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交通部運輸研究所

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<tr><td colspan="4">摘要：
海事安全調查的意義在於為了防止海難事故和海上事件發生而進行的海事案件調查。植基於分離並獨立於任何其它形式的調查基礎上，海事安全調查應採用一致的方法和途徑，必要時進行和鼓勵大範圍的調查，以發現引發因素和其他安全風險，及提交報告給國際海事組織以供將訊息廣為發布，幫助國際海運界正視並解決安全問題。
本研究的目的在於檢討在國際海事組織的海運安全調查相關法規框架下，臺灣海運安全調查機制現況，並透過分析各主要海事國家海運安全調查機制的運作概況，以明確指出臺灣海運安全調查機制所面臨的問題及未來與國際接軌時應加強的改進措施，研究成果可供行政院運安會、交通部及所屬機關研議參採。</td></tr>
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ABSTRACT:

The objective of marine safety investigation is to prevent marine incidents in the future and to investigate any such incidents. Based on the separation from, and independent of, any other form of investigation, marine safety investigation should be applying consistent methodology and approach, to enable and encourage a broad ranging investigation, where necessary, in the interests of uncovering the causal factors and other safety risks; and providing reports to the International Maritime Organization to enable a wide dissemination of information to assist the international marine industry to address safety issues.

Based on the framework of the International Conventions, Regulations and Codes relating to marine safety investigation and cooperative investigation among nations, this study is set to assess and evaluate the status and problems of Taiwan's marine safety investigation scheme and make recommendations regarding issues in Taiwan's marine safety investigation system and measures that need to be taken to make Taiwan's practice align with international practice. The research findings may serve as a reference to government agencies under the Taiwan Transportation Board (TTSB) and the Minsitry of Traffic and Communications (MOTC).

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第一章 緒論

1.1 序言

立法院 106 年 10 月 18 日第 9 屆第 4 會期交通委員會第 5 次全體委員會議質詢「公共運輸事故調查執行現況、國家運輸安全調查委員會成立情形」，會中交通部長同意半年內再盤點並進行規劃，另依據交通部 106 年 11 月 21 日交路字第 1065015771 號函，囑本所依行政院人事總處就飛航安全調查委員會擬具之「運輸安全調查委員會設置計畫書草案」所提意見之因應作法，擬具交通部意見送行政院人事總處參考。

本項海運安全調查機制之檢討與分析工作，係依前述交通部函示就國內外海運安全調查機構進行盤點，並研擬與國際接軌之改善建議。

1.2 工作項目與議題推論

本計畫工作項目臚列如后：

1. 蒐集並研析國際各先進國家海運安全調查機構之重大事故定義與事故調查範圍、歷年調查案件數與主要類別、組織與人力規模(專任或兼任)、功能及獨立性行使現況。

2. 蒐集並研析國際各先進國家海運安全調查機構之安全調查與其政府行政監理機關之行政調查關係，以及彼此之權責分工。

3. 蒐集並研析國際各先進國家海運安全調查機構之安全改善建議對其政府行政監理機關之強制性，以及如何影響(拘束)行政監理機關之後續改善。

4. 蒐集國際各先進國家海運安全調查機構人才專業性與訓練實務狀況，並探討其調查結果之權威性與公信力。

5. 蒐集國際各先進國家海運安全調查機構之運作經費來源。

6. 探討國內海運安全調查有待與國際接軌之處，並研提相關建議(如資料公開、客觀審查，以及落實追蹤...等等)。

從上述的工作項目，透過 ISO QMS models 的分析方式，歸納「海運安全調查機制」所探討的範疇主要為：

1. 什麼是海事事故？

2. 什麼樣的海事事故會啟動調查機制？

3. 國際間主要都是什麼樣的組織來執行調查？

4. 什麼樣的人具備擔任海事調查的能力？

5. 調查結果具備什麼樣的效力？

6. 錢從哪裡來？

7. 我們該怎麼做？

1.3 研究限制

本研究的主要核心工作在於取得各先進國家有關海事調查機制方面廣泛的資訊，以提供我國政府作為建置「國家運輸安全調查委員會」的規劃參考之用，囿於研究時間僅有短短一個半月，極為短促。因此，本研究的基本作法與呈現原則如下：

1. 以平實的文字語言陳述；

2. 以簡潔的歸納方式呈現；

3. 搜集的全數電子資料檔案(粗估超過千頁以上，大多為 PDF 檔案形式的原始法規依據)，以附錄方式供後續研究參考(請參考附錄 D)。

另有關名詞定義方面，合作研究的合約文件中對於本議題的主體以「國家運輸安全調查委員會」、「海運安全調查機構」、「海運安全調查委員會」稱之。唯在國際間慣用的稱謂或有不同，或有「國家運輸安全委員會」、「運輸安全委員會」、「海事調查機關」、「海事調查機構」、「海運安全調查機構」、「海事安全委員會」、「海事調查委員會」、「海事安全調查委員會」等等稱謂不一。主要差異在於稱之曰「海事」抑或「海運」，以及「安全」、「調查」抑或「安全調查」的差別。因此，在本報告中，除各國相應單位名稱的直接翻譯以外，均混合使用，不做嚴格定義。

第二章 海事調查體制的基本精神與法理基礎

2.1 前言

所謂調查者，係指應用科學的方法，針對現實生活中某個特定的社會現象進行考察，真實記錄和客觀的敘述，瞭解其發生的各種原因和相關聯繫，從而提出解決社會問題對策的活動。包含該社會現象的背景、主題、細節、結果、評析等要素。其作用主要在於總結經驗以及學習運用二方面。誠如《詩經・小雅・鶴鳴》：「他山之石，可以攻玉」；《論語・述而》：「三人行，必有我師焉，擇其善者而從之，其不善者而改之。」《戰國策・楚策四》：「見兔而顧犬，未為晚也；亡羊而補牢，未為遲也。」《新書・連語》：「周諺曰：『前車覆而後車戒。』今前車已覆矣，而後車不知戒，不可不察也。」丹麥諺語亦云：「災難中無所得，才真是難中之難(A catastrophe that pleases none is really bad.)」[1]等所寓者，同其理矣，而海事調查研究之目的亦同。

國際間有關海事調查的論述，不論是從聯合國國際海事組織的層面、各國政府部門層次，亦或是各產官學研等各層次或機構的研究從未間斷，相關的規範也不時推陳出新。其目的無他，就是為了達成 Safer Shipping, Cleaner Ocean 四個英文字的持續向上的目標。

有關海事調查的法源基礎，在聯合國海洋法公約(UNCLOS)第 94 條(船旗國的義務)第 7 項規定：「每一國家對於涉及懸掛該國旗幟的船舶在公海上因海難或航行事故對另一國國民造成死亡或嚴重傷害，或對另一國的船舶或設施、或海洋環境造成嚴重損害的每一事件，都應由適當的合格人士一人或數人或在有這種人士在場的情況下進行調查。對於該另一國就任何這

[1] Kristiansen S, Maritime Transportation: Safety Management and Risk Analysis, Elsevier Butterworth-Heinemann: London, 2005, p3.

種海難或航行事故進行的任何調查，船旗國應與該另一國合作。」 即已敘明。

在聯合國國際海事組織(IMO)方面，在海上人命安全公約(SOLAS)、載重線公約(Loadline)、防止船舶污染國際公約(MARPOL)、航海人員訓練、發證及當值標準國際公約(STCW)、國際漁船安全公約(Torremolinos)、關於油汙染損害在公海行駛干涉國際公約(Intervention)以及在相關的決議案以及章程或通函中均明確宣示，每一政府機關應保證根據國際海事組織相關規定履行對其任何船舶的任何事故進行調查的義務。

在國際勞工組織(ILO)方面，在防止海員事故公約(Convention No. 134)、商船最低標準公約(Convention No. 147)、預防海員事故建議案(R142)、國際海事勞工公約(MLC 2006)中也都敘明各國應對涉及其懸掛旗幟之船舶所導致之人員傷亡之任何嚴重海事事故展開官方調查。

2.2 聯合國海洋法公約

聯合國海洋法公約(United Nations Convention on the Law of the Sea, 1982, UNCLOS)相關條文臚列如下：

Article 2 (第二條) Legal status of the territorial sea, of the air space over the territorial sea and of its bed and subsoil (領海及其上空、海床和底土的法律地位)

1. The sovereignty of a coastal State extends, beyond its land territory and international waters and, in the case of an archipelagic State, its archipelagic waters, to an adjacent belt of sea, described as the territorial sea. (沿海國的主權及於其陸地領土及其內水以外鄰接的一帶海域，在群島國的情形下則及於群島水域以外鄰接的一帶海域，稱為領海。)

2. This sovereignty extents to the air space over the territorial sea as well as to its bed and subsoil. (此項主權及於領海的上空及其海床和底土。)

3. The sovereignty over the territorial sea is exercised subject to this Convention and to other rules of international law. (對於領海的主權的行使受本公約和其他國際法規則的限制。)

Article 27 (第二十七條) Criminal jurisdiction on board a foreign ship (外國船舶上的刑事管轄權)

1. The criminal jurisdiction of the coastal State should not be exercised on board a foreign ship passing through the territorial sea to arrest any person or to conduct any investigation in connection with any crime committed on board the ship during its passage, save only in the following cases: (沿海國不應在通過領海的外國船舶上行使刑事管轄權，以逮捕與在該船舶通過期間船上所犯任何罪行有關的任何人或進行與該罪行有關的任何調查，但下列情形除外：)

(a) if the consequences of the crime extend to the coastal State; (罪行的後果及於沿海國)

(b) if the crime is of a kind to disturb the peace of the country or the good order of the territorial sea; (罪行屬於擾亂當地安寧或領海的良好秩序的性質；)

(c) if the assistance of the local authorities has been requested by the master of the ship or by a diplomatic agent or consular officer of the flag State; or (經船長或船旗國外交代表或領事官員請求地方當局予以協助；或)

(d) if such measures are necessary for the suppression of illicit traffic in narcotic drugs or psychotropic substances. (這些措施是取締違法販運麻醉藥品或精神調理物質所必要的。

2. The above provisions do not affect the right of the coastal State to take any steps authorized by its laws for the purpose of an arrest or investigation on board a foreign ship passing through the territorial sea after leaving internal waters. (上述規定不影響沿海國為在駛離內水後通過領海的外國船舶上進行逮捕或調查的目的而採取其法律所授權的任何步驟的權利。)

3. In the cases provided for in paragraphs 1 and 2, the coastal State shall, if the master so requests, notify a diplomatic agent or consular officer of the flag State before taking any steps, and shall facilitate contact between such agent or officer and the ship's crew. In cases of emergency this notification may be communicated while the measures are being taken. (在第一和第二兩款規定的情形下，如經船長請求，沿海國在採取任何步驟前應通知船旗國的外交代表或領事官員，並應便利外交代表或領事官員和船上業務人員之間的接觸。遇有緊急情況，發出此項通知可與採取措施同時進行。)

4. In considering whether or in what manner an arrest should be made, the local authorities shall have due regard to the interests of navigation. (地方當局在考慮是否逮捕或如何逮捕時，應適當顧及航行的利益。)

5. Except as provided in Part XII or with respect to violations of laws and regulations adopted in accordance with Part V, the coastal State may not take any steps on board a foreign ship passing through the territorial sea to arrest any person or to conduct any investigation in connection with any crime committed before the ship entered the territorial sea, if the ship, proceeding from a foreign port, is only passing through the territorial sea without entering internal waters. (除第十二部分有所規定外或有違犯按照第五部分制定的法律和規章的情形，如果來自外 國港口的外國船舶僅通過領海而不駛入內水，沿海國不得在通過領海的該船舶上採取任何步驟，以逮捕與該船舶駛進領海前所犯任何罪行有關的任何人或進行與該罪行有關的調查。)

Article 94 (第九十四條) Duties of the flag State (船旗國的義務)

1. Every State shall effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag. (每個國家應對懸掛該國旗幟的船舶有效地行使行政、技術及社會事項上的管轄和控制。)

2. In particular every State shall: (每個國家特別應：)

   (a) maintain a register of ships containing the names and particulars of ships flying its flag, except those which are excluded from generally accepted international regulations on account of their small size; and (保持一本船舶登記冊，載列懸掛該國旗幟的船舶的名稱和詳細情況，但因體積過小而不在一般國際規章規範的船舶除外；)

   (b) assume jurisdiction under its internal law over each ship flying its flag and its master, officers and crew in respect of administrative, technical and social matters concerning the ship. (根據其國內法，就有關每艘懸掛該國旗幟的船舶的行政、技術和社會事項，對該船及其船長、高級船員和船員行使管轄權。)

3. Every State shall take such measures for ships flying its flag as are necessary to ensure safety at sea with regard, inter alia, to: (每個國家對懸掛該國旗幟的船舶，除其他外，應就下列各項採取為保證海上安全所必要的措施：)

   (a) the construction, equipment and seaworthiness of ships; (船舶的構造、裝備和適航條件；)

   (b) the manning of ships, labour conditions and the training of crews, taking into account the applicable international instruments; (船舶的人員配備、船員的勞動條件和訓練，同時考慮到適用的國際文件；)

(c) the use of signals, the maintenance of communications and the prevention of collisions. (信號的使用、通信的維持和碰撞的防止。)

4. Such measures shall include those necessary to ensure: (這種措施應包括為確保下列事項所必要的措施：)

(a) that each ship, before registration and thereafter at appropriate intervals, is surveyed by a qualified surveyor of ships, and has on board such charts, nautical publications and navigational equipment and instruments as are appropriate for the safe navigation of the ship; (每艘船舶，在登記前及其後適當的間隔期間，受合格的船舶檢驗人的檢查，並在船上備有船舶安全航行所需要的海圖、航海出版物以及航行裝備和儀器；)

(b) that each ship is in the charge of a master and officers who possess appropriate qualifications, in particular in seamanship, navigation, communications and marine engineering, and that the crew is appropriate in qualification and numbers for the type, size, machinery and equipment of the ship; (每艘船舶都由具備適當資格，特別是具備航海術、航行、通信和海洋工程方面資格的船長和高級船員負責，而且船員的資格和人數與船舶種類、大小、機械和裝備都是相稱的；)

(c) that the master, officers and, to the extent appropriate, the crew are fully conversant with and required to observe the applicable international regulations concerning the safety of life at sea, the prevention of collisions, the prevention, reduction and control of marine pollution, and the maintenance of communications by radio. (船長、高級船員和在適當範圍內的船員，充分熟悉並須遵守關於海上生命安全，防止碰撞，防止、減少和控制海洋污染和維持無線電通信所適用的國際規章。)

5. In taking the measures called for in paragraphs 3 and 4 each State is required to conform to generally accepted international regulations, procedures and practices and to take any steps which may be necessary to

secure their observance. (每一國家採取第三和第四款要求的措施時，須遵守一般接受的國際規章、程序和慣例，並採取為保證這些規章、程序和慣例得到遵行所必要的任何步驟。)

6. A State which has clear grounds to believe that proper jurisdiction and control with respect to a ship have not been exercised may report the facts to the flag State. Upon receiving such a report, the flag State shall investigate the matter and, if appropriate, take any action necessary to remedy the situation. (一個國家如有明確理由相信對某一船舶未行使適當的管轄和管制，可將這項事實通知船旗國。船旗國接到通知後，應對這一事項進行調查，並於適當時採取任何必要行動，以補救這種情況。)

7. Each State shall cause an inquiry to be held by or before a suitably qualified person or persons into every marine casualty or incident of navigation on the high seas involving a ship flying its flag and causing loss of life or serious injury to nationals of another State or serious damage to ships or installations of another State or to the marine environment. The flag State and the other State shall cooperate in the conduct of any inquiry held by that other State into any such marine casualty or incident of navigation. (每一國家對於涉及懸掛該國旗幟的船舶在公海上因海難或航行事故對另一國國民造成死亡或嚴重傷害，或對另一國的船舶或設施、或海洋環境造成嚴重損害的每一事件，都應由適當的合格人士一人或數人或在有這種人士在場的情況下進行調查。對於該另一國就任何這種海難或航行事故進行的任何調查，船旗國應與該另一國合作。)

Article 97 (第九十七條) Penal jurisdiction in matters of collision or any other incident of navigation (關於碰撞事項或任何其他航行事故的刑事管轄權)

1. In the event of a collision or any other incident of navigation concerning a ship on the high seas, involving the penal or disciplinary responsibility of

the master or of any other person in the service of the ship, no penal or disciplinary proceedings may be instituted against such person except before the judicial or administrative authorities either of the flag State or of the State of which such person is a national. (遇有船舶在公海上碰撞或任何其他航行事故涉及船長或任何其他為船舶服務的人員的刑事或紀律責任時，對此種人員的任何刑事訴訟或紀律程序，僅可向船旗國或此種人員所屬國的司法或行政當局提出。)

2. In disciplinary matters, the State which has issued a master's certificate or a certificate of competence or licence shall alone be competent, after due legal process, to pronounce the withdrawal of such certificates, even if the holder is not a national of the State which issued them. (在紀律事項上，只有發給船長證書或駕駛資格證書或執照的國家，才有權在經過適當的法律程序後宣告撤銷該證書，即使證書持有人不是發給證書的國家的國民也不例外。)

3. No arrest or detention of the ship, even as a measure of investigation, shall be ordered by any authorities other than those of the flag State. (船旗國當局以外的任何當局，即使作為一種調查措施，也不應命令逮捕或扣留船舶。)

Article 218 (第二百一十八條) Enforcement by port States (港口國的執行)

1. When a vessel is voluntarily within a port or at an off-shore terminal of a State, that State may undertake investigations and, where the evidence so warrants, institute proceedings in respect of any discharge from that vessel outside the internal waters, territorial sea or exclusive economic zone of that State in violation of applicable international rules and standards established through the competent international organization or general diplomatic conference. (當船隻自願位於一國港口或岸外設施時，該國可對該船違反通過主管國際組織或一般外交會議制訂的可適用的國

際規則和標準在該國內水、領海或專屬經濟區外的任何排放進行調查，並可在有充分證據的情形下，提起司法程序。)

2. No proceedings pursuant to paragraph 1 shall be instituted in respect of a discharge violation in the internal waters, territorial sea or exclusive economic zone of another State unless requested by that State, the flag State, or a State damaged or threatened by the discharge violation, or unless the violation has caused or is likely to cause pollution in the internal waters, territorial sea or exclusive economic zone of the State instituting the proceedings. (對於在另一國內水、領海或專屬經濟區內發生的違章排放行為，除非經該國、船旗國或受違章排放行為損害或威脅的國家請求，或者違反行為已對或可能對提起司法程序的國家的內水、領海或專屬經濟區造成污染，不應依據第一款提起司法程序。)

3. When a vessel is voluntarily within a port or at an off-shore terminal of a State, that State shall, as far as practicable, comply with requests from any State for investigation of a discharge violation referred to in paragraph 1, believed to have occurred in, caused, or threatened damage to the internal waters, territorial sea or exclusive economic zone of the requesting State. It shall likewise, as far as practicable, comply with requests from the flag State for investigation of such a violation, irrespective of where the violation occurred. (當船隻自願位於一國港口或岸外設施時，該國應在實際可行範圍內滿足任何國家因認為第一款所指的違章排放行為已在其內水、領海或專屬經濟區內發生，對於內水、領海或專屬經濟區已造成損害或有損害的威脅而提出的進行調查的請求，並且應在實際可行範圍內，滿足船旗國對這一違反行為所提出的進行調查請求，不論違反行為在何處發生。)

4. The records of the investigation carried out by a port State pursuant to this article shall be transmitted upon request to the flag State or to the coastal State. Any proceedings instituted by the port State on the basis of such an investigation may, subject to section 7, be suspended at the request of the

coastal State when the violation has occurred within its internal waters, territorial sea or exclusive economic zone. The evidence and records of the case, together with any bond or other financial security posted with the authorities of the port State, shall in that event be transmitted to the coastal State. Such transmittal shall preclude the continuation of proceedings in the port State. (港口國依據本條規定進行的調查的紀錄，如經請求，應轉交船旗國或沿海國。在第七節限制下，如果違反行為發生在沿海國的內水、領海或專屬經濟區內，港口國根據這種調查提起的任何司法程序，經該沿海國請求可暫停進行。案件的證據和記錄，連同繳交港口國當局的任何保證書或其他財政擔保，應在這種情形下轉交給該沿海國。轉交後，在港口國即不應繼續進行司法程序。)

Article 220 (第二百二十條) Enforcement by coastal States (沿海國的執行)

1. When a vessel is voluntarily within a port or at an off-shore terminal of a State, that State may, subject to section 7, institute proceedings in respect of any violation of its laws and regulations adopted in accordance with this Convention or applicable international rules and standards for the prevention, reduction and control of pollution from vessels when the violation has occurred within the territorial sea or the exclusive economic zone of that State. (當船隻自願位於一國港口或岸外設施時，該國對在其領海或專屬經濟區內發生的任何違反關於防止、減少和控制船隻造成的污染的該國按照本公約制定的法律和規章或可適用的國際規則和標準的行為，可在第七節限制下，提起司法程序。)

2. Where there are clear grounds for believing that a vessel navigating in the territorial sea of a State has, during its passage therein, violated laws and regulations of that State adopted in accordance with this Convention or applicable international rules and standards for the prevention, reduction and control of pollution from vessels, that State, without prejudice to the application of the relevant provisions of Part II, section 3, may undertake physical inspection of the vessel relating to the violation and may, where

the evidence so warrants, institute proceedings, including detention of the vessel, in accordance with its laws, subject to the provisions of section 7. (如有明顯根據認為在一國領海內航行的船隻，在通過領海時，違反關於防止、減少和控制來自船隻的污染的該國按照本公約制定的法律和規章或可適用的國際規則和標準，該國在不妨害第二部份第三節有關規定的適用的情形下，可就違反行為對該船進行實際檢查，並可在有充分證據時，在第七節限制下按照該國法律提起司法程序，包括對該船的拘留在內。)

3. Where there are clear grounds for believing that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation of applicable international rules and standards for the prevention, reduction and control of pollution from vessels or laws and regulations of that State conforming and giving effect to such rules and standards, that State may require the vessel to give information regarding its identity and port of registry, its last and its next port of call and other relevant information required to establish whether a violation has occurred. (如有明顯根據認為在一國專屬經濟區或領海內航行的船隻，在專屬經濟區違反關於防止、減少和控制來自船隻的污染的可適用的國際規則和標準或符合這種國際規則和標準並使其有效的該國的法律和規章，該國可要求該船提供關於該船的識別標誌、登記港口、上次停泊和下次停泊的港口，以及其他必要的有關情報，以確定是否已有違反行為發生。)

4. States shall adopt laws and regulations and take other measures so that vessels flying their flag comply with requests for information pursuant to paragraph 3. (各國應制定法律和規章，並採取其他措施，以使懸掛其旗幟的船隻遵從依據第三款提供情報的要求。)

5. Where there are clear grounds for believing that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation referred to in paragraph

3 resulting in a substantial discharge causing or threatening significant pollution of the marine environment, that State may undertake physical inspection of the vessel for matters relating to the violation if the vessel has refused to give information or if the information supplied by the vessel is manifestly at variance with the evident factual situation and if the circumstances of the case justify such inspection. (如有明顯根據認為在一國專屬經濟區或領海內航行的船隻,在專屬經濟區內犯有第三款所指的違反行為而導致大量排放,對海洋環境造成重大污染或有造成重大污染的威脅，該國在該船拒不提供情報，或所提供的情報與明顯的實際情況顯然不符，並且依案件情況確有進行檢查的理由時，可就有關違反行為的事項對該船進行實際檢查。)

6. Where there is clear objective evidence that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation referred to in paragraph 3 resulting in a discharge causing major damage or threat of major damage to the coastline or related interests of the coastal State, or to any resources of its territorial sea or exclusive economic zone, that State may, subject to section 7, provided that the evidence so warrants, institute proceedings, including detention of the vessel, in accordance with its laws. (如有明顯客觀證據證明在一國專屬經濟區或領海內航行的船隻,在專屬經濟區內犯有第三款所指的違反行為而導致排放,對沿海國的海岸或有關利益，或對其領海或專屬經濟區內的任何資源，造成重大損害或有造成重大損害的威脅，該國在有充分證據時，可在第七節限制下，按照該國法律提起司法程序，包括對該船的拘留在內。)

7. Notwithstanding the provisions of paragraph 6, whenever appropriate procedures have been established, either through the competent international organization or as otherwise agreed, whereby compliance with requirements for bonding or other appropriate financial security has been assured, the coastal State if bound by such procedures shall allow the vessel to proceed. (雖有第六款的規定，無論何時如已通過主管國際組

織或另外協議制訂了適當的程序,從而已經確保關於保證書或其他適當財政擔保的規定得到遵守，沿海國如受這種程序的拘束，應即准許該船繼續航行。)

8. The provisions of paragraphs 3, 4, 5, 6and 7 also apply in respect of national laws and regulations adopted pursuant to article 211, paragraph 6. (第三、第四、第五、第六和第七款的規定也應適用於依據第二百一十一條第六款制定的國內法律和規章。)

Article 221 (第二百二十一條) Measures to avoid pollution arising from maritime casualties (避免海難引起污染的措施)

1. Nothing in this Part shall prejudice the right of States, pursuant to international law, both customary and conventional, to take and enforce measures beyond the territorial sea proportionate to the actual or threatened damage to protect their coastline or related interests, including fishing, from pollution or threat of pollution following upon a maritime casualty or acts relating to such a casualty, which may reasonably be expected to result in major harmful consequences. (本部份的任何規定不應妨害各國為保護其海岸或有關利益，包括捕魚，免受海難或與海難有關的行動所引起,並能合理預期造成重大有害後果的污染或污染威脅，而依據國際法，不論是根據習慣還是條約，在其領海範圍以外，採取和執行與實際的或可能發生的損害相稱的措施的權利。)

2. For the purposes of this article, "maritime casualty" means a collision of vessels, stranding or other incident of navigation, or other occurrence on board a vessel or external to it resulting in material damage or imminent threat of material damage to a vessel or cargo. (為本條的目的，「海難」是指船隻碰撞、擱淺或其他航行事故，或船上或船外所發生對船隻或船貨造成重大損害或重大損害的迫切威脅的其他事故。)

Article 226 (第二百二十六條) Investigation of foreign vessels (調查外國船隻)

1.

(a) States shall not delay a foreign vessel longer than is essential for purposes of the investigations provided for in articles 216, 218 and 220. Any physical inspection of a foreign vessel shall be limited to an examination of such certificates, records or other documents as the vessel is required to carry by generally accepted international rules and standards or of any similar documents which it is carrying; further physical inspection of the vessel may be undertaken only after such an examination and only when: (各國羈留外國船隻不得超過第二百一十六、第二百一十八和第二百二十條規定的為調查目的所必需的時間。任何對外國船隻的實際檢查應只限於查閱該船按照一般接受的國際規則和標準所須持有的證書、記錄或其他文件或其所持有的任何類似文件；對船隻的進一步的實際檢查，只有在經過這樣的查閱後以及在經過這樣的查閱後以及在下列情況下，才可進行：)

(i) there are clear grounds for believing that the condition of the vessel or its equipment does not correspond substantially with the particulars of those documents; (有明顯根據認為該船的情況或其裝備與這些文件所載各節有重大不符；)

(ii) the contents of such documents are not sufficient to confirm or verify a suspected violation; or (這類文件的內容不足以證實或證明涉嫌的違反行為；或)

(iii) the vessel is not carrying valid certificates and records. (該船未持有有效的證件和記錄。)

(b) If the investigation indicates a violation of applicable laws and regulations or international rules and standards for the protection and preservation of the marine environment, release shall be made promptly subject to reasonable procedures such as bonding or other appropriate

financial security. (如果調查結果顯示有違反關於保護和保全海洋環境的可適用的法律和規章或國際規則和標準的行為，則應於完成提供保證書或其他適當財政擔保等合理程序後迅速予以釋放。)

(c) Without prejudice to applicable international rules and standards relating to the seaworthiness of vessels, the release of a vessel may, whenever it would present an unreasonable threat of damage to the marine environment, be refused or made conditional upon proceeding to the nearest appropriate repair yard. Where release has been refused or made conditional, the flag State of the vessel must be promptly notified, and may seek release of the vessel in accordance with Part XV. (在不妨害有關船隻適航性的可適用的國際規則和標準的情形下，無論何時如船隻的釋放可能對海洋環境引起不合理的損害威脅，可拒絕釋放或以駛往最近的適當修船廠為條件予釋放。在拒絕釋放或對釋放附加條件的情形下，必須迅速通知船隻的船旗國，該國可按照第十五部份尋求該船的釋放)

2. States shall cooperate to develop procedures for the avoidance of unnecessary physical inspection of vessels at sea. (各國應合作制定程序，以避免在海上對船隻作不必要的實際檢查。)

2.3 國際海事組織之相關國際公約

SOLAS (關於 1974 年國際海上人命安全公約之 1978 年議定書 Protocal of 1978 Relating to the International Convention for the Safety of Life at Sea 1974, SOLAS 74/78)

Chapter I, Regulation 11, Maintenance of conditions after survey (第 11 條 檢驗後狀況的維持)

(a) The condition of the ship and its equipment shall be maintained to conform with the provisions of the present regulations to ensure that the ship in all respects will remain fit to proceed to sea without danger to the ship or persons on board. (船舶及其設備狀況應保持符合本公約規則的各項規定,以確保船舶在所有方面保持適合於出海航行而不危及船舶及船上人員。)

(b) After any survey of the ship under regulations 7, 8, 9 or 10 has been completed, no change shall be made in the structural arrangements, machinery, equipment and other items covered by the survey, without the sanction of the Administration. (根據第 7、8、9 條或第 10 條的規定對船舶進行的任何檢驗完成後，未經主管機關許可，已經檢驗的結構佈置、機器、設備及其他項目均不得作任何變動。)

(c) Whenever an accident occurs to a ship or a defect is discovered, either of which affects the safety of the ship or the efficiency or completeness of its life-saving appliances or other equipment, the master or owner of the ship shall report at the earliest opportunity to the Administration, the nominated surveyor or recognized organization responsible for issuing the relevant certificate, who shall cause investigations to be initiated to determine whether a survey, as required by regulations 7, 8, 9 or 10, is necessary. If the ship is in a port of a Contracting Government, the master or owner shall also report immediately to the appropriate authorities of the port State and the nominated surveyor or recognized organization shall ascertain that such a report has been made. (當船舶發生事故或發現缺陷，對該船的安全或其救生設備或其他設備的有效性或完整性產生影響時,該船船長或船東應盡早向負責簽發有關證書的主管機關、指定的驗船師或認可的組織報告。該主管機關、指定的驗船師或認可的組織應立即著手調查以確定是否需要 按第 7、8、9 條或第 10 條的要求進行檢驗。如果該船在另一締約國的港口內,船長或船東應立即向該港口國的有關當局報告，而指定的驗船師或認可的組織應查明已進行了此項報告。)

Chapter I, Regulation 21, Casualties (C 部分 事故 第 21 條 事故)

(a) Each Administration undertakes to conduct an investigation of any casualty occurring to any of its ships subject to the provisions of the present Convention when it judges that such an investigation may assist in determining what changes in the present regulations might be desirable. (各主管機關對其所屬受本公約規定約束的任何船舶所發生的任何事故,當其認為調查該項事故有助於確定本規則可能所需要的何種修改時，即應承擔義務進行調查。)

(b) Each contracting Government undertakes to supply the Organization with pertinent information concerning the findings of such investigations. No reports or recommendations of the Organization based upon such information shall disclose the identity or nationality of the ships concerned or in any manner fix or imply responsibility upon any ship or person. (各締約國政府有義務將有關此項調查所獲得的適當資料提供給本組織。本組織根據此項資料所作的報告或建議,一律不得洩露有關船舶的辨認特徵或國籍，或以任何方式確定或暗示任何船舶或個人承擔的責任。)

MARPOL (關於 1973 年防止船舶汙染國際公約之 1978 年議定書 Protocol of 1978 Relating to the International Convention for the Prevention of Pollution From Ships 1973, MARPOL 73/78)

Article 8, Reports on incidents involving harmful substances, provides: (第 8 條，涉及有害物質的事故報告)

(1) A report of an incident shall be made without delay to the fullest extent possible in accordance with the provisions of Protocol I to the present Convention. (應毫不延遲地盡可能按本公約議定書的規定寫出事故報告。)

(2) Each Party to the Convention shall: (每一締約國應：)

.1 make all arrangements necessary for an appropriate officer or agency to receive and process all reports on incidents; and (為適當的官員或機構受理所有關於事故的報告，作出一切必要的安排；並)

.2 notify the Organization with complete details of such arrangements for circulation to other Parties and Member States of the Organization. (這些安排的詳細情況通知本組織，以便轉告其他締約國和本組織的會員國。)

(3) Whenever a Party receives a report under the provisions of the present article, that Party shall relay the report without delay to: (締約國一旦收到本條規定的報告時，應立即將該報告轉發給：)

.1 the Administration of the ship involved; and (所涉及的船舶主管機關；以及)

.2 any other State which may be affected. (可能受到影響的任何其他國家。)

(4) Each Party to the Convention undertakes to issue instructions to its maritime inspection vessels and aircraft and to other appropriate services, to report to its authorities any incident referred to in Protocol I to the present Convention. That Party shall, if it considers it appropriate, report accordingly to the Organization and to any other Party concerned. (每一締約國承擔義務指示其海上檢查船舶和飛機以及其他適當的部門，向其當局報告本公約議定書中所涉及的任何事故。該締約國如認為適當，應相應地報告本組織和有關的任何其他締約國。)

Article 12, Casualties to ships (第 12 條，船舶事故)

(1) Each Administration undertakes to conduct an investigation of any casualty occurring to any of its ships subject to the provisions of the regulations if such casualty has produced a major deleterious effect upon the marine environment. (各主管機關承擔義務對其受規則的規定約束的任何船舶所發生的任何事故進行調查,如果這種事故對海上環境造成了重大的有害影響。)

(2) Each Party to the Convention undertakes to supply the Organization with information concerning the findings of such investigation, when it judges that such information may assist in determining what changes in the present convention might be desirable. (各締約國承擔義務向本組織提供關於這種調查結果的資料,如果其認為這種資料可能有助於確定本公約可能需要進行何種修改。)

Load Line (1966 年國際船舶載重線公約 International convention on load lines 1966)

Article 23, Casualties (第二十三條，事故)

(1) Each Administration undertakes to conduct an investigation of any casualty occurring to ships for which it is responsible and which are subject of the present Convention when it judges that such an investigation may assist in determining what changes in the Convention might be desirable. (各主管機關對它所負責的、而且受本公約規定約束的船舶所發生的任何事故,如它認為進行調查有助於確定公約將宜作何種修改時，承擔調查的義務。)

(2) Each contracting Government undertakes to supply the Organization with pertinent information concerning the findings of such investigations. No reports or recommendations of the Organization based upon such information shall disclose the identity or nationality of the ships concerned or in any manner fix or imply responsibility upon any ship or person. (每

一締約國政府承擔義務向海事組織提供這種調查結果的適當資料。海事組織根據此種資料所作的報告或建議，都不得透露有關船舶的名稱和國籍，或者以任何形式確定或暗示任何船舶或個人應負的責任。)

STCW (1978 年航海人員訓練、發證及航行當值標準國際公約及其修正案 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended)

Regulation I/5, National provisions (規則 I/5 國家規定)

1 Each Party shall establish processes and procedures for the impartial investigation of any reported incompetency, act or omission, that may pose a direct threat to safety of life or property at sea or to the marine environment, by the holders of certificates or endorsements issued by that Party in connection with their performance of duties related to their certificates and for the withdrawal, suspension and cancellation of such certificates for such cause and for the prevention of fraud. (每一締約國應制訂步驟及程序以對由該締約國所簽發證書及加簽持有者執行與其證書有關之職責時，任何之不適任、作為、不作為或減低安全行為所可能構成直接危及生命、財產或海上環境之報告進行公正之調查；及制訂因該等原因撤銷、停用及註消該等證書，暨防止詐欺行為之步驟及程序。)

2 Each Party shall prescribe penalties or disciplinary measures for cases in which the provisions of its national legislation giving effect to the Convention are not complied with in respect of ships entitled to fly its flag or of seafarers duly certificated by that Party. (每一締約國對有權懸掛其國旗之船舶或由其適當發證之航海人員，在違反實施本公約之國內法，應規定處罰或懲戒辦法。)

3 In particular, such penalties or disciplinary measures shall be prescribed and enforced in cases in which: (該等處罰或懲戒辦法應特別就下列情況予以規定，並執行之：)

