S，144°30'E 的一點，再至 13°00'S，144°00'E 的一點，

再至 15°00'S，146°00'E 的一點，再至 18°00'S，147°00'E 的一點，

再至 21°00'S，153°00'E 的一點，

最後至澳大利亞海岸 24°42'S，153°15'E 的一點所劃的一條連線。

7 “活性物質”系指對有害水生微生物和病原體具有一般或特殊作用的一種物質或微生物，包括病毒或真菌。

第 A-2 條 一般適用

除非另行指明，壓艙水的排放只需根據本附則的規定，通過壓艙水管理進行。

第 A-3 條 例外

第 B-3 條的要求，或一當事國根據 C 部分通過的附加措施，應不適用於：

- .1 為保障船舶緊急情況下的船舶安全和救助海上人命而進行的必要的壓艙水和沉積物的加裝或排放；或
- .2 因船舶或設備損壞而導致的壓艙水和沉積物的意外排放：
 - .1 但須在發生損壞或發現排放或損壞前後，為防止排放或使排放減至最低限度，已採取了一切合理的預防措施；和
 - .2 如船東、公司或主管的高級船員故意或輕率行事而引起損壞，則不在此例；或
 - .3 以避免或使污染損害降至最低限度為目的進行的壓艙水和沉積物的加裝和排放；或
 - .4 在公海對相同壓艙水和沉積物進行的加裝和連續排放；或
 - .5 在最初加裝壓艙水和沉積物的同一地點排放壓艙水，且所排放壓艙水和沉積物與其他位置加裝的壓艙水沒有混合。如果混合發生了，從其他區域加裝的壓艙水需根據本附則進行壓艙水管理。

第 A-4 條 當事國的特殊許可

- 1 當事國在自己管轄的水域可以給予本公約規定外的任何適用第 B-3 或 C-1 條要求的例外,但僅當其：
 - .1 被授給在特定港口或地點間的單航程或多航程的船舶；或被授給在特殊港口或地點之外操作的船舶；
 - .2 接受期間檢驗的有效期不超過五年的船舶；
 - .3 被授給除第 1.1 款中規定的在港口或地點間以外的沒有混合壓艙水或沉積物的船舶；和
 - .4 根據本組織制定的風險評估導則授予。
- 2 根據第 1 款給予的許可須在通知本組織以便將相關資訊通知當事國後才能生效。

3 本公約的任何授權須不影響或損害毗鄰國或其他國家的環境、人類健康、財產或資源。也須與當事國認為可受到不利影響的有關國家進行協商，以解決任何發現的影響。

4 本規則的任何免除應當記錄在壓艙水記錄簿中。

第 A-5 條 等效要求

對於單獨用於娛樂或競賽或主要用於搜救的小於 50 米且最大壓艙水容量為 8 公噸的遊艇，應根據本組織制定的導則確定等效要求。

B 部分 船舶的管理和控制要求

第 B-1 條 壓艙水管理計畫

每條船都須備有並實施經主管機關批准的壓艙水管理計畫。此種計畫需根據本組織制定並通過的壓艙水管理指南編制。壓艙水管理計畫應針對每一船舶並應至少：

- .1 詳細說明與本公約要求的壓艙水管理相關的船舶和船員安全程式。
- .2 詳細闡述根據本公約條款實施壓艙水管理要求和壓艙水管理補充操作所採取的行動；
- .3 詳細說明沉積物處理程式：
 - .1 在海上；和
 - .2 在岸上；
- .4 包括船上壓艙水管理協調程式，該套裝程式含在國家主權海域對其水域進行的排放；
- .5 指定船上負責計畫得以完全實施的高級船員；
- .6 包含本公約規定的船舶報告要求；和
- .7 由船方的工作語言寫成。如果該語言不是英語、法語或西班牙語，則應包括上述文字之一的譯文。

第 B-2 條 壓艙水記錄簿

- 1 每條船都應備有壓艙水記錄簿，其可以是電子記錄系統，或者可以是其他記錄簿或系統的一部分，該記錄簿中至少應包含附錄 II 所要求的資訊。
- 2 壓艙水記錄簿應在完成最後一項記錄後在船上保留至少兩年，並且此後由船公司至少保管三年。
- 3 如果發生本附則第 A-3 條、A-4 條或者第 B-3.6 條所述的壓艙水的排放，或者發生本公約中所沒有被另行免除的事故性或其他意外壓艙水排放事件，應在壓艙水記錄簿中記錄該種排放的情況和原因。
- 4 壓艙水記錄簿應存放在隨時可取來檢查的地方，對沒有配備船員的被拖船只，該記錄簿可以存放在拖船。

5 應及時將壓艙水管理的相關作業詳細記入壓艙水記錄簿。每項記錄應由高級船員或相關作業的負責人員簽字，且每記完一頁應由船長簽字。壓艙水記錄簿應使用船方的工作語言及英語、法語或西班牙語的一種。

6 當事國授權的適當官員，可在其港口或近海裝卸站對適用本規則的任何船舶的壓艙水記錄簿進行檢查，並可將任何記錄製成副本並要求船長證明該副本是正確副本。這樣證明的任何副本，應被允許在任何法律訴訟中作為該項記錄中所述事實的證據。對壓艙水記錄簿的檢查和製作正確無誤的副本，應儘快進行而不致造成船舶的不當延誤。

第 B-3 條 船舶壓艙水管理

1 在 2009 年之前建造的船舶：

.1 壓艙水容量在 1500 至 5000 立方米之間的，包括 1500 和 5000 立方米的，在 2014 年前須進行滿足或超過第 D-1 或 D-2 條規定標準的壓艙水管理，在此時間之後，須滿足或超過第 D-2 條規定的標準。

.2 壓艙水容量少於 1500 立方米和大於 5000 立方米的，在 2016 年前須滿足或超過第 D-1 或 D-2 條規定標準的壓艙水管理，在此時間之後，須滿足或超過第 D-2 條規定的標準。

2 不遲於第一次期間檢驗或更新檢驗，無論先進行哪個，在對船舶執行可用標準的那一年的交船周年日之後，適用第 1 款的船舶須遵守第 1 款。

3 在 2009 年或之後建造的壓艙水容量少於 5000 立方米的船舶，須進行滿足或超出第 D-2 條規定標準的壓艙水管理。

4 在 2009 年或之後但在 2012 年之前建造的壓艙水容量達到或超過 5000 立方米的船舶，須按照第 1.2 款進行壓艙水管理。

5 在 2012 年或之後建造的壓艙水容量達到或超過 5000 立方米的船舶，須進行滿足或超出第 D-2 條規定標準的壓艙水管理。

6 本規則的要求不適用於把壓艙水排放至考慮本組織制定的導則而設計的接收設備。

7 壓艙水管理的其他方法也可能是第 1-5 款規定標準的可接受選擇，提供這些方法確保至少對環境、人類健康、財產或資源達到相同保護水準，並原則上經過大會批准。

第 B-4 條 壓艙水置換

1 滿足第 D-1 條標準進行壓艙水置換的船舶應：

.1 如果可能，在距離最近陸地至少 200 海裏和水深至少 200 米以上，按照本組織制定的導則進行壓艙水置換。

.2 根據本條第 1.1 款不能進行壓艙水置換的船舶，壓艙水置換須考慮第 1.1 款所述的導則進行並盡可能地遠離陸地，在任何情況下距離最近陸地不得少於 50 海裏和水深不得少於 200 米。

.2 在距最近陸地或水深不滿足第 1.1 或 1.2 款要求的海域，通過諮詢相鄰的或其他當事國，港口國可以

指定船舶根據第 1.1 款規定的導則可以進行壓艙水置換的適當區域。

3 船舶不應為遵守本條第 1.1 款的任何特殊要求而被要求繞航或延誤預定航程。

4 船舶進行壓艙水置換時，如果船長有理由認為這種置換因為惡劣天氣、船舶構造設計、設備故障或任何其他特殊情況而會對船舶的安全或穩性、其船員或者乘客構成威脅，無須遵守第 1.1 或 1.2 款的規定。

5 當船舶被要求並未按照本規則進行壓艙水置換時，須將此種原因記入壓艙水記錄簿。

第 B-5 條 船舶沉積物管理

1 所有船舶應根據船舶壓艙水管理計畫的規定對設計用來裝載壓艙水處所的沉積物進行清除和處理。

2 基於本組織制定的導則，第 B-3.3 條至 B-3.5 條所述的船舶在設計和建造時應最大限度地降低沉積物的加裝和不必要積聚，以便於清除，並且提供安全通道進行沉積物的清除和採樣。第 B-3.1 條所述的船舶應在可行的範圍內遵守本款。

第 B-6 條 高級船員和船員的職責

高級船員和船員應熟悉其在所服務船舶實施壓艙水管理中的職責，並應熟悉該船與其職責相應的壓艙水管理計畫。

C 部分 某些區域的特殊要求

第 C-1 條 附加措施

1 如果一當事國，個別地或與其他當事國聯合，認為有必要採取 B 部分外的措施，來防止、減少或消除通過進入其管轄區域的壓艙水和沉積物傳播有害水生物和病原體，則此當事國可要求進港船舶達到或超出一個特定的標準或要求作為其掛靠的條件。

2 在根據本條第 1 款制定標準或要求前，當事國應與相鄰或附近可能受到該標準或要求影響的國家協商。

3 將根據本條 1 款應用附加措施的一個或幾個當事國應：

.1 考慮本組織制定的指南。

.2 除緊急情況或疫情，在計畫實施措施的日期前至少 6 個月通知本組織其設立附加措施的目的。通知應包括：

.1 可以實施附加措施的精確的座標。

.2 要求實施附加措施的需要和理由，包括任何可能的益處。

.3 附加措施的說明；和

.4 任何有利於船舶遵守附加措施的安排。

.3 在《聯合國海洋法公約》中體現的國際法慣例所要求的範圍內，獲得本組織的批准。

4 實施這種附加措施的一當事國或幾個當事國應盡力提供所有適當的服務，可包括但不局限於通知航行此區域的船員、可用的和可供選擇的航線或港口，盡可能的減輕船舶的負擔。

5 任何被一當事國或幾個當事國採納的附加措施應不危及船舶的安全，並且在任何情況下都不違反該船應當遵守的其他公約。

6 實施附加措施的一當事國或幾個當事國可以在其認為適當的一段時間內或特定環境下放棄這些措施。

第 C-2 條 關於在某些區域加裝壓艙水的警告和相關船旗國措施

1 當事國應努力通知海員其管轄範圍內根據已知條件船舶不應加裝壓艙水的區域。該當事國的通知應包括上述區域的精確座標，以及任何壓艙水加裝替代區域的位置，如果可能。對於下述區域可予以警告：

.1 已知的與壓艙水的加裝或排放相關的有害水生物和病原體（如有毒的藻類的繁盛）的爆發、流行和聚集。

.2 附近的污水排放口；及

.3 潮水沖刷較弱的區域或潮流較混濁的時間。

2 除根據第 1 款規定通知海員外，當事國應通知本組織和任何受潛在影響的沿海國第 1 款中確定的區域以及上述警告可能生效的時間。對本組織和任何受潛在影響的沿海國的通知中應包括該區域的精確座標，及任何壓艙水加裝替代區域的位置，如果可能。當特定警告不再適用時當事國應同時通知海員、本組織和任何受潛在影響的沿海國。

第 C-3 條 資訊交流

本組織應以適當方式使根據本規則第 C-1 條和第 C-2 條交流的資訊方便被查訪。

D 部分 壓艙水管理標準

第 D-1 條 壓艙水置換標準

1 根據本條進行壓艙水置換的船舶應達到 95% 的體積置換率。

2 對於用泵吸法置換壓艙水的船舶，注入排出壓載艙三倍容積的水量應被視為等效於本條第 1 款所述的標準。

第 D-2 條 壓艙水執行標準

1 根據本規則進行壓艙水管理的船舶排放的壓艙水中每立方米可檢出存活微生物應少於 10 個，最大尺寸應大於或等於 50 微米，每毫升可檢出存活微生物應少於 50 個，最大尺寸應大於或等於 10 微米；第 2 款中規定的指示生物的排放不應超過特定的濃度。

2 指示生物，作為人類健康的標準，應當包括但不應局限於：

.1 每 100 毫升小於 1cfu 的有毒霍亂菌（01 和 0139）或 1 克的浮游動物樣品（濕重）小於 1cfu；（cfu=菌

落單位)

.2 每 100 毫升 250cfu 的大腸桿菌；

.3 每 100 毫升 100cfu 的腸道球菌。

第 D-3 條 壓艙水管理系統的批准要求

1 除本條第 2 款中指定的，用於遵守本公約的壓艙水管理系統必須由主管機關根據本組織制定的導則批准通過。

2 使用活性物質或準備包含一種或多種活性物質的壓艙水管理系統，應根據本組織制定的程式經本組織批准通過。這種程式應說明批准活性物質的批准和退出以及建議的應用方式。退出批准時，相關活性物質或物質應在退出一年內禁止使用。

3 根據本公約使用的壓艙水管理系統對船舶及其設備和船員必須是安全的。

第 D-4 條 壓艙水處理技術原型

1 對於任何船舶，在第 D-2 條的標準對之生效以前，參加一個經主管機關批准的專案，以核對總和評估具有前景的壓艙水處理技術，第 D-2 條的標準須在船舶被要求遵守這種標準五年之後適用於該船。

2 對於任何船舶，在第 D-2 條的標準對之生效以後，考慮到本組織制定的導則，參加一個經主管機關批准的專案，以核對總和評估具有前景的、可潛在帶來達到高於第 D-2 條中標準的壓艙水管理技術，第 D-2 條的標準須在這種技術安裝之後五年停止用於船舶。

3 在建立和開展任何項目來核對總和評估具有前景的壓艙水技術中，當事國應：

.1 考慮本組織制定的導則，並

.2 只允許對此類技術進行有效測試所必需的最少數量的船舶參與。

4 在整個實驗和評估時期，處理系統必須連貫地按照設計進行操作。

第 D-5 條 本組織對標準的審議

1 委員會應當在第 D-2 條提出的標準的最早生效日期三年前進行審議，包括確定是否有達到標準的合適的技術、對第 2 款中標準的評估、對發展中國家特別是小的島國在發展需求方面的社會-經濟影響的評估。委員會還應當進行適當的定期審議，以檢查第 B-3.1 所述船舶的適用要求和本附則中壓艙水管理的其他方面問題，包括本組織制定的任何導則。

2 對適當技術的審議還須考慮到：

.1 對船舶和其船員的安全考慮；

.2 環境可接受性，也就是不引起比其本身所解決的更多或更大的環境影響；

.3 實用性，也就是與船舶設計和操作的相容性；

.4 成本有效性，也就是經濟的；和

.5 在清除或致使壓艙水中的有害水生物和沉積物失去活性方面的生物有效性。

3 委員會可以組織一個或多個工作組進行第 1 款所述的的審議。委員會應當決定其組成、職責範圍和成立此種小組需要解決的特殊事項。這些工作組可以擬定或推薦提案作為本附則的修正案供當事國考慮。只有當事國可以參與建議的形成和委員會的修正案決議。

4 如基於本條規定的審議，當事國決定通過本附則的修正案，則此修正案應根據本公約第 19 條所述程式通過並生效。

E 部分 壓艙水管理的核對總和認證要求

第 E-1 條 檢驗

1 適用本公約的 400 總噸及以上的船舶，不包括浮動的平臺、移動儲存裝置和移動生產、儲存或卸載裝置，應進行下列檢驗：

.1 初次檢驗，在船舶投入營運之前或在首次簽發本附則第 E-2 條或第 E-3 條所要求的證書之前進行。此種檢驗應保證第 B-1 條要求的壓艙水管理計畫和相關的結構、設備、系統、附件、佈置、材料或程式完全符合本公約適用的要求。

.2 換證檢驗，按主管機關規定的期限間隔進行，除非適用本附則第 E-5.2 條、第 E-5.5 條、第 E-5.6 條或第 E-5.7 條，不得超過 5 年。這種檢驗應保證第 B-1 條要求的壓艙水管理計畫和相關的結構、設備、系統、附件、佈置、材料或程式完全符合本公約適用的要求。

.3 期間檢驗，在證書簽發第二或第三周年日前後三個月內進行，應替代本條第 1.4 款所述的年度檢驗。期間檢驗應保證壓艙水管理的設備和相關系統和程式完全符合本附則中使用的要求並運轉良好。此種期間檢驗應在根據本附則第 E-2 條或第 E-3 條簽發的證書上簽署。

.4 年度檢驗，在證書簽發周年日前後三個月內進行，包括對壓艙水管理計畫相關的結構、設備、系統、附件、佈置和材料或程式根據本條第 1.1 款的總體檢查，以確保船舶已根據本條第 9 款進行維護並滿足擬定的用途。此種年度檢驗應在根據本附則第 E-2 條或第 E-3 條簽發的證書上簽署。

.5 附加檢驗，根據情況對進行過結構、設備、系統、附件、佈置和材料方面的改變、更替或重大維修以完全符合本公約的要求的船舶進行總體的或局部的檢驗。此種檢驗應確保任何上述改變、更替或重大維修都有效進行，從而使船舶符合本公約的要求。附加檢驗應在根據本附則第 E-2 條或第 E-3 條簽發的證書上簽署。

2 主管機關對於不受本條第 1 款規定限制的船舶應採取適當措施以保證本公約適用的規定得以遵守。

3 為執行本公約而對船舶進行的檢驗應由主管機關的官員進行。但主管機關可將這些檢驗委託給為此目的而指定的驗船師或由其認可的組織。

4 主管機關指定的驗船師或認可的組織執行本條第 3 款所指的檢驗與檢查時，應至少授給所指定的驗船師或認可的組織如下權力：

- .1 要求其檢驗的船舶遵守本公約的規定；及
- .2 在受到本公約當事國港口有關當局請求時，進行核對總和檢查。

5 主管機關應將授權給指定的驗船師或認可的組織的具體職責和情況通知本組織，以便轉告本公約的當事國供其官員參考。

6 當主管機關、指定的驗船師或認可的組織確定船舶的壓艙水管理措施與本附則第 E-2 條或 E-3 條規定要求的證書不符時，或該船沒有理由不對環境、人類健康、財產或資源造成不當的威脅或損害而不適於出海時，則該驗船師及組織應立即要求該船採取糾正措施以符合本公約。應當立即通知驗船師或組織，並確保不為其簽發證書或吊銷證書。如果此時該船是在另一當事國的港口內，則亦應立即通知該港口國的有關當局。當主管機關的官員、指定的驗船師或認可的組織已經通知該港口國的有關當局，則該港口國政府應根據本規則對該官員、驗船師或組織給以一切必要的協助，幫助他們根據本條及本規則第 9 條的規定履行其職責。

7 凡船舶發生事故或發現缺陷，對該船根據公約實施壓艙水管理的能力造成實質影響時，該船的船東、經營人或其他船舶負責人應儘快向負責簽發有關證書的主管機關、認可的組織或指定的驗船師報告，該主管機關、認可的組織或指定的驗船師在收到報告後，應立即進行調查，以確定是否需要進行本條第 1 款所要求的檢驗，如該船系在另一當事國的港口內，船東、經營人或其他負責人應立即向該港口的有關當局報告，而指定的驗船師或認可的組織則應查明此報告是否業已遞交。

8 無論採取何種方式，有關的主管機關均應保證核對總和檢查的全面性和有效性，並應負責做出必要的安排以完成此項義務。

9 船舶的狀況及其設備、系統和程式應得到維護以符合本公約的規定，保證船舶在各方面都適航而不會對環境、人類健康、財產或資源造成不當的有害威脅。

10 在船舶根據本條第 1 款檢驗完成後，未經主管機關許可，不得改變第 B-1 條要求的壓艙水管理計畫相關的經檢驗的結構、設備、附件、佈置和材料，除非直接更換此種設備或附件。

第 E-2 條 證書的簽發或簽證

1 根據本附則第 E-1 條經檢驗合格的船舶，主管機關應保證為其簽發證書。由一當事國簽發的證書須被其他當事國接受，並在本公約所涉及的各方面被視為與其自己簽發的證書同樣有效。

2 證書應由主管機關或經其正式授權的任何人或機構簽發或簽證。不論何種情況，主管機關對證書負有全部責任。

第 E-3 條 由另一當事國簽發或簽證證書

1 應主管機關的要求，另一當事國可指派人員對船舶進行檢驗，並且如果認為符合本公約，應根據本公約向該船簽發或授權簽發證書，並在適當時根據本附則為船舶的證書簽證或授權為其簽證。

2 應儘快將證書副本和檢驗報告副本送交要求進行該項檢驗的主管機關。

3 這樣簽發的證書應注明該證書是應主管機關的要求簽發的，應與主管機關簽發的證書具有同等效力和得到同樣承認。

4 對懸掛非當事國船旗的船舶，不得發給證書。

第 E-4 條 證書的格式

證書應按附錄 1 的格式，用發證國的官方文字寫成。如果所用文字既非英文、法文又非西班牙文，則該文本中還應有上述三種文字之一的譯文。

第 E-5 條 證書的有效性和有效期

1 國際壓艙水管理證書的有效期限應由主管機關規定，但不得超過 5 年。

2 對於換證檢驗：

.1 儘管本條第 1 款要求換證檢驗在現有證書失效前三個月內完成，但新證書的有效期應自完成換證檢驗的日期起至從現有證書失效日起算不超過五年。

.2 如換證檢驗在現有證書有效期限後完成，新證書的有效期限應自完成換證檢驗的日期起至從現有證書失效日起算不超過五年。

.3 如換證檢驗在現有證書失效日期前三個月以上完成時，新證書的有效期限應自完成換證檢驗的日期起至不超過完成該檢驗日期後五年。

3 如果證書簽發的有效期少於 5 年，主管機關可以延長有效期限最長至本條第 1 款規定的期限，前提是根據本附則第 E-1.1.3 條進行了適當的檢驗。

4 如果換證檢驗已經完成但新證書不能在現有證書的有效期限前完成簽發或替換，主管機關授權的人員或組織可以簽署現有證書，且此種證書應被承認有效，但延長的時間應自失效日起不超過五個月。

5 如果一船舶在證書過有效期限後不在其待檢驗的港口，主管機關可以延長證書的有效期限，但此種延長應只以船舶完成其該航次為目的，且只在合理可行的情況下方能准予。任何證書的延長時間都不能超過三個月，且獲得延期的船舶在抵達待檢驗的港口後應無權在沒有新證書的情況下依靠此種延期離開港口。當完成換證檢驗後，新證書的有效期限應不超過同意延期前以現有證書失效日起算的五年時間。

6 對於沒有根據本條前述條款予以延期的從事短航線船舶的證書，主管機關可給予自其證書上所述失效日起一個月的寬限期。在完成換證檢驗後，新證書的有效期限應不超過同意延期前以現有證書失效日起算的五年時間。

7 在特殊情況下，經主管機關許可，新證書的日期無需根據本條第 2.2 款、第 5 款或第 6 款的要求籤注為現有證書的失效日。在上述特殊情況下，新證書有效期限應不超過自完成換證檢驗日期起的五年時間。

8 如果在本附則第 E-1 條所述期限前完成年度檢驗，則：

- .1 應根據證書上簽署的日期來確定周年，但該日期不應遲於檢驗完成日期後的三個月；
 - .2 其後的本附則第 E-1 條要求的年度或期間檢驗應根據本附則所述的間隔使用新的周年日完成；
 - .3 如果進行了一個或多個適當的年度檢驗而沒有超過本附則第 E-1 條所述的最大檢驗間隔，失效日期可以保持不變。
- 9 根據本附則第 E-2 條或第 E-3 條簽發的證書在出現下述任何情況時即行失效：
- .1 如果為滿足本公約所必備的結構、設備、系統、附件、佈置或材料發生改變、更替或重大維修且證書沒有按照本附則簽發；
 - .2 在船舶改掛另一國的國旗時。只有當換發新證書的國家政府完全滿意的認為該船符合本附則第 E-1 條要求時，才予以換發新證書。如果變更船旗系在兩個當事國之間進行，則在變更船旗後的 3 個月內，前一個船旗國如接到申請，應儘快將變更船旗前該船所攜證書的副本以及有關的檢驗報告送交該船的新主管機關；
 - .3 如果相關檢驗沒有完全按照本附則第 E-1.1 條規定的期限內進行；
 - .4 如果證書不是根據本附則第 E-1.1 條簽發的。

附錄三

攜帶原油、液態有毒物質、垃圾和商業或
市政廢棄物以及壓艙水之船隻(美國)

SUBCHAPTER O—POLLUTION

PART 151—VESSELS CARRYING OIL, NOXIOUS LIQUID SUBSTANCES, GARBAGE, MUNICIPAL OR COMMERCIAL WASTE, AND BALLAST WATER

Subpart A—Implementation of MARPOL 73/78 and the Protocol on Environmental Protection to the Antarctic Treaty as it Pertains to Pollution from Ships

GENERAL

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- 151.04 Penalties for violation.
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OIL POLLUTION

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- 151.10 Control of oil discharges.
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NOXIOUS LIQUID SUBSTANCE POLLUTION

- 151.30 Applicability.
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APPENDIX TO SUBPART D OF PART 151—BALLAST WATER REPORTING FORM AND INSTRUCTIONS FOR BALLAST WATER REPORTING FORM

Subpart E—Definition of Marine Debris for the Purposes of the Marine Debris Research, Prevention, and Reduction Act

- 151.3000 Definition of marine debris for the purposes of the Marine Debris Research, Prevention, and Reduction Act.

AUTHORITY: 33 U.S.C. 1321, 1902, 1903, 1908; 46 U.S.C. 6101; Pub. L. 104–227 (110 Stat. 3034); Pub. L. 108–293 (118 Stat. 1063), § 623; E.O. 12777, 3 CFR, 1991 Comp. p. 351; DHS Delegation No. 0170.1, sec. 2(77).

Subpart A—Implementation of MARPOL 73/78 and the Protocol on Environmental Protection to the Antarctic Treaty as it Pertains to Pollution from Ships

AUTHORITY: 33 U.S.C. 1321, 1903, 1908; 46 U.S.C. 6101; Pub. L. 104–227 (110 Stat. 3034); E.O. 12777, 3 CFR, 1991 Comp. p. 351; Department of Homeland Security Delegation No. 170.1.

SOURCE: CGD 75–124a, 48 FR 45709, Oct. 6, 1983, unless otherwise noted.

GENERAL

§ 151.01 Purpose.

The purpose of this subpart is to implement the Act to Prevent Pollution from Ships, 1980, as amended (33 U.S.C. 1901–1911) and Annexes I, II and V of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), done at London on February 17, 1978. This subpart also implements the Antarctic Science, Tourism, and Conservation Act of 1996, and the Protocol on Environmental Protection to the Antarctic Treaty done at Madrid on October 4, 1991.

[CGD 88–002, 54 FR 18403, Apr. 28, 1989, as amended by CGD 88–002A, 55 FR 18582, May 2, 1990; CGD 97–015, 62 FR 18045, Apr. 14, 1997; USCG–2000–7641, 66 FR 55570, Nov. 2, 2001]

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§ 151.03 Applicability.

This subpart applies to each ship that must comply with Annex I, II or V of MARPOL 73/78 unless otherwise indicated.

[CGD 88-002, 54 FR 18403, Apr. 28, 1989, as amended by CGD 88-002A, 55 FR 18582, May 2, 1990; CGD 97-015, 62 FR 18045, Apr. 14, 1997]

§ 151.04 Penalties for violation.

(a) A person who violates MARPOL 73/78, the Act, or the regulations of this subpart is liable for a civil penalty for each violation, as provided by 33 U.S.C. 1908(b)(1). Each day of a continuing violation constitutes a separate violation.

(b) A person who makes a false, fictitious statement or fraudulent representation in any matter in which a statement or representation is required to be made to the Coast Guard under MARPOL 73/78, the Act, or the regulations of this subpart, is liable for a civil penalty for each statement or representation, as provided by 33 U.S.C. 1908(b)(2).

(c) A person who knowingly violates MARPOL 73/78, the Act, or the regulations of this subpart commits a class D felony, as described in 18 U.S.C. 3551 *et seq.* In the discretion of the Court, an amount equal to not more than one-half of the fine may be paid to the person giving information leading to conviction.

(d) A ship operated in violation of MARPOL 73/78, the Act, or the regulations of this subpart is liable *in rem* for any civil penalty covered by paragraph (a) or (b) of this section, or any fine covered by paragraph (c) of this section, and may be proceeded against in the United States District Court of any district in which the ship may be found.

[CGD 88-002, 54 FR 18403, Apr. 28, 1989, as amended by CGD 88-002A, 55 FR 18582, May 2, 1990; CGD 92-007, 57 FR 33261, July 27, 1992; CGD 96-052, 62 FR 16703, Apr. 8, 1997; USCG-1999-5832, 64 FR 34714, June 29, 1999]

§ 151.05 Definitions.

As used in this subpart—

Act means the Act to Prevent Pollution from Ships, as amended (33 U.S.C. 1901-1911).

Antarctica means the area south of 60 degrees south latitude.

Cargo associated wastes means all materials which have become wastes as a result of use on board a ship for cargo stowage and handling. Cargo associated wastes include, but are not limited to dunnage, shoring, pallets, lining and packing materials, plywood, paper, cardboard, wire, and steel strapping.

Clean ballast means the ballast in a tank which, since oil was last carried therein, has been so cleaned that effluent therefrom, if it were discharged from a ship that is stationary into clean calm water on a clear day would not produce visible traces of oil on the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines. If the ballast is discharged through an oil discharge monitoring and control system approved by the government of the country under whose authority the ship is operating, evidence based on such a system, to the effect that the oil content of the effluent does not exceed 15 parts per million (ppm) is determinative that the ballast is clean.

Commandant means Commandant, U.S. Coast Guard.

Discharge means any release, however caused, from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying. It does not include—

(1) Dumping within the meaning of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, done at London on 13 November 1972; or

(2) Release of oil or oily mixtures directly arising from the exploration, exploitation and associated off-shore processing of sea-bed mineral resources.

Discharge, as defined by MARPOL 73/78 in relation to harmful substances or effluent containing such substances, means any release however caused from a ship, and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying. It does not include—

(1) Dumping within the meaning of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, done at London on November 13, 1972; or

(2) The release of harmful substances directly arising from the exploration, exploitation, and associated offshore processing of seabed mineral resources; or

(3) The release of harmful substances for purposes of legitimate scientific research relating to pollution abatement or control.

Dishwater means the liquid residue from the manual or automatic washing of dishes and cooking utensils which have been pre-cleaned to the extent that any food particles adhering to them would not normally interfere with the operation of automatic dishwashers.

Domestic wastes means all types of wastes generated in the living spaces on board a ship, except victual wastes.

Existing ship means a ship that is not a new ship.

Fuel oil means any oil used to fuel the propulsion and auxiliary machinery of the ship carrying the fuel. The term "fuel oil" is also known as "oil fuel."

Garbage means all kinds of victual, domestic, and operational waste, excluding fresh fish and parts thereof, generated during the normal operation of the ship and liable to be disposed of continuously or periodically, except dishwater, graywater, and those substances that are defined or listed in other Annexes to MARPOL 73/78.

Graywater means drainage from dishwasher, shower, laundry, bath, and washbasin drains and does not include drainage from toilets, urinals, hospitals, and cargo spaces.

Great Lakes means the Great Lakes of North America and the St. Lawrence River west of a rhumb line drawn from Cap des Rosiers to West Point, Anticosti Island, and, on the north side of Anticosti Island, the meridian of longitude 63 degrees west.

Harmful substance means any substance which, if introduced into the sea, is liable to create hazards to human health, harm living resources and marine life, damage amenities, or interfere with other legitimate uses of the sea, and includes any substance subject to control by MARPOL 73/78.

High viscosity Category B NLS means any Category B NLS having a viscosity of at least 25 mPa.s at 20 °C and at

least 25 mPa.s at the time it is unloaded.

High viscosity Category C NLS means any Category C NLS having a viscosity of at least 60 mPa.s at 20 °C and at least 60 mPa.s at the time it is unloaded.

High viscosity NLS includes Category A NLSs having a viscosity of at least 25 mPa.s at 20 °C and at least 25 mPa.s at the time they are unloaded, high viscosity Category B NLSs, and high viscosity Category C NLSs.

Instantaneous rate of discharge of oil content means the rate of discharge of oil in liters per hour at any instant divided by the speed of the ship in knots at the same instant.

Length means the horizontal distance between the foremost part of a ship's stem to the aftermost part of its stern, excluding fittings and attachments.

Maintenance waste means materials collected while maintaining and operating the ship, including, but not limited to, soot, machinery deposits, scraped paint, deck sweepings, wiping wastes, and rags.

Major conversion means a conversion of an existing ship—

(1) That substantially alters the dimensions or carrying capacity of the ship; or

(2) That changes the type of the ship; or

(3) The intent of which, in the opinion of the government of the country under whose authority the ship is operating, is substantially to prolong its life; or

(4) Which otherwise so alters the ship that, if it were a new ship, it would become subject to relevant provisions of MARPOL 73/78 not applicable to it as an existing ship.

Marine pollutant means a harmful substance in packaged form, as it appears in Appendix B of 49 CFR 172.101.

MARPOL 73/78 means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating to that Convention. A copy of MARPOL 73/78 is available from the International Maritime Organization, 4 Albert Embankment, London, SE1, SR7, England.

Medical waste means isolation wastes, infectious agents, human blood and

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blood products, pathological wastes, sharps, body parts, contaminated bedding, surgical wastes and potentially contaminated laboratory wastes, dialysis wastes, and such additional medical items as prescribed by the Administrator of the EPA by regulation.

Nearest land. The term “from the nearest land” means from the baseline from which the territorial sea of the territory in question is established in accordance with international law, except that, for the purposes of these regulations, “from the nearest land” off the north eastern coast of Australia shall mean from a line drawn from a point on the coast of Australia in—

latitude 11°00′ South, longitude 142°08′ East to a point in—latitude 10°35′ South, longitude 141°55′ East, thence to a point—latitude 10°00′ South, longitude 142°00′ East, thence to a point—latitude 9°10′ South, longitude 143°52′ East, thence to a point—latitude 9°00′ South, longitude 144°30′ East, thence to a point—latitude 13°00′ South, longitude 144°00′ East, thence to a point—latitude 15°00′ South, longitude 146°00′ East, thence to a point—latitude 18°00′ South, longitude 147°00′ East, thence to a point—latitude 21°00′ South, longitude 153°00′ East, thence to a point on the coast of Australia in latitude 24°42′ South, longitude 153°15′ East.

New ship means a ship—

(1) For which the building contract is placed after December 31, 1975; or

(2) In the absence of a building contract, the keel of which is laid or which is at a similar stage of construction after June 30, 1976; or

(3) The delivery of which is after December 31, 1979; or

(4) That has undergone a major conversion—

(i) For which the contract is placed after December 31, 1975;

(ii) In the absence of a contract, the construction work of which is begun after June 30, 1976; or

(iii) That is completed after December 31, 1979.

(5) For the purposes of §§151.26 through 151.28, which is delivered on or after April 4, 1993.

NLS means Noxious Liquid Substance.

NLS Certificate means an International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk issued under MARPOL 73/78.

Noxious liquid substance (NLS) means—

(1) Each substance listed in §151.47 or §151.49;

(2) Each substance having an “A”, “B”, “C”, or “D” beside its name in the column headed “Pollution Category” in Table 1 of 46 CFR Part 153; and

(3) Each substance that is identified as an NLS in a written permission issued under 46 CFR 153.900 (d).

Oceangoing ship means a ship that—

(1) Is operated under the authority of the United States and engages in international voyages;

(2) Is operated under the authority of the United States and is certificated for ocean service;

(3) Is operated under the authority of the United States and is certificated for coastwise service beyond three miles from land;

(4) Is operated under the authority of the United States and operates at any time seaward of the outermost boundary of the territorial sea of the United States as defined in §2.22 of this chapter; or

(5) Is operated under the authority of a country other than the United States.

NOTE: A Canadian or U.S. ship being operated exclusively on the Great Lakes of North America or their connecting and tributary waters, or exclusively on the internal waters of the United States and Canada; is not an “oceangoing” ship.

Oil means petroleum whether in solid, semi-solid, emulsified, or liquid form, including but not limited to, crude oil, fuel oil, sludge, oil refuse, oil residue, and refined products, and, without limiting the generality of the foregoing, includes the substances listed in Appendix I of Annex I of MARPOL 73/78. “Oil” does not include animal and vegetable based oil or noxious liquid substances (NLS) designated under Annex II of MARPOL 73/78.

Oil cargo residue means any residue of oil cargo whether in solid, semi-solid, emulsified, or liquid form from cargo tanks and cargo pump room bilges, including but not limited to, drainages, leakages, exhausted oil, muck, clingage, sludge, bottoms, paraffin (wax), and any constituent component

of oil. The term “oil cargo residue” is also known as “cargo oil residue.”

Oil residue means—

- (1) Oil cargo residue; and
- (2) Other residue of oil whether in solid, semi-solid, emulsified, or liquid form, resulting from drainages, leakages, exhausted oil, and other similar occurrences from machinery spaces.

Oily mixture means a mixture, in any form, with any oil content. “Oily mixture” includes, but is not limited to—

- (1) Slops from bilges;
- (2) Slops from oil cargoes (such as cargo tank washings, oily waste, and oily refuse);
- (3) Oil residue; and
- (4) Oily ballast water from cargo or fuel oil tanks.

Oily rags means rags soaked with oil.

Oil-like NLS means each cargo listed in § 151.49.

Oil tanker means a ship constructed or adapted primarily to carry oil in bulk in its cargo spaces and includes combination carriers and any “chemical tanker” as defined in Annex II of MARPOL 73/78 when it is carrying a cargo or part cargo of oil in bulk.

Oily mixture means a mixture with any oil content, including bilge slops, oily wastes, oil residues (sludge), oily ballast water, and washings from cargo oil tanks.

Operational waste means all cargo-associated waste, maintenance waste, and cargo residues other than oil residues and NLS cargo residues. “Operational wastes” includes ashes and clinkers (*i.e.*, a mass of incombustible matter fused together by heat) from shipboard incinerators and coal-burning boilers but does not include plastic clinkers, which are treated as an Annex V waste, or oily rags, which are treated as an Annex I waste.

Person means an individual, firm, public or private corporation, partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body.

Plastic means any garbage that is solid material, that contains as an essential ingredient one or more synthetic organic high polymers, and that is formed or shaped either during the manufacture of the polymer or polymers or during fabrication into a finished product by heat or pressure or

both. “Degradable” plastics, which are composed of combinations of degradable starches and are either (a) synthetically produced or (b) naturally produced but harvested and adapted for use, are plastics under this part. Naturally produced plastics such as crabshells and other types of shells, which appear normally in the marine environment, are not plastics under this part.

NOTE: Plastics possess material properties ranging from hard and brittle to soft and elastic. Plastics are used for a variety of marine applications including, but not limited to: food wrappings, products for personal hygiene, packaging (vaporproof barriers, bottles, containers, and liners), ship construction (fiberglass and laminated structures, siding, piping insulation, flooring, carpets, fabrics, adhesives, and electrical and electronic components), disposable eating-utensils and cups (including styrene products), bags, sheeting, floats, synthetic fishing nets, monofilament fishing line, strapping bands, hardhats, and synthetic ropes and lines.

Port means—

- (1) A group of terminals that combines to act as a unit and be considered a port for the purposes of this subpart;
- (2) A port authority or other organization that chooses to be considered a port for the purposes of this subpart; or
- (3) A place or facility that has been specifically designated as a port by the COTP.

Prewash means a tank washing operation that meets the procedure in 46 CFR 153.1120.

Recognized Classification Society means a classification society that is a participating member of the International Association of Classification Societies (IACS).

Residues and mixtures containing NLSs (NLS residue) means—

- (1) Any Category A, B, C, or D NLS cargo retained on the ship because it fails to meet consignee specifications;
- (2) Any part of a Category A, B, C, or D NLS cargo remaining on the ship after the NLS is discharged to the consignee, including but not limited to puddles on the tank bottom and in sumps, clingage in the tanks, and substance remaining in the pipes; or
- (3) Any material contaminated with Category A, B, C, or D NLS cargo, including but not limited to bilge slops, ballast, hose drip pan contents, and tank wash water.

Segregated ballast means the ballast water introduced into a tank that is completely separated from the cargo oil and fuel oil system and that is permanently allocated to the carriage of ballast or to the carriage of ballast or cargoes other than oil or noxious substances as variously defined in the Annexes of MARPOL 73/78.

Ship means a vessel of any type whatsoever, operating in the marine environment. This includes hydrofoils, air-cushion vehicles, submersibles, floating craft whether self-propelled or not, and fixed or floating drilling rigs and other platforms.

Shipboard oil pollution emergency plan means a plan prepared, submitted, and maintained according to the provisions of §§151.26 through 151.28 of this subpart for United States ships or maintained according to the provisions of §151.29(a) of this subpart for foreign ships operated under the authority of a country that is party to MARPOL 73/78 or carried on board foreign ships operated under the authority of a country that is not a party to MARPOL 73/78, while in the navigable waters of the United States, as evidence of compliance with §151.21 of this subpart.

Solidifying NLS means a Category A, B, or C NLS that has a melting point—

(1) Greater than 0 °C but less than 15 °C and a temperature, measured under the procedure in 46 CFR 153.908(d), that is less than 5 °C above its melting point at the time it is unloaded; or

(2) 15 °C or greater and a temperature, measured under the procedure in 46 CFR 153.908(d), that is less than 10 °C above its melting point at the time it is unloaded.

Special area means a sea area, where for recognized technical reasons in relation to its oceanographical and ecological condition and to the particular character of the traffic, the adoption of special mandatory methods for the prevention of sea pollution by oil, NLSs, or garbage is required.

Terminal means an onshore facility or an offshore structure located in the navigable waters of the United States or subject to the jurisdiction of the United States and used, or intended to be used, as a port or facility for the transfer or other handling of a harmful substance.

NOTE: The Coast Guard interprets commercial fishing facilities, recreational boating facilities, and mineral and oil industry shorebases to be terminals for the purposes of Annex V of MARPOL 73/78, since these facilities normally provide wharfage and other services, including garbage handling, for ships.

U.S. inspected ships means those ship required to be inspected and certificated under 46 CFR 2.01-7.

Victual waste means any spoiled or unspoiled food waste.

[CGD 75-124a, 48 FR 45709, Oct. 6, 1983; 48 FR 54977, Dec. 8, 1983, as amended by CGD 85-010, 52 FR 7758, Mar. 12, 1987; CGD 88-002, 54 FR 18403, Apr. 28, 1989; CGD 88-002A, 55 FR 18582, May 2, 1990; 55 FR 35988, Sept. 4, 1990; 56 FR 8880, Mar. 1, 1991; CGD 93-030, 59 FR 51338, Oct. 7, 1994; CGD 94-056, 60 FR 43377, Aug. 21, 1995; CGD 97-015, 62 FR 18045, Apr. 14, 1997; USCG 2000-7079, 65 FR 67155, Nov. 8, 2000; USCG-2000-7641, 66 FR 55570, Nov. 2, 2001; USCG-2000-6927, 70 FR 74675, Dec. 16, 2005; USCG-2008-0179, 73 FR 35013, June 19, 2008]

§ 151.06 Special areas.

(a) For the purposes of this part, the navigational descriptions of the special areas are as follows:

(1) The Mediterranean Sea area means the Mediterranean Sea proper including the gulfs and seas therein, with the boundary between the Mediterranean and the Black Sea constituted by the 41° N parallel and bounded to the west by the Straits of Gibraltar at the meridian of 5°36' W.

(2) The Baltic Sea means the Baltic Sea proper with the Gulf of Bothnia, the Gulf of Finland, and the entrance to the Baltic Sea bounded by the parallel of the Skaw in the Skagerrak at 57°44.8' N.

(3) The Black Sea area means the Black Sea proper with the boundary between the Mediterranean Sea and the Black Sea constituted by the parallel 41° N.

(4) The Red Sea area means the Red Sea proper including the Gulfs of Suez and Aqaba bounded at the south by the rhumb line between Ras si Ane (12°8.5' N, 43°19.6' E) and Husn Murad (12°40.4' N, 43°30.2' E).

(5) The Gulfs areas means the sea area located northwest of the rhumb line between Ras al Hadd (22°30' N, 59°48' E) and Ras al Fasteh (25°04' N, 61°25' E).

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(6) The Gulf of Aden areas means the part of the Gulf of Aden between the Red Sea and the Arabian Sea bounded to the west by the rhumb line between Ras si Ane (12°28.5' N, 43°19.6' E) and Husn Murad (12°40.4' N, 43°30.2' E) and to the east by the rhumb line between Ras Asir (11°50' N, 51°16.9' E) and the Ras Fartak (15°35' N, 52°13.8' E).

(7) The Antarctic areas means the sea south of 60° south latitude.

(8) *The North West European waters* mean the North Sea and its approaches, the Irish Sea and its approaches, the Celtic Sea, the English Channel and its approaches and part of the North East Atlantic immediately to the west of Ireland. The area is bounded by lines joining the following points:

48°27' N on the French coast
48°27' N; 006°25' W
49°52' N; 007°44' W
50°30' N; 012° W
56°30' N; 012° W
62° N; 003° W
62° N on the Norwegian coast
57°44'.8 N on the Danish and Swedish coasts.

(9) *The Oman area of the Arabian Sea* means the sea enclosed by the following co-ordinates:

22°30'.00 N; 059°48'.00 E
23°47'.27 N; 060°35'.73 E
22°40'.62 N; 062°25'.29 E
21°47'.40 N; 063°22'.22 E
20°30'.37 N; 062°52'.41 E
19°45'.90 N; 062°25'.97 E
18°49'.92 N; 062°02'.94 E
17°44'.36 N; 061°05'.53 E
16°43'.71 N; 060°25'.62 E
16°03'.90 N; 059°32'.24 E
15°15'.20 N; 058°58'.52 E
14°36'.93 N; 058°10'.23 E
14°18'.93 N; 057°27'.03 E
14°11'.53 N; 056°53'.75 E
13°53'.80 N; 056°19'.24 E
13°45'.86 N; 055°54'.53 E
14°27'.38 N; 054°51'.42 E
14°40'.10 N; 054°27'.35 E
14°46'.21 N; 054°08'.56 E
15°20'.74 N; 053°38'.33 E
15°48'.69 N; 053°32'.07 E
16°23'.02 N; 053°14'.82 E

(10) *The Southern South African waters* means the sea area enclosed by the following co-ordinates:

31°14' S; 017°50' E

31°30' S; 017°12' E
32°00' S; 017°06' E
32°32' S; 016°52' E
34°06' S; 017°24' E
36°58' S; 020°54' E
36°00' S; 022°30' E
35°14' S; 022°54' E
34°30' S; 026°00' E
33°48' S; 027°25' E
33°27' S; 027°12' E

(11) *The North Sea area* means the North Sea proper, including seas within the North Sea southwards of latitude 62° N and eastwards of longitude 4° W; the Skagerrak, the southern limit of which is determined east of the Skaw by latitude 57°44.8' N; and the English Channel and its approaches eastwards of longitude 5° W.