.1 a company or master has engaged a person not holding a certificate as required by the Convention. (公司或船長業已雇用未持有本公約所要求證書之人員；)

.2 a master has allowed any function or service in any capacity required by these regulations to be performed by a person holding an appropriate certificate, to be performed by a person not holding the required certificate, a valid dispensation or having documentary proof required by regulation I/10, paragraph 5; or (未持有合規定證書、有效特許證或規則 I/10 第 5 項所要求證明檔之人員經船長允許擔任原應由持有適當證書人員執行本規則所規定之任何專長或職務；或)

.3 a person has obtained by fraud or forged documents an engagement to perform any function or serve in any capacity required by these regulations to be performed or filled by a person holding a certificate or dispensation. (利用詐欺或偽造證書得到雇用之人員，從事應由持有證書或特許證人員執行或填補本規則中所規定任何專長或職務。)

4 A Party, within whose jurisdiction there is located any company which, or any person who, is believed on clear grounds to have been responsible for, or to have knowledge of, any apparent non-compliance with the Convention specified in paragraph 3, shall extent all co-operation possible to any Party which advises it of its intention to initiate proceedings under its jurisdiction. (締約國對其所管轄之任何公司或個人有明顯理由相信，對第 3 項所述任何明顯不符合本公約規定，而應予以負責或確知時，應儘可能與告知將有意在其管轄權內提起訴訟之任何締約國進行所有合作。)

Torremolinos (1977 年托列莫利諾斯國際漁船安全公約 Torremolinos International Convention for the Safety of Fishing Vessels, 1977)

ARTICLE 7 Casualties to Fishing Vessels (第七條 漁船事故)

1. Each Party shall arrange for an investigation of any casualty occurring to any of its vessels subject to the provisions of the Convention, when it judges that such an investigation may assist in determining what changes in the Convention might be desirable. (各締約國對其所屬的受本公約規定約束的任何漁船所發生的任何事故,當其認為調查該項事故有助於確定本規則可能需要的何種修改時，即應安排進行調查。)

2. Each Party shall supply the Organization with pertinent information concerning the findings of such investigation for circulation to all Parties. No reports or recommendations of the Organization based upon such information shall disclose the identity or nationality of the vessels concerned, or in any manner fix or imply responsibility upon any vessel or person. (各締約國應將有關此項調查所獲得的適當資料提供給本組織。本組織根據此項資料作所的報告或建議,一律不得洩露有關船舶的辨認特徵或國籍，或以任何方式確定或暗示任何船舶或個人承擔的責任。)

INTERVENTION (關於油汙染損害在公海行駛干涉國際公約 The International Convention Relating to Intervention on the High Sea in Cases of Oil Pollution Casualties 1969, INTERVENTION 1969)

ARTICLE 1

1. Parties to the present Convention may take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil; following upon a maritime casualty or acts

related to such a casualty, which may reasonably be expected to result in major harmful consequences. (公約規定了沿岸國，在發生海事事故後，有在公海上採取必要措施的權利，以防止、減輕或消除對其沿岸海區和有關利益產生嚴重的和緊急的油污危險或油污威脅，但這些措施不能影響公海的自由原則。)

ARTICLE 3

When a coastal State is exercising the right to take measures in accordance with Article I, the following provisions shall apply: (沿岸國根據第一條行使採取措施的權利時，應依照下列各項規定：)

(a) before taking any measures, a coastal State shall proceed to consultations with other States affected by the maritime casualty, particularly with the flag State or States; (在採取任何措施之前，沿岸國應與受到海事事故影響的其他國家進行協商，特別是與船旗國進行協商；)

(b) the coastal State shall notify without delay the proposed measures to any persons physical or corporate known to the coastal State, or made known to it during the consultations, to have interests which can reasonably be expected to be affected by those measures. The coastal State shall take into account any views they may submit; (沿岸國應盡速將擬採取的措施，通知會受到這些措施影響的任何自然人或法人，包括在協商期間得知其利益估計會受影響者。沿岸國應考慮他們提出的任何意見；)

(c) before any measure is taken, the coastal State may proceed to a consultation with independent experts, whose names shall be chosen from a list maintained by the Organizations; (在採取任何措施以前，沿岸國可與沒有利害關係的專家們進行協商，這些專家應從本組織保存的名單中選出；)

(d) in cases of extreme urgency requiring measures to be taken immediately, the coastal State may take measures rendered necessary by the urgency of the situation, without prior notification or consultation or without continuing consultations already begun; (倘遇有須立即採取措施的非常緊急情況，沿岸國可不須事先通知或協商，或不繼續已開始的協商，就採取為緊急情況所必需的措施；)

(e) a coastal State shall, before taking such measures and during their course, use its best endeavours to avoid any risk to human life, and to afford persons in distress any assistance of which they may stand in need, and in appropriate cases to facilitate the repatriation of ships'crews, and to raise no obstacle thereto; (在採取這種措施之前和在執行過程中，沿岸國應盡最大努力避免任何生命危險，並對遇險人員提供他們需要的幫助，以及在適當情況下，提供遣返船員的便利，而不是製造障礙；)

(f) measures which have been taken in application of Article I shall be notified without delay to the States and to the known physical or corporate persons concerned, as well as to the Secretary-General of the Organization. (按第一條規定已經採取的措施，應盡速通知有關的各國和已知的有關自然人和法人，並通知本組織秘書長。)

2.4 國際勞工組織公約

國際勞工組織公約(ILO (International Labour Organization) Conventions And Recommendations)相關規範如下：

Merchant Shipping (Minimum Standards) Convention, 1976 (No. 147) (商船最低標準公約)

Article 2 provides: (第 2 條)

Each Member which ratifies this Conventions undertakes" ..... "(g) to hold an official inquiry into any serious marine casualty involving ships registered in its territory, particularly those involving injury and/or loss of life, the final report of such inquiry normally to be made public."(批准本公約的各會員國承諾：(g)對涉及在其領土上登記的船舶的任何嚴重海事事故，尤其那些涉及人身傷亡的事故進行正式調查，這種調查的最終報告在正常情況下應予公開發表。)

Prevention of Accidents (Seafarers) Convention, 1970 (No. 134)　防止海員工傷事故公約

Article 2 provides: (第 2 條)

1. The competent authority in each maritime country shall take the necessary measures to ensure that occupational accidents are adequately reported and investigated, and comprehensive statistics of such accidents kept and analysed. (各海運國主管當局應採取必要措施，保證對工傷事故進行充分報告和調查，並對這種事故進行充分統計和分析。)

2. All occupational accidents shall be reported and statistics shall not be limited to fatalities or to accidents involving the ship. (所有工傷事故都應予以報告和統計，不應限於死亡事故和船舶事故。)

3. The statistics shall record the numbers, nature, causes and effects of occupational accidents, with a clear indication of the department on board ship - for instance, deck, engine or catering - and of the area - for instance, at sea or in port - where the accident occurred. (事故統計應記錄工傷事故的次數、性質、原因和後果，並清楚地說明事故發生在船上哪個部門(如甲板部、輪機部或事務部)和事故發生在什麼區域(如海上或港內)。)

4. The competent authority shall undertake an investigation into the causes and circumstances of occupational accidents resulting in loss of life or

serious personal injury, and such other accidents as may be specified in national laws or regulations. (主管當局應對那些給人命造成嚴重傷亡的工傷事故和國家法律或條例可能規定的其他事故的原因和細節情況進行調查。)

Article 3 provides: (第 3 條)

In order to provide a sound basis for the prevention of accidents which are due to particular hazards of maritime employment, research shall be undertaken into general trends and into such hazards as are brought out by statistics. (為了對防止由海上工作的特殊危險所造成的事故提供可靠的依據，應對一般趨向和統計出來的這種危險進行研究。)

Article 9 provides, in paragraph 2: (第 9 條 第 2 項)

All appropriate and practical measures shall also be taken to bring to the attention of seafarers information concerning particular hazards, for instance by means of official notices containing relevant instructions. (還應採取所有適當可行的措施，例如依靠載有有關訓練的正式通知，使海員注意有關特別危險的資訊。)

Prevention of Accidents (Seafarers) Recommendation, 1970 (No. 142) 防止航海人員職業傷害建議書

Paragraph 3 provides: (第三條)

Subjects to be investigated in pursuance of Article 3 of the Prevention of Accidents (Seafarers) Convention, 1970, might include - (在履行「1970 年防止(航海人員)公約」第三條之調查限制，應包括：)

(a) working environment, such as working surfaces, layout of machinery and means of access and lighting, and methods of work; (工作環境，諸如工作場所，機械佈置及進入與照明，以及工作方式。)

(b) incidence of accidents in different age groups; (事故在不同年齡之發生率。)

(c) special physiological or psychological problems created by the shipboard environment; (在船上環境所產生之生理的或心理的特別問題。)

(d) problems arising from physical stress on board ship, in particular as a consequence of increased workload; (在船上產生之身體壓力，尤其是增加工作量所產生之後果。)

(e) problems arising from and effects of technical developments and their influence on the composition of crews; (由技術發展結果及航海人員組成之影響所產生之問題。)

(f) problems arising from any human failures such as carelessness. (由於人為錯誤，諸如粗心等產生之問題。)

The Maritime Labour Convention 2006 (MLC 2006) 2006 海事勞工公約

Regulation 5.1.6 – Marine casualties 海事事故

1. Each Member shall hold an official inquiry into any serious marine casualty, leading to injury or loss of life, that involves a ship that flies its flag. The final report of an inquiry shall normally be made public. (各成員國應對涉及到懸掛其旗幟船舶的導致人員傷亡的任何嚴重海事事故開展官方調查。這種調查的最後報告通常應予公佈。)

2. Members shall cooperate with each other to facilitate the investigation of serious marine casualties referred to in paragraph 1 of this Regulation. (成員國應相互合作,以便利本規則第 1 款所述的嚴重海事事故調查。)

2.5 國際海事組織決議案與通函

Assembly Resolutions

- A.173(ES.IV) - Participation in official inquiries into maritime casualties. revoked by A.849(20)

- Resolution A.203(VII) - Recommendation on the conclusion of agreements and arrangements between States on the question of access and employment of foreign seaborne salvage equipment in territorial waters

- Resolution A.322(IX) - The conduct of investigation into casualties

- Resolution A.440(XI) - Exchange of information for Investigations into Marine Casualties. revoked by A.849(20)

- Resolution A.442(XI) - Personnel and material resource needs of Administrations for the investigation of casualties and contravention of conventions

- Resolution A.849(20) - Code for the investigation of marine casualties and incidents. (adopted on 27 November 1997) revokes A.173(ES.IV) A.440(XI) A.637(16) amended by A.884(21)

- Assembly resolution A.850(20) - Human element vision, principles and goals for the Organization (adopted on 27 November 1997) (revoked by A.947(23))

- Resolution A.884(21) - Amendments to the code for the investigation of marine casualties and incidents (resolution A.849(20)) (adopted on 25 November 1999)

- Resolution A.987(24) - Guidelines on fair treatment of seafarers in the event of a maritime accident. (Adopted on 1 December 2005)

- Resolution A.1056(27) Rev.1 - Promotion as widely as possible of the application of the 2006 Guidelines on fair treatment of seafarers in the event of a maritime accident. (Adopted on 30 November 2011)

- Resolution A.1070(28) - IMO Instruments Implementation Code (III Code) (Adopted on 4 December 2013)

- Resolution A.1075(28) - Guidelines to assist investigators in the implementation of the Casualty Investigation Code (Resolution MSC.255(84)) (Adopted on 4 December 2013) (REVOKES resolutions A.849(20) and A.884(21).)

MSC resolutions

- MSC.255(84) - Adoption of the code of the international standards and recommended practices for a safety investigation into a marine casualty or marine incident (Casualty Investigation Code) (adopted on 16 May 2008) amended by MSC.390(94) fair treatment of seafarers A.987(24) recommended practices MSC.257(84) standards and recommendationsMSC-MEPC.3/Circ.2 guidelines to assist A.1075(28) casualty statistics III.3/Circ.1 III.3/Circ.2 enters into force 1 January 2010

- MSC.390(94) - Amendments to the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) (Resolution MSC.255(84)) (adopted on 18 November 2014)

Circulars of the Maritime Safety Committee (MSC)

- MSC/Circ.224 Submission of damage cards and intact stability casualty records

- MSC/Circ.388 Fire casualty records

- MSC/Circ.433 Reports on investigations into serious casualties

- MSC/Circ.539/Add.2 Reports on casualty statistics concerning fishing vessels and fishermen at sea

- MSC/Circ.559 Guidelines to ensure the reporting to the Organization of incidents involving dangerous goods and marine pollutants in packaged form on board ships and in port areas

- MSC/Circ.621 Guidelines for the investigation of accidents where fatigue may have been a contributing factor

- MSC/Circ.621 - Guidelines for the investigation of accidents where fatigue may have been a contributing factor

- MSC/Circ.827 - MEPC/Circ.333: Reports on marine casualties and incidents. Harmonized reporting procedures - Reports required under SOLAS regulation I/21 and MARPOL 73/78 articles 8 and 12 (9 December 1997)

- MSC/Circ.953, MEPC/Circ.372: Reports on marine casualties and incidents - Revised harmonized reporting procedures - Reports required under SOLAS regulation I/21 and MARPOL 73/78 articles 8 and 12 (14 December 2000) (The present circular supersedes MSC/Circ.827 - MEPC/Circ.333.)

Sub-Committee on Implementation of IMO Instruments (III.3)

- III.3/Circ.1: Casualty analysis and statistics - Safety issues: referenced to paragraphs to Casualty Investigation Code MSC 255(84) compliments FSI.3/Circ.7 (18 June 2014)

- III.3/Circ.2: Casualty analysis and statistics: referenced to paragraphs to Casualty Investigation Code MSC 255(84) (III.3/Circ.2, 21 October 2014)

- III.3/Circ.3: Casualty analysis and statistics (III.3/Circ.3, 23 October 2015)

- III.3/Circ.4: Casualty analysis and statistics (III.3/Circ.4, 1 December 2016)

Circulars on flag State implementation (FSI.3)

- FSI.3/Circ.7: Casualty statistics and investigations - Safety issues, supersedes FSI.4/Circ.6 compliments III.3/Circ.1 (30 April 2012)

Circulars on casualty related matters (MSC/MEPC.3)

- MSC-MEPC.3/Circ.1 Casualty-related matters - Reports on Marine Casualties and incidents - Revised harmonized reporting procedures - Reports required under SOLAS regulation I/21 and MARPOL 73/78, articles 8 and 12 (5.10.05)

- MSC-MEPC.3/Circ.2 Casualty-related matters - Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident code MSC.255(84) reg 6 MSC.257(84) (13 June 2008)

- MSC-MEPC.3/Circ.3 : Reports on marine casualties and incidents - Revised harmonized reporting procedures - Reports required under SOLAS regulation I/21 and MARPOL, articles 8 and 12 approved amendments to MSC-MEPC.3/Circ.1 superseded by MSC-MEPC.3/Circ.4 (18 December 2008)

- MSC-MEPC.3/Circ.4 Casualty-related matters - Reports on marine casualties and incidents - Revised harmonized reporting procedures - Reports required under SOLAS regulations I/21 and a XI-1/, and MARPOL, articles 8 and 12 supersedes MSC/MEPC.3/Circ.3 17.9.13 (28 August 2013)

- MSC-MEPC.3/Circ.4/Rev.1: Casualty-related matters - Reports on marine casualties and incidents - Revised harmonized reporting procedures - Reports required under SOLAS regulations I/21 and a XI-1/, and MARPOL, articles 8 and 12 supersedes MSC/MEPC.3/Circ.4 (18 November 2014)

2.6 有關 IMO 海事調查的教育與訓練

有關海事調查的訓練目前 IMO 所發布的最新版本為 2014 年的 Safety Investigation into Marine Casualties and Incidents (Model Course 3.11)，全書 234 頁。主要為十天 60 小時的課程，課程綱要與課表規劃如下：

表 2.6-1 IMO Model Course 3.11-1

	Course Outline and Timetable	Indicative time (hours)	
	Subject Area	Lecture/ Discussion	Practical
1	Course introduction	0.5	
2	General overview	1	
3	The Casualty Investigation Code (CI Code)	3	
4	Setting up an investigation (including group exercises)	3	
5	Basic analysis	2	10
6	A template for a marine safety investigation – current imo processes for marine casualty and incident safety investigation	2	4
7	Human factors in an accident context (including a group exercise)	3	4.5
8	Evidence – General	1	2.5
9	Memory	1	1.5
10	Evidence – Witness evidence – interviewing	0.5	4.5
11	Evidence – Electronic data	1	1.5
12	Evidence – Photography and photographic	0.5	1
13	Evidence – Wreck inspection and recovery	0.5	
14	Evidence – Fatigue, stress and performance	0.5	0.5
15	Risk – ISM	1	

表 2.6-1 IMO Model Course 3.11-1			
	Course Outline and Timetable	Indicative time (hours)	
	Subject Area	Lecture/ Discussion	Practical
16	Safety recommendations	1	2.5
17	Report structure and obligations	0.5	2.5
18	Reporting to IMO – MSC-MEPC.3/Circ.4 , Circular Letter No. 2892, IMO Assembly Resolution A.1029(26) – GISIS and IMO Assembly Resolution A.1074(28) and guide on the process of reporting a marine casualty and incident to IMO (annex to document FSI 20/INF.19)	0.5	1.5
19	Reopening an investigation, media and family liaison	0.5	0.5
Subtotal		23	37
Total		60	

表 2.6-2 IMO Model Course 3.11-2

PERIOD	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
1 (1.5 hrs)	**Opening** (30 mins) **1.** Course introduction **2.** Overview (start)	Review day 1 **3.** Casualty Investigation Code	Review day 2 **6.** IMO Assembly resolution A.1075(28)	Review day 3 **8.** Evidence – General	Review day 4 **10.** Evidence – Interviewing
Break					
2 (1.5 hrs)	**2.** Overview (continued)	**4.** Setting up an investigation (group exercise)	**7.** Human factors	**9.** Memory	Interviewing exercise
Lunch Break					
3 (1.5 hrs)	Group exercise – Initial case study	**5.** Basic analysis	Group exercise – Case study	Group exercise – Case study	Interviewing exercise
Break					
4 (1.5 hrs)	Group exercise – Case study Report back and discussion	Group exercise – Apply analysis to case study	Group exercise – Case study	Case study 3 Report back	Interviewing exercise

表 2.6-3 IMO Model Course 3.11-3

PERIOD	DAY 6	DAY 7	DAY 8	DAY 9	DAY 10
1 (1.5 hrs)	Review day 5 and Week one **11.** Evidence – electronic data	Review day 6 **14.** Evidence – fatigue, stress and performance	Review day 7 **16.** Safety recommendations Group exercise – Safety recommendations	Review day 8 Major group exercise – Final case study	Major group exercise
Break					
2 (1.5 hrs)	**12.** Evidence – Photography **13.** Evidence – Wreck inspection and recovery	Group exercise – Fatigue	**17.** Report structure **18.** Reporting to IMO	Major group exercise	Assessment (test)
Lunch Break					
3 (1.5 hrs)	Group exercise – Initial case study (review)	**15.** Risk – ISM	**19.** Reopening an investigation, media and family liaison	Major group exercise	Feedback and review
Break					
4 (1.5 hrs)	Group exercise – Report back	Group exercise – Case study	Group exercise – Final case study Major group exercise	Major group exercise	Close

每班授課學生數規劃最多 20 人，分組討論或實作時每組最多 6 人。建議可以研討的經典個案包括：

- Herald of Free Enterprise (Human factors, ISM, reason/SHEL)
- Queen of the North (Grounding, Human factors, reason/SHEL)
- Stena Danica (Grounding/multi-ship incident /Culture aspects/authority gradient)
- Shen Neng 1 (Grounding/ISM/ Fatigue issues)
- Nego Kim (Fire explosion/ISM)
- Cosco Busan (Allision/Use of VDR evidence)
- Royal Princess (Injury to engineer in W/t door/Human factors/latent conditions)
- Queen Elizabeth 2 (Pilotage – BRM reports by two authorities)
- Eagle Otome (Double collision/ Fatigue and other human factors)
- Taki-Tooo (Multiple human factors. Small boat accident)

第三章 海事調查章程

3.1 海事調查章程概說

為避免海事事故再度發生及確認事故之發生原因並作出安全上之必要建議，國際海事組織自 1968 年通過 A.173(ES.IV)海事調查決議案起，分別採納施行相關海事安全調查決議案，經合併、補充、發展，國際海事組織於 2008 年 5 月 16 日採納的 MSC.255(84)號決議案「海事事故和事件安全調查國際標準和推薦做法章程」(Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident)簡稱「海事調查章程」(Casualty Investigation Code)[2](參見附錄 A)。國際海事組織海事安全委員會也將本章程納入國際海上人命安全公約(SOLAS 第 XI-I/6 條)[3]，使該章程成為強制性的規定，並於 2010 年 1 月 1 日生效實施，爾後又透過 Resolution A.1070(28)《IMO 文件實施規則, III Code》[4]、Resolution A.1075(28)《協助調查員施行海事調查章程(MSC.255(84)決議案)之準則》[5](參見附錄 B)、MSC-MEPC.3/Circ.4/Rev.1《海事事故與事件報告》[6]的指導與規範，為海事事故和事件的調查與分析提供了明確的法律框架。

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[2] Resolution MSC.255(84), Adoption of the code of the international standards and recommended practices for a safety investigation into a marine casualty or marine incident (Casualty Investigation Code), (adopted on 16 May 2008), enters into force 1 January 2010, amended by MSC.390(94) fair treatment of seafarers A.987(24) recommended practices MSC.257(84) standards and recommendationsMSC-MEPC.3/Circ.2 guidelines to assist A.1075(28) casualty statistics III.3/Circ.1 III.3/Circ.2.

[3] Resolution MSC.257(84), Adoption of amendments to the international convention for the safety of life at sea, 1974, as amended, (adopted on 16 May 2008), enters into force 1 January 2010 - gives effect to MSC.255(84) para 2, MSC 84/24/Add.1, IMO.

[4] Resolution A.1070(28) - IMO Instruments Implementation Code (III Code) 《IMO 文件實施規則, III Code》(Adopted on 4 December 2013) (REVOKES resolution A.1054(27) on the Code for the Implementation of Mandatory IMO Instruments, 2011.)

[5] Resolution A.1075(28) - Guidelines to assist investigators in the implementation of the Casualty Investigation Code (Resolution MSC.255(84)) 《協助調查員施行海事調查章程(MSC.255(84)決議案)之準則》(Adopted on 4 December 2013) (REVOKES resolutions A.849(20) and A.884(21).)。

[6] MSC-MEPC.3/Circ.4/Rev.1 Casualty-related matters - Reports on marine casualties and incidents - Revised harmonized reporting procedures - Reports required under SOLAS regulations I/21 and a XI-1/, and MARPOL, articles 8 and 12 (supersedes MSC/MEPC.3/Circ.4) 海事事故與事件報告《經修訂的協調報

海事調查章程的主體分為三個部分，其中第 I 部分(General provisions 一般規定)及第 II 部分(Mandatory standards 強制性標準)屬強制性規定，第 III 部分(Recommended practices 推薦做法)則屬推薦性的指導與解釋。值得一提的是，海事調查章程引入了獨立的「海事安全調查」模式，其所定義的海事安全調查，乃是以防止事故再次發生為主要目的之調查。

強制性標準規定海事安全調查應獨立於民事、刑事和以處罰為目的的行政調查，並要求各國要保證調查人員進行公平、客觀的調查，不被任何可能受調查結果影響之人員或組織的干涉。海事調查章程的強制性標準提出了幾項要求，包含：

1. 強制要求船旗國(Flag State)[7]必須對所有重大海事事故(如死亡、船舶全損、重大環境污染等)進行調查。

2. 船旗國應與其他具實質利益國(substantially interested State)[8]協商實施海事調查。

3. 所有實質利益國都須盡力配合海事調查國；海事調查國也應盡可能為實質利益國家提供參與調查的機會。

4. 海事調查國應將重大海事事故的正式調查報告提交予國際海事組織。

告程序 - SOLAS 公約第 I/21 條和 MARPOL73/78 公約第 8 條和第 12 條所要求的報告》(18 November 2014)

7 船旗國一般有兩種：一是在船舶所有者的本國登記，懸掛本國的國旗，因而受該國法律的管轄和保護；一是在船舶所有者所屬國家之外的國家登記，取得登記國的國籍，懸掛該國國旗，受該國法律管轄和保護。船旗是表明船舶國籍的標誌，因此各國政府對懸掛本國國旗航行的船舶均有船舶登記程序和取得國籍所具備條件的規定。

8 有實質利益的國家係指：(1)涉及海事事故或海事事件的船舶的船旗國；或(2)涉及海事事故或海事事件的沿岸國；或(3)環境受到海事事故嚴重或重大損害的國家(包括其根據國際法得到承認的水域和領土的環境)；或(4)海事事故或海事事件的後果對其或其有權行使管轄權的人工島嶼，裝置，或結構造成，或威脅造成嚴重損害的國家；或(5)海事事故造成其國民死亡或嚴重受傷的國家；或(6)具有海事安全調查國認為對調查有用的重要信息的國家；或(7)海事安全調查國認為因其它原因而涉及其利益的國家。

5. 海事調查國應將正式海事調查報告向公眾與業界公開。

海事調查章程第 III 部分推薦做法方面，強調安全調查的目的僅在於保障海上安全，而非追究責任或進行處罰。該規則所以強調海事安全調查的獨立性原則，係因部分國家的海事調查工作是由制定並執行法規的機構在執行海事調查工作，而在非由完全公正、獨立的機構執行下，恐導致海事調查結果不能完全公正，有些因素或肇因可能將因此而忽略。

海事調查章程之推薦做法，述明了安全調查單位的責任，並確立了「獨立自主」、「注重因果關係」、「調查優先」、「安全調查範圍」及「國際合作」等六項調查的基本原則；另就「海事事故和意外事件調查(除重大海事外)」、「船旗國與個別實質利益國進行協議時應考慮因素」、「非法干擾行為」、「通知各方當事人啟始調查」、「統籌調查」、「證據收集」、「資訊保密」、「證人與當事人保護」、「初稿與最終報告」及「海事案件重啟調查」等項，分章給予指導性建議。

3.2 調查員資格

關於海事調查員的資格，在國際法規中並無清楚的規範，僅述及海事案件須由合格且適當的人員執行。回溯「政府間海事諮詢組織」(Inter-Governmental Maritime Consultative Organization, IMCO)於 1979 年 11 月 15 日所通過的 A.442(XI)「管理單位為執行事故與違反公約調查之人員及物資需求」決議案中，提及為確保公約的有效執行，敦促各國政府應採取一切必要措施，以確保有合格且適當的人員與物資，用以執行國際規則所要求之海事調查和違規稽核工作，並需特別著重滿足有關海事事故及違反有關海上安全和海洋環境保護案件之作業需求。

此外，海事調查章程第一章(目的)之第 1.3 節中，提及船旗國應由適當合格人員進行海事調查；在《聯合國海洋法公約》第 94 條(船旗國的意義)之第七項述及：「每一國家對於涉及懸掛該國旗幟的船舶在公海上因海難或航行事故對另一國國民造成死亡或嚴重傷害，或對另一國的船舶或設施、或

海洋環境造成嚴重損害的每一事件，都應由適當的合格人士一人或數人或在有這種人士在場的情況下進行調查…」[9]。

3.3 我國的海事調查措施與海事調查章程之比較

以現行航政單位執行事故調查措施與海事調查章程之要求與建議進行比較，將更加彰顯其差異與兼容並蓄之難點，其差異如表 3 所示[10]。

表 3.3-1 航政單位執行事故調查措施與海事調查章程規範差異表

項目	海事調查章程規範事項	國內執行	備考
1	海事安全調查應獨立於民事、刑事和以處罰為目的行政調查。 *(CI Code 1.2：海事安全調查應分離於並獨立於任何其它形式的調查。但是，本規則的目的並非排除任何其它形式的調查，包括為民事、刑事和行政訴訟進行的調查。另外，本規則的意圖並不是讓進行海事安全調查的國家因發現會指出過失或責任而不完全報告海事事故或海事事件的起因。)*	由航港局執行，調查與評議結果可用於民、刑事訴訟及行政裁處。 (1 查 101 年 11 月 7 日廢止之臺灣地區各港務局海事評議委員會組織規程第 20 條訂有「本會海事評議書，係供行政主管機關作為行政處分或司法機關審理案件之參考」；與海事安全調查不以懲處為目標之所盼有極大落差。 2 查 101 年 8 月 17 日令頒之海事評議小組設置及評議作業要點第 2 條規範「評議小組之任務如下：(一)船舶沉沒、碰撞、觸礁、強迫停泊或其他意外事故及有關船舶貨載、海員或旅客之非常事變等海事案件之調查評議事項(二)有關船員及不屬船員部分之過失責任評議事項(三)海難事件海損評議事項(四)有關船舶航行安全之建議改善事項」；另第 14 條訂有「評議小組決議應作成海事評議書原本，報請航港局局長核定後作成正本，以航港局之名義送達當事人，並以副本分送交通部及有關機關。外籍船舶或人員涉及海事案件，經評議認為	強制性

[9] 林倉玉，2014，臺灣執行海事事故調查現況與需求研究—以國際海事組織《海事調查規則》為比較基礎，國立高雄海洋科技大學航運管理研究所，碩士學位論文

[10] 陳彥宏, 林倉玉, 于惠蓉, April 2014,漫談聯合國國際海事組織海事調查章程與台灣的海事調查體制, 台灣海事安全與保安研究學刊, TAMSS Bimonthly - Vol. 5 No.2, 台灣海事安全與保安研究會, 基隆, pp15-32.

表 3.3-1 航政單位執行事故調查措施與海事調查章程規範差異表			
項目	海事調查章程規範事項	國內執行	備考
		故意或重大過失者，航港局應核轉交通部轉請外交部將海事案件發生情形及結果送達該船員所屬國或船籍國請求議處」；新頒規定仍難脫調查違失及懲處之行政作為，然新案納入有關船舶航行安全之建議改善事項作為主要任務之一，確實彰顯具備部分海事安全調查之功能。)	
2	要求各國要保證調查人員進行公平、客觀的調查，不被任何可能受調查結果影響之人員或組織的干涉。 *(CI Code 11.1：海事安全調查國須確保進行海事安全調查的調查員是公正而客觀的。海事安全調查須能夠在不受可能受調查結果影響的任何人或組織的指示或干擾下報告海事安全調查的結果。)*	未編制專職人員執行，又由行政單位(航港局)負責召集人員，無法確保排除涉案人員或相關組織干涉。 (1 查 101 年 11 月 7 日廢止之臺灣地區各港務局海事評議委員會組織規程第 8 條「本會受理前條海事案件之評議，應由當事人或利害關係人之申請或上級機關及港務局局長之交議，始得為之」及第 14 條「海事案件之評議，涉及港務管理機關之責任者，得由該港務局申敘理由，報請交通部核准，移轉其他港務局海事評議委員會評議之」；案內相關規定雖設有利益迴避條款，但均無法確保其基於公平、客觀立場進行案件調查與評議。 2 查 101 年 8 月 17 日令頒之海事評議小組設置及評議作業要點第 5 條規範「評議小組置執行秘書一人，由航港局派科長兼任之，襄助執行評議小組事務；置海事檢查員若干人，辦理海事評議業務」及第 8 條亦訂有「評議小組受理海事案件之評議，應由當事人或利害關係人之申請，或上級機關及航港局局長之交議，始得為之」；調查人力(海事檢查員)來源不明確，評議小組均屬兼職、約聘性質，而評議之啟始仍難脫前規窠臼，實無法確保相關作業不受干涉；另第 15 條規範「評議小組委員、執行秘書、檢查員，對於海事案件之評議過程，應嚴守祕密」，本條之本意應為保護相關人員能免於外界壓力，進行公平、客觀的評議，但由於評議	強制性

表 3.3-1 航政單位執行事故調查措施與海事調查章程規範差異表			
項目	海事調查章程規範事項	國內執行	備考
		後相關資訊未對大眾公開，反造成黑箱作業的疑慮。)	
3	要求各國確保提供法令規範，支持調查人員基於海事安全調查目的，進行登船、面談船長和船員與任何其他涉入人士，以及獲取證據之權力。 *(CI Code 8.1：各國均須確保其國內法做出規定，使進行海事安全調查的調查員能夠登船，詢問船長、船員，及任何其它有關人員，以及為海事安全調查獲取證據材料。)*	可見實務執行，但未建立完整法規或辦法。 (1 查 101 年 11 月 7 日廢止之臺灣地區各港務局海事評議委員會組織規程第 12 條訂有「本會對海事案件之評議認為有實地查驗之必要時，得由召集委員指派檢查員實地調查或勘驗。當事人應負協助之義務，並提供必要之資料」之規定 2 查 74 年 5 月 7 日海事報告處理要點第 4 條規定有航政主管機關處理海事報告之程序，其中包括現場實地調查、傳詢有關船員(當事人)及蒐集查證資料、撰寫「海事檢查報告書」或「資料摘要」提請海事評議委員會評議等。 3 查 101 年 8 月 17 日令頒之海事評議小組設置及評議作業要點並無直接授權規定，但於第 9 條規範「評議小組受理海事案件之評議，應先由各航務中心作成海事檢查報告書或資料摘要，連同卷證送局請召集委員指定日期開會評議」；是以相關授權來源係來自「海事報告處理要點」，惟其所執行之作法屬查核「海事報告」內容，而非主動式進行安全調查工作，另相關取證、登檢、面談及後續所需進行科學檢驗證據作為於「海事報告處理要點」之執行程序與授權並不完整，亦缺乏法令保障。)	強制性
4	為調查員提供接觸政府之驗船師、海岸巡防署官員、船舶交通服務人員、引水人或有關國家之其他海事人員之機會。 *(CI Code 8.1：各國均須確保其國內法做出規定，使進行海事安全調查的調查員能夠登船，詢問船長、船員，及任何其它有關人員，以及為海事安全調查獲取證據材料。)* *(CI Code 16.4：合作：當實際可行並與本規則，特別是關於合作的第 10 章的要求和建議相一致*	可見實務執行，但未建立完整法規或辦法。 (同項次 3 說明)	強制性

表 3.3-1 航政單位執行事故調查措施與海事調查章程規範差異表			
項目	海事調查章程規範事項	國內執行	備考
	時，海事安全調查國應尋求促進開展海事事故或海事事件調查的有重大利益的國家及其它個人或組織之間的合作。) *(CI Code 16.4.2：應準備好隨時提供的證據包括：.1 船旗國、船東和船級社所持有的檢驗及其他記錄；.2 所有記錄的數據，包括航行數據記錄儀；及.3 政府驗船師，海岸警備隊官員，船舶交通服務操作員，引航員或其它海事人員可提供的證據。)*		
5	強制要求船旗國(Flag State)必須對所有重大海事事故(如死亡、船舶全損、重大環境污染等)進行調查。 *(CI Code 6.1：對每一非常嚴重海事事故均須進行海事安全調查。)* *(CI Code 6.2：在按照第 7 章所達成的任何協議之下，涉及非常嚴重海事事故船舶的船旗國負責確保按照本規則進行並完成海事安全調查。)* *(CI Code 2.22：非常嚴重海事事故係指涉及船舶全損或人員死亡或嚴重環境損害的海事事故。)*	未能全面對國籍船進行所有重大海事事故調查，亦缺乏授權法案，現有海事報告規則亦應進行修訂。 (1 查 51 年 7 月 13 日修頒之舊海商法第 49 條規定「船長遇船舶沉沒、擱淺、碰撞、強迫停泊，或其他意外事故及有關於船舶貨載、海員或旅客之非常事變時，應作成海事報告，載明實在情況，檢送主管機關。前項海事報告，應有海員或旅客之證明。」，是以 80 年 12 月 18 日修正之海事報告規則第 3 條據此要求「船長遇船舶發生海事時，應依海商法第四十九條之規定，作成海事報告。前項海事報告之作成，於船長遭難死亡或失蹤時，由生還船員中職務最高者為之，全船遭難死亡或失蹤時，由船舶所有人或船舶代理人為之。海事報告應有海員或旅客之證明。但其報告係船長於遭難後，獨身脫險之處作成者，不在此限。」；惟 88 年修正之海商法已全文修正致喪失法源依據，宜修訂規則內容或另置法源。 2 查 101 年 8 月 22 日修正之商港港務管理規則第 48 條「遇難或避難船舶進港泊靠後，應即補辦下列手續：一、補填入港報告連同旅客名單、船員名冊送航港局或指定機關查核。二、遇難船舶應將海事報告書送交航港局或指定機關簽證。三、船長應將船舶應備文書送請航港局或指定機關查驗。」；並無強制船旗國必須對所有重大海事事故進行調查之規範。)	強制性

表 3.3-1 航政單位執行事故調查措施與海事調查章程規範差異表			
項目	海事調查章程規範事項	國內執行	備考
6	規定船旗國與其他具實質利益國 (substantially interested State)(特別是沿海國)協商實施海事調查。 *(CI Code 7.1：在不限制各國單獨進行其自己的海事安全調查權利的條件下，當海事事故發生於某國領土，包括其領海、內水之中時，涉及海事事故的船旗國和該沿岸國須協商以就由哪個或幾個國家按照本規則的要求或建議作為海事安全調查國進行調查而達成協議。)*	無相關機制設計。	強制性
7	規定所有實質利益國都須盡力配合海事調查國；海事調查國也應盡可能為實質利益國家提供參與調查的機會。 *(CI Code 7.2：在不限制各國單獨進行其自己的海事安全調查權利的條件下，當海事事故發生於公海上，或某國的專屬經濟區之中，並涉及到一個以上的船旗國時，則有關國家須協商就由哪個或幾個國家按照本規則的要求或建議作為海事安全調查國進行調查而達成協議。)* *(CI Code 7.3：對於第 7.1 或 7.2 條所述海事事故，有關國家可與另一個有重大利益關係的國家達成協議，由該國或多國作為海事安全調查國。)*	無相關機制設計。	強制性
8	海事調查國應將正式海事調查報告向公眾與業界公開。 *(CI Code 14.4：海事安全調查報告的最後文本須由海事安全調查國向公眾及航運界提供，或，如由其它國家或本組織公佈，則海事安全調查國須協助公眾及航運界獲取調查報告的細節。)*	未有具體法規或辦法。 (查 101 年 8 月 17 日令頒之海事評議小組設置及評議作業要點第 3 條規範「評議小組決議應作成海事評議書原本，報請航港局局長核定後作成正本，以航港局之名義送達當事人，並以副本分送交通部及有關機關。外籍船舶或人員涉及海事案件，經評議認為故意或重大過失者，航港局應核轉交通部轉請外交部將海事案件發生情形及結果送達該船員所屬國或船籍國請求議處。」；相關調查報告僅提供有關單位，並無向公眾與業界公開之機制設計。)	強制性
9	海事調查國應將重大海事事故的正式調查報告提交予國際海事組織。	非締約國，亦未加入週邊組織，缺乏管道進行主動報告。	強制性

表 3.3-1 航政單位執行事故調查措施與海事調查章程規範差異表			
項目	海事調查章程規範事項	國內執行	備考
	(CI Code 14.1：海事安全調查國須向本組織提交對每一非常嚴重海事事故所進行的海事安全調查的海事安全調查報告的最終文本。) *(CI Code 14.2：當對不非常嚴重的海事事故或海事事件進行了海事安全調查，並做出了海事安全調查報告，且其中含有的信息可防止將來的海事事故或海事事件或減少其嚴重性時，其最終文本須提交給本組織。)*		
10	規範海事調查報告初稿及最終報告格式，並基本應包括： 1 事故與事件之基本事實及說明事故與事件之結果是否有死亡、受傷或污染之概要。 2 船旗國、船舶所有人、經營者、公司與船級協會。 3 有關船舶尺度(Dimensions)及主機之詳細資料，以及船員、日常工作情況與其他有關事項，例如：在船上服務時間等說明。 4 敘述事故與事件之詳細情況。 5 使報告達到合乎邏輯結論或結果之分析與評論，以確定對事故事件有影響之所有因素。 6 依國際海事組織事故與事件資料庫(Database)要求劃分章節、分析原因及對原因要素之評論，包括機械方面與人為因素方面。 7 從防止類似事故之角度提出建議。 *(CI Code 14.3：第 14.1 及 14.2 條所指海事安全調查報告須利用海事安全調查中獲取的全部信息，考慮到其範圍，並要求確保包括並了解了所有與安全有關的問題，以便在必要時採取安全措施。)* *(Resolution A.1075(28) Guidelines to Assist Investigators in the Implementation of the Casualty Investigation Code (Resolution MSC.255(84)))*	1 查 80 年 12 月 18 日修正之海事報告規則要求載明 25 項基本資料提供調查與評議使用包含「一、製作海事報告年、月、日。二、船名。三、國籍及船籍港。四、船舶所有人。五、船舶營運人。六、建造完成之年、月、日。七、上次檢修日期。八、總噸位及淨噸位。九、主機種類、數目及推進動力。十、駕駛操縱系統。十一、觀測設備。十二、求救信號設備。十三、載客人數及載貨數量。十四、船艏艉吃水。十五、海事概述。十六、海事發生地點。十七、海事發生時間。十八、天候、海象及潮流。十九、船長姓名及執業證書。二十、輪機長姓名及執業證書。二十一、當值駕駛員、輪機員姓名及執業證書。二十二、引水人姓名。二十三、海事經過及處理。二十四、船長簽章。」。 2 查 101 年 8 月 17 日令頒之海事評議小組設置及評議作業要點第 11 點規定「第九點規定之海事檢查報告書或資料摘要，應載明下列事項：(一)案由。(二)當事人姓名、出生年月日、住所、身分證統一編號或護照號碼、所任職務及任職之公司或機構。(三)本案有關資料概述(包括當事人報告及詢問有關人員之筆錄案件發生時間、地點、船舶名稱、噸位、載重、吃水深度、船之長、寬、主機、氣象、航向、航速、流向、流速、損壞狀況等)。(四)案情檢查經過。(五)船長之海事報告。(六)案情研判。(七)擬議處理意見。(八)參考法規條文。(九)其他。」 3 評議小組決議所作成之「海事評議書」則無規範格式或應具備內容規定，然現況檢視	強制性

表 3.3-1 航政單位執行事故調查措施與海事調查章程規範差異表			
項目	海事調查章程規範事項	國內執行	備考
		與國際海事組織規範海事調查報告形式與內容存有相當差異。	
11	當領土範圍(含領海或沿岸)發生海事，船旗國或沿岸國應在合理可行下儘速通知各具實質利益國。 *(CI Code 5.2：當海事事故發生於沿岸國的領土，包括其領水之內時，船旗國和該沿岸國須相互通知，並分別實際可行地盡快通知其它有重大利益的國家。)*	無相關機制設計。	強制性
12	自海員取證，應確保人身自由及遣返原居地等人權保障措施。 *(CI Code 12.1：如海事安全調查需要海員提供證據，須盡實際可能地儘早取證。海員須盡可能早的獲准返回船舶，或遣返。海員的人權須始終得到維護。)*	可見實務執行，但缺乏具體法規或辦法。 (查我國為保障船員權益所訂之船員法(100 年 2 月 1 日修正)，並無針對自海員取證相關權益保障規範，然其第 90 條規定賦予主管機關得委任當地航政機關辦理有關船員管理、海事報告、航行安全、海難處理.....等事項權限；故應可透過船員法修訂或由航政機關頒佈相關自海員取證之人權保障措施辦法進行補強)	強制性
13	行政責任；各國應確保海洋安全調查當局有提供給他們足夠的物力，財力和合格的人員，使他們能夠根據本規則開展海事安全調查工作。 *(CI Code 15.1：各國應確保海事安全調查當局具有充分的物質和財務資源以及適任的合格人員使其能夠便利該國按照本規則履行對海事事故和海事事件進行海事安全調查的義務。)*	缺乏足夠資源，且未有具體規劃或辦法。	建議性
14	建議籌組之海事調查員應具備 A.1070(28) 號決議案中所列技能，但並不排除使用具有其他任何方面專長的海事調查顧問，提供專家意見。 *(CI Code 15.1：各國應確保海事安全調查當局具有充分的物質和財務資源以及適任的合格人員*	現行評議辦法訂有延攬相關背景或具專才人員參與評議工作，但海事調查員之技能或培訓，無相關規範或培訓機制設計。 (查 101 年 8 月 17 日令頒之海事評議小組設置及評議作業要點第 3 條規範「評議小組置委員十一人至十三人，航港局局長、港務長、航務組組長、船舶組組長及船員組組長為當	建議性

表 3.3-1 航政單位執行事故調查措施與海事調查章程規範差異表			
項目	海事調查章程規範事項	國內執行	備考
	使其能夠便利該國按照本規則履行對海事事故和海事事件進行海事安全調查的義務。) *(CI Code 15.2：任何參加海事安全調查的調查員均應根據第 A.1070(28)號決議中所列海事安全調查員的技能加以任命。)* *(CI Code 15.3：但是，第 15.2 條並不排除在臨時的基礎上適宜地任命有所需特殊專業技能的調查員參加海事安全調查，也不排除使用顧問對海事安全調查的任何方面提供專家意見。)*	然委員，其餘委員由局長就下列人員中選聘之：(一)具有一等船長資格，並有三年以上實務經驗者。(二)具有一等引水人資格，並有三年以上實務經驗者。(三)具有一等輪機長資格，並有三年以上實務經驗者。(四)行政院農業委員會漁業署代表。(五)具有驗船師資格，並有三年以上實務經驗者。(六)具有資望之有關教授或教師。(七)具有資望之保險從業人員。(八)具有法官、檢察官或律師資格，並有三年以上實務經驗者。(九)具有資望之會計師。(十)具有資望之海事公證人員。(十一)其他對海事案件之處理特具經驗之人員。」及第 5 條規範「評議小組置執行秘書一人，由航港局派科長兼任之，襄助執行評議小組事務；置海事檢查員若干人，辦理海事評議業務」；上列檢查(調查)人員現況未符合國際海事組織所建議之技能；其餘人員由航港局長決定之委員，其條件應屬符合本條所述「其他任何方專長的海事調查顧問」身分。)	
15	通知涉入各方及開展調查；在合理可行下，儘速通知各涉入方(含船東、代理人等)，展開調查工作相關訊息，並告知其權利和義務。 *(CI Code 20.1：當按照本規則開始海事安全調查時，應盡實際可能地儘早通知被調查的海事事故或海事事件涉案船舶的船長、船東和代理人：.1 被調查的海事事故或海事事件；.2 開始海事安全調查的時間和地點；.3 海事安全調查當局的名稱及聯繫細節；.4 進行海事安全調查所依據的法律的有關細節；.5 受到海事安全調查的有關方的權利和義務；及.6 進行海事安全調查的國家的權利和義務。)*	無相關機制設計。	建議性
16	統籌調查；應建立國內執行調查工作適當的辦法，並確保海事調查所遵循的方法符合 A.1075(28)修訂建議，及考量包含國際海事組織、國際勞工組織所提相關建議，調查中應考量國際安全管理(ISM)規則規範。	可見部分實務執行已將相關規則納入考量，但並無制度機制設計。	建議性

表 3.3-1 航政單位執行事故調查措施與海事調查章程規範差異表			
項目	海事調查章程規範事項	國內執行	備考
	(CI Code 21.2：海事安全調查國應確保國內有適宜的框架以：.1 任命海事安全調查的調查員包括領導海事安全調查的調查員；.2 向海事安全調查的成員提供合理水平的支持；.3 與其它有重大利益的國家聯絡，制定海事安全調查的計劃；.4 確保海事安全調查中遵循的方法與經修訂的 A.1075(28)".號大會決議中所建議的相一致；.5 確保海事安全調查考慮到本組織或國際勞工組織所公佈的與進行海事安全調查有關的任何建議或文件;及 .6 確保海事安全調查考慮到船舶經營人按照 ISM 規則的安全管理程序和安全政策。)*		
17	資訊保密；國家應確保調查員係基於促進海事安全執行調查，並基於此規則不使相關紀錄資料披露，作為民、刑事訴訟使用。 *(CI Code 23.1：各國應保證進行海事安全調查的調查員僅在下列情況下披露海上安全記錄的信息：.1 為運輸安全的目的有必要或值得這樣做，並已考慮到對將來的海事安全調查獲得信息的任何影響；或.2 按照本規則另有准許。)*	無相關機制設計。	建議性
18	案件涉入方與證人保護；國家應提供法律保護予提供證據資料之個人，以防止因此可能導致該員涉入相關民、刑事訴訟；另於取證過程中應告知並保障其應有之權益。 *(CI Code 24.1：如法律要求某人提供可能會使其負罪的證據，為了海事安全調查，該證據，在法律許可的情況下，應防止在針對該人的民事或刑事訴訟中作為證據而被接受。)* *(CI Code 24.2：被要求提供證據的人應被告知本調查的性質和根據。被要求提供證據的人須被告知並獲准得到有關下列各項的法律意見：.1 海事安全調查之後的任何訴訟中令自己負罪的任何潛在風險；.2 任何不使自己負罪的權利或保持沉默的權利；.3 如向海事安全調查提供證據，為避免該證據對其自身不利而向該海員提供的任何保護。)*	無相關機制設計。	建議性
19	事故調查報告草案和最終報告，應提供有關利益方審視並有回覆意見管道，並防止調查報告作為相關訴訟中的證據。	現行評議辦法訂有 30 天審視期及提請復議規定，但無防止調查報告作為相關訴訟中證據的相關機制設計。(見 101 年 8 月 17 日令頒之海事評議小組設置及評議作業要點第 2 條、第 14 條及第 17 條規定)	建議性

表 3.3-1 航政單位執行事故調查措施與海事調查章程規範差異表			
項目	海事調查章程規範事項	國內執行	備考
	(CI Code 25.3：海事安全調查國應給與有關方 30 天，或其它雙方同意的時間對報告草案提出意見。海事安全調查國應在準備最後報告之前，審議所提意見，並且當接受或否決該意見將對意見提交方的利益有直接影響時，海事安全調查國應通知該有關方其意見得到處理的方式。如果海事安全調查國 30 天後或雙方同意的時間到期後未收到意見，則可開始完成該報告。)*		
20	重啟調查；當有新證據出現可能導致分析與所得結論有重大改變時，應考慮重啟調查。 *(CI Code 26.1：當得到了會對所作的分析和結論造成重大改變的新證據時，已完成海事安全調查的海事安全調查國應重新審議其調查結果，並應考慮重開調查。)*	無完整機制設計。 (查 101 年 8 月 17 日令頒之海事評議小組設置及評議作業要點第 17 條規範「當事人收受海事評議書後，發現足以影響評議小組決議之新事證者，得向航港局申請海事案件重新評議。前項申請，應自海事評議書送達後三十日內為之」；我國因以行政調查及裁處為主，雖作業要點第 2 條第 4 項將「有關船舶航行安全之建議改善事項」列為主要任務之一，然申請海事案件重新評議，並不必然確保進行以安全性為主體的調查與分析工作。)	建議性

3.4 交通部委託研究計畫的論點

2015 年交通部航政司委託國立臺灣海洋大學「海運安全整體研析及管理策略研究[11]」研究報告「4.6.3 國內海事調查概況」中，該章節陳述如下：

為了因應各種災變的狀況減少災害發生防止災害擴大，我國《災害防救法》第 22 條規定要求各級政府平時應依權責實施之減災事項包括了「災害潛勢、危險度、境況模擬與風險評估之調查分析、以及適時公布其結果」的要求；然而依其第 22 條第 4 項規定所訂定的「空難海難及陸上交通事故災害潛勢資料公開辦法」卻多屬陸上交通事故災害潛勢資料公開內容及程序之規定，針對空難及海難部分則僅有第 3 條：「空難及海難不具特定災害區域、危險度及發生潛勢，得不辦理災害潛勢公開資料。」其他則闕如。然而，

[11] 「海運安全整體研析及管理策略研究」期末報告書，交通部航政司委託國立臺灣海洋大學研究，2015 年 1 月

在空難領域部分，依據「飛航安全調查委員會組織法」之規定，自 2012 年 5 月 20 日起「行政院飛航安全調查委員會」已正式成為獨立調查機關，補足空難災害預防的一部份缺口，同時也接軌國際。

在海難、海事事故之領域裡，國內並不存在如「飛航安全調查委員會」的獨立安全調查機構，但包含航港局、海巡署、漁業署及海軍司令部等單位在執行業務中，均不同程度的扮演有「海事事故」行政調查的角色。這些機關在極其有限的經費、人力與資源下，各自辦理著含括「海事報告管理」、「事故調查」、「海事評(復)議」、「案件分類統計」、「行政裁處」、「案例報告彙編公告」及「安全建議發布」等領域行政作為。而由交通、海巡及漁業部門所進行的調查或統計，常因三者立場與權責不同，不利於彙整進行整體分析與運用，殊為可惜。此外，在未建置海洋專責機構及缺乏法源支持下，不可否認的是，國內在海事事故調查上缺乏整體規劃，實難以執行系統性分析作為與後續延伸性處置。這個缺憾，實關係著國家防災及海事安全政策的成敗。

檢視國內海事調查現況，作為海難事故之預防、應變及復原重建之中央災害防救業務主管機關「交通部」，曾於 2012 年 11 月 2 日新聞稿指出：「將依照國際海事組織(IMO)2008 年海事調查章程相關規定，由交通部航港局擔任獨立調查專責機關」；經查交通部航港局辦事細則之第 16 條，確實已律定該局各航務中心掌理包含「海事案件之調查處理」事項。值得注意的是，航港局為行政機關，係依我國行政程序法立法基本精神，本「職權進行主義」與「職權調查原則」，在兼顧「當事人參與」及「行政效能」原則下，執行機關權責；經檢視交通部海難災害防救業務計畫(101 年 12 月草案版)第肆編第一章「海事調查及評議」所列作業規劃，略以：

1. 海難災害發生後，各地區航務中心就所轄水域進行海事調查，並要求依《船員法》第 66 條規定作成海事報告及辦理海事報告簽證。

2. 各地區航務中心應依海事報告規則規定對肇事船舶進行海事調查，並查明海事發生之原因送交相關單位檢討改善，以避免再度發生類似海難。

3. 重大海難事件涉及相關船舶或船員責任者，應依海事報告規則及海事評議小組設置及評議作業要點規定辦理海事調查及評議。

4. 各海難案件當事人如不服航港局海事評議小組所作評議，應於收到海事評議書之日三十日內，向航港局申請重新評議。

就其企圖與整體規劃而言，主管單位確實朝向以調查為主的制度邁進一步，很值得鼓勵，但欲以行政調查兼容安全調查，本質上存在著基本價值的衝突，事實上就法制面而言，我們可以有相當多選項，例如，依中央行政機關組織基準法屬二級機關的交通部與三級機關的航港局，在擔任「獨立調查機關」的目標操作上，是可依法另設掌理調查的單位，與現有評議制度進行區隔；或如另外立法成立一獨立機關，以拉高其位階層級；又如成立行政法人機構，使安全調查工作運作更具效率與彈性。需進一步說明的是，此論述並非將評議中的海事調查業務劃分出去，而是將安全調查部分獨立執行，並不變更評議中原存之監理、行政調查及航行安全建議發布等執掌功能；是以當事故發生時，監理行政調查應是與安全調查工作平行進行。

總結國際海事組織海事調查章程與國內現行運作中的海事調查機制比較，存在著下列幾個值得我們繼續關注的議題：

1. 國內啟動海事調查的條件與機制與「海事調查章程」所訂定者頗有差距。

2. 國內無法確保海事安全調查獨立於民事、刑事和以處罰為目的行政調查之外。

3. 國內海事調查機制設計無法確保調查工作不受涉案人員或相關組織干涉。

4. 國內調查實務工作或行政辦法規範與保障。

5. 涉入調查案件之關係人與證人等，在相對之權利與義務上，我國應建立制度規範與保障。

6. 凡涉及第三方或其他實質利益國配合海事調查的作業與協調，我國目前無制式管道與作業機制。

7. 國內海事調查報告內容與運用作法與「海事調查章程」之建議差距太大，也未見正式海事調查報告向公眾與業界公開，更遑論將重大海事事故的正式調查報告提交予國際海事組織。

8. 國內海事安全工作所需之調查員及海事專家，其遴選、訓練、任用及執行調查工作，應建立制度性規劃與保障。

上述議題所衍生的問題：一者，欠缺應有的專業、中立與客觀的事故調查組織；再者，事故調查制度欠缺縝密規劃與適當法律規範，致整體呈現混沌與曖昧不明；三者，難見事故調查具體成效之展現。這些都是值得我們再深入檢討的。

從分析各主要國家與國際組織的海事安全體制中發現，各國幾乎都設立有主導海事安全的機構，如英國的海事事故調查局(Marine Accident Investigation Branch, MAIB)、美國的國家運輸安全委員會(National Transportation Safety Board, NTSB)、日本的運輸安全委員會(Japan Transport Safety Board, JTSB)、澳大利亞的運輸安全局(Australian Transport Safety Bureau, ATSB)、加拿大的運輸安全委員會(Transportation Safety Board of Canada, TSB)等。各國國情不同，機構位階有高有低，有直屬中央部會級的，也有直屬交通部級的機構，但同一特點就是，這些機構都是高度的專業、中立、客觀、獨立的進行海事的調查與預防的工作。

海事調查工作的良窳，可以說是一個國家海洋事務管理工作的重要指標，也是災害防救重要的一環，各海事先進國家對此工作莫敢忽視。其實，制度並無優劣之別，但求符合潮流、國情與需要才是重點。不論在行政調查或安全調查工作的分野上，應使之具備獨立行事能力，而透過組織與制度的設計，是能達到兼容並蓄的。目前我們的陸、海、空交通運輸安全體系，在交通部下有「道安委員會」，在行政院下有「飛安委員會」；然而，卻遺憾的獨缺「海安委員會」來照顧與關心這維繫台灣命脈的海運安全。

成立「海運安全調查委員會」可由專業、中立、客觀、獨立的海事調查著手，透過預防與建議事項的提出糾正與安全宣導，逐步推動、督促各有關部門落實預防機制，甚或進一步擴充職權，監督船舶檢查工作的執行，或督導港口國管制的功能，則此一組織及足以達成維護我國海事安全的功能與使命。未來不論是否籌組「海運安全調查委員會」，我們尚可透過海事調查工作的精進、積極參與國際海事的相關組織、檢討國內海洋事務管理單位的組織再造，以及海事相關法規的修(立)法工作等途徑，更務實的思考國內所需要之海事管理體制與事故調查組織架構，區隔行政管理與安全性需求的差異，在建構健全的調查程序、組織與法制基礎上，形塑一個更安全的海事環境。莫使不幸的災禍徒然發生，於其中卻毫無所穫，那可就真是災難中的災難了。

3.5 本所合作研究報告的論點

2015 年交通部運輸研究所「與 IMO 海運安全公約及國際海事案件處理規範調和之研究[12]」合作研究報告中，摘要部分章節如下：

我國現行之海事調查制度除不具獨立性，且主要業務為行政/監理調查，亦包括海損評議(海損評議部分係依據調查結果，分析研擬肇事責任分擔比例，供法院判決海損賠償之參考)，與 IMO 對於海事安全調查之要求存在不小之差異性。且考量我國對於海事行政/監理調查與評議並沒有專門性的立法，亦無法源授權執行。因此討論我國海事調查制度之改善應同時兼顧兩個面向，其一為推動建立具獨立性之海事安全調查制度;其二則為建立海事行政/監理調查與評議之法源。

為能達成 IMO 海事安全調查目的，與國際(CI Code、各代表性先進國家等)接軌，落實海事安全調查功效，且配合 IMO 預計於 2016 年 1 月 1 日生效實施之強制性會員國稽核機制(該機制將海事安全調查列為重要項目之

12 「與 IMO 海運安全公約及國際海事案件處理規範調和之研究」，交通部運輸研究所合作研究報告，2015 年 6 月

一)，我國應需推動建立具獨立性之海事安全調查制度，含訂立專門性之法條，以及設立專責機關。

有關訂立海事安全調查專法部分，建議可以 CI Code 及飛航事故調查法為基礎，訂立規範海事安全調查之專法，或可名為「海事事故安全調查法」，將調查目的、事故定義、調查組織授權、調查範圍、訪談權、各受調查單位權利義務、隱私保密權責、非法干預等非常基本的授權事項納入規範，並設立罰則。因為每一事項均會影響事故有關人員的權益，非經法律授權，難彰顯獨立、公正、公開之安全調查精神。

在設立專責機關之實際做法方面，可分為兩種模式，其一為獨立設立「海事安全調查委員會(簡稱海安會)」;其二則為以飛安會為基礎，擴張調查之客體，納入海事安全調查組織與機制，而擴組成立「運輸安全調查委員會(簡稱運安會)」。不論是採用哪種模式，皆可達到建立海事安全調查專責機關的目標。而為能進一步較精確提出設立專責機關的採行模式的具體建議，本研究綜整前述兩種模式的優缺點說明如下：

1. 獨立設立「海事安全調查委員會」

【優點】

(1) 由於與飛安會之設立宗旨相似度頗高，可以飛安會為範例，參考進行相關組織架構規劃與立法(組織法)推動作業。

(2) 海安會專責於海事安全調查，組織規模與業務範圍較為單純。

【缺點】

(1) 在已有飛安會的情況下，獨立設立海安會，除未能整合運輸安全調查資源，存在一些行政浪費的情形外，且會有疊床架屋之嫌。

(2) 與目前大部份代表性先進國家以單一組織(運輸安全委員會)執行如:飛航、鐵路、海事、道路、管線等運輸相關安全調查之做法不相符。

(3) 未來若需將各個獨立之安全調查委員會整併為單一之「運輸安全調查委員會」時，尚需再行推動組織規模與業務範圍之調整與立法事項，徒增作業程序與複雜性，且易予人浪費資源之感。

2. 以飛安會為基礎，擴組成立「運輸安全調查委員會」

【優點】

(1) 以飛安會為基礎，納入「海事安全調查」組織與機制，修改組織法(含更名為「運輸安全調查委員會」)以擴增並調整其組織架構即可完成。

(2) 未來可循此模式，視需要擴充納入鐵路、道路、管線等安全調查組織與機制，整合運輸安全調查資源，可涵蓋較大運輸安全範圍，以提出更高層次的安全改善建議，並具相關事權統一指揮之便。

(3) 與目前大部份代表性先進國家以單一組織(運輸安全委員會)執行如:飛航、鐵路、海事、道路、管線等運輸相關安全調查之做法相符合(如美國之 NTSB、澳洲之 ATSB，以及加拿大與日本之 TSB)。

【缺點】

(1) 涉及飛安會之組織調整，需審慎研擬組織與業務之擴增規劃。

(2) 運安會組織規模與業務範圍較為龐大，與各自獨立之飛安會與海安會相較之下，其整體運作可能存在較不專一單純之疑慮，需注意實際運作之管理與規範。

以 IMO 在 2016 年 1 月 1 日即將實施強制性會員國稽核機制(該機制將海事安全調查列為重要項目之一)之時程而言，從目前起算僅剩兩年多一點，我國宜加緊腳步完成建立具獨立性之海事安全調查制度，並妥善運作以符合 IMO 稽核要求。

有關設立海事安全調查專責機關方面，經由前述兩種可行採行模式的優缺點比較分析，可得兩種模式雖皆涉及立法作業，但存在本質上的差異，設立海安會模式是建立新機關；而運安會模式是由現有機關進行組織調整擴充，以政府行政組織再造而言，運安會模式似較易於達成。此外，設立海安會模式除未能整合運輸安全調查資源，存在一些行政浪費的情形，且會有疊床架屋之嫌外，未來可能面臨若需將各個獨立之安全調查委員會整併為單一之「運輸安全調查委員會」時，尚需再行推動組織規模與業務範圍之調整與立法事項，徒增作業程序與複雜性，且易予人浪費資源之感的問題，應以運安會模式為宜。

另外，近日立法院交通委員會通過臨時提案，請交通部、飛安會及交通部運輸研究所研議成立「運輸安全調查委員會」。可見政府已相當重視此項議題，準此，在設立海事安全調查專責機關方面，應以推動以飛安會為基礎，而擴組成立運安會，並納入「海事安全調查」組織與機制為較適當之做法。

綜上，本研究建議參照目前大部份代表性先進國家之潮流趨勢，直接採一勞永逸，一次到位之方式，以飛安會為基礎，擴組成立「運輸安全調查委員會」。其實際做法為以飛安會為基礎，納入「海事安全調查」組織與機制，修改組織法(含更名為「運輸安全調查委員會」)以擴增並調整其組織架構。成立「運輸安全調查委員會」可整合運輸安全調查資源，涵蓋較大運輸安全範圍，以提出更高層次的安全改善建議，並具相關事權統一指揮之便。未來亦可循此模式，視需要擴充納入鐵路、道路、管線等安全調查組織與機制，完善我國運輸安全調查體制。其中有關運安會之「海事安全調查」組織部分，建議可比照飛安會，設置資深海安調查官、副資深海安調查官、海安調查官、副海安調查官、工程師及副工程師等職務，並依聘用人員聘用條例聘用之，各職務之人數亦得先行比照飛安會，續依實際運作情形調整。另建議於調查實驗室部分納入船舶航行與操船模擬、船舶性能分析、船舶設備與航儀分

析、VDR 解讀與分析、航行資料整合及其他調查相關技術(如機械、物理、材料等)等功能。

假使在推動將飛安會擴組成立運安會之運作過程中發生重大困難，則可轉而接續推動獨立成立海安會，迅速應變。其實際做法可以推動成立運安會過程所獲得之既有共識、組織架構、業務規劃，以及立法之推動經驗等為基礎(亦可輔以飛安會為範例)，調整進行相關組織架構規劃與立法(組織法)推動作業。

海事安全調查專責獨立機關之執掌範圍，並非是要將所有海事調查相關業務從航港局劃分過去，而是專責於「非常嚴重海事事故」之安全調查部分，以釐清事故發生原因並提出航安改善建議。而「非常嚴重海事事故」的定義可參照 CI Code 定為「涉及船舶全損或人員死亡或嚴重環境損害的海事事故」，其中「嚴重環境損害」的定義可為「經評定對環境造成重大有害影響的環境損害」。

在海事安全調查專責獨立機關運作的同時，航港局依然執行其所屬之監理、行政調查及部分安全調查(視情況與需要性)等執掌業務。其中除「非常嚴重海事事故」之蒐證，以及客觀事實資料之彙整可藉由調查組織取得外，所有案件之行政/監理檢討究責事項(含海事評議)，以及其他海事事故與事件之調查處理，仍依航港局原有之規範與程序執行。另在目前航港局組織與人力皆較不完整的情形下，建議可強化航港局(含其各航務中心)行政/監理調查之人力編制，以提升執行成效。

而在建立海事行政/監理調查與評議之法源方面，建議可於「海上交通安全法」中納入相關法條授權航政機關執行。查「2004 年運研所版海上交通安全法草案」與「2008 年交通部版海上交通安全法草案」雖已有納入相關規定，但尚未與獨立性海事安全調查制度劃分權責。建議可以前述兩草案為基礎，以與獨立性海事安全調查制度劃分權責為目的，調整部分條文內容而納入規範。

若是無法成立(或尚未成立)具獨立性之海事安全調查制度，我國亦宜應朝健全現有體制之法律授權，以及強化人力編制、技術等方面著手改善。其中在海事調查法規方面，考量我國目前並沒有專門性的立法，亦無法源授權執行，建議可參照上一段說明，於「海上交通安全法」中納入相關法條授權航政機關執行。如此雖然無法滿足 IMO 所要求之海事安全調查工作應具獨立性，且其目的不為「判別或劃分事故責任」，並應分離並獨立於其他類型調查等基本原則，但可達到較為健全現有制度的目的，以利於海事調查作業之執行，增進海事安全。

此外，現行對涉及航業法、海商法等海事案件之海損賠償等爭議問題，其處理模式主要為各級法院依民法判決，而各級法院因較缺乏對海事案件之專業性，一般會參考海事評議小組依據其調查結果，並分析研擬肇事責任分擔比例所作成之「海事評議書」，作為判決參考。為強化各級法院之海事案件專業性，提升其司法審判之獨立性，遂有各界提出應設立「海事專業法庭」之議題。意即，海事案件之海損、過失責任評定、審判等事項之處理應以海事專業法庭負責為宜。

參照「司法院九十年度邀請交通運輸界參與司法改革座談會建議事項本院辦理情形表」(http://www.judicial.gov.tw/aboutus/aboutus05/aboutus05-28.asp)，可得司法院表示法官專業化制度正式向前邁進，未來各專業類型案件，將由專業法官審理，並視案件量多寡，酌設專業法庭或專業法院，妥速審結海事案件。但因迄今尚未正式設立海事專業法庭，爰建議政府可考量接續推動之。

第四章 歐盟的海事調查

4.1 概說

歐盟在 2011 年 6 月 17 日通過 Directive 2009/18/EC 指令[13]，確立海事事故調查的基本原則，並規範各成員國應履行下列工作[14]：

- 建立獨立，公正和永久的事故調查機構。沒有海運船隊的內陸國家沒有義務遵守這一規定，只需指定一個聯絡點。捷克和斯洛伐克目前就是這種情況。

- 要求通報海事事故。這項義務涵蓋的傷亡和事件如下：

  - 涉及懸掛其中一個成員國旗幟的船隻；(Article 5 Obligation to investigate, 1.(a) involving a ship flying its flag, irrespective of the location of the casualty;)

  - 在成員國的領海及內水發生；(Article 5 Obligation to investigate, 1.(b) occurring within its territorial sea and internal waters as defined in UNCLOS, irrespective of the flag of the ship or ships involved in the casualty;)

  - 涉及成員國的實質利益。(Article 5 Obligation to investigate, 1.(c) involving a substantial interest of the Member State, irrespective of the location of the casualty and of the flag of the ship or ships involved.)

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13 DIRECTIVE 2009/18/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009, establishing the fundamental principles governing the investigation of accidents in the maritime transport sector and amending Council Directive 1999/35/EC and Directive 2002/59/EC of the European Parliament and of the Council (http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1398234420545&uri=CELEX:32009L0018)

14 http://emsa.europa.eu/about-investigation-of-marine-casualties.html

- Member States should perform a preliminary assessment on serious casualties in order to decide whether to investigate them. It is left to the Member States to decide whether to investigate a less serious accident or a marine incident. 事故調查係依據事故嚴重程度而定。分類為非常嚴重事故(Very serious casualties) (MSC-MEPC.3/Circ.3 意味著船舶全面損失，嚴重破壞環境或有人員死亡)事故的海事事故均必須調查。會員國應對嚴重傷亡事故進行初步評估，以決定是否繼續進行調查。對於較不嚴重的事故或海洋事件，由成員國決定是否調查。

- 在事故發生後 12 個月內應發布調查報告。(Article 14 Accident reports)

- 通過歐洲海事事故信息平台(European Marine Casualty Information Platform , EMCIP[15])向委員會通報海事傷亡和事故。(Article 17 European database for marine casualties)

4.2 歐盟各國海事調查機構

依據歐盟Art.8.1 of Directive 2009/18/EC 規定[16]，每一會員國都應有一個負責處理海難事件的公正永久性調查機構。各成員國所提供的資料可以

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[15] https://emcipportal.jrc.ec.europa.eu/index.php?id=97

[16] Article 8 Investigative bodies

1. Member States shall ensure that safety investigations are conducted under the responsibility of an impartial permanent investigative body, endowed with the necessary powers, and by suitably qualified investigators, competent in matters relating to marine casualties and incidents.
   In order to carry out a safety investigation in an unbiased manner, the investigative body shall be independent in its organisation, legal structure and decision-making of any party whose interests could conflict with the task entrusted to it.
   Landlocked Member States which have neither ships nor vessels flying their flag will identify an independent focal point to cooperate in the investigation pursuant to Article 5(1) (c).
2. The investigative body shall ensure that individual investigators have a working knowledge of, and practical experience in, those subject areas pertaining to their normal investigative duties. Additionally, the investigative body shall ensure ready access to appropriate expertise, as necessary.
3. The activities entrusted to the investigative body may be extended to the gathering and analysis of data relating to maritime safety, in particular for prevention purposes, insofar as these activities do not affect its independence or entail responsibility in regulatory, administrative or standardisation matters.
4. Member States, acting in the framework of their respective legal systems, shall ensure that the investigators of its investigative body, or of any other investigative body to which it has delegated the task of safety investigation, where appropriate in collaboration with the authorities responsible for the judicial inquiry, be provided with any information pertinent to the conduct of the safety investigation and therefore be authorised to:

在歐盟海事調查資訊平台上獲取(The European Marine Casualty Information Platform (EMCIP))。各會員國之海事調查專責機構如下：

Austria奧地利

Ministry for Transport, Innovation and Technology

Supreme Shipping Authority, Dept. W1, Radetskystrasse 2, A-1030 Wien

Tel: +43 171 162655901, Fax: +43 171 162655999

Belgium比利時

FPS Transport and Mobility Conseil d'Enquete Maritime

City Atrium - Rue du Progrès 56, 1210 Bruxelles, Belgium

Tel: +32 2 277 3879, Fax: +32 2 277 4016

http://www.mobilit.fgov.be

Bulgaria保加利亞

Directorate for Aircraft, Maritime and Railway Accident Investigation

9 Dyakon Ignatiy Street, 1000 Sofia, Bulgaria

(a) have free access to any relevant area or casualty site as well as to any ship, wreck or structure including cargo, equipment or debris;
(b) ensure immediate listing of evidence and controlled search for and removal of wreckage, debris or other components or substances for examination or analysis;
(c) require examination or analysis of the items referred to in point (b), and have free access to the results of such examinations or analysis;
(d) have free access to, copy and have use of any relevant information and recorded data, including VDR data, pertaining to a ship, voyage, cargo, crew or any other person, object, condition or circumstance;
(e) have free access to the results of examinations of the bodies of victims or of tests made on samples taken from the bodies of victims;
(f) require and have free access to the results of examinations of, or tests made on samples taken from, people involved in the operation of a ship or any other relevant person;
(g) interview witnesses in the absence of any person whose interests could be considered as hampering the safety investigation;
(h) obtain survey records and relevant information held by the flag State, the owners, classification societies or any other relevant party, whenever those parties or their representatives are established in the Member State;
(i) call for the assistance of the relevant authorities in the respective States, including flag-State and port-State surveyors, coastguard officers, vessel traffic service operators, search and rescue teams, pilots or other port or maritime personnel.