(12) *The Wider Caribbean region* means the Gulf of Mexico and Caribbean Sea proper, including the bays and seas therein and that portion of the Atlantic Ocean within the boundary constituted by the 30° N parallel from Florida eastward to 77°30' W meridian, thence a rhumb line to the intersection of 20° N parallel and 59° W meridian, thence a rhumb line to the intersection of 7°20' N parallel and 50° W meridian, thence a rhumb line drawn southwesterly to the eastern boundary of French Guiana.

(b) Special areas for the purpose of Annex I of MARPOL 73/78 include those referenced in §151.13. Special areas for the purposes of Annex II of MARPOL 73/78 include those referenced in §151.32. Special areas for the purpose of Annex V of MARPOL 73/78 include those referenced in §151.53.

[CGD 94–056, 60 FR 43377, Aug. 21, 1995, as amended by USCG–2008–0179, 73 FR 35013, June 19, 2008]

§ 151.07 Delegations.

Each Coast Guard official designated as a Captain of the Port (COTP) or Officer in Charge, Marine Inspection (OCMI) or Commanding Officer, Sector Office, is delegated the authority to—

(a) Issue International Oil Pollution Prevention (IOPP) Certificates;

(b) Detain or deny entry to ships not in substantial compliance with MARPOL 73/78 or not having an IOPP Certificate or evidence of compliance with MARPOL 73/78 on board;

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(c) Receive and investigate reports under § 151.15; and

(d) Issue subpoenas to require the attendance of any witness and the production of documents and other evidence, in the course of investigations of potential violations of the Act to Prevent Pollution from Ships, as amended (33 U.S.C. 1901–1911), this subpart, or MARPOL 73/78.

[CGD 88–002, 54 FR 18404, Apr. 28, 1989, as amended by CGD 88–002A, 55 FR 18582, May 2, 1990; USCG–2006–25556, 72 FR 36328, July 2, 2007]

§ 151.08 Denial of entry.

(a) Unless a ship is entering under force majeure, no oceangoing tanker or any other oceangoing ship of 400 gross tons or more required by § 151.10 to retain oil, oil residue, or oily mixtures on board while at sea, and no oceangoing ship carrying a Category A, B, or C NLS cargo or NLS residue in cargo tanks that are required to be prewashed under 46 CFR Part 153, may enter any port or terminal under § 158.110(a) of this chapter unless the port or terminal has a Certificate of Adequacy, as defined in § 158.120 of this chapter.

(b) A COTP may deny the entry of a ship to a port or terminal under § 158.110(b) if—

(1) The port or terminal does not have a Certificate of Adequacy, as required in § 158.135 of this chapter; or

(2) The port or terminal is not in compliance with the requirements of subpart D of part 158.

[CGD 88–002, 54 FR 18404, Apr. 28, 1989, as amended by USCG–2000–7641, 66 FR 55570, Nov. 2, 2001]

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SOURCE: Sections 151.09 through 151.25 appear by CGD 75–124a, 48 FR 45709, Oct. 6, 1983, unless otherwise noted.

§ 151.09 Applicability.

(a) Except as provided in paragraph (b) of this section, §§ 151.09 through 151.25 apply to each ship that—

(1) Is operated under the authority of the United States and engages in international voyages;

(2) Is operated under the authority of the United States and is certificated for ocean service;

(3) Is operated under the authority of the United States and is certificated for coastwise service beyond three nautical miles from land;

(4) Is operated under the authority of the United States and operates at any time seaward of the outermost boundary of the territorial sea of the United States as defined in § 2.22(a)(2) of this chapter; or

(5) Is operated under the authority of a country other than the United States while in the navigable waters of the United States, or while at a port or terminal under the jurisdiction of the United States.

(b) Sections 151.09 through 151.25 do not apply to—

(1) A warship, naval auxiliary, or other ship owned or operated by a country when engaged in noncommercial service;

(2) A Canadian or U.S. ship being operated exclusively on the Great Lakes of North America or their connecting and tributary waters;

(3) A Canadian or U.S. ship being operated exclusively on the internal waters of the United States and Canada; or

(4) Any other ship specifically excluded by MARPOL 73/78.

(c) Sections 151.26 through 151.28 apply to each United States oceangoing ship specified in paragraphs (a)(1) through (a)(4) of this section which is—

(1) An oil tanker of 150 gross tons and above or other ship of 400 gross tons and above; or

(2) A fixed or floating drilling rig or other platform, when not engaged in the exploration, exploitation, or associated offshore processing of seabed mineral resources.

(d) Sections 151.26 through 151.28 do not apply to—

(1) The ships specified in paragraph (b) of this section;

(2) Any barge or other ship which is constructed or operated in such a manner that no oil in any form can be carried aboard.

(e) Section 151.26(b)(5) applies to all vessels subject to the jurisdiction of the United States and operating in Antarctica.

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NOTE TO §151.09(c)(3): The term “internal waters” is defined in §2.24 of this chapter.

[CGD 88–002, 54 FR 18404, Apr. 28, 1989, as amended by CGD 88–002A, 55 FR 18582, May 2, 1990; CGD 93–030, 59 FR 51338, Oct. 7, 1994; CGD 97–015, 62 FR 18045, Apr. 14, 1997; USCG–2006–25150, 71 FR 39209, July 12, 2006; USCG–2007–27887, 72 FR 45904, Aug. 16, 2007; USCG–2008–0179, 73 FR 35013, June 19, 2008]

§ 151.10 Control of oil discharges.

(a) When more than 12 nautical miles from the nearest land, any discharge of oil or oily mixtures into the sea from a ship other than an oil tanker or from machinery space bilges of an oil tanker is prohibited except when all of the following conditions are satisfied—

(1) The oil or oily mixture does not originate from cargo pump room bilges;

(2) The oil or oily mixture is not mixed with oil cargo residues;

(3) The ship is not within a special area;

(4) The ship is proceeding enroute;

(5) The oil content of the effluent without dilution is less than 15 parts per million (ppm); and

(6) The ship has in operation oily-water separating equipment, a bilge monitor, bilge alarm, or combination thereof as required by part 155 subpart B of this chapter.

(b) When within 12 nautical miles of the nearest land, any discharge of oil or oily mixtures into the sea from a ship other than an oil tanker or from machinery space bilges of an oil tanker is prohibited except when all of the following conditions are satisfied—

(1) The oil or oily mixture does not originate from cargo pump room bilges;

(2) The oil or oily mixture is not mixed with oil cargo residues;

(3) The oil content of the effluent without dilution does not exceed 15 ppm;

(4) The ship has in operation oily-water separating equipment, a bilge monitor, bilge alarm, or combination thereof as required by part 155 subpart B of this chapter; and

(5) The oily-water separating equipment is equipped with a 15 ppm bilge alarm; for U.S. inspected ships, approved under 46 CFR 162.050 and for U.S. uninspected ships and foreign ships, either approved under 46 CFR

162.050 or listed in the current International Maritime Organization (IMO) Marine Environment Protection Committee (MEPC) Circular summary of MARPOL 73/78 approved equipment.

NOTE: In the navigable waters of the United States, the Federal Water Pollution Control Act (FWPCA), section 311(b)(3) and 40 CFR Part 110 govern all discharges of oil or oily-mixtures.

(c) The overboard discharge of any oil cargo residues and oily mixtures that include oil cargo residues from an oil tanker is prohibited, unless discharged in compliance with part 157 of this chapter.

(d) When more than 12 nautical miles from the nearest land, any discharge of oil or oily mixtures into the sea from a ship other than an oil tanker or from machinery space bilges of an oil tanker; that is not proceeding enroute; shall be in accordance with paragraphs (b)(1), (b)(2), (b)(3), (b)(4), and (b)(5) of this section.

(e) The provisions of paragraphs (a), (b), (c) and (d) of this section do not apply to the discharge of clean or segregated ballast.

(f) The person in charge of an ocean-going ship that cannot discharge oily mixtures into the sea in compliance with paragraphs (a), (b), (c), or (d) of this section must ensure that those oily mixtures are—

(1) Retained on board; or

(2) Discharged to a reception facility. If the reception facility is in a port or terminal in the United States, each person who is in charge of each ocean-going tanker or any other oceangoing ship of 400 gross tons or more shall notify the port or terminal, at least 24 hours before entering the port or terminal, of—

(i) The estimated time of day the ship will discharge oily mixtures;

(ii) The type of oily mixtures to be discharged; and

(iii) The volume of oily mixtures to be discharged.

NOTE: There are Federal, state, or local laws or regulations that could require a written description of the oil residues and oily mixtures to be discharged. For example, a residue or mixture containing oil might have a flashpoint less than 60 °C (140 °F) and thus have the characteristic of ignitability under 40 CFR 261.21, which might require a description of the waste for a manifest under 40 CFR Part 262, subpart B. Occupational safety and

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health concerns may be covered, as well as environmental ones.

The notice required in this section is in addition to those required by other Federal, state, and local laws and regulations. Affected persons should contact the appropriate Federal, state, or local agency to determine whether other notice and information requirements, including 40 CFR Parts 262 and 263, apply to them.

(g) No discharge into the sea shall contain chemicals or other substances introduced for the purpose of circumventing the conditions of discharge specified in this regulation.

(h) This section does not apply to a fixed or floating drilling rig or other platform that is operating under a National Pollutant Discharge Elimination System (NPDES) permit.

[CGD 75-124a, 48 FR 45709, Oct. 6, 1983, as amended by CGD 78-035, 50 FR 36793, Sept. 9, 1985. Redesignated by CGD 88-002, 54 FR 18404, Apr. 28, 1989; USCG-1998-3799, 63 FR 35530, June 30, 1998; USCG-2000-7641, 66 FR 55571, Nov. 2, 2001]

§ 151.11 Exceptions for emergencies.

(a) Sections 151.10 and 151.13 do not apply to—

(1) The discharge into the sea of oil or oily mixture necessary for the purpose of securing the safety of a ship or saving life at sea.

(2) The discharge into the sea of oil or oily mixture resulting from damage to a ship or its equipment—

(i) Provided that all reasonable precautions have been taken after the occurrence of the damage or discovery of the discharge for the purpose of preventing or minimizing the discharge; and

(ii) Except if the owner or the master acted either with intent to cause damage, or recklessly and with knowledge that damage would probably result.

(b) [Reserved]

[CGD 75-134a, 48 FR 45709, Oct. 6, 1983, as amended by CGD 88-002, 54 FR 18404, Apr. 28, 1989]

§ 151.13 Special areas for Annex I of MARPOL 73/78.

(a) For the purposes of §§151.09 through 151.25, the special areas are the Mediterranean Sea area, the Baltic Sea area, the Black Sea area, the Red Sea area, the Gulfs area, the Gulf of Aden, and the Antarctic area, the North West

European waters, and Oman area of the Arabian Sea which are described in §151.06. The discharge restrictions are effective in the Mediterranean Sea, Baltic Sea, Black Sea, and the Antarctic area.

(b) Subject to the provisions of §151.11—

(1) A ship of 400 gross tons or over and any oil tanker may not discharge oil or oily mixture within a special area. In the Antarctic area, discharge into the sea of oil or oily mixture from any ship is prohibited.

(2) A ship of less than 400 gross tons other than an oil tanker may not discharge oil or oily mixture within a special area, unless the oil content of the effluent without dilution does not exceed 15 parts per million (ppm).

(3) All ships operating in the Antarctic area must have on board a tank or tanks of sufficient capacity to retain all oily mixtures while operating in the area and arrangements made to discharge oily mixtures at a reception facility outside the Antarctic area.

(c) The provisions of paragraph (b) of this section do not apply to the discharge of clean or segregated ballast.

(d) The provisions of paragraph (b)(1) of this section do not apply to the discharge of processed bilge water from machinery space bilges, provided that all of the following conditions are satisfied—

(1) The bilge water does not originate from cargo pump room bilges;

(2) The bilge water is not mixed with oil cargo residues;

(3) The ship is proceeding enroute;

(4) The oil content of the effluent without dilution does not exceed 15 ppm;

(5) The ship has in operation oily-water separating equipment complying with part 155 of this chapter; and

(6) The oily-water separating equipment is equipped with a device that stops the discharge automatically when the oil content of the effluent exceeds 15 ppm.

(e) No discharge into the sea shall contain chemicals or other substances introduced for the purpose of circumventing the conditions of discharge specified in this section.

(f) The oily mixtures that cannot be discharged into the sea in compliance

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with paragraphs (b), (c), or (d) of this section shall be retained on board or discharged to reception facilities.

(g) Nothing in this section prohibits a ship on a voyage, only part of which is in a special area, from discharging outside the special area in accordance with § 151.10.

(h) In accordance with Regulation 38.6.1 of Annex I of MARPOL 73/78, the discharge restriction in § 151.13 for the Red Sea area, Gulfs area, Gulf of Aden area, the Oman area of the Arabian Sea, and the Southern South African waters will enter into effect when each party to MARPOL 73/78 whose coastline borders the special area has certified that reception facilities are available and the IMO has established an effective date for each special area. Notice of the effective dates for the discharge requirements in these special areas will be published in the FEDERAL REGISTER and reflected in this section.

[CGD 75–124a, 48 FR 45709, Oct. 6, 1983; 48 FR 54977, Dec. 8, 1983, as amended by CGD 88–002, 54 FR 18404, Apr. 28, 1989; CGD 88–002A, 55 FR 18582, May 2, 1990; CGD 94–056, 60 FR 43377, Aug. 21, 1995; USCG–2000–7641, 66 FR 55571, Nov. 2, 2001; USCG–2008–0179, 73 FR 35013, June 19, 2008]

§ 151.15 Reporting requirements.

(a) The master, person in charge, owner, charterer, manager, or operator of a vessel involved in any incident described in paragraph (c) of this section must report the particulars of the incident without delay to the fullest extent possible under the provisions of this section.

(b) If a vessel involved in an incident is abandoned, or if a report from that vessel is incomplete or unattainable, the owner, charterer, manager, operator, or their agent must assume the obligations placed upon the master or other person having charge of the vessel under provisions of this section.

(c) The report must be made whenever an incident involves—

(1) A discharge of oil, hazardous substances, marine pollutants, or noxious liquid substances (NLS) resulting from damage to the vessel or its equipment, or for the purpose of securing the safety of a vessel or saving a life at sea;

(2) A discharge of oil in excess of the quantities or instantaneous rate per-

mitted in §§ 151.10 or 151.13 of this chapter, or NLS in bulk, in 46 CFR 153.1126 or 153.1128, during the operation of the vessel;

(3) A discharge of marine pollutants in packaged form; or

(4) A probable discharge resulting from damage to the vessel or its equipment. The factors you must consider to determine whether a discharge is probable include, but are not limited to—

(i) Ship location and proximity to land or other navigational hazards;

(ii) Weather;

(iii) Tide current;

(iv) Sea state;

(v) Traffic density;

(vi) The nature of damage to the vessel; and

(vii) Failure or breakdown aboard the vessel of its machinery or equipment. Such damage may be caused by collision, grounding, fire, explosion, structural failure, flooding or cargo shifting or a failure or breakdown of steering gear, propulsion, electrical generating system or essential shipboard navigational aids.

(d) Each report must be made by radio whenever possible, or by the fastest telecommunications channels available with the highest possible priority at the time the report is made to—

(1) The appropriate officer or agency of the government of the country in whose waters the incident occurs; and

(2) The nearest Captain of the Port (COTP) or the National Response Center (NRC), toll free number 800–424–8802 (in Washington, DC, metropolitan area, 202–267–2675), fax 202–267–1322, telex number 892427 for incidents involving U.S. vessels in any body of water; or incidents involving foreign flag vessels in the navigable waters of the United States; or incidents involving foreign-flag tank vessels within waters subject to the jurisdiction of the United States, including the Exclusive Economic Zone (EEZ).

(e) Each report must contain—

(1) The identity of the ship;

(2) The type of harmful substance involved;

(3) The time and date of the incident;

(4) The geographic position of the vessel when the incident occurred;

(5) The wind and the sea condition prevailing at the time of the incident;

(6) Relevant details respecting the condition of the vessel;

(7) A statement or estimate of the quantity of the harmful substance discharged or likely to be discharged into the sea; and

(8) Assistance and salvage measures.

(f) A person who is obligated under the provisions of this section to send a report must—

(1) Supplement the initial report, as necessary, with information concerning further developments; and

(2) Comply as fully as possible with requests from affected countries for additional information concerning the incident.

(g) A report made under this section satisfies the reporting requirements of § 153.203 of this chapter and of 46 CFR 4.05-1 and 4.05-2, if required under those provisions.

[USCG-2000-6927, 70 FR 74675, Dec. 16, 2005, as amended by USCG-2006-25150, 71 FR 39209, July 12, 2006; USCG-2008-0179, 73 FR 35014, June 19, 2008]

§ 151.17 Surveys.

(a) Every U.S. oil tanker of 150 gross tons and above, and every other U.S. ship of 400 gross tons and above; that is required to have an International Oil Pollution Prevention (IOPP) Certificate on board and to which this part applies, except as provided for in paragraphs (b) and (d) of this section; is subject to the following surveys conducted by the Coast Guard—

(1) An initial survey, conducted before the ship is put in service or before an IOPP Certificate required under § 151.19 is issued for the first time; this survey includes a complete examination of its structure, equipment, systems, fittings, arrangements and material in so far as the ship is covered by this chapter.

(2) Periodic renewal surveys conducted at intervals corresponding with the renewal of the IOPP Certificates. The purpose of the survey is to determine whether the structure, equipment, systems, fittings, arrangements, and material comply with the requirements of parts 155 and 157 of this chapter.

(3) Annual surveys for inspected ships conducted as close as practicable to twelve (12) and thirty-six (36) months from the date of issuance of the IOPP Certificate, and not more than two months prior to or later than these twelve and thirty-six month dates; this survey is to determine that the oily-water separating equipment and associated pumps and piping systems remain satisfactory for the service intended, and that no unauthorized alterations have been made, and is to be endorsed on the IOPP Certificate.

(4) Intermediate surveys for inspected ships conducted as close as practicable to twenty-four (24) months from the date of issuance of the IOPP Certificates, and not more than six months prior to or later than that twenty-four month date; this survey is to determine whether the equipment and associated pump and piping systems, including oil discharge monitoring and control systems, and oily-water separating equipment comply with the requirements of parts 155 and 157 of this chapter, and are in good working order, and is to be endorsed on the IOPP Certificate.

(5) Intermediate surveys for uninspected ships conducted as close as practicable to thirty (30) months from the date of issuance of the IOPP Certificate, and not more than six months prior to or later than that thirty month date; this survey is to determine whether the equipment and associated pump and piping systems, including oil discharge monitoring and control systems, and oily-water separating equipment comply with the requirements of parts 155 and 157 of this chapter, and are in good working order, and is to be endorsed on the IOPP Certificate.

(b) Every U.S. inspected oil tanker of 150 gross tons and above, and every other U.S. inspected ship of 400 gross tons and above; that is not required to have an IOPP Certificate on board is subject to the following surveys to be conducted by the Coast Guard—

(1) An initial survey conducted before the ship is put into service.

(2) All other surveys are conducted concurrently with either inspections for certification or required reinspections.

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(c) After any survey of a ship under this section has been completed, no significant change may be made in the construction, equipment, fittings, arrangements or material covered by the survey without the sanction of the COTP or OCMI except for the direct replacement of such equipment or fittings.

(d) Fixed and floating drilling rigs and other platforms, barges, and uninspected ships; that are not required to have an IOPP Certificate on board are not required to be surveyed under this section.

[CGD 75–124a, 48 FR 45709, Oct. 6, 1983, as amended by USCG–1998–3799, 63 FR 35530, June 30, 1998]

§ 151.19 International Oil Pollution Prevention (IOPP) Certificates.

(a) Each U.S. oil tanker of 150 gross tons and above and each other U.S. ship of 400 gross tons and above; that engages in voyages to ports or off-shore terminals under the jurisdiction of other parties to MARPOL 73/78 must have on board a valid International Oil Pollution Prevention (IOPP) Certificate.

(b) Each oil tanker of 150 gross tons and above and each other ship of 400 gross tons and above, operated under the authority of a country other than the United States that is party to MARPOL 73/78, must have on board a valid IOPP Certificate.

(c) An IOPP Certificate is issued by a COTP, OCMI, or a classification society authorized under 46 CFR part 8, after a satisfactory survey in accordance with the provisions of § 151.17.

(d) The Supplement to the IOPP Certificate is a part of the IOPP Certificate and must remain attached to that Certificate. If the Supplement to the Certificate is changed, a new IOPP Certificate will be required.

(e) The IOPP Certificate for each inspected or uninspected ship is valid for a maximum period of 5 years from the date of issue, except as follows:

(1) A Certificate ceases to be valid if significant alterations have taken place in the construction, equipment, fittings, or arrangements required by the pollution prevention requirements of parts 155 or 157 of this chapter with-

out the approval of the COTP or the OCMI.

(2) A Certificate ceases to be valid if intermediate surveys as required by § 151.17 of this part are not carried out.

(3) A Certificate issued to a ship ceases to be valid upon transfer of the ship to the flag of another country.

(Approved by the Office of Management and Budget under control number 1625–0041)

[CGD 75–124a, 48 FR 45709, Oct. 6, 1983, as amended by CGD 95–010, 62 FR 67531, Dec. 24, 1997; USCG–1998–3799, 63 FR 35530, June 30, 1998; USCG–2000–7223, 65 FR 40057, June 29, 2000; USCG–2000–7641, 66 FR 55571, Nov. 2, 2001; USCG–2006–25150, 71 FR 39209, July 12, 2006]

§ 151.21 Ships of countries not party to MARPOL 73/78.

(a) Each oil tanker of 150 gross tons and above and each other ship of 400 gross tons and above, operated under the authority of a country not a party to MARPOL 73/78, must have on board valid documentation showing that the ship has been surveyed in accordance with and complies with the requirements of MARPOL 73/78. Evidence of compliance may be issued by either the government of a country that is party to MARPOL 73/78 or a recognized classification society.

(b) Evidence of compliance must contain all of the information in, and have substantially the same format as, the IOPP Certificate.

(Approved by the Office of Management and Budget under control number 1625–0019)

[CGD 75–124a, 48 FR 45709, Oct. 6, 1983, as amended by CGD 93–030, 59 FR 51338, Oct. 7, 1994; USCG–2006–25150, 71 FR 39209, July 12, 2006]

§ 151.23 Inspection for compliance and enforcement.

(a) While at a port or terminal under the jurisdiction of the United States, a ship is subject to inspection by the Coast Guard—

(1) To determine that a valid IOPP Certificate is on board and that the condition of the ship and its equipment corresponds substantially with the particulars of the IOPP Certificate;

(2) To determine that evidence of compliance with MARPOL 73/78, as required by § 151.21 is on board and that

the condition of the ship and its equipment corresponds substantially with the particulars of this evidence of compliance;

(3) To determine whether a ship has been operating in accordance with and has not discharged any oil or oily mixtures in violation of the provisions of MARPOL 73/78 or this subchapter;

(4) To determine whether a ship has discharged oil or oily mixtures anywhere in violation of MARPOL 73/78, upon request from a party to MARPOL 73/78 for an investigation when the requesting party has furnished sufficient evidence to support a reasonable belief that a discharge has occurred.

(b) A ship that does not comply with the requirements of parts 151, 155 and 157 of this chapter, or where the condition of the ship or its equipment does not substantially agree with the particulars of the IOPP Certificate or other required documentation, may be detained by order of the COTP or OCMI, at the port or terminal where the violation is discovered until, in the opinion of the detaining authority, the ship can proceed to sea without presenting an unreasonable threat of harm to the marine environment. The detention order may authorize the ship to proceed to the nearest appropriate available shipyard rather than remaining at the place where the violation was discovered.

(c) An inspection under this section may include an examination of the Oil Record Book, the oil content meter continuous records, and a general examination of the ship. A copy of any entry in the Oil Record Book may be made and the Master of the ship may be required to certify that the copy is a true copy of such entry.

[CGD 75-124a, 48 FR 45709, Oct. 6, 1983, as amended by CGD 88-002A, 55 FR 18582, May 2, 1990]

§ 151.25 Oil Record Book.

(a) Each oil tanker of 150 gross tons and above, ship of 400 gross tons and above other than an oil tanker, and manned fixed or floating drilling rig or other platform shall maintain an Oil Record Book Part I (Machinery Space Operations). An oil tanker of 150 gross tons and above or a non oil tanker that carries 200 cubic meters or more of oil

in bulk, shall also maintain an Oil Record Book Part II (Cargo/Ballast Operations).

(b) An Oil Record Book printed by the U.S. Government is available to the masters or operators of all U.S. ships subject to this section, from any Coast Guard Sector Office, Marine Inspection Office, or Captain of the Port Office.

(c) The ownership of the Oil Record Book of all U.S. ships remains with the U.S. Government.

(d) Entries shall be made in the Oil Record Book on each occasion, on a tank to tank basis if appropriate, whenever any of the following machinery space operations take place on any ship to which this section applies—

(1) Ballasting or cleaning of fuel oil tanks;

(2) Discharge of ballast containing an oily mixture or cleaning water from fuel oil tanks;

(3) Disposal of oil residue; and

(4) Discharge overboard or disposal otherwise of bilge water that has accumulated in machinery spaces.

(e) Entries shall be made in the Oil Record Book on each occasion, on a tank to tank basis if appropriate, whenever any of the following cargo/ballast operations take place on any oil tanker to which this section applies—

(1) Loading of oil cargo;

(2) Internal transfer of oil cargo during voyage;

(3) Unloading of oil cargo;

(4) Ballasting of cargo tanks and dedicated clean ballast tanks;

(5) Cleaning of cargo tanks including crude oil washing;

(6) Discharge of ballast except from segregated ballast tanks;

(7) Discharge of water from slop tanks;

(8) Closing of all applicable valves or similar devices after slop tank discharge operations;

(9) Closing of valves necessary for isolation of dedicated clean ballast tanks from cargo and stripping lines after slop tank discharge operations; and

(10) Disposal of oil residue.

(f) Entries shall be made in the Oil Record Book on each occasion, on a tank-to-tank basis if appropriate,

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whenever any of the following operations take place on a fixed or floating drilling rig or other platform to which this section applies—

(1) Discharge of ballast or cleaning water from fuel oil tanks; and

(2) Discharge overboard of platform machinery space bilge water.

(g) In the event of an emergency, accidental or other exceptional discharge of oil or oily mixture, a statement shall be made in the Oil Record Book of the circumstances of, and the reasons for, the discharge.

(h) Each operation described in paragraphs (d), (e) and (f) of this section shall be fully recorded without delay in the Oil Record Book so that all the entries in the book appropriate to that operation are completed. Each completed operation shall be signed by the person or persons in charge of the operations concerned and each completed page shall be signed by the master or other person having charge of the ship.

(i) The Oil Record Book shall be kept in such a place as to be readily available for inspection at all reasonable times and shall be kept on board the ship.

(j) The master or other person having charge of a ship required to keep an Oil Record Book shall be responsible for the maintenance of such record.

(k) The Oil Record Book for a U.S. ship shall be maintained on board for not less than three years.

(l) This section does not apply to a barge or a fixed or floating drilling rig or other platform that is not equipped to discharge overboard any oil or oily mixture.

(m) This section does not apply to a fixed or floating drilling rig or other platform that is operating in compliance with a valid National Pollutant Discharge Elimination System (NPDES) permit.

(Approved by the Office of Management and Budget under control number 1625–0009)

[CGD 75–124a, 48 FR 45709, Oct. 6, 1983; 48 FR 54977, Dec. 8, 1983, as amended by CGD 88–002A, 55 FR 18582, May 2, 1990; USCG–2000–7641, 66 FR 55571, Nov. 2, 2001; USCG–2006–25150, 71 FR 39209, July 12, 2006; USCG–2006–25556, 72 FR 36328, July 2, 2007]

§ 151.26 Shipboard oil pollution emergency plans.

(a) *Language of the plan.* The shipboard oil pollution emergency plan must be available on board in English and in the working language of the master and the officers of the ship, if other than English.

(b) *Plan format.* The plan must contain the following six sections. A seventh non-mandatory section may be included at the shipowner's discretion:

(1) *Introduction.* This section must contain the following:

(i) *Introductory text.* The introductory text of the plan must contain the following language (For ships operating in Antarctica, the introductory text of the plan must contain the following language *and* explain that they are in accordance with the Protocol on Environmental Protection to the Antarctic Treaty):

This plan is written in accordance with the requirements of Regulation 26 of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).

The purpose of the plan is to provide guidance to the master and officers on board the ship with respect to the steps to be taken when a pollution incident has occurred or is likely to occur.

The plan contains all information and operational instructions required by the guidelines (Resolution MEPC.54(32)). The appendices contain names, telephone numbers, telex numbers, etc. of all contacts referenced in the plan, as well as other reference material.

This plan has been approved by the Coast Guard and, except as provided below, no alteration or revision may be made to any part of it without the prior approval of the Coast Guard.

Changes to the seventh section of the plan and the appendices do not require approval by the Coast Guard. The appendices must be maintained up-to-date by the owners, operators, and managers.

(ii) *General information.*

(A) The ship's name, call sign, official number, International Maritime Organization (IMO) international number, and principal characteristics.

(B) [Reserved]

(2) *Preamble.* This section must contain an explanation of the purpose and use of the plan and indicate how the

shipboard plan relates to other shore-based plans.

(3) *Reporting Requirements.* This section of the plan must include information relating to the following:

(i) *When to report.* A report shall be made whenever an incident involves—

(A) A discharge of oil or oily mixture resulting from damage to the ship or its equipment, or for the purpose of securing the safety of a ship or saving life at sea;

(B) A discharge of oil or oily mixture during the operation of the ship in excess of the quantities or instantaneous rate permitted in §151.10 of this subpart or in §157.37 of this subchapter; or

(C) A probable discharge. Factors to be considered in determining whether a discharge is probable include, but are not limited to: ship location and proximity to land or other navigational hazards, weather, tide, current, sea

state, and traffic density. The master must make a report in cases of collision, grounding, fire, explosion, structural failure, flooding or cargo shifting, or an incident resulting in failure or breakdown of steering gear, propulsion, electrical generating system, or essential shipborne navigational aids.

(ii) *Information required.* This section of the plan must include a notification form, such as that depicted in Table 151.26(b)(3)(ii)(A), that contains information to be provided in the initial and follow-up notifications. The initial notification should include as much of the information on the form as possible, and supplemental information, as appropriate. However, the initial notification must not be delayed pending collection of all information. Copies of the form must be placed at the location(s) on the ship from which notification may be made.

TABLE 151.26(b) (3) (ii)

SHIPBOARD OIL POLLUTION EMERGENCY PLAN SAMPLE FORMAT FOR INITIAL NOTIFICATION	
<u>AA (SHIP NAME, CALL SIGN, FLAG)</u>	
<u>BB (DATE AND TIME OF EVENT, UTC)</u> D D H H M M	
<u>CC (POSITION, LAT, LONG)</u> d d m m d d d m m	<u>DD (BEARING, DISTANCE FROM LANDMARK)</u> d d d N miles
<u>EE (COURSE)</u> d d d	<u>FF (SPEED, KNOTS)</u> km km 1/10
<u>LL (INTENDED TRACK)</u>	
<u>MM (RADIO STATION(S) GUARDED)</u>	
<u>NN (DATE AND TIME OF NEXT REPORT, UTC)</u> D D H H M M	
<u>PP (TYPE AND QUANTITY OF CARGO/BUNKERS ON BOARD)</u>	
<u>OO (BRIEF DETAILS OF DEFECTS/DEFICIENCIES/DAMAGE)</u>	

TABLE 151.26 (b) (3) (ii) Continued

<u>RR (BRIEF DETAILS OF POLLUTION, INCLUDING ESTIMATE OF QUANTITY LOST)</u>			
<u>SS (BRIEF DETAILS OF WEATHER AND SEA CONDITIONS)</u>			
WIND	DIRECTION ☐ ☐ ☐ SPEED (Beaufort)		SWELL DIRECTION ☐ ☐ ☐ HEIGHT (m)
<u>TT (CONTACT DETAILS OF SHIPS OWNER/OPERATOR/AGENT)</u>			
<u>UU (SHIP, SIZE, AND TYPE)</u>			
LENGTH:	(m)	BREADTH:	(m) DRAUGHT: (m) TYPE:
<u>XX (ADDITIONAL INFORMATION)</u>			
BRIEF DETAILS OF INCIDENT:			
NEED FOR OUTSIDE ASSISTANCE:			
ACTIONS BEING TAKEN:			
NUMBER OF CREW AND DETAILS OF ANY INJURIES:			
DETAILS OF P&I CLUB & LOCAL CORRESPONDENT:			
OTHERS:			

Note: The alphabetical reference letters in the above format are from "General principles for ship reporting systems and ship reporting requirements, including guidelines for reporting incidents involving dangerous goods, harmful substances and/or marine pollutants" adopted by the International Maritime Organization by resolution A.851(20). The letters do not follow the complete alphabetical sequence as certain letters are used to designate information required for other standard reporting formats, e.g., those used to transmit route information.

(iii) *Whom to contact.* (A) This section of the plan must make reference to the appendices listing coastal state contacts, port contacts, and ship interest contacts.

(B) For actual or probable discharges of oil, or oily mixtures the reports must comply with the procedures described in MARPOL Protocol I. The reports shall be directed to either the nearest Captain of the Port (COTP) or to the National Response Center (NRC), toll free telephone number: 800-424-8802, direct telephone: 202-267-2675, or Fax: 202-267-1322.

(C) For Antarctica, in addition to compliance with paragraph (b)(3)(iii)(B) of this section, reports shall also be directed to any Antarctic station that may be affected.

(4) *Steps to control a discharge.* This section of the plan must contain a discussion of procedures to address the following scenarios:

(i) Operational spills: The plan must outline procedures for removal of oil spilled and contained on deck. The plan must also provide guidance to ensure proper disposal of recovered oil and cleanup materials;

(A) Pipe leakage: The plan must provide specific guidance for dealing with pipe leakage;

(B) Tank overflow: The plan must include procedures for dealing with tank overflows. It must provide alternatives such as transferring cargo or bunkers to empty or slack tanks, or readying pumps to transfer the excess ashore;

(C) Hull leakage: The plan must outline procedures for responding to spills due to suspected hull leakage, including guidance on measures to be taken to reduce the head of oil in the tank involved either by internal transfer or discharge ashore. Procedures to handle situations where it is not possible to identify the specific tank from which

leakage is occurring must also be provided. Procedures for dealing with suspected hull fractures must be included. These procedures must take into account the effect of corrective actions on hull stress and stability.

(ii) Spills resulting from casualties: Each of the casualties listed below must be treated in the plan as a separate section comprised of various checklists or other means which will ensure that the master considers all appropriate factors when addressing the specific casualty. These checklists must be tailored to the specific ship. In addition to the checklists, specific personnel assignments for anticipated tasks must be identified. Reference to existing fire control plans and muster lists is sufficient to identify personnel responsibilities in the following situations:

- (A) Grounding;
- (B) Fire or explosion;
- (C) Collision;
- (D) Hull failure; and
- (E) Excessive list.

(iii) In addition to the checklist and personnel duty assignments required by paragraph (b)(4)(ii) of this section, the plan must include—

(A) Priority actions to ensure the safety of personnel and the ship, assess the damage to the ship, and take appropriate further action;

(B) Information for making damage stability and longitudinal strength assessments, or contacting classification societies to acquire such information. Nothing in this section shall be construed as creating a requirement for damage stability plans or calculations beyond those required by law or regulation; and

(C) Lightning procedures to be followed in cases of extensive structural damage. The plan must contain information on procedures to be followed for ship-to-ship transfer of cargo. Reference may be made in the plan to existing company guides. A copy of such company procedures for ship-to-ship transfer operations must be kept in the plan. The plan must address the coordination of this activity with the coastal or port state, as appropriate.

(5) *National and Local Coordination.* (i) This section of the plan must contain information to assist the master in ini-

tiating action by the coastal State, local government, or other involved parties. This information must include guidance to assist the master with organizing a response to the incident should a response not be organized by the shore authorities. Detailed information for specific areas may be included as appendices to the plan.

(ii) For Antarctica, a vessel owner or operator must include a plan for prompt and effective response action to such emergencies as might arise in the performance of its vessel's activities.

(iii) To comply with paragraph (b)(5)(ii) of this section, an agency of the United States government may promulgate a directive providing for prompt and effective response by the agency's public vessels operating in Antarctica.

(6) *Appendices.* Appendices must include the following information:

(i) Twenty-four hour contact information and alternates to the designated contacts. These details must be routinely updated to account for personnel changes and changes in telephone, telex, and telefacsimile numbers. Clear guidance must also be provided regarding the preferred means of communication.

(ii) The following lists, each identified as a separate appendix:

(A) A list of agencies or officials of coastal state administrations responsible for receiving and processing incident reports;

(B) A list of agencies or officials in regularly visited ports. When this is not feasible, the master must obtain details concerning local reporting procedures upon arrival in port; and

(C) A list of all parties with a financial interest in the ship such as ship and cargo owners, insurers, and salvage interests.

(D) A list which specifies who will be responsible for informing the parties listed and the priority in which they must be notified.

(iii) A record of annual reviews and changes.

(7) *Non-mandatory provisions.* If this section is included by the shipowner, it should include the following types of information or any other information that may be appropriate:

- (i) Diagrams;

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- (ii) Response equipment or oil spill removal organizations;
 - (iii) Public affairs practices;
 - (iv) Recordkeeping;
 - (v) Plan exercising; and
 - (vi) Individuals qualified to respond.
- (8) *Index of sections.* The plan must be organized as depicted in Table 151.26(b)(8).

TABLE 151.26(b)(8)—INDEX OF SECTIONS—
SAMPLE FORMAT

Mandatory

Section 1: Introduction
Section 2: Preamble
Section 3: Reporting requirements
Section 4: Steps to control a discharge
Section 5: National and local coordination
Section 6: Appendices

Voluntary

Section 7: Non-mandatory provisions

[CGD 93-030, 59 FR 51338, Oct. 7, 1994, as amended by CGD 97-015, 62 FR 18045, Apr. 14, 1997; USCG-2000-7641, 66 FR 55571, Nov. 2, 2001; USCG-2008-0179, 73 FR 35014, June 19, 2008]

§ 151.27 Plan submission and approval.

(a) No manned ship subject to this part may operate unless it carries on board a shipboard oil pollution emergency plan approved by the Coast Guard. An unmanned ship subject to this regulation must carry the notification list required in §151.26(b)(3) on board in the documentation container; remaining sections of the plan must be maintained on file at the home office. For new ships, plans must be submitted at least 90 days before the ship intends to begin operations.

(b) An owner or operator of a ship to which this part applies shall prepare and submit one English language copy of the shipboard oil pollution emergency plan to Commandant (CG-5431), U.S. Coast Guard, 2100 2nd St., SW., Stop 7581, Washington, DC 20593-7581.

(c) An owner or operator with multiple ships to which this part applies may submit one plan for each type of ship with a separate ship-specific appendix for each vessel covered by the plan.

(d) Combined shipboard oil pollution emergency plans and response plans

meeting the requirements of subparts D and E of part 155 of this chapter must be prepared according to §155.1030(j) of this chapter.

(e) If the Coast Guard determines that the plan meets all requirements of this section, the Coast Guard will notify the owner or operator of the ship and return a copy of the approved plan along with an approval letter. The approval period for a plan expires 5 years after the plan approval date.

(f) If the Coast Guard determines that the plan does not meet all of the requirements, the Coast Guard will notify the owner or operator of the plan's deficiencies. The owner or operator must then resubmit two copies of the revised plan, or corrected portions of the plan, within time period specified in the written notice provided by the Coast Guard.

[CGD 93-030, 59 FR 51342, Oct. 7, 1994, as amended by CGD 96-026, 61 FR 33665, June 28, 1996; USCG-1998-3799, 63 FR 35530, June 30, 1998; USCG-2008-0179, 73 FR 35014, June 19, 2008; USCG-2010-0351, 75 FR 36284, June 25, 2010]

§ 151.28 Plan review and revision.

(a) An owner or operator of a ship to which this subpart applies must review the shipboard oil pollution emergency plan annually and submit a letter to Commandant (CG-5431) certifying that the review has been completed. This review must occur within 1 month of the anniversary date of Coast Guard approval of the plan.

(b) The owner or operator shall submit any plan amendments to Commandant (CG-5431) for information or approval.

(c) The entire plan must be resubmitted to Commandant (CG-5431) for reapproval 6 months before the end of the Coast Guard approval period identified in §151.27(e) of this subpart.

(d) A record of annual review and changes to the plan must be maintained in the last appendix of section six of the plan.

(e) Except as provided in paragraph (f) of this section, revisions must receive prior approval by the Coast Guard before they can be incorporated into the plan.

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(f) Revisions to the seventh section of the plan and the appendices do not require approval by the Coast Guard. The Coast Guard shall be advised and provided a copy of the revisions as they occur.

[CGD 93-030, 59 FR 51342, Oct. 7, 1994, as amended by CGD 96-026, 61 FR 33665, June 28, 1996; USCG-2008-0179, 73 FR 35014, June 19, 2008]

§ 151.29 Foreign ships.

(a) Each oil tanker of 150 gross tons and above and each other ship of 400 gross tons and above, operated under the authority of a country other than the United States that is party to MARPOL 73/78, shall, while in the navigable waters of the United States or while at a port or terminal under the jurisdiction of the United States, carry on board a shipboard oil pollution emergency plan approved by its flag state.

(b) Each oil tanker of 150 gross tons and above and each other ship of 400 gross tons and above, operated under the authority of a country that is not a party to MARPOL 73/78, must comply with § 151.21 of this subpart while in the navigable waters of the United States.

[CGD 93-030, 59 FR 51342, Oct. 7, 1994]

NOXIOUS LIQUID SUBSTANCE POLLUTION

SOURCE: Sections 151.30 through 151.49 appear by CGD 85-010, 52 FR 7759, Mar. 12, 1987, unless otherwise noted.

§ 151.30 Applicability.

(a) Except as provided in paragraph (b) of this section, §§ 151.30 through 151.49 apply to each ship that—

(1) Is operated under the authority of the United States and engages in international voyages;

(2) Is operated under the authority of the United States and is certificated for ocean service;

(3) Is operated under the authority of the United States and is certificated for coastwise service beyond three nautical miles from land;

(4) Is operated under the authority of the United States and operates at any time seaward of the outermost boundary of the territorial sea of the United States as defined in § 2.22 of this chapter; or

(5) Is operated under the authority of a country other than the United States while in the navigable waters of the United States, or while at a port or terminal under the jurisdiction of the United States.

(b) Sections 151.30 through 151.49 do not apply to—

(1) A tank barge whose certificate is endorsed by the Coast Guard for a limited short protected coastwise route if the barge is constructed and certificated primarily for service on an inland route;

(2) A warship, naval auxiliary, or other ship owned or operated by a country when engaged in noncommercial service;

(3) A Canadian or U.S. ship being operated exclusively on the Great Lakes of North America or their connecting and tributary waters;

(4) A Canadian or U.S. ship being operated exclusively on the internal waters of the United States and Canada; or

(5) Any other ship specifically excluded by MARPOL 73/78.

NOTE TO § 151.30 (b)(4): The term “internal waters” is defined in § 2.24 of this chapter.

[CGD 88-002, 54 FR 18405, Apr. 28, 1989, as amended by CGD 88-002A, 55 FR 18582, May 2, 1990; USCG-2008-0179, 73 FR 35014, June 19, 2008]

§ 151.31 Where to find requirements applying to oceangoing ships carrying Category A, B, C, and D NLS.

(a) The requirements for oceangoing ships carrying NLSs listed in §§ 151.47 and 151.49 are in §§ 151.33 through 151.45.

(b) The requirements for oceangoing ships carrying NLSs listed in Table 151.05 of 46 CFR part 151 and Table 1 of 46 CFR part 153, which are not listed in § 151.47 or § 151.49, are in 46 CFR parts 98, 151, and 153.

(c) Alternatives to the requirements in this part for oceangoing ships carrying NLSs are in 46 CFR part 153.

(d) Procedures for obtaining permission to carry an NLS not listed in § 151.47, § 151.49, Table 151.05 of 46 CFR part 151, or Table 1 of 46 CFR part 153 are in 46 CFR 153.900(c).

§ 151.32 Special areas for the purpose of Annex II.

(a) For the purposes of §§151.30 through 151.49, the special areas are the Baltic Sea area, the Black Sea area, and the Antarctic area which are described in §151.06. Discharges into the sea of NLSs or mixtures containing such substances are prohibited in the Antarctic area.

(b) In accordance with paragraph (13)(a) of Regulation 5 of Annex II of MARPOL 73/78, the discharge restrictions in §151.32 for the Baltic Sea area and the Black Sea area will enter into effect when each Party to MARPOL 73/78 whose coastline borders the special area has certified that reception facilities are available and the IMO has established an effective date for each special area. Notice of the effective date for discharge requirements in these areas will be published in the FEDERAL REGISTER and reflected in this section.

[CGD 94-056, 60 FR 43378, Aug. 21, 1995]

§ 151.33 Certificates needed to carry Category C Oil-like NLS.

(a) A U.S. oceangoing ship may not carry a Category C oil-like NLS listed in §151.49 in a cargo tank unless the ship has a Certificate of Inspection endorsed to allow the NLS to be carried in that cargo tank, and if the ship engages in a foreign voyage—

(1) An Attachment for NLSs to the IOPP Certificate, issued under §151.37(a), that allows the NLS to be carried in that cargo tank; or

(2) A Certificate of Fitness issued under 46 CFR part 153 that allows the NLS to be carried in that cargo tank.