5. The investigative body shall be enabled to respond immediately on being notified at any time of a casualty, and to obtain sufficient resources to carry out its functions independently. Its investigators shall be afforded status giving them the necessary guarantees of independence.
6. The investigating body may combine its tasks under this Directive with the work of investigating occurrences other than marine casualties on condition that such investigations do not endanger its independence.

Tel: +359 2 940 9334, Fax: +359 2 940 9361

http://www.mtitc.government.bg

Cyprus賽普勒斯

Department of Merchant Shipping of Cyprus

Kylinis Street, Mesa Geitonia, 4007 Lemesos, P.O. Box 56193 - 3305 Lemesos, Cyprus

Tel: +357 25848100, Fax: +357 25848200

casualties@dms.mcw.gov.cy

http://www.shipping.gov.cy

Croatia克羅埃西亞

Air, Maritime and Railway Traffic Accident Investigation Agency

Ivana Šibla 9-11, HR-10000 Zagreb, Croatia

Tel: +385 1 8886 830, Fax: +385 1 8886 831

http://www.azi.hr

Czech Republic捷克

Ministry of Transport, Czech Maritime Administration Navigation Department

Nábř. L. Svobody 12/1222

110 15 Praha 1

Tel: +420 225 131 343

evzen.vydra@mdcr.cz

Denmark丹麥

Danish Maritime Accident Investigation Board

Carl Jacobsens Vej 29, DK-2500 Valby, Denmark

Tel: +45 91 37 63 00

dmaib@dmaib.dk

http://www.dmaib.com

Danish Maritime Authority

38 C, Vermundsgade, DK-2100 Copenhagen, Denmark
Tel: +45 3917 4400, Fax: +45 3917 4401
sfs@dma.dk
http://www.dma.dk

Estonia愛沙尼亞

Estonian Safety Investigation Bureau
Harju 11, 15072 TALLINN, Estonia
Tel: +372 639 7684, Fax: +372 631 3660
info@ojk.ee
http://www.ojk.ee/en

Marine Casualties Investigation and Maritime Safety Department
Lume 9, 10416 Tallinn, Estonia
Tel: +372 6205 704, Fax: +372 6205 706
http://www.vta.ee

Finland芬蘭

Safety Investigation Authority
Ratapihantie 9, 00520 Helsinki, Finland
Tel: +358 2956 66870, Fax: +358 9 8764375
http://www.sia.fi

France法國

Marine Accident Investigation Office
Tour Pascal B - Antenne Voltaire, 92055 LA DEFENSE CEDEX, France
Tel: +33 1 40 81 38 24, Fax: +33 1 40 81 38 42
bea-mer@developpement-durable.gouv.fr
http://www.bea-mer.developpement-durable.gouv.fr

Germany德國

Federal Bureau of Maritime Casualty Investigation

Bernhard Nocht-Strasse 78, 20359 Hamburg, Germany
Tel: +49 40 3190 8311, Fax: +49 40 3190 8340
posteingang-bsu@bsh.de
http://www.bsu-bund.de

Greece希臘

Hellenic Bureau for Marine Casualties Investigation (HBMCI)
150 Grigoriou Lambraki Street, 5th floor, Piraeus, 18518, Greece
Tel: +30 210 4191307, Fax: +30 210 4191269
hbmci@yen.gr
http://www.hbmci.gov.gr

Hungary匈牙利

Transport Safety Bureau of Hungary
Koer utca 2/A, 1103 Budapest, Hungary
Tel: +36 1 294 5529, Fax: +36 1 432 6241
tsbmarineinfo@nfm.gov.hu
http://www.kbsz.hu

Iceland冰島

Icelandic Transportation Safety Board (ITSB)
Flugvallarvegur 7, 101 Reykjavik, Iceland
Tel: +354 511 6500, Fax: +354 551 6501
rns@rns.is
http://www.rnsa.is

Ireland愛爾蘭

Marine Casualty Investigation Board
Leeson Lane, DN 2 Dublin, Ireland
Tel: +353-1-6783484/5/6, Fax: +353-1- 6783493
info@mcib.ie

http://www.mcib.ie

Italy義大利

Marine Casualty Investigation Body

Viale dell'Arte, 16, 00144 Roma, Italy

Tel: +39 06 45489209, Fax: +39 06 96519919

investigativo@mit.gov.it

Latvia拉托維亞

Transport Accident and Incident Investigation Bureau

58 Brivibas Street, LV-1011 Riga, Latvia

Tel: +371 67288140, Fax: +371 67283339

taiib@taiib.gov.lv

http://www.taiib.gov.lv

Lithuania立陶宛

Transport Accident and Incident Investigation Division

Gedimino Ave. s17, LT-01505 Vilnius, Lithuania

Tel: +370 5 239 3907, Fax: +370 5 239 3850

http://www.sumin.lt/

Luxembourg盧森堡

Administration des Enquêtes Techniques Aviation civile, Maritime, Fluvial et Chemin de fer

B.P 1388, L-1013 Luxembourg (city), Luxembourg

Tel: +352 24 78 44 17, Fax: +352 26 47 89 75

info@aet.etat.lu

http://www.mt.public.lu/transports/AET

Malta馬爾他

Marine Safety Investigation Unit

‘Maritime House’, Lascaris Wharf, Valletta VLT 1921, Malta
Tel: +356 21660369
msiu.tm@transport.gov.mt
http://mtip.gov.mt/en/Pages/MSIU/Marine-Safety-Investigation-Unit.aspx

Netherlands荷蘭

Dutch Safety Board
P.O. Box 95404, 2509 CK The Hague, Netherlands
Tel: +31 70-3337000, Fax: +31 70-3337077
scheepvaart@onderzoeksraad.nl
http://www.onderzoeksraad.nl/en

Netherlands Shipping Inspectorate
s' Gravenweg 665, 3009 AP Rotterdam, Netherlands
Tel: +31 70 456 4500, Fax: +31 10 202 3520
ongevallen-zeevaart@ivw.nl
http://www.ivw.nl

Norway挪威

Accident Investigation Board Norway
Sophie Radichsvei 17, NO-2003 Lillestrom, Norway
Tel: +47 63 89 63 00, Fax: +47 63 89 63 01
marine@aibn.no
http://www.aibn.no

Norwegian Maritime Directorate
PO Box 2222, N-5509 Haugesund Haugesund, Norway
Tel: +47 52745000, Fax: +47 52745001
postmottak@sjofartsdir.no
http://www.sjofartsdir.no

Poland波蘭

State Marine Accident Investigation Commission (PKBWM)

Stefana Batorego 4, Square, 70-207 Szczecin, POLAND
Ph. +48 91 44 03 286
www.pkbwm.gov.pl

Portugal葡萄牙

Maritime Accident Investigation and Aeronautical Meteorology Authority Office (GAMA)

Rua C do aeroporto 1749-077, Lisboa, Portugal
Tel: +351 218 447 069
www.gpiam.mam.gov.pt
gpiam@gpiam.mam.gov.pt

Romania羅馬尼亞

Marine Accidents Investigation Department

38, Dinicu Golescu Blvd, Sector 1, 010873 Bucharest, Romania
Tel: + 40 750 032 154, Fax: + 40 21 311 12 20
http://dgiattn@mt.ro

Slovakia斯洛伐克

Ministry of Transport, Posts and Telecommunication

Maritime Office, Water Transport Department, Namestie slobody 6, 81005 Bratislava, Slovakia
Tel: +421-2-5949 4111, Fax: +421-2-5249 4794
info@mindop.sk
http://www.telecom.gov.sk

Slovenia斯洛文尼亞

Ministry of Infrastructure

Langusova 4, 1535 Ljubljana, Slovenija
Tel: +386 1 478 8000 / +386 41 757 624, Fax: +386 1 478 82 53
mzi.maiis@gov.si

janez.pozar@gov.si
http://www.mzi.gov.si/si/delovna_podrocja/preiskovanje_v_zvezi_z_varnostjo/preiskovanje_pomorskih_nesrec_in_incidentov/

Spain西班牙

Comisión Permanente de Investigación de Accidentes e Incidentes Marítimos

Paseo de la Castellana 67, 28071 Madrid, Spain
Tel: +34 91 597 7224/7141, Fax: + 34 91 597 8596
ciaim@fomento.es
http://www.ciaim.es

Sweden瑞典

Swedish Accident Investigation Board

P.O. Box 12538, New visiting address: Sveavägen 151, SE-102 29 Stockholm, Sweden
Tel: +46 8 508 862 00, Fax: +46 8 508 862 90
info@havkom.se
http://www.havkom.se

Swedish Transport Agency, Maritime Department

Box 653, SE-601 15 Norrköping, Sweden
Tel: +46 771 503 503, Fax: +46 11 23 99 34
sjofart@transportstyrelsen.se
http://www.transportstyrelsen.se/en

United Kingdom英國

Marine Accident Investigation Branch

Mountbatten House - Grosvenor Square, SO15 2JU Southampton, United Kingdom
Tel: +44 23 8039 5500, Fax: +44 23 8023 2459
maib@dft.gsi.gov.uk

http://www.maib.gov.uk

Marine Accident Incident Compliance Officer (MAICO)

H.M. Government of Gibraltar, Office of the Minister for Tourism, Commercial Affairs, Public Transport & the Port, Suite 735, Europort, Gibraltar

Tel: +44 (0)7703754779

maico@gibraltar.gov.gi

4.3 歐盟海事調查合作框架與資訊平台

歐盟海事調查機構永久合作框架(Permanent Cooperation Framework (PCF))是為使各成員國能遵循(Article 10 of Directive 2009/18/EC[17])所設置的一個業務論壇以期能夠按照其創立條例的要求促進合作。PCF並制定有預先確定的工作重點和目標的工作計畫。PCF會議的要點在歐洲海事事故信息平台(European Marine Casualty Information Platform , EMCIP)上對大公眾開放。

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[17] Article 10 Permanent cooperation framework

1. Member States shall, in close cooperation with the Commission, establish a permanent cooperation framework enabling their respective investigative bodies to cooperate among themselves to the extent necessary to attain the objective of this Directive.
2. The rules of procedure of the permanent cooperation framework and the organisation arrangements required therefor shall be decided in accordance with the regulatory procedure referred to in Article 19(2).
3. Within the permanent cooperation framework, the investigative bodies in the Member States shall agree, in particular, upon the best modalities of cooperation in order to:
   - (a) enable investigative bodies to share installations, facilities and equipment for the technical investigation of wreckage and ship's equipment and other objects relevant to the safety investigation, including the extraction and evaluation of information from VDRs and other electronic devices;
   - (b) provide each other with the technical cooperation or expertise needed to undertake specific tasks;
   - (c) acquire and share information relevant for analysing casualty data and making appropriate safety recommendations at Community level;
   - (d) draw up common principles for the follow-up of safety recommendations and for the adaptation of investigative methods to the development of technical and scientific progress;
   - (e) manage appropriately the early alerts referred to in Article 16;
   - (f) establish confidentiality rules for the sharing, in the respect of national rules, of witness evidence and the processing of data and other records referred to in Article 9, including in relations with third countries;
   - (g) organise, where appropriate, relevant training activities for individual investigators;
   - (h) promote cooperation with the investigative bodies of third countries and with the international maritime accidents investigation organisations in the fields covered by this Directive;
   - (i) provide investigative bodies conducting safety investigations with any pertinent information.

圖 4.3.1 歐盟海事安全局歐洲海事事故信息平台(EMSA EMCIP)

歐盟海事安全局(European Maritime Safety Agency, EMSA, 亦有譯為歐盟海事安全署[18])擔任執行歐盟海事調查機構永久合作框架(Permanent Cooperation Framework (PCF))的秘書處的工作，協助PCF主席履行職責、安排會議和其他活動、分發所有與會議和函件有關的文件。秘書處可以參加PCF討論，提交自己的意見書，提出議程項目，並出席PCF會議或其他PCF活動。

歐洲海事事故信息平台(European Marine Casualty Information Platform , EMCIP)是由EMSA運營的數據庫和數據分發系統。EMCIP旨在通過：加強安全調查、擴大和深化對傷亡調查結果的分析、提供一目了然的信息，實現一般風險識別和分析以提供各成員國、歐洲和全球層面一系列海事調查後潛在的優勢與益處。自2011年6月17日起，成員國將通知海上傷亡和事故以及報告EMCIP安全調查所得數據，使得EMSA能夠協助委員會和成員國對這些數據進行初步分析，研擬趨勢監測機制，提出安全建議提案，完善現有歐洲的海事安全立法以及推廣或要求使用新技術。

歐洲海事事故信息平台(EMCIP)存儲涉及各類船舶和職業事故的海上傷亡數據和信息。EMCIP還能夠對海事事故所涉及的技術，人員，環境和組織因素進行統計和分析。 此外，EMCIP使成員國可以直接向國際海事組織

[18] http://www.emsa.europa.eu

全球整合航運資訊系統IMO-GISIS系統報告調查結果，而不會有任何重複的工作。EMCIP數據庫的分類是由EMSA根據歐洲研究和國際推薦的做法和程序，與成員國協商制定的。EMCIP包括一個社群門戶網站，事故調查機構公佈的調查報告和會員國通報的關於傷亡和事件的“匿名”資料信息在「調查者」社區內共享。有關海事事故和事故的信息也向公眾開放。EMCIP的運作機制如下圖所示：

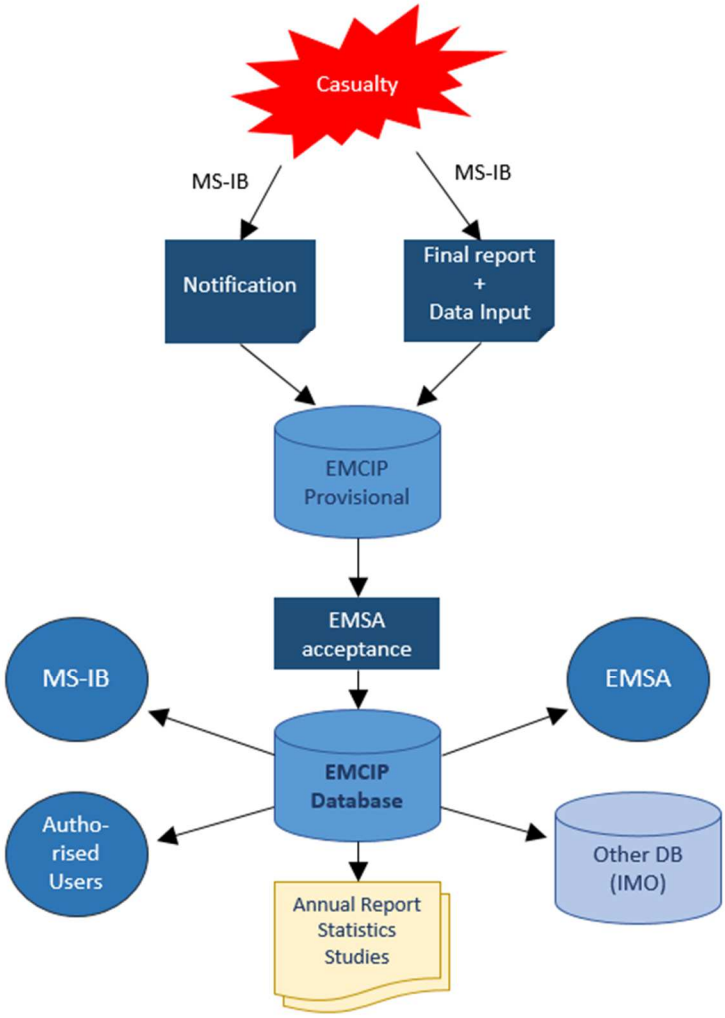


圖 4.3.2 EMSA EMCIP 運作機制

海事查詢系統包括：通告(Notifications)及調查報告(Investigation Reports)二類[19]。

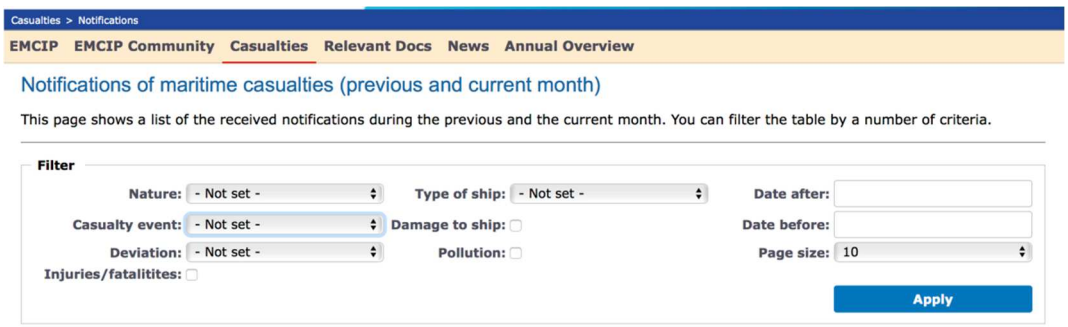


圖 4.3.3　EMSA EMCIP 運作機制- Notifications-1

Latest 3 casualties being notified

Casualty date	Ship type	Severity	Casualty event
06-Dec-2017	Fishing vessel	Marine incident	Collision
05-Dec-2017	Fishing vessel	Serious	Loss of control
05-Dec-2017	Cargo ship	Marine incident	

圖 4.3.4　EMSA EMCIP 運作機制- Notifications-2

圖 4.3.5　EMSA EMCIP 運作機制- Investigation Reports -1

Latest 3 marine casualty investigation reports

	Occ.nr.	Name of ship	Date	Ship type	Reported by
	4253/2016	Graig Rotterdam	18-Dec-2016	Cargo ship	United Kingdom - MAIB
	80/2017	CAPE BON	19-Dec-2016	Cargo ship	France - BEAmer
	1143/2017	Jean Nicoli	06-Mar-2017	Passenger ship	France - BEAmer

19　https://emcipportal.jrc.ec.europa.eu/index.php?id=97

圖 4.3.6 EMSA EMCIP 運作機制- Investigation Reports -2

EMCIP存儲有關所有通報的海上傷亡，事故和職業事故的詳情和後果的數據。此外，成員國調查機構在完成安全調查後，會以事故鏈方式報告有關事故發生順序的數據，確定影響因素，包括與船上操作，岸上管理和監管影響有關的其他因素以及其他因素安全建議。簡單列舉如下圖片所示：

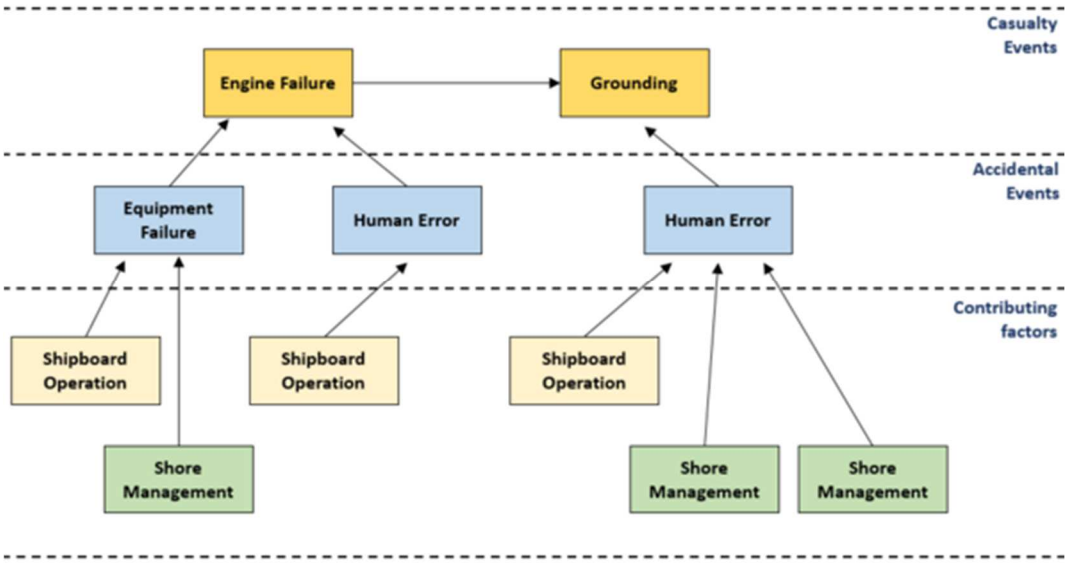


圖 4.3.7 EMSA EMCIP 事故鏈

EMSA代表成員國和委員會管理EMCIP，包括系統的維護和改進。EMCIP數據庫目前由位於意大利的歐盟委員會聯合研究中心(Joint Research Centre of the European Commission (JRC))管理維護。EMSA由成員國通過EMCIP用戶組協助完成其任務。

EMCIP目前的成員除主管的EMSA外，登錄的海事主管機構計13個；海事調查機構計29個。簡列如下(詳如連結網址) [20],[21]：

海事調查	Austria	Safety Investigation Authority Austria (BAV/SUB)
海事調查	Belgium	Federal Bureau for the Investigation of Maritime Accidents

[20] https://emcipportal.jrc.ec.europa.eu/index.php?id=19

[21] https://emcipportal.jrc.ec.europa.eu/index.php?id=20&no_cache=1

海事調查	Bulgaria	Bulgarian Accident Investigation Unit
海事調查	Croatia	Air, Maritime and Railway Traffic Accident Investigation Agency (AIN)
海事調查	Cyprus	Marine Accident Investigation Service
海事調查	Denmark	Danish Maritime Accident Investigation Board (DMAIB)
海事調查	Estonia	Estonian Safety Investigation Bureau (ESIB)
海事調查	Finland	Safety Investigation Authority (SIA)
海事調查	France	Bureau d'Enquêtes sur les Evènements de Mer (BEAmer)
海事調查	Germany	Federal Bureau of Maritime Casualty Investigation (BSU)
海事調查	Greece	Hellenic Bureau of Marine Casualties Investigation (HBMCI)
海事調查	Hungary	Transport Safety Bureau of Hungary (TSBH)
海事調查	Iceland	Icelandic Transportation Safety Board (ITSB)
海事調查	Ireland	Marine Casualty Investigation Board (MCIB)
海事調查	Italy	DIGIFEMA
海事調查	Latvia	Transport Accident and Incident Investigation Bureau (TAIIB)
海事調查	Lithuania	Transport Accident and Incident Investigation Division (TAITS)
海事調查	Luxembourg	Administration des Enquêtes Techniques Aviation civile, Maritime, Fluvial et Chemin de fer
海事調查	Malta	Marine Safety Investigation Unit (MSIU)
海事調查	Netherlands	Dutch Safety Board
海事調查	Norway	Accident Investigation Board Norway (AIBN)
海事調查	Poland	State Marine Accident Investigation Commission (PKBWM)
海事調查	Portugal	Aeronautical Meteorology Authority and Maritime Accident Investigation Office (GAMA)
海事調查	Romania	Marine Accidents Investigation Department (MAID)
海事調查	Slovenia	Marine Accident and Incident Investigation Services (MAIIS)
海事調查	Spain	Comisión Permanente de Investigación de Accidentes e Incidentes Marítimos (CIAIM)
海事調查	Sweden	Swedish Accident Investigation Authority (SHK)
海事調查	United Kingdom	Marine Accident Investigation Branch (MAIB)
海事調查	United Kingdom	Gibraltar Marine Accident Investigation Compliance Office (MAICO)
海事主管	Cyprus	Department of Merchant Shipping of Cyprus

海事主管	Czech Republic	Navigation Department
海事主管	Denmark	Danish Maritime Authority (DMA)
海事主管	Estonia	Marine Casualties Investigation and Maritime Safety Department
海事主管	Finland	Finnish Transport Safety Agency (Trafi)
海事主管	Greece	Marine Accidents Department - Safety of Navigation Directorate - Hellenic Coastguard HQs
海事主管	Ireland	Department of Transport - Marine Survey Office
海事主管	Netherlands	Netherlands Shipping Inspectorate (NSI)
海事主管	Norway	Norwegian Maritime Authority (NMA)
海事主管	Portugal	Instituto Portuário e dos Transportes Marítimos (IPTM)
海事主管	Slovakia	Ministry of Transport, Construction and Reginal Development
海事主管	Spain	Directorate General of Merchant Marine (DGMM)
海事主管	Sweden	Swedish Transport Agency, Maritime Department

EMCIP, EMSA 所設的主要文件臚列如下(詳參連結檔案或是本研究報告所附電子檔案) (請參考附錄 D)：

- **REGULATION (EC) No 1406/2002** of the European Parliament and of the Council of 27 June 2002 establishing a European Maritime Safety Agency (Consolidated text);
- **DIRECTIVE 2009/18/EC** of the European Parliament and of the Council establishing the fundamental principles governing the investigation of accidents in the maritime transport sector and amending Council Directive 1999/35/EC and Directive 2002/59/EC of the European Parliament and of the Council;
- COMMISSION **REGULATION (EU) No 1286/2011** adopting a common methodology for investigating marine casualties and incidents developed pursuant to Article 5(4) of Directive 2009/18/EC of the European Parliament and of the Council

- COMMISSION IMPLEMENTING **REGULATION (EU) No 651/2011** adopting the rules of procedure of the permanent cooperation framework established by Member States in cooperation with the Commission pursuant to Article 10 of Directive 2009/18/EC of the European Parliament and of the Council
- Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident, **MSC-MEPC.3_Circ.2**;
- Reports on Marine Casualties and Incidents required under SOLAS and MARPOL 73/78, Revised harmonized reporting procedures, **MSC-MEPC.3_Circ.3**;
- Reports required under SOLAS regulations I/21 and a XI-1/6, and MARPOL, articles 8 and 12, **MSC-MEPC.3_Circ.4**;
- European Statistics of accidents at work (**ESAW) - Methodology** (2012) Accidents at work;
- Relevant provisions of the Maritime Labour Convention, 2006: **Regulation 5.1.6 - Marine casualties and Guideline B4.3.6 - Investigations**.
- **EMCIP current taxonomy – Glossary of reporting attributes**: This document compiles the values of the EMCIP taxonomy currently in production. Please note that this will be replaced after June 2018 by the revised version provided by the document "EMCIP-taxonomy (business edition May 2017)".
- **EMCIP revised taxonomy (business edition May 2017)**. This document is based on the results of the taxonomy review process that was conducted in 2016 by EMSA and Member States. The revised taxonomy will be in production after June 2018.
- PCF 1 Salient points

- PCF 2 Salient points
- PCF 3 Salient Points
- PCF4 Salient Points
- PCF5 Salient Points
- PCF6 Salient Points
- PCF7 DRAFT Salient Points
- EMCIP notes
- EMCIP casualty type
- EMCIP Accidents to people - Deviation
- EMCIP ship types
- EMCIP model

除此之外另有安全警報、相關出版品(Safety Alerts), (Safety Publications)以及年報(Annual Overview)、季報(Accident Investigation - Quarterly Key Figures)可供參考：

- The "Marine Casualty and Incidents - Summary Overview 2011-2015" takes stock of the previous publications and summarises the figures into a single document.
- The third edition (2016) relates to accidents and incidents that happened during the years from 2011 to 2015.
- The second edition (2015) relates to accidents and incidents that happened during the years from 2011 to 2014.
- The first edition (2014) relates to accidents and incidents that happened during the years from 2011 to 2013.
- Accident Investigation - Quarterly Key Figures

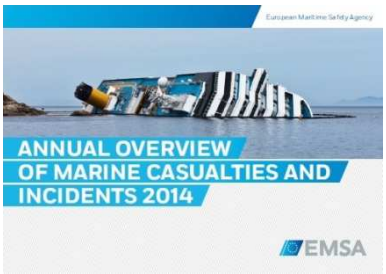


圖 4.3.8 歐盟海事安全局海難及海事案件年度回顧(EMSA Annual Overview of Marine Casualties and Incidents)

4.4 歐盟海事調查教育訓練

歐盟 EMSA 在里斯本開設的 SAFEMED III - Core skills accident investigation course, CSC 是五天的海事調查員核心課程，提供做為歐盟各國海事調查官訓練之用。課程表如下所示：(2014.09.15~19, 2017.09.04~08 的授課講義 pdf 檔案請參考本報告隨附電子檔案) (請參考附錄 D)

Core Skills Course on accident investigation for MS
4-8 September 2017
EMSA Lisbon

Monday, 4 September 2017

09.00 – 10.15		10.30 - 12.30	Lunch	13.30 – 15.00		15.15- 17.00
1. **Introduction** (15m) 2. **EMSA and AI** (30m) 3. **Accident Investigation Purpose and Key Principles** (30m) *Coffee break (10.15-10.30)*		4. **Cont. Accident Investigation Purpose and Key Principles** (2h)		5. **Operational readiness and the work processes** (1h 30m) *Coffee break (15.00-15.15)*		6. **Cont. Operational readiness and the work processes** (1h 45m) (including Initial Assessment and response, Strategy and Planning)

Tuesday, 5 September 2017

08.30 – 10.15		10.30 - 12.30	Lunch	13.30 – 15:00		15.15 – 17.00
7. Accident site assessment, site hazard identification and risk assessment (1h 15m) **8. Physical Evidence Collection** (30m) *Coffee break (10.15-10.30)*		**9. Cont. Physical Evidence Collection** (2h 00m)		**10. Human Element** (1h 30m) *Coffee break (15.00-15.15)*		**11. Cont. Human Element** (1h 45m)

Wednesday, 6 September 2017

08.30 – 10.00		10.15- 12.30	Lunch	13.30– 15.00		15.15– 17.00
12. Witness Interviewing (1h 30m) *Coffee break (10.00-10.15)*		**13. Practical Interviewing Practice** (h 15m)		**14. Cont. Practical Interviewing Practice** (1h 30m) *Coffee break (15.00-15.15)*		**15. Cont. Practical Interviewing Practice** (1h 45m)

Thursday, 7 September 2017

08.30 – 10.00		10.15 - 12.30	Lunch	13.30 – 15.00		15.15 – 17.00
16. Evidence Analysis (1h 30m) *Coffee break (10.00-10.15)*		**17. Cont. Evidence Analysis** (2h 15m)		**18. Developing Safety Recommendations and Follow up** (1h 30m) *Coffee break (15.00-15.15)*		**19. Safety Reports** (1h) **20. EMCIP** (35min) **21. Preparation for practical exercise** (10m)

Friday, 8 September 2017

08.30 – 10.00		10.15 - 12.30	Lunch	13.30 -15.15		15.30 – 16.00
22. Practical exercise (1h 30m) *Coffee break (10.00-10.15)*		**23. Cont. Practical Exercise** (2h 15m)		**24. Cont. Practical Exercise** (1h 45m) *Coffee break (15.15-15.30)*		**25. Evaluation** (15m) **26. Closure of the training** (15m)

圖 4.4.1　事故調查核心技術課程 Core skills accident investigation course

第五章 各國海事調查體制概說

5.1 前言

有關海事調查方面的論述在台灣其實也見過不少了，對於國際上幾個主要國家的體制的比較，以及對於我國現行體制的分析，不論是學界，抑或是主管海事的交通部門，這麼多年下來也有很多的研究與見地。其實該怎麼做？誠如《周易·繫辭》「仁者見之謂之仁，知者見之謂之知」，再多的爭辯，往往只也在某些面比較好，卻永遠不會有最好的答案產生。核心的議題，癥結的要素永遠還是在「人」的議題之上。

這個負責海事調查工作的「人」是不是獨立、公正、客觀的？

這個負責海事調查工作的「人」是不是具備專業能力與素養的？

這樣的以「人」為核心的海事調查體制用 ISO QMS Model 從 4M1E(4M1E 指 Man（人），Machine（機器），Material（物），Method（方法），Environments（環境）到 8M1E 來檢核一次?或是要用 5W1E, 5W3H, 7W2H(Why（為什麼做）、What（做什麼）、Where（在哪裡做）、When（何時做）、Who（由誰做）、How（如何做）、How much（成本是多少）)來檢核一次?其實答案即已很清晰了。

當然，還有一個關鍵因素是負責海事調查工作的「人」的「長官」會不會直接介入定調事故原因，或是強勢引導調查方向?就好像會不會在事發隔天，長官就定調這是「因大風大雨造成的」船舶翻覆事件。抑或是在海事調查過程要求承辦調查官必須扣住某個議題，以連結與事故發生的關係。

如果體制是可以這樣被影響的，再怎麼好的規劃也是枉然。

《詩經·小雅·鶴鳴》「鶴鳴於九皋，聲聞於天。魚在於渚，或潛在淵。樂彼之園，爰有樹檀，其下維穀。他山之石，可以攻玉。」今者，不管「他

山之石」是「為錯」還是「攻玉」？為了雕琢出台灣海事調查體制的美玉，研究人員以這麼短的時間，盡最大的努力，透過不同體系的資料來源管道，彙整出全球五十餘個國家的海事調查機構的基本體制，供委託單位參考，同時也就海事調查人員教育訓練體制、國際合作模式(Marine Accident Investigators' International Forum, MAIIF)以及海事調查的實質效益簡單舉例彙整如表 5.2-1 所示。

5.2 各國海運安全調查機構概說

表 5.2-1 各國海運安全調查機構彙整表

國家	機關名稱與隸屬	MAIIF	備註
Antigua & Barbuda 安地卡及巴布達	**主管機關：ADOMS IID** Department of Marine Services and Merchant Shipping Inspection and Investigation Division **調查機關：MARCARE** Maritime Consulting and Research GmbH **航運部門轄下的獨立調查機關** **但是調查機構是以公司型態成立**	○	主管官署為：ADOMS IID，但執行調查為由 ADOMS IID 指派 MARCARE 在全球的約 320 名適格的調查官(competent Inspectors)執行。 參考資料： http://www.adomsiid.org MARCARE® Maritime Consulting and Research GmbH, http://www.marcare.de http://www.marcare.de/adomsIID_en.htm
Argentina 阿根廷	**主管/調查機關：海軍** Department of Marine Accident Investigation and Incidents Directorate of Security and Judicial Police Naval Prefecture Argentina 隸屬海軍保安與司法警察部門下的司法部門專責海事調查	○	http://www.prefecturanaval.gov.ar http://www.prefecturanaval.gov.ar/web/es/html/inst_mision7.php