(b) A foreign oceangoing ship operating in the navigable waters of the U.S. may not carry a Category C oil-like NLS listed in §151.49 in a cargo tank unless the ship has—

(1) An Attachment for NLSs to the IOPP Certificate that allows the NLS to be carried in that cargo tank; or

(2) A Certificate of Compliance issued under 46 CFR Part 153 to allow the NLS to be carried in that cargo tank.

(c) A U.S. oceangoing ship authorized to carry certain dangerous cargoes in bulk under 46 CFR Part 98 may not carry a Category C oil-like NLS listed in §151.49 in a cargo tank unless the

ship has a Certificate of Inspection endorsed to allow the NLS to be carried in that cargo tank, and if the ship engages in a foreign voyage, an NLS Certificate issued under §151.37(b) that allows the NLS to be carried in that cargo tank.

§ 151.35 Certificates needed to carry Category D NLS and Category D Oil-like NLS.

(a) A U.S. oceangoing ship may not carry a Category D NLS listed in §151.47 in a cargo tank unless the ship has a Certificate of Inspection endorsed to allow the NLS to be carried in that cargo tank, and if the ship engages in a foreign voyage—

(1) An NLS Certificate issued under §151.37(b) to allow the NLS to be carried in that cargo tank; or

(2) A Certificate of Fitness issued under 46 CFR part 153 to allow the NLS to be carried in that cargo tank.

(b) A U.S. oceangoing ship may not carry a Category D oil-like NLS listed in §151.49 in a cargo tank unless the ship has a Certificate of Inspection endorsed to allow the NLS to be carried in that cargo tank, and if the ship engages in a foreign voyage—

(1) An Attachment for NLSs to the IOPP Certificate, issued under §151.37(a), to allow the NLS to be carried in that cargo tank; or

(2) An NLS Certificate issued under §151.37(b) to allow the NLS to be carried in that cargo tank, or

(3) A Certificate of Fitness issued under 46 CFR part 153 to allow the NLS to be carried in that cargo tank.

(c) A foreign oceangoing ship in the navigable waters of the U.S. may not carry a Category D NLS listed in §151.47 in a cargo tank unless the ship has one of the following:

(1) An NLS Certificate endorsed to allow the NLS to be carried in that cargo tank; or

(2) A Certificate of Compliance issued under 46 CFR part 153 to allow the NLS to be carried in that cargo tank.

(d) A foreign oceangoing ship in the navigable waters of the U.S. may not carry a Category D oil-like NLS listed in §151.49 in a cargo tank unless the ship has one of the following:

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(1) An Attachment for NLSs to the IOPP Certificate to allow the NLS to be carried in that cargo tank; or

(2) An NLS Certificate endorsed to allow the NLS to be carried in the cargo tank; or

(3) A Certificate of Compliance issued under 46 CFR part 153 to allow the NLS to be carried in the cargo tank.

(e) A U.S. oceangoing ship authorized to carry certain dangerous cargoes in bulk under 46 CFR part 98 may not carry a Category D NLS listed in §151.47 or a Category D oil-like NLS listed in §151.49 in a cargo tank unless the ship has a Certificate of Inspection endorsed to allow the NLS to be carried in that cargo tank, and if the ship engages in a foreign voyage, an NLS Certificate issued under §151.37(b) that allows the NLS to be carried in that cargo tank.

§ 151.37 Obtaining an Attachment for NLSs to the IOPP Certificate and obtaining an NLS Certificate.

(a) The Coast Guard or a classification society authorized under 46 CFR part 8 issues an Attachment for NLSs to the IOPP Certificate to an oceangoing ship to allow the carriage of a Category C oil-like NLS or a Category D oil-like NLS if the following requirements are met:

(1) Except for ships that are not configured and are not equipped to ballast or wash cargo tanks while proceeding en route, the ship must have a Coast Guard approved monitor under §157.12 that is approved for the cargoes that are desired to be carried.

(2) Except as required by paragraph (a)(3), ships of 150 meters or less in length carrying a Category C oil-like NLS must meet the damage stability requirements applying to a Type III hull as provided by Regulation 14 (c) of Annex II.

(3) A U.S. self propelled ship of 150 meters or less in length on a coastwise voyage carrying a Category C oil-like NLS must meet the damage stability requirements applying to a Type III hull as provided by 46 CFR part 172, subpart F except §§172.130 and 172.133.

(b) Except as allowed in paragraph (c) of this section, the Coast Guard or a classification society authorized under 46 CFR part 8 issues an NLS Certificate

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endorsed to allow the oceangoing ship engaged in a foreign voyage to carry a Category D NLS listed in §151.47 if the ship has—

(1) An approved Procedures and Arrangements Manual and Cargo Record Book, both meeting the requirements in 46 CFR 153.490; and

(2) A residue discharge system meeting 46 CFR 153.470, unless the approved Procedures and Arrangements Manual limits discharge of Category D NLS residue to the alternative provided by 46 CFR 153.1128(b).

(c) The Coast Guard or a classification society authorized under 46 CFR part 8 issues a NLS Certificate with the statement that the vessel is prohibited from discharging NLS residues to the sea if the vessel does not meet 46 CFR 153.470 and 153.490 but meets 46 CFR subpart 98.31.

[CGD 75–124a, 48 FR 45709, Oct. 6, 1983, as amended by CGD 95–010, 62 FR 67532, Dec. 24, 1997]

§ 151.39 Operating requirements: Category D NLS.

The master or person in charge of an oceangoing ship that carries a Category D NLS listed in §151.47 shall ensure that the ship is operated as prescribed for the operation of oceangoing ships carrying Category D NLSs in 46 CFR 153.901, 153.909, 153.1100, 153.1104, 153.1106, 153.1124, 153.1126, and 153.1128.

[CGD 85–010, 52 FR 7759, Mar. 12, 1987, as amended by USCG–2008–0179, 73 FR 35014, June 19, 2008]

§ 151.41 Operating requirements for oceangoing ships with IOPP Certificates: Category C and D Oil-like NLSs.

The master or person in charge of an oceangoing ship certificated under §151.37(a) shall ensure that—

(a) The carriage and discharge of the oil-like NLS meets §§157.29, 157.31, 157.35, 157.37, 157.41, 157.45, 157.47, and 157.49 of this chapter; and

(b) The oil-like NLS is not discharged unless—

(1) The monitor required by §151.37(a)(1) is set to detect the oil-like NLS; and

(2) A statement that the monitor has been set to detect the oil-like NLS is entered in the Oil Record Book Part

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II(Cargo/Ballast Operations), required by § 151.25.

§ 151.43 Control of discharge of NLS residues.

(a) Unless the ship is a fixed or floating drilling rig or other platform operating under an National Pollution Discharge Elimination System (NPDES) permit, the master or person in charge of an oceangoing ship that cannot discharge NLS residue into the sea in accordance with 46 CFR 153.1126 or 153.1128 shall ensure that the NLS residue is—

(1) Retained on board; or

(2) Discharged to a reception facility.

(b) If Category A, B, or C NLS cargo or NLS residue is to be transferred at a port or terminal in the United States, the master or person in charge of each oceangoing ship carrying NLS cargo or NLS residue shall notify the port or terminal at least 24 hours before entering the port or terminal of—

(1) The name of the ship;

(2) The name, category and volume of NLS cargo to be unloaded;

(3) If the cargo is a Category B or C high viscosity NLS cargo or solidifying NLS cargo listed in Table 1 of 46 CFR Part 153 with a reference to “§ 153.908(a)” or “§ 153.908(b)” in the “Special Requirements” column of that table, the time of day the ship is estimated to be ready to discharge NLS residue to a reception facility;

(4) If the cargo is any Category B or C NLS cargo not under paragraph (b)(3) of this section, whether or not the ship meets the stripping requirements under 46 CFR 153.480, 153.481, or 153.482;

(5) The name and the estimated volume of NLS in the NLS residue to be discharged;

(6) The total volume of NLS residue to be discharged; and

(7) The name and amount of any cleaning agents to be used during the prewash required by 46 CFR 153.1120.

(c) The master or person in charge of a U.S. ship in a special area shall operate the ship in accordance with 46 CFR 153.903.

NOTE: The master or person in charge of a ship carrying Category A NLS that is required to prewash tanks under the procedures in 46 CFR Part 153.1120 is required under 46 CFR 153.1101 to notify the COTP at

least 24 hours before a prewash surveyor is needed.

§ 151.47 Category D NLSs other than oil-like Category D NLSs that may be carried under this part.

The following is a list of Category D NLSs other than Oil-like Category D NLSs that the Coast Guard allows to be carried:

Acetophenone
Acrylonitrile-Styrene copolymer dispersion in Polyether polyol
iso- & cyclo-Alkane (C10–C11)
Alkenyl(C11+)amine
Alkyl(C8+)amine, Alkenyl (C12+) acid ester mixture
Alkyl dithiothiadiazole (C6–C24)
Alkyl ester copolymer (C4–C20)
Alkyl(C8–C40) phenol sulfide
Aluminum sulfate solution
Ammonium hydrogen phosphate solution
Ammonium nitrate solution (45% or less)
Ammonium nitrate, Urea solution (2% or less NH₃)
Ammonium phosphate, Urea solution
Ammonium polyphosphate solution
Ammonium sulfate solution (20% or less)
Amyl alcohol (iso-, n-, sec-, primary)
Animal and Fish oils, n.o.s. (*see also Oil, edible*)
Animal and Fish acid oils and distillates, n.o.s.
Aryl polyolefin (C11–C50)
Brake fluid base mixtures
Butylene glycol
iso-Butyl formate
n-Butyl formate
gamma-Butyrolactone
Calcium hydroxide slurry
Calcium long chain alkyl sulfonate (C11–C50)
Calcium long chain alkyl(C11–C40) phenate
Calcium long chain alkyl phenate sulfide (C8–C40)
Caprolactam solutions
Chlorine chloride solution
Citric acid (70% or less)
Coconut oil fatty acid methyl ester
Copper salt of long chain (C17+) alkanolic acid
Cyclohexanol
Decahydronaphthalene
Diacetone alcohol
Dialkyl(C8–C9) diphenylamines
Dialkyl(C7–C13) phthalates
Diethylene glycol
Diethylene glycol butyl ether acetate, *see* Poly(2-8) alkylene glycol monoalkyl(C1–C6) ether acetate
Diethylene glycol dibutyl ether
Diethylene glycol ethyl ether, *see* Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether
Diethylene glycol ethyl ether acetate, *see* Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether acetate

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Diethylene glycol methyl ether acetate, <i>see</i> Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether acetate	Magnesium long chain alkyl phenate sulfide (C8–C20)
Diethylene glycol phenyl ether	3-Methoxybutyl acetate
Diethylene glycol phthalate	Methyl acetoacetate
Di-(2-ethylhexyl)adipate	Methyl alcohol
1,4-Dihydro-9,10-dihydroxy anthracene, disodium salt solution	Methyl amyl ketone
Diisobutyl ketone	Methyl butenol
<i>Diisodecyl phthalate</i> , <i>see</i> Dialkyl(C7–C13) phthalates	Methyl butyl ketone
Diisononyl adipate	Methyl isobutyl ketone
<i>Diisononyl phthalate</i> , <i>see</i> Dialkyl(C7–C13) phthalates	Methyl tert-butyl ether
2,2-Dimethylpropane-1,3-diol	Methyl butynol
<i>Dinonyl phthalate</i> , <i>see</i> Dialkyl(C7–C13) phthalates	Methyl propyl ketone
Dipropylene glycol dibenzoate	N-Methyl-2-pyrrolidone
Dipropylene glycol methyl ether, <i>see</i> Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	Myrcene
<i>Ditridecyl phthalate</i> , <i>see</i> Dialkyl(C7–C13) phthalates	Naphthalene sulfonic acid-formaldehyde copolymer, sodium salt solution
<i>Dundecyl phthalate</i> , <i>see</i> Dialkyl(C7–C13) phthalates	Nonanoic acid (all isomers)
Dodecenylsuccinic acid, dipotassium salt solution	Nonanoic, Tridecanoic acid mixture
Ethoxylated long chain (C16+) alkyloxyalkanamine	Nonyl methacrylate
Ethoxy triglycol (<i>crude</i>)	Noxious Liquid Substance, (17) n.o.s.
2-Ethyl-2-(hydroxymethyl)propane-1,3-diol, C8–C10 ester	Octadecenoamide solution
Ethyl acetate	Octanoic acid
Ethyl acetoacetate	Oil, edible:
Ethyl butanol	Babassu
Ethylenediaminetetraacetic acid, tetrasodium salt solution	Beechnut
Ethylene glycol	Castor
Ethylene glycol acetate	Cocoa butter
Ethylene glycol dibutyl ether	Coconut
Ethylene glycol methyl butyl ether	Cod liver
Ethylene glycol phenyl ether	Corn
Ethylene glycol phenyl ether, Diethylene glycol phenyl ether mixture	Cottonseed
2-Ethylhexanoic acid, <i>see</i> Octanoic acid	Fish
Ethyl propionate	Groundnut
Ferric hydroxyethylethylene diamine triacetic acid, trisodium salt solution	Hazelnut
Formamide	Nutmeg butter
Glycerine (83%), Dioxanedimethanol (17%) mixture	Olive
Glycerol monooleate	Palm
Glyoxal solution (40% or less)	Palm kernel
Glyphosate solution (not containing surfactant)	Peanut
Heptanoic acid	Poppy
Hexamethylenediamine adipate	Raisin seed
Hexamethylenetetramine solutions	Rapeseed
Hexanoic acid	Rice bran
Hexanol	Safflower
N-(Hydroxyethyl)ethylenediamine triacetic acid, trisodium salt solution	Salad
Isophorone	Sesame
Lactic acid	Soya bean
Latex (ammonia (1% or less) inhibited)	Sunflower seed
Long chain alkaryl sulfonic acid (C16–C60)	Tucum
Magnesium long chain alkaryl sulfonate (C11–C50)	Vegetable
	Walnut
	Oil, misc:
	Animal, n.o.s.
	Coconut oil, esterified
	Coconut oil, fatty acid methyl ester
	Lanolin
	Linseed
	Neatsfoot
	Oiticica
	Palm oil, fatty acid methyl ester
	Palm oil, methyl ester
	Perilla
	Pilchard
	Soya bean (epoxidized)
	Sperm
	Tung
	Whale

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Olefin/Alkyl ester copolymer (molecular weight 2000+)
Oleic acid
Palm kernel acid oil, methyl ester
Palm stearin
Pentaethylenehexamine
Pentanoic acid
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether, *Including*:
Diethylene glycol butyl ether
Diethylene glycol ethyl ether
Diethylene glycol n-hexyl ether
Diethylene glycol methyl ether
Diethylene glycol n-propyl ether
Dipropylene glycol butyl ether
Dipropylene glycol methyl ether
Polypropylene glycol methyl ether
Triethylene glycol butyl ether
Triethylene glycol ethyl ether
Triethylene glycol methyl ether
Tripropylene glycol methyl ether
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate, *Including*:
Diethylene glycol butyl ether acetate
Diethylene glycol ethyl ether acetate
Diethylene glycol methyl ether acetate
Polyalkylene glycols, Polyalkylene glycol monoalkyl ethers mixtures
Polypropylene glycol methyl ether, *see* Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether
Polyalkyl(C10-C20) methacrylate
Polybutenyl succinimide
Polyether (molecular weight 2000+)
Polyethylene glycol monoalkyl ether
Polyolefin amide alkeneamine (C17+)
Polyolefin amide alkeneamine (C28+)
Polyolefin amide alkeneamine borate (C28-C250)
Polyolefin amide alkeneamine polyol
Polyolefin anhydride
Polyolefin ester (C28-C250)
Polyolefin phenolic amine (C28-C250)
Polyolefin phosphorosulfide, barium derivative
Polypropylene glycol
n-Propyl acetate
Propylene glycol monoalkyl ether, *Including*:
n-Propoxypropanol
Propylene glycol n-butyl ether
Propylene glycol ethyl ether
Propylene glycol methyl ether
Propylene glycol ethyl ether, *see* Propylene glycol monoalkyl ether
Propylene glycol methyl ether, *see* Propylene glycol monoalkyl ether
Propylene glycol methyl ether acetate
Propylene glycol phenyl ether
Sodium acetate solution
Sodium benzoate solution
Sodium carbonate solution
Soybean oil (epoxidized)
Sulfohydrocarbon (C3-C88)
Sulfonated polyacrylate solution
Sulfolane
Sulfurized fat (C14-C20)

Sulfurized polyolefinamide alkene(C28-C250)amine
Tallow
Tallow fatty acid
Tetrasodium salt of Ethylenediaminetetraacetic acid solution
Triethylene glycol butyl ether, *see* Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether
Triethylene glycol ethyl ether, *see* Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether
Triethylene glycol methyl ether, *see* Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether
Triethyl phosphate
Trimethylol propane polyethoxylate
Tripropylene glycol methyl ether, *see* Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether
Trisodium salt of N-(Hydroxyethyl)-ethylenediamine triacetic acid solution
Urea, Ammonium mono- and di-hydrogen phosphate, Potassium chloride solution
Urea, Ammonium nitrate solution (2% or less NH₃)
Urea, Ammonium phosphate solution
Vegetable oils, n.o.s. (*see also* Oil, edible)
Vegetable acid oils and distillates, n.o.s.
Waxes:
Candelilla
Carnauba
[CGD 85-010, 52 FR 7759, Mar. 12, 1987, as amended by CGD 88-100a, 54 FR 40000, Sept. 29, 1989; 55 FR 17269, Apr. 24, 1990; CGD 92-100a, 59 FR 16986, Apr. 11, 1994; CGD 94-901, 59 FR 45147, Aug. 31, 1994; CGD 95-901, 60 FR 34039, June 29, 1995; USCG 2000-7079, 65 FR 67155, Nov. 8, 2000]

§ 151.49 Category C and D Oil-like NLSs allowed for carriage.

The following is a list of Category C and D Oil-like NLSs that the Coast Guard allows to be carried:

(a) The following Category C oil-like NLSs may be carried:

Aviation alkylates
Cycloheptane
Cyclohexane
Cyclopentane
p-Cymene
Ethylcyclohexane
Heptane (all isomers)
Heptene (all isomers)
Hexane (all isomers)
Hexene (all isomers)
iso-Propylcyclohexane
Methyl cyclohexane
2-Methyl-1-pentene, *see* Hexene (all isomers)
Nonane (all isomers)
Octane (all isomers)
Olefin mixtures (C5-C7)
Pentane (all isomers)
Pentene (all isomers)
1-Phenyl-1-xylylethane
Propylene dimer
Tetrahydronaphthalene

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Toluene
Xylenes

(b) [Reserved]

[CGD 85-010, 52 FR 7759, Mar. 12, 1987, as amended by CGD 88-100a, 54 FR 40001, Sept. 29, 1989; 55 FR 17269, Apr. 24, 1990; CGD 92-100a, 59 FR 16987, Apr. 11, 1994; CGD 94-901, 59 FR 45148, Aug. 31, 1994; CGD 95-901, 60 FR 34039, June 29, 1995; USCG 2000-7079, 65 FR 67157, Nov. 8, 2000; USCG-2008-0179, 73 FR 35014, June 19, 2008]

GARBAGE POLLUTION AND SEWAGE

SOURCE: Sections 151.51 through 151.77 and Appendix A appear by CGD 88-002, 54 FR 18405, Apr. 28, 1989, unless otherwise noted.

§ 151.51 Applicability.

(a) Except as provided by paragraph (b) of this section, §§151.51 through 151.77 apply to—

(1) Each ship that is of United States registry or nationality, or one operated under the authority of the United States, including recreational vessels defined in 46 U.S.C. 2101(25) and uninspected vessels defined in 46 U.S.C. 2101(43), wherever located; and

(2) Each ship, other than a ship referred to in paragraph (a)(1) of this section, while in the navigable waters or the Exclusive Economic Zone of the United States.

(b) Sections 151.51 through 151.77 do not apply to—

(1) A warship, naval auxiliary, or other ship owned or operated by the United States when engaged in non-commercial service; or

(2) Any other ship specifically excluded by MARPOL 73/78.

NOTE: The Exclusive Economic Zone extends from the baseline of the territorial sea seaward 200 miles as defined in the Presidential Proclamation 5030 of March 10, 1983 (3 CFR, 1983 Comp. p. 22).

[CGD 88-002, 54 FR 18405, Apr. 28, 1989, as amended by CGD 88-002A, 55 FR 18582, May 2, 1990]

§ 151.53 Special areas for Annex V of MARPOL 73/78.

(a) For the purposes of §§151.51 through 151.77, the special areas are the Mediterranean Sea area, the Baltic Sea area, the Black Sea area, the Red Sea area, the Gulfs area, the North Sea area, the Antarctic area, and the Wider Caribbean region, including the Gulf of

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Mexico and the Caribbean Sea which are described in §151.06.

(b) In accordance with paragraph (4)(b) of Regulation 5 of Annex V of MARPOL 73/78, the discharge restrictions in §151.71 for special areas will enter into effect when each party to MARPOL 73/78 whose coastline borders the special area has certified that reception facilities are available and the IMO has established an effective date for each special area. Notice of the effective dates for the discharge requirements in each special area will be published in the FEDERAL REGISTER and reflected in this section.

(c) The discharge restrictions are in effect in the Mediterranean Sea, Baltic Sea, the North Sea, the Gulfs and the Antarctic special areas.

[CGD 94-056, 60 FR 43378, Aug. 21, 1995, as amended by USCG-2009-0273, 74 FR 66241, Dec. 15, 2009]

§ 151.55 Recordkeeping requirements.

(a) This section applies to the following:

(1) Every manned oceangoing ship (other than a fixed or floating platform) of 400 gross tons and above that is engaged in commerce and that is documented under the laws of the United States or numbered by a State.

(2) Every manned fixed or floating platform subject to the jurisdiction of the United States.

(3) Every manned ship that is certified to carry 15 passengers or more engaged in international voyages.

(b) The master or person in charge of each ship under paragraph (a)(1), (a)(2), or (a)(3) of this section shall ensure that a written record is maintained on the ship of each of the following garbage discharge or disposal operations:

(1) Discharge overboard.

(2) Discharge to another ship.

(3) Discharge to a reception facility.

(4) Incineration on the ship.

(c) The record under paragraph (b) of this section must contain the following information on each discharge or disposal operation:

(1) The type of operation as described under paragraphs (b)(1) through (b)(4) of this section.

(2) The date and time of the operation.

(3) If the operation was conducted at a port, the name of the port.

(4) If the operation was not conducted at a port, the latitude and longitude of the location where the operation was conducted and the estimated distance of that location from shore. If the operation involved off-loading to another ship, the identity of the receiving ship by name and official number.

(5) The amount of garbage involved, described by volume in cubic meters.

(6) For discharges into the sea, a description of the contents of the garbage, described by the following categories:

- (i) Plastic material.
- (ii) Floating dunnage, lining, or packing material.
- (iii) Ground paper products, rags, glass, metal, bottles, crockery, or other similar garbage.
- (iv) Unground paper products, rags, glass, metal, bottles, crockery, or other similar garbage.
- (v) Victual wastes.
- (vi) Incinerated ash.
- (vii) Incinerated plastic residue.

(d) The record under paragraph (b) of this section must be prepared at the time of the operation, certified as correct by the master or person in charge of the ship, maintained on the ship for two years following the operation, and made available for inspection by the Coast Guard.

[CGD 92-71, 59 FR 18703, Apr. 19, 1994, as amended by USCG-2000-7641, 66 FR 55571, Nov. 2, 2001]

§ 151.57 Waste management plans.

(a) This section applies to the following:

(1) Each manned oceangoing ship (other than a fixed or floating platform) of 40 feet or more in length that is documented under the laws of the United States or numbered by a state and that either is engaged in commerce or is equipped with a galley and berthing.

(2) Each manned fixed or floating platform that is—

- (i) Documented under the laws of the United States; or
- (ii) Operating under the authority of the United States, including, but not limited to, a lease or permit issued by an agency of the United States.

(b) The master or person in charge of a ship under paragraphs (a)(1) and (a)(2) of this section shall ensure that the ship is not operated unless a waste management plan meeting paragraph (c) of this section is on the ship and that each person handling garbage follows the plan.

(c) Each waste management plan under paragraph (b) of this section must be in writing and—

(1) Provide for the discharge of garbage by means that meet Annex V of MARPOL 73/78, the Act, and §§151.51 through 151.77;

(2) Describe procedures for collecting, processing, storing, and discharging garbage; and

(3) Designate the person who is in charge of carrying out the plan.

(Approved by the Office of Management and Budget under control number 1625-0072)

[CGD 88-002A, 55 FR 18582, May 2, 1990, as amended by USCG-2006-25150, 71 FR 39209, July 12, 2006]

§ 151.59 Placards.

(a) This section applies to the following:

(1) Each manned U.S. ship (other than a fixed or floating platform) that is 26 feet or more in length.

(2) Each manned floating platform in transit that is—

- (i) Documented under the laws of the United States; or
- (ii) Operating under the authority of the United States, including, but not limited to, a lease or permit issued by an agency of the United States.

(b) The master or person in charge of each ship under paragraph (a)(1) or (a)(2) of this section shall ensure that one or more placards meeting the requirements of this section are displayed in prominent locations and in sufficient numbers so that they can be read by the crew and passengers. These locations must be readily accessible to the intended reader and may include embarkation points, food service facilities, garbage handling spaces, and common spaces on deck. If the Captain of the Port determines that the number or location of the placards is insufficient to adequately inform crew and passengers, the Captain of the Port may require additional placards and may specify their locations.

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(c) Each placard must be at least nine inches wide by four inches high, made of a durable material, and lettered with letters at least $\frac{1}{8}$ inch high.

(d) Except as under paragraph (e) of this section, the placard must notify the reader of the following:

(1) The discharge of plastic or garbage mixed with plastic into any waters is prohibited.

(2) The discharge of all garbage is prohibited in the navigable waters of the United States and, in all other waters, within three nautical miles of the nearest land.

(3) The discharge of dunnage, lining, and packing materials that float is prohibited within 25 nautical miles of the nearest land.

(4) Other unground garbage may be discharged beyond 12 nautical miles from the nearest land.

(5) Other garbage ground to less than one inch may be discharged beyond three nautical miles of the nearest land.

(6) A person who violates the above requirements is liable for a civil penalty for each violation, and the criminal penalties of a class D felony. Placards installed on vessels before May 7, 1997, need not be replaced; and existing stocks of placards, containing previous language, may be used. When language on a placard is inconsistent with the language in the Code of Federal Regulations (CFR) due to use of a placard containing previous language penalty amounts contained in the CFR are controlling.

(7) Regional, State, and local restrictions on garbage discharges also may apply.

(e) For ships while operating on the Great Lakes or their connecting or tributary waters, the placard must—

(1) Notify the reader of the information in paragraph (d) of this section; or

(2) Notify the reader of the following:

(i) The discharge of all garbage into the Great Lakes or their connecting or tributary waters is prohibited.

(ii) A person who violates the above requirements is liable for a civil penalty for each violation, and the criminal penalties of a class D felony. Placards installed on vessels before May 7, 1997, need not be replaced; and existing stocks of placards, containing previous

language, may be used. When language on a placard is inconsistent with the language in the Code of Federal Regulations (CFR) due to use of a placard containing previous language, penalty amounts contained in the CFR are controlling.

[CGD 88–002A, 56 FR 8880, Mar. 1, 1991, as amended by CGD 96–052, 62 FR 16703, Apr. 8, 1997; 62 FR 31340, June 9, 1997]

§ 151.61 Inspection for compliance and enforcement.

While within the navigable waters of the United States or the Exclusive Economic Zone, a ship is subject to inspection by the Coast Guard or other authorized federal agency to determine if—

(a) The ship has been operating in accordance with these regulations and has not discharged plastics or other garbage in violation of the provisions of the Act or Annex V of MARPOL 73/78;

(b) Grinders or comminuters used for the discharge of garbage between 3 and 12 nautical miles from nearest land are capable of reducing the size of garbage so that it will pass through a screen with openings no greater than 25 millimeters (one inch);

(c) Information for recordkeeping requirements, when required under § 151.55, is properly and accurately logged;

(d) A waste management plan, when required under § 151.57, is on board and that the condition of the ship, equipment and operational procedures of the ship meet the plan; and

(e) Placards, when required by § 151.59, are posted on board.

[CGD 88–002, 54 FR 18405, Apr. 28, 1989, as amended by CGD 88–002A, 55 FR 18583, May 2, 1990]

§ 151.63 Shipboard control of garbage.

(a) The master, operator, or person who is in charge of a ship shall ensure that all garbage is discharged ashore or in accordance with §§ 151.66–151.73.

(b) The following factors, among others, may be considered by enforcement personnel in evaluating compliance with §§ 151.51 through 151.77:

(1) Records, including receipts, of garbage discharges at port reception facilities.

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(2) Records under § 151.55 or log entries of garbage discharges.

(3) The presence and operability of equipment to treat ship-generated garbage, including, but not limited to, incinerators, grinders, or comminuters.

(4) The presence of and adherence to a written shipboard waste management plan.

(5) The absence of plastics in ship stores.

(6) Ongoing educational programs to train shipboard personnel of garbage handling procedures and the need for these.

(7) The presence of shipboard spaces used for collecting, processing, storing and discharging ship-generated garbage.

(c) The master, operator, or person who is in charge of a ship shall ensure that if garbage is transported from a ship by shipboard personnel, it is properly deposited into a port or terminal's reception facility.

[CGD 88-002, 54 FR 18405, Apr. 28, 1989, as amended by CGD 88-002A, 55 FR 18583, May 2, 1990; CGD 92-71, 59 FR 18703, Apr. 19, 1994]

§ 151.65 Reporting requirements.

The master or person who is in charge of each oceangoing ship shall notify the port or terminal, at least 24 hours before entering the port or terminal, of the name of the ship and the estimated volume of garbage requiring disposal, if any of the following types of garbage are to be discharged:

(a) Garbage regulated by the Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture under 7 CFR 330.400 or 9 CFR 94.5.

(b) Medical wastes.

(c) Hazardous wastes defined in 40 CFR 261.3.

§ 151.66 Operating requirements: Discharge of garbage in the Great Lakes and other navigable waters.

(a) Except as otherwise provided in this section, no person on board any ship may discharge garbage into the navigable waters of the United States.

(b) On the United States' waters of the Great Lakes, commercial ships, excluding non-self propelled barges that are not part of an integrated tug and barge unit, may discharge bulk dry

cargo residues in accordance with this paragraph and paragraph (c) of this section. Owners and operators of ships to which these paragraphs apply are encouraged to minimize the volume of dry cargo residues discharged through the use of suitable residue control measures onboard and by loading and unloading cargo at facilities that use suitable shoreside residue control measures. As used in this paragraph and paragraph (c) of this section:

Apostle Islands National Lakeshore means the site on or near Lake Superior administered by the National Park Service, less Madeline Island, and including the Wisconsin shoreline of Bayfield Peninsula from the point of land at 46°57'19.7" N, 90°52'51.0" W southwest along the shoreline to a point of land at 46°52'56.4" N, 91°3'3.1" W.

Bulk dry cargo residues means non-hazardous and non-toxic residues of dry cargo carried in bulk, including limestone and other clean stone, iron ore, coal, salt, and cement. It does not include residues of any substance known to be toxic or hazardous, such as, nickel, copper, zinc, lead, or materials classified as hazardous in provisions of law or treaty;

Caribou Island and Southwest Bank Protection Area means the area enclosed by rhumb lines connecting the following coordinates, beginning on the northernmost point and proceeding clockwise:

47°30.0' N	85°50.0' W
47°24.2' N	85°38.5' W
47°04.0' N	85°49.0' W
47°05.7' N	85°59.0' W
47°18.1' N	86°05.0' W

Detroit River International Wildlife Refuge means the U.S. waters of the Detroit River bound by the area extending from the Michigan shore at the southern outlet of the Rouge River to 41°54' N, 083°06' W along the U.S.-Canada boundary southward and clockwise connecting points:

42°02' N	083°08' W
41°54' N	083°06' W
41°50' N	083°10' W
41°44.52' N	083°22' W
41°44.19' N	083°27' W

Grand Portage National Monument means the site on or near Lake Superior, administered by the National Park Service, from a southwest corner of the monument point of land,

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47°57.521' 89°41.245', to the northeast corner of the monument point of land, 47°57.888' 89°40.725'.

Indiana Dunes National Lakeshore means the site on or near Lake Michigan, administered by the National Park Service, from a point of land near Gary, Indiana at 41°42'59.4" N 086°54'59.9" W eastward along the shoreline to 41°37'08.8" N 087°17'18.8" W near Michigan City, Indiana.

Integrated tug and barge unit means any tug barge combination which, through the use of special design features or a specially designed connection system, has increased seakeeping capabilities relative to a tug and barge in the conventional pushing mode;

Isle Royale National Park means the site on or near Lake Superior, administered by the National Park Service, where the boundary includes any submerged lands within the territorial jurisdiction of the United States within four and one-half miles of the shoreline of Isle Royale and the surrounding islands, including Passage Island and Gull Island.

Mile means a statute mile, and refers to the distance from the nearest land or island;

Milwaukee Mid-Lake Special Protection Area means the area enclosed by rhumb lines connecting the following coordinates, beginning on the northernmost point and proceeding clockwise:

43°27.0' N	87°14.0' W
43°21.2' N	87°02.3' W
43°03.3' N	87°04.8' W
42°57.5' N	87°21.0' W
43°16.0' N	87°39.8' W

Northern Refuge means the area enclosed by rhumb lines connecting the coordinates, beginning on the northernmost point and proceeding clockwise:

45°45' N	86°00' W,

western shore of High Island, southern shore of Beaver Island:

45°30' N	85°30' W
45°30' N	85°15' W
45°25' N	85°15' W
45°25' N	85°20' W
45°20' N	85°20' W
45°20' N	85°40' W
45°15' N	85°40' W
45°15' N	85°50' W
45°10' N	85°50' W
45°10' N	86°00' W

Pictured Rocks National Lakeshore means the site on or near Lake Superior,

administered by the National Park Service, from a point of land at 46°26'21.3" N 086°36'43.2" W eastward along the Michigan shoreline to 46°40'22.2" N 085°59'58.1" W.

Six Fathom Scarp Mid-Lake Special Protection Area means the area enclosed by rhumb lines connecting the following coordinates, beginning on the northernmost point and proceeding clockwise:

44°55' N	82°33' W
44°47' N	82°18' W
44°39' N	82°13' W
44°27' N	82°13' W
44°27' N	82°20' W
44°17' N	82°25' W
44°17' N	82°30' W
44°28' N	82°40' W
44°51' N	82°44' W
44°53' N	82°44' W
44°54' N	82°40' W

Sleeping Bear Dunes National Lakeshore means the site on or near Lake Michigan, administered by the National Park Service, that includes North Manitou Island, South Manitou Island and the Michigan shoreline from a point of land at 44°42'45.1" N 086°12'18.1" W north and eastward along the shoreline to 44°57'12.0" N 085°48'12.8" W.

Stannard Rock Protection Area means the area within a 6 mile radius from Stannard Rock Light, at 47°10'57" N 87°13'34" W;

Superior Shoal Protection Area means the area within a 6 mile radius from the center of Superior Shoal, at 48°03.2' N 87°06.3' W;

Thunder Bay National Marine Sanctuary means the site on or near Lake Huron designated by the National Oceanic and Atmospheric Administration as the boundary that forms an approximately rectangular area by extending along the ordinary high water mark between the northern and southern boundaries of Alpena County, cutting across the mouths of rivers and streams, and lakeward from those points along latitude lines to longitude 83 degrees west. The coordinates of the boundary are:

45°12'25.5" N	83°23'18.6" W
45°12'25.5" N	83°00'00" W
44°51'30.5" N	83°00'00" W
44°51'30.5" N	83°19'17.3" W

Waukegan Special Protection Area means the area enclosed by rhumb

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lines connecting the following coordinates, beginning on the northernmost point and proceeding clockwise:

42°24.3' N 87°29.3' W
42°13.0' N 87°25.1' W
42°12.2' N 87°29.1' W

42°18.1' N 87°33.1' W
42°24.1' N 87°32.0' W; and

Western Basin means that portion of Lake Erie west of a line due south from Point Pelee.

TABLE 151.66(b)—BULK DRY CARGO RESIDUE DISCHARGES ALLOWED ON THE GREAT LAKES

Location	Cargo	Discharge allowed except as noted
Tributaries, their connecting rivers, and St. Lawrence River.	Limestone and other clean stone.	Prohibited where there is an apparent impact on wetlands, fish spawning areas, and potable water intakes.
	All other cargos	Prohibited.
Lake Ontario	Limestone and other clean stone.	Prohibited where there is an apparent impact on wetlands, fish spawning areas, and potable water intakes.
	Iron ore	Prohibited within 6 miles from shore.
	All other cargos	Prohibited within 13.8 miles from shore.
Lake Erie	Limestone and other clean stone.	Prohibited where there is an apparent impact on wetlands, fish spawning areas, and potable water intakes; prohibited in the Detroit River International Wildlife Refuge; prohibited in Western Basin, except that a vessel operating exclusively within Western Basin may discharge limestone or clean stone cargo residues over the dredged navigation channels between Toledo Harbor Light and Detroit River Light.
	Iron ore	Prohibited within 6 miles from shore; prohibited in the Detroit River International Wildlife Refuge; prohibited in Western Basin, except that a vessel may discharge residue over the dredged navigation channels between Toledo Harbor Light and Detroit River Light if it unloads in Toledo or Detroit and immediately thereafter loads new cargo in Toledo, Detroit, or Windsor.
	Coal, salt	Prohibited within 13.8 miles from shore; prohibited in the Detroit River International Wildlife Refuge; prohibited in Western Basin, except that a vessel may discharge residue over the dredged navigation channels between Toledo Harbor Light and Detroit River Light if it unloads in Toledo or Detroit and immediately thereafter loads new cargo in Toledo, Detroit, or Windsor.
	All other cargos	Prohibited within 13.8 miles from shore; prohibited in the Detroit River International Wildlife Refuge; prohibited in Western Basin.
Lake St. Clair	Limestone and other clean stone.	Prohibited where there is an apparent impact on wetlands, fish spawning areas, and potable water intakes.
	All other cargos	Prohibited.
Lake Huron except Six Fathom Scarp Mid-Lake Special Protection Area.	Limestone and other clean stone.	Prohibited where there is an apparent impact on wetlands, fish spawning areas, and potable water intakes; prohibited in the Thunder Bay National Marine Sanctuary.
	Iron ore	Prohibited within 6 miles from shore and in Saginaw Bay; prohibited in the Thunder Bay National Marine Sanctuary; prohibited for vessels up bound along the Michigan thumb as follows: (1) Between 5.8 miles northeast of entrance buoys 11 and 12 to the track line turn abeam of Harbor Beach, prohibited within 3 miles from shore; and (2) For vessels bound for Saginaw Bay only, between the track line turn abeam of Harbor Beach and 4 nautical miles northeast of Point Aux Barques Light, prohibited within 4 miles from shore and not less than 10 fathoms of depth.
	Coal, salt	Prohibited within 13.8 miles from shore and in Saginaw Bay; prohibited in the Thunder Bay National Marine Sanctuary; prohibited for vessels up bound from Alpena into ports along the Michigan shore south of Forty Mile Point within 4 miles from shore and not less than 10 fathoms of depth.
	All other cargos	Prohibited within 13.8 miles from shore and in Saginaw Bay; prohibited in the Thunder Bay National Marine Sanctuary.
Lake Michigan	Limestone and other clean stone.	Prohibited where there is an apparent impact on wetlands, fish spawning areas, and potable water intakes; prohibited within the Milwaukee Mid-Lake and Waukegan Special Protection Areas; prohibited within the Northern Refuge; prohibited within 3 miles of the shore of the Indiana Dunes and Sleeping Bear National Lakeshores; prohibited within Green Bay.

TABLE 151.66(b)—BULK DRY CARGO RESIDUE DISCHARGES ALLOWED ON THE GREAT LAKES—
Continued

Location	Cargo	Discharge allowed except as noted
Lake Superior	Iron ore	Prohibited in the Northern Refuge; north of 45° N, prohibited within 12 miles from shore and in Green Bay; south of 45° N, prohibited within 6 miles from shore, and prohibited within the Milwaukee Mid-Lake and Waukegan Special Protection Areas, in Green Bay, and within 3 miles of the shore of Indiana Dunes and Sleeping Bear National Lakeshores; except that discharges are allowed at: (1) 4.75 miles off Big Sable Point Betsie, along established Lake Carriers Association (LCA) track lines; and (2) Along 056.25° LCA track line between due east of Poverty Island to a point due south of Port Inland Light.
	Coal	Prohibited in the Northern Refuge; prohibited within 13.8 miles from shore and prohibited within the Milwaukee Mid-Lake and Waukegan Special Protection Areas, in Green Bay, and within 3 miles of the shore of Indiana Dunes and Sleeping Bear National Lakeshores; except that discharges are allowed: (1) Along 013.5° LCA track line between 45° N and Boulder Reef, and along 022.5° LCA track running 23.25 miles between Boulder Reef and the charted position of Red Buoy #2; (2) Along 037° LCA track line between 45°20' N and 45°42' N; (3) Along 056.25° LCA track line between points due east of Poverty Island to a point due south of Port Inland Light; and (4) At 3 miles from shore for coal carried between Manistee and Ludington along customary routes.
	Salt	Prohibited in the Northern Refuge; prohibited within 13.8 miles from shore and prohibited within the Milwaukee Mid-Lake and Waukegan Special Protection Areas, in Green Bay, and within 3 miles of the shore of Indiana Dunes and Sleeping Bear National Lakeshores, and in Green Bay.
	All other cargos	Prohibited in the Northern Refuge; prohibited within 13.8 miles from shore and prohibited within the Milwaukee Mid-Lake and Waukegan Special Protection Areas, in Green Bay, and within 3 miles of the shore of Indiana Dunes and Sleeping Bear National Lakeshores.
	Limestone and other clean stone.	Prohibited where there is an apparent impact on wetlands, fish spawning areas, and potable water intakes; and prohibited within Isle Royal National Park and the Caribou Island and Southwest Bank, Stannard Rock, and Superior Shoal Protection Areas, and within 3 miles of the shore of the Apostle Islands and Pictured Rocks National Lakeshores or the Grand Portage National Monument.
	Iron ore	Prohibited within 6 miles from shore (within 3 miles off northwestern shore between Duluth and Grand Marais); and prohibited within Isle Royal National Park and the Caribou Island and Southwest Bank, Stannard Rock, and Superior Shoal Protection Areas, and within 3 miles of the shore of the Apostle Islands and Pictured Rocks National Lakeshores or the Grand Portage National Monument.
	Coal, salt	Prohibited within 13.8 miles from shore (within 3 miles off northwestern shore between Duluth and Grand Marais); and prohibited within Isle Royal National Park and the Caribou Island and Southwest Bank, Stannard Rock, and Superior Shoal Protection Areas, and within 3 miles of the shore of the Apostle Islands and Pictured Rocks National Lakeshores or the Grand Portage National Monument.
	Cement	Prohibited within 13.8 miles from shore (within 3 miles off-shore west of a line due north from Bark Point); and prohibited within Isle Royal National Park and the Caribou Island and Southwest Bank, Stannard Rock, and Superior Shoal Protection Areas, and within 3 miles of the shore of the Apostle Islands and Pictured Rocks National Lakeshores or the Grand Portage National Monument.

TABLE 151.66(b)—BULK DRY CARGO RESIDUE DISCHARGES ALLOWED ON THE GREAT LAKES—
Continued

Location	Cargo	Discharge allowed except as noted
	All other cargos	Prohibited within 13.8 miles from shore; and prohibited within Isle Royal National Park and the Caribou Island and Southwest Bank, Stannard Rock, and Superior Shoal Protection Areas, and within 3 miles of the shore of the Apostle Islands and Pictured Rocks National Lakeshores or the Grand Portage National Monument.

(c)(1) The master, owner, operator, or person in charge of any commercial ship loading, unloading, or discharging bulk dry cargo in the United States' waters of the Great Lakes and the master, owner, operator, or person in charge of a U.S. commercial ship transporting bulk dry cargo and operating anywhere on the Great Lakes, excluding non-self propelled barges that are not part of an integrated tug and barge unit, must ensure that a written record is maintained on the ship that fully and accurately records information on:

(i) Each loading or unloading operation on the United States' waters of the Great Lakes, or in the case of U.S. commercial ships on any waters of the Great Lakes, involving bulk dry cargo; and

(ii) Each discharge of bulk dry cargo residue that takes place in United States' waters of the Great Lakes, or in the case of U.S. commercial ships on any waters of the Great Lakes.

(2) For each loading or unloading operation, the record must describe:

- (i) The date of the operation;
- (ii) Whether the operation involved loading or unloading;
- (iii) The name of the loading or unloading facility;
- (iv) The type of bulk dry cargo loaded or unloaded;
- (v) The method or methods used to control the amount of bulk dry cargo residue, either onboard the ship or at the facility;
- (vi) The time spent to implement methods for controlling the amount of bulk dry cargo residue; and
- (vii) The estimated volume of bulk dry cargo residue created by the loading or unloading operation that is to be discharged.

(3) For each discharge, the record must describe:

(i) The date and time the discharge started, and the date and time the discharge ended;

(ii) The ship's position, in latitude and longitude, when the discharge started and when the discharge ended; and

(iii) The ship's speed during the discharge.

(iv) Records must be kept on Coast Guard Form CG-33, which can be found at http://www.uscg.mil/hq/cg5/cg522/cg5224/dry_cargo.asp. The records must be certified by the master, owner, operator, or person in charge and kept in written form onboard the ship for at least two years. Copies of the records must be forwarded to the Coast Guard at least once each quarter, no later than the 15th day of January, April, July, and October. The record copies must be provided to the Coast Guard using only one of the following means:

(A) E-mail to DCRRecordkeeping@USCG.mil;

(B) Fax to (202) 372-1926, ATTN: DCR RECORDKEEPING; or

(C) Mail to U.S. Coast Guard: Commandant (CG-522), ATTN: DCR RECORDKEEPING, 2100 2nd St., SW., Stop 7126, Washington, DC 20593-7126.