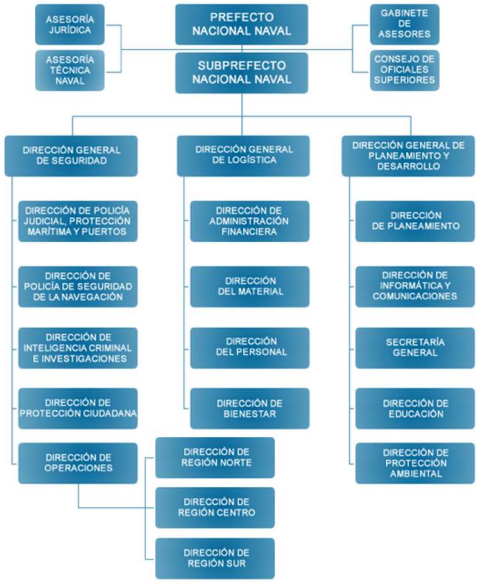
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			 Investigation of navigation occurrences The occurrences of navigation, by their characteristics, place where they occur, intervening means and the myriad of confluent factors, deserve special consideration for their clarification, since the accumulated information allows justice and the Prefecture itself to be issued on what happened. His research is, therefore, a feature of singular importance among the activities carried out by the Prefecture, not only for the determination of emerging responsibilities and their consequences in the professional performance of merchant marine personnel, but for the weighting of the efficiency of the rules on navigation safety and its eventual improvement. The summary instruction in cases of shipwrecks, collisions, stranding and other accidents of navigation, is carried out in the jurisdictional units and supervised by the Directorate of Security and Judicial Police, supplying to the International Maritime Organization the reports that it requires on various types of events and a summary of the conclusions of the investigation of the most relevant events. In this matter, the Prefecture acts in the exercise of the administrative jurisdiction of navigation, which the legislation assigns to it in an original and exclusive manner, giving intervention to the competent judicial authorities in the corresponding cases, without prejudice of resolving in administrative headquarters with respect to faults or breaches of security of navigation.
Australia 澳大利亞	Australian Transport Safety Bureau 聯邦政府下的運輸安全委員會	○	http://www.atsb.gov.au/marine 1999 年成立，隸屬於基礎建設、運輸、區域發展及地方政府部。道路部分最近移出。委員會委員由國會任命。 Legislation and regulations

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	負責航空、海事、軌道三類運輸安全的獨立調查機構 依運輸安全調查法(Transport Safety Investigation Act 2003)設立 ATSB，首長(Chief Commissioner)任期五年 海事調查部分依 Transport Safety Investigation Regulations 2003, Part 3 Marine operations 執行 該國海運安全調查機構之安全改善建議事項是列入該國重要紀錄，並在每一單一海事調查報告中也會列出，甚至也列出未回應改善建議的罰則。例如澳洲政府 TSI Act 25A 即規定：90 天回應以及未回應的計點及個人 3,300 機關 16,500 罰鍰規定。		The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory Agency. The ATSB is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. Some of these links will take you to the Australian Government Federal Register of Legislation website. Acts • Transport Safety Investigation Act 2003 • Navigation Act 2012 Regulations • Transport Safety Investigation Regulations 2003 • Transport Safety Investigation (Voluntary and Confidential Reporting Scheme) Regulation 2012 • Protection of cockpit voice recording information (amended, 1 July 2009) Enforcement Policy • Failure of a Responsible Person to Report under Sections 18 and 19 of the TSI Act 2003 to the AFP • Failure to respond to a Safety Recommendation • Disclosure of the contents of a draft report Questions and Answers about the Act • TSI Act - Questions and Answers Documents supporting the Transport Safety Investigation Act 2003 • Documents supporting the *Transport Safety Investigation Act 2003* Disclosing restricted information in civil proceedings Disclosing restricted information in civil proceedings 調查程序： Terminology, investigation procedures and deciding whether to investigate https://www.atsb.gov.au/about_atsb/investigation-procedures/ Sections 25A of the TSI Act requires a person, association or agency to provide a written response to a Safety Recommendation contained in a report released under section 25 of the TSI Act. The response is required within 90 days of the report being published. Responses to recommendations are published on the ATSB website. Failure to respond may attract a penalty of up to 30 penalty points ($3,300 for a natural person and $16,500 for an incorporated organisation), and advice of any such failure to respond will be published on the ATSB website. https://www.atsb.gov.au/about_atsb/legislation/failure-to-respond/

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
Austria 奧地利	Austrian Safety Investigation Authority (SIA, German: Sicherheitsuntersuchungsstelle; SUB) Federal Office for Transport (Bundesanstalt für Verkehr, BAV) 隸屬：Federal Ministry for Transport, Innovation and Technology. 奧地利運輸，創新和技術部轄下的奧地利安全調查局(SIA, or SUB)負責民用航空、軌道、纜車、航運交通事故的安全調查	○	https://www.bmvit.gv.at/en/index.html Federal Waterways Administration https://www.bmvit.gv.at/en/verkehr/waterways/administration.html Federal Office for Transport (Bundesanstalt für Verkehr, BAV) is a government agency of Austria. Its head office is Vienna. It is subordinate to the Federal Ministry for Transport, Innovation and Technology. A part of this agency is the Federal Safety Investigation Authority (SIA; German: Sicherheitsuntersuchungsstelle; SUB). The SIA is an independent authority to investigate accidents and incidents in the fields of civil aviation, railway, cablecars and shipping.
Bahamas 巴哈馬	The Bahamas Maritime Investigations Department (BMID) The Bahamas Maritime Authority United Kingdom 2017.12.01 才剛成立的巴哈馬海事調查部門(BMID)是巴哈馬海事局轄下執行獨立、客觀海事調查的機構	○	http://www.bahamasmaritime.com http://www.bahamasmaritime.com/maritime/investigations-department/about/ http://www.bahamasmaritime.com/wp-content/uploads/2015/08/Ch-268-MerchantShippingAct.pdf Mission Statement: To identify, investigate and ultimately prevent marine casualties and marine incidents so as to improve safety and protect the marine environment. The Bahamas Maritime Investigations Department (BMID) was established on 01 December 2017 with one primary objective; to prevent further marine accidents or incidents from occurring. It is the responsibility of the BMID to investigate marine casualties involving Bahamian vessels worldwide and vessels of any flag, at the time of the event, within Bahamian

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			territorial waters. The BMID will investigate all very serious marine casualties as required by the Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (MSC.255(84)). It is not the purpose of the marine investigation to determine liability nor, except so far as is necessary to achieve its objective, to apportion blame. The BMID is responsible for: ● Carrying out investigations to determine the cause of marine casualties and marine incidents at sea ● Publishing marine safety investigation reports that include recommendations and lessons learned to improve safety ● Determining where possible what changes in the present Regulations might be desirable ● Improving national and international co-operation in marine safety investigations Accurate and timely reporting by owners, managers and masters remains vital to ensure the appropriate response can be mounted by BMID. The success of any investigation rests on the cooperation and information provided by all parties involved and should be reported to the BMID without hesitation and in accordance with the Bahamas Merchant Shipping Act. Guiding Principle: The Bahamas has a responsibility to the international community, to our Owners and the International Maritime Organisation to conduct independent and objective marine safety investigations that remain free from prejudice.
Brazil 巴西	Maritime Casualty Investigation Department Brazilian Navy - Directorate of Ports and Coasts Diretoria de Portos e Costas Departamento de Inquéritos e Investigações de Acidentes da Navegação (DPC-24) 巴西海軍下屬「港口與海岸部」下的「航行事故調查司」	○	http://www.dpc.mar.mil.br/
Bulgaria 保加利亞	The Aircraft, Maritime and Railway Accident Investigation Directorate (AMRAID)	○	http://www.mtitc.government.bg The Aircraft, Maritime and Railway Accident Investigation Directorate (AMRAID)

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	Ministry of Transport, Information Technology and Communications Bulgaria 保加利亞「運輸、信息科技和通信部」下設的 AMRAID 負責航空、海事與軌道事故調查 AMRAID 下面並有 MAIU 專責海事調查		https://www.mtitc.government.bg/en/category/22/aircraft-maritime-and-railway-accident-investigation Maritime Accident Investigation Unit https://www.mtitc.government.bg/en/category/198/maritime-accident-investigation-unit Activity The Maritime Accident Investigation Unit (MAIU) was established on 01.01.2006 based on IMO Resolution A.849(20) adopted on 27 Nov. 1997, Regulation 1406/2002 of the European Parliament and the Council establishing EMSA and Art.79 of Bulgarian Merchant Shipping Code (MSC). At present, the work of the unit is regulated by art. 79 of MSC, Ordinance 23 for reporting and investigation of accidents in the maritime spaces, Directive 2009/16/EC of the EP and of the Council establishing the fundamental principles governing the investigation of accidents in the maritime transport sector and Regulation (EU) No 1286/2011 of the EC adopting a common methodology for investigating marine casualties and incidents. MAIU is a part of the Aircraft, Maritime and Railway Accident Investigation Directorate in the Ministry of Transport, Information Technology and Communications. It is independent of Maritime Administration Executive Agency and reports directly to the Minister. The main functions of MAIU are: ● Maintenance the system for reporting of the accidents; ● Organization and supervision of the technical investigations on marine casualties and organizing the work of the committees established for the purpose; ● Prepare and publish Final or Interim Report, or Interim Report for each year of conducted investigation in case it is not finalized for objective reasons; ● Keep an archive of the investigations and maintain information database of maritime accidents. The main objective is: Based on the findings of the investigation, to issue, publish, and provide safety recommendations to all parties concerned. The purpose of the independent technical investigation of an accident is not to determine liability or to apportion blame, but to find the reasons and causes for the accident and to issue safety recommendatios to avoid such accident in the future. Legislation - MAIU ● COMMISSION REGULATION (EU) No 1286/2011 ● REGULATIONS COMMISSION IMPLEMENTING REGULATION (EU) No 651/2011 ● DIRECTIVE 2009/18/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			● 2008-MSC-MEPC.3-Circ.2. Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Res. MSC.255(84)) https://www.mtitc.government.bg/en/category/22/aircraft-maritime-and-railway-accident-investigation In the field of marine accident investigation: Governance functions to carry out independent investigation of accidents; Organization and carrying out investigations of maritime accidents; Maintenance of a reporting system, investigations archive and database; Analysis of the actions of all individuals and legal entities in the field of navigation and operation of the facilities involved into the accidents investigated; Maintaining contacts and ensuring interaction with investigation bodies of the EU Member States and non-EU countries; Informing the European Maritime Safety Agency about the investigations conducted; Follow the recommendations of the International Maritime Organization and the European Maritime Safety Agency set out in their legal instruments related to the investigation of marine casualties; The investigating inspectors have the power to: - conduct investigation of maritime accidents; - have full and unrestricted access to all the evidences, related to maritime accidents; - request and analyze oral and written statements from the crew, involved in the investigated accident; - request and receive information from ship owners, operators, maritime administrations, Vessel Traffic Services, classification companies and data from ship recorders; - include safety recommendations evolved from the investigation results in their final report for investigation.
Canada 加拿大	Director of Investigation - Marine Transportation Safety Board of Canada Canada 運輸事故調查與安全委員會(TSB)為依據 Canadian Transportation Accident Investigation and Safety Board Act 所	○	http://www.bst-tsb.gc.ca/eng/qui-about/index.asp The TSB is an independent agency, created by an Act of Parliament (the Canadian Transportation Accident Investigation and Safety Board Act), that came into force on 29 March 1990. The TSB consists of up to five Board members, including a chairperson, and has approximately 220 employees. Our Head Office is located in Gatineau, Quebec; however, most investigation staff are located in various regional and field offices across Canada where they are better

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	設獨立的聯邦政府部會級的委員會。委員五人。負責有關航空、海事、軌道、管道的事故調查。總人員約 220 人。 加拿大即採任務導向方式聘僱調查專業人員。 TSB 創建了一個部門(Multi-Modal Training and Standards Division)，為調查人員和其他專家提供培訓，以確保他們擁有完成工作所需的技能和工具。對於維護調查手冊、程序和標準都必須按照規定來進行。而該部門的員工是該部門中重要的資產之一，且對於 TSB 調查人員，亦必須確保按照要求工作進行維護和更新。這意味著與調查人員和其他 TSB 專家必須進行相關聯繫，以確保相關工作實得以同步進行。		able to respond quickly to transportation occurrences anywhere in the country. http://www.bst-tsb.gc.ca/eng/marine/index.asp The TSB's marine investigators are certified as masters or chief engineers of commercial vessels, masters of fishing vessels, or are naval architects, and have extensive experience in the marine industry. As well as conducting investigations, they participate in national and international government and industry groups to monitor safety trends and communicate safety issues to change agents. At the TSB, we have created a Multi-Modal Training and Standards Division to provide investigators and other specialists with training to ensure they have the necessary skills and tools to do their job. Maintaining investigation manuals, procedures and standards is integral to ensuring that all investigations are conducted in accordance with accepted practice. Employees in this division are the gatekeepers of one of our most valuable tools, the TSB investigation methodology, ensuring that it is maintained and updated as required. Working in this field means liaising with investigation staff and other TSB specialists to ensure training materials and other tools are in sync with investigation realities. Employees in multi-modal training and standards usually belong to these occupational groups: https://www.canada.ca/en/treasury-board-secretariat/topics/staffing/qualification-standards.html#ED, https://www.canada.ca/en/treasury-board-secretariat/services/staffing/qualification-standards/core.html#TI
Chile 智利	Directorate General of The Maritime Territory and Merchant Marine Marine Accident Investigation and Analysis Division Navy CHILE 智利的海事調查與分析處隸屬於海軍下屬的海域與商船總局之下，僅執行海事調查	○	https://www.globalsecurity.org/military/world/chile/navy.htm http://www.directemar.cl/
China 中國	China Maritime Safety Administration Safety Management Department China MSA	○	http://www.msa.gov.cn

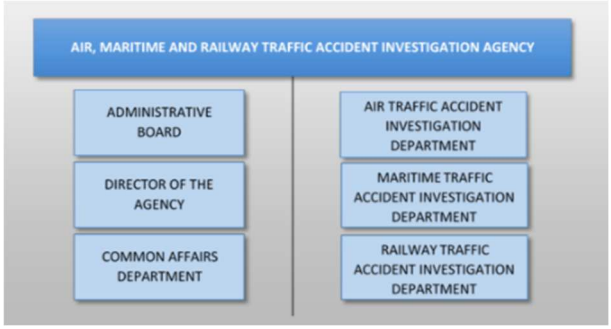
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
Croatia 克羅埃西亞	Air, Maritime and Railway Traffic Accident Investigation Agency (AIN) 由飛安會升格而成，附件 PDF 檔案資料非常值得參考 管理委員會(The Administrative Board)由三位委員所組成 AIN 有 ISO 9001 認證 人員訓練分：Initial, Basic, Advanced, Practical work and training of investigators (On-the-Job-training)四階	X	http://www.seetoint.org/wp-content/uploads/downloads/2015/05/Croatian-Air-Maritime-and-Railway-Traffic-Accident-Investigation-Agency-Mr.-Belas.pdf  http://www.ain.hr (有專屬網站，但無英文資料)
Cyprus 塞浦路斯	Marine Accident Investigation Committee (MAIC) Cyprus MAIC 國家級的獨立調查機構	○	2013.12.19 成立，依據 EU Directive 2009/18/EC 精神轉成塞浦路斯國內法 Marine Accidents and Incidents Investigation Law of 2012 (Law no.94 (I)/2012)而執行 http://www.maic.gov.cy http://www.maic.gov.cy/mcw/dms/maic/maic.nsf/index_en/index_en?OpenDocument http://www.mcw.gov.cy/mcw/dms/dms.nsf/marintro_en/marintro_en?OpenDocument All marine accidents (casualties and incidents) involving Cyprus flagged ships occurring anywhere around the globe, or, irrespective of flag occurring, within the territorial waters of the Republic of Cyprus should be notified, without delay, to the MAIC which constitutes the new national independent body for the holding of safety investigations and for carrying out proper analysis of marine casualties and incidents in order to determine their causes. 法規依據： The Marine Casualties and Incidents Investigation Law of 2012 (No.94(I)/2012) (無英文版) CIRCULAR No. 1/2014 dated 25th June, 2014 "Accident Reporting and Investigation"(英文版)
Denmark 丹麥	Danish Maritime Accident Investigation Board (DMAIB) Ministry of Business and Growth Denmark	○	http://www.dmaib.com The Danish Maritime Accident Investigation Board is an independent unit under the Ministry of Business and Growth. We investigate maritime accidents and accidents to seafarers in order to prevent recurrent accidents. The DMAIB is based in Valby, Denmark, and consists of four investigators, one of which is the head of the board. The

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	丹麥商業暨成長部轄下 由四位海事專業調查官組成		investigators together have a broad maritime and technical background combined with knowledge within safety science. 法規依據： Act no. 457 of 18 May 2011 on safety investigations of marine accidents. Order no. 638 of 14 June 2011 on the reporting of marine accidents, deaths and near-miss incidents. Directive 2009/18/EC of the European Parlament and of the Council of 23 April 2009 on principles governing the investigation of accidents in the maritime transport sector. Circular letter on fair treatment of seafarers in connection with marine accidents in Danish waters.
Estonia 愛沙尼亞	Estonia Maritime Administration Estonian Safety Investigation Bureau (ESIB) Ministry of Economic Affairs and Communications. Estonia 在愛沙尼亞「經濟事務與交通部」轄下，負責海事、航空、鐵道的事故調查	○	http://www.ojk.ee (有專屬網站，但無英文資料) The objective of ESIB is to improve transportation safety through professional and independent investigation of accidents and serious incidents in maritime, aviation and railway sector. The aim of the investigation is to determine the causes of the accidents and systemic safety deficiencies and deliver safety recommendations based on investigation findings. The ESIB does not appoint any blame or liability. The investigations are carried out in accordance with Estonian laws, EU regulations and international treaties.
Finland 芬蘭	Safety Investigation Authority Finland (SIAF, SIA, OTKES) Ministry of Justice Finland 芬蘭的運輸安全委員會(SIA, OTKES)係「司法部」轄下的獨立調查機構。有16位成員分別負責航空、鐵道、海事、其他事故及特殊事件等五個部門的調查工作。每個部門各有一位主調查官。 針對特定事故得聘任專業人士參與調查。2013年預算€1,305,000，實際支出€1,320,000。	○	http://www.sia.fi Organisation The Safety Investigation Authority operates in connection with the Ministry of Justice. The Authority carries out its functions independently and impartially. The Executive Director of the Safety Investigation Authority is responsible for its operation and ability to function. There are 16 permanent positions at the Safety Investigation Authority. The activities are divided into five investigative branches: aviation, rail traffic, maritime traffic, other accidents, and exceptional events. A Chief Investigator has been appointed for each investigative branch. They are responsible for the investigation of accidents and incidents in their respective fields together with the Safety Investigators. In addition, the Safety Investigation Authority can use the services of experts in the investigation for an hourly payment. The Safety Investigation Authority provides investigation training for its experts. They are appointed individually for specific tasks, such as a member of the investigative board. History

表 5.2-1 各國海運安全調查機構彙整表			
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	1970年代即已開始對飛安事故進行調查，海事部分係1997年才開始。		Independent accident investigations in Finland • Investigation of aviation accidents since the early 1970s • A planning commission for the investigation of major accidents since 1986 • The Safety Investigation Authority since 1996 (major accidents and serious incidents, as well as aviation and rail traffic accidents) • Investigation of maritime accidents and incidents since 1997 • In accordance with the Safety Investigation Act (525/2011) that entered into force in June 2011, investigation commissions are no longer established. Instead, an investigative board consisting of the leader of the investigation board and typically 1–3 experts is appointed to investigate accidents. In addition, the investigative board can avail themselves of assistance from special experts with the investigation. The Chief Investigator of the investigative branch in question leads the safety investigation. The Safety Investigation Act 525/2011 (芬蘭文)
France 法國	Marine Accident Investigation Office (Bureau d'Enquêtes sur les Evènements de Mer (BEAmer)) French Ministry of Ecology, Energy, Sustainable Development and Spatial Planning France 法國的海事調查局(BEAmer)係法國生態，能源，可持續發展和空間規劃部下的獨立調查機構 由 1 名主任，1 名副主任，3 名調查員和 4 名行政人員的 9 人核心小組組成。專家調查員二十餘人，根據事件的不同，BEAmer 可以根據其特定資質選擇外部專家。 所有規定在法國本土境外屬地一律適用。	○	http://www.bea-mer.developpement-durable.gouv.fr/about-us-r50.html The BEAmer The French marine casualties investigation board (BEAmer) was set up in December 1997. Missions The primary mission of the BEAmer is to conduct technical investigations into marine casualties to prevent similar accidents in the future. The BEAmer is also intended to collect, analyse and disseminate information regarding professional practices or lessons learned from investigations into casualties or incidents. It conducts also special studies and research into experience feedback and accidentology. Legal and regulatory context The action of the BEAmer takes place in full compliance with international, European and national rules and notably with the provisions of : at the international level, with the « Code for the Investigation of Marine Casualties and Accidents » laid out in Resolution MSC 255 (84) on 16 May 2008 and published by decree n°2010-1577 on 16 December 2010 ; at the European level, with the Directive 2009/18/EC of 23 April 2009 establishing the fundemental principles governing the investigation of accidents in the maritime transport sector and the Commission regulation n°1286/2011 adopting a

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	2009 年起通過 ISO 9001 認證。		common methodology for investigating marine casualties and incidents ; at the French national level, with the Transportation Code, specially clauses L1621-1 to L1622-2 and R1621-1 to R1621-38 relating to technical investigations after marine casualties and terrestrial accidents or incidents. Scope BEAmer inquiries concern French-registered civilian vessels, wherever they may be, or vessels flying the flags of other states when the marine casualty or incident occurs in French internal waters or territorial seas. Inquiries are also conducted when a marine casualty, regardless of where it happened, has led to the death or serious injury of French nationals, or has caused or threatened to cause serious harm to the French territory, the environment, and installations or structures over which France has jurisdiction. Inquiries The aim of the enquiries is to collect and analyse relevant information, to determine the circumstances and possible causes and if appropriate, to make recommendations to improve maritime safety and pollution prevention. The overall context of the regulation or its implementation is also apprehended. The objective of the technical inquiries of BEAmer is neither to determine nor to attribute civil or penal liabilities, which is the role of the judicial inquiry. The BEAmer is an impartial investigative body, investigators do not receive or seek instructions from any authority or other body whose interests could conflict with the task entrusted to them. At the end of each investigation, BEAmer releases an investigation report in an appropriate form to the type and severity of the event. This report includes lessons learned and recommendations to improve safety to avoid repetition of the analyzed accidents. The recommendations of recipients have an obligation to inform within 90 days of receipt or other specific deadline, the follow for follow-up of these recommendations. Safety studies The specific safety studies carried out by the BEAmer are aimed at producing an overall picture of certain types of marine casualties. Such documents are based on the BEAmer's own statistical data as well as the expertise of its personnel, investigators and expert consultants. The BEAmer can also ask specialist organizations to conduct studies. Organisation The BEAmer is a national board placed with the Inspector General for Maritime Affairs.

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			Specialized permanent body, it leads its work independently of the departments of the Ministry responsible for determining and monitoring of safety standards of maritime safety (shipping, fishing sector, pleasure craft). BEAmer is operated by a core staff of nine persons in Paris and about twenty local delegates and experts. Additional specialised experts are working for the board. Overseas, In the French overseas departments, there are not distinction with France. In overseas territories (TOM), the organic laws are applied (New Caledonia - French Polynesia) or specific competences (Wallis and Futuna Islands and the French Southern and Antarctic Territories). In these communities, Directive 2009/18 / EC doesn't apply.
Germany 德國	Federal Bureau of Maritime Casualty Investigation (BSU) Federal Ministry of Transport and Digital Infrastructure. Germany 德國聯邦交通和數位基礎設施部轄下的聯邦海事調查局(BSU)，最早立法朔源自 1877 年的'Law concerning the investigation of marine casualties' (Gesetz betreffend die Untersuchung von Seeunfällen)到 1986 年由 Law on maritime casualty investigation (Seeunfalluntersuchungsgesetz – SeeUG)取代。 BSU 計由 13 個成員，含 7 位調查官所組成。	○	http://www.bsu-bund.de Federal Bureau of Maritime Casualty Investigation Investigation Welcome to the website of the Federal Bureau of Maritime Casualty Investigation (BSU), Federal Higher Authority subordinated to the Federal Ministry of Transport and Digital Infrastructure. The Federal Bureau of Maritime Casualty Investigation (BSU) registers and investigates all types of marine accidents to or on board German flagged ships world-wide. Within the German territorial waters and the German exclusive economic zone (EEZ) BSU acts regardless of the flag(s) of the ship(s) involved. The sole objective of BSU accident investigations is to determine the circumstances and causes as well as the contributing factors of the accident with a view to preserve life and avoid accidents in the future, not to apportion blame, or settle liability or claims. History of the German Maritime Casualty Investigation Marine casualty investigation in Germany – past and present Recognition of the fact that investigating marine casualties is beneficial has existed since the performance of seafaring on a larger scale. Consequently, many seafaring nations introduced formal investigation procedures early on so as to clarify the causes of any given accident and draw lessons to prevent similar accidents in the future. This primarily concerned exposing and penalising misconduct, however. Accordingly, after the formation of the German Empire in 1870, the introduction of a single flag for the entire German fleet and the growing importance of German maritime shipping associated with that, draft legislation was drawn up in Germany at the instigation of representatives of the Hanseatic cities and brought into force in 1877 as the 'Law

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			concerning the investigation of marine casualties' (Gesetz betreffend die Untersuchung von Seeunfällen). This law laid down a quasi-judicial procedure, which entailed a hearing to determine the causes and, in particular, to assess the conduct of the parties involved. Confiscation of a certificate of proficiency was one possible outcome. The main principles of the regulations adopted in 1877 remained applicable up until 30 September 1986, when they were superseded by the Law on maritime casualty investigation (Seeunfalluntersuchungsgesetz – SeeUG) as a consequence of judicially ordered constitutional requirements. Although its provisions gave rise to considerable administrative and procedural changes, the principle of a quasi-judicial marine casualty investigation, focusing primarily on penalising the misconduct of a decision maker involved in a marine casualty, was met in full. The Maritime Boards in Kiel, Hamburg, Bremerhaven, and Emden, which were directed by a person qualified for appointment to judicial office and staffed by full-time and part-time qualified assessors, were restructured to form the investigating committees of Waterways and Shipping Directorates North and North-West. The appellate body for their administrative rulings (Maritime Board rulings) was the Higher Federal Maritime Board of Inquiry, a federal higher authority located in Hamburg established specifically for this purpose. Germany's reunification inevitably involved the transfer of East Germany's system of marine casualty investigation to the administrative structures of the former Federal Republic. The Marine Court in Rostock was superseded by the establishment of the Rostock Maritime Board. Apart from that, the legacy system of marine casualty investigation was initially maintained. At the same time as the aforementioned isolated developments in Germany and other seafaring nations, recognition that marine casualty investigation can make an important contribution to enhancing the safety of shipping and therefore help to protect human life, the environment, and material goods started to gain traction around the world as early as in the 1940s. International treaties, conventions and resolutions at International Maritime Organization (IMO) and European Union level – such as the United Nations Convention on the Law of the Sea of 10 December 1982, the International Convention for the Safety of Life at Sea of 1 November 1974 (SOLAS), the International Convention of Load Lines of 5 April 1966, the International Convention for the Prevention of Pollution from Ships of 2 November 1973 (MARPOL), and Council Directive 1999/35/EC of 29 April 1999 on a system of mandatory surveys for the safe operation of regular ro-ro ferry and high-speed passenger craft services – dealt with (but in each case only on the periphery) the issue of marine casualty investigation more or less specifically. However, this concerned sub-areas or, for example, was

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			limited to certain vessel categories and largely without binding effect internationally. Adoption of the Code for the Investigation of Marine Casualties and Incidents in the Annex to Resolution A.849(29) of the IMO Assembly of 27 November 1997, amended by Resolution A.884(21) of 25 November 1999, was a special landmark in this advancement. For the first time, the establishment of a system for modern and standardised marine casualty investigation was recommended to seafaring nations, which should be designed explicitly and exclusively to investigate marine casualties detached from questions of blame and responsibilities under liability legislation, so as to significantly increase the knowledge gained from accident investigations. Germany's legislature drew the necessary conclusions from the above advancements and in passing the Law to improve safety of shipping by investigating marine casualties and other incidents of 16 June 2002 (Gesetz zur Verbesserung der Sicherheit der Seefahrt durch die Untersuchung von Seeunfällen und anderen Vorkommnissen – SUG, BGBl. (Federal Law Gazette) 2002 I p. 1817 ff.) effected a fundamental realignment of marine casualty investigation. The institution and objective of the Maritime Boards were retained in principle in a separate section of the new SUG. However, the formation of the Federal Bureau of Maritime Casualty Investigation (BSU), which executes its legal mandate of investigating autonomously, meant the establishment of a new federal higher authority that was independent, equipped with a variety of powers, and investigated marine casualties with the sole objective of drawing necessary lessons from them and thereby enhance the safety of shipping. Whereas the Federal Republic of Germany and Great Britain, Finland, several Nordic countries, and Australia and Canada, for example, transposed the IMO's recommendations into their national legislation early on, many other countries inside and outside the European Union found the approximation of their own legal systems difficult. This complicated international co-operation between flag, coastal, and other States interested in the investigation of marine casualties when more than one was involved, amongst other things. Therefore, a Casualty Investigation Code was adopted through IMO Resolutions 255.84(84) and MSC.257(84) of 16 May 2008 and implemented in the internationally binding SOLAS agreement, which obliges flag States to investigate according to a uniform standard very serious marine casualties, i.e. those involving the loss of human life or a ship, as well as heavy environmental pollution. Flag and concerned coastal States are required to co-ordinate their related investigative activities, while aligning the execution thereof with the aforementioned investigation code. This is taken one step further by Directive 2009/18/EC of the European Parliament and of the Council of 23 April 2009

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			establishing the fundamental principles governing the investigation of accidents in the maritime transport sector and amending Council Directive 1999/35/EC and Directive 2002/59/EC of the European Parliament and of the Council (referred to below as 'Directive'). Referring explicitly to the aforementioned guidelines of the IMO and the definitions and principles contained therein, these oblige Member States of the Union to investigate both very serious and serious marine casualties when they are involved in a marine casualty as flag or coastal State or due to other substantial interests. Although serious marine casualties – or in summary, those that resulted in at least the temporary disablement of a ship or involved environmental pollution – may be excluded from the obligation to investigate, this may happen only if a preliminary investigation gives rise to a comprehensible explanation for the lack of necessity. A single legal framework for the investigation of marine casualties and any necessary cross-border co-operation was thus established within the European Union. Where necessary, the Federal Republic approximated the SUG to account for the requirements of the aforementioned Directive with the Law amending the Maritime Safety Investigation Law (BGBl. 2011 I p. 2279), which entered into force on 1 December 2011. Since the Directive does not cover the provisions for proceedings of the Maritime Board, they remained unchanged for the most part. The wording of the SUG – or the provisions governing the work of the BSU – was revised. Moreover, its structure and nomenclature were reorganised to enhance usability. In particular, the referencing of a large number of provisions from the Aviation Accident Investigation Law (FlUUG, BGBl. 1998 I p. 2470 ff.) opted for in the 2002 version of the Law and related restriction of the SUG to a list of 'definition translations', exemptions, and extensions (see former version, Article 15 SUG) have been abandoned. Alongside that, the recast Article 1 SUG, in particular, facilitates application of the Law with the amended and focused definition of the substantive scope, as well as with the insertion of Article 1 a SUG, which now defines the term, marine casualty, that actually sets the course for the necessity and scope of any maritime safety investigation, in all its different classifications, without the complication of having to refer to secondary legal sources. A turning point compared to the 'former' SUG is the fundamental exclusion of non-commercial pleasure craft (provided that there is no required crew on board and not more than 12 passengers are carried) and fishing vessels not exceeding 15 metres in length from the list of incidents requiring investigation (see new version, Article 1(3) (2 and 3) SUG). Although – in favour of the BSU – the legislature establishes a savings clause for precisely those types of vessel under paragraph 4 of the discussed rule, this counter-exception from the boundary of the substantive scope only

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			applies to Germany's territorial waters and the adjacent Exclusive Economic Zone (EEZ). Article 11 SUG was amended substantially and inevitably in the wake of implementing the EU Directive. Whereas an actual obligation of the BSU to investigate certain accidents could be derived from the previously applicable SUG only within narrow constraints and then only in conjunction with international rules that were only partially binding under international law, implementation of the aforementioned European legislation now delivered clear and unambiguous guidelines under which the BSU must operate after a marine casualty. In the process, alternative points of reference are – as was already the case but now worded far more specifically – the classification of an incident as a very serious or serious marine casualty, the German flag, Germany's territorial waters and the adjacent EEZ, and finally the Federal Republic of Germany's substantial interest in a maritime safety investigation. In addition to the above reforms, the substantive change in the investigation procedure likely to have the greatest importance in practice deserves special mention. This is the reduction in the period for consultation for people and bodies particularly affected by the investigation report from 60 to 30 days after circulation of the draft (see new version, Article 27(4) p. 1 SUG). All in all, the EU guidelines state that the investigation procedure should be streamlined and where possible closed with the publication of an investigation report within 12 months of the marine casualty (see new version, Article 28(1) p. 1 SUG). If it is not possible to meet this deadline, then an interim investigation report must be published to notify the public of the continuing pendency of the investigation through this official channel. Finally, the safety recommendations published by the BSU as a result of an investigation are upgraded. Article 29(5) of the new version of the SUG states that any addressee of safety recommendations is obliged to report to the BSU on the progress of their implementation. Expressed in nautical terms, it can be summarised that a sure course toward a modern system of marine casualty investigation designed to support the concept of the safety partnership and the goal of enhancing the safety of shipping as a whole has been steered in the Federal Republic of Germany with the enactment of the Maritime Safety Investigation Law in 2002. The amendment of the SUG in 2011 is the result of global position fixing, which the legislature has accounted for by making only marginal course corrections, as necessary. The BSU's general course discussed above, i.e. the exclusive task of making seafaring safer with its work, remains unchanged, however. BSU today

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			Enacting the Safety-at-Sea-Investigation-Act (SUG) in June 2002, the Code for the Investigation of Marine Casualties and Incidents of the International Maritime Organization (IMO) was transposed into German law. At the same time the BSU was established as the national authority responsible for marine accident investigations in Germany. Since then, BSU with its staff of 13, including 7 investigators, is responsible for registration and investigation of all types of marine accidents to or on board German flagged ships. Within the German territorial waters BSU, additionally, acts regardless of the flag(s) of the ship(s) involved. At this, the responsibility of BSU covers merchant ships as well as seagoing leisure crafts and traditional ships. Having received an accident notification, the Head of BSU, in his absence his Deputy, decides whether or not to start an accident investigation. In this decision, as well as in determining the scope and content of the investigation, no instructions are to be given to BSU. Aim of a BSU accident investigation is a comprehensive analysis and presentation of the accident event. All direct and indirect causes, the contributing factors as well as the overall circumstances shall be considered. To this aim, the SUG provides the BSU with extensive rights with regards to access to the scene of the accident, securing and analysis of evidence, commissioning of experts as well as interviewing of witnesses. All of which is not limited to only on board the ships. Also ashore, e.g. in vessel traffic service centres, at shipyards or at the manufacturers of systems and equipment, BSU has extensive options to safeguarding evidence. At the same time, the concept of the IMO Code, and of the SUG as well, is based on a modern accident investigation aiming at achieving a safety-orientated partnership. The principle of such a modern accident investigation is to learn from accidents. It aims to formulate safety recommendations with the sole purpose to help avoid similar occurrences in the future. Therefore, the marine accident investigation of BSU is not an investigation to apportion blame or determine liability. The specific challenge is to highlight the individual accident event from all its different angles. The safety recommendations formulated at the end should, however, help to enhance the safety of shipping in general, and thus go beyond the individual case. The addressees of a safety recommendation are those entities best in place to take remedial action(s) to enhancing safety. In formulating and determining the addressee of a safety recommendation, BSU does not regard individual safety management systems isolated, but does regard all of them as parts of an overall system the final goal of which is the overall enhancement of safety at sea. Therefore, the addressee of a safety recommendation of BSU might be an entity to which no direct failure had been attributed during the actual investigation of the accident event. The entity addressed can, however, be best placed to help avoid a similar occurrence in

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			future, or help mitigate its consequences. Generally, the safety recommendations are published as part of the final report of BSU. If, however, the identified safety issue requires immediate action, BSU might, regardless of the status of the investigation publish a preliminary safety recommendation. Another new element is the intended international co-operation. To fulfil the aim of a comprehensive investigation, it is necessary to take all the affected parties into account. Shipping is one of the most international industrial branches, if not the most international branch. Marine accidents of German flagged ships might occur all over the world. The flag State(s) of ships involved in accidents within the German territorial waters might be from the other end of the world. Shipping companies run their business from any place on earth, shipyards and manufacturers of systems and equipment are based all around the globe. And last but not least, the crews on board ships come from all over the world. The BSU, through a world-wide network of accident investigation authorities (Marine Accident Investigators‘ International Forum MAIIF), is in contact with those States the marine accident investigation procedures of which are also following the IMO Code principles. Based upon this, BSU conducts investigations in international co-operation. These can range from a simple assistance rendered to the other investigative body to a fully joint investigation concluded with a joint investigation report. Regardless of whether being conducted only by BSU or jointly with other States, the investigations of BSU are generally concluded with the publication of a final report. In less serious cases with no new lessons to be learnt to improve safety, the investigation might be concluded with a summary report. Such a summary report only presents the sequence of events. The majority of BSU investigations, however, is concluded with a full report. These full reports contain, after the presentation of the sequence of events, an analysis finally leading to the safety recommendations of BSU. Before a full report is published, BSU prepares a draft of the report. This draft is sent, in confidence, to all parties affected by it for comments. Valid comments are taken into account in the final report. The concept of a modern marine accident investigation, as described above, is not yet fully understood all over. In particular, the addressees of reports of the BSU frequently still conceive them as allocation of blame. But not as lessons to be learnt with the sole purpose to improve the safety of shipping, which they are intended to be. Organisation chart The Federal Bureau of Maritime Casualty Investigation (BSU), Federal Higher Authority subordinated to the Federal Ministry of Transport and Digital Infrastructure.