[USCG-2004-19621, 73 FR 56498, Sept. 29, 2008, as amended at USCG-2010-0351, 75 FR 36284, June 25, 2010]

§ 151.67 Operating requirements: Discharge of plastic prohibited.

No person on board any ship may discharge into the sea, or into the navigable waters of the United States, plastic or garbage mixed with plastic, including, but not limited to, synthetic ropes, synthetic fishing nets, and plastic garbage bags. All garbage containing plastics requiring disposal

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must be discharged ashore or incinerated.

[CGD 88-002, 54 FR 18405, Apr. 28, 1989, as amended by CGD 88-002A, 55 FR 18583, May 2, 1990]

§ 151.69 Operating requirements: Discharge of garbage outside special areas.

(a) When operating outside of a special area specified in §151.53, no person may discharge, into the sea, garbage that is separated from plastic, if the distance from nearest land is less than—

(1) 25 nautical miles for dunnage, lining and packing materials that float; or

(2) 12 nautical miles for victual wastes and all other garbage including paper products, rags, glass, metal, bottles, crockery and similar refuse, except that, such garbage may be discharged outside of three nautical miles from nearest land after it has been passed through a grinder or comminuter specified in §151.75.

(b) Mixtures of garbage having different discharge requirements under paragraph (a)(1) or (a)(2) of this section must be—

(1) Retained on board for later disposal ashore; or

(2) Discharged in accordance with the more stringent requirement prescribed by paragraph (a)(1) or (a)(2) of this section.

§ 151.71 Operating requirements: Discharge of garbage within special areas.

(a) When a ship is located in a special area referenced in §151.53 of this part, no person may discharge garbage from the ship, except as allowed in paragraph (b) or (c) in this section.

(b) Except as provided in paragraph (c) of this section, disposal into the sea of victual waste must be made as far as practicable from land but, in any case, not less than 12 nautical miles from the nearest land.

(c) Disposal into the Wider Caribbean region of victual wastes which have been passed through a comminuter or grinder shall be made as far as practicable from land but, in any case, not less than 3 nautical miles from the

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nearest land. Such comminuted or ground food wastes shall be capable of passing through a screen with opening no greater than 25 millimeters.

[CGD 94-056, 60 FR 43378, Aug. 21, 1995]

§ 151.73 Operating requirements: Discharge of garbage from fixed or floating platforms.

(a) Except as allowed in paragraph (b) of this section, no person may discharge garbage from—

(1) A fixed or floating platform engaged in the exploration, exploitation or associated offshore processing of seabed mineral resources; or

(2) Any ship within 500 meters (1650 feet) of such platforms.

(b) Victual waste may be discharged into the sea from a ship or fixed or floating platform regulated by paragraph (a) of this section if—

(1) It passes through a comminuter or grinder meeting §151.75; and

(2) That ship or fixed or floating platform is beyond 12 nautical miles from nearest land.

§ 151.75 Grinders or comminuters.

Each grinder or comminuter used to discharge garbage in accordance with §151.69(a)(2) or §151.73(b)(1), must be capable of processing garbage so that it passes through a screen with openings no greater than 25 millimeters (one inch).

§ 151.77 Exceptions for emergencies.

Sections 151.67, 151.69 and 151.71 do not apply to the following:

(a) Discharges of garbage from a ship for the purpose of securing the safety of the ship and those on board or saving life at sea.

(b) The escape of garbage resulting from damage to a ship or its equipment, if all reasonable precautions have been taken before and after the occurrence of the damage, to prevent or minimize the escape.

(c) The accidental loss of synthetic fishing nets, provided all reasonable precautions have been taken to prevent such loss.

[CGD 88-002, 54 FR 18405, Apr. 28, 1989, as amended by CGD 88-002A, 55 FR 18583, May 2, 1990; CGD 90-054, 56 FR 19578, Apr. 29, 1991]

APPENDIX A TO §§ 151.51 THROUGH 151.77—SUMMARY OF GARBAGE DISCHARGE RESTRICTIONS

Garbage Type	All Vessels Except Fixed or Floating Platforms and Associated Vessels		Fixed or Floating Platforms & Assoc. Vessels ³ (33 CFR 151.73)
	Outside special areas (33 CFR 151.69)	In special areas ² (33 CFR 151.71)	
Plastics—includes synthetic ropes and fishing nets and plastic bags.	Disposal prohibited (33 CFR 151.67).	Disposal prohibited (33 CFR 151.67).	Disposal prohibited (33 CFR 151.67).
Dunnage, lining and packing materials that float.	Disposal prohibited less than 25 miles from nearest land and in the navigable waters of the U.S.	Disposal prohibited (33 CFR 151.71).	Disposal prohibited.
Paper, rags, glass, metal bottles, crockery and similar refuse.	Disposal prohibited less than 12 miles from nearest land and in the navigable waters of the U.S.	Disposal prohibited (33 CFR 151.71).	Disposal prohibited.
Paper, rags, glass, etc. comminuted or ground. ¹	Disposal prohibited less than 3 miles from nearest land and in the navigable waters of the U.S.	Disposal prohibited (33 CFR 151.71).	Disposal prohibited.
Virtual waste not comminuted or ground.	Disposal prohibited less than 12 miles from nearest land and in the navigable waters of the U.S.	Disposal prohibited less than 12 miles from nearest land.	Disposal prohibited.
Virtual waste comminuted or ground. ¹	Disposal prohibited less than 3 miles from nearest land and in the navigable waters of the U.S.	Disposal prohibited less than 12 miles from nearest land.	Disposal prohibited less than 12 miles from nearest land and in the navigable waters of the U.S.
Mixed garbage types. ⁴	See Note 4.	See Note 4.	See Note 4.

Note 1: Comminuted or ground garbage must be able to pass through a screen with a mesh size no larger than 25 mm. (1 inch) (33 CFR 151.75)

Note 2: Special areas under Annex V are the Mediterranean, Baltic, Black, Red, and North Seas areas and the Gulfs area. (33 CFR 151.53)

Note 3: Fixed or floating platforms and associated vessels includes all fixed or floating platforms engaged in exploration, exploitation or associated offshore processing of seabed mineral resources, and all ships within 500m of such platforms.

Note 4: When garbage is mixed with other harmful substances having different disposal or discharge requirements, the more stringent disposal restrictions shall apply.

[CGD 88-002, 54 FR 18405, Apr. 28, 1989, as amended by CGD 90-054, 56 FR 19578, Apr. 29, 1991]

§ 151.79 Operating requirements: Discharge of sewage within Antarctica.

(a) A vessel certified to carry more than 10 persons must not discharge untreated sewage into the sea within 12 nautical miles of Antarctic land or ice shelves; beyond such distance, sewage stored in a holding tank must not be discharged instantaneously but at a moderate rate and, where practicable, while the ship is en route at a speed of no less than 4 knots. For purposes of this section, “sewage” means:

(1) Drainage and other wastes from any form of toilets, urinals, and WC scuppers;

(2) Drainage from medical premises (dispensary, sick bay, etc.) via wash basins, wash tubs, and scuppers located in such premises;

(3) Drainage from spaces containing living animals; or

(4) Other waste waters when mixed with the drainages defined above.

(b) Paragraph (a) of this section does not apply to a warship, naval auxiliary, or other ship owned or operated by the United States and used only in government non-commercial service.

(c) Paragraph (a) of this section does not apply in cases of an emergency relating to the safety of a ship and those on board or saving life at sea. Notice of an activity, otherwise prohibited under paragraph (a) of this section, undertaken in case of an emergency shall be reported immediately to the National Response Center (NRC) *toll free telephone number: 800-424-8802, direct telephone: 202-267-2675, or Fax: 202-267-1322.*

[CGD 97-015, 62 FR 18045, Apr. 14, 1997, as amended by USCG-2008-0179, 73 FR 35014, June 19, 2008]

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Subpart B—Transportation of Municipal and Commercial Waste

AUTHORITY: 33 U.S.C. 2602; 49 CFR 1.46.

SOURCE: CGD 89-014, 54 FR 22548, May 24, 1989, unless otherwise noted.

§ 151.1000 Purpose.

The purpose of this subpart is to implement the permit provisions of the Shore Protection Act of 1988, (33 U.S.C. 2601 *et seq.*).

[CGD 89-014, 54 FR 22548, May 24, 1989, as amended by USCG-2001-9286, 66 FR 33641, June 25, 2001]

§ 151.1003 Applicability.

(a) Except as provided by paragraph (b) of this section, this subpart applies to each vessel whose purpose is the transportation of municipal or commercial waste in coastal waters.

(b) This subpart does not apply to public vessels.

§ 151.1006 Definitions.

As used in this subpart—

Coastal waters means—

(1) The territorial sea of the United States;

(2) The Great Lakes and their connecting waters;

(3) The marine and estuarine waters of the United States up to the head of tidal influence; and

(4) The Exclusive Economic Zone as established by Presidential Proclamation Number 5030, dated March 10, 1983.

NOTE: The Exclusive Economic Zone extends from the baseline of the territorial sea of the United States seaward 200 miles.

Municipal and commercial waste means solid waste as defined in section 1004 of the Solid Waste Disposal Act (42 U.S.C. 6903) except—

(1) Solid waste identified and listed under section 3001 of the Solid Waste Disposal Act (42 U.S.C. 6921);

(2) Waste generated by a vessel during normal operations;

(3) Debris solely from construction activities;

(4) Sewage sludge subject to regulation under title I of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1401 *et seq.*); and

(5) Dredge or fill material subject to regulation under title I of the Marine

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Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1401 *et seq.*), the Federal Water Pollution Control Act (33 U.S.C. 1251 *et seq.*), or the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. 401 *et seq.*).

Public vessel means a vessel that—

(1) Is owned, or demise chartered, and operated by the United States Government or a government of a foreign country; and

(2) Is not engaged in commercial service.

Vessel means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water.

[CGD 89-014, 54 FR 22548, May 24, 1989, as amended by USCG-2001-9286, 66 FR 33641, June 25, 2001]

§ 151.1009 Transportation of municipal or commercial waste.

A vessel may not transport municipal or commercial waste in coastal waters without—

(a) A conditional permit to transport municipal or commercial waste issued under this subpart; and

(b) Displaying a number in accordance with § 151.1024.

[CGD 89-014, 54 FR 22548, May 24, 1989; CGD 89-014, 54 FR 24078, June 5, 1989]

§ 151.1012 Applying for a conditional permit.

(a) The owner or operator of each vessel to which this subpart applies shall apply by letter for a conditional permit required by § 151.1009. Applications must be submitted to Commandant (CG-5431), U.S. Coast Guard Headquarters, 2100 2nd St., SW., Stop 7581, Washington, DC 20593-7581, Attn: Shore Protection Act Desk and include the following:

(1) The name, address, and telephone number of the vessel owner and operator.

(2) The vessel's name and official number, if any.

(3) The vessel's area of operation.

(4) The vessel's transport capacity.

(5) A history of the types of cargo transported by the vessel during the previous year, including identifying the type of municipal or commercial waste transported as—

(i) Municipal waste;

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- (ii) Commercial waste;
- (iii) Medical waste; or
- (iv) Waste of another character.

(6) The types of cargo to be transported by the vessel during the effective period of the conditional permit, including identifying the type of municipal or commercial waste as it is identified in paragraphs (a)(5)(i) through (iv) of this section.

(7) A statement of whether the application for a conditional permit is for a single voyage, a short term operation or a continuing operation. If the application is for a single voyage or a short term operation, the statement must include the duration of the voyage or operation.

(8) An acknowledgment that certifies as to the truthfulness and accuracy of the information provided.

(b) The owner or operator under paragraph (a) of this section shall provide any additional information the Coast Guard may require.

[CGD 89-014, 54 FR 22548, May 24, 1989, as amended by CGD 96-026, 61 FR 33665, June 28, 1996; USCG-2008-0179, 73 FR 35014, June 19, 2008; USCG-2010-0351, 75 FR 36284, June 25, 2010]

§ 151.1015 Issuing or denying the issuance of a conditional permit.

(a) After reviewing the application made under § 151.1012, the Coast Guard either—

(1) Issues the conditional permit for a vessel under this section; or

(2) Denies the issuance of the conditional permit to the vessel in accordance with paragraph (c) of this section. On denying the issuance of the permit, the Coast Guard notifies the applicant of the—

(i) Denial and the reason for the denial; and

(ii) Procedures under § 151.1021 for appealing the denial.

(b) Each conditional permit issued under this section is effective—

(1) On the date it is issued; and

(2) Until the expiration date stated on the conditional permit unless it is—

(i) Withdrawn under § 151.1018;

(ii) Terminated because—

(A) The vessel is sold; or

(B) This subpart no longer applies to the vessel.

(c) The Coast Guard may deny the issuance of a conditional permit if—

(i) The application does not contain the information required under § 151.1012; or

(ii) There is reason to believe that the information contained on the application is not true and correct.

§ 151.1018 Withdrawal of a conditional permit.

(a) The Coast Guard may withdraw a conditional permit if the Administrator of the EPA requests withdrawal because the Administrator has determined that the owner or operator of the vessel has a record or a pattern of serious violations of—

(1) Subtitle A of the Shore Protection Act of 1988 (33 U.S.C. 2601 *et seq.*);

(2) The Solid Waste Disposal Act (42 U.S.C. 6901 *et seq.*);

(3) The Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1401 *et seq.*);

(4) The Rivers and Harbors Appropriations Act of 1899 (33 U.S.C. 1401 *et seq.*); or

(5) The Federal Water Pollution Control Act (33 U.S.C. 1251 *et seq.*).

(b) Upon reaching a determination to withdraw a conditional permit, the Coast Guard notifies the owner or operator of—

(1) The withdrawal and the reason for the withdrawal;

(2) The procedures for appealing the withdrawal.

(c) After receiving the notice under paragraph (b) of this section, the owner or operator shall ensure that—

(1) The vessel immediately ceases transporting municipal or commercial waste and the marking required by § 151.1024 is removed; and

(2) The conditional permit is returned to the Coast Guard within 5 days after receiving the notice.

§ 151.1021 Appeals.

(a) Any person directly affected by an action taken under this subpart may request reconsideration by the Coast Guard officer responsible for that action.

(b) The person affected who is not satisfied with a ruling after having it reconsidered under paragraph (a) of this section may—

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(1) Appeal that ruling in writing within 30 days after the ruling to the Assistant Commandant for Marine Safety, Security, and Stewardship (CG-5), U.S. Coast Guard Headquarters, 2100 2nd St., SW., Stop 7355, Washington, DC 20593-7355; and

(2) Supply supporting documentation and evidence that the appellant wishes to have considered.

(c) After reviewing the appeal submitted under paragraph (b) of this section, the Assistant Commandant for Marine Safety, Security and Environmental Protection issues a ruling which is final agency action.

(d) If the delay in presenting a written appeal has an adverse impact on the operations of the appellant, the appeal under paragraph (b) of this section—

(1) May be presented orally; and

(2) Must be submitted in writing within five days after the oral presentation—

(i) With the basis for the appeal and a summary of the material presented orally; and

(ii) To the same Coast Guard official who heard the oral presentation.

[CGD 89-014, 54 FR 22548, May 24, 1989, as amended by CGD 96-026, 61 FR 33665, June 28, 1996; CGD 97-023, 62 FR 33363, June 19, 1997; USCG-2002-12471, 67 FR 41332, June 18, 2002; USCG-2008-0179, 73 FR 35014, June 19, 2008; USCG-2010-0351, 75 FR 36284, June 25, 2010]

§ 151.1024 Display of number.

(a) The owner or operator of each vessel under this subpart must ensure that the vessel number stated on the conditional permit issued under § 151.1015 is displayed so that it—

(1) Is clearly legible;

(2) Has a contrasting background;

(3) Is readily visible from either side of the vessel; and

(4) Is in block figures that are at least 18 inches in height.

(b) No person may tamper with or falsify a number required under this section.

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Subpart C—Ballast Water Management for Control of Non-indigenous Species in the Great Lakes and Hudson River

AUTHORITY: 16 U.S.C. 4711; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 91-066, 58 FR 18334, Apr. 8, 1993, unless otherwise noted.

§ 151.1500 Purpose.

The purpose of this subpart is to implement the provisions of the Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990 (16 U.S.C. 4701 *et seq.*).

§ 151.1502 Applicability.

This subpart applies to each vessel that carries ballast water and that after operating on the waters beyond the Exclusive Economic Zone during any part of its voyage enters the Snell Lock at Massena, New York, or navigates north of the George Washington Bridge on the Hudson River, regardless of other port calls in the United States or Canada during that voyage.

[CGD 94-003, 59 FR 67634, Dec. 30, 1994]

§ 151.1504 Definitions.

The following terms are defined as used in this subpart.

Ballast water means any water and suspended matter taken on board a vessel to control or maintain, trim, draught, stability, or stresses of the vessel, regardless of how it is carried.

Ballast tank means any tank or hold on a vessel used for carrying ballast water, whether or not the tank or hold was designed for that purpose.

Captain of the Port (COTP) means the Coast Guard officer designated as COTP of either the Buffalo, NY, Marine Inspection Zone and Captain of the Port Zone or the New York, NY, Captain of the Port Zone described in part 3 of this chapter or an official designated by the COTP.

Commandant means the Commandant of the Coast Guard or an authorized representative.

Exclusive Economic Zone (EEZ) means the area established by Presidential Proclamation Number 5030, dated

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March 10, 1983, (48 FR 10605, 3 CFR, 1983 Comp., p. 22), which extends from the base line of the territorial sea of the United States seaward 200 miles, and the equivalent zone of Canada.

Environmentally sound method means methods, efforts, actions, or programs, either to prevent introductions or to control infestations of aquatic nuisance species, that minimize adverse impacts to the structure and function of an ecosystem, minimize adverse effects on non-target organisms and ecosystems, and that emphasize integrated pest management techniques and non-chemical measures.

Great Lakes means Lake Ontario, Lake Erie, Lake Huron (including Lake Saint Clair), Lake Michigan, Lake Superior, and the connecting channels (Saint Mary's River, Saint Clair River, Detroit River, Niagara River, and Saint Lawrence River to the Canadian border), and includes all other bodies of water within the drainage basin of such lakes and connecting channels.

Port means a terminal or group of terminals or any place or facility that has been designated as a port by the COTP.

Sediments means any matter settled out of ballast water within a vessel.

Voyage means any transit by a vessel destined for the Great Lakes or the Hudson River, north of the George Washington Bridge, from a port or place outside of the EEZ, including intermediate stops at a port or place within the EEZ.

[CGD 91-066, 58 FR 18334, Apr. 8, 1993, as amended by CGD 94-003, 59 FR 67634, Dec. 30, 1994; USCG-1998-3423, 64 FR 26682, May 17, 1999]

§ 151.1506 Restriction of operation.

No vessel subject to the requirements of this subpart may be operated in the Great Lakes or the Hudson River, north of the George Washington Bridge, unless the master of the vessel has certified, in accordance with § 151.1516, that the requirements of this subpart have been met.

[CGD 94-003, 59 FR 67634, Dec. 30, 1994]

§ 151.1508 Revocation of clearance.

A COTP may request the District Director of Customs to withhold or re-

voke the clearance required by 46 U.S.C. app. 91 for a vessel subject to this subpart, the owner or operator of which is not in compliance with the requirements of this subpart.

§ 151.1510 Ballast water management.

(a) The master of each vessel subject to this subpart shall employ one of the following ballast water management practices:

(1) Carry out an exchange of ballast water on the waters beyond the EEZ, from an area more than 200 nautical miles from any shore, and in waters more than 2,000 meters (6,560 feet, 1,093 fathoms) deep, prior to entry into the Snell Lock, at Massena, New York, or prior to navigating on the Hudson River, north of the George Washington Bridge, such that, at the conclusion of the exchange, any tank from which ballast water will be discharged contains water with a minimum salinity level of 30 parts per thousand.

(2) Retain the vessel's ballast water on board the vessel. If this method of ballast water management is employed, the COTP may seal any tank or hold containing ballast water on board the vessel for the duration of the voyage within the waters of the Great Lakes or the Hudson River, north of the George Washington Bridge.

(3) Use an alternative environmentally sound method of ballast water management that has been submitted to, and approved by, the Commandant prior to the vessel's voyage. Requests for approval of alternative ballast water management methods must be submitted to the Commandant (CG-5), 2100 2nd Street, SW., Stop 7355, Washington, DC 20593-7355.

(b) No master of a vessel subject to this subpart shall separately discharge sediment from tanks or holds containing ballast water unless it is disposed of ashore in accordance with local requirements.

(c) Nothing in this subpart authorizes the discharge of oil or noxious liquid substances (NLSs) in a manner prohibited by United States or international laws or regulations. Ballast water carried in any tank containing a residue of oil, NLSs, or any other pollutant must be discharged in accordance with the applicable regulations. Nothing in

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this subpart affects or supersedes any requirement or prohibitions pertaining to the discharge of ballast water into the waters of the United States under the Federal Water Pollution Control Act (33 U.S.C. 1251 *et seq.*).

[CGD 91-066, 58 FR 18334, Apr. 8, 1993, as amended by CGD 94-003, 59 FR 67634, Dec. 30, 1994; USCG-1998-3423, 66 FR 58390, Nov. 21, 2001; USCG-2010-0351, 75 FR 36284, June 25, 2010]

§ 151.1512 Vessel safety.

Nothing in this subpart relieves the master of the responsibility for ensuring the safety and stability of the vessel or the safety of the crew and passengers, or any other responsibility.

§ 151.1514 Ballast water management alternatives under extraordinary conditions.

The master of any vessel subject to this subpart who, due to weather, equipment failure, or other extraordinary conditions, is unable to effect a ballast water exchange before entering the EEZ, must employ another method of ballast water management listed in § 151.1510, or request from the COTP permission to exchange the vessel's ballast water within an area agreed to by the COTP at the time of the request and must discharge the vessel's ballast water within that designated area.

§ 151.1516 Compliance monitoring.

(a) The master of each vessel equipped with ballast tanks shall provide, as detailed in § 151.2040, the following information, in written form, to the COTP:

- (1) The vessel's name, port of registry, and official number or call sign.
- (2) The name of the vessel's owner(s).
- (3) Whether ballast water is being carried.
- (4) The original location and salinity, if known, of ballast water taken on, before an exchange.
- (5) The location, date, and time of any ballast water exchange.
- (6) The salinity of any ballast water to be discharged into the territorial waters of the United States.
- (7) The intended discharge port for ballast water and location for disposal of sediment carried upon entry into the territorial waters of the United States,

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if ballast water or sediment are to be discharged.

(8) The signature of the master attesting to the accuracy of the information provided and certifying compliance with the requirements of this subpart.

(b) The COTP may take samples of ballast water to assess the compliance with, and the effectiveness of, this subpart.

[CGD 91-066, 58 FR 18334, Apr. 8, 1993, as amended by USCG-1998-3423, 66 FR 58391, Nov. 21, 2001; USCG-2002-13147, 69 FR 32869, June 14, 2004]

§ 151.1518 Penalties for failure to conduct ballast water management.

(a) A person who violates this subpart is liable for a civil penalty in an amount not to exceed \$27,500. Each day of a continuing violation constitutes a separate violation. A vessel operated in violation of the regulations is liable in rem for any civil penalty assessed under this subpart for that violation.

(b) A person who knowingly violates the regulations of this subpart is guilty of a class C felony.

[USCG-2002-13147, 69 FR 32869, June 14, 2004]

Subpart D—Ballast Water Management for Control of Non-indigenous Species in Waters of the United States

AUTHORITY: 16 U.S.C. 4711; Department of Homeland Security Delegation No. 0170.1.

SOURCE: USCG-1998-3423, 64 FR 26682, May 17, 1999, unless otherwise noted.

§ 151.2000 What is the purpose of this subpart?

This subpart implements the provisions of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) (16 U.S.C. 4701-4751), as amended by the National Invasive Species Act of 1996 (NISA).

§ 151.2005 To which vessels does this subpart apply?

Unless exempted in § 151.2010 or § 151.2015, this subpart applies to all vessels, U.S. and foreign, equipped with ballast tanks, that operate in the waters of the United States and are

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bound for ports or places in the United States.

[USCG-2002-13147, 69 FR 32869, June 14, 2004]

§ 151.2007 What are the penalties for violations of the mandatory provisions of this subpart?

(a) A person who violates this subpart is liable for a civil penalty not to exceed \$ 27,500. Each day of a continuing violation constitutes a separate violation. A vessel operated in violation of the regulations is liable in rem for any civil penalty assessed under this subpart for that violation.

(b) A person who knowingly violates the regulations of this subpart is guilty of a class C felony.

[USCG-2002-13147, 69 FR 32869, June 14, 2004]

§ 151.2010 Which vessels are exempt from the mandatory requirements?

(a) Two types of vessels are exempt from the requirements in §§ 151.2035, 151.2040, and 151.2045:

(1) A crude oil tanker engaged in the coastwise trade.

(2) A Department of Defense or Coast Guard vessel subject to the requirements of section 1103 of the Act, or any vessel of the Armed Forces, as defined in the Federal Water Pollution Control Act (33 U.S.C. 1322(a)) that is subject to the “Uniform National Discharge Standards for Vessels of the Armed Forces” (33 U.S.C. 1322(n)).

(b) One type of vessel is exempt from the requirements in §§ 151.2040 and 151.2045:

(1) A vessel that operates exclusively within one Captain of the Port (COTP) Zone.

(2) [Reserved]

[USCG-2007-28201, 72 FR 27739, May 17, 2007]

§ 151.2015 Is a vessel in innocent passage exempt from the mandatory requirements?

A foreign vessel merely traversing the territorial sea of the U.S. (*i.e.*, not entering or departing a U.S. port, or not navigating the internal waters of the U.S.) is exempt from the requirements of this subpart.

[USCG-2003-14273, 69 FR 44961, July 28, 2004]

§ 151.2025 What definitions apply to this subpart?

(a) Unless otherwise stated in this section, the definitions in 33 CFR 151.1504, 33 CFR 160.203, and the United Nations Convention on the Law of the Sea apply to this part.

(b) As used in this part—

ANSTF means the Aquatic Nuisance Species Task Force mandated under the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA).

Ballast tank means any tank or hold on a vessel used for carrying ballast water, whether or not the tank or hold was designed for that purpose.

Captain of the Port (COTP) means the Coast Guard officer designated as the COTP, or a person designated by that officer, for the COTP zone covering the U.S. port of destination. These COTP zones are listed in 33 CFR part 3.

Exchange means to replace the water in a ballast tank using one of the following methods:

(1) *Flow through exchange* means to flush out ballast water by pumping in mid-ocean water at the bottom of the tank and continuously overflowing the tank from the top until three full volumes of water has been changed—to minimize the number of original organisms remaining in the tank.

(2) *Empty/refill exchange* means to pump out the ballast water taken on in ports, estuarine, or territorial waters until the tank is empty, then refilling it with mid-ocean water; masters/operators should pump out as close to 100 percent of the ballast water as is safe to do so.

Exclusive Economic Zone (EEZ) means the area established by Presidential Proclamation Number 5030, dated March 10, 1983 (48 FR 10605, 3 CFR, 1983 Comp., p. 22) which extends from the base line of the territorial sea of the United States seaward 200 miles, and the equivalent zone of Canada.

IMO guidelines mean the Guidelines for the Control and Management of Ships’ Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens (IMO Resolution A.868 (20), adopted November 1997).

NANPCA means the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990.

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NBIC means the National Ballast Water Information Clearinghouse operated by the Coast Guard and the Smithsonian Environmental Research Center as mandated under NISA.

NISA means the National Invasive Species Act of 1996, which reauthorized and amended NANPCA.

Port or place of departure means any port or place in which a vessel is anchored or moored.

Port or place of destination means any port or place to which a vessel is bound to anchor or moor.

United States means the States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Virgin Islands, and the Trust Territory of the Pacific Islands.

Voyage means any transit by a vessel destined for any United States port or place.

Waters of the United States means waters subject to the jurisdiction of the United States as defined in 33 CFR § 2.38, including the navigable waters of the United States. For this regulation, the navigable waters include the territorial sea as extended to 12 nautical miles from the baseline, pursuant to Presidential Proclamation No. 5928 of December 27, 1988.

[USCG-1998-3423, 64 FR 26682, May 17, 1999, as amended by USCG-2003-15404, 68 FR 37741, June 25, 2003; USCG-2002-13147, 69 FR 32869, June 14, 2004; USCG-2003-14273, 69 FR 44961, July 28, 2004]

§ 151.2030 Who is responsible for determining when to use the safety exemption?

(a) The master, operator, or person-in-charge of a vessel is responsible for the safety of the vessel, its crew, and its passengers.

(b) The master, operator, or person-in-charge of a vessel is not required to conduct a ballast water management practice (including exchange), if the master decides that the practice would threaten the safety of the vessel, its crew, or its passengers because of adverse weather, vessel design limitations, equipment failure, or any other extraordinary conditions. If the master uses this section, and the—

(1) Vessel is on a voyage to the Great Lakes or Hudson River, the vessel must comply with the requirements of

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§ 151.1514 of subpart C of this part (Ballast water management alternatives under extraordinary conditions); or

(2) Vessel is on a voyage to any port other than the Great Lakes or Hudson River, the vessel shall not be required to perform a ballast water management practice which the master has found to threaten the safety of the vessel, its crew, or its passengers because of adverse weather, vessel design limitations, equipment failure, or any other extraordinary conditions.

(c) Nothing in this subpart relieves the master, operator, or person-in-charge of a vessel, of the responsibility for ensuring the safety and stability of the vessel or the safety of the crew and passengers, or any other responsibility.

§ 151.2035 What are the required ballast water management practices for my vessel?

(a) Masters, owners, operators, or persons-in-charge of all vessels equipped with ballast water tanks that operate in the waters of the U.S. must:

(1) Avoid the discharge or uptake of ballast water in areas within or that may directly affect marine sanctuaries, marine preserves, marine parks, or coral reefs.

(2) Minimize or avoid uptake of ballast water in the following areas and situations:

(i) Areas known to have infestations or populations of harmful organisms and pathogens (e.g., toxic algal blooms).

(ii) Areas near sewage outfalls.

(iii) Areas near dredging operations.

(iv) Areas where tidal flushing is known to be poor or times when a tidal stream is known to be more turbid.

(v) In darkness when bottom-dwelling organisms may rise up in the water column.

(vi) Where propellers may stir up the sediment.

(vii) Areas with pods of whales, convergence zones, and boundaries of major currents.

(3) Clean the ballast tanks regularly to remove sediments. Clean the tanks in mid-ocean or under controlled arrangements in port, or at dry dock. Dispose of your sediments in accordance with local, State, and Federal regulations.

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(4) Discharge only the minimal amount of ballast water essential for vessel operations while in the waters of the United States.

(5) Rinse anchors and anchor chains when you retrieve the anchor to remove organisms and sediments at their place of origin.

(6) Remove fouling organisms from hull, piping, and tanks on a regular basis and dispose of any removed substances in accordance with local, State and Federal regulations.

(7) Maintain a ballast water management plan that has been developed specifically for the vessel that will allow those responsible for the plan's implementation to understand and follow the vessel's ballast water management strategy.

(8) Train the master, operator, person-in-charge, and crew, on the application of ballast water and sediment management and treatment procedures.

(b) In addition to the provisions of paragraph (a) of this section, if the vessel carries ballast water that was taken on in areas less than 200 nautical miles from any shore into the waters of the U.S. after operating beyond the Exclusive Economic Zone, you (the master, operator, or person-in-charge of a vessel) must employ at least one of the following ballast water management practices:

(1) Perform complete ballast water exchange in an area no less than 200 nautical miles from any shore prior to discharging ballast water in U.S. waters;

(2) Retain ballast water onboard the vessel; or

(3) Prior to the vessel entering U.S. waters, use an alternative environmentally sound method of ballast water management that has been approved by the Coast Guard.

[USCG-1998-3423, 64 FR 26682, May 17, 1999, as amended at 66 FR 58391, Nov. 21, 2001; USCG-2003-14273, 69 FR 44961, July 28, 2004; USCG-2002-14273, 69 FR 60309, Oct. 8, 2004]

§ 151.2036 If my voyage does not take me into waters 200 nautical miles or greater from any shore, must I divert to conduct a ballast water exchange?

A vessel will not be required to deviate from its voyage, or delay the voyage, in order to conduct a ballast water exchange.

[USCG-2003-14273, 69 FR 44961, July 28, 2004]

§ 151.2037 If my vessel cannot conduct ballast water management practices because of its voyage and/or safety concerns, will I be prohibited from discharging ballast water?

(a) A vessel that cannot practicably meet the requirements of § 151.2035(b)(1) because its voyage does not take it into waters 200 nautical miles or greater from any shore for a sufficient length of time and elects to retain ballast water on board, or because of the safety concerns contained in § 151.2030, will not be prohibited from the discharge of ballast water in areas other than the Great Lakes and the Hudson River. However, the vessel must discharge only that amount of ballast water operationally necessary to ensure the safety of the vessels for cargo operations and make ballast water records available to the local Captain of the Port upon request.

(b) A vessel that cannot practicably meet the requirements of § 151.2035(b)(3) because its alternative environmentally sound ballast water management method is inoperable must employ one of the other ballast water management practices stated in § 151.2035(b). If the vessel cannot employ other ballast water management practices due to voyage or safety concerns, the vessel will not be prohibited from the discharge of ballast water in areas other than the Great Lakes and the Hudson River. However, the vessel must discharge only that amount of ballast water operationally necessary to ensure the safety of the vessels for cargo operations and make ballast water records available to the local Captain of the Port upon request.

[USCG-2003-14273, 69 FR 44961, July 28, 2004]

§ 151.2040 What are the mandatory ballast water management requirements for vessels equipped with ballast tanks that operate in the waters of the United States and are bound for ports or places in the United States?

(a) A vessel bound for the Great Lakes or Hudson River, which has operated beyond the EEZ (which includes the equivalent zone of Canada) during any part of its voyage regardless of intermediate ports of call within the waters of the United States or Canada, must comply with §§ 151.2041 and 151.2045 of this subpart, as well as with the provisions of subpart C of this part.

(b) A vessel engaged in the foreign export of Alaskan North Slope Crude Oil must comply with §§ 151.2041 and 151.2045 of this subpart, as well as with the provisions of 15 CFR 754.2(j)(1)(iii). Section 15 CFR 754.2(j)(1)(iii) requires a mandatory program of deep water ballast exchange unless doing so would endanger the safety of the vessel or crew.

(c) A vessel not covered by paragraphs (a) or (b) of this section and is bound for ports or places in the United States must comply with §§ 151.2041 and 151.2045 of this subpart.

(d) This subpart does not authorize the discharge of oil or noxious liquid substances (NLS) in a manner prohibited by United States or international laws or regulations. Ballast water carried in any tank containing a residue of oil, NLS, or any other pollutant must be discharged in accordance with applicable regulations.

(e) This subpart does not affect or supercede any requirement or prohibition pertaining to the discharge of ballast water into the waters of the United States under the Federal Water Pollution Control Act (33 U.S.C. 1251 to 1376).

[USCG–2002–13147, 69 FR 32869, June 14, 2004]

§ 151.2041 What are the mandatory ballast water reporting requirements for all vessels equipped with ballast tanks bound for ports or places of the United States?

(a) Ballast water reporting requirements exist for each vessel bound for ports or places of the United States regardless of whether a vessel operated outside of the EEZ (which includes the

equivalent zone of Canada), unless exempted in §§ 151.2010 or 151.2015.

(b) The master, owner, operator, agent, or person-in-charge of a vessel to whom this section applies must provide the information required by § 151.2045 in electronic or written form (OMB form Control No. 1625–0069) to the Commandant, U.S. Coast Guard or the appropriate COTP as follows:

(1) For any vessel bound for the Great Lakes from outside the EEZ (which includes the equivalent zone of Canada).

(i) You must fax the required information at least 24 hours before the vessel arrives in Montreal, Quebec to either the USCG COTP Buffalo, Massena Detachment (315–769–5032), or the St. Lawrence Seaway Development Corporation (315–764–3250); or

(ii) If you are not a U.S. or Canadian Flag vessel, you may complete the ballast water information section of the St. Lawrence Seaway required “Pre-entry Information from Foreign Flagged Vessels Form” and submit it in accordance with the applicable Seaway Notice in lieu of this requirement.

(2) For any vessel bound for the Hudson River north of the George Washington Bridge entering from outside the EEZ (which includes the equivalent zone of Canada). You must fax the information to the COTP New York (718–354–4249) at least 24 hours before the vessel enters New York, New York.

(3) For any vessel not addressed in paragraphs (b)(1) and (b)(2) of this section, which is equipped with ballast water tanks and bound for ports or places in the United States. If your voyage is less than 24 hours, you must report before departing your port or place of departure. If your voyage exceeds 24 hours, you must report at least 24 hours before arrival at your port or place of destination. All required information is to be sent to the National Ballast Information Clearinghouse (NBIC) using only one of the following means:

(i) Internet at: <http://invasions.si.edu/NBIC/bwform.html>;

(ii) E-mail to NBIC@BALLASTREPORT.ORG;

(iii) Fax to 301–261–4319; or

(iv) Mail to U.S. Coast Guard, c/o SERC (Smithsonian Environmental Research Center), P.O. Box 28, Edgewater, MD 21037-0028.

(c) If the information submitted in accordance with this section changes, you must submit an amended form before the vessel departs the waters of the United States.

[USCG-2002-13147, 69 FR 32870, June 14, 2004; 69 FR 40767, July 7, 2004]

§ 151.2043 Equivalent Reporting Methods for vessels other than those entering the Great Lakes or Hudson River after operating outside the EEZ or Canadian equivalent.

(a) For ships required to report under § 151.2041 the Chief, Environmental Standards Division (CG-5224), acting for the Assistant Commandant for Marine Safety, Security, and Stewardship (CG-5) may, upon receipt of a written request, consider and approve alternative methods of reporting if:

(1) Such methods are at least as effective as that required by § 151.2041; and

(2) Compliance with the requirement is economically or physically impractical.

(i) The Chief, Environmental Standards Division (CG-5224) will take approval or disapproval action on the request submitted in accordance with paragraph (a) of this section within 30 days of receipt of the request.

(ii) [Reserved]

[USCG-1998-3423, 66 FR 58391, Nov. 21, 2001, as amended by USCG-2002-12471, 67 FR 41332, June 18, 2002. Redesignated and amended by USCG-2002-13147, 69 FR 32870, June 14, 2004; USCG-2008-0179, 73 FR 35014, June 19, 2008]

§ 151.2045 What are the mandatory recordkeeping requirements for vessels equipped with ballast tanks that are bound for a port or place in the United States?

(a) The master, owner, operator, or person in charge of a vessel bound for a port or place in the United States, unless specifically exempted by §§ 151.2010 or 151.2015 must keep written, records that include the following information (Note: Ballast tank is any tank or hold that carries ballast water regardless of design):

(1) *Vessel information.* Include the—

(i) Name;

(ii) International Maritime Organization (IMO) Number (official number if IMO number not issued);

(iii) Vessel type;

(iv) Owner or operator;

(v) Gross tonnage;

(vi) Call sign; and

(vii) Port of Registry (Flag).

(2) *Voyage information.* Include the date and port of arrival, vessel agent, last port and country of call, and next port and country of call.

(3) *Total ballast water information.* Include the total ballast water capacity, total volume of ballast water on board, total number of ballast water tanks, and total number of ballast water tanks in ballast. Use units of measurements such as metric tons (MT), cubic meters (m3), long tons (LT), and short tons (ST).

(4) *Ballast Water Management.* Include the total number of ballast tanks/holds that are to be discharged into the waters of the United States or to a reception facility. If an alternative ballast water management method is used, please note the number of tanks that were managed using an alternative method, as well as the type of method used. Indicate whether the vessel has a ballast water management plan and IMO guidelines on board, and whether the ballast water management plan is used.

(5) *Information on ballast water tanks that are to be discharged into the waters of the United States or to a reception facility.* Include the following:

(i) The origin of ballast water. This includes date(s), location(s), volume(s) and temperature(s) (If a tank has been exchanged, list the loading port of the ballast water that was discharged during the exchange.).

(ii) The date(s), location(s), volume(s), method, thoroughness (percentage exchanged if exchange conducted), sea height at time of exchange if exchange conducted, of any ballast water exchanged or otherwise managed.

(iii) The expected date, location, volume, and salinity of any ballast water to be discharged into the waters of the United States or a reception facility.

(6) *Discharge of sediment.* If sediment is to be discharged within the jurisdiction of the United States include the

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location of the facility where the disposal will take place.

(7) *Certification of accurate information.* Include the master, owner, operator, person in charge, or responsible officer's printed name, title, and signature attesting to the accuracy of the information provided and certifying compliance with the requirements of this subpart.

(8) *Change to previously submitted information.* Indicate whether the information is a change to information previously submitted for this voyage.

(9) The master, owner, operator, or person in charge of a vessel subject to this section, must retain a signed copy of this information on board the vessel for 2 years.

(10) The information required of this subpart may be used to satisfy the ballast water recordkeeping requirements for vessels subject to §151.2040(a) and (b).

(11) A sample form and the instructions for completing the form are in the appendix to this subpart. If you complete the "Ballast Water Reporting Form" contained in the IMO Guidelines or complete the ballast water information section of the St. Lawrence Seaway required "Pre-entry Information Flagged Vessels Form," then you have met the requirements of this section.

[USCG-1998-3423, 64 FR 26682, May 17, 1999, as amended at 66 FR 58391, Nov. 21, 2001; USCG-2002-13147, 69 FR 32870, June 14, 2004]

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§ 151.2050 What methods are used to monitor compliance with this subpart?

(a) The COTP may take samples of ballast water and sediment, examine documents, and make other appropriate inquiries to assess the compliance of any vessel subject to this subpart.

(b) The master, owner, operator, or person in charge of a vessel subject to this section, shall make available to the COTP the records required by §151.2045 upon request.

(c) The NBIC will compile the data obtained from submitted reports. This data will be used, in conjunction with existing databases on the number of vessel arrivals, to assess vessel reporting rates.

§ 151.2055 Where are the alternate exchange zones located? [Reserved]

§ 151.2060 What must each application for approval of an alternative compliance technology contain? [Reserved]

§ 151.2065 What is the standard of adequate compliance determined by the ANSTF for this subpart? [Reserved]

APPENDIX TO SUBPART D OF PART 151—BALLAST WATER REPORTING FORM AND
INSTRUCTIONS FOR BALLAST WATER REPORTING FORM

INSTRUCTIONS FOR BALLAST WATER REPORTING FORM

(Please write in English and PRINT legibly.)

Is this an Amended Ballast Reporting Form?: Check Yes or No. Amendments should be submitted if there are any differences between actual ballast discharges and discharge information reported in a prior form. Please mark "Yes" if this form amends a previously submitted ballast reporting form.

SECTION 1. VESSEL INFORMATION

Vessel Name: Print the name of the vessel clearly.

IMO Number: Fill in identification number of the vessel used by the International Maritime Organization.

Owner: Write in the name of the registered owner(s) of the vessel. If under charter, enter Operator name.

Type: List specific vessel type. Use the following abbreviations: bulk (bc), ro-ro (rr), container (cs), tanker (ts), passenger (pa), oil/bulk ore (ob), general cargo (gc), reefer (rf). Write out any additional vessel types.

GT: What is the Gross Tonnage of the vessel?

Call Sign: Write in the official call sign.

Flag: Fill in the full name of the country under whose authority the ship is operating. No abbreviations please.

SECTION 2. VOYAGE INFORMATION

Arrival Port: Write in the name of your first port of call after entering the U.S. EEZ or St. Lawrence Seaway. No abbreviations.

Arrival Date: Fill in the arrival date to the above port. Please use European date format (DDMMYY).

Agent: List agent used for current port.

Last Port: Fill in the last port at which the vessel called immediately before entering the U.S. EEZ.

No abbreviations please.

Country of Last Port: Fill in the last country at which the vessel called immediately before entering the U.S. EEZ.

No abbreviations please.

Next Port: Fill in the port at which the vessel will call immediately after departing the current port

("Current Port"="Arrival Port" above). No abbreviations please.

Country of Next Port: Fill in the country of "Next Port" at which the vessel will call immediately after current port. No abbreviations please.

SECTION 3. BALLAST WATER

Total Ballast Water on Board:

Volume: What was the total volume of ballast water on board upon arrival into the waters of U.S. EEZ? Do not count potable water.

Units: Please include volume units (m³, MT, LT, ST).

Number of Tanks in Ballast: Count the number of ballast tanks and holds with ballast as vessel enters waters inside the United States EEZ.

Total Ballast Water Capacity:

Volume: What is the maximum volume of ballast water used when no cargo is on board?

Units: Please include volume units (m³, MT, LT, ST).

Total Number of Tanks on Ship: Count all tanks and holds that can carry ballast water (do not include tanks that carry potable water).

SECTION 4. BALLAST WATER MANAGEMENT

Total No. of tanks to be discharged: Count only tanks and holds with ballast to be discharged into waters inside the United States EEZ or into an approved reception facility. Count all tanks and holds separately (e.g., port and starboard tanks should be counted separately).

Of tanks to be discharged, how many Underwent Exchange: Count all tanks that are to be discharged into waters of the United States or into an approved reception facility.

Of tanks to be discharged, how many Underwent Alternative Management: Count all tanks that are to be discharged into waters of the United States or an approved reception facility.

Please specify alternative method(s) used, if any: Specifically, describe methods used for ballast management.

If no ballast treatment conducted, state reason why not: This applies to all tanks and holds being discharged into waters of the

United States or into an approved reception facility.

Ballast Management Plan on board?: Is there a written document on board, specific to your vessel, describing the procedure for ballast management? This should include safety and exchange procedures (usually provided by vessel's owner or operator). Check Yes or No.

Management Plan implemented?: Do you follow the above management plan? Check Yes or No.

IMO Ballast Water Guidelines on board?: Is there a copy of the International Maritime Organization (IMO) Ballast Water Guidelines on board this vessel (i.e. "Guidelines for the Control and Management of Ship's Ballast Water to Minimize the Transfer Aquatic Organisms and Pathogens", [Res. A.868(20)])? Check Yes or No.

SECTION 5. BALLAST WATER HISTORY

(Record all tanks to be deballasted in port state of arrival: If none, go to #6)

Tanks/Holds: Please list all tanks and holds that you have discharged or plan to discharge into waters of the United States or into an approved reception facility (write out, or use codes listed below table). Follow each tank across the page listing all source(s), exchange events, and/or discharge events separately. List each tank on a separate line. Port and starboard tanks with identical ballast water histories may be included on same line. Please use an additional page if necessary, being careful to include ship name, date, and IMO number at the top of each. For tanks with multiple sources: list 3 largest sources from last 30 days on separate lines. If more than 3 sources, include a 4th line for the respective tank(s) that indicated "Multiple" in port column and list the remaining tank volume not included in the 3 largest sources (i.e., total tank volume minus volume of the 3 largest sources). See example #1 on sample ballast reporting form.

-BW SOURCES

Date: Record date of ballast water uptake. Use European format (DDMMYY).

Port or latitude/longitude: Record location of ballast water uptake, no abbreviations for ports.

Volume: Record total volume of ballast water uptake, with volume units.

Temp: Record water temperature at time of ballast water uptake, in degrees Celsius (include units).

-BW MANAGEMENT PRACTICES-

Date: Date of ballast water management practice. If exchanges occurred over multiple days, list the day when exchanges were completed. Use European format (DDMMYY).

Endpoint or latitude/longitude: Report location of ballast water management practice. If an exchange occurred over an extended distance, list the end point latitude and longitude.

Volume: Report total volume of ballast water moved (i.e., gravitated and pumped into tanks, discharged to reception facility) during management practice, with units.

% Exch.: (Note: for effective flow through exchange, this value should be at least 300%).

$$\% \text{ Exchange} = \frac{\text{Total Volume added by Refill or Flow Through}}{\text{Capacity of Ballast Tank or Hold}} \times (100\%)$$

Method: Indicate management method using code (ER = empty/refill, FT = flow through, ALT = alternative method).

Sea Ht . (m): Estimate the sea height in meters at the time of the ballast water exchange if this method was used. (Note: this is the combined height of the wind-seas and swell, and does not refer to water depth).

-BW DISCHARGES-

Date: Date of ballast water discharge. Use European format (DDMMYY).

Port or latitude/longitude: Report location of ballast water discharge, no abbreviations for ports.

Volume: Report volume of ballast water discharged, with units.

Salinity: Document salinity of ballast water at the time of discharge, with units (i.e., specific gravity (sg) or parts per thousand (ppt)).

SECTION 6. TITLE AND SIGNATURE

Responsible officer's name and title (printed) and signature: Print name and title, include signature.

BALLAST WATER REPORTING FORM

IS THIS AN AMENDED BALLAST REPORTING FORM? YES ☐ NO ☐

1. VESSEL INFORMATION

Vessel Name:	Arrival Port:	Specify Units Below (m³, MT, LT, ST) Total Ballast Water on Board: Total Ballast Water Capacity:		
IMO Number:	Arrival Date:			
Owner:	Agent:			
Type:	Last Port:			
GT:	Country of Last Port:			
Call Sign:	Country of Next Port:			
Flag:				
		Volume	Units	No. of Tanks in Ballast
		Volume	Units	Total No. of Tanks on Ship

4. BALLAST WATER MANAGEMENT

4. BALLAST WATER MANAGEMENT

Of tanks to be discharged, how many: Total No. Ballast Water Tanks to be discharged:

Underwent Exchange: Underwent Alternative Management:

Underwent Alternative Management:

Of tanks to be discharged, how many:

Please specify alternative method(s) used, if any:

If no ballast treatment conducted, state reason why not:

Ballast management plan on board?

Management plan implemented? YES ☐ NO ☐

IMO ballast water guidelines on board [res. A.868(20)]? YES ☐ NO ☐

5. BALLAST WATER HISTORY: Record all tanks to be deballasted in port state of arrival; **IF NONE, GO TO #6** (Use additional sheets as needed)

[illegible]

Ballast Water Tank Codes: Forepeak = FP, Aftpeak = AP, Double Bottom = DB, Wing = WT, Topside = TS, Cargo Hold = CH, Other = O

6. RESPONSIBLE OFFICER'S NAME AND TITLE, PRINTED AND SIGNATURE:

§ 151.3000

33 CFR Ch. I (7–1–11 Edition)

Vessels equipped with ballast water tanks bound for all ports or places within the waters of the United States after operating outside the EEZ (which includes the equivalent zone of Canada).	
Bound for	You must submit your report as detailed below.
The Great Lakes	Fax the information at least 24 hours before the vessel arrives in Montreal, Quebec, to the USCG COTP Buffalo, Massena Detachment (315–769–5032) or to the Saint Lawrence Seaway Development Corporation (315–764–3250). In lieu of faxing, vessels that are not U.S. or Canadian flagged may complete the ballast water information section of the St. Lawrence Seaway “Pre-entry Information from Foreign Flagged Vessel Form”.
Hudson River north of the George Washington Bridge.	Fax the information to the COTP New York at (718–354–4249) at least 24 hours before the vessel arrives at New York, New York. *NOTE: Vessels entering COTP New York Zone which are not bound up the Hudson River north of George Washington Bridge should submit the form in accordance with the instructions in the following block.
All other U.S. Ports	Report before departing the port or place of departure if voyage is less than 24 hours, or at least 24 hours before arrival at the port or place of destination if the voyage exceeds 24 hours; and submit the required information to the National Ballast Information Clearinghouse (NBIC) by one of the following means: Via the Internet at http://invasions.si.edu/NBIC/bwform.html ; E-mail to NBIC@BALLASTREPORT.ORG ; Fax to 301–261–4319; or Mail the information to U.S. Coast Guard, c/o SERC. P.O. Box 28, Edgewater, MD 21037–0028.
Vessels that have not operated outside the EEZ, which are equipped with ballast water tanks and are bound for all ports or places within the waters of the United States.	
Bound for	You must submit your report as detailed below:
All U.S. ports including the Great Lakes and Hudson River North of George Washington Bridge.	Report before departing the port or place of departure if voyage is less than 24 hours, or at least 24 hours before arrival at the port or place of destination if the voyage exceeds 24 hours; and submit the required information to the National Ballast Information Clearinghouse (NBIC) by one of the following means: Via the Internet at http://invasions.si.edu/NBIC/bwform.html ; E-mail to NBIC@BALLASTREPORT.ORG ; Fax to 301–261–4319; or Mail to U.S. Coast Guard, c/o SERC, P.O. Box 28, Edgewater, MD 21037–0028.

If any information changes, send an amended form before the vessel departs the waters of the United States.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The Coast Guard estimates that the average burden for this report is 35 minutes. You may submit any comments concerning the accuracy of this burden estimate or any suggestions for reducing the burden to: Commandant (CG–5224), U.S. Coast Guard, 2100 2nd St., SW. Stop 7126, Washington, DC 20593–7126, or Office of Management and Budget, Paperwork Reduction Project (1625–0069), Washington, DC 20503.

[USCG–1998–3423, 64 FR 26682, May 17, 1999, as amended at 66 FR 58391, Nov. 21, 2001; USCG–2002–13147, 69 FR 32870, June 14, 2004; USCG–2005–21531, 70 FR 36349, June 23, 2005; USCG–2008–0179, 73 FR 35014, June 19, 2008; USCG–2010–0351, 75 FR 36284, June 25, 2010; USCG–2011–0257, 76 FR 31837, June 2, 2011]

Subpart E—Definition of Marine Debris for the Purposes of the Marine Debris Research, Prevention, and Reduction Act

AUTHORITY: 33 U.S.C. 1951–1958 (2006); 33 CFR 1.05–1; Department of Homeland Security Delegation No. 0170.1.

§ 151.3000 Definition of marine debris for the purposes of the Marine Debris Research, Prevention, and Reduction Act.

(a) *Marine debris.* For the purposes of the Marine Debris Research, Prevention, and Reduction Act (33 U.S.C. 1951–

1958 (2006)) only, marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes.

(b) NOAA and the Coast Guard have jointly promulgated the definition of marine debris in this part. NOAA’s regulation may be found in 15 CFR part 909.

[74 FR 45560, Sept. 3, 2009]

附錄四

澳洲壓艙水處理要求



Australian Government

Department of Agriculture, Fisheries and Forestry
Biosecurity

National Seaports Program

Australian Ballast Water Management Requirements

Version 5

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Introduction

On 1 July 2001, Australia introduced mandatory ballast water management requirements (the requirements) to reduce the risk of introducing harmful aquatic organisms into Australia's marine environment through ballast water from international vessels.

These requirements are enforceable under the *Quarantine Act 1908*.

Background

The Australian Quarantine and Inspection Service (AQIS) is the lead agency of the Australian Government for the regulation of ballast water taken up by international vessels. AQIS is responsible for ensuring that foreign ballast water intended for discharge inside Australia's territorial sea (the area within 12 nautical miles of the Australian coastal baseline) has been managed in accordance with Australia's requirements.

Ballast water that has been exchanged at sea by an approved method is deemed to be acceptable for discharge in Australian ports / waters.

Ballast water reporting and management verification form an integral part of the requirements.

The requirements are consistent with the International Maritime Organisation (IMO) Ballast Water Convention that aims to minimise the translocation of harmful aquatic species in ships' ballast water and ballast tank sediments.

There are some practical refinements in the Australian requirements that are not identified in the IMO guidelines. Mariners are advised to take notice of these refinements, which are under the heading 'Practical Considerations'.

During ballast water exchanges, the safety of a vessel and its' crew are of paramount importance. Mariners undertaking ballast water management to comply with Australian requirements must pay primary attention to the safety of the vessel and crew at all times.

This particularly applies to vessels using the Sequential Exchange (Empty / Refill) method. Vessel stability, stresses and sloshing at every stage of a planned operation including the 'half full tank' situation must be pre-calculated before execution of the planned operation.

Mandatory Ballast Water Management Requirements

The discharge of high-risk ballast water in Australian ports or waters is prohibited.

All internationally plying vessels intending to discharge ballast water anywhere inside the Australian territorial sea are required to manage their ballast water in accordance with Australia's mandatory ballast water management requirements.

High Risk Ballast Water

Australian Government Requirements

AQIS deems all salt water from ports and coastal waters outside Australia's territorial sea to be a 'high-risk' and capable of introducing exotic marine pests into Australia.

The discharge of high-risk ballast water from ships is prohibited anywhere inside Australia's territorial sea.

Ballast water of the following types is deemed by AQIS to be 'low-risk':

-
- Fresh potable water sourced from a municipal water supply, with supporting documentation - Relative Density 1.002 or less at 15oC and 1000 hPa atmospheric pressure
 - Ballast water that has been exchanged at an approved location (mid-ocean) by an approved method
 - Ballast water of which at least 95 per cent was taken up in mid-ocean
 - Ballast water of which at least 95 per cent was taken up inside Australia's territorial sea.

Australian State/Territory Government Requirements

AQIS does not regulate the management of ballast water taken up within Australia's territorial sea and domestic ports. This is managed by the State or Territory Government agencies responsible for the port location.

Victoria, one of seven Australian states / territories, has additional requirements for the management of Australian sourced domestic ballast water which are enforced by the Victorian State Government Environment Protection Authority (EPA) under the *Environment Protection Act 1970*.

Victoria's requirements regulate the management of ballast water taken up within Australia's territorial sea and within domestic ports. The Victorian EPA requires all vessels intending to visit a Victorian port to submit a ballast water report form and log detailing the origin of all ballast water on board. No domestic ballast water discharge is permitted in Victorian waters unless approval has been granted by the EPA in writing.

If domestic ballast water is intended to be discharged within Victorian waters (12nm off the coast) and ports, it must be managed in accordance with the Victorian requirements which can be viewed and downloaded from the Victorian EPA website [Victorian EPA Ballast Water](#).

The Victorian EPA maintains a 24 hour helpline for ballast water enquiries and can be contacted by phone on +61 3 9695 2547.

However, AQIS retains the responsibility for the regulation of foreign sourced ballast water in Victorian ports.

For every vessel visiting Australia, it is the Master's responsibility to ascertain what additional State / Territory Government ballast water management requirements, over and above the AQIS requirements must be met for each Australian port on their vessel's itinerary.

Ballast Water Management Options

The IMO Ballast Water Convention requires all vessels to have onboard a 'Ballast Water Management Plan' specifically for that vessel. The vessels' 'Ballast Water Management Plan' must provide detailed instructions for the ships' crew to manage ballast water safely with due regard to weather, vessel stresses and vessel stability and sloshing*. The management of all ballast water must be undertaken in accordance with that plan. The Convention also requires vessels to maintain a 'Ballast Water Record Book' to record the management of all ballast water taken up and discharged by the vessel.

Mariners may use any of the following ballast water management options which have been approved by AQIS.

1. Non-discharge of 'high-risk' ballast water in Australian ports or waters

Vessels that do not intend to discharge any ballast water in Australian waters are not legally required to carry out any management of foreign ballast water. The carriage of high-risk ballast water into the territorial sea is strongly discouraged by AQIS.

Mariners are cautioned that AQIS will only grant permission to discharge high-risk ballast inside Australian waters where there is a clear and immediate safety risk to the vessel and crew, and it is not possible for the vessel to be safely diverted beyond Australia's territorial sea to conduct a ballast water exchange. AQIS will assess such circumstances on a case by case basis.

Vessel Masters are advised to manage all ballast water on board a vessel as if it will have to be discharged in Australian waters. In the event of unforeseen circumstances, whereby it becomes necessary to discharge some ballast water, Masters must obtain written permission from AQIS prior to discharging any ballast water. Permission may be granted, provided the ballast water in question has been properly managed prior to arrival in Australian waters.

Vessels that repeatedly fail to manage all ballast water prior to entering the territorial sea may be required, at their own expense, to employ independent marine surveyors on arrival and departure, from every Australian port of call to formally certify that no high-risk ballast water has been discharged during the vessel's visit to Australia.

2. Tank-to-tank transfers

While the carriage of high risk ballast water into the Australian territorial sea is legal, AQIS strongly discourages vessel Masters from doing so. It is also permissible to move high-risk ballast water around between tanks within a vessel inside the territorial sea.

Masters of vessels who undertake tank to tank transfers of ballast water must be vigilant to ensure that the risk of unauthorised ballast discharging during the transfer operation is assessed and managed appropriately. Severe penalties apply under s78 of the *Quarantine Act 1908* for the unauthorised discharge of ballast water in Australian waters. Additional penalties may also apply under State Government EPA legislation.

Car Carriers

Australia recognises that purpose built car carriers and other specialist vessels may have difficulty in conducting exchanges of all ballast water due to stability / stress considerations. In recognition that car carriers would not usually need to discharge ballast water in Australian ports / waters, AQIS recommends that this type of vessel exchanges ballast water in the following types of tank.

- Tanks that need to be discharged inside Australia's territorial sea
- Tanks that may need to be transferred within the vessel to compensate for changes to trim or list caused by cargo operations. Both source and target tanks intended to be used for transfers must contain only low risk ballast water so that in the event of accidental overflows, only low-risk ballast water will escape into the Australian marine environment.

3. Full Ballast Water Exchange at Sea

- Sequential exchange (empty/refill) method
- Flow-through exchange method
- Dilution exchange method.

Each of the above methods have been tested and results demonstrate that if carried out correctly, are capable of achieving the necessary 95% (or better) volumetric exchange of high-risk ballast water. Ballast water exchanges must be conducted outside the Australian territorial sea. It is also recommended that ballast exchanges be conducted as far away as possible from any land mass and in water at least 200m deep.

Sequential Exchange (empty / refill) Method

This method involves emptying tanks (one or two or a few at a time) of high-risk ballast water at sea before refilling them with clean water from the deep ocean. It is important to ensure that the ballast mix achieved by this method contains no more than 5% of high-risk ballast water.

Not all ships are able to empty ballast tanks at sea due to considerations of stability, stress and sloshing¹. Masters should verify that their ships' design parameters for stress, stability and sloshing will not be compromised at any stage of a planned sequential exchange operation.

The reduction in positive stability caused by free surface effect in slack tanks during sequential exchanges must be taken into account by mariners using this method.

Flow-through Exchange Method

At least 300% of a tank's maximum capacity² of clean water from the deep ocean must be pumped into each tank to achieve an acceptable 95% volumetric exchange.

Even when, at the start of a flow through operation, a tank is only partially filled with high-risk ballast water, at least 300% of the tank's maximum capacity* must still be pumped into the tank to comply with Australian requirements. The 300% capacity is measured from when water begins to flow into a tank. In the case of a tank that is not completely full at the commencement of a flow through operation, 300% of the tank's full capacity still starts to be measured from when pumping starts, not from when the tank starts to overflow.

- ¹ ***Sloshing** – the official term for the movement of water in a slack tank. Such movement can be so violent as to cause damage to structural steelwork inside a vessels' tank.
- ² ***Maximum Capacity** – the volume contained by a tank when it is completely full. The IMO Convention refers to 'tank volume' and states that three times a tank's 'volume' must be flushed through. This has led to ambiguity and some vessels have only pumped in three times the 'contents' of a tank which is **not acceptable**.

Dilution Exchange Method

Some vessels, mainly tankers are fitted with extra piping / pumping arrangements. On some of these vessels, ballast may be pumped in through one side of a tank and out through the other side simultaneously (pumping in / pumping out, as opposed to pumping in / simply overflowing out).

This type of flushing using two pumps is acceptable. As for 'flow-through', at least 300% of each tank's maximum capacity must be flushed through for an acceptable exchange.

AQIS will verify that ballast exchanges have been carried out correctly in accordance with the law. The verification process involves an examination of real-time records about ballast exchange operations, which must be kept by the vessel.

Practical Considerations

Masters must pay attention to the following when conducting Sequential Exchanges

Soundings of tanks and corresponding residual volumes must be recorded at the end of the 'emptying phase' so that the make-up of the ballast mixture to be discharged in Australian waters can be verified by AQIS on arrival at an Australian port. The acceptable criterion for ballast water discharge is at least 95% managed water to a maximum of 5% unmanaged water in any mixture to be discharged.

Masters must pay attention to the following when conducting Flow-through Exchanges

Tanks may be flushed one at a time or in similar pairs. For example: Double Bottom Tanks 1 Port and Starboard may be pumped simultaneously using a single pressure source.

It is not acceptable to flush dissimilar pairs of tanks (e.g. DBT1 P and DBT 2S) together (see examples below).

The reason for this is that dissimilar tanks being flushed together using a single pressure source receive unequal quantities of water from the pump. Under these circumstances it is difficult to determine the volume of water supplied to each tank.

Flushing dissimilar tanks together does not comply with Australian requirements

Mariners should note that the use of two or more pumps simultaneously into common lines still constitutes a single pressure source!

Estimating the quantity of water flushed through each tank involves estimating the delivery rate of ballast pumps and timing the hours of running of those pumps. It should be noted that pumps do not deliver their rated capacity.

The actual delivery rate of a ship's ballast pump depends on the following factors:

- Wear and tear on pumps / pipes etc.
- Depth underwater of sea inlet (ship's draught)
- Horizontal and vertical distance of each tank from the pump (friction / gravity)
- Vessel trim (trim by stern = pump uphill = gravity to overcome)
- Variations in ballast main diameter.

To ensure that sufficient water has been flushed through a tank to satisfy Australian requirements, mariners must test and record their ballast pumps' delivery rates as follows:

The Fore Peak Tank (FPT) is the most distant tank from the ballast pumps on most vessels. Most FPTs have a portion above the waterline. Most ballast mains (pipes) incorporate a series of reductions in diameter and changes in direction between the pump and the FPT.

The combination of all of these factors leads to a particular pump on a particular vessel delivering less water per hour to the FPT than it would to any other tank on that vessel.

It is therefore recommended that mariners test their ballast pumps by filling the

forepeak from empty (as proven by a manual sounding) until it overflows, and timing the operation.

If more than one ballast pump is fitted, each pump should be tested separately. If two pumps are intended to be used together in flow through operations, a separate test using both pumps together should be conducted. The quantity delivered by two pumps operating together into a common line would usually be less than the sum of each pump's individual delivery rate. Since it would be unusual to use two pumps to fill up a FPT, the test of combined tanks would be acceptable if it is carried out on two other forward tanks, ideally above the waterline eg TSTs 1P and S.

Mariners are advised that if no acceptable pump testing has been documented, AQIS may deem a pump's delivery rate to be the original rated capacity minus 1% for every year of a ship's age.

A template for documenting ballast pump tests is available at Attachment 1.

Safety Considerations

Where full ballast water exchange has not been undertaken due to safety reasons (weather, sea conditions or operational impracticability), the Master should report this to AQIS as soon as possible prior to entering Australia's territorial sea. Under no circumstances should this information be sent to AQIS any later than the submission of the Quarantine Pre-Arrival Report (QPAR). The QPAR must be forwarded to AQIS between 12 and 96 hours prior to arrival from an overseas place at an Australian port. The QPAR is usually sent to AQIS via ships' local Australian agents.

Alternative Ballast Water Management Methods

Vessels wishing to use alternative methods for ballast water management that are not specified above should apply in writing to AQIS before the event. Vessels that cannot comply with the requirements due to design considerations should contact AQIS in writing before arrival in the territorial sea to seek further advice from the National Seaports Program Canberra.

Vessels arriving in Australian ports without having managed their ballast water by an approved method will be refused permission to discharge their ballast water in Australian ports or waters.

Ballast Water Reporting

All vessels arriving in Australia from international waters are required to submit a Quarantine Pre-Arrival Report (QPAR) to AQIS between 12-96 hours prior to entering Australian waters. The QPAR may be submitted electronically which is AQIS' preferred method of submission (eQPAR), or by email or fax (QPAR).

Masters / agents who do not submit the QPAR to AQIS will not be given formal quarantine clearance to enter port. This will cause delays to the vessel and additional AQIS charges will be incurred by the vessel.

The QPAR also requires Masters to declare whether or not they have complied with Australia's mandatory ballast water management requirements. All vessels require AQIS permission to discharge ballast water in Australian waters.

Masters must also complete the 'AQIS Ballast Water Management Summary' (AQIS form 26) with details about ballast water uptake ports, ocean exchanges and intended Australian discharge locations.

The AQIS Ballast Water Management Summary (ABWMS) is intended to summarise the real-time records of ballast water management conducted at sea. This form is required to be sent to AQIS pre-arrival with the QPAR if the vessel plans to discharge ballast water. Although not mandatory, AQIS prefers that ABWMS forms are also submitted with the QPAR to [the Maritime National Coordination Centre](#) (MNCC).

If details / intentions about the discharge of foreign sourced ballast water (as originally submitted to AQIS) changes for any reason, a revised ABWMS must be sent to the MNCC for verification prior to the vessel discharging any ballast water.

Once the ABWMS is received the [MNCC](#) will verify the ballast management of the vessel, and if compliant written permission to discharge will be granted by AQIS.

If the vessel Master / agent does not submit a completed ABWMS with the QPAR prior to arrival the vessel will not be permitted to discharge ballast in Australian waters until a physical inspection has occurred.

Completed originals of these forms including any comments by AQIS on the back of the form, must be retained on the vessel for a period of two years and provided to AQIS on request.

Verification Inspections

AQIS Officers will conduct ballast water verification inspections onboard vessels to ensure compliance with Australia's ballast water management requirements.

AQIS Officers will use the QPAR, the ABWMS and the vessel's deck, engineering and ballast water management logs to verify that the information supplied to AQIS is correct.

The verification inspection will take around 30 minutes to complete and in most cases will be conducted at the same time as a routine vessel inspection.

Tank stripping

Sediments from ballast tanks must not be discharged in Australian waters.

Ballast tank stripping using pumps that are permanent fixtures on a vessel is acceptable. The use of portable pumps to strip out ballast tanks is not permitted.

If ballast tank sediment is manually removed from tanks, the sedimentary material must not be dumped in Australian ports / waters. Sedimentary material from ballast tanks may be landed as quarantine waste in some Australian ports, or it can be dumped back into the sea in deep water, which is at least 200m deep and outside the 12nm limit but preferably beyond 200nm from land.

Ballast Water Exchange Calculations

Acceptable ballast water exchanges must achieve at least a 95% dilution of high-risk ballast water with clean seawater from the deep ocean.

1. Sequential Exchange (Empty / Refill) Operations

At least 95% of the water in a given tank must have been drawn from the deep ocean on arrival in Australia. Residual high-risk ballast that remains in a tank at the end of the 'emptying phase' of an exchange operation must be less than 5% of the total volume contained in the tank on arrival in Australian waters.

Masters must record a sounding and corresponding volume of residual water at the end of the 'emptying phase' of sequential exchange operations. Masters must also record times, dates, locations and methods used (gravity / pumps / combination of gravity and pumps) to empty and refill all tanks managed by this method.

2. Flow-through and Dilution Operations

300% of the full capacity of every tank exchanged by either of these methods must be pumped into the relevant tank using clean seawater from the deep ocean.

Critical to the efficiency of this method are the following:

- Only one similar pair of tanks may be flushed through simultaneously at any time
- Pumping hours to achieve the required 300% exchange should be calculated using the measured pumping rate of ballast pumps (as per the pump test described above) rather than the 'rated' pumping capacity of the new pumps as stated in manufacturers specifications. A pump's / piping system's efficiency usually decreases with age.

If a tank initially contains more than 5% of its full capacity of high-risk ballast water, 300% of the tanks full capacity must be pumped in to achieve the required 95% volumetric exchange.

Mariners are advised that 300% flushing is the minimum pumping requirement for ships using the flow-through or dilution methods. It is advisable to exceed the minimum requirement of 300% to be sure of achieving compliance with the requirements.

Further Advice & Information

Further information can be obtained by contacting AQIS.

Log on to our web site

Home page address: www.aqis.gov.au/shipping

Contact us

For further information on the process to manage ballast water in Australian waters please contact [your local AQIS office](#).

Disclaimer

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Detailed Version History

The version information shown on the cover of this document relates to this version only. Previous document versions are outlined below:

ELECTRONIC LOCATION: INSERT FILE PATH TO ELECTRONIC LOCATION

VERSION	DATE	REASON FOR ISSUE	AUTHOR
5.3	1 August 2011	Review and update of document to reflect new BW management requirements.	Seaports Program
5.4	29 November 2011	Update 'Contact us' details	Seaports Program (Mila Jukic)

Attachment 1: Ballast Water Pump Test

Vessel Name:.....

Lloyds Number: Port of Registry: Date Launched:

ID of Ballast Pump(s) tested:.....

Original Rated Capacity of Pump(s) tested:

Details of Tank(s) used in test:

(Fore peak tank preferred for single pump tests, forward upper wing tanks preferred for testing combined pumps)

a) Maximum Tank Capacity (m3):

b) Initial contents (m3):

c) Time start pumping:

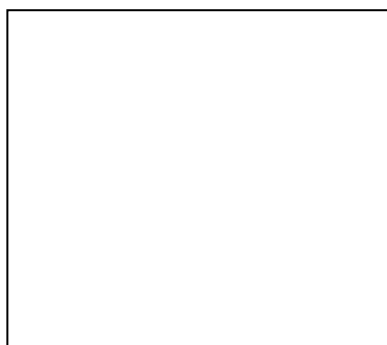
d) Time tank overflowed: e) Hours Pumping (d – c): f) Volume pumped (a – b):

g) Pump's delivery rate: $(f \div e)$ per Hour

Master's Signature:

Chief Officer's Signature:

Ship's Stamp:



NOTE: Pumps must be tested at least every twelve months

Attachment 2: Examples of Ballast Water Exchange Calculations

Sequential Exchange

Calculation Example 1

A vessel has a Fore Peak ballast tank with full capacity 2000 m³. The vessel's Master wishes to arrive in an Australian port with the Fore Peak only half full (1000 m³). Regardless of how much 'high-risk' water is in the tank before the exchange, the water in the tank must be exchanged so that after refilling, not more than 5% of the resulting mixture in the tank is 'high-risk' water. After pumping out (when suction on the pump is lost), a sounding of the tank is taken and this shows that only 5 m³ remains.

In this situation, provided at least 95 m³ of deep ocean water is added to the FPT, the resultant mixture will be acceptable for discharge in Australian waters. The Master may fill the tank only to his desired volume of 1000 m³ and the ballast water in the tank requires no further management.

Calculation Example 2

A vessel has a centre line, double bottom tank beneath No.1 Cargo Hold (DB1C) with full capacity 6000 m³. The vessel's Master wishes to arrive in an Australian port with DB1C only filled to one third of its capacity (2000 m³).

After pumping out (when suction on the pump is lost), a sounding of the tank is taken and this shows that 250 m³ remains in the tank.

To achieve a 95% volumetric exchange in this tank, the Master has two options:

- i) Fill the tank up to 5000 m³ and then pump out water until his desired level of 2000 m³ is reached.
- ii) Strip the tank until only 100 m³ remains before refilling the tank to 2000 m³.

Flow-through / Dilution Calculations

A cape sized vessel (100,000 DWT) with nine cargo holds, has the following dedicated ballast tanks:

Tank / Hold	Capacity	Contents
Fore Peak	2000 m ³	1000 m ³
WBT 1P	3000 m ³	Full
WBT 1S	3000 m ³	Full
WBT 2P	4200 m ³	Full
WBT 2S	4200 m ³	Full
WBT 3P	3000 m ³	1200 m ³
WBT 3S	3000 m ³	Full
WBT 4P	4200 m ³	Full
WBT 4S	4200 m ³	Full
After Peak	1200 m ³	800 m ³

The ten-year-old vessel is fitted with two main ballast pumps each with a rated capacity of 2500 m³/hr when the vessel was new. From pump tests, the Chief Officer is aware that each of these pumps now delivers about 2000 m³/hr when used by itself or a total of 3700 m³/hr when the pumps are used together.

Calculation Example 1

Fore peak tank (capacity 2000 m³) initially contains 1000 m³ of high-risk ballast water. Master wishes to exchange the tank's contents in mid-ocean using the flow through method.

300% of the tank's full capacity (i.e. $3 \times 2000 \text{ m}^3$) = 6000 m³.

Using only one pump, the Master must pump clean seawater into the tank for 3 hours. Using two pumps together, the required pumping time would be $6000 \div 3700 = 1.62\text{hrs}$ (1h 37mins)

1 Pump delivers 2000 m³/hr = 6000 m³ in 3 hrs = 300% of tank's FULL capacity.

2 Pumps deliver 3700 m³/hr = 6000 m³ in 1.62 hrs = 300% of tank's FULL capacity.

Calculation Example 2

Master wishes to use flow through method on WBT 1P, WBT 1S, WBT 2P and WBT 2S.

a) Acceptable

Using both ballast pumps together the master simultaneously flushes WBT 1P and 1S simultaneously for at least 4.86 hours (combined capacity of 1P&S = 6000 m³, 4.86 hours pumping @ 3700 m³/hr = 18000 m³ = 300% of each tank's full capacity).

After the ballast exchange in WBT 1P and S, those tanks are closed off and a new exchange begins on WBT 2P and S simultaneously. No.2s, with combined capacity of 8,400 m³ require a further 6.81 hrs flushing with both pumps simultaneously

b) Unacceptable

Master uses both pumps to flush WBT 1P&S and WBT 2P&S (combined capacity = 14,400) simultaneously for 11.68 hrs. The pumps deliver the same quantity of water in total but it is impossible to say how much water each tank received if this procedure is used. It is clear though that No.1s, being further from the pumps, will receive less than No.2s.

附錄五

「壓艙水污染問題管理法制化座談會」

會議議程及會議紀錄

一、會議議程

日期：2013年8月30日(星期五)

地點：交通部運輸研究所港灣技術研究中心

時間	議程	主講人	主持人
14:00-14:10	主席致詞	邱永芳主任	
14:10-15:20	議題一：管理事項 議題二：管理流程	劉大綱 博士 國立成功大學海洋 科技與事務研究所	邱永芳主任
15:20-15:30	休息		
15:30-16:50	議題三：權責機關 議題四：懲處手段 議題五：立法方式	王毓正 博士 國立成功大學法律 學系	邱永芳主任
16:50-17:00	討論		

二、會議記錄

日期：2013 年 8 月 30 日(星期五)

地點：交通部運輸研究所港灣技術研究中心

主持人:港灣技術研究中心 邱永芳 主任

與會人員:交通部航政司、環保署、交通部航港局、海巡署、台灣港務股份有限公司、中國驗船中心、長榮海運、陽明海運、萬海航運

議題一:管理事項:

主持人:

壓艙水基本影響性已有基礎研究，目前開始要進入法制化之階段，由於三通之後兩岸船隻往來頻繁，也造成了台灣海域污染的可能性增加，故在研究進入期中階段時，邀請各界人士進行討論廣徵意見，以

找出壓艙水污染的解決方式 以下就請二位主講人發言，謝謝。

主講人:劉教授

那在此就先對第一個題綱來做說明，未來管制上是否要對壓艙水管制上採行與國際公約相同之手段抑或是依台灣現況而做調整訂定法規?此處先對國際壓艙水公約規範先做介紹，目前國際公約規定壓艙水是必須在指定交換區內交換才能進港，未來則會更進一步的要求壓艙水透過岸上或船上處理設施以達到一定的水質標準;此外，相關壓艙水的資料也必須在船隻進港前先送至該國的相關管制部門，而港口國官員對於危險性較高的船隻也可以登船針對相關文件或對壓艙水取樣後來進行查驗，就目前的這些管理事項而言，想請問大家對於這些未來可能用在台灣的相關規範有無意見或是有施行上窒礙難行之處?

交通部航政司:

執行面上會牽涉到 PSC 是否能夠確實執行，在此也感謝劉教授對規範做了相關整理，分為一般檢查與詳細檢查，未來如採行的話我國可能也會遵循相關的分類，另外想請問國外標準的訂定是由何單位訂定?是由各國環保署或其他機關訂定嗎?想請各位說明以利我們執行上作為參考?

環保署:

環保署在壓艙水上從去年開始已經有討論關於此的相關議題，關於標準的訂定可能回歸到 IMO 的方向以便和國際接軌。

交通部航政司:

跟隨國際標準是否為環保署立場?如果是的話我們自然是尊重沒有意見，另外也要考慮到國情因素，若我國訂定的標準要比國際標準低當然是不行，而要比國際標準高的話也還有商榷之餘地，要避免其他船隻因較高標準而影響其進入台灣的意願。

主持人:

在這些管理項目上會有窒礙難行的狀況嗎? 請各位踴躍發言。

主講人:

這裡想要補充說明一下，這裡的一般檢查指的是文件檢查，執行檢查之對象是港口國官員，而根據了解目前各港口國官員的人數不足，如果要增加鑑驗項目是否會超出人力負荷?而詳細檢查則會牽涉到採水，需要有專業的人員和符合特定規格的器材，而根據目前台灣其他環境檢查而言，這些檢驗流程與器材認證都是由環保署來訂定及認證的，故即便採用公約標準但檢驗流程該如何訂定與釐清?環保署與交通部要如何合作?都是需要解決的問題。

主持人:

目前似乎分成兩個問題，一個是一般檢查是由航管單位來查驗，而詳細檢查部分則是由環保署要來看看是否有必要增添管理的項目等，而管理項目上那些部分由那些部會負責，我們會在之後權責單位的部分再詳細討論。

主持人:

關於目前的研究室從壓艙水的性質與影響開始，目前也已經把台灣附近的海域與港灣貨運量做了相關調查，已從無到有對台灣海域與港灣壓艙水排放的狀況已有基礎了解，前前後後持續了4年左右。

交通部航港局:

在此先跟諸位報告一下，現階段IMO公約仍尚未生效，我們部會估計約104年才會正式實行，故目前的討論是防患於未來，而就目前討論的事項而言，海污法寫得很清楚，像在之前油污的部分環保署也帶大家出國去研討取經，那現在壓艙水又是一個新東西，不曉得這裡環保署是否可以考量一下，訂出一個適用的標準以利執行，而目前我們是只針對靜態上做檢查，而檢查方面應先做動態檢查(船隻在離岸一定範圍外先做交換)再做靜態檢查(懷疑有問題後)，如果環保署不能訂出一個標準出來，後端將無法執行相關的檢驗。

台灣港務股份有限公司:

港務公司的腳色談這個問題似乎較為尷尬，我們比較注意到實際上操作之問題，第一個是關於鄰近區域的港口，如果我方的規定與他國比較相對嚴苛的話，是否會對於船隻停留時間等造成影響，而使我國港口之競爭力降低？

第二個是關於標準上必須要有依據，我們儘管是站在第一線，但卻因為缺乏公權力而無法對船隻強制處罰，只能對上級或其他單位進行通報，另外登船查驗的部分也同樣因為缺乏公權力的因素而在執行上有困難。

另外，關於岸上設施的設立，以之前經驗而言都會遭受到相關的阻礙(例如各地縣政府有其施政上的考量)而無法成立，並且執行緩衝期和職權範圍等都是必須要釐清與訂定以避免可能產生的糾紛，而在考慮港口的話也不能只考慮到商港也要考慮到由其他單位(經濟部工業局)所管理的港口，這些港口進出的船隻包含了煤鐵船等等，也都是需要關注的。

海巡署:

主席和各位先進好，海巡署目前的主要任務仍在海上治安，但也會在環境保護上會協助各部會，以油污為例就有許多例子，不過壓艙水牽涉的層面較廣，在人員訓練和資訊上也會有困難，如在未來在壓艙水的管制上要與其他部會要如何配合等這都是需要考慮到的問題。

中國驗船中心:

在落實壓艙水執行的問題上，會對船東造成衝擊也考驗著政府的執行力，對於 IMO 的 D1 與 D2 階段上沒有問題，想補充一點的是關於船隻沉澱物公約有規定必須要用岸上設施來處理收受，但個人認為較不可行因為對船東而言必須要改裝現有船隻來配合岸上設施會付出更多成本，同時也有船期的問題。另外關於管制方面，也補充一下也許可從公約生效前後的角度來看待，公約生效前當然國家想如何管制就如何管制，但公約生效後國內法自然可遵循公約規定，或許還可分成國際航線與國內航線的船隻來看待，這二者是否要以相同的標準

來看待是值得考慮的一點。

長榮海運:

我們公司是遠洋貨櫃船，所以目前公約雖然尚未生效但我們船隻已開始遵守關於美方之規定，同時也對船隻進行調整製作新型船隻以配合他國法規，而未來公約如生效我們公司也一定會去遵守相關規範。

交通部航政司:

岸上收受設施的相關收費情形可否請研究團隊提供？

主講人:

目前尚未有實際處理的情況，而岸上收受設施在壓艙水處理上只是一個處理選項並非一定要強制執行。

交通部航政司航政監理課:

目前壓艙水帶來的物種影響以及其處理方式與成本？是否會影響到國內海域以至於有必要針對國內的船隻特別設置一套法律抑或是指針對外來商船做限制即可？

如果商船只經過我國海域是否他國公約和法律有授權給其本國有管理這些船隻之權力？

主講人:

公約雖有提到外來種，但並未明確定義外來種，公約中有提到的是會對海域造成影響的藻類，不過實際上外來種包含的範圍極廣，目前已有霍亂弧菌傳到國外造成人員死亡的案例，而外來種處理是預防重於治療，一旦等到外來種進入國內定居後，要進行處理或排除則會變得非常困難甚至是成為一個無法解決的問題，這也是為何我們要在現在就先對壓艙水進行研究的原因。

議題二:管理流程:

主持人:

請主講人進行管理流程的介紹。

主講人:劉教授

這部分的議題是延續剛剛的部分，目前預計抵港前要求船隻做申報，而交通部現在對於船隻抵港前申報也有相關的紀錄，故在此不曉得在壓艙水申報的這一部分是否可以在未來也放入到交通部的資料庫中？另外，關於此資料庫要由誰管理以及如何透過資料庫建立風險評估的模式也都是需要解決的問題，而這些問題的解決有賴交通部與環保署的協調分工，在這邊的權責問題會在下一段提出讓大家討論；另外，中鋼有提到一個關於壓艙水之問題，他們在卸貨時雖然進水出水都在高雄港但是並非就沒有外來種污染之問題，因為在換水的過程中仍有可能把船隻底泥混入港口的水中造成污染，而這個問題因為其排水量過大目前也沒有想到解決的方法。

台灣港務股份有限公司:

肯定教授立法的美意，現今以高雄港而言，有類似大小的油輪也不少，以目前旗津附近的處理設備也是無法處理如此龐大的水量，如要在之後使用岸上處理設施，船東會考慮到進港出貨以及收費的問題，這些作業時間會影響到船期進而影響到船商進港的意願，或許可以使用移動處理船透過處理船到外海清理船上壓艙水的方式來避免產生外來種的問題而不要使用岸上處理設施？

中國驗船中心:

贊同張處長移動處理船的方式，也許是可行的方式(參考拖船業)。
環保署:

與大家意見較為不同，認為岸上設施是有可行之處的，因為像長榮等海運公司會自己設置船上處理設備，但如果是沒有設置這些設備的船隻就有機會來使用岸上設施，至於當地居民反彈的問題，個人感覺若是用交換水的方式可能會對當地港區造成較大影響，設置岸上設施可以處理得較乾淨反而沒有這種困擾。

議題三:權責機關:

主持人:

進入權責機關討論 請王教授發言。

主講人:王教授

在前方已經有先稍微碰觸到這個議題，也許我們可以把先前的想法集中到這裡討論，今天不論最後是採取如何的管制措施，最後都是要解決兩個問題，首先是要制定出規範的架構，其次則是這個規範要由誰來執行，而在執行這個計畫的期間，我們看了其他國家的管制方式，美國方面是以 USCG 為主要管制機關 但其並非把業務全包，而是在前端有一專責小組，這裡面也包含了美國環保署;澳洲方面則以 AQIS 為管制單位，主要是歸於檢疫單位來執行，但是每個國家都會依國情來做不同的考量各國管制的方式均不同，要制訂本國的法規管制仍必須考慮到本土化之問題，才能定出適當的管制規範。

交通部航港局:

對我們來講，我們是以航行安全為主，現在我們討論的壓艙水和油污、污水也是差不多的東西，重點是要有一個標準出來我們才能夠進行管制和其他操作，而不是照著這個流程(PPT)就能直接進行。

主講人回應:

標準的制定應該視各地情況而定，以我國情況而言也必須要對本身環境有足夠的了解，並依現狀訂出適當的標準，而這裡也涉及到一個更前端的問題，就是這個壓艙水管制法制化的目的何在?是為了要遵守國際壓艙水公約抑或是為了環境保護?如果是為了環境保護，那公約生效與否就不重要，以美澳為例其制定的目的即是為了環境保護而非公約生效，另外，台灣也不可能成為公約的締約國，故在此情況下，公約生效與否影響到的是在於未來可能其他國家都有這樣的要求，那我們國家如果沒有或是我國的標準與他國標準不同時，我們要如何處理這樣的狀況?故在此的問題並非是否要遵守公約，而是要看看我們未來所制定的這套機制能否確保台灣海域能夠受到保護。

而就我國法規命令而言，通常訂立某個法規命令的機關即為該法令的執行機關，少有由 A 機關制定 B 機關執行的情況出現，如果有這種狀況出現的話，通常會讓兩個機關會同或會商來共同解決執行上的問題。

交通部航政司：

想請問之後環保署改組變為環境資源部後，動植物檢疫局之工作是否會併入環保署內？

環保署：

以目前所知而言，目前環保署內有關海洋污染這塊上的相關業務上並沒有變動。

主講人：

如果涉及到會同或會商的話，就必須由法律的制定加以解決，並非只依命令就能夠授權的。

交通部航政司：

建議多蒐集政治制度與我國相類似或是地理環境類似國家的制度，例如香港或新加坡等國這樣會較有說服力。

台灣港務股份有限公司：

同意交通部航政司之意見，而就鄰近的國家而言也許香港與新加坡會是一個可以參考的對象(因其處境與台灣較為相近);另外，在法制化的研究上或許也可以保留一些彈性給其他部會使其在執行上更為順利。

議題四:懲處手段

主講人:王教授

管理的話要有配套的處罰手段，方能避免成為無牙老虎;以美澳而言針對違反文件檢驗之法定義務而言會處以罰款，而對明知故犯者則會使用刑法加以制裁;另外，由於檢驗費時也可以嘗試透過建立黑

名單的方式來列為未來嚴格檢驗之對象。

萬海航運:

以取樣而言較不可行，取樣的流程麻煩且耗時，美國是文件審查為主要手段原則上相信你是清白的但一旦發現有誤則會給予嚴重懲罰。

交通部航政司:

PSC 懲處的方式有很多種，不一定是建立黑名單也有先處罰代理商的方式，我們希望在懲處上也可以呈現多元處理的方式。

環保署:

壓艙水是否為污染物質仍有疑問，故其是否可歸於海污法的管制範圍內是值得商榷的，並且其產生原因和處理方式都和傳統污水不一致，故還是希望能夠回歸到 PSC 來控管，由其來查核相關的文件。

交通部航政司:

也許可以分成不同的階段來處理？第一階段由 PSC 作文件查核，第二階段交由其他單位做檢驗，大家一起會同來處理壓艙水之問題。

交通部航港局:

我們沒有權力開罰單，只有環保署才有能力，要進行相關查驗勢必得要各部會互相配合或是會同會商後討論出該如何配合。

議題五:立法方式

主講人:王教授

有三種模式可供參考，首先就是制定專法，另外一種就是修正現行法律把此種管理機制納入，最後一種則是直接公告適用國際公約。

台灣港務股份有限公司:

建議對各項模式做優缺點分析，使人能夠一目了然;另外，國內線與國外線之生態也截然不同，國外線固然依國外之規定走，但國內線

的部分若有不行的話可能就直接找立委喬了，故這部分希望能以簡潔明晰的方式表現，必須要能夠使立委們能夠了解制訂本法原意。

主講人：

提出疑問很多人都說商港法 75 條可以解決很多問題，但是其規定上兩岸船隻航行要如何認定？此航線是否可列為法條中的國際事務來處理？

交通部航政司：

兩岸目前是等同國際航線，準用此條...(王問：法律上有規定準用嗎?)，由於設立專法的難度高，建議採用修法或擴大解釋的方式就可把壓艙水管理包含進來，只是如牽涉到裁罰的部分的話，75 條則可能就不適用，必須要有國內法才能夠開罰。

主講人：

直接適用 75 條仍有部分疑義我們在此提出來，也就是說管制後如果無罰則要如何處理，如果直接適用的話其處罰會無法全面；另外法規本身也有問題，關於“得參照”的拘束性是有問題的，其會讓參採的標準可以調整若直接採用這條的話將使明確性出現問題，受規範者會出現無所適從的現象。