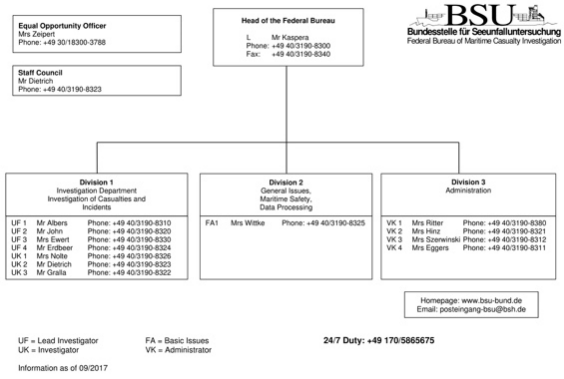
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			
Gibraltar 直布羅陀	Marine Accident Investigation Compliance Officer Ministry of Education, Justice and International Exchange of Information Ministry of Financial Services and Gaming Gibraltar 英國屬地直布羅陀的海事調查係由「Gibraltar Marine Accident Investigation Compliance Office (MAICO)」執行，MACIO 位階與直布羅陀海事局(Gibraltar Maritime Administration (Ministry of Maritime Affairs))平行，執行「獨立」調查工作。 事故報告單(Incident Report Form)必須同時向 MACIO, GMA 遞送。	○	http://www.gibraltarships.com ● The Gibraltar Marine Accident Investigation Compliance Officer (MAICO) and Maritime Administration (GMA) requires Masters and Owners to report accidents and dangerous occurrences. ● In this regard, a completed Incident Report Form is required for accidents leading to death or significant injury, or to loss or abandonment of the vessel or to her suffering material damage; any stranding, collision, fire, explosion or major breakdown; any incident causing harm to any person or the environment; and any safety or security related incident which could possibly hazard the ship or endanger personnel or create a risk to the environment. Shipping Guidance Notice – 053 Accident, Safety and Security Incident Reporting 1.3 In the case of death due to an accident, the Gibraltar MAICO will determine whether an investigation is required and he will appoint an Inspector to conduct such investigation when necessary. 4.3 The local authorities and the MAICO will independently determine how the matter is to be investigated and inform the GMA. Shipping Guidance Notice 043 – Death of a Seafarer GIBRALTAR MARITIME ADMINISTRATION (on behalf of the GIBRALTAR MARINE ACCIDENT INVESTIGATION COMPLIANCE OFFICER)
Greece 希臘	Hellenic Bureau of Marine Casualties Investigation (HBMCI) The Hellenic Coast Guard Force Ministry of Shipping and Island Policy	X	http://hbmci.gov.gr/indexEng.htm The Hellenic Bureau for Marine Casualties Investigation – HBMCI was established under the provisions of Law 4033/2011 (Official Gazette A' 264) which incorporated Directive 2009/18/EC of the European Parliament and of the Council of the 23rd of April 2009 establishing the

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	希臘海事調查局係隸屬航運與島嶼政策部轄下的希臘海巡屬下面的機構		fundamental principles governing the investigation of accidents in the maritime transport sector. It comprises the new independent and impartial Organization of the Hellenic Republic, competent for conducting safety investigations for marine casualties and incidents that take place in vessels flying the Hellenic flag, other vessels within the Hellenic territorial waters or within the Hellenic Search and Rescue region provided that SAR services were delivered by Greek Authorities, as well as any casualty or incident involves substantial interests of Hellas. Investigations conducted by the Hellenic Bureau for Marine Casualties Investigation – HBMCI, are independent from criminal or other administrative investigations which are held to apportion blame or determine liability, and focus on identifying causal and contributing factors that led to the marine accident or incident, with the objective of preventing future marine accidents or incidents, enhancing maritime safety.
Hong Kong 香港	Marine Accident Investigation and Shipping Security Policy Branch (MAISSP) Marine Department The Government of the Hong Kong Special Administrative Region Hong Kong	○	http://www.mardep.gov.hk http://www.mardep.gov.hk/en/publication/eoverview.html Overview Marine Accident Investigation and Shipping Security Policy Branch The Marine Accident Investigation Section (MAIS) was moved from the Shipping Division to Multi-lateral Policy Division under the MAISSP Branch in January 2000. This move enables marine accidents to be investigated independently of other Divisions of the Marine Department, in particular Shipping Division and Port Control Division, which are the regulatory and administrative authorities for ship safety and Hong Kong port respectively. The MAISSPB investigates all marine accidents occurring in Hong Kong and on board Hong Kong registered ships. It also conducts official inquiries ordered under the Merchant Shipping Ordinance (Cap. 281), the Shipping and Port Control Ordinance (Cap. 313), Merchant Shipping (Local Vessels) Ordinance (Cap. 548), Merchant Shipping (Seafarers) Ordinance (Cap. 478), and the Pilotage Ordinance (Cap. 84). The primary purpose of investigation carried out by MAISSPB is to ascertain the circumstances and the causes with the aim of improving the safety of life at sea and, by publicising the findings of the investigations, the avoidance of accidents in the future. It is not the purpose of the investigation or the report to apportion blame or to take disciplinary action. In addition, the summary together with the lessons learnt and the full investigation report on serious and very serious accidents will be posted on this site.

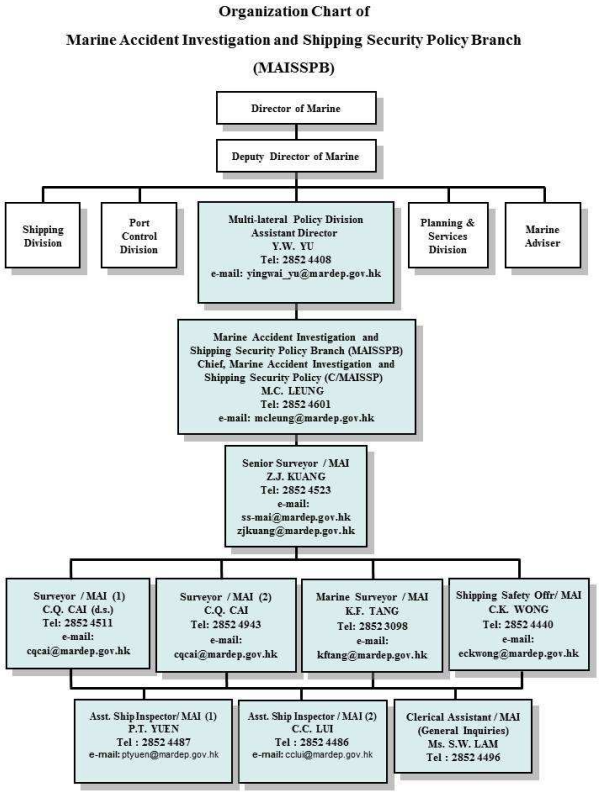
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			
Hungary 匈牙利	Transportation Safety Bureau (TSB) (Közlekedésbiztonsági Szervezetet, KBSZ) The Minister for Economy and Transport Hungary 匈牙利經濟運輸部轄下在 2006 年由民航安全局改制為運輸安全局(TSB)負責航空、軌道與海事安全事故調查。 每件調查事件的主任調查官必須是政府官員。外聘專家不在此限。	○	http://www.kbsz.hu The Minister for Economy and Transport created the agency on 1 February 2006. It investigates air, rail, and marine accidents. Prior to the creation of the TSB, the Civil Aviation Safety Bureau of Hungary (CASB, Hungarian acronym: POLÉBISZ) served as the country's aviation accident investigation agency for four years, when it investigated over five hundred aircraft accidents and incidents. Our organisation What are the reasons behind the recurrence of accidents? - we do not recognise the risks - we do not know the causes - we do not act to stop the causes - we do not share our experiences Transportation Safety Bureau of Hungary was established by the Minister for Economy and Transport on 1st January 2006 in accordance with the law enacted by Parliament. Its task is the independent technical investigation of aviation, railway and marine accidents with the objective to issue safety recommendations based on lessons learnt from analyses in order to prevent similar occurrences in the future. Therefore, we regard prevention as our fundamental aim.

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			In our technical investigations, we endeavour to take all objective facts into consideration. In order to find the causes we have to reveal circumstances leading to the occurrences. In practice, it means not only conducting the required technical and technological investigation but also reviewing the legal background as well as the traffic safety regulations. We pay particular attention to the human factor as the most important element of processes with regard to safety. This is why we place great emphasis on education and continuous improvement of already acquired knowledge, skills and experience. It is not the purpose of our investigations to apportion blame or legal liability. In accordance with European Union directives, Hungarian regulations prohibit the naming of persons legally responsible for the occurrence. Our investigations are anonymous, therefore the final reports on the results of the investigations prepared by our organisation do not contain names. Our tools of prevention are as follows: we make the findings of our investigations (i.e. the most likely reasons of the occurrences) public in order to draw lessons from them as well as sending safety recommendations to the organisations concerned. We are obliged to compile and send an annual report to the Government regarding our work, the further use of safety recommendations and the conditions of transport safety in the areas under our jurisdiction. The independence of our organisation is provided by law. The impartiality of our employees is assured not only by complying with regulations but also by their personal and professional commitment to high standards. Our predecessor organization, the Civil Aviation Safety Bureau of Hungary (POLÉBISZ - CASB) had investigated more than five hundred incidents and accidents during the four-year period of its existence, gaining considerable experience in the process. By using that accumulated intellectual capital for the benefit of aviation, railway and water transport safety, I believe we can make a difference. - About the independent technical investigation Technical investigation of aviation, railway and marine accidents This publication was compiled for those persons and organisations which are either directly or indirectly involved in the technical investigation of aviation, railway and marine accidents. Our aim is to inform you about the most important questions concerning the process of technical investigations. Transportation Safety Bureau (TSB) Transportation Safety Bureau (TSB) is an independent investigating body. Its activity is based on Regulation (EU) No 996/2010 of the European Parliament and of the Council on the investigation and prevention of accidents and incidents in civil aviation and Act CLXXXIV of 2005 on the technical

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			investigation of aviation, railway and marine accidents and incidents and on its implementory decrees. The competence of TSB - as a central office - extends to the whole of Hungary. TSB is supervised by the Minister for Transport. TSB shall not be ordered concerning the conduct of technical investigations. The objective of the technical investigation The objective of the technical investigation is to reveal the causes and circumstances of transport accidents in order to prevent similar cases in the future. It is not the purpose of this activity to apportion blame or liability. Accordingly, the reports compiled by TSB preserve the anonymity of the parties concerned. Furthermore, TSB shall not be obliged to make the data having come to their knowledge in the course of the investigation available to other authorities (regarding which the owner of the data could have refused their disclosure pursuant to the relevant act). Act CLXXXIV of 2005 stipulates cases when TSB shall initiate an independent technical investigation. These cases are: any fatal aviation, railway and marine accident as well as accidents without fatalities but resulting in substantial material damage and/or are of significant risk to transport safety. TSB may also investigate other transport occurrences which - in its judgement - would have resulted in accidents in other circumstances, or when the occurrence has a high impact on the transport system as a whole. TSB may initiate an investigation upon request from transport companies, infrastructure managers, other safety authorities, or accident investigating bodies of other states. The scope of authority of TSB extends to the technical investigation of occurrences involving state aircraft as well. How does TSB work? TSB maintains a 24/7 duty service which receives occurrence reports from aircraft/airport/infrastructure operators or other concerned persons and parties. The relevant legal acts ensure that the person reporting an occurrence cannot be put at a disadvantage by his/her employer on account of his/her report. Upon receiving the occurrence report, TSB investigators initiate the technical investigation - if it deemed necessary - and conduct the accident site survey. The relevant law provides TSB investigators the right to have access to the accident site even when it is labelled as a crime scene, and to conduct the site survey simultaneously with other authorities. TSB investigators record the evidence found at the site of the accident. They can commence controlled removal of evidence for further examination and/or analysis. They have the right to

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			interview the concerned persons and eyewitnesses, and to have access to all documentation and data - concerning the vehicles, crew or the traffic - which might help reveal the cause(s) of the accident. TSB may request or make a copy of these documents and data. TSB investigators may also have immediate access and use of the contents of data recorders and other recordings for the technical investigation. If another state is involved in the accident (either on the account of the vehicle or the nationality of the injured) TSB shall inform the accident investigating body of the state concerned. Its representative may participate in the investigation. Orders given in the course of the investigation (e.g.: call-in for an interview, custody of evidence, etc.) are binding, and may be appealed in court only. Who can be a member of the Investigating Committee (IC)? The Investigator-in-Charge can only be a government official of TSB. The IC may also invite external experts to participate in the investigation. By no means shall the members of the IC be related to the case under investigation. What happens to the findings of the investigation? Upon closing the investigation, the IC compiles a draft report which is sent to the relevant parties who may make reflections within 60 days from the receipt of the report. The Investigator-in-Charge is entitled to either include the reflections in the final report or handle them as dissents. The final reports are published on the website of TSB. Anonymity means that the final reports do not contain the names of the concerned persons. Final reports are not binding, nor shall an appeal be lodged against them. The IC may issue safety recommendations within the final report addressed to any of the concerned parties. The IC may also recommend immediate preventive actions in the course of the investigation. The addressees are not obliged to accept and implement the safety recommendations, however, if they decide to accept them, they shall inform TSB of further actions taken. In case of rejection, an explanation as to why they rejected the recommendations shall be given to TSB. TSB reports to the Government annually on the experiences gained during the investigations. What happens when a Hungarian vehicle is involved in an accident abroad? According to international agreements, investigation of accidents shall be conducted by the state in the territory or airspace of which the accident occurred. States concerned in the account of vehicles or injured persons have the right to

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			participate in the investigation (and TSB usually does so). The Hungarian operator may delegate an advisor via TSB; or it may suggest the involvement of TSB in the investigation. Assistance to the injured and the relatives It is the intention of TSB to provide professional and humane help and support for relatives of people who lost their lives in an accident as well as for those who were injured in an accident. TSB informs them on the investigation process and provides them an opportunity to express their views regarding the investigation.
Iceland 冰島	Icelandic Transportation Safety Board (ITSB) Icelandic Transport Authority (ICETRA) Minister of the Interior Iceland 「內政部」冰島「交通局」冰島「運輸安全委員會(ITSB)」負責航空、海事、道路的運輸安全調查	○	http://www.rnsa.is (網站無英文資料) The ITSB was established under the administration of the Ministry of Interior in 1. June 2013. At this date the former three investigation Boards for: Aviation, Marine and Road were merged into one Transportation Safety Board.
India 印度	Nautical Advisor (DYNA/NA) The Directorate General of Shipping Ministry of Shipping 航運部下屬的航運總局的海事顧問辦公室	X	http://dgshipping.gov.in/Content/AboutusTop.aspx
Indonesia 印度尼西亞	National Transportation Safety Committee Office Ministry of Transportation Republic of Indonesia Indonesia 位於印度尼西亞「交通部」的「運輸安全委員會(NTSC, KNKT)」辦公室負責調查航空、陸運、軌道及海運的安全議題，飛航事故由飛航事故調查委員會(AAIC)另外執行。	○	The National Transportation Safety Committee (NTSC, Indonesian: Komite Nasional Keselamatan Transportasi, KNKT) is an Indonesian government agency charged with the investigation of air, land, rail, and marine transportation safety deficiencies. It has its headquarters on the third floor of the Ministry of Transportation Building in Central Jakarta, Jakarta. It is a part of the Ministry of Transportation. The Aircraft Accident Investigation Commission (AAIC, Indonesian: Komisi Penelitian Penyebab Kecelakaan Pesawat Udara, KPPKPU) investigates aviation accidents and incidents. http://www.dephub.go.id/post/read/knkt-kini-bertanggung-jawab-pada-presiden-8775?language=en http://kemhubri.dephub.go.id/knkt NTSC

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	比較特別的是，運輸安全委員會(NTSC, KNKT)直接向總統報告。 NTSC由五位成員所組成，任期五年，由總統指派。		National Transportation Safety Committee was established by Presidential Decree in 1999 (Presidential Decree No. 105/1999), as an independent agency accountable to the public through the Ministry (see Diagram Basic Concepts of Functions) NTSC is responsible for researching shortage of aviation safety, maritime and land transportation. Although so far only relate to aviation and the recent railway safety. Based on the results of the accident investigation, the NTSC makes recommendations that should be taken to prevent the recurrence of similar accidents. NTSC conduct research and studies necessary to perform the task, and to identify safety deficiencies that may occur. Yaang most important aspect of the investigation is the only purpose of this activity is to prevent accidents / incidents, not to blame. Basic Concepts 1. The concept of NTSC is the sole agent who can develop a higher level of security than individual capital institutions separately. 2. NTSC can perform its function properly if it is completely separate and independent of any other government agency of the Republic of Indonesia. 3. NTSC has no authority to regulate, fund or directly involved in the operation of any mode of transportation. 4. NTSC is the function and duty to supervise the transportation system, to investigate and make recommendations from the standpoint of total goals, and to make recommendations for improvement of security needed. 5. NTSC five members appointed by the President for a period of five years (this has not been implemented yet). 6. Members NTSC elect a Chairman and Secretary of the Commission for a period of one year and again for next year. 7. NTSC Transport Safety Investigation Committee shall: a. System Transport Safety Investigation b. Accident and Incident Investigation 8. NTSC determine when, what, who, how and why, transportation accidents. 9. NTSC promoting transportation safety through the recommendation process. methods of Investigation NTSC will conduct reactive and proactive. Proactive Researches include: Proactive research include: a. Safety study b. Evaluating the effectiveness of transport 'security agencies other government programs c. Assess and review transportation issues

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			Meanwhile, a study of reactive only be done every time the accident / incident occurred (see flow chart). The database is maintained to identify and project trends.
Ireland 愛爾蘭	The Marine Casualty Investigation Board (MCIB) Minister for Transport, Tourism & Sport 愛爾蘭的海事調查委員會是交通旅遊與運動部所屬獨立行使海事調查職權的機構	X	http://www.mcib.ie The Marine Casualty Investigation Board (MCIB) was established on 5 June, 2002 under Section 7(1) of the Merchant Shipping (Investigation of Marine Casualties) Act, 2000. The legislative framework for the operation of the MCIB, the reporting and investigating of marine casualties and the powers of MCIB investigators, is set out in the Act of 2000 and the European Communities (Merchant Shipping) (Investigation of Accidents) Regulations 2011. The Act defines what a marine casualty is, sets out the purpose of investigations, lays down the requirement for reporting a marine casualty, sets out when and how investigations are to be conducted, sets out the powers of the MCIB investigators when carrying out their investigation and indicates the timeframe to be adhered to in the investigation of marine casualties. In carrying out its functions the MCIB complies with the provisions of the International Maritime Organisation's Casualty Investigation Code and EU Directive 2009/18/EC governing the investigation of accidents in the maritime transport sector. All Board members are engaged on a part-time basis. The MCIB is an independent body with its own funding provided for by the Oireachtas under Section 19 of the Act. The MCIB is independent of the Minister for Transport, Tourism & Sport in the performance of its functions and, in general, shall be independent of any other person or body whose interests could conflict with the functions of the Board. MERCHANT SHIPPING (INVESTIGATION OF MARINE CASUALTIES) ACT, 2000 PART 2 Marine Casualty Investigation Board 9.—(1) The Board shall consist of— (a) three persons appointed by the Minister; (b) the Chief Surveyor; and (c) the Secretary-General of the Department of the Marine and Natural Resources, or his or her nominee.
Italy 意大利	Directorate-General for Rail and Marine Investigations (Direzione Generale per le Investigazioni Ferroviarie e Marittime, DIGIFEMA) 3rd Division Marine Investigations	○	http://digifema.mit.gov.it/en/ 無英文資料(建構中)

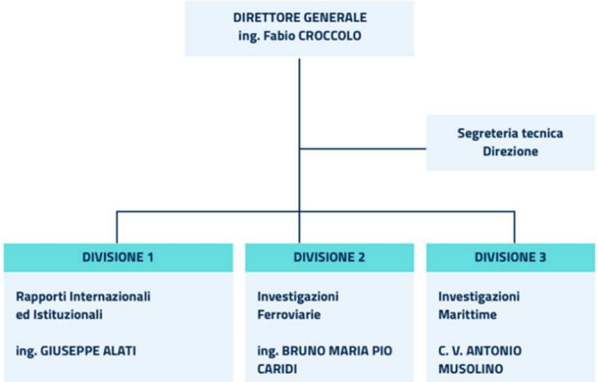
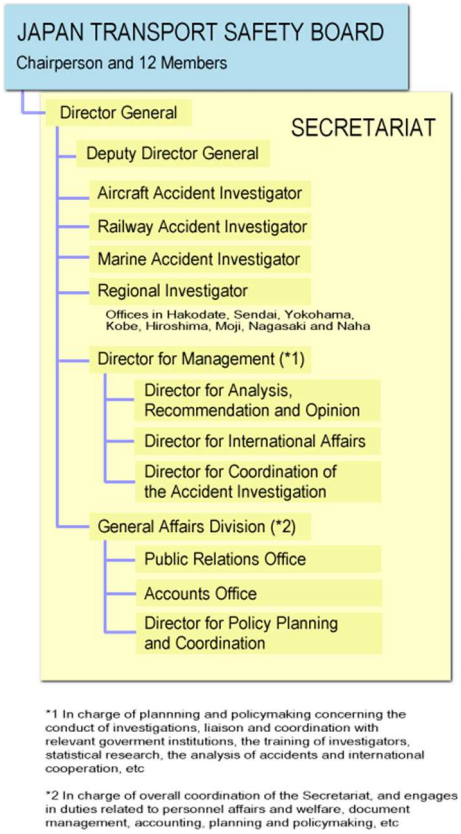
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	Ministry of Infrastructure and Transport (Ministero delle Infrastrutture e dei Trasporti) Italy 義大利基礎設施和運輸部下的軌道和海事調查總局(DIGIFEMA)僅負責軌道與海事調查		
Japan 日本	Investigator General for Marine Accident Japan Transport Safety Board (JTSB) Minister of Land, Infrastructure, Transport and Tourism Japan 國土交通省運輸安全委員會 JTSB 主管航空、海事、軌道安全事故調查工作，委員會由八位全職及六位兼職專業人士所組成。與海事有關的有全職二位(海事安全、造船)、兼職一位(人因工程)。 以日本 Board Members 為例：全職 8 人、兼職 6 人，負責領域及個人專長背景分佈不同。	○	http://www.mlit.go.jp/jtsb  Chairman (Aircraft, Railway, Marine) (Aerospace engineering, Computational fluid dynamics) Member (Full-time) 1. (Aircraft, Railway, Marine) (Legislation) 2. (Aircraft) (Operation and maintenance of aircraft) 3. (Aircraft) (Maneuvering of aircraft) 4. (Railway) (Railway engineering, Geotechnical engineering) 5. (Railway) (Dynamics of machinery, Vehicle dynamics, Railway vehicle engineering) 6. (Marine) (Ship operation, Maritime traffic safety) 7. (Marine) (Naval architect) Member (Part-time) 1. (Aircraft) (Flight simulation, Flight dynamics)

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			2. (Aircraft) (Ergonomics (Human factors)) 3. (Railway) (Structural engineering) 4. (Railway) (Electrical engineering, Traffic management (Human interface)) 5. (Marine) (Ergonomics)
Latvia 拉脫維亞	Marine Accident Investigation Department Transport Accident and Incident Investigation Bureau Minister of Transportation Latvia 2005.12.21 年拉脫維亞成立飛航事故調查局(AAIIB)，2007.04.01 年 AAIIB 被指派調查重大鐵道事故，2007.07.01 AAIIB 更名為 TAIIB，2011.06.01 從拉脫維亞海事局接手海事調查工作。 TAIIB 目前有固定成員 10 人，從事飛航、軌道以及海事三類事故調查。航空 3 人，軌道 2 人，海事 2 人，行政管理 3 人。	○	http://www.taiib.gov.lv Transport Accident and Incident Investigation Bureau (TAIIB) http://www.taiib.gov.lv/?lang=en Purpose The main purpose of TAIIB is to investigate aircraft accidents and incidents, serious railway accidents and railway accidents and from 1 June 2011 also marine accidents to ascertain and determine the causes thereby to prevent recurrence of equal aircraft, railway and marine accidents and incidents in the future and improve aviation, railway and marine safety. The purpose of investigation is not to apportion blame or liability. History Cabinet of the Republic of Latvia has released an Order Nr.822 on creation of Aviation Accident and Incident Investigation Bureau (AAIIB) in December 21, 2005; the Bureau has started its activities as the Governmental entity of independent governance under direct supervision of Minister of Transportation since January 1, 2006. Since April 1, 2007 AAIIB has been designated as the Investigative body for Serious Railway Accidents, by Cabinet Order Nr.953 “On the serious railway accident investigation institution”, dated by December 12, 2006. Therefore, since July 1, 2007, Aviation Accident and Incident Investigation Bureau has changed its title to be called as “Transport Accident and Incident Investigation Bureau” (TAIIB). In accordance with the Section 8.[1] of „ Maritime Administration and Marine Safety Law”, and Article 14. of “Transitional provisions’’ of this Law, since June 1, 2011 TAIIB has taken over and acquired the responsibilities of Marine Accidents and Incidents Investigation from Latvian Maritime Administration. Organization TAIIB has three structural departments – Aircraft accident and incident investigation department, Railway accident investigation department and Marine accident investigation department. TAIIB has a permanent staff of ten personnel including: three investigators in aviation, two investigators in railway, two investigators in marine and three administrative staff members.
Liberia 賴比瑞亞	Director of Investigations	○	http://www.liscr.com http://www.liscr.com/maritime/Investigations

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	The Liberian International Ship & Corporate Registry USA 賴比瑞亞的海事調查機構是設在「美國」維吉尼亞州 主要在調查註冊為賴比瑞亞船籍船舶的海事調查或是違反賴比瑞亞海事法的調查		http://www.liscr.com/maritime/reporting Marine Investigations Department When the need for investigations of maritime incidents or offences of Liberian Maritime Law or other related problems arise, they are handled by the Liberian Registry's Marine Investigations Department. Marine casualty investigations are administrative proceedings that are essentially remedial in nature. Most of the Marine Investigations' functions involve "incidents" which can be thought of as undesired events or occurrences that require intervention by the Administration. They can be events that directly involve the ship such as a detention, casualty, contravention (MARPOL 73/78, TSS and COLREG), an oil spill, and many others. Vessel casualty investigations cover a variety of incidents including, but not limited to; fire, explosion, collision, grounding, contact, heavy weather damage, hull cracking and defects. Casualty investigations also include looking into possible violations of law or failure on the part of personnel, shipowners, or ship operators, which could result in personnel action against licenses, certificates of competency or seafarer documents. Incidents may also be personnel related such as death or an injury, failure to properly perform duties, crew grievances, or an act of fraud or misconduct. There also may be an interaction between "incidents" such as a shipboard explosion that injures a seafarer or improper navigation that results in a vessel grounding or collision. Other incidents may relate to issues such as embargoes, treaties, tariffs, desertion, stowaway, crew wages issues, etc. SOLAS Chapter 1, Regulation 21 requires Administrations to investigate certain casualties and to notify the IMO of the results. The Liberian Administration will investigate casualties occurring on Liberian flagged vessel when an investigation may assist in determining what changes may be desirable to the present regulations.
Lithuania 立陶宛	Transport Accident and Incident Investigation Division Ministry of Justice 立陶宛運輸事故調查部門係於 2010.12.01 合併飛安與軌道二個調查部門而成，2011.09.16 再併入海事調查。 2016.01.01 運輸事故調查部門由「交通部」改隸「司法部」 TAIID 的成員有三人	X	詳細資料參考 2016 年報 http://www.tm.lt/dok/2016%20Annual%20Report%20(EN).pdf The safety investigation authority of the Republic of Lithuania is the Transport Accident and Incident Investigation Division of the Ministry of Justice of the Republic of Lithuania. The Transport Accident and Incident Investigation Division is an authority carrying out safety investigations of multimodal transport, i.e. safety investigations of accidents and incidents of aircrafts, marine vessels and railway transport. The Transport Accident and Incident Investigation Division under the Ministry of Justice of the Republic of Lithuania was established on 1 December 2010, having merged the two independent positions of the investigator-in-charge of the aircraft accidents and incidents and the

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	Head: aircraft Chief specialist: railway Senior specialist: maritime		investigator-in-charge of the railway transport accidents and incidents. The Transport Accident and Incident Investigation Division started its actual activity as on 1 February 2011, after the positions of the Head of the Division (investigator-in-charge of the aircraft accidents and incidents) and of the Chief specialist (the investigator-in-charge of the railway transport accidents and incidents) were established. On 16 September 2011 the position of the Senior specialist (the investigator-in-charge of the maritime accidents and incidents) was established. As of 1 January 2016, the Transport Accidents and Incidents Investigation Division was transferred from the Ministry of Transport and Communications of the Republic of Lithuania to the Ministry of Justice of the Republic of Lithuania. In total there are three positions at the Transport Accident and Incident Investigation Division – Head of the Division (investigator-in-charge of the aircraft accidents and incidents), Chief specialist (investigator-in-charge of the railway transport accidents and incidents), and Senior specialist (the investigator-in-charge of the maritime accidents and incidents). Maritime accident and incident investigations are carried out in accordance with Directive 2009/18/EC of the European Parliament and the Council of 23 April 2009 establishing the fundamental principles governing the investigation of accidents in the maritime transport sector and amending Council Directive 1999/35/EC and Directive 2002/59/EC of the European Parliament and of the Council, and which was transposed to Order No. 1R-386 of 30 December 2015 of the Minister of Justice of the Republic of Lithuania 'On the approval of the description of the procedure, drawing up and submission of reports and safety recommendations for safety investigations of maritime accidents and incidents', Commission Regulation No 1286/2011 of 9 December 2011 adopting a common methodology for investigating marine casualties and incidents developed pursuant to Article 5(4) of Directive 2009/18/EC of the European Parliament and of the Council, and the Law on Maritime Safety of the Republic of Lithuania.
Luxemburg 盧森堡	Administration of Technical Investigations (Administration des Enquêtes Techniques, AET) Ministry of Transport Luxembourg 盧森堡交通部下的技術調查局(AET)負責調查航空、軌道、河道及海事交通事故	○	http://www.gouvernement.lu/6738006/transports-maritime 無英文資料 The Administration for Technical Investigations (French: Administration des Enquêtes Techniques, AET) is a division of the Luxembourgish Ministry of Transport that investigates air, rail, river, and maritime accidents. The agency has its headquarters in Luxembourg City. Safety investigations following accidents and/or incidents are carried out by "Administration des Enquêtes Techniques" (AET), the Accident/Incident Investigation Authority in

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			Luxembourg. This body performs its functions independently in compliance with Council Directive 94/56/EC reporting only to the Minister responsible for the Department of Transports. The Law of 30 April 2008 concerning a) creation of the Administration of Technical Investigations b) modification of the amended law of 22 June 1963 on the system of salaries of the State and c) repeal of the Act of 8 March 2002 establishes an entity which is responsible to initiate and to conduct the investigation of accidents and major incidents in civil aviation, maritime transport and railway. The AET, with autonomous decision making authority, is settled as an independent body within the governmental system and to guarantee such an independent position, AET only reports to the Minister responsible for the Department of Transports. https://ec.europa.eu/transport/modes/air/encasia/about/members/luxembourg_en
Malta 馬爾他	Marine Safety Investigation Unit The Ministry for Transport, Infrastructure and Capital Projects Malta 馬爾他的海事調查部門係隸屬運輸，基礎設施和資本項目部，專責海事調查	○	http://mti.gov.mt/en/Pages/MSIU/Marine-Safety-Investigation-Unit.aspx https://mtip.gov.mt/en/Pages/MSIU/Marine-Safety-Investigation-Unit.aspx Marine Safety Investigation Unit AN OVERVIEW OF MSIU'S ACTIVITIES The Marine Safety Investigation Unit (MSIU) is an independent Government Investigation Unit. The MSIU, which is managed by the Head of Marine Safety Investigation, is independent in its organisation and decision-making process from the policy maker, regulator, and any other party whose interests could conflict with the tasks entrusted to the MSIU. The MSIU is tasked to contribute to maritime safety by carrying out safety investigations into accidents and incidents, and participate in safety studies and academic research. The MSIU is established by the Merchant Shipping (Accident and Incident Safety Investigation) Regulations 2011. Its safety investigations are conducted in accordance with the provisions prescribed in these regulations. The MSIU does not investigate to apportion blame and / or determine civil / criminal liabilities. The Unit has significant authority to investigate marine accidents and incidents and no entity other than the MSIU may commence a safety investigation into a marine accident and incident. Malta is a major stakeholder in the maritime industry, whilst its geographical position in the Mediterranean Sea makes its waters amongst the busiest in Europe. The MSIU has the legal mandate to investigate accidents and incidents involving Maltese registered ships anywhere in the world, and foreign flagged ships navigating and trading within Maltese waters.