交通部航港局：

如參採此的確沒辦法開出罰則，只能管制和列出缺失，但在船隻修正錯誤的過程就會使其船期延誤這本身也可作為一種處罰，故若在時間不足的情況下，也許可以分成不同階段暫時先採 75 條之後再分別進行後續階段的實施與修正，但如果要更完備則有制定新法的必要。

交通部航政司：

一般採取 75 條的狀況是在無罰則且為較急迫的情形，如果要有罰則的話則是需要內化為國內法，因此是否參採必須就國際公約本身的規定而定。

交通部航政司：

看看有沒有甚麼問題可以當場提出，再轉介給現場的不同單位來處理這樣會比較快速得到回應。

附錄六 期中簡報資料

交通部港灣技術研究中心

我國港灣壓艙水污染問題管理法制化之研究(1/4) (期中報告)

主 持 人：王毓正 博士
協同主持人：劉大綱 博士

2013/7/17

財團法人成大研究發展基金會

一

研究內容及工作項目

研究內容及工作項目

- 調查壓艙水國際公約發展現狀與國際法制及其實踐情形。
- 瞭解港務機關及船舶相關之權益關係人對壓艙水管理與規範需求之意見。
- 完成壓艙水管理法草案架構之研擬。
- 以參與方式管理舉辦座談會以瞭解權益關係人對草案架構之建議。

二

計畫背景分析

2-1 船舶壓艙水規範之需求與國際公約之簡史

■ 壓艙物演進與外來種入侵問題

- 1900年以前，船舶使用固體壓艙物-石塊、砂子和泥土，20世紀後，開始以水壓艙，許多生物便能透過壓艙水而傳遞。
- 舊金山灣的亞洲蛤、美國聖勞倫斯五大湖的斑馬貽貝以及黑海的櫛水母都是相當著名的例子。

■ 1980年以來，聯合國與國際海事組織開始重視海洋環境保護問題，制定了一系列公約、大會決議案和指導性文件，加強船舶壓艙水控制與管理

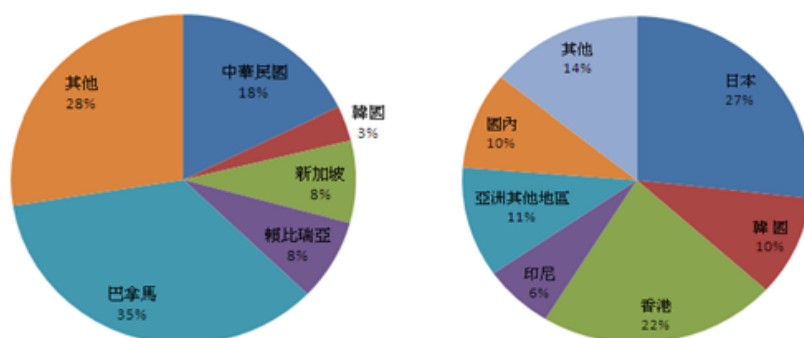
- 1982年《聯合國海洋法公約》
- 1992年《生物多樣性公約》
- 2004年《國際船舶壓艙水和沉積物控管公約》
 - 生效門檻：30個國家簽署、商船總噸位35%以上
 - 現況：36個國家簽署，商船總噸位總噸位占29.07%

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2-2 適於我國之壓艙水處置方式

2-2-1 進港船舶運輸型態分析

- 蒐集93-96年間臺中港區域進港船舶之航運資料，進行運輸型態分析。
- 研究結果顯示船旗國部分是巴拿馬為最大的來源國(左圖)；船舶前一個停靠港是以亞洲為主，其中又以日本占了最大的比例(右圖)。



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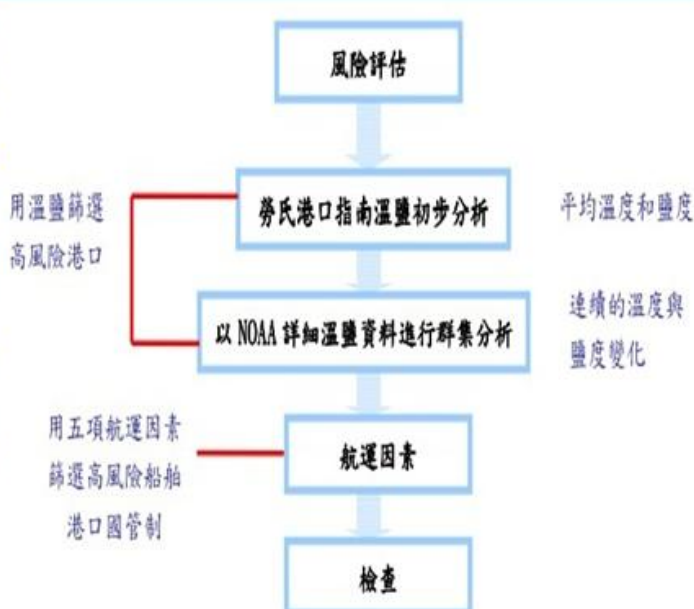
2-2-2 外來侵襲物種資料庫建置

- 外來物種種類繁多，公約本身亦未對外來種做詳細之定義，然而公約中曾以舉例方式指出藻類為易藉由壓艙水侵襲之外來種，且有害藻類之入侵易造成重大環境影響。
- 研究結果發現由曾爆發藻華之地區亦為我國入港船舶上一港常造訪之港口，整理出38種有害物種中，其中12種已登記入臺灣物種名錄中。
- 未來針對高風險船舶進行採樣研究，調查壓艙水中是否含有此26類未被列入名錄的物種並進行追蹤，以進一步防範其入侵。

6

2-2-3 壓艙水風險評估系統建立

- 為提高港口國官員的有效檢查率，本團隊以三階段篩選出高風險船舶。
- 以98年臺中港入港船舶為例統計，原始進港船舶由艘數1,422艘，經過三階段篩選出高風險船舶132艘，占原始艘數的9.3%。
- 此結果可與現有之港口國管制系統結合，既可達到壓艙水管理目的並能提高港口國官員行政效率。

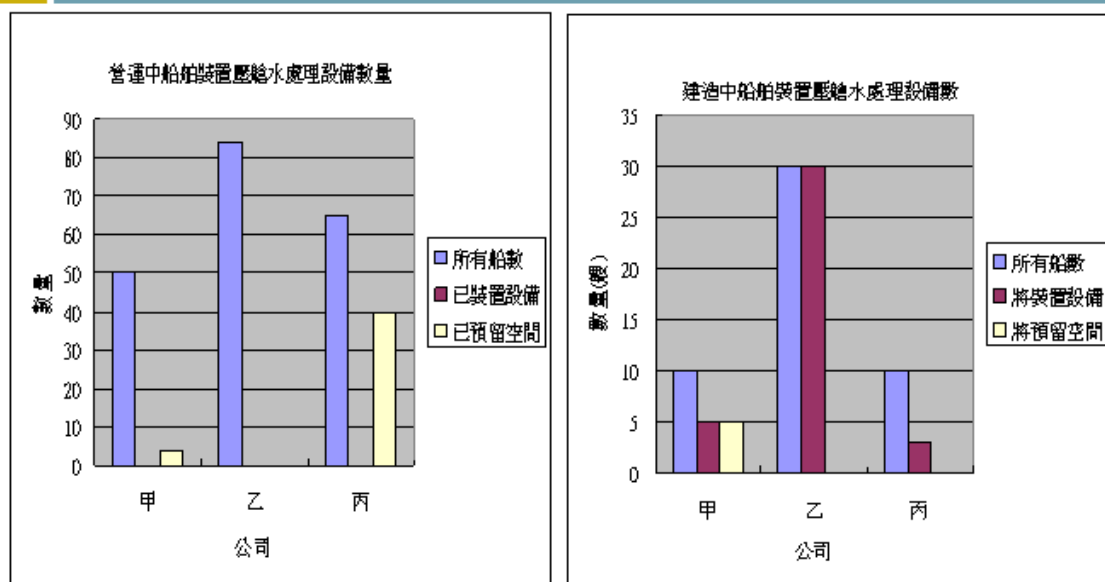


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2-2-4 臺中港壓艙水於船舶或岸上處置設施之規劃

- 以電子問卷方式向國內規模較大三家航運公司進行壓艙水設備使用現況調查。調查船舶數為營運中船舶數199艘，建造中船舶數50艘。
- 研究結果顯示我國航商幾乎都傾向採用船用壓艙水管理系統，而對於使用岸上處置設備的意願較低，主要考量因素是對使用該設備可能會對作業流程造成影響，而使用船上壓艙水管理系統處置正具備了彌補這樣缺點的方便性，因而成為航運公司較傾向採用的方式。

8



營運中船舶(左圖)與建造中船舶(右圖)裝置壓艙水處置設備率

9

2-3 國內壓艙水管理相關法規之現況

	海洋污染防治法相關法制	商港法相關法制	船舶法相關法制
主管機關	環保部門	交通部門	交通部門
適用範圍	防治海洋污染，保護海洋環境	港區內之污染行為	我國籍船舶配備、技術等
爭議點	1.壓艙水是否被認定為「污染物質」(29條) 2.壓艙水不屬「海洋棄置物質」，因此壓艙水交換無法適用海洋棄置區法規。	可管制港區內船舶所造成之污染行為，但港區外之船舶污染則無權管轄。	可對我國籍船舶設備加以規定，但無法對其他國籍規定。

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三

調查壓艙水國際公約發展現狀與國際法制及其實踐情形

11

3-1 國際控管船舶壓艙水及沉澱物公約之內容與現狀

- 針對船舶壓艙水所帶來的外來種入侵問題可能造成海域生態環境、人類健康及經濟損失，IMO於2004年2月13日通過《船舶壓艙水和沉積物控管國際公約》。
- 2006年MEPC第55次會議通過五個決議案作為公約附錄規則，合稱為《船舶壓艙水和底泥控管規則》
- MEPC陸續另制訂了14套壓艙水管理技術規範。
- MEPC所通過之規範，對於壓艙水公約的實施具有相當重要的指導性。

12

3-1-1 正文

- 公約本文共有22條，包括一般性條款以及壓艙水管理上的技術性條款。
- 一般性條款，包括有公約中專有名詞的定義(Art.1)，當中重要名詞，如「壓艙水」為「控制船舶橫傾、縱傾、吃水、穩性或應力而加裝到船上的水及懸浮物質」。
- 壓艙水管理上的技術性條款方面，為確保船舶依公約規定實施壓艙水管理，授權締約國可對於進港船舶進行下列三項內容之檢查：
 - 有效證書。
 - 壓艙水記錄簿。
 - 壓艙水採樣。

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- 樣品的分析時間不應作為延誤船舶營運、行動或離港的理由(Art.9)，並規定對於船舶的核對與認證以及所有的壓艙水管理措施，都不得對船舶造成不當延誤(Art.7)(Art.12)。
- 若船舶造成違規的事實，可對違規船提起法律訴訟、將所發生違規事件的情況和證據提供給該船的主管機關(Art.8)或將違規船舶的相關資訊通知下一港口(Art.11)，締約國間也可對於違規船舶的調查與公約的實施進行合作(Art.10)。

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3-1-2 附錄規則

- 公約附錄規則《船舶壓艙水和底泥控管規則》，共包括五部分內容，分別為「A總則」、「**B船舶管理和控制要求**」、「C某些區域的特殊要求」、「**D壓艙水管理的標準**」、「E壓艙水管理的檢驗與發證要求」，提供了對於壓艙水管理詳細的規定要求。

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- 「B 船舶管理和控制要求」部分對於船舶如何進行壓艙水管理與控制提供詳細的說明。
- 首先，每艘船舶需備有經主管機關批准的「壓艙水管理計畫」(Regulation B-1)，內容應包含：
 - 根據公約要求所擬定的壓艙水管理程序。
 - 實施壓艙水管理所採取的行動。
 - 沉積物在海上及在岸上的處理程序。
 - 負責壓艙水管理計畫實施的船員。
 - 公約所規定的船舶報告要求。

16

- 其次，每艘船舶需備有「壓艙水記錄簿」(Regulation B-2)，型式上可以是電子記錄系統或是船上其他記錄簿或系統的一部分，內容須包含：
 - 船舶基本資料及壓艙容量。
 - 汲取壓艙水的時間。距離港口的位置與深度、水量。
 - 為壓艙水管理之目的而處置壓艙水的時間與水量。
 - 排放壓艙水入海的時間與水量。
 - 排放壓艙水到收受設施的時間與水量。
 - 意外或例常性以外的汲取或排放壓艙水的時間、位置與水量等等項目。

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與壓艙水管理計畫不同的是壓艙水記錄簿需要及時將壓艙水管理的相關作業詳細記錄，每項記錄應由高級船員或負責操作的人員簽名，且每記完一頁應由船長簽字，最後一項記錄在完成後在船上至少保留兩年，之後再由船公司保存至少三年。

- 第三，對於船舶壓艙水管理明確地依照船舶建造日期與壓艙容量來規定實施日期(Regulation B-3)，如表所示。

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建造年分 (西元年)	壓艙水容量 (立方公尺)	2009	2010	2011	2012	2013	2014	2015	2016
2009 以前	1500~5000	D1 或 D2					D2		
	<1500 or >5000	D1 或 D2							D2
2009 以後	<5000	D2*							
2009-2011	≥ 5000	D1 或 D2							D2
2012 以後		-----			D2				

註：依 A.1005(25)：2009 年建造者，2011/12/31 前應改為 D2。

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■ 第四，壓艙水交換位置的規定(Regulation B-4):

船舶應在距離最近陸地至少200海浬和水深至少200公尺以上的位置依公約規定進行壓艙水交換。若上述情形無法達到，須盡可能地遠離陸地，在任何情況下距離最近陸地不得少於50海浬和水深不得少於200公尺。

如果仍無法找到滿足上述條件的海域，港口國可藉由諮詢鄰國或其他締約國，指定船舶可以進行壓艙水交換的適當區域(但在任何會影響船舶安全、穩定性而對船員或乘客構成威脅的情況下，就不受上述壓艙水交換位置的限制)。

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■ 壓艙水性能標準(Regulation D-2)：經過壓艙水管理系統處置過之壓艙水中的生物量必須達到該標準，才能排放入海，標準列出如下：

- 壓艙水所含有的可存活生物，其尺寸在 ≥ 50 微米時，每立方公尺要少於10個，其尺寸 < 50 微米時，但 ≥ 10 微米時，每毫升要 < 10 個指標微生物。
- 每100毫升要少於1個CFU (colony forming unit菌落形成單位)的有毒霍亂弧菌(*Vibrio cholera*)，或每公克要少於1個CFU的浮游生物樣品。
- 每100毫升要少於250個CFU的大腸桿菌(*E. Coli*)。
- 每100毫升要少於100個CFU的腸球菌(*Enterococci*)。

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3-1-4 公約現狀

- 《船舶壓艙水和沉積物控管國際公約》的最新簽署情形為36個國家簽署，總噸數達全球商船噸數之29.06% (截至2013年6月3日)，已達到雙重門檻之一 (BWM Convention Art.17)，公約生效指日可待。

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3-2 美國之船舶壓艙水管理法制及其實踐現況

3-2-1 美國船舶壓艙水管理法制

美國壓艙水管理法制

法源依據 ↓

母法:《外來有害水生生物防止和控制法》(US Nonindigenous Aquatic Nuisance Prevention and Control Act)和修正案《國家入侵物種法》(National Invasive Species Act of 1996)



子法:33 CFR(導航及通航水域)PART 151-《攜帶原油、液態有毒物質、垃圾和商業或市政廢棄物以及壓艙水之船隻》

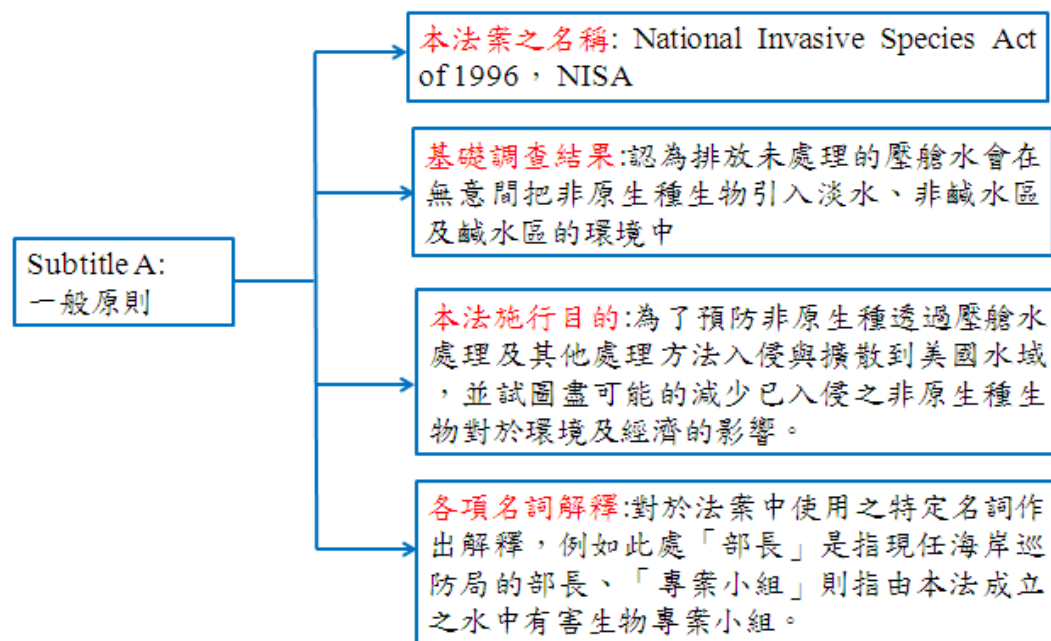
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國家入侵物種法 (National Invasive Species Act of 1996)

標題	標題名稱
TITLE I	水中有害生物的預防和控制 (AQUATIC NUISANCE PREVENTION AND CONTROL)
Subtitle	A 總則(General Provisions)
	B 非原生水生生物非蓄意引入之預防 (Prevention of Unintentional Introductions of Nonindigenous Aquatic Species)
	C 水中有害生物傳播之預防與控制 (Prevention and Control of Aquatic Nuisance Species Dispersal)
	D 撥款授權(Authorizations of Appropriation)
	E 共同的环境分析(Cooperative Environmental Analyses)
TITLE II	五大湖魚類和野生動物復育 (GREAT LAKES FISH AND WILDLIFE RESTORATION)
TITLE III	濕地(WETLANDS)
TITLE IV	五大湖原油污染的研究結果與開發(GREAT LAKES OIL POLLUTION RESEARCH AND DEVELOPMENT)

24

國家入侵物種法-Subtitle A



25

國家入侵物種法-Subtitle B

Subtitle B:
預防非原生種
生物非蓄意地
被引入

指導原則:為了管制美國水域的水中有害生物而要求部長在以船隻及其乘客的安全為前提下制定出相關準則，並由此授權給其他單位制定相關管理規定，同時也在本段訂出罰則。

壓艙水處理資訊的整合及應用:除了評估壓艙水在美國河口、海洋、淡水區等原生種豐富及複雜的地區交換所造成的影響外，也要求研擬出相關的應對方法與管制規定來阻止外來種透過壓艙水入侵。

武裝部隊的壓艙水方案及壓艙水管理之示範項目:針對國防部與海岸巡防局的船隻作出特別的規定，另外也制定相關要求使壓艙水管制的相關技術能夠應用在現行船隻上。

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國家入侵物種法-Subtitle C

Subtitle C:
水中有害生物
的預防及控制

水中有害生物應對方案的制定:要求專責小組應該為美國水域制定及實施預防水中有害生物入侵和擴散之方案。

國家水中有害生物的管理計畫:包含了洲及洲際間對入侵種的管理計畫，它要求各洲的州政府給專案小組一個全面的管理計畫以核定這些計畫所牽涉的區域及範圍是在洲或洲際區域。

本法案與其他法律之關係:規定這個subpart中的任何內容都不應影響任何國家的權力或政治分支去採用或實施水中有害生物的控制措施，以及減少或影響任何國家管轄的魚類和野生動物物種。

國際合作:要求專責小組應對國務卿(外長)在水中有害生物於其他國家交界水域的出沒上提供即時的建議。

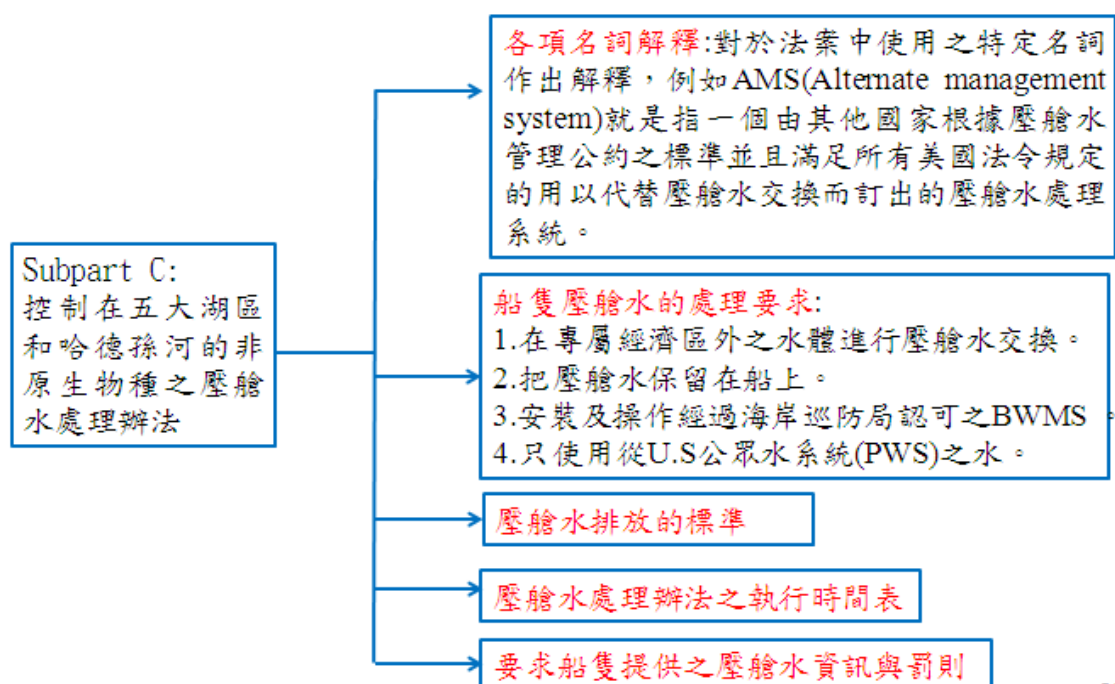
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33 CFR part 151- 《攜帶原油、液態有毒物質、垃圾和商業或市政廢棄物以及壓艙水之船隻》

標題	標題名稱
Subpart A	防止船舶污染公約的執行和南極條約中與船舶造成污染相關的環境保護議定書(Implementation of MARPOL 73/78 and the Protocol on Environmental Protection to the Antarctic Treaty as it Pertains to Pollution from Ships)
Subpart B	市政和商業廢棄物的運輸 (Transportation of Municipal and Commercial Waste)
Subpart C	為控制在五大湖區和哈德孫河的非原生物種之壓艙水處理辦法(Ballast Water Management for Control of Nonindigenous Species in the Great Lakes and Hudson River)
Subpart D	為控制美國水域中非原生種生物之壓艙水處理辦法 (Ballast Water Management for Control of Nonindigenous Species in Waters of the United States)
Subpart E	在海洋廢棄物研究、預防和削減法案之目的中關於海洋廢棄物的定義(Definition of Marine Debris for the Purposes of the Marine Debris Research, Prevention, and Reduction Act)

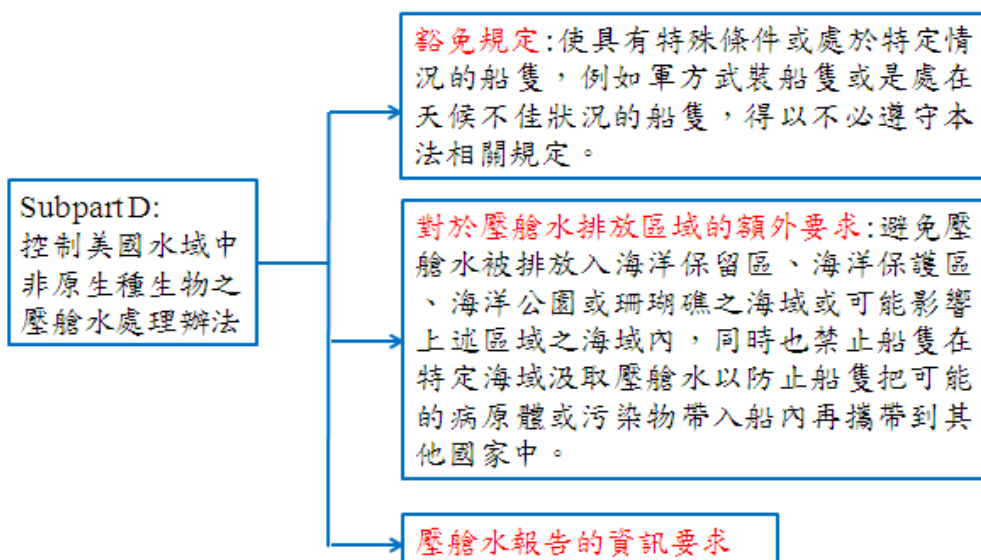
28

33 CFR part 151- Subpart C



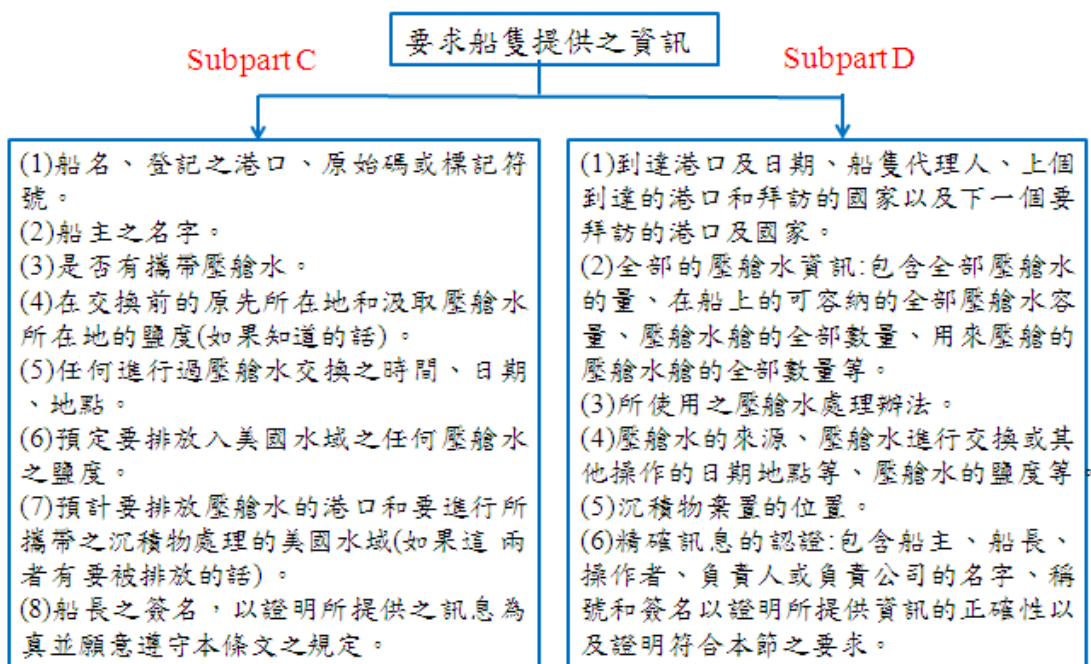
29

33 CFR part 151- Subpart D



30

船隻壓艙水資訊



31

3-2-2 美國之船舶壓艙水管理簡史與實踐現況

- 美國外來種的入侵事件可追溯至八〇年代初期的壓艙水排放引起斑馬貽貝由大湖區水域入侵，因此於1990年頒布《外來有害水生生物防止和控制法》，此法立意雖佳，但因未能進行有效的壓艙水管制。
- 外來種入侵的情形在九〇年代仍時有耳聞，因此於1996年又頒布了《國家入侵物種法》，並授權由美國海岸警衛隊建立國家自願壓艙水管理的指導方針(USCG, 2011)，並於隔年成立「國家壓艙水資訊交換中心」，負責壓艙水資料的彙整與研究分析。

32

- 1998年美國海岸警衛隊開始實施初步性全國性壓艙水自願監督計劃，但因目標達成率不足，於2004年實施強制性的壓艙水管理規則(33 CFR 151 subparts C and D)，檢討多年的實施成果並配合現有的技術發展，於2012年3月23日公布最新管理規則：《船舶壓艙水排放在美國水域之活物種標準；最終規則》(USCG, 2012)，並於公布後三個月—2012年6月21日生效。

33

- 美國對於壓艙水管理在聯邦層級上主要有兩個機關，即海岸警衛隊與環境保護署，兩者的關係密切，並於2010年9月公佈審核壓艙水處理系統的協議，將對審核通過的處理系統頒發「環境技術驗證」，以確保各船舶上所安裝的壓艙水處理系統能符合規定之壓艙水排放標準，接著於2011年兩機關並簽署合作備忘錄以共同管理船舶排放。
- 此外，為配合最終規則中對於壓艙水管理系統的要求，設有獨立實驗室作為國家授權的單位受理製造商所申請的壓艙水管理系統的認證與測試。

34

- 根據《船舶壓艙水排放在美國水域之活物種標準；最終規則》，美國在壓艙水管理上之實施現況如下述：
- 壓艙水管理要求 (§151.2025 Ballast water management requirements)
 - 裝置並操作由海岸警衛隊根據46 CFR part 162的規定所認可的壓艙水管理系統(Ballast Water Management System)，並符合§ 151.2030所規定之壓艙水排放標準(Ballast water discharge standard)。
 - 使用美國公共水系統水作為壓艙水。
 - 使用替代性管理系統。
 - 在美國水域內不排放壓艙水。
 - 將壓艙水排放至岸上設施(或駁船設施)。

對於船長、船東、航運公司、代理商或裝有壓艙船舶的負責人在美國水域被要求必須採取以上的其中一個壓艙水管理方法。

35

▣ 壓艙水排放標準 (§151.2030 Ballast water discharge Standard)

進入美國水域的船舶被要求使用由海岸警衛隊認可的壓艙水管理系統來處置壓艙水應符合壓艙水排放標準如表所示：

生物尺寸	USCG
≥ 50 微米(<u>um</u>)	< 10個微生物(organisms)/ m ³
10-50微米(<u>um</u>)	< 10個微生物(organisms)/ml
指標生物	--
有毒霍亂弧菌(toxicogenic <i>Vibrio cholera</i>)	< 1CFU/100ml
大腸桿菌(<i>Escherichia coli</i>)	< 250 CFU /100ml
腸球菌(intestinal enterococci)	< 100 CFU /100ml

36

▣ 獲認可的壓艙水管理方式的實施時程

(§ 151.2035 Implementation schedule for approved ballast water management)

進入美國水域的船舶被要求使用由海岸警衛隊認可的壓艙水管理系統來處置壓艙水以符合壓艙水排放標準，依船舶建造日期與壓艙容積有不同的實施時程，如表所示。

37

船分類	壓艙容積 (立方公尺)	建造日期	實施日期
新造船	所有船	2013年12月1日以後(含)	即日生效
現有船	<1500	在2013年12月1前	2016年1月1日以後的第一次進塢
	1500-5000	在2013年12月1前	2014年1月1日以後的第一次進塢
	>5000	在2013年12月1前	2016年1月1日以後的第一次進塢

38

□ 申報要求 (§ 151.2060 Reporting requirements)

進入美國水域的船舶無論是否已在專屬經濟海域換水都需在抵港前24小時向指定主管機關申報「壓艙水申報表格」，內容包括船舶資料、航程資料、壓艙水資料、壓艙水管理資料、將排放至美國水域或收受設施的壓艙資料、沉積物排放資料、資料正確的認可等七部分 (§ 151.2070)。

39

□ 罰則 (§ 151.2080 Penalties)

違反規定者依民事賠償最高可罰 35,000 美元 (§ 151.2080) 且可按日連續處罰，若蓄意違反本規則者，可判處 C 級刑事重罪。

□ 替代性管理系統 (§ 151.2026 Alternate management systems)

取得各國主管機關型式認可符合《壓艙水公約》標準的壓艙水管理系統可向海岸警衛隊申請作為替代性管理系統，並需於安裝後的五年內滿足壓艙水管理方式的實施時程 (§ 151.2035) 要求。目前已取得 USCG 認可的替代性管理系統如表所示。

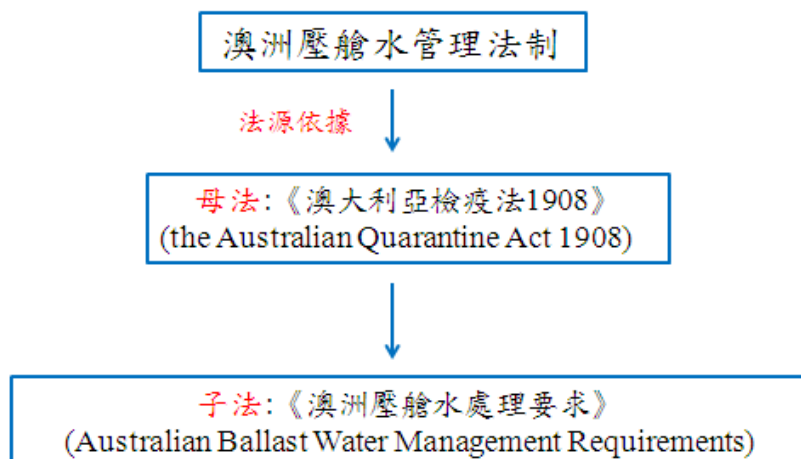
40

製造商	機型	型號	認可日期
Alfa Laval Tumba AB	PureBallast	Models 250 to 2500	2013/4/15
Alfa Laval Tumba AB	PureBallast	Models 2.0 and 2.0Ex	2013/4/15
Ecochlor Inc.	Ecochlor	Series 75, 100, 150, 200, 250, and 300	2013/4/15
Hyde	Guardian	HG-60, -100, -150, -200, -250, -300, -400, -450, -500, -600, -700, -800, -900, -1000, -1250, -1350, -1400, -1488, -1600, -2000, -2500, -2975, -4000, -5000, and -6000	2013/4/15
NK Company, Ltd	BlueBallast	NK-O3-010, -015, -030, -040, -050, -075, -100, -150, -200, -250, -300, and -400	2013/4/15
Panasia Co., Ltd	GloEn-Patrol	P-50, -150, -250, -300, -350, -500, -700, -750, -800, -900, -1000, -1200, -1500, -2000, -2500, -3000, -3500, -4000, -4500, -5000, -6000	2013/4/29
Qingdao Headway Technology Company, Ltd.	OceanGuard™	OceanGuard™	2013/4/15
RWO GmbH Marine Water Technology, Veolia Water Solutions and Technologies	CleanBallast	CleanBallast® -150, -200, -250, -300, -350, -400, -450, -500, -500-1, -750, -1000, -1250, -1500, -1750, -2000, -2250, -2500, -2750, -3000, -3250, -3500, and -3750	2013/4/15
Severn Trent De Nora, LLC	BalPure	Models BP-500, -675, -1000, -2000, -2650, -3000, -4000, and -5000	2013/4/15
SunRui	BalClor	BC-300, -500, -1000, -1500, -2000, -2500, -3000, -3500, -4000, -5000, -6000, and -7000	2013/5/1

41

3-3 澳洲之船舶壓艙水管理法制及其實踐現況

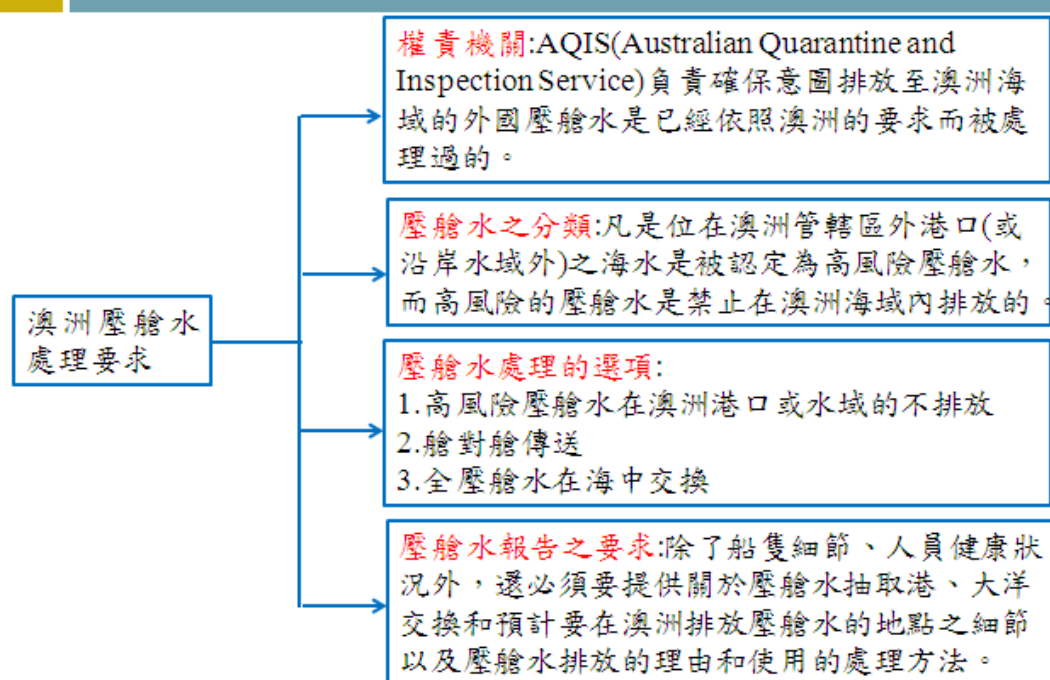
3-3-1 澳洲之船舶壓艙水管理法制



澳大利亞檢疫法 (the Australian Quarantine Act 1908)

- 將壓艙水視同於其他需檢疫之貨物看待，並在原則上是準用於與貨物檢疫相同之規定。
- 壓艙水在特定的情況下可以豁免部分的檢驗或要求。
- 本條法律授權給總督使其可以在不牴觸本法的前提下訂出相關規定使本法之內涵得以發揮，也由此延伸並制定出《澳洲壓艙水處理要求》，對壓艙水加以管制。

澳洲壓艙水處理要求



44

3-3-2 澳洲之船舶壓艙水管理簡史與實踐現況

- 澳大利亞澳洲衛生檢疫局 (Australian Quarantine and Inspection Service) 作為澳大利亞壓艙水管理之主管機關自1990年首度實施自願性壓艙水檢疫規範，並於2001年7月實施《澳大利亞檢疫法1908》，作為強制性壓艙水管理規則，以保護澳大利亞的水域生態、經濟、漁業、水產養殖業免於受到有害水生物種與病原體之入侵危險。

45

- 目前所有國際線船舶在抵澳前的最後一個停靠港或進入澳大利亞水域之前需申報壓艙水資料，這些資料將由澳大利亞壓艙水決策支援系統進行評估，對各船舶的壓艙水作出「高風險」或「低風險」的評等，低風險的壓艙水就無需處理可進入澳洲水域，高風險的壓艙水就要到抵澳前進行處置，包括以下的幾種方式：
 - 在澳大利亞港口或水域時完全不排放高風險壓艙水。
 - 在艙間換水以避免排放壓艙水。
 - 在大洋中使用順序交換法、溢流法或稀釋法進行壓艙水交換。
- 並且各船舶必須提供安全的壓艙水取樣點，協助檢疫官員完成安全的壓艙水採樣工作(IMO,2000)。

46

- 為使整個管理架構能發揮功效，壓艙水申報乃是關鍵的環節。壓艙水決策支援系統（DSS）並不取代原有的「抵港前檢疫報告」。這是所有從國際水域要進入澳洲海域的船舶都必須在進入澳洲水域前的12-96個小時內向澳大利亞檢疫及檢查服務處提出，不繳交「抵港前檢疫報告」的船舶，將無法取得檢疫通關以進入港口，且這將可能耽延船舶行程且船舶可能需要負擔額外的費用。
- 抵港前檢疫報告包含一系列關於檢疫的問題，其中只有一個題目是與壓艙水有關。

47

- 自 2010 年 7 月 1 日起澳大利亞檢疫及檢查服務處執行海港計劃(National Seaports Program Australian Ballast Water Management Requirements)，並為整合大於25米之國際線船舶所有抵港前活動而設立了「海上國家協調中心」，作為所有抵港前資訊整合的單位以及船務代理商、營運商等向官方的聯絡單位，並依航線區域陸續將申報系統完全轉換為電子申報系統(eQPAR)。

48

- 除了抵港前檢疫報告以外，如果船舶將在澳大利亞港口排放壓艙水，也需遞交「壓艙水管理摘要」(AQIS Ballast Water Management Summary)，此為船舶壓艙水管理的詳細記錄，包括：
 - 在海上所進行之壓艙水管理的實況記錄。
 - 壓艙水汲取港口。
 - 大洋交換和預定在澳大利亞排放壓艙水位置等資訊。
- 但並非強制性繳交

49

- 一旦海上國家協調中心收到船舶所遞交的的壓艙水管理摘要，就會由澳大利亞檢疫及檢查服務處官員上船進行驗證該船所提供給AQIS的資訊是否正確。
- 通過登船驗證，澳大利亞檢疫及檢查服務處就會給予可在澳洲海域內排放壓艙水的書面許可。
- 如果船舶未在抵港前隨同「抵港前檢疫報告」(QPAR)繳交壓艙水管理摘要，就將不會被許可在澳洲海域內排放壓艙水。

50

- 在澳洲領海內和國內港口的壓艙水管理，則由港口所在位置的地方政府機關主管。
- 以維多利亞州為例(DAFF, 2011)，維多利亞州政府環保署根據《環境保護法案1970》的授權，對於來自澳洲境內水域的壓艙水進行管理。
- 要求船舶需要繳交壓艙水申報表格以及註明船舶壓艙水來源的日誌，若沒有維多利亞州環保署的批准，即使是汲取自國內水域的壓艙水也不可在維多利亞州水域排放。

51

- 然而，澳大利亞檢疫及檢查服務處仍保有對汲取自澳洲領海外之壓艙水的監管責任。因此，對每一個造訪澳洲的船隻，船東有責任在澳洲所有港口航行時滿足澳大利亞檢疫及檢查服務處的規定，並且要確定各洲政府是否有額外的壓艙水管理規定。

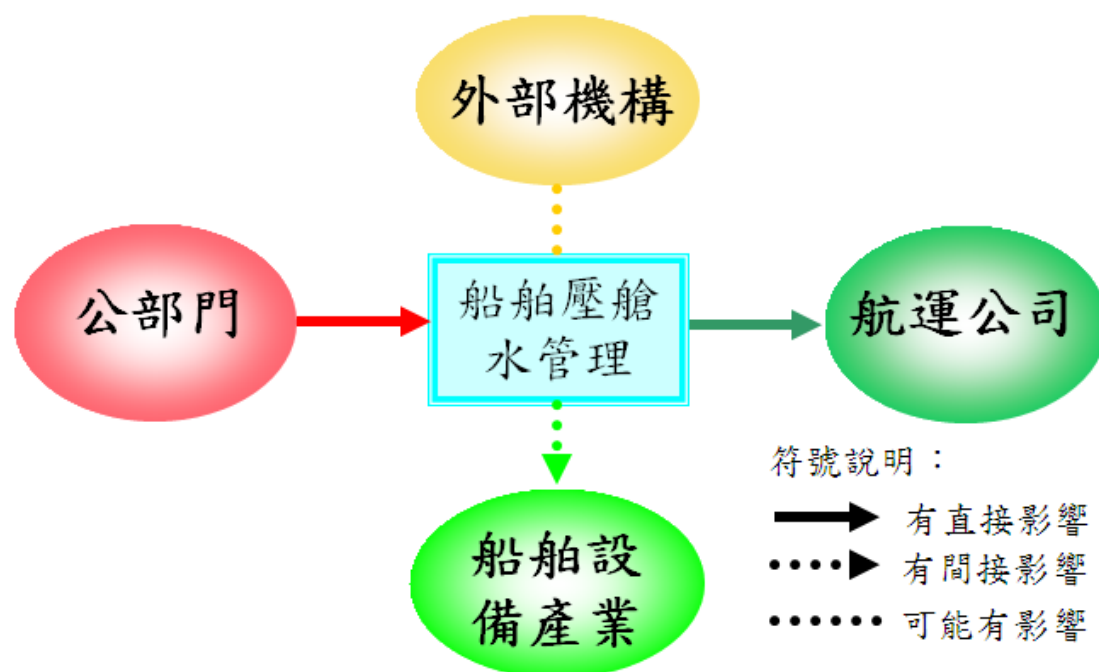
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四

瞭解港務機關及船舶相關之權益關係人對壓艙水管理與規範需求之意見

53

4-1 界定船舶壓艙水權益關係人及其相互關係



54

訪談對象編號(1/3)

群組	所屬機關	職稱	編號	訪談數
公部門	交通部航港單位	科長	a1-1	12
	交通部航港單位	港口國官員	a1-2	
	交通部航港單位	課長	a1-3	
	交通部航港單位	港口國官員	a1-4	
	交通部航港單位	港口國官員	a1-5	
	國營港務公司	處長	a2-1	
	國營港務公司	副處長	a2-2	
	國營港務公司	港務長	a2-3	
	國營港務公司	經理	a2-4	
	環保單位	技正	a3-1	
	環保單位	技士	a3-2	
	環保單位	科長	a3-3	

55

訪談對象編號(2/3)

群組	所屬機關	職稱	新編號	訪談數
航運公司	船公司(甲)	專案課長	b-1	8
	船公司(乙)	三副	b-2	
	船公司(丙)	經理	b-3	
	船公司(丁)	副理	b-4	
	船公司(戊)	經理	b-5	
	船公司(己)	船長	b-6	
	船公司(庚)	船長	b-7	
	船公司(庚)	大管輪	b-8	

56

訪談對象編號(3/3)