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			Masters, ship operators, ships managers and Transport Malta are required to report accidents and incidents as soon as practicable to the MSIU. A typical safety investigation normally takes about 12 months to complete, depending on the accident dynamics and its complexity. The safety investigation reports compiled by the MSIU are published after the safety investigation process is completed. However, these reports and most of the collected evidence are inadmissible in a court of law and cannot be used in criminal and civil proceedings. Their only scope is the dissemination of safety lessons and the prevention of similar future accidents and incidents. Malta is an active member of the International Maritime Organization (IMO), the United Nations' specialised agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships. The MSIU has an active role and is a member of the Maltese delegation at the IMO's Sub-Committee on Implementation of IMO Instruments (III). The MSIU is also a member of the European Commission's Permanent Co-operation Framework, the Marine Accident Investigators International Forum, and the European Maritime Investigators Forum.
Marshall Islands 馬紹爾群島	Deputy Commissioner of Maritime Affairs Republic of the Marshall Islands USA 馬紹爾群島國的海事調查部門是在美國的維吉尼亞州 海事調查主要都是關於註冊為馬紹爾群島船籍船舶的重大船舶或人員傷亡事故	○	http://www.register-iri.com https://www.register-iri.com/index.cfm?action=page&page=70&fromPage=5 Investigations initiates, completes and documents Port State Control (PSC) detentions, contraventions and casualty investigations, distributes major casualty and pollution incidents investigation reports to the International Maritime Organization (IMO), Port States and other interested parties, distributes determinations after investigating contraventions of SOLAS, MARPOL, and COLREGS and monitors developments in national and international maritime law or conventions that could impact maritime investigatory functions. Most investigations functions involve incidents which can be thought of as issues or occurrences that require some type of action by the RMI Maritime Administrator. They can be events which directly involve the ship such as a casualty, contravention or an oil spill. They may be personnel related such as a death or an injury, failure to properly perform duties, crew grievance or an act of fraud or misconduct. There also may be an interaction between incidents such as a shipboard explosion that injures a seafarer or improper navigation that results in a vessel grounding. Other incidents

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			may relate to more generic issues such as embargoes, treaties and tariffs.
Netherlands 荷蘭	Dutch Safety Board Netherlands 荷蘭安全委員會 DSB 統合航空、內陸航運、軌道、公路、國防、健康、管道、工業、網路、建築、水運、風險管理等領域，成立單一調查委員會，負責意外及失事調查。委員會委員共三員由荷蘭女王任命。 DSB 強調： 獨立 Indepent 透明 Transparent 專業 Professional	○	http://www.safetyboard.nl https://www.onderzoeksraad.nl/en/ The Safety Board's aim is the improvement of safety in the Netherlands. Its main focus is those situations in which civilians are dependent on the government, companies or organisations for their safety. The Board solely investigates when incidents or accidents occur and aims to draw lessons from the results of these investigations. Values Independent The Safety Board is objective, impartial and independent in its judgment. The Board will always be critical towards all parties concerned. Transparent The Board is transparent is its choices to conduct an investigation or not and will give account on the investigation, used methodology and the way in which the Board forms its judgments and findings. The Safety Board will also be transparent about the course of the investigations without anticipating at the conclusions. Professional The Dutch Safety Board is a reliable, professional organisation. The Board is knowledgeable and makes sure that the required knowledge is present within the organisation and will also consult experts from outside the Dutch Safety Board. About the board The Safety Board is chaired by Tjibbe Joustra. Apart from the chairman, the Board consists of two other members who, in addition to their broad knowledge of safety issues, have extensive scientific, administrative and social experience. The small number of members makes quick decisions possible about whether or not to investigate an incident. This allows the Safety Board to operate quite effectively. The board consists of the following members: Tjibbe Joustra Marjolein van Asselt Erwin Muller For specialist knowledge, the Board members can enlist the assistance of the associate members of the Board. The associate members of the Board can offer advice on the entire operating process, from the selection of incidents to be investigated to the drafting of the report and the possible

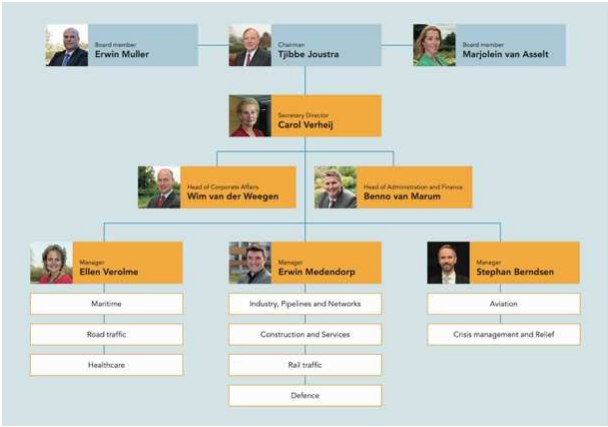
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			reopening of an investigation due to new facts coming to light. Legislation The Safety Investigation Board Act came into force on 1 February 2005, with the board officially being invested on 7 February of that year by the Minister of the Interior and Kingdom Relations. Kingdom Act Explanatory memorandum Be aware that the Kingdom Act has somewhat been revised in the past few years. Coordination protocol Dutch Safety Board Bureau At the current time, the Dutch Safety Board is active in the sectors: aviation inland shipping rail traffic road traffic defence health care pipelines, industry and networks construction and services water crisis management and relief Each investigator works for a set sector but will also carry out investigations for other sectors where necessary and/or desirable. The organisation's organisational chart looks like this: 

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
New Zealand 紐西蘭	Transport Accident Investigation Commission (TAIC) New Zealand 紐西蘭運輸事故調查委員會(TAIC)負責航空、海事、軌道交通事故的調查工作。運作方式與美國NTSB加拿大TSB類似。 TAIC成立時僅調查航空事故，1992年增加軌道事故調查，1995年增加海事事故調查 TAIC由五個委員、一位執行長和他的27個同事共同組成，年度預算五百萬紐幣	○	http://www.taic.org.nz 委員會委員由總督(Governor-General)任命。 The Transport Accident Investigation Commission (TAIC, Māori: Te Komihana Tirotiro Aitua Waka) is a transport safety body of New Zealand. It has its headquarters on the 16th floor of the AXA Centre in Wellington. The agency investigates aviation, marine, and rail accidents and incidents occurring in New Zealand. It does not investigate road accidents except where they affect the safety of aviation, marine, or rail (e.g. level crossing or car ferry accidents) It was established by Act of the Parliament of New Zealand (the Transport Accident Investigation Commission Act 1990) on 1 September 1990. TAIC's legislation, functions and powers were modelled on and share some similarities with the National Transportation Safety Board (USA) and the Transportation Safety Board (Canada). It is a standing Commission of Inquiry and an independent Crown entity, and reports to the Minister of Transport. Initially investigating aviation accidents only, the TAIC's jurisdiction was extended in 1992 to cover railway accidents and later in 1995 to cover marine accidents. The Wellington-based Transport Accident Investigation Commission comprises five Commissioners, supported by a Chief Executive and her 27 staff, with an annual budget of about $5m. As well as being Commissioners for the inquiry purposes, they are also the independent Crown entity board, in keeping with the requirements of the Crown Entities Act 2004. This section of the site provides information about our leadership, the domestic legal and international framework within which we work, our plans for the future and our performance reporting. Each heading clicks through to more detailed corporate information. Legal framework The Commission is established by the Transport Accident Investigation Commission Act 1990. The Commission's corporate form is an independent Crown entity subject to the provisions of the Crown Entities Act 2004. The Commission’s powers enable it to carry out its inquiries, and includes the power to prohibit access to an accident site, to inspect and remove records, and to secure physical evidence. Some of its powers are provided under the Commissions of Inquiry Act 1908. The Commission’s legal framework and working practices are consistent with international obligations and standards for safety-focused investigation of significant transport accidents or incidents. International conventions

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			Through its reports and recommendations, the Commission meets New Zealand’s international obligations under a number of international conventions, including: Convention on Civil Aviation, including Annex 13 which is concerned with accident investigation. Convention on the International Maritime Organisation International Convention for the Safety of Life at Sea, including the Casualty Code which is concerned with accident investigation. International Convention on Standards of Training, Certification and Watchkeeping for Seafarers Convention on the International Regulations for Preventing Collisions at Sea Jurisdiction TAIC's jurisdiction extends to the 12 nautical mile limit of New Zealand's territorial waters, the land within that, and the air above, and to New Zealand registered aircraft or ships anywhere in the world. By agreement, another country may lead investigations into occurrences in international waters or airspace involving NZ-registered ships and aircraft, such as one closer to the accident site or where an aircraft was made. Independence and cooperation The Commission is required by law to act independently from the Government, regulatory agencies, and transport operators when conducting its investigations. Investigations by other authorities into compliance with transport regulations, occupational health and safety issues, or possible criminal activity, must be undertaken independently from the Commission. The Commission co-ordinates with other investigations seeking access to an accident scene or physical evidence. Investigations protected Statements and submissions made to the Commission, as well as certain investigation records, are protected records that can only be disclosed for the purposes of the Commission’s inquiry. This reflects the purpose of the Commission which is to increase transport safety by avoiding repeat accidents, rather than ascribing blame. Similarly, the Commission’s reports cannot be used in regulatory, criminal or civil proceedings, but can be used in a Coroner’s inquiry. While the Official Information Act 1982 and the Privacy Act 1993 both apply to the Commission, certain investigation records are not subject to the Official Information Act. Strategy and performance The Commission is mindful of its business model as an independent Crown entity, and its obligations to operate effectively and efficiently. The Commission pursues its goal of 'No repeat accidents - ever!' through its investigations and findings, and, where

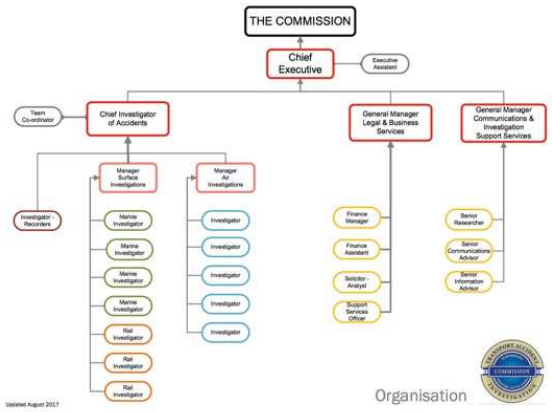
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			appropriate, making recommendations to people and organisations that are able to change rules or practices to improve transport safety. The Commission has set five strategic objectives to ensure it contributes to a safer transport system and meets its statutory obligations. These objectives are to: ● Deliver sound, cost effective Crown entity performance ● Develop and maintain responsive reciprocal stakeholder relationships ● Share inquiry and entity information ● Develop and maintain capable staff ● Properly conduct investigations Further information As an independent Crown entity, the Commission is publicly accountable to the Minister of Transport (or designated Associate) and to Parliament for its strategy, funding and performance. For more information, Accountability Documents are available going back to 2000, including Annual Reports, Statements of Intent, and Statements of Performance Expectations. TAIC prepares a Briefing to the Incoming Minister immediately prior to each general election, or when either the Minister of Transport or an Associate Minister of Transport (with delegated responsibility for the Commission) changes. TAIC discloses its chief executive's expenses, gifts and hospitality costs every six months, as required of all State sector chief executives. 	
Norway 挪威	Accident Investigation Board Norway (AIBN; Norwegian: Statens havarikommisjon for transport, SHT) Norway	○	https://www.aibn.no/home The Accident Investigation Board Norway is a public body of inquiry. The purpose of AIBN investigations is to clarify the sequence of events and factors which are assumed to be of importance for the prevention of transport accidents. The AIBN shall not apportion blame or liability.

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	交通運輸部事故調查委員會(AIBN) 1989 年前稱之航空事故委員會 AAC，而且並無固定處所與人員，1989.07.10 正式成立民航事故調查委員會 HSL 才開始有固定辦公處所，1999 年正式在交通部下成為正式單位，民航事故調查委員會 HSL，2002 年增加軌道事故調查業務，改名為 HSLB，2005 年增加道路安全事故調查業務，更名為 SHT，2008 年增加海事事故調查業務，也增加重大漁船事故調查業務。		The Accident Investigation Board Norway shall be competent, innovative, credible and compassionate. The AIBN is a permanent, independent body of inquiry for transport accidents. AIBN started out investigating aviation accidents in 1989, and has since seen its area of authority expand to include railway, road traffic and shipping accidents. Historical development: Before 1989 Following aviation accidents, ad hoc committees of inquiry were established to look into the course of events, causes and responsibilities (The Aviation Accident Committee). The committees had no permanent address, and were often made up of people associated with the Norwegian Air Traffic and Airport Management (presently known as Avinor) and the Armed Forces. 1989 The Accident Investigation Board for Civil Aviation (HSL) was established on 10 July 1989, in line with the international aviation organisation ICAO's established template, with permanent employees. The board's permanent address became Villa Hareløkka at Fornebu. 1999 The Accident Investigation Board for Civil Aviation (HSL) was established as a separate agency under the Ministry of Transport and Communications. The board was moved to temporary premises at Kjeller airport following the shut-down of Fornebu Airport in the autumn of 1998. 2001 The board moved into modern, new premises at Lillestrøm near Kjeller airport. 2002 The mandate of the Accident Investigation Board was expanded to include accidents and serious incidents in the railway sector. The board's name was changed to the Accident Investigation Board for Civil Aviation and Railways (HSLB). 2005 The mandate of the Accident Investigation Board was expanded to also include investigation of accidents and serious incidents in connection with road traffic and the agency's name was changed to the Accident Investigation Board Norway (SHT). At the same time, the board inaugurated a new wing at Lillestrøm. 2008 The Accident Investigation Board was expanded also to include investigation of marine accidents and serious incidents. At the same time, the Institute of Maritime Enquiry

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			and the Permanent Investigation Board for Special Accidents in the Fisheries Fleet ceased to exist. Mandate PURPOSE AND DELINEATION: AIBN shall investigate accidents and incidents in the aviation, railway, road and marine sectors. The objective of the investigations is to elucidate matters deemed to be significant for the prevention of transport accidents. The AIBN shall not apportion any blame or liability under civil or criminal law. The AIBN itself decides the scale of the investigations to be conducted, including an assessment of the investigation's expected safety benefits with regard to necessary resources. Methodology The Accident Investigation Board Norway has developed a common framework and analysis process for systematic safety investigations within the four transport modes (The AIBN method). This concerns how the AIBN collects, organises, analyses and interprets information and data from accidents in a systematic, verifiable manner. The framework describes how the AIBN understands accidents, why they occur and how safety can be improved to prevent new accidents occurring. The AIBN's analysis process is divided into the following seven stages adapted to the scope of the investigation: Stage 1: Clarifying the sequence of events and circumstances of the accident. Stage 2: Identifying safety problems = 'what went wrong' in the sequence of events. Stage 3: Barrier analysis. Stage 4: Identifying safety factors. Stage 5: Establishing the factors' relevance (existence, influence and importance). Stage 6: Considering systemic safety problems (safety issues) = areas for improving safety. Stage 7: Assessing the need for safety recommendations.

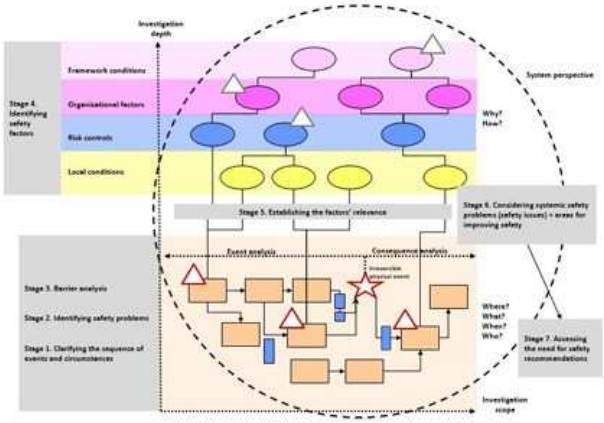
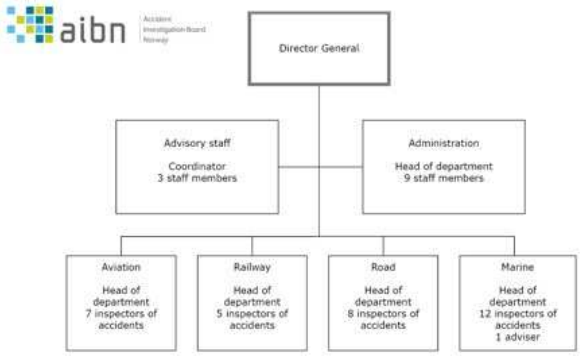
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			 Organisation map  Marine The marine department at the Norwegian Accident Investigation Board (AIBN) was established 1 July 2008. The sole objective of investigating an accident is to determine its circumstances and causes, with the aim of improving the safety of life at sea and the avoidance of accidents in the future. It is not the Board's task to apportion blame or liability. In accordance with legislation, the board will investigate all marine accidents involving Norwegian passenger ships, as well as accidents involving other Norwegian ships, including fishing vessels, where crew, shipmaster or others have or are assumed to have lost their life. Further, the board may investigate accidents involving foreign ships that occur in Norwegian territorial waters in addition to accidents with foreign ships in other waters when the flag State consents or if Norwegian jurisdiction can be applied in accordance with international law. The Accident Investigation Board may also investigate other marine accidents, including accidents with recreational craft, if clarification of the causes may contribute to increased safety at sea. The former arrangement with maritime inquiries will be replaced by the new legislation. The police will maintain the assessment of accidents and incidents with regard to criminal aspects.

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			The arrangement with the "Permanent board of inquiry for certain accidents in the fishing fleet" was suspended from 1 July 2008.
Panama 巴拿馬	Maritime Casualty Investigation Branch Marine Accident Investigation Department (DIAM) Panama Maritime Authority Republic of Panama 巴拿馬海事局，海事事故調查部門	○	http://www.segumar.com/marine-accident-investigation/ Marine Accident Investigation ABOUT US By Board of Directors Resolution No. 006-2007 of September 17, 2007, the new organizational Structure of The Merchant Marine General Directorate integrating among others, the Marine Accidents Investigation Department which is in charge of the investigations of marine casualties and incidents, as well as acts of piracy and armed robber, suffered by Panamanian Flag Vessels, as well as occurring within our territorial waters regardless of the vessel's flag, which might pose a risk to human life or the environment, or has caused loss of life, marine pollution or property damage or involving search and rescue authorities of the State or any other event that needs to be investigated. Likewise all our staff are highly trained and have experience in nautical engineering disciplines, and contingency plans. Also, the DIAM has the administrative staff in charge of the financial aspects, nominations, files, data analysis and publications, providing general support to researchers in every single phase of administrative inquires, preliminary reports and thorough investigations. OBJECTIVE Our objective is conducting research on Maritime Safety Casualties and Incidents directly related to the operation of the vessel, as well as acts of piracy and armed robbery occurring on board Panamanian flag vessels, and in our territorial waters regardless of the vessel flag. The investigation will determine the causes and factors of the accident and marine incident which contributed to the causes and make relevant recommendations in order to prevent hazardous situations and similar threats in the future. Our guidelines are based on Nº106-135-DGMM resolution of September 9, 2013 of the Panama Maritime Authority, Resolution MSC. 255 (84), adopted on May 16, 2008 and Resolution A.1025 (26) adopted on December 2, 2009. WHAT IS A MARINE CASUALTY A marine casualty means an event, or a sequence of events, that has resulted in any of the following which has occurred directly in connection with the operations of a ship: 1. the death of, or serious injury to, a person; 2. the loss of a person from a ship; 3. the loss, presumed loss or abandonment of a ship; 4. material damage to a ship;

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			5. the stranding or disabling of a ship, or the involvement of a ship in a collision; 6. material damage to marine infrastructure external to a ship, that could seriously endanger the safety of the ship, another ship or an individual; or 7. severe damage to the environment, or the potential for severe damage to the environment, brought about by the damage of a ship or ships. However, a marine casualty does not include a deliberate act or omission, with the intention to cause harm to the safety of a ship, an individual or the environment. HUMAN FACTOR Human factor research is generally focused on the analysis of human cognitive abilities and limitations. This includes constructs such as attention, memory, decision-making, action, skilled performance, and stress. Greater understanding of this area enables us to reduce errors and accidents caused by technology. It also helps investigators understand how accidents happen and assists in determining suitable recommendations HOW TO REPORT A MARINE ACCIDENT OR CASUALTY Which accidents need to be reported? All marine accidents and incidents that threaten life at sea and the pollution of the marine environment need to be reported to the Marine Accident Investigation Department (DIAM) by Captains, Operators, Owners, Recognized Organizations, Legal Representatives, Panama Canal, Segumar and State Coastal Administrations. These accidents may be notify by the most efficient possible way such as emails, faxes and phone calls. These notifications should be send by filling out our preliminary report form available at our department. Preliminary Casualty Report Others Preliminary Casualty Report Pollution (Contaminacion) Preliminary Casualty Report Grounding (Encallamiento) Preliminary Casualty Report Sinking (Hundimiento) Preliminary Casualty Report Collision Preliminary Casualty Report Fire or Explosion (Fuego o Explosion) Preliminary Report (Occupational) In addition, should be sent completely filled to Marine Accident Investigation Department the following formats: Crew List (PMA Format) MSC-MEPC.3/Circ. 1 (IMO Annex 1-10) RESOLUTIONS ↑Top

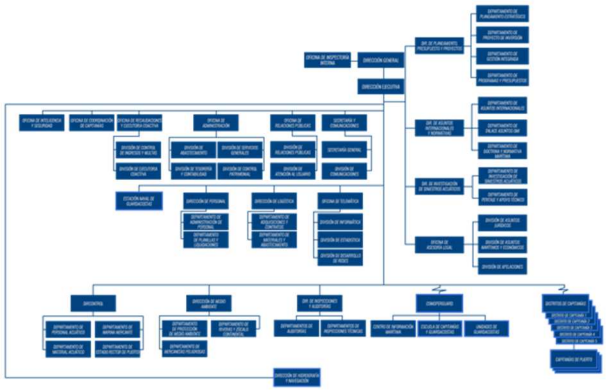
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			RES. No. 106-135-DGMM (9-Sept-2013) NUEVO REGLAMENTO DE INVETS. DE ACCIDENTE 2013 RES. A.1075 (28) Guidelines to assist investigators RES. MSC.255 (84) adoption of Code Res. A.849 (20) RES. MSC.257 (84) adoption of amendments to SOLAS RES. A.1025(26)
Peru 秘魯	Directorate General of Captaincies and Coast Guard DICAPI Director of Marine Casualty Investigation Peru Maritime Authority Peru 秘魯「海軍」轄下的「海巡」轄下的「海事調查處」	○	http://www.dicapi.mil.pe https://www.dicapi.mil.pe (無英文資料) 
Philippines 菲律賓	Maritime Industry Authority Director II Enforcement Service (ES), Marine Safety Investigator Philippines 菲律賓「交通部」轄下「海事局」下面的「海事調查部門」	○	http://www.marina.gov.ph
Poland 波蘭	Polish State Marine Accident Investigation Commission (SMAIC , PKBWM) POLAND 波蘭國家海事調查委員會 2009 年依歐盟	○	http://www.pkbwm.gov.pl The State Commission on Maritime Accident Investigation (Państwa Komisja Badania Wypadków Morskich, PKBWM) is an agency of the Polish government that investigates maritime accidents. It is headquartered in Warsaw. It was established in accordance with the 23 April 2009 European Parliament and Council Directive 2009/18/EC.

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	Directive 2009/18/EC 而設立 委員會由七位成員所組成，外加 12 位不同專長領域專家，以及四個專業團體代表所組成。		波蘭文 LEGAL ACTS APPOINTING AND GOVERNING ACTIVITY OF SMAIC: Act of 31 August 2012 on the State Commission for the Investigation of Marine Accidents Regulation of the Minister of Transport and Maritime Economy of 19 October 2012 on the template for the identity of a member of the State Commission for the Investigation of Marine Accidents Regulation of the Minister of Transport and Maritime Economy of 19 October 2012 regarding authorization for experts and representatives of significantly interested states taking part in the work of the State Commission for the Investigation of Marine Accidents Regulation of the Minister of Transport and Maritime Economy of 19 October 2012 on the detailed scope of reports prepared by the State Commission for the Investigation of Marine Accidents Regulation of the Minister of Transport and Maritime Economy of October 26, 2012 on the manner of performing duties in the scope of securing traces and evidence relating to marine casualty or incident Ordinance of the Minister of Transport, Construction and Maritime Economy of 30 July 2013 on the regulations of the State Maritime Accident Investigation Commission and its registered office Casualty Investigation Code - Resolution MSC.255 (84) COMPOSITION OF THE COMMISSION AND COMMISSION EXPERTS THE STATE MARINE ACCIDENT INVESTIGATION COMMISSION (SMAIC) IS COMPOSED OF THE FOLLOWING PERSONS: Chairman of SMAIC Secretary of SMAIC Member of SMAIC: Krzysztof Kuropieska Member of SMAIC: 2 Vice Chairman of SMAIC Secretariat SMAIC Experts (individual):12 - speciality: fires, fire protection on ship - speciality: electronic navigation, yachting - speciality: electrotechnician - speciality: diving, fast boats - speciality: ship's engeneering

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			- speciality: hydrography and marine cartography, ECDIS, ECS - speciality: navigational safety, optimalization of the decision making processes - speciality: - speciality: electronic navigation, shipping safety - speciality: diving, underwater works - speciality: construction and equipment of small watercraft - speciality: English translator Experts (institutional): 4 J.S. Hamilton Poland S.A., NavSim Polska Sp. z o.o., Polski Rejestr Statków S.A., Vartsila Polska Sp. z o.o.
Portugal 葡萄牙	Accident Investigation Bureau Maritime Office of Prevention and Investigation of Maritime Accidents (GPIAM) Ministry of the Sea Portugal 葡萄牙政府海洋部下設海事事故預防和調查辦公室(GPIAM)海事事故調查局	○	http://www.gama.mm.gov.pt Aeronautical Meteorology Authority and Maritime Accident Investigation Office (GAMA) http://www.gama.mm.gov.pt Mission and Duties The RANGE is a core service of the direct administration of the State, with administrative autonomy, which functions under the Ministry of the Sea Mission: 1 - As national supervisory authority on civil aeronautical meteorology , the DOE is responsible for ensuring compliance with the obligations under the rules of the single European sky, ensure compliance with the standards and recommendations arising from the ratification of the Convention on International Civil Aviation and standards and procedures issued by the World Meteorological Organization, in the context of aeronautical meteorology. 2 - How accident investigation agency in the maritime transport sector , the DOE's mission is to investigate accidents and incidents with the highest efficiency and possible speed, to identify their respective causes, prepare and issue the corresponding reports and make recommendations on maritime safety that reduce maritime accidents. duties: 1 - As the national supervisory authority on civil aeronautical meteorology, the DOE has the following tasks: a) contribute to the safety, regularity and efficiency of civil aviation, supervising and inspecting organizations, activities, equipment and facilities sector of civil aeronautical

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			meteorology, ensuring compliance with international and relevant European standards; b) Ensure procedures, organizations, services, infrastructure, equipment, systems and other affections means the provision of meteorological services to civil aviation and conditions for the provision of civil aviation meteorological services; c) to institute and undertake the administrative offense cases arising from the violation of laws and regulations on civil aeronautical meteorology, and to apply the respective sanctions; d) To cooperate with other public bodies in the field of aeronautical meteorology, producing and providing information to the Government and the public in the area of civil aeronautical meteorology; e) Ensure the technical representation of the Portuguese State in European and international organizations in the field of civil aeronautical meteorology; f) To prepare the annual report of safety oversight in the area of civil aeronautical meteorology, including the annual sent to the European Commission State report as provided for in Article 15 of Implementing Regulation (EU) No 1034/2011 , Decision of 17 October 2011; g) Report to the Civil Aviation Authority (ANAC) occurrences that may determine the suspension or cancellation of permits and certifications granted, pursuant to the applicable regimes, as well as the cessation of activities or closure of plants until they leave to verify the default case for which such removal or shutdown. 2 - As the accident investigation agency in the maritime transport sector , the DOE has the following tasks: a) Develop, autonomous and independently, the technical research activities related to marine casualties and incidents in order to determine the respective causes; b) determine, where the Member State acts as principal investigator, in cooperation with the equivalent bodies of the other substantially interested States, the scope of research and the practical aspects of their implementation; c) Respect the common methodology for investigating marine casualties and incidents adopted by Regulation (EU) No 1286/2011 of the Commission of 9 December 2011; d) ensure that the technical investigation is initiated soon after checking the marine casualty or incident, or, failing that, within two months after the occurrence thereof; e) To ensure the development of safety investigations in accordance with the provisions of Article 11 of Law No. 18/2012 of 7 May, and promote their dissemination, including its findings and any recommendations to the public and, in particular, the maritime sector, within 12 months after the date of the accident;

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			f) To cooperate in the technical investigations conducted by the investigative bodies of other Member States of the European Union or delegate by mutual agreement, these investigative bodies to conduct technical investigations, as provided for in Articles 10, 15 and 16 o Law No. 18/2012 of 7 May; g) To receive and treat all data provided by the National Maritime Authority on the occurrence of marine casualties and incidents; h) Report to the General Directorate of Natural Resources, Maritime Safety and Services and the Directorate General of the Maritime Authority the occurrence of marine casualties and incidents; i) To participate in activities at the level of European or international organizations in the field of research and prevention of maritime accidents, communicating rapidly to the European Commission the need to issue an early warning, if, at any stage of technical research, is deemed necessary urgent intervention at European Union level, to prevent the risk of new accidents; j) notify the European Commission through the European platform of information on maritime accidents (EMCIP), accidents and incidents involving ships flying the national flag, regardless of where the accident or incident occurs and accidents and marine incidents occurring in the territorial sea of the Portuguese State or its internal waters, whatever the flag of the ship or ships involved in them, and also of marine casualties and incidents involving other legitimate interests of the Portuguese State, using for that purpose the model in Annex I to the Act No. 18/2012 of 7 May; k) notifying the European Commission, through EMCIP, the reasons for the decision not to carry out a technical investigation; l) provide the European Commission with data resulting from technical research, on the model of EMCIP; m) to provide the International Maritime Organization the relevant information on the results of the technical investigations carried out; n) To agree with the other Member States of the European Union, under the permanent cooperation framework, the best forms of cooperation in order to: i) enable investigative bodies to share installations, facilities and equipment for the purpose of investigation of wreckage and ship's equipment and other objects of interest for technical investigation, including the extraction and analysis of data from the data recorders travel (VDR) and other electronic devices; ii) provide the technical expert or mutual assistance needed to undertake specific tasks;

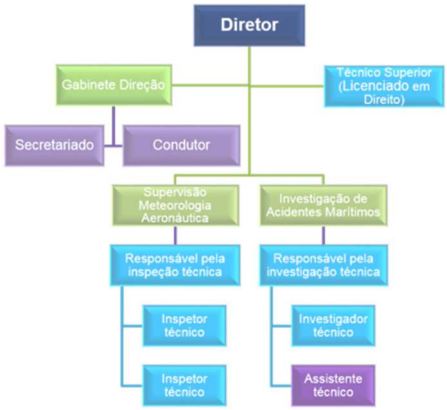
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			iii) obtain and share information relevant to the analysis of data on accidents and making appropriate safety recommendations appropriate to the level of the European Union; iv) establishing common principles for the follow-up of safety recommendations and for the adaptation of investigative methods to scientific and technical progress; v) manage appropriately the early alerts provided for in Article 13 of Law No. 18/2012 of 7 May; vi) establish confidentiality rules for the sharing of witness evidence and the processing of data and other elements provided for in Article 18 of Law No. 18/2012 of 7 May, including in relations with third countries; vii) Organize relevant training activities for individual investigators; viii) promoting cooperation with third countries investigative bodies and international organizations in marine accident investigation in the areas covered by Law No. 18/2012 of 7 May; ix) provide all relevant information to technical investigative bodies. Chart  National legislation laws: Law No. 18/2012 of May 7 - transposes Directive No. 2009/18 / EC of the European Parliament and of the Council of 23 April, establishing the fundamental principles governing the investigation of accidents in technical the maritime transport sector Decrees: Decree-Law No. 236/2015, of October 14 - Creates the Maritimes Accident Investigation Bureau and the Authority for Aeronautical Meteorology (GAMA) and the first amendment of Decree-Law No. 68/2012, of 20 March, which approved the structure of the IPMA, I. P

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			Decree-Law No. 68/2012, of March 20 - Approves the Organic Sea Portuguese Institute and the atmosphere, IP Decree-Law No. 55/2010 of May 31 - Amending Decree-Law No. 186/2007, of 10 May Decree-Law No. 186/2007, of May 10 - Fixed construction conditions, certification and operation of national civil aerodromes, down the operating, administrative requirements, security and facilitation to apply these infrastructure and shall operational classification of national civil airfields forpurpose of airport planning Decree-Law 218/2005, of 14 December - Transposing into national law Directive 2003/42 / EC of the European Parliament and of the Council of 13 June on the occurrence reporting under civil Aviation Decree-Law No. 289/2003, of November 14 - adopt the provisions contained in Parts I and III of Annex No 6 and in the Annex 18 of the International Convention on Civil Aviation, as well as common technical standards JAR-OPS 1 and 3, relating to civil aircraft based in the country operators performing commercial air transport ordinances: Ordinance No. 109/2017 of March 15 - Approves the profile of workers with technical functions of RANGE Dispatches in DR: Order No. 1654/2017, of 21 February - Designates the master Armando Miguel Perez de Jesus Sequeira to hold the position of director of GAMA Framework technical investigation of marine accidents Despite the existing national and international regulations in the field of maritime safety and the industry's investment in safer ships, accidents at sea with very diverse causes, continue to occur. The world increasingly globalized, in very precisely due to shipping, you need ships and use them as a means of transport for almost all types of tradable goods. Therefore, the global seaborne trade continues to grow creating a hazard to ships, seafarers and the environment. So many have been the efforts of the organizations with responsibilities in the field of maritime safety to minimize this risk through better ships, better trained crew and practices that take into account the need to preserve the marine environment. Even so, accidents follow one another, often with loss of life, with the loss of ships and with serious damage to the marine ecosystem and often also for coastal areas. The need to investigate the causes of accidents, especially of the most serious, is obvious. Although the global point of view of maritime safety (in both aceções safety and security)

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			there is much to do to try to prevent accidents, the technical investigation of accidents is an issue that early interest to all those involved in shipping because it seems like a fundamental tool to find technical glitches that can be avoided helping to reduce the risk of new accidents occur. In this context, the instruments and procedures to pursue this task have evolved and today available for technicians who hold these responsibilities. The SOLAS Convention and the Accident Investigation Code are two of the instruments published by IMO in this context that underpin this. This code requires that a safety investigation is made to be held in each very serious accident, defined as an accident of this type that involve the total loss of the ship or a death or serious damage to the environment. The Code also recommends an investigation of serious and less serious maritime accidents and other incidents also, the ship's flag state involved, if it is considered likely that it would provide information that could be used to prevent future accidents. To this end, the European Union published, inserted in maritime safety III package, the Directive 2009/18 / EC of the European Parliament and of the Council of 23 April 2009 establishing the fundamental principles governing the investigation of accidents in the maritime transport sector and amending Directives 1999/35 / EC of the Council and 2002/59 / EC of the European Parliament and of the council. Also published the Regulation (EU) No 1286/2011 of the Commission of 9 December 2011, adopting a common methodology for investigating marine casualties and incidents developed pursuant to Article 5, n. No. 4, of Directive 2009/18 / EC of the European Parliament and the Council. All this legislation is to minimize the risk of maritime accidents making the sea a safer way for people to ships and goods while seeking to minimize the risk of these accidents seriously affect the marine environment. The Directive 2009/18 / EC was transposed in Portugal by Law No. 18/2012 of 7 May, which created the Accident Investigation Bureau Maritime and Aeronautical Meteorology Authority (GAMA) has yet been published Decree-Law No. 140/2012 of 10 July, which contains its mission and duties, repealed by Decree-Law No. 236/2015 of 14 October. The GAMA fits thus investigate accidents and incidents with the highest efficiency and possible speed, to identify their respective causes, develop and disseminate the corresponding reports, promote studies, make recommendations on maritime safety that reduce maritime accidents and ensure participation in committees, organizations or activities, domestic and foreign. http://www.gama.mm.gov.pt/index.php/investigacao-acidentes-maritimos/estatisticas-2/dados-estatisticos

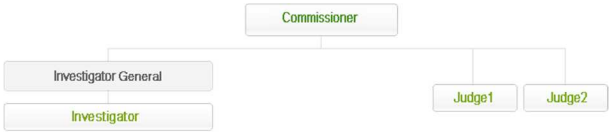
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
Republic of Korea 大韓民國	Korean Maritime Safety Tribunal (KMST) Ministry of Oceans and Fisheries(MOF) Republic of Korea 韓國海洋漁業部(MOF)下設海事安全法庭(KMST)專司海事調查業務 韓國航空及軌道事故調查委員會 ARAIB 則隸屬交通部	○	http://www.kmst.go.kr/eng/main/main.asp 2006 年成立，整合軌道及航空運輸事故調查。 KMST Regional MST (Busan, Incheon, Mokpo, Donghae)  The Aviation and Railway Accident Investigation Board was established on 10 July 2006, integrating the existing Korea Aviation Accident Investigation Board and the Railway Accident Investigation Board, in accordance with the Aviation and Railway Accident Investigation Act. The purpose of the aviation and railway accident investigations is to prevent future accidents through precise determination of the accident causes, and further to improve the peoples' precious lives and property. The Aviation and Railway Accident Investigation Board consists of 12 Members including the Chairman and a Standing Member. The Board itself is divided into the Aviation Sub-Board with six Members and the Railway Sub-Board with six Members including the Chairman and the Standing Member who participate in both Sub-Boards, respectively and are well recognized experts with long experience in relevant areas. The Board affairs, such as the accident investigation activities, are handled by the Secretariat which consists of 25 staff including the Director General, 9 aviation accident investigators and 5 railway accident investigators.

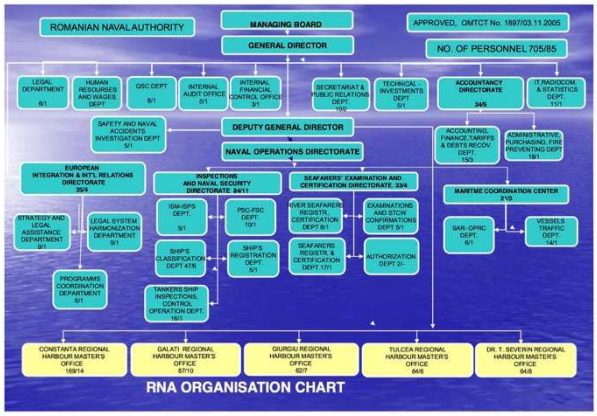
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
Romania 羅馬尼亞	Inspectorate of Civil Navigation Romania Naval Authority 羅馬尼亞海軍直屬 Deputy General Director 的 Safety and Naval Accidents Investigation Dept (Naval disaster and events investigation office)	○	http://www.rna.ro https://portal.rna.ro/english Investigates the navigation events and disasters happened in the national navigation waters involving ships hoisting whatsoever flag, as well as Romanian flagged ships in open sea.  	
Singapore 新加坡	Transport Safety Investigation Bureau Singapore 新加坡交通部的運輸安全調查局是 2016.08.01 重組飛航事故調查局而成的新機構。 TSIB 下設 Air Accident Investigation Bureau (AAIB)與 Marine Safety Investigation Branch (MSIB)	○	http://www.mot.gov.sg https://www.mot.gov.sg/About-MOT/Transport-Safety-Investigation-Bureau/ Transport Safety Investigation Bureau (TSIB) The TSIB is the air and marine accidents and incidents investigation authority in Singapore. It was formed on 1 August 2016 from a restructuring of the Air Accident Investigation Bureau. The mission of the TSIB is to promote aviation and maritime safety through the conduct of independent and objective investigations into air and marine accidents and incidents in accordance with international standards and recommended practices. The sole objective of TSIB's investigation of an accident or incident shall be the prevention of accidents and incidents. It is not the purpose of this activity to apportion blame or liability. When carrying out its investigations, the TSIB will: Gather, record and analyse all available information on the accidents and incidents Determine the causes and/or contributing factors Identify possible safety issues Make safety recommendations to address the safety issues Produce an investigation report The TSIB comprises the Air Accident Investigation Bureau (AAIB) and the Marine Safety Investigation Branch (MSIB).