群組	所屬機關	職稱	編號	訪談數
船舶設備產業	驗船機構	副處長	c-1	3
	海事服務公司	總經理	c-2	
	造船公司	工程師	c-3	
外部機構	大學海洋科技系所	助理教授	d-1	6
	大學海洋環境系所	教授	d-2	
	大學環境安全系所	教授	d-3	
	大學法律系所	助理教授	d-4	
	大學輪機工程系所	副教授	d-5	
	環保團體	理事長	d-6	
總計				29

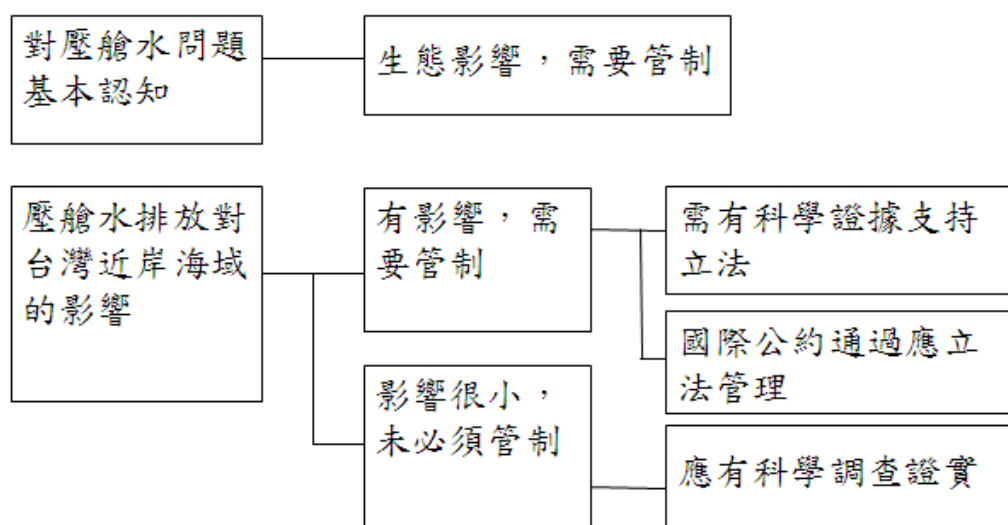
57

4-2 質性訪談重要權益關係人——訪談提綱

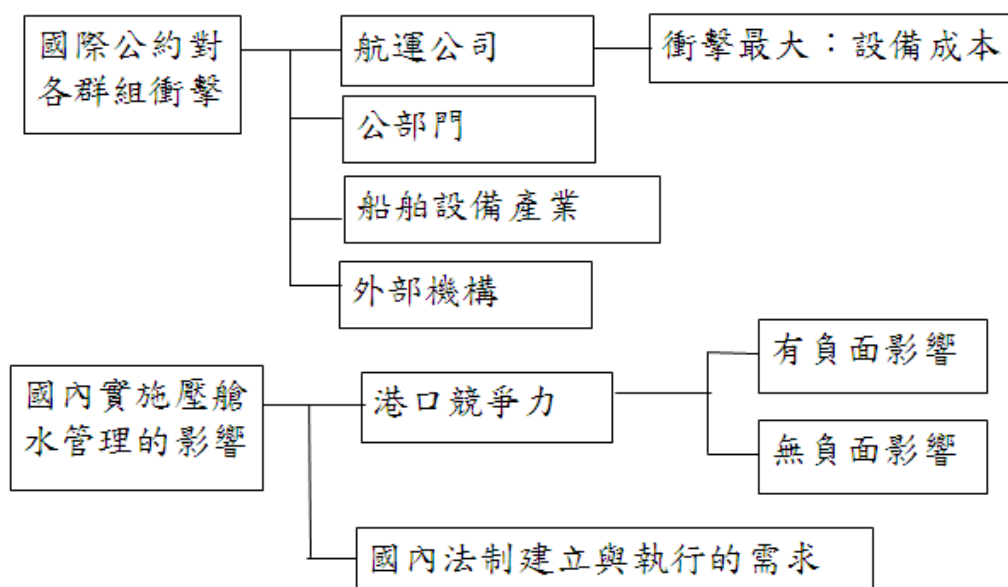
面向	No	問題內涵	面向	No	問題內涵
生態	A1	瞭解受訪者對壓艙水管理的認知程度	管理	C1	壓艙水管理之法制
	A2	對於壓艙水於臺灣海域不當排放之嚴重性認知		C2	壓艙水管理之執法面
經濟	B1	國際公約對我國相關產業之衝擊	技術	D1	指定壓艙水交換區之可行性
	B2	我國實施壓艙水管理之影響		D2	檢驗船用壓艙水處理效能之技術
	B3	從經濟效益評估壓艙水管理與否		D3	岸上壓艙水處置設施之可行性

4-3 權益關係人對於各面向的看法分析

□ 對於生態面向的看法

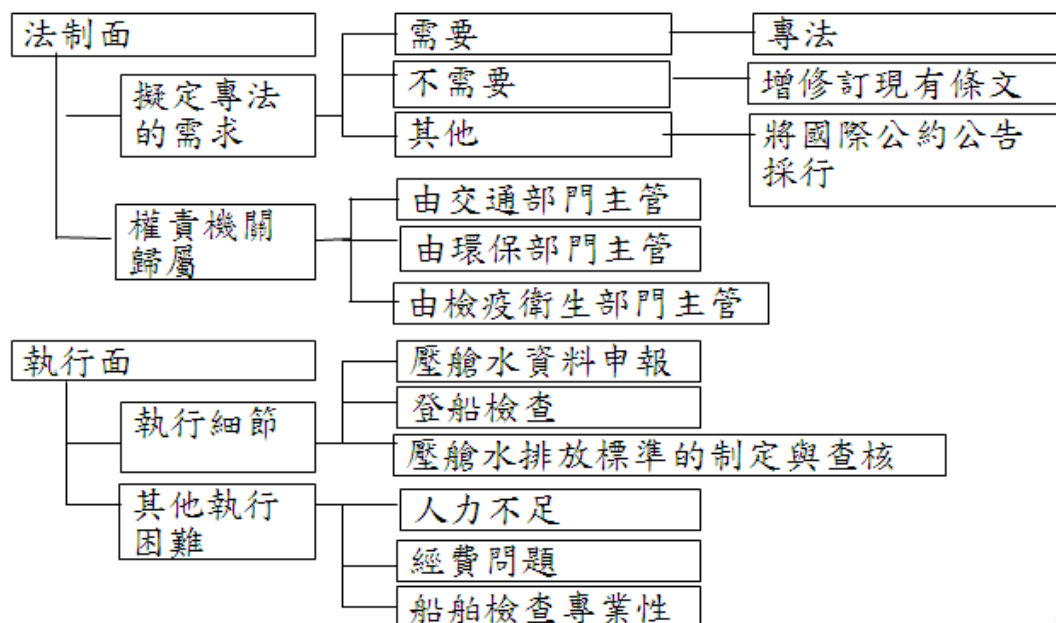


□ 對於經濟面向的看法



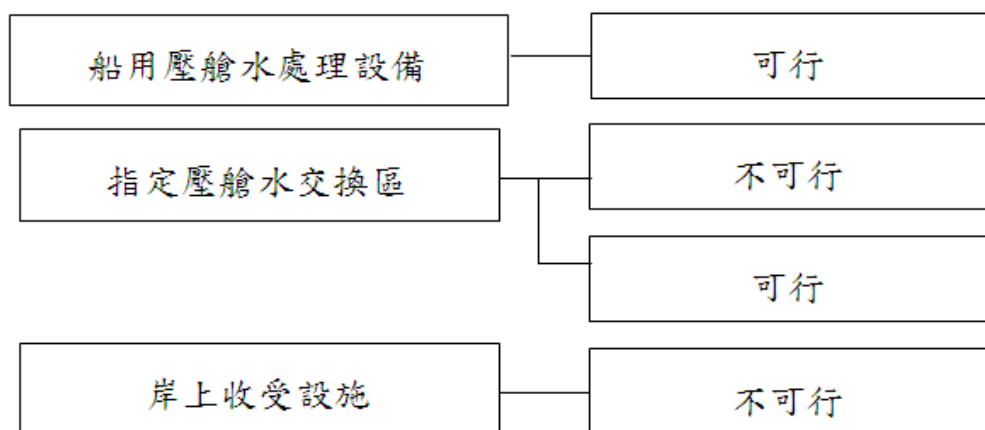
60

□ 對於管理面向的看法



61

□ 對於技術面向的看法



62

五

完成壓艙水管理法草案架構之研擬

63

5-1 相關問題與法規現狀之掌握

- **美國與澳洲法制之比較**:美國部分是以外來種法案作為依據並針對壓艙水獨立制定一個新的法規;而澳洲則是把壓艙水視同於貨物直接沿用檢疫法的規範,同時另訂出壓艙水處理要求作為輔助。
- **台灣目前管制法令-商港法與海污法**:這兩個法中其實均有採行與澳洲類似作法的空間,但商港法本身只能適用於港內之管制而海污法管轄的單位屬於衛生署。其本身並沒有船隻可供上船進行相關的檢驗,需要仰賴其他政府單位的配合,故在台灣實行管制措施時並不能只單看法條,而是要加入最適功能理論作為考量的因素,挑選出最適合處理這種狀況的法案與單位,而若在這方面時有窒礙難行的狀況時,那就要考慮依循美國方式,獨立為壓艙水立法甚至是創設一個特別執行壓艙水處理的專責單位。

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六

結論

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美澳法制部分

相同之處

- 美澳均認為壓艙水是在必須要盡速面對及處理的問題，故兩國均在2000年以前就開始著手關於壓艙水管制法案的研擬及討論。就最後認可的壓艙水處理方式而言，美澳也極為相近，壓艙水所訂定的相關處理標準也大同小異。
- 由於規範對象大部份為跨洋航行的船隻，在航行的過程中會經過不同的國家，若各國間要求的標準的差異過大，可能會影響到這些船隻的船期甚至是對經濟上的利益造成破壞，故三者標準趨於一致是一個合理且可以想像的現象。

66

相異之處

- 美國是以外來種法案作為依據，並專對船隻上壓艙水的處理規範做出立法，其體系獨立而完整，並由外來種法案中要求先調查壓艙水相關的背景資料如，可能透過壓艙水入侵的外來種、各地區生態環境的現狀以及可能造成的經濟與環境影響等。
- 美國不單單只是為了配合國際壓艙水公約之規範而定，除了符合壓艙水公約中的大洋交換法外，同樣考慮到交換法過渡期後的應變方式。在壓艙水處理規範中，要求針對壓艙水處理技術做出研發，並對這些在未來可能被使用的壓艙水處理設備做出相應的規範。整體而言，美國的壓艙水規範體系是完備且能夠應用於現在及之後的船隻管制上的。

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- 澳洲並非把壓艙水作為一個獨立的規範事項加以立法，而是把壓艙水是同於貨物，直接適用於原有的檢疫法規定。這樣的處理辦法相較之下要來的簡便許多，只要修改現行法律而不必另外立法，可減低立法的成本並讓管制措施得以盡快實施。
- 以檢疫法為法源依據所訂出的壓艙水處理要求，內涵上大致上與IMO之規定相符合，僅針對本地做了相對應的修正，並沒有如美國一般對未來船隻可能會使用的壓艙水處理設備做出較為細部的規定。儘管如此，在國際壓艙水公約的過渡期內澳洲的壓艙水相關管制仍可以適用於現在的船隻管制，只是對於過渡期後的管制措施尚未見到有相關前瞻性之跡象，這是值得注意的部分。

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- 綜合兩國，美澳的管制各有其優缺點，若台灣要制定相關壓艙水管制規定，則需要審慎考慮，評估其中規範的脈絡究竟以何者較適合於台灣的法律及生態環境，同時在必要的時候也要考量是否該針對台灣的壓艙水管制做出不同於上述二國的管制方式，以使在台灣針對壓艙水的管制能夠有效地進行，避免珍貴的天然生態環境與資源遭受到外來物種的破壞。

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訪談部分

- 由文獻分析與深入訪談結果討論國內可能之壓艙水處置與管理方式，在壓艙水之處置方式部份發現船舶裝置船用壓艙水處理設備是航運公司接受度最高且已在規劃中的壓艙水處置方式，指定壓艙水交換區需要有更進一步的科學調查才能確認是否可行，而岸上收受設施在初步討論中已具有相當困難性。

70

- 在管理方式部份發現我國港口國官員人力與專業度的限制，需要建立船舶壓艙水風險評估系統與建置(或選定)壓艙水採樣化實驗室，以協助港口國官員有效執法，法規方面發現與船舶壓艙水管理較為相關的三大現行法規中，都涉及部分的壓艙水管理需求，但各有其侷限性，因此國內若要進行船舶壓艙水之管理有立定專法或增修現有相關法規的需求。

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- 質性訪談國內壓艙水管理之權益關係人，結果發現在生態與技術面向各群組的看法相當一致：
- 首先，各群組都認同不當排放壓艙水會造成生態環境的問題，需要予以管制，且需對於臺灣近岸海洋生態環境進行調查，以瞭解實際影響的程度。
- 各群組都認為國內最可行的處置方式是要求船舶裝置壓艙水處理設備，其次是要求船舶進行壓艙水交換，而岸上收受設施則被視為不可行。

72

- 在經濟與管理面向各群組的看法差異較大：在經濟面向上，航運公司一致被認為所受到的衝擊最大，但對於我國港口競爭力以及國內法制的建立與執行，各群組看法不同。
- 在管理面向上有法制面與執行面兩方面的討論，在法制面的看法上公部門群組中的環保單位受訪者認為國內壓艙水管理之主管機關應為交通部門較為適當，但交通單位受訪者對此則持相對的看法，其他群組受訪者則對於後續的執法能力較為關注。
- 因此，對於國內壓艙水管理之法制化首要釐清主管機關之歸屬，並可參照各權益關係人群組之建議研擬符合我國情需求之管理辦法。

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附錄七
期中報告審查意見處理情形表

交通部運輸研究所合作研究計畫

■期中□期末報告審查意見處理情形表

計畫名稱：我國港灣壓艙水污染問題管理法制化之研究 (1/4)

執行單位：財團法人成大研究發展基金會

參與審查人員 及其所提之意見	合作研究單位 處理情形	本所計畫承辦單位 審查意見
蔡進發委員： 1. 研究內容豐富包含國際規範及國內的調查。 2. 建議針對 port state control 相關法規研究以加強對壓艙水的管理。	謝謝指教。 未來報告會針對 PSC 法規有整理分析，再與壓艙水法規結合。	已補充
方志中委員： 1. 國際法制實踐情形，應加入歐盟(荷蘭)及日本、新加坡等國之實踐狀況以見代表性。 2. 本管理法制之主管單位為何?執行單位為何?(同美國或澳洲?) 3. 訪談對象應增列驗船師及海巡署代表，以健全未來檢驗執行之意見。 4. 座談會之代表性，請考量!	謝謝建議，對於每一個國家的壓艙水管理法制，我們是檢視其母法、逐條分析，工作量大，對於歐盟或其他國家是規劃於下一年度計畫進行研究。 對於壓艙水管理單位提出建議需要相當謹慎，我們將在座談會中提出此議題討論。 質性訪談已包括中國驗船中心代表，而海巡署已以公文邀約過訪談未成，將再次邀約訪談。 敬悉。	符合規範要求 已補充 已補充
張淑淨委員： 1. 壓艙水採樣與樣品分析時間?處理程序? 2. 壓艙水交換或排放時的跡象?(例如航速?)偵測的可能性?還是僅能採文件審查?	在公約中已有規定如何採樣，包括採樣點、檢驗數目等都有技術規範可參考。 就國際間的實施現況而言，目前以文件審查為主。	符合規範要求 已修正

參與審查人員 及其所提之意見	合作研究單位 處理情形	本所計畫承辦單位 審查意見
3. 壓艙水管理記錄簿之檢查，在經緯度位置是否合理這方面的檢查，請舉例說明。 Ref. p4-23。是否考慮在法制化時把檢查所需設備也給予法規依據。	壓艙水記錄簿上註明該船舶在何處進行換水，從壓艙水容量與幫浦的運作量可推算出換水的時間，與船舶的航程記錄進行比對便可初步判斷壓艙水的管理記錄是否真實。 謝謝建議，後續研究將納入考慮。	遵照委員指示辦理
江文山委員： 1. 建議未來另案針對國內現況壓艙水排放情形，其中存在那些問題，進行基本的調查分析。另外，若要排放應於何時、何地進行，會有哪些影響等需先有初步評估。 2. 文中對於美國與澳洲有較詳細說明，至於其他國家的狀況如何，是否亦能略作說明。 3. 針對問卷與訪談數量的代表性，建議略作說明。 4. 結論 4 中提到”指定壓艙水交換還需進一步科學調查”，建議說明那些調查。	海拋區有做過調查，是在法的部分，環保署不認為壓艙水是污染物質。 其他國家是下年度計畫。 樣本代表性會再多作說明。 謝謝指教，科學調查項目可參考本團隊上年度計畫「鄰港水質環境調查研究 4/4」第 7.1.1 節中壓艙水指定交換區劃設的案例，如海洋物理和化學、船舶航線、風險評估等項目。	已補充 已修正 已修正 遵照委員指示辦理
洪憲忠委員： 1. BWM 公約尚未生效。 2. BWM 公約生效執行後，港口國管制 PSC 會依國際公約規定進行外籍船舶查驗。 3. 建議持續了解 BWM 公約之發展。	知悉。 遵照建議，並進一步納入後續之研究。 未來會考慮到國際法規變動快速的特性，將考慮以法律或行政命令來兼顧公約高度的變動性。	已修正 符合規範要求

附錄八 期末簡報資料

交通部港灣技術研究中心

我國港灣壓艙水污染問題管理法制化之研究(1/4)

期末報告(初稿)

主 持 人：王毓正 博士

協同主持人：劉大綱 博士

2013/11/15

財團法人成大研究發展基金會

期中報告審查意見處理情形表

蔡委員

□ 所提之意見(1):

建議針對 port state control 相關法規研究以加強對壓艙水的管理。

□ 本團隊回覆:

未來報告會針對PSC法規有整理分析，再與壓艙水法規結合。

2

方委員

□ 所提之意見(1):

國際法制實踐情形，應加入歐盟(荷蘭)及日本、新加坡等國之實踐狀況以見代表性。

□ 本團隊回覆:

未來報告會針對PSC法規有整理分析，再與壓艙水法規結合。

□ 所提之意見(2):

本管理法制之主管單位為何?執行單位為何?(同美國或澳洲?)

□ 本團隊回覆:

對於壓艙水管理單位提出建議需要相當謹慎，我們將在座談會中提出此議題討論。

3

張委員

□ 所提之意見(1):

壓艙水交換或排放時的跡象?(例如航速?)偵測的可能性?還是僅能採文件審查?

□ 本團隊回覆:

就國際間的實施現況而言，目前以文件審查為主。

□ 所提之意見(2):

壓艙水管理記錄簿之檢查，在經緯度位置是否合理這方面的檢查，請舉例說明。Ref. p4-23。是否考慮在法制化時把檢查所需設備也給予法規依據。

□ 本團隊回覆:

壓艙水記錄簿上註明該船舶在何處進行換水，從壓艙水容量與幫浦的運作量可推算出換水的時間，與船舶的航程記錄進行比對便可初步判斷壓艙水的管理記錄是否真實。

4

江委員

□ 所提之意見(1):

建議未來另案針對國內現況壓艙水排放情形，其中存在那些問題，進行基本的調查分析。另外，若要排放應於何時、何地進行，會有哪些影響等需先有初步評估。

□ 本團隊回覆:

海拋區有做過調查，是在法的部分，環保署不認為壓艙水是污染物質。

□ 所提之意見(2):

文中對於美國與澳洲有較詳細說明，至於其他國家的狀況如何，是否亦能略作說明。

□ 本團隊回覆:

其他國家是下年度計畫。

5

洪委員

□ 所提之意見(1):

BWM 公約生效執行後，港口國管制PSC會依國際公約規定進行外籍船舶查驗。

□ 本團隊回覆:

遵照建議，並進一步納入後續之研究。

□ 所提之意見(2):

建議持續了解BWM 公約之發展。

□ 本團隊回覆:

未來會考慮到國際法規變動快速的特性，將考慮以法律或行政命令來兼顧公約高度的變動性。

6

一

研究內容及工作項目

7

研究內容及工作項目

- 調查壓艙水國際公約發展現狀與國際法制及其實踐情形。
- 瞭解港務機關及船舶相關之權益關係人對壓艙水管理與規範需求之意見。
- 完成壓艙水管理法草案架構之研擬。
- 以參與方式管理舉辦座談會以瞭解權益關係人對草案架構之建議。

8

二

計畫背景分析

9

2-1 船舶壓艙水規範之需求與國際公約之簡史

□ 壓艙物演進與外來種入侵問題

- 1900年以前，船舶使用固體壓艙物-石塊、砂子和泥土，20世紀後，開始以水壓艙，許多生物便能透過壓艙水而傳遞。
- 舊金山灣的亞洲蛤、美國聖勞倫斯五大湖的斑馬貽貝以及黑海的櫛水母都是相當著名的例子。

□ 1980年以來，聯合國與國際海事組織開始重視海洋環境保護問題，制定了一系列公約、大會決議案和指導性文件，加強船舶壓艙水控制與管理

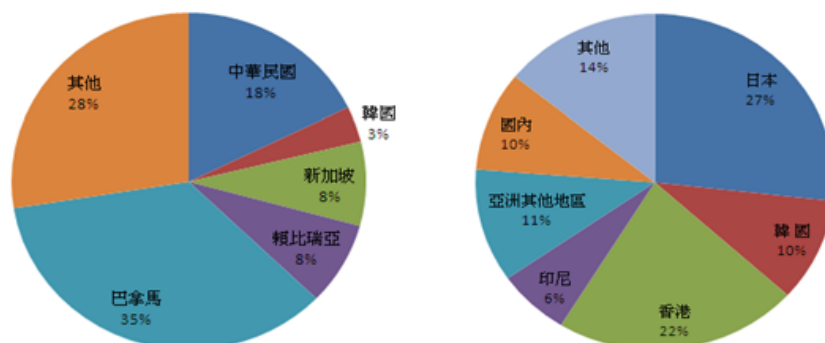
- 1982年《聯合國海洋法公約》
- 1992年《生物多樣性公約》
- 2004年《國際船舶壓艙水和沉積物控管公約》
 - 生效門檻：30個國家簽署、商船總噸位35%以上
 - 現況：36個國家簽署，商船總噸位總噸位占29.07%

10

2-2 適於我國之壓艙水處置方式

2-2-1 進港船舶運輸型態分析

- 蒐集93-96年間臺中港區域進港船舶之航運資料，進行運輸型態分析。
- 研究結果顯示船旗國部分是巴拿馬為最大的來源國(左圖)；船舶前一個停靠港是以亞洲為主，其中又以日本占了最大的比例(右圖)。



11

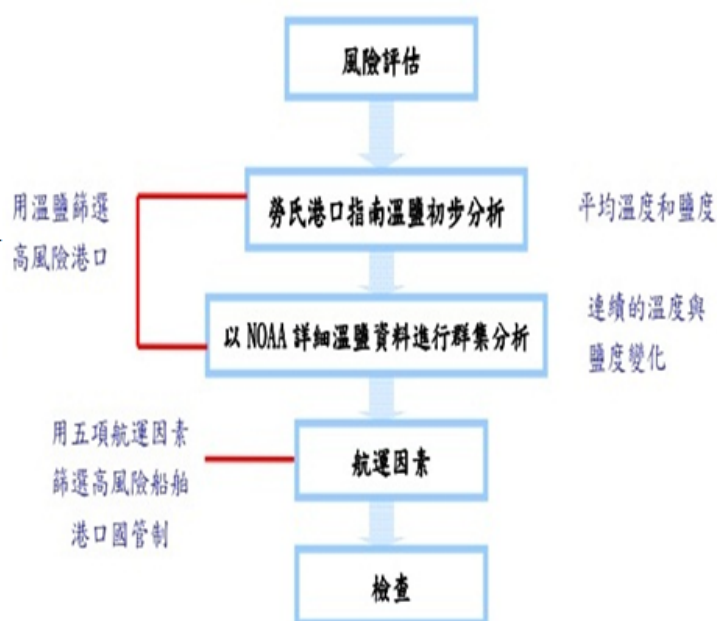
2-2-2 外來侵襲物種資料庫建置

- 外來物種種類繁多，公約本身亦未對外來種做詳細之定義，然而公約中曾以舉例方式指出藻類為易藉由壓艙水侵襲之外來種，且有害藻類之入侵易造成重大環境影響。
- 研究結果發現由曾爆發藻華之地區亦為我國入港船舶上一港常造訪之港口，整理出38種有害物種中，其中12種已登記入臺灣物種名錄中。
- 未來針對高風險船舶進行採樣研究，調查壓艙水中是否含有此26類未被列入名錄的物種並進行追蹤，以進一步防範其入侵。

12

2-2-3 壓艙水風險評估系統建立

- 為提高港口國官員的有效檢查率，本團隊以三階段篩選出高風險船舶。
- 以98年臺中港入港船舶為例統計，原始進港船舶由艘數1,422艘，經過三階段篩選出高風險船舶132艘，占原始艘數的9.3%。
- 此結果可與現有之港口國管制系統結合，既可達到壓艙水管理目的並能提高港口國官員行政效率。

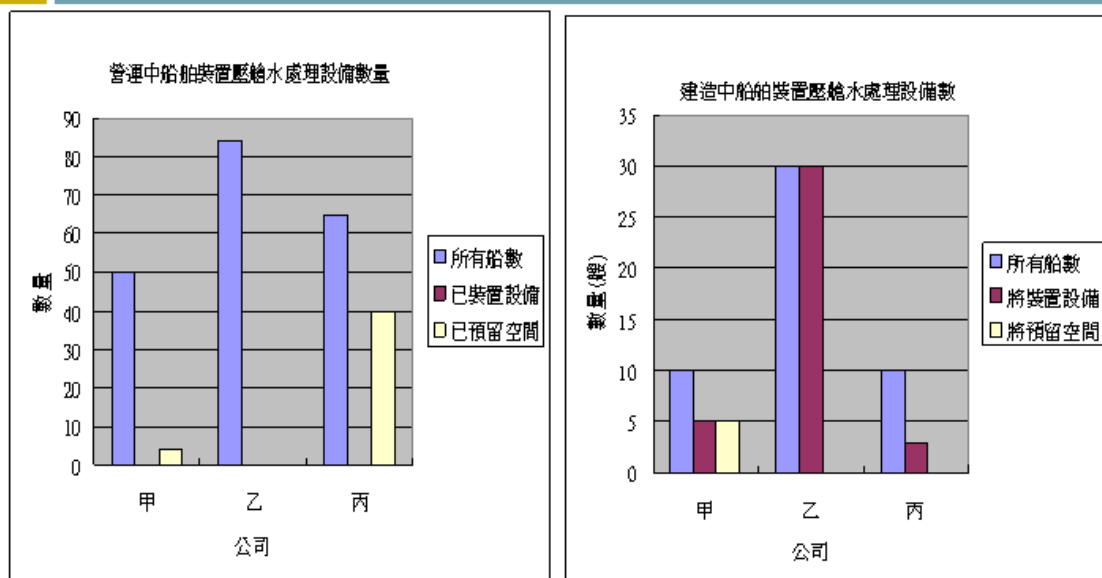


13

2-2-4 臺中港壓艙水於船舶或岸上處置設施之規劃

- 以電子問卷方式向國內規模較大三家航運公司進行壓艙水設備使用現況調查。調查船舶數為營運中船舶數199艘，建造中船舶數50艘。
- 研究結果顯示我國航商幾乎都傾向採用船用壓艙水管理系統，而對於使用岸上處置設備的意願較低，主要考量因素是對使用該設備可能會對作業流程造成影響，而使用船上壓艙水管理系統處置正具備了彌補這樣缺點的方便性，因而成為航運公司較傾向採用的方式。

14



營運中船舶(左圖)與建造中船舶(右圖)裝置壓艙水處置設備率

15

2-3 國內壓艙水管理相關法規之現況

	海洋污染防治法相關法制	商港法相關法制	船舶法相關法制
主管機關	環保部門	交通部門	交通部門
適用範圍	防治海洋污染，保護海洋環境	港區內之污染行為	我國籍船舶配備、技術等
爭議點	1.壓艙水是否被認定為「污染物質」(29條) 2.壓艙水不屬「海洋棄置物質」，因此壓艙水交換無法適用海洋棄置區法規。	可管制港區內船舶所造成之污染行為，但港區外之船舶污染則無權管轄。	可對我國籍船舶設備加以規定，但無法對其他國籍規定。

16

三

調查壓艙水國際公約發展現狀與國際法制及其實踐情形

17

3-1 國際控管船舶壓艙水及沉澱物公約之內容與現狀

- 針對船舶壓艙水所帶來的外來種入侵問題可能造成海域生態環境、人類健康及經濟損失，IMO於2004年2月13日通過《船舶壓艙水和沉積物控管國際公約》。
- 2006年MEPC第55次會議通過五個決議案作為公約附錄規則，合稱為《船舶壓艙水和底泥控管規則》
- MEPC陸續另制訂了14套壓艙水管理技術規範。
- MEPC所通過之規範，對於壓艙水公約的實施具有相當重要的指導性。

18

3-1-1 正文

- 公約本文共有22條，包括一般性條款以及壓艙水管理上的技術性條款。
- 一般性條款，包括有公約中專有名詞的定義(Art.1)，當中重要名詞，如「壓艙水」為「控制船舶橫傾、縱傾、吃水、穩性或應力而加裝到船上的水及懸浮物質」。
- 壓艙水管理上的技術性條款方面，為確保船舶依公約規定實施壓艙水管理，授權締約國可對於進港船舶進行下列三項內容之檢查：
 - 有效證書。
 - 壓艙水記錄簿。
 - 壓艙水採樣。

19

- 樣品的分析時間不應作為延誤船舶營運、行動或離港的理由(Art.9)，並規定對於船舶的核對與認證以及所有的壓艙水管理措施，都不得對船舶造成不當延誤(Art.7)(Art.12)。
- 若船舶造成違規的事實，可對違規船提起法律訴訟、將所發生違規事件的情況和證據提供給該船的主管機關(Art.8)或將違規船舶的相關資訊通知下一港口(Art.11)，締約國間也可對於違規船舶的調查與公約的實施進行合作(Art.10)。

20

3-1-2 附錄規則

- 公約附錄規則《船舶壓艙水和底泥控管規則》，共包括五部分內容，分別為「A總則」、「**B船舶管理和控制要求**」、「C某些區域的特殊要求」、「**D壓艙水管理的標準**」、「E壓艙水管理的檢驗與發證要求」，提供了對於壓艙水管理詳細的規定要求。

21

- 「B 船舶管理和控制要求」部分對於船舶如何進行壓艙水管理與控制提供詳細的說明。
- 首先，每艘船舶需備有經主管機關批准的「壓艙水管理計畫」(Regulation B-1)，內容應包含：
 - 根據公約要求所擬定的壓艙水管理程序。
 - 實施壓艙水管理所採取的行動。
 - 沉積物在海上及在岸上的處理程序。
 - 負責壓艙水管理計畫實施的船員。
 - 公約所規定的船舶報告要求。

22

- 其次，每艘船舶需備有「壓艙水記錄簿」(Regulation B-2)，型式上可以是電子記錄系統或是船上其他記錄簿或系統的一部分，內容須包含：
 - 船舶基本資料及壓艙容量。
 - 汲取壓艙水的時間。距離港口的位置與深度、水量。
 - 為壓艙水管理之目的而處置壓艙水的時間與水量。
 - 排放壓艙水入海的時間與水量。
 - 排放壓艙水到收受設施的時間與水量。
 - 意外或例常性以外的汲取或排放壓艙水的時間、位置與水量等等項目。

23

- 第三，對於船舶壓艙水管理明確地依照船舶建造日期與壓艙容量來規定實施日期(Regulation B-3)，如下所示。

建造年分 (西元年)	壓艙水容量 (立方公尺)	2009	2010	2011	2012	2013	2014	2015	2016
2009 以前	1500~5000	D1 或 D2					D2		
	<1500 or >5000	D1 或 D2							D2
2009 以後	<5000	D2*							
2009-2011	≥ 5000	D1 或 D2							D2
2012 以後		-----			D2				

註：依 A.1005(25)：2009 年建造者，2011/12/31 前應改為 D2。

24

- 第四，壓艙水交換位置的規定(Regulation B-4):

船舶應在距離最近陸地至少 200 海浬和水深至少 200 公尺以上的位置依公約規定進行壓艙水交換。若上述情形無法達到，在任何情況下距離最近陸地不得少於 50 海浬和水深不得少於 200 公尺。

若仍無法找到滿足上述條件的海域，港口國可藉由諮詢鄰國或其他締約國，指定船舶可以進行壓艙水交換的適當區域(但在任何會影響船舶安全、穩定性等構成威脅的情況下，就不受上述壓艙水交換位置的限制)。

25

- 壓艙水性能標準(Regulation D-2)：經過壓艙水管理系統處置過之壓艙水中的生物量必須達到該標準，才能排放入海，標準列出如下：
 - 壓艙水所含有的可存活生物，其尺寸在 ≥ 50 微米時，每立方公尺要少於10個，其尺寸 < 50 微米時，但 ≥ 10 微米時，每毫升要 < 10 個指標微生物。
 - 每100毫升要少於1個CFU(colony forming unit菌落形成單位)的有毒霍亂弧菌(*Vibrio cholera*)，或每公克要少於1個CFU的浮游生物樣品。
 - 每100毫升要少於250個CFU的大腸桿菌(*E. Coli*)。
 - 每100毫升要少於100個CFU的腸球菌(*Enterococci*)。

26

3-2 美國之船舶壓艙水管理法制及其實踐現況

3-2-1 美國船舶壓艙水管理法制

美國壓艙水管理法制

法源依據



母法:《外來有害水生生物防止和控制法》(US Nonindigenous Aquatic Nuisance Prevention and Control Act)和修正案《國家入侵物種法》(National Invasive Species Act of 1996)



子法:33 CFR(導航及通航水域)PART 151-《攜帶原油、液態有毒物質、垃圾和商業或市政廢棄物以及壓艙水之船隻》

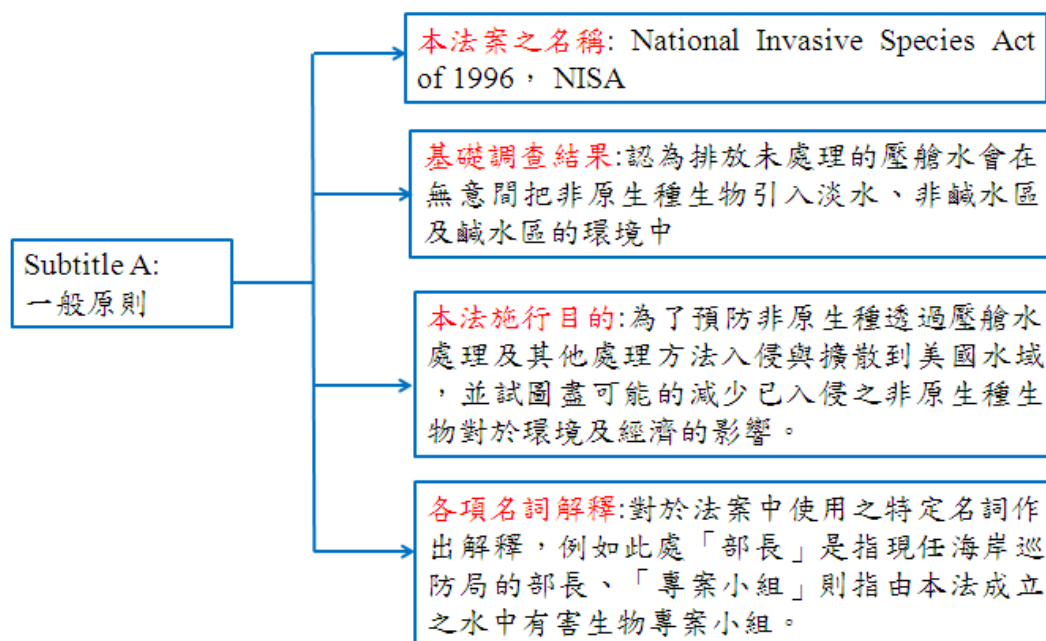
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國家入侵物種法 (National Invasive Species Act of 1996)

標題	標題名稱
TITLE I	水中有害生物的預防和控制 (AQUATIC NUISANCE PREVENTION AND CONTROL)
Subtitle	A 總則(General Provisions)
	B 非原生水生生物非蓄意引入之預防 (Prevention of Unintentional Introductions of Nonindigenous Aquatic Species)
	C 水中有害生物傳播之預防與控制 (Prevention and Control of Aquatic Nuisance Species Dispersal)
	D 撥款授權(Authorizations of Appropriation)
	E 共同的环境分析(Cooperative Environmental Analyses)
TITLE II	五大湖魚類和野生動物復育 (GREAT LAKES FISH AND WILDLIFE RESTORATION)
TITLE III	濕地(WETLANDS)
TITLE IV	五大湖原油污染的研究結果與開發(GREAT LAKES OIL POLLUTION RESEARCH AND DEVELOPMENT)

28

國家入侵物種法-Subtitle A



29

國家入侵物種法-Subtitle B

Subtitle B:
預防非原生種
生物非蓄意地
被引入

指導原則:為了管制美國水域的水中有害生物而要求部長在以船隻及其乘客的安全為前提下制定出相關準則，並由此授權給其他單位制定相關管理規定，同時也在本段訂出罰則。

壓艙水處理資訊的整合及應用:除了評估壓艙水在美國河口、海洋、淡水區等原生種豐富及複雜的地區交換所造成的影響外，也要求研擬出相關的應對方法與管制規定來阻止外來種透過壓艙水入侵。

武裝部隊的壓艙水方案及壓艙水管理之示範項目:針對國防部與海岸巡防局的船隻作出特別的規定，另外也制定相關要求使壓艙水管制的相關技術能夠應用在現行船隻上。

30

國家入侵物種法-Subtitle C

Subtitle C:
水中有害生物
的預防及控制

水中有害生物應對方案的制定:要求專責小組應該為美國水域制定及實施預防水中有害生物入侵和擴散之方案。

國家水中有害生物的管理計畫:包含了洲及洲際間對入侵種的管理計畫，它要求各洲的州政府給專案小組一個全面的管理計畫以核定這些計畫所牽涉的區域及範圍是在洲或洲際區域。

本法案與其他法律之關係:規定這個subpart中的任何內容都不應影響任何國家的權力或政治分支去採用或實施水中有害生物的控制措施，以及減少或影響任何國家管轄的魚類和野生動物物種。

國際合作:要求專責小組應對國務卿(外長)在水中有害生物於其他國家交界水域的出沒上提供即時的建議。

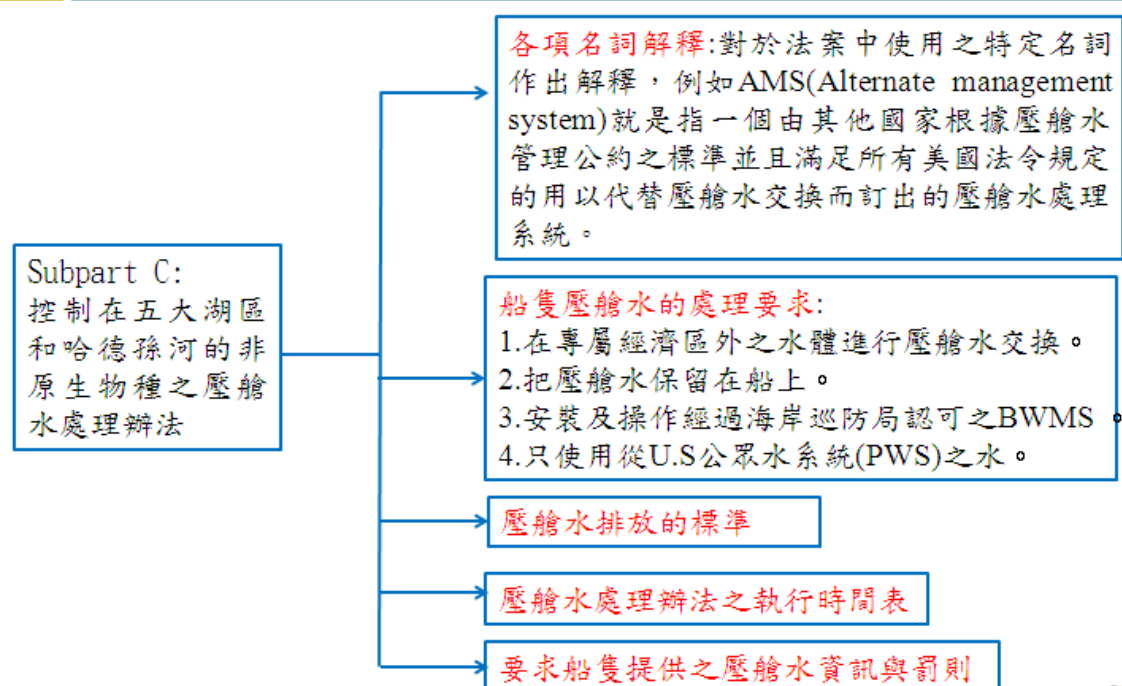
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33 CFR part 151- 《攜帶原油、液態有毒物質、垃圾和商業或市政廢棄物以及壓艙水之船隻》

標題	標題名稱
Subpart A	防止船舶污染公約的執行和南極條約中與船舶造成污染相關的環境保護議定書(Implementation of MARPOL 73/78 and the Protocol on Environmental Protection to the Antarctic Treaty as it Pertains to Pollution from Ships)
Subpart B	市政和商業廢棄物的運輸 (Transportation of Municipal and Commercial Waste)
Subpart C	為控制在五大湖區和哈德孫河的非原生物種之壓艙水處理辦法(Ballast Water Management for Control of Nonindigenous Species in the Great Lakes and Hudson River)
Subpart D	為控制美國水域中非原生種生物之壓艙水處理辦法 (Ballast Water Management for Control of Nonindigenous Species in Waters of the United States)
Subpart E	在海洋廢棄物研究、預防和削減法案之目的中關於海洋廢棄物的定義(Definition of Marine Debris for the Purposes of the Marine Debris Research, Prevention, and Reduction Act)

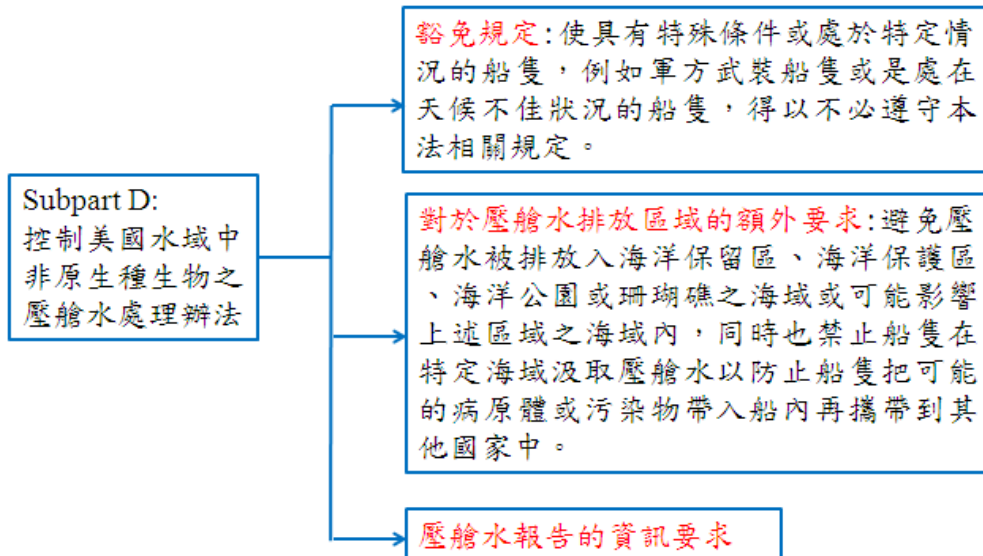
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33 CFR part 151- Subpart C



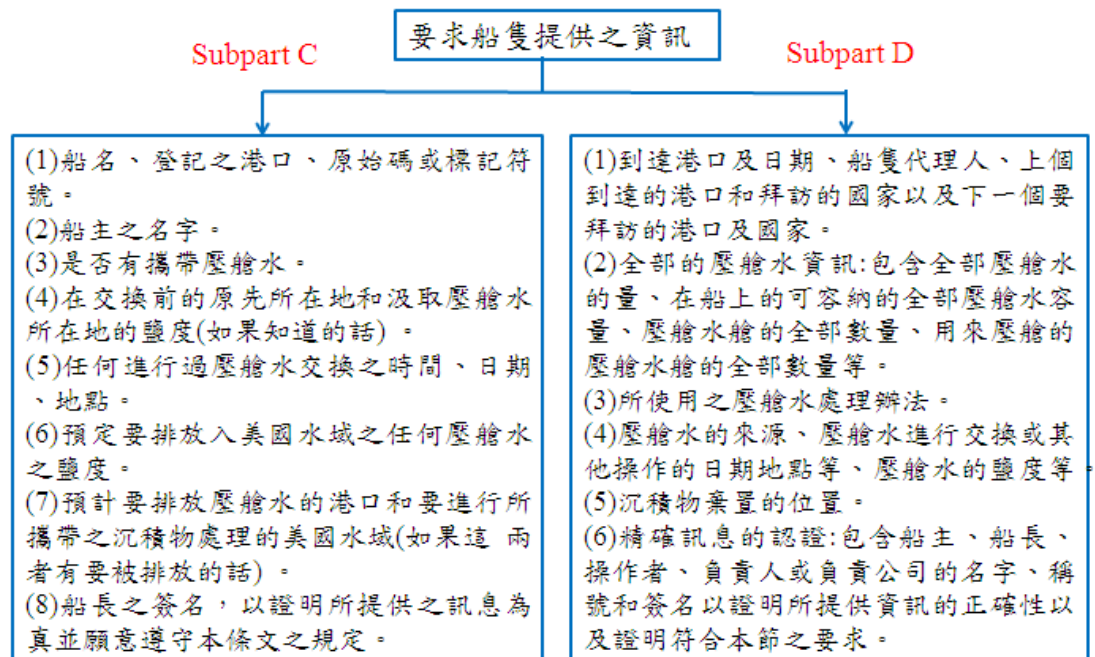
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33 CFR part 151- Subpart D