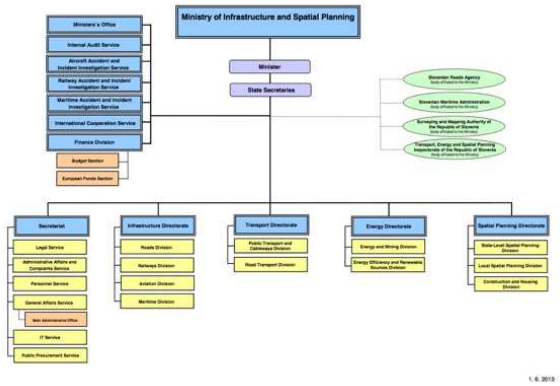
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			Air Accident Investigation Bureau (AAIB) The AAIB is responsible for the investigation of air accidents and serious incidents in Singapore, whether involving local or foreign commercial aircraft. The AAIB also participates in overseas investigations of accidents and serious incidents involving Singapore-registered aircraft or aircraft that is managed by a Singapore operator. The AAIB carries out investigations in accordance with the Convention on International Civil Aviation. Marine Safety Investigation Branch (MSIB) The MSIB is responsible for the investigation of very serious marine casualties involving Singapore-registered ships, as well as those involving non-Singapore registered ships within Singapore territorial waters. The MSIB carries out investigations in accordance with the Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Incident of the International Maritime Organization.
Slovenia 斯洛維尼亞	Marine Accident and Incident Investigation Service Ministry of Infrastructure Slovenia 基礎設施部下面的獨立機關負責航空、海事、鐵道事故調查	○	 http://www.mzi.gov.si/en/legislation_and_documents/ http://www.mzi.gov.si/en/about_the_ministry/ Slovenia Background Air, Maritime and Railway Accident and Incident Investigation Unit is an independent safety authority organized within the Ministry of Infrastructure. Legal basis SIA Slovenia conducts air accidents and incidents investigations under the provisions of ICAO Annex 13, Regulation (EU) No. 996/2010 and in accordance with national Aviation act (Official Gazette RS No. 81/10), Decree on the investigation of aircraft accidents, serious incidents and incidents (Official Gazette 72/03 and 110/05), Regulation on the logistical support to aircraft accident and incident investigation (Official Gazette RS No. 26/07 and 25/13).

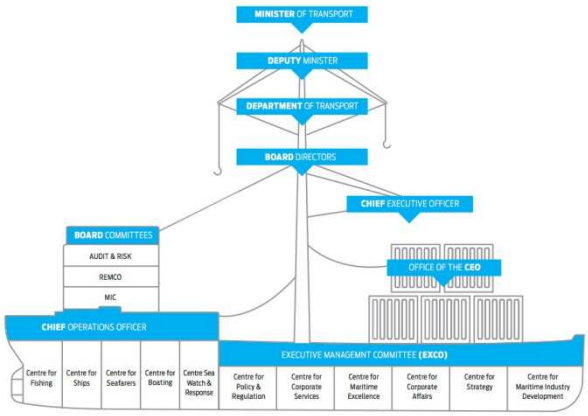
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
South Africa 南非	Marine casualties investigation commission South African Maritime Safety Authority (SAMSA) Ministry of Transport 南非的海事調查委員會是由交通部長任命組成的獨立委員會性質接受並評估南非海事局的海事調查報告，並直接向部長報告	X	South African Maritime Safety Authority Act 1998 Marine casualties investigation commission 51. (1) The Minister may establish an independent commission to receive and evaluate reports on casualties prepared by the Authority in terms of any law referred to in section 2(2). (2) A commission established under subsection (1) reports directly to the Minister. 
Spain 西班牙	Permanent Commission of Investigation of Accidents and Incidents Marítimos (CIAIM) Comisión Permanente de Investigación de Accidentes e Incidentes Marítimos (CIAIM) Ministerio de Fomento 海事事故和事件調查常設委員會(CIAIM)是隸屬於發展部的合議機構，負責調查海事事故和事故的技術原因。 它在海事，港口，沿海當局或其利益可能與其權限相衝突的任何其他方面享有完全的職能獨立性。 CIAIM 所進行的調查不會追究責任的確定，也不追究過錯的歸屬。 CIAIM 由主席、副主席、秘書長及六位不同	X	http://www.mfom.es/MFOM/LANG_CASTELLANO/ORGANOS_COLEGIADOS/CIAIM/

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	領域的專家以及六位候補人士所組成。		
Sweden 瑞典	Swedish Accident Investigation Authority (SHK) 瑞典事故調查委員會(SHK)為司法部的下屬機構。專責調查不論係發生在空中、陸地或海上的重大事故，包括航空、海事、道路、軌道，也包括火災、不良建築結構、礦區安全、環境污染、核電及醫療科技。 SHK的首長必須曾任法官，每一被調查事件亦必須由曾任法官的調查官所主導。 啟動事件調查可以因為發生事故而起的，也可以是由SHK調查官主動申請調查的。	X	The Swedish Accident Investigation Authority (Statens haverikommission - SHK) http://www.havkom.se/en/ The Swedish Accident Investigation Authority (Statens haverikommission - SHK) is a government authority which investigates accidents and incidents with the aim of improving safety. About SHK The Swedish Accident Investigation Authority (Statens haverikommission, SHK) is an independent governmental authority under the Ministry of Justice that investigates all types of serious civil or military accidents and incidents with the aim of improving safety, regardless of whether they occur on land, at sea or in the air. SHK is headed by a Director General who by law must be a former judge. Every investigation must also be led by a former judge. The Director General is responsible to the Government as a whole for the performance of the authority. Areas of investigation Examples of areas where SHK carries out investigations include civil aviation, civil maritime transport, rail and road transports, as well as fires, building construction failures, mining, environmental pollution, nuclear power and medical technology. When will SHK investigate? Whether SHK will investigate an occurrence or not is regulated by law and will vary from one area to another. In some situations an investigation is mandatory while in others it is up to SHK to decide on the basis of the anticipated safety gains of an investigation. Normally, however, it is the seriousness of the event which determines whether or not it will be investigated. If an accident has resulted in multiple fatalities or serious injuries, or if there has been extensive damage to property or the environment, SHK will often initiate an investigation. Three questions to be answered An accident investigation aims at answering three questions: What happened? Why did it happen? What can be done to prevent a similar occurrence from happening in the future, or to mitigate its consequences if it does happen? The investigation shall also provide a basis for assessment of the performance of rescue services and, when appropriate, for improvements of these rescue services. Investigation process The purpose of SHK investigations

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			SHK's investigations are intended to clarify, as far as possible, the sequence of events and their causes, as well as damages and other consequences. The results of an investigation shall provide the basis for decisions aiming at preventing a similar event from occurring in the future, or limiting the effects of such an event. The investigation shall also provide a basis for assessment of the performance of the rescue services and, when appropriate, for improvements to these rescue services. When appropriate, SHK shall also issue recommendations regarding relevant measures to take to enhance safety. SHK does not have any regulatory or supervisory role and its investigations do not deal with issues of guilt, blame or liability for damages. The sole objective of the investigations is safety. The investigation team SHK investigation teams always consist of at least a chairperson (a former judge) and an investigator in charge. Often other investigators with different specialist skills are also a part of the investigation team. Considering the vast range of occurrences that may come under investigation, it is evident that SHK often also needs to engage external experts in various fields. A representative of the regulating authority concerned is normally invited to follow the investigation, however without being a part of the investigation team. Fact-finding presentation meeting At the end of the fact-finding phase, SHK holds a fact-finding presentation meeting, where all the facts so far are presented. All concerned parties are invited to take part in this meeting. A report of the investigation is always published on SHK's website. Investigation process in short Registration of an occurrence report Initial analysis of the occurrence Chair of investigations decides to investigate or not Appointment of the investigation team On site visit Start-up meeting Investigation plan and budget Fact-finding phase Work and follow-up meetings with investigation team Fact-finding presentation meeting for stakeholders Analysis and report drafting phase Draft report is circulated for internal consultation Draft report is circulated for external consultation

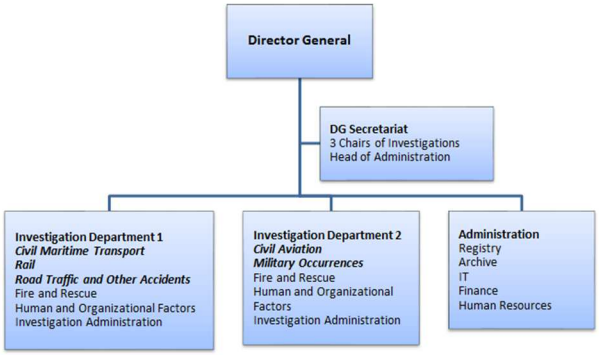
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			Finalizing of report Final report is published Follow-up to safety recommendations Legislation Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation Regulation (EU) No. 1286/2011 adopting a common methodology for investigating marine casualties and incidents Accident Investigation Act (1990:712) Accident Investigation Ordinance (1990:717) Ordinance (2007:860) providing instructions for SHK Organization  Civil Maritime Transport SHK has been investigating maritime accidents and serious incidents since 1990. The Swedish Transport Agency has the role of regulator and supervisory authority for the civil maritime transport sector in Sweden. SHK investigates accidents and incidents that occur in direct connection with the operation of a ship. Which types of vessels are affected by the investigation requirements? Commercial, fishing, and government vessels flying the Swedish flag, re-gardless of where the accident occurred. Foreign vessels in Swedish waters (except vessels used for foreign government purposes). Accidents with vessels (regardless of flag and location) where Sweden has a substantial interest in the occurrence, such as accidents resulting in fatalities of Swedish citizens or significant damage to the Swedish environment. Which accidents and incidents shall be investigated? Very serious accidents, which have occurred in direct connection with the operation of a ship, where:

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			the vessel has been lost or abandoned at sea; a person has died, or several persons have been seriously injured; serious damage has occurred to the environment, or the ship, or property that was not transported by the ship, has sustained extensive damage. Incidents that could have led to a very serious accident shall also be investigated. Preliminary assessment of serious accidents Serious accidents – but which are not considered very serious – shall be subject to a formalized preliminary assessment before SHK takes a decision whether or not to investigate the event. The following are examples of such serious accidents: fires, explosions, collisions, groundings, heavy weather or ice damages, hull cracking or similar events, which have occurred in direct connection with the operation of a ship, if the event has resulted in: the vessel no longer fulfilling the applicable safety requirements, which entails a risk of damage to the vessel or injury to persons on board, or which constitutes an unreasonable threat to the environment; damage to the environment; a breakdown, which in turn has led to the need for towage or assistance from shore; or the loss of a person from the ship. SHK may also investigate less serious accidents and incidents if there are important safety lessons to be learned from such an investigation. Special rules apply to the investigation of occurrences involving foreign ro-ro or a high speed passenger ships in scheduled service. SHK may delegate the responsibility to lead an investigation to another state, provided that the investigation is carried out in accordance with the Casualty Investigation Code of the International Maritime Organization, IMO (the IMO Code). Legislation Accident Investigation Act (1990:712) Accident Investigation Ordinance (1990:717) Ordinance (2007:860) providing instructions for SHK Regulation (EU) No 1286/2011 adopting a common methodology for investigating marine casualties and incidents
Switzerland 瑞士	Swiss Transportation Safety Investigation Board (STSB)	X	https://www.sust.admin.ch/en/stsb-homepage/ The Swiss Transportation Safety Investigation Board (STSB) is the State authority of the Swiss Confederation which has a

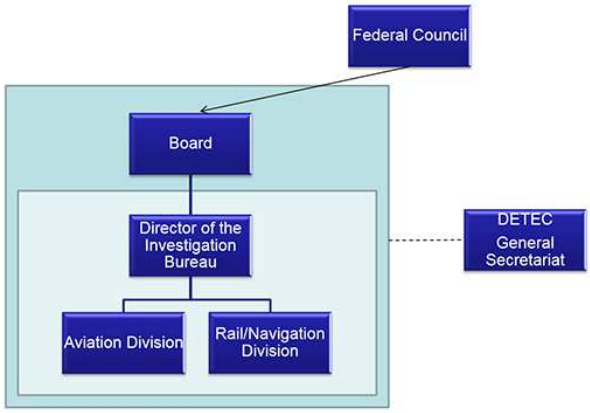
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
	瑞士運輸安全調查委員會(STSB)聯邦政府層級的機構，負責調查涉及軌道，航空，內河航行船舶和海船的事故和危險事件。 航空調查官80位，軌道及水運航行調查官4位外加15位外部專家成員。 2011.11.01航空事故調查局(AAIB)與鐵路軌道、纜車與船舶事故調查局(IRFBA)合併而成立瑞士事故調查委員會(SAIB)，2015.02.01瑞士事故調查委員會(SAIB)更名為瑞士運輸安全調查委員會(STSB)		mandate to investigate accidents and dangerous incidents involving trains, aircraft, inland navigation ships, and seagoing vessels. The aim of this activity is to determine not only the direct causes of such events but also the more deep-seated reasons and other risks associated with them. This sole objective of this form of investigation is to acquire insights by means of which future accidents and hazardous situations can be prevented and which result in improved safety. However, the results of such a safety investigation are not intended to clarify questions of blame and liability.  Organization On 1 November 2011, the Swiss Accident Investigation Board (SAIB) resulted from the merger of the Aircraft Accident Investigation Bureau (AAIB) and the Investigation Bureau for Railway, Funicular and Boat Accidents (IRFBA). The merger of the two services had the objective to concentrate specialized knowledge and to guarantee unity of doctrine in accident investigations. As per 1 February 2015, the Swiss Accident Investigation Board (SAIB) was renamed Swiss Transportation Safety Investigation Board (STSB). This name change was part of a law reform. In this law reform, three ordinances which had previously defined the SAIB were consolidated and combined into one single ordinance. Part of the reform was to transfer the responsibility for the investigation into incidents of Switzerland-registered seagoing vessels to the STSB in addition to the SAIB's former responsibilities. The STSB is an Extra-Parliamentary Committee in accordance to Articles 57a-57g of the Swiss Government and Administration Organisation Act (RVOG). The SUSB investigates incidents in aviation, public transportation and high seas navigation in accordance with the Swiss Ordinance regarding the Safety Investigation of Transportation Incidents (VSZV). The investigation consists of an independent clarification of the technical, operational and human circumstances and causes leading to the event. The investigations' only goal is to increase safety in transportation, i.e. to prevent similar incidents in the future. The target audience consists of professionals in the transportation area

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			and the interested public. The reports are explicitly not addressed to judicial and administrative authorities.
Turkey 土耳其	Accident Research and Investigation Board (KAIK) Ministry of Transport, Maritime Affairs And Communications 土耳其交通部下的事故研究及調查委員會(KAIK)負責海事、航空、道路及軌道安全事故調查	○	Accident Investigation Board of Turkey (KAIK) is establieshed with the promulgation of the Decree Law 655, dated 26/09/2011. KAIK is responsible for accident investigations in the transport sector; namely maritime, aviation, railways and motorways.
United Kingdom 英國	Marine Accident Investigation Branch (MAIB) Department for Transport 運輸部海事事故調查局(MAIB)由35個成員所組成，並有四個經驗豐富的事故調查員團隊，每個團隊有一名主調查員和三名調查員。 MAIB的職責是通過查明海事事故的原因和情況、並與其他方面合作來減小未來再次發生此類事故的可能性來促進海上安全。開展事故調查的唯一目的是為了未來安全。我們不追究責任，不確定賠償責任，也不執法或提出檢控。	X	Marine Accident Investigation Branch (MAIB) https://www.gov.uk/government/organisations/marine-accident-investigation-branch/about About us The MAIB investigates marine accidents involving UK vessels worldwide and all vessels in UK territorial waters. Our job is to help prevent further avoidable accidents from occurring, not to establish blame or liability. Marine Accident Investigation Branch receives between 1500 and 1800 reports of accidents of all types and severity each year. On average this leads to 30 separate investigations being launched. Who we are We are an independent unit within the Department for Transport. Our 4 experienced accident investigation teams are supported by an administrative team. We're based in Southampton and have 35 members of staff. Our responsibilities We're responsible for: carrying out investigations to determine the causes of accidents at sea publishing reports that include our recommendations on improving safety at sea and the actions we've taken increasing awareness of how marine accidents happen improving national and international co-operation in marine accident investigations Our priorities Our priorities are to: maintain our position as one of the world's leading safety investigation organisations

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			help set standards in marine accident investigation by following best practice and asking those we work with to do the same provide our staff with regular specialised training to keep expertise up to date Regulations and guidance Reporting requirements Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 The Merchant Shipping (Accident Reporting and Investigation) (Amendment) Regulations 2013 Accident Reporting Form MGN 458 Accident reporting and investigation Relevant extracts from the Merchant Shipping Act 1995 259. Powers of inspectors in relation to premises and ships 260. Provisions supplementary to section 259 267. Investigation of marine accidents 292. General functions of Secretary of State
United States of America 美國	National Transportation Safety Board 國家運輸安全委員會 NTSB 聯邦政府(與部同級) 1967 年成立，1974 年立法為獨立機關。NTSB 總部員工約有 400 人。委員會由五位成員組成，任期五年，由總統提名，報請參議院同意。 國家運輸安全委員會負責有關航空、公路、海事、軌道、管道、危害物質等有關的認輸安全調查。	X	https://www.ntsb.gov/Pages/default.aspx History of The National Transportation Safety Board The NTSB originated in the Air Commerce Act of 1926, in which the U.S. Congress charged the U.S. Department of Commerce with investigating the causes of aircraft accidents. Later, that responsibility was given to the Civil Aeronautics Board's Bureau of Aviation Safety, when it was created in 1940. In 1967, Congress consolidated all transportation agencies into a new U.S. Department of Transportation (DOT) and established the NTSB as an independent agency placed within the DOT for administrative purposes. In creating the NTSB, Congress envisioned that a single organization with a clearly defined mission could more effectively promote a higher level of safety in the transportation system than the individual modal agencies working separately. Since 1967, the NTSB has investigated accidents in the aviation, highway, marine, pipeline, and railroad modes, as well as accidents related to the transportation of hazardous materials. In 1974, Congress reestablished the NTSB as a completely separate entity, outside the DOT, reasoning that " ...No federal agency can properly perform such (investigatory) functions unless it is totally separate and independent from any other ... agency of the United States. " Because the DOT has broad operational and regulatory responsibilities that affect the safety, adequacy, and efficiency of the transportation system, and transportation accidents may suggest deficiencies in that system, the NTSB's independence was deemed necessary for proper oversight. The NTSB,

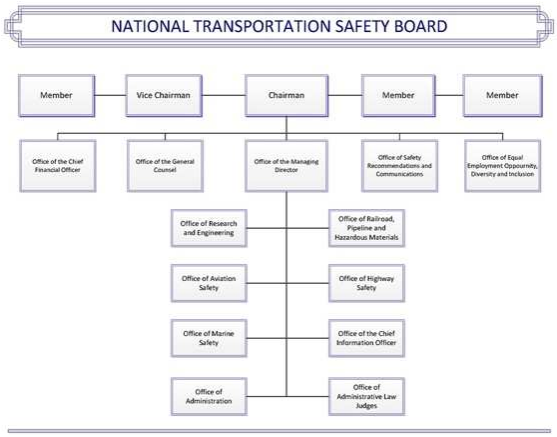
表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			which has no authority to regulate, fund, or be directly involved in the operation of any mode of transportation, conducts investigations and makes recommendations from an objective viewpoint. In 1996, Congress assigned the NTSB the additional responsibility of coordinating Federal assistance to families of aviation accident victims. While originally legislated to provide assistance following major aviation accidents, the program has expanded to provide assistance in all modes of transportation on a case-by-case basis. In 2000, the agency embarked on a major initiative to increase employee technical skills and make our investigative expertise more widely available to the transportation community by establishing the NTSB Academy. The George Washington University Virginia campus was selected as the Academy's home. The NTSB took occupancy of the new facility in August 2003. On October 1, 2006, the name of the NTSB Academy was changed to the NTSB Training Center to better reflect the internal training mission of the facility. Since its inception, the NTSB has investigated more than 132,000 aviation accidents and thousands of surface transportation accidents. On call 24 hours a day, 365 days a year, NTSB investigators travel throughout the country and to every corner of the world to investigate significant accidents and develop factual records and safety recommendations with one aim—to ensure that such accidents never happen again. The NTSB's Most Wanted List of Transportation Safety Improvements highlights safety-critical actions that DOT modal administrations, the USCG, and others need to take to help prevent accidents and save lives. To date, the NTSB has issued over 13,000 safety recommendations to more than 2,500 recipients. Because the NTSB has no formal authority to regulate the transportation industry, our effectiveness depends on our reputation for conducting thorough, accurate, and independent investigations and for producing timely, well-considered recommendations to enhance transportation safety. 

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			The NTSB Board The NTSB has five Board Members, each nominated by the President and confirmed by the Senate to serve 5-year terms. A Member is designated by the President as Chairman and another as Vice Chairman for 2-year terms. The Chairmanship requires separate Senate confirmation. When there is no designated Chairman, the Vice Chairman serves as Acting Chairman. Office of Marine Safety Program Description The Office of Marine Safety (OMS) investigates major marine accidents on or under the navigable waters, internal waters, or the territorial sea of the United States and accidents involving U.S. flagged vessels worldwide to determine the probable cause and identify safety recommendations which will prevent similar events in the future. These responsibilities are specified in the Independent Safety Board Act and regulations promulgated jointly at 49 CFR Part 850 by the Board and the United States Coast Guard (USCG). The Office of Marine Safety also investigates accidents involving U.S. public vessels and non-public vessels, and accidents that may involve the USCG marine safety functions. OMS may also investigate, independently or with another government, marine accidents in which the United States is a party of substantial interest, according to the International Maritime Organization's "Code for the Investigation of Marine Casualties and Incidents." OMS investigations may also include recurring accidents such as those related to recreational boating safety, and catastrophic accidents on U.S. waters whether or not the USCG has jurisdiction. OMS safety recommendations are issued to Federal Government agencies such as the USCG, State agencies, vessel owners and operators, classification societies and maritime industry organizations. OMS also actively participates in US-based and international groups to improve marine investigations and promote maritime safety. The international program requires the review of U.S. position papers related to marine accident investigation and participation at International Maritime Organization (IMO) meetings related to marine accident investigations. The program also involves coordination with other U.S. and foreign agencies to ensure that the Board meets its obligations under IMO conventions (most notably, participation in joint-flag-state marine accident investigations). Further, the program involves cooperation with other marine accident investigations organizations worldwide, such as the Marine Accident Investigators International Forum (MAIIF), representing 34 member states in Europe, the Americas, Asia and Africa. Finally, the OMS tracks developments in marine accident investigation and prevention worldwide.

表 5.2-1 各國海運安全調查機構彙整表			
國家	機關名稱與隸屬	MAIIF	備註
			Marine Accident Investigation ● USCG Investigations Relationship ● Gathering, examining, and analyzing data related to engineering investigations ● Gathering, examining, and analyzing data related to deck operations investigations ● Human factors in marine accidents ● Interviewing ● Medical factors in marine accidents ● Using electronic data in marine accident investigations ● Survival factors investigations

5.3 依機關別分類

固然海運歷史先於航空的歷史，但除少數歷史悠久的海洋強權國國以外，在有關「事故」調查，普遍來說還是以飛安的調查機制較為完整。很多國家的運輸安全機關都是由飛安調查漸漸擴及至海事調查的，例如：克羅埃西亞、芬蘭、匈牙利、拉脫維亞、立陶宛、紐西蘭、挪威、瑞士等國皆是。即便是自 1877 年就開始有海事調查的德國，也強調其有關海事調查體制的很多法令規章是參考自飛安調查體制。

從前節所彙整的各國有關海事調查體制的一些基本資料中，可以歸納為幾個現象：

1. 有來自最高層級只要涉及重要安全議題都可以調查的安全委員會；

2. 有來自中央層級的交通運輸安全組織；

3. 有直接向中央報告的海事調查組織；

4. 有向部長層級（二級機關）報告的海事調查組織；

5. 有向類似中央三級機關報告的海事調查組織；

6. 也有直接委外辦理的海事調查組織。

上述的狀況中在向二級機關報告的海事調查組織算是最複雜的，囿於各國國情不同，海事調查組織或委員會可能隸屬交通、海洋、司法、能源、建設等不同部會而有所區別。當然也有屬於國防部海軍或海巡體系的狀況。

事實上從 ICAO 彙整的飛安調查機關構的名稱彙整中也是可以看到一模一樣的脈絡，有直屬中央或聯邦政府的，也有隸屬交通、司法、能源、建設、觀光、文化甚至航空部的。(詳參：附錄 C Accident Investigation Authorities, ICAO) ，

各國的海運安全調查機構概況簡單列表如下：

表 5.3-1 各國海運安全調查機構屬性分類表

國家	機關名稱	屬性	航空	道路	海事	軌道	管道	其他
Australia	Australian Transport Safety Bureau (ATSB)	中央	○		○	○		
Canada	Transportation Safety Board of Canada (TSB)	中央	○		○	○	○	
Cyprus	Marine Accident Investigation Committee (MAIC)	中央			○			
Indonesia	National Transportation Safety Committee Office (NTSC, KNKT)	中央	○	○	○	○		
Netherlands	Dutch Safety Board (DSB)	中央	○	○	○	○	○	任何有關安全的議題皆是
New Zealand	Transport Accident Investigation Commission (TAIC)	中央	○		○	○		
Switzerland	Swiss Transportation Safety Investigation Board (STSB)	中央	○		○	○		
United States of America	National Transportation Safety Board (NTSB)	中央	○	○	○	○	○	有關有害物質運送議題
Iceland	Icelandic Transportation Safety Board (ITSB)	內政	○	○	○			
Finland	Safety Investigation Authority Finland (SIAF, SIA, OTKES)	司法	○		○	○		其他事故特殊事故

表 5.3-1 各國海運安全調查機構屬性分類表								
國家	**機關名稱**	**屬性**	**航空**	**道路**	**海事**	**軌道**	**管道**	**其他**
Gibraltar	Marine Accident Investigation Compliance Officer	司法			○			
Lithuania	Transport Accident and Incident Investigation Division	司法	○		○	○		
Sweden	Swedish Accident Investigation Authority (SHK)	司法	○	○	○	○	○	軍事的及其他與安全有關的議題
Austria	Austrian Safety Investigation Authority (SIA, SUB)	交通	○		○	○		纜車
Bahamas	The Bahamas Maritime Investigations Department (BMID)	交通			○			
Bulgaria	The Aircraft, Maritime and Railway Accident Investigation Directorate (AMRAID)	交通	○		○	○		
China	China Maritime Safety Administration	交通			○			
Croatia	Air, Maritime and Railway Traffic Accident Investigation Agency (AIN)	交通	○		○	○		
Estonia	Estonian Safety Investigation Bureau (ESIB)	交通	○		○	○		
Germany	Federal Bureau of Maritime Casualty Investigation (BSU)	交通			○			
Greece	Hellenic Bureau of Marine Casualties Investigation (HBMCI)	交通			○			
Hungary	Transportation Safety Bureau (TSB, KBSZ)	交通	○		○	○		
Ireland	The Marine Casualty Investigation Board (MCIB)	交通			○			
Italy	Directorate-General for Rail and Marine Investigations (DIGIFEMA)	交通			○	○		
Japan	Japan Transport Safety Board (JTSB)	交通	○		○	○		
Latvia	Transport Accident and Incident Investigation Bureau	交通	○		○	○		
Luxemburg	Administration of Technical Investigations (AET)	交通	○		○	○		
Malta	Marine Safety Investigation Unit	交通			○			
Norway	Accident Investigation Board Norway (AIBN, SHT)	交通	○	○	○	○		
Philippines	Director II Enforcement Service (ES), Marine Safety Investigator	交通			○			

表 5.3-1 各國海運安全調查機構屬性分類表								
國家	**機關名稱**	**屬性**	**航空**	**道路**	**海事**	**軌道**	**管道**	**其他**
Poland	Polish State Marine Accident Investigation Commission (SMAIC, PKBWM)	交通			○			
Singapore	Transport Safety Investigation Bureau	交通	○		○			
South African	Marine Casualties Investigation Commission	交通			○			
Turkey	Accident Research and Investigation Board (KAIK)	交通	○	○	○	○		
United Kingdom	Marine Accident Investigation Branch (MAIB)	交通			○			
Antigua & Barbuda	Maritime Consulting and Research GmbH	委外			○			
Liberia	The Liberian International Ship & Corporate Registry	委外			○			
Marshall Islands	Deputy Commissioner of Maritime Affairs	委外			○			
Slovenia	Marine Accident and Incident Investigation Service	建設	○		○	○		
Hong Kong	Marine Accident Investigation and Shipping Security Policy Branch	海事			○			
Panama	Marine Accident Investigation Department (DIAM)	海事			○			
Portugal	Office of Prevention and Investigation of Maritime Accidents (GPIAM)	海洋			○			
Republic of Korea	Korean Maritime Safety Tribunal (KMST)	海洋			○			
Argentina	Department of Marine Accident Investigation and Incidents	海軍			○			
Brazil	Maritime Casualty Investigation Department	海軍			○			
Chile	Marine Accident Investigation and Analysis Division	海軍			○			
Peru	Marine Casualty Investigation	海軍			○			
Romania	Inspectorate of Civil Navigation	海軍			○			
France	Marine Accident Investigation Office (BEAmer)	能源			○			
India	Nautical Advisor (DYNA/NA)	航運			○			

表 5.3-1 各國海運安全調查機構屬性分類表								
國家	**機關名稱**	**屬性**	**航空**	**道路**	**海事**	**軌道**	**管道**	**其他**
Spain	Permanent Commission of Investigation of Accidents and Incidents Marítimos (CIAIM)	發展			○			
Denmark	Danish Maritime Accident Investigation Board (DMAIB)	經濟			○			

5.4 其他類型海事調查教育訓練

除本研究報告第 2.6 節 IMO Model Course 3.11 以及第 4.6 節 EMSA CSC 二個海事調查訓練課程之外，國際間有關海事調查教育訓練有下列幾種方式：

1. 美國 NTSB 訓練中心自辦課程(NTSB：Marine Accident Investigation (MS101))，五天，$2,150[22]。課程內容包括：USCG Investigations Relationship; Gathering, examining, and analyzing data related to engineering investigations; Gathering, examining, and analyzing data related to deck operations investigations; Human factors in marine accidents; Interviewing; Medical factors in marine accidents; Using electronic data in marine accident investigations; Survival factors investigations 等範疇。

2. 學位課程(Safety and Accident Investigation - Marine Transport MSc)包含二門必修的核心課程以及四門選修課程，外加個人專題計畫(Individual project 等同碩士論文)，以 part-time 方式研讀，學費(碩士 22,500 英鎊 (三年); 學士後 17,200 英鎊 (二年); 學士後 10,350 英鎊 (一年))，語言能力(IELTS Academic 6.5 overall; TOEFL 92)也有一些要求，課程如下[23]：

[22] https://www.ntsb.gov/Training_Center/Pages/MS101_2017.aspx

[23] https://www.cranfield.ac.uk/courses/taught/safety-and-accident-investigation-marine-transport

(1) Compulsory modules：

- Fundamentals of Investigation
- Applied Marine Accident Investigation

(2) Elective modules：

- Interviewing Techniques for Accident Investigators;
- Investigating Human Performance;
- Composites Manufacturing for High Performance Structures;
- Failure of Materials and Structures;
- Mass Fatality Incidents; Investigation and Evidence Collection;
- Legal Skills for Accident Investigators;
- Structural Integrity;
- GIS Fundamentals;
- Research Methods and Statistics;
- Fires, Explosions and their Investigation;
- Fundamentals of Material Failures for Accident Investigators

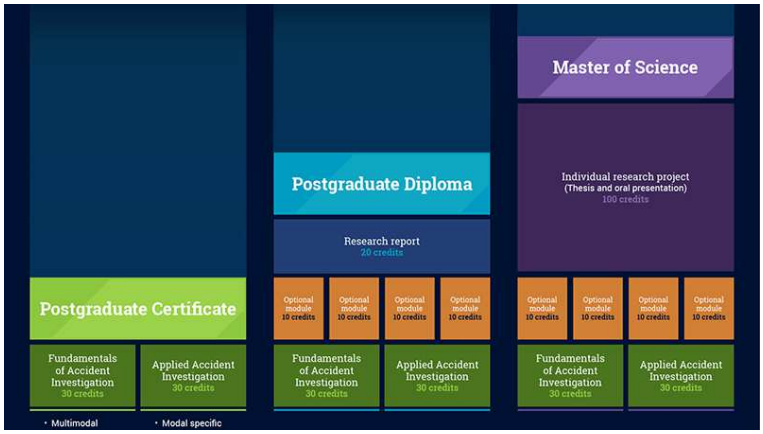


圖 5.4.1 學士後安全及事故調查學程 Postgraduate programme in Safety and Accident Investigation

3. 學程(Applied Marine Accident Investigation)，授課時間三週，費用£4,450，相當於上述學位課程的第二門核心課程[24]。

4. 短期課程：

(1) 澳洲 ATSB 開辦(ATSB Human Factors for Transport Safety Investigators course)，五天，$2,500 澳幣[25]。課程內容包括：Overview of human factors; Human error; Human information processing; Perception; Memory; Attention ;Fatigue; Workload; Stress; Decision making; Situation awareness; Communication; Team resource management; Human factors in maintenance; Alarms and responses; Human factors of survivability; Automation; Ergonomics; Investigating human factors; Safety culture; Risk and resilience; Organisational influences; Medical and environmental conditions 等範疇。

24 https://www.cranfield.ac.uk/courses/short/transport-systems/applied-marine-accident-investigation

25 https://www.atsb.gov.au/about_atsb/training/human-factors/

(2) 澳洲 ATSB 亦曾經派遣資深海事調查官赴印尼(Indonesia's National Transportation Safety Committee (NTSC))開辦三天的(Marine Safety Investigation Course (MSIC))課程[26]。

(3) 澳洲海運學院(AMC)依需求不定期開辦 Maritime Accident Investigation Course, Advanced Maritime Accident Investigation Course，基本課程與進階課程各五天，每門課程$2,500 澳幣[27]。

(4) 英國 Warsash Maritime Academy: Risk Management and Incident Investigation (3 days)[28]。

5. 線上課程(on-line course, e-learning)：

(1) 英國 Lloyd's Maritime Academy：Diploma in Marine Accident Investigation 課程包含：Introduction and Background to Accident Investigation; The Common Causes of Marine Accidents; First Principles of Marine Accident Investigation; Practical Preparation for the Investigation; Investigation Protocol; On Site Risk Assessment and Investigation Management; Data Collection; Analysis of Data; The Investigation Report; Post-Publication of a Marine Accident Report; A Mock Marine Accident Investigation and Report 等範疇[29]。

(2) 克羅埃西亞船級社(Croatian Register Of Shipping)認證的(Online Marine accident and incident investigation course)，課程包含：Causes of Incidents; Human Failure and Human Error; Initiation of

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26 https://www.atsb.gov.au/newsroom/news-items/2017/training-in-marine-safety-investigation/

27 本課程於 2007, 2008 年首次開辦。本人即是本課程教材撰寫人。

28 http://www.warsashacademy.co.uk/courses/course-pages/risk-management-and-incident-investigation/course-details.aspx

29 http://www.lloydsmaritimeacademy.com/event/marine-accident-investigation-distance-learning

an Accident