34

船隻壓艙水資訊



35

3-2-2 美國之船舶壓艙水管理簡史與實踐現況

- 美國外來種的入侵事件可追溯至八〇年代初期的壓艙水排放引起斑馬貽貝由大湖區水域入侵，因此於1990年頒布《外來有害水生生物防止和控制法》，此法立意雖佳，但因未能進行有效的壓艙水管制。
- 外來種入侵的情形在九〇年代仍時有耳聞，因此於1996年又頒布了《國家入侵物種法》，並授權由美國海岸警衛隊建立國家自願壓艙水管理的指導方針(USCG, 2011)，並於隔年成立「國家壓艙水資訊交換中心」，負責壓艙水資料的彙整與研究分析。

36

- 1998年美國海岸警衛隊開始實施初步性全國性壓艙水自願監督計劃，但因目標達成率不足，於2004年實施強制性的壓艙水管理規則(33 CFR 151 subparts C and D)，檢討多年的實施成果並配合現有的技術發展，於2012年3月23日公布最新管理規則：《船舶壓艙水排放在美國水域之活物種標準；最終規則》(USCG, 2012)，並於公布後三個月—2012年6月21日生效。

37

- 美國對於壓艙水管理在聯邦層級上主要有兩個機關，即**海岸警衛隊與環境保護署**，兩者的關係密切，並於2010年9月公佈審核壓艙水處理系統的協議，將對審核通過的處理系統頒發「**環境技術驗證**」，以確保各船舶上所安裝的壓艙水處理系統能符合規定之壓艙水排放標準，接著於2011年兩機關並簽署合作備忘錄以共同管理船舶排放。

38

- 根據《船舶壓艙水排放在美國水域之活物種標準；最終規則》，美國在壓艙水管理上之實施現況如下述：
- 壓艙水管理要求(§151.2025 Ballast water management requirements)
 - 裝置並操作由海岸警衛隊根據46 CFR part 162的規定所認可的壓艙水管理系統(Ballast Water Management System)，並符合§ 151.2030所規定之壓艙水排放標準(Ballast water discharge standard)。
 - 使用美國公共水系統水作為壓艙水。
 - 使用替代性管理系統。
 - 在美國水域內不排放壓艙水。
 - 將壓艙水排放至岸上設施(或駁船設施)。

對於船長、船東、航運公司、代理商或裝有壓艙船舶的負責人在美國水域被要求必須採取以上的其中一個壓艙水管理方法。

39

□ 壓艙水排放標準 (§151.2030 Ballast water discharge Standard)

進入美國水域的船舶被要求使用由海岸警衛隊認可的壓艙水管理系統來處置壓艙水應符合壓艙水排放標準如下所示：

生物尺寸	USCG
≥ 50 微米(μm)	< 10 個微生物(organisms)/ m^3
10-50 微米(μm)	< 10 個微生物(organisms)/ml
指標生物	--
有毒霍亂弧菌(toxicogenic <i>Vibrio cholera</i>)	$< 1\text{CFU}/100\text{ml}$
大腸桿菌(<i>Escherichia coli</i>)	$< 250\text{CFU}/100\text{ml}$
腸球菌(intestinal enterococci)	$< 100\text{CFU}/100\text{ml}$

40

□ 獲認可的壓艙水管理方式的實施時程，如下所示。

(§ 151.2035 Implementation schedule for approved ballast water management)

船分類	壓艙容積 (立方公尺)	建造日期	實施日期
新造船	所有船	2013年12月1日以後(含)	即日生效
現有船	< 1500	在2013年12月1前	2016年1月1日以後的第一次進塢
	1500-5000	在2013年12月1前	2014年1月1日以後的第一次進塢
	> 5000	在2013年12月1前	2016年1月1日以後的第一次進塢

41

□ 申報要求 (§ 151.2060 Reporting requirements)

進入美國水域的船舶無論是否已在專屬經濟海域換水都需在抵港前24小時向指定主管機關申報「壓艙水申報表格」，內容包括船舶資料、航程資料、壓艙水資料、壓艙水管理資料、將排放至美國水域或收受設施的壓艙水資料、沉積物排放資料、資料正確的認可等七部分 (§ 151.2070)。

42

□ 罰則 (§ 151.2080 Penalties)

違反規定者依民事賠償最高可罰35,000美元 (§ 151.2080) 且可按日連續處罰，若蓄意違反本規則者，可判處C級刑事重罪。

□ 替代性管理系統 (§151.2026 Alternate management systems)

取得各國主管機關型式認可符合《壓艙水公約》標準的壓艙水管理系統可向海岸警衛隊申請作為替代性管理系統，並需於安裝後的五年內滿足壓艙水管理方式的實施時程 (§151.2035) 要求。目前已取得USCG認可的替代性管理系統如表所示。

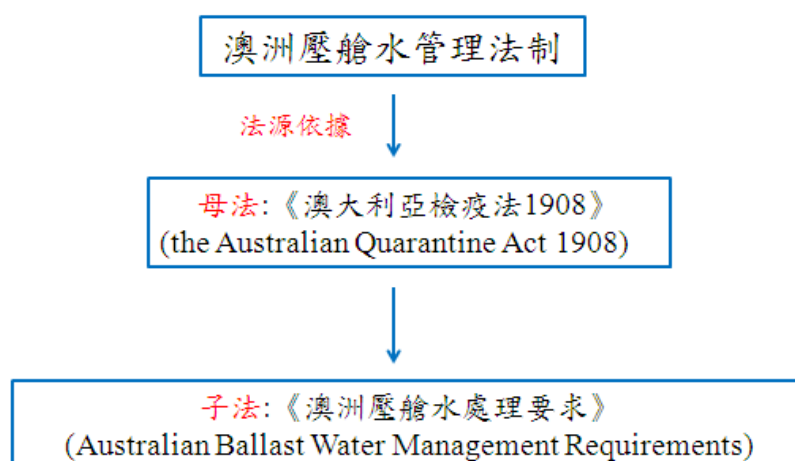
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製造商	機型	型號	認可日期
Alfa Laval Tumba AB	PureBallast	Models 250 to 2500	2013/4/15
Alfa Laval Tumba AB	PureBallast	Models 2.0 and 2.0Ex	2013/4/15
Ecochlor Inc.	Ecochlor	Series 75, 100, 150, 200, 250, and 300	2013/4/15
Hyde	Guardian	HG-60, -100, -150, -200, -250, -300, -400, -450, -500, -600, -700, -800, -900, -1000, -1250, -1350, -1400, -1488, -1600, -2000, -2500, -2975, -4000, -5000, and -6000	2013/4/15
NK Company, Ltd	BlueBallast	NK-O3-010, -015, -030, -040, -050, -075, -100, -150, -200, -250, -300, and -400	2013/4/15
Panasia Co., Ltd	GloEn-Patrol	P-50, -150, -250, -300, -350, -500, -700, -750, -800, -900, -1000, -1200, -1500, -2000, -2500, -3000, -3500, -4000, -4500, -5000, -6000	2013/4/29
Qingdao Headway Technology Company, Ltd.	OceanGuard™	OceanGuard™	2013/4/15
RWO GmbH Marine Water Technology, Veolia Water Solutions and Technologies	CleanBallast	CleanBallast® -150, -200, -250, -300, -350, -400, -450, -500, -500-1, -750, -1000, -1250, -1500, -1750, -2000, -2250, -2500, -2750, -3000, -3250, -3500, and -3750	2013/4/15
Severn Trent De Nora, LLC	BalPure	Models BP-500, -675, -1000, -2000, -2650, -3000, -4000, and -5000	2013/4/15
SunRui	BalClor	BC-300, -500, -1000, -1500, -2000, -2500, -3000, -3500, -4000, -5000, -6000, and -7000	2013/5/1

44

3-3 澳洲之船舶壓艙水管理法制及其實踐現況

3-3-1 澳洲之船舶壓艙水管理法制



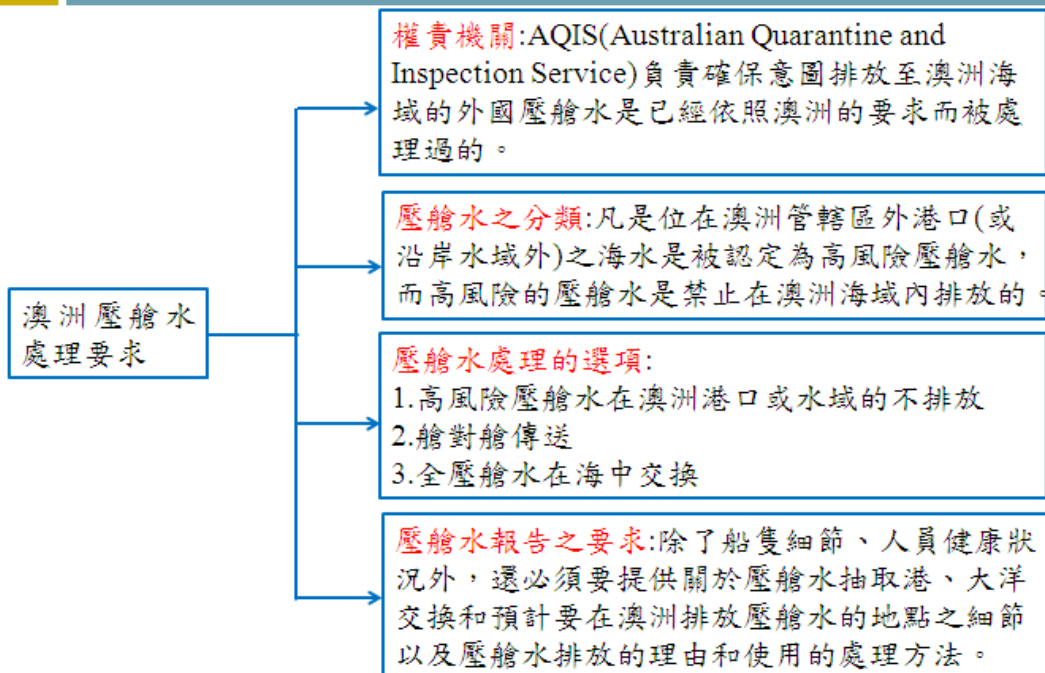
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澳大利亞檢疫法 (the Australian Quarantine Act 1908)

- 將壓艙水視同於其他需檢疫之貨物看待，並在原則上是準用於與貨物檢疫相同之規定。
- 壓艙水在特定的情況下可以豁免部分的檢驗或要求。
- 本條法律授權給總督使其可以在不牴觸本法的前提下訂出相關規定使本法之內涵得以發揮，也由此延伸並制定出《澳洲壓艙水處理要求》，對壓艙水加以管制。

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澳洲壓艙水處理要求



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3-3-2 澳洲之船舶壓艙水管理簡史與實踐現況

- 澳大利亞澳洲衛生檢疫局(Australian Quarantine and Inspection Service) 作為澳大利亞壓艙水管理之主管機關自1990年首度實施自願性壓艙水檢疫規範，並於2001年7月實施《澳大利亞檢疫法1908》，作為強制性壓艙水管理規則，以保護澳大利亞的水域生態、經濟、漁業、水產養殖業免於受到有害水生物種與病原體之入侵危險。

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- 目前所有國際線船舶在抵澳前的最後一個停靠港或進入澳大利亞水域之前需申報壓艙水資料，這些資料由澳大利亞壓艙水決策支援系統進行評估，對各船舶壓艙水作出「高風險」或「低風險」的評等，低風險壓艙水就無需處理可進入澳洲水域，高風險的壓艙水就要到抵澳前進行處置，包括以下的幾種方式：

- 在澳大利亞港口或水域時完全不排放高風險壓艙水。
- 在艙間換水以避免排放壓艙水。
- 在大洋中使用順序交換法、溢流法或稀釋法進行壓艙水交換。

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- 為使整個管理架構能發揮功效，壓艙水申報乃是關鍵的環節。壓艙水決策支援系統（DSS）並不取代原有的「抵港前檢疫報告」。這是所有從國際水域要進入澳洲海域的船舶都必須在進入澳洲水域前的12-96個小時內向澳大利亞檢疫及檢查服務處提出，不繳交「抵港前檢疫報告」的船舶，將無法取得檢疫通關，且這將可能耽延船舶行程且船舶可能需要負擔額外的費用。

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- 自2010年7月1日起澳大利亞檢疫及檢查服務處執行海港計劃(National Seaports Program Australian Ballast Water Management Requirements)，並為整合大於25米之國際線船舶所有抵港前活動而設立了「海上國家協調中心」，作為所有抵港前資訊整合的單位以及船務代理商、營運商等向官方的聯絡單位，並依航線區域陸續將申報系統完全轉換為電子申報系統(eQPAR)。

51

- 除了抵港前檢疫報告以外，如果船舶將在澳大利亞港口排放壓艙水，也需遞交「壓艙水管理摘要」(AQIS Ballast Water Management Summary)，此為船舶壓艙水管理的詳細記錄，包括：
 - ▣ 在海上所進行之壓艙水管理的實況記錄。
 - ▣ 壓艙水汲取港口。
 - ▣ 大洋交換和預定在澳大利亞排放壓艙水位置等資訊。
- 但並非強制性繳交

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- 當海上國家協調中心收到船舶所遞交的壓艙水管理摘要，就會由澳大利亞檢疫及檢查服務處官員上船進行驗證該船所提供給AQIS的資訊是否正確。
- 通過登船驗證，澳大利亞檢疫及檢查服務處就會給予可在澳洲海域內排放壓艙水的書面許可。
- 如果船舶未在抵港前隨同「抵港前檢疫報告」(QPAR)繳交壓艙水管理摘要，就將不會被許可在澳洲海域內排放壓艙水。

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- 在澳洲領海內和國內港口的壓艙水管理，則由港口所在位置的地方政府機關主管。
- 以維多利亞洲為例(DAFF, 2011)，維多利亞州政府環保署根據《環境保護法案1970》的授權，對於來自澳洲境內水域的壓艙水進行管理。
- 要求船舶需要繳交壓艙水申報表格以及註明船舶壓艙水來源的日誌，若沒有維多利亞州環保署的批准，即使是汲取自國內水域的壓艙水也不可在維多利亞州水域排放。

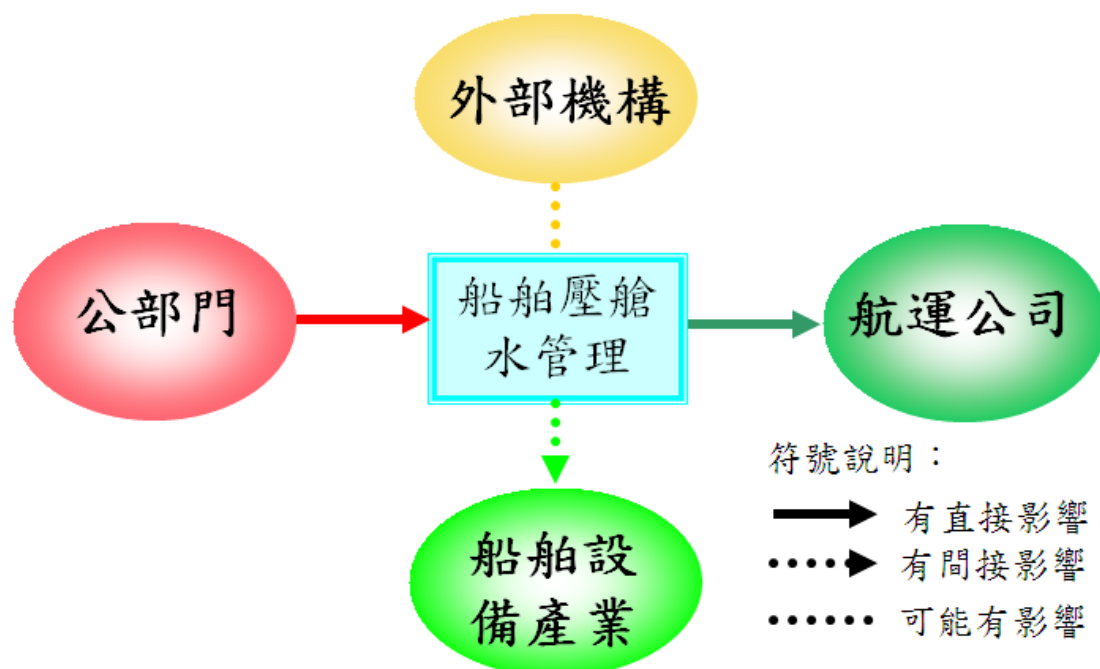
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四

瞭解港務機關及船舶相關之權益關係人對壓艙水管理與規範需求之意見

55

4-1 界定船舶壓艙水權益關係人及其相互關係



56

訪談對象編號(1/3)

群組	所屬機關	職稱	編號	訪談數
公部門	交通部航港單位	科長	a1-1	12
	交通部航港單位	港口國官員	a1-2	
	交通部航港單位	課長	a1-3	
	交通部航港單位	港口國官員	a1-4	
	交通部航港單位	港口國官員	a1-5	
	國營港務公司	處長	a2-1	
	國營港務公司	副處長	a2-2	
	國營港務公司	港務長	a2-3	
	國營港務公司	經理	a2-4	
	環保單位	技正	a3-1	
	環保單位	技士	a3-2	
	環保單位	科長	a3-3	

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訪談對象編號(2/3)

群組	所屬機關	職稱	新編號	訪談數
航運公司	船公司(甲)	專案課長	b-1	8
	船公司(乙)	三副	b-2	
	船公司(丙)	經理	b-3	
	船公司(丁)	副理	b-4	
	船公司(戊)	經理	b-5	
	船公司(己)	船長	b-6	
	船公司(庚)	船長	b-7	
	船公司(庚)	大管輪	b-8	

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訪談對象編號(3/3)

群組	所屬機關	職稱	編號	訪談數
船舶設備產業	驗船機構	副處長	c-1	3
	海事服務公司	總經理	c-2	
	造船公司	工程師	c-3	
外部機構	大學海洋科技系所	助理教授	d-1	6
	大學海洋環境系所	教授	d-2	
	大學環境安全系所	教授	d-3	
	大學法律系所	助理教授	d-4	
	大學輪機工程系所	副教授	d-5	
	環保團體	理事長	d-6	
總計				29

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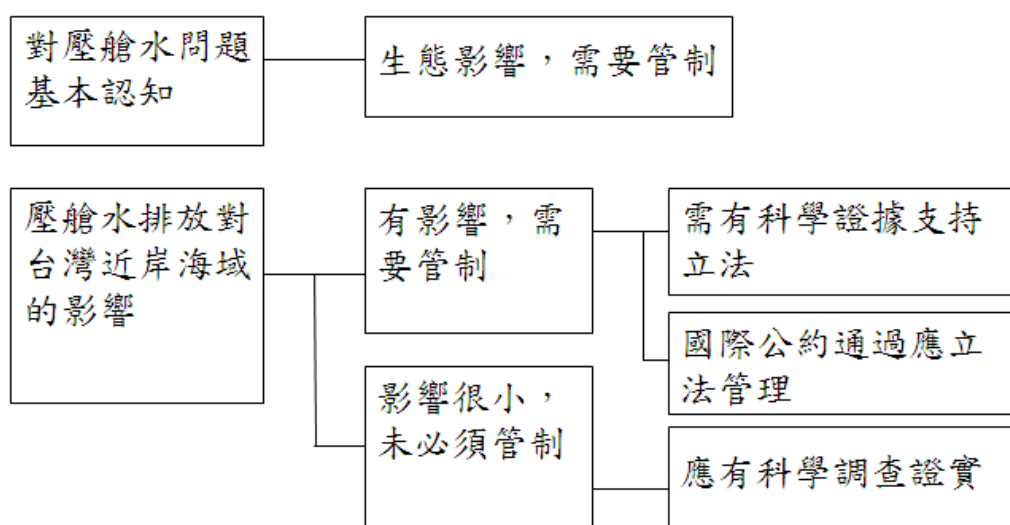
4-2 質性訪談重要權益關係人---訪談提綱

面向	No	問題內涵	面向	No	問題內涵
生態	A1	瞭解受訪者對壓艙水管理的認知程度	管理	C1	壓艙水管理之法制
	A2	對於壓艙水於臺灣海域不當排放之嚴重性認知		C2	壓艙水管理之執法面
經濟	B1	國際公約對我國相關產業之衝擊	技術	D1	指定壓艙水交換區之可行性
	B2	我國實施壓艙水管理之影響		D2	檢驗船用壓艙水處理效能之技術
	B3	從經濟效益評估壓艙水管理與否		D3	岸上壓艙水處置設施之可行性

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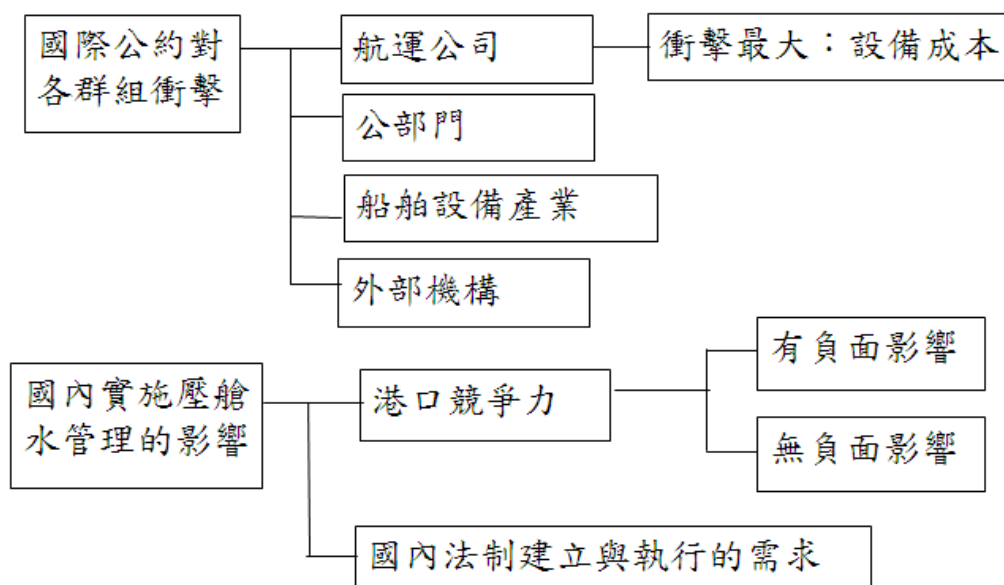
4-3 權益關係人對於各面向的看法分析

□ 對於生態面向的看法



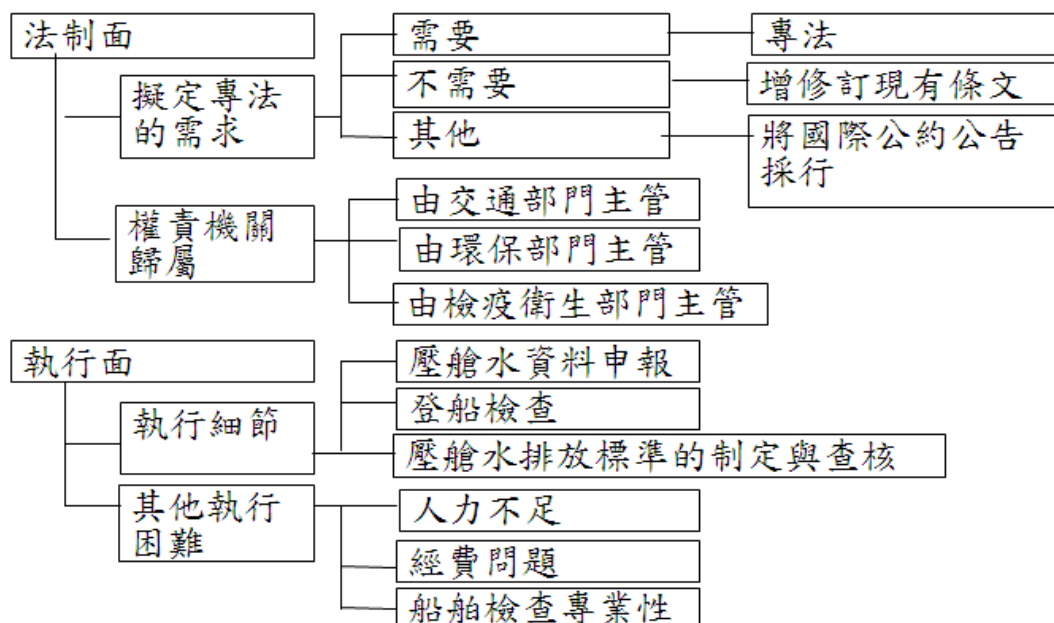
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□ 對於經濟面向的看法



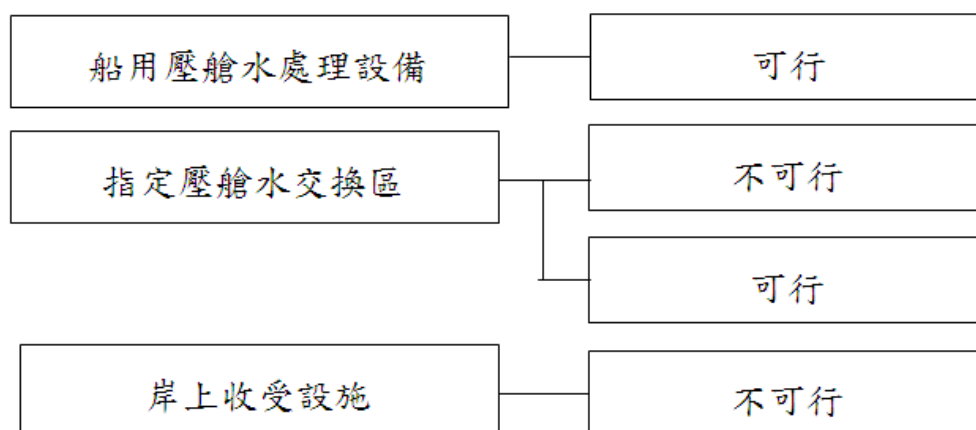
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□ 對於管理面向的看法



63

□ 對於技術面向的看法



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五

座談會記錄摘要與意見歸納

65

管理事項

- 依據目前《壓艙水公約》的規定，有關壓艙水管理可以採取的管制手段包括有三方面：指定壓艙水交換區、船用壓艙水處理設備以及岸上收受設施。
- 使用船用壓艙水處理設備被視為最適於我國的壓艙水處置方式，其次為指定壓艙水交換區，而岸上收受設施被認為最不可行。

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1. 岸上壓艙水收受設施

- 岸上壓艙水收受設施被所有人視可行性最低。主要原因是多數受訪者認為技術上有困難，加上岸上收受設施對於港口經營者是一項鉅額投資，包括成本與投資報酬率，以及後續的維修保養、操作人員訓練等，這也涉及航商的使用意願與願付代價。

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2. 壓艙水指定交換區

- 多數人認為在我國近岸海域劃設指定壓艙水交換區是不可行的，原因包括會影響船舶航線，還有對於短航程的船舶，如往來於兩岸的船舶，要在其航程時間內完成換水要求不易達到。
- 在《壓艙水公約》中D-1換水標準要求僅是過渡措施，等到進入D-2後，船舶都需安裝壓艙水處理設備，以我國的立法速度而言，屆時可能已進入到公約 D-2時程，因此部分認為並不需要針對D-1換水標準制定規則。

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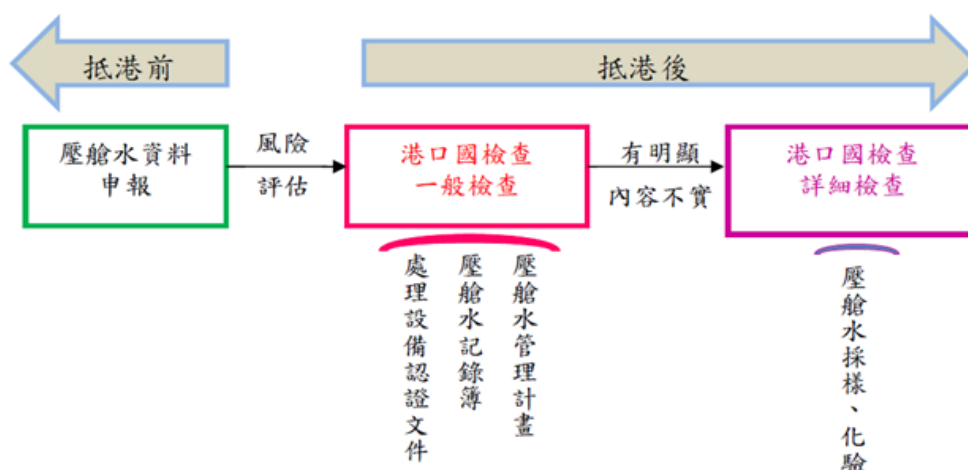
3. 船用壓艙水處理設備

- 所有人均認同最為可行的壓艙水處置方式是要求船舶裝置船用壓艙水處理系統，航運公司均視此為國際社會的趨勢，因此新造船都已安裝設備或已預留空間，現有船待公約生效就會安裝設備，對於國內未來是否要實施壓艙水管理，表示肯定與樂觀其成的態度。

69

管理流程

- 對於欲進入我國港域並載有壓艙水之船舶，在不影響船期的前提下，應如何規劃壓艙水管理流程！



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權責機關

- 環保單位因壓艙水在《海洋污染防治法》中尚未能定義為「污染物質」，表示目前壓艙水的管理並非屬於環保業務，除非其中含有廢油、污水等已公告的污染物質。且環保單位要對船舶執法較有困難性，認為船舶設備的管理應由航政單位主政較為適合。
- 交通航港單位認為壓艙水問題就屬性而言，與航運安全無關，但對環境有影響，所以應由環保單位主管，但港口機關可配合執行。

71

- 船舶設備產業群組受訪者認為船舶排放的污染物，還留在船上應由交通部管理，因為船舶設備、證書等均為交通管的管理職責，但當壓艙水排放入海，造成污染時，環保署可能就有管理的需要。
- 但無論其看法如何，都對我國公部門各單位間能建立合作機制、完善管理壓艙水問題寄予期許。

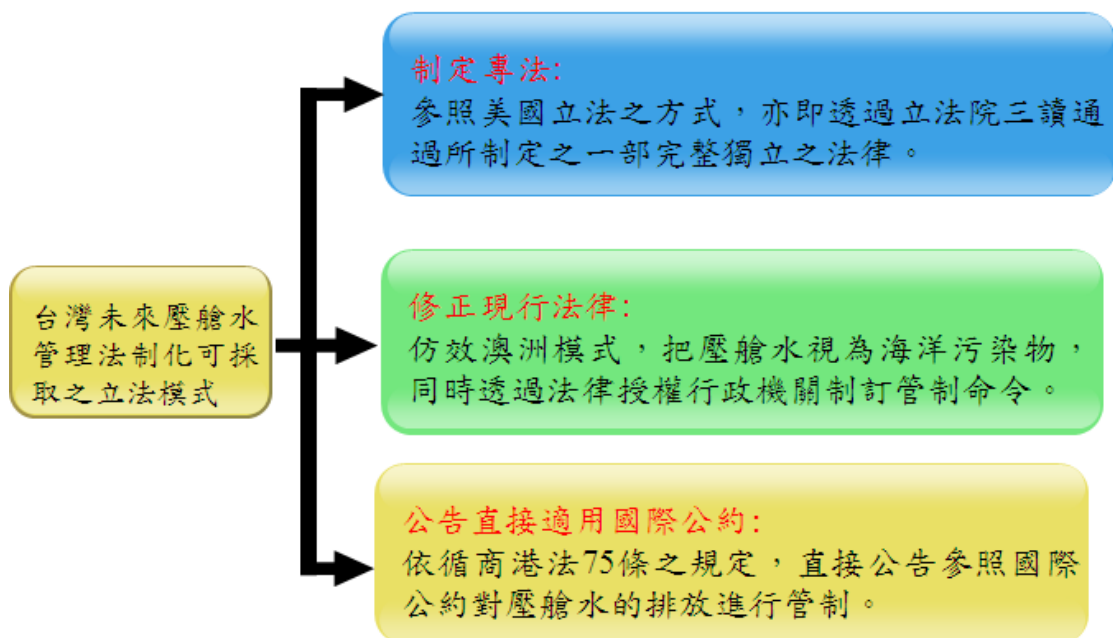
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懲處手段

- 《壓艙水公約》正文第八條對於任何違反公約要求的行為，不論其發生在何處，都予以禁止並授權給各締約國之主管機關之法律給予制裁。即使目前公約尚未生效，但已開始實施壓艙水管理的國家為防止船隻規避管制，均在壓艙水管理辦法中制定了罰則。
- 現今對壓艙水的檢驗仍須一定的時間，故會出現在等待檢驗結果時船隻卻已經出港之情形，為避免船隻以船期為由規避相關之檢驗與開罰，可透過建立黑名單之方式或是累計開罰，使得違反之船隻在下次入港時會遭受到懲處或更嚴格之檢驗。

73

修法方式



74

六

壓艙水管理法草案架構之研擬

75

6.1 依據商港法75條規定管理可行性

- 有關國際公約是否可作為我國行政管制之法源，涉及「一元論」及「二元論」的區分。
- 對於二元論國家而言，國際條約即使經過批准或加入，亦無國內法效力，仍需要制定國內法以實踐國際條約。
- 我國憲法並未明文規定，但多數實務與學說認為我國係採取「二元論」。
- 更何況，我國目前有簽訂國際公約之困難，而通常採取自願性遵守的方式。

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- 縱使以商港法第75條為訂定法規命令之授權依據，是否即可直接以BWM公約的規範內容作為商港內壓艙水管理之依據？
- 透過自願遵守之方式實踐國際公約的國家，通常可採取就公約中最有利自己國家的部分遵守：亦得基於更高的環保要求，訂定更為嚴格的排放標準。
- 國際公約不可能鉅細靡遺地進行規範，各國仍須視各自國家之狀況與情形，訂定個別之管制程序及細節事項之規範內容，縱使以商港法第75條為依據，仍屬「立法」的問題。
- 商港法第75條的授權範圍是否足夠？

77

商港法第75條無法解決的兩個問題

- 管制範圍不足：商港法管制範圍僅限於商港內，若要壓艙水的管制措施能夠完全發揮阻絕外來種威脅台灣海域環境，則須在船隻進入港口前即採取積極預防管制的措施。
- 欠缺罰則規定：此將造成依據商港法第75條所訂定之法規命令欠缺違法效果之結果，導致有效管制上之不利。

78

6.2 壓艙水管理應包含之權責機關

- 以美國為例，縱使以USCG為第一線的主管機關，但於制定相關規定時會整合各部會成立專案小組，以研議相關法制問題。
- 若將公約中之壓艙水管理機制放到內國法層次來看，其任務範圍將涉及海洋環境保護管理機關以及海洋秩序與安全管理機關，亦可能涉及港口管理以及海洋環境保護等法律之修訂。
- BWM公約所定之壓艙水交換區域管理之設定及相關之排放標準的訂定等規範事項，就我國目前相關行政機關之分工而言，環保署確實屬業務較為直接相關之權責機關。

79

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80

- 縱使目前BWM公約對於D1之管理模式訂於2017年退場，但有延後退場的高度可能性。
- 臺灣未來若採取自願性遵守BWM公約的方式，則在有必要的情形下，仍可繼續沿用壓艙水交換區域管理模式而不受BWM公約之影響。
- 壓艙水排放標準之訂定以及港口外違反壓艙水違法排放之採樣與取締等事項觀之，環保署在壓艙水管理事項上確實關係密切。

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- 行政程序法第19條第1項規定「行政機關為發揮共同一體之行政機能，應於其權限範圍內互相協助」。行政機關執行職務時，遇因人員、設備不足等原因，不能獨自執行職務；或執行職務所必要認定之事實，不能獨自調查，皆得向無隸屬關係之其他機關請求協助（行政程序法第19條第2項第2、3款）
- 被請求機關亦得依據行政程序法第19條第5、6項規定拒絕之。
- 建議應透過在法律層次的修法，例如仿效美國法的規範模式，所有權責機關之所應負責之工作事項予以確定與整合。

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6.3 壓艙水管理法制化模式之建議

- 單以商港法第75條作為壓艙水管理之依據，在本質上存在有規範不足之現象。
- 是否應制定一部專屬的法律，應先釐清是否透過修訂現行法規之方式仍不足以因應。
- 就壓艙水管理而言，透過相關現行法律的修正，應即已足夠因應法制化的需求。

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海洋污染防治法及商港法進行修正

- 明確將壓艙水納入「其他污染物」之項目。
- 確立商港內航政機關為壓艙水管理之主管機關，商港以外環保署為壓艙水管理之主管機關，海洋巡防署則為協助業務之執行機關。
- 分別在兩部法律當中增訂授權條款，授權航政機關與環保署會同共同訂定具法規命令性質之壓艙水管理辦法。

海洋污染防治法及商港法進行修正

- 在海洋污染防治法中增訂由環保署會同航政機關訂定壓艙水排放標準，但其他法律亦得訂定較嚴格之排放標準。
- 在商港法中增訂航政主管機關得視商港內之水質情況，在必要時訂定較嚴格之排放標準。
- 分別在兩部法律當中，對於在商港內或商港外之違反壓艙水管理規範之行為，明確訂定罰則規定，由各自主管機關據以執法。
- 航政機關與環保署會同共同訂定之壓艙水管理辦法當中應包含，壓艙水管理方式、管理流程、應檢具接受檢查之文書種類與應記載事項，及其他相關細節事項。

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附錄九
期末報告審查意見處理情形表

交通部運輸研究所合作研究計畫

□期中 ■ 期末報告審查意見處理情形表

計畫名稱：我國港灣壓艙水污染問題管理法制化之研究 (1/4)

執行單位：財團法人成大研究發展基金會

參與審查人員 及其所提之意見	合作研究單位 處理情形	本所計畫承辦單位 審查意見
蔡進發委員： 1. 研究成果合乎預期 2. 資料蒐集及訪談具完整性與全面性。 3. 建議結論更精簡。 4. 建議了解美國為何自己訂定更嚴格的標準，但卻不簽約的原因？	謝謝指教。 謝謝指教。 敬悉，已於定稿中遵造辦理。 謝謝指教，因各國有其考量，部分國家為了不要過度拘束本國船隻保護自身經濟利益故不簽約，如美澳等先進國家。美國之前甚至想要訂得更嚴格的排放標準以保護自身海域。	已補充 已修正 遵照委員指示辦理
方志中委員： 1. 本研究完成國際公約發及國際法制實際文獻回顧。 2. 完成問卷調查及座談會。 3. 第六章應具體擬定壓艙水管理辦法草案架構。 4. 若為多年期計畫，應分年列出並說明各年度之關連性。	謝謝指教。 謝謝指教。 感謝委員指導，但由於這部分仍須配合第二年計畫研擬出更具體的規範內容之後，比較有辦法做出較完整的草案架構建議，尚請委員諒解。 謝謝指教，關於後面四年的計畫每年可能會有一些更動，但會先在這份報告中先大致把各年度的工作項目提出。	已補充 已補充 遵照委員指示辦理 已補充
張淑淨委員： 1. 對問題面的探討，點出了多項重要考量因素，也蒐集歸納分析了權益相關人的意見。 2. 提出的修法與主管機關等建議方案，可再對應問題面的因素，	謝謝指教。 謝謝指教，對於修法與主管機關之問題面因素的優缺點分析請參閱本研究 p.5-7 第 5.3.3 小節「權責機關」與 p.5-8 第 5.3.5 小節「修法方式」，而第六章提出的修法與主管機關等建議	已補充 符合規範要求

參與審查人員 及其所提之意見	合作研究單位 處理情形	本所計畫承辦單位 審查意見
分析其優缺點。	方案為綜整上述分析之結果。	
3. 宜再檢視並整理國際與國內各法規可規範的行為者與空間範圍。	謝謝指教，國際法規部分請參閱本研究 p.3-14 第 3.2.1 小節「美國之船舶壓艙水管理法制」其中說明美國壓艙水管理法制之是源自於 1990 年的《外來有害水生生物防止和控制法》，包括可規範的行為者與空間範圍及 p. 3-29 第 3.3.1 小節「澳洲之船舶壓艙水管理法制」其中說明目前在澳洲的壓艙水管理要求的法源基礎是來自於《澳大利亞檢疫法 1908》，包括可規範的行為者與空間範圍。國內法規部分請參閱第 6.1 節「依據商港法 75 條規定管理可行性之分析」，內容從國際公約內國法化之角度討論壓艙水公約在我國內之可規範的行為者與空間範圍適用性，並進一步討論國內與壓艙水管理最為相關之法規——商港法適用於壓艙水管理的可規範的行為者與空間範圍，敬請詳閱。	遵照委員指示辦理
4. 修法建議宜再以類似狀況之法案修訂與實施檢視評估其可行性。	敬悉。	已修正
5. P.7-5 建議明確將壓艙水納入「其他污染物」之項目。但就如 p.4-22 之意見調查所述：似並不宜將壓艙水直接(全部)視為污染物，建議說明此點。	謝謝指教，p.4-22 中「似並不宜將壓艙水直接(全部)視為污染物」陳述為本研究質性訪談中之一位受訪者意見，另有受訪者對此持不同看法；而 P.7-5 乃為本研究綜整國際法規與國內法規與權益關係人之意見所得之建議，與 P.4-22 陳述並無衝突。 針對壓艙水是否可被視為污染物，請參見 p.2-9 與 2-10 中對於海洋污染防治法第 29 條與商港法第 37 條之說明。	
6. P.2-11 表 2-2 建議再加一列 ”法源/法規依據”。	謝謝指教，表 2-2 為「與壓艙水管理相關之法制討論」，本表第一列即為 ”法源/法規依據”。	已修正
7. 對國際航線/通過之外籍船舶的規範必須依據國際法(UNCLOS)及 IMO 各國國際公約規範(尤其就我國而言，更是如此)才較可行。	謝謝指教，國際法(UNCLOS)及 IMO 各國國際公約規範是國際海運之指導原則與基本規範，但各國是否可直接以國際法規作為執法依據？請參閱本研究 p.6-1、p.6-2 對於一元論與二元論國家將國際公約國內法化之討論。	符合規範要求
8. 若要要求船舶安裝設備，更是必須從 UNCLOS、IMO 等之國際法規著手，而對應的國內法源在中華民國領海與鄰接區、專屬經濟海域等法。此議題必然涉及不同機關，單從海污法與商港法來看，來修法，很可能是不夠的。	謝謝指教，委員看法與本研究結論一致，單從海污法與商港法來看，來修法，確實是不夠充分的，如本研究 p.6-2、p.6-3 的說明。	遵照委員指示辦理
9. 期中所提意見第 1 點係希望能從相關時間與程序檢視所提國內各方案運作上的可行性。	敬悉。	

參與審查人員 及其所提之意見	合作研究單位 處理情形	本所計畫承辦單位 審查意見
江文山委員： 1. 研究方法嚴謹且成果顯著，執行單位努力值得肯定。 2. 報告主要著重於法規與執行面作探討，建議考量未來若壓艙水法規要執行，則技術面的配套措施有那些進行探討與建議。 3. 建議報告中第七章內容略作修飾，以利重點能夠凸顯。 4. 結論中建議商港與非商港的壓艙水主管機關分別為航政與環保署，是否已考量工業港的特性。	謝謝指教。 敬悉。 敬悉，已於定稿中遵造辦理。 謝謝指教，這個部分是目前我們報告中尚未涉及到的部分，我們會把這部分納入下一年度的研究計畫中。	已補充
洪憲忠委員： 1. 可考量針對現有「海污法」、「商港法」、「船舶法」、「海巡法」等進行修正，較易於推動。 2. 現在海洋污染處理模式可供法制化時相關機關(環保署、交通部、海巡署等) 權責、法源之參考。 3. 罰則應規劃納入法源內。	謝謝指教，委員意見與本研究結論原則上一致，「本研究首先認為單以商港法第 75 條作為壓艙水管理之依據，在本質上存在有規範不足之現象。反之，是否必須透過制定一部專屬的法律以作為壓艙屬管理之依據，本研究亦採取保留之立場。」如 p.6-1、p.7-5 所述。 謝謝指教，壓艙水在排放方式、排放地點、可察覺性等都与目前已列入管制之海洋污染項目有所不同，因此無法完全以現有的海洋污染處理模式處理，而有立法管理之需求。 謝謝指教，委員意見與本研究結論相同，如 p.7-5 所述「對於在商港內或商港外之違反壓艙水管理規範之行為，明確訂定罰則規定，由各自主管機關據以執法。」。	遵照委員指示辦理 遵照委員指示辦理 遵照委員指示辦理
張雅富委員書面審查： 1. 壓艙水的污染管理方向及權責分工單位可考慮： 1.源頭管理，確認外來物種的可能危害程度、抽驗程序及本土海域及港灣生態的承受能力。 2.配合立法，因應國際公約對船舶的管制，就航行區域、船舶設施規範、許可排放交換情形等，進行管理機關分工。	謝謝指教。要確認外來物種對於台灣海域的危害程度需要進行壓艙水採樣並對樣品進行分析，但因壓艙水採樣必須登船才可進行，在沒有法規依據下，研究單位並無權登船進行採樣。因此，亟需相關法制的建立才能進行相關研究使壓艙水能夠「源頭管理」。	遵照委員指示辦理

參與審查人員 及其所提之意見	合作研究單位 處理情形	本所計畫承辦單位 審查意見
2. 理想與實務上的平衡考量： 1.管理手段的可實現性及成本效益，有關壓艙水污染查驗的立即可驗證，在時效上不影響船期。 2.不影響本國籍船舶及港口的對外國際競爭力，例如衍生壓艙水處理收費及滯港費用、進出時間。 3.臺灣鄰近其他國家港口的實施期程與管理排放交換海域協商。 3. 第四、五章內容紀錄甚為豐富，建議有研究的小結，避免只有訪談或座談紀錄整理。	謝謝指教。壓艙水公約中所建議的各種管理手段都以不影響船期為考量。對於壓艙水管理對於港口競爭力之影響，在本研究 p.4-12 可見相關之討論。 謝謝指教，第四章與第五章之架構是將訪談或座談會記錄整理並分析後所得之結果，其精要的小結第四章請參閱 p.7-2 第 5 點，第五章請參閱 p.7-3 第 6 點。	遵照委員指示辦理 遵照委員指示辦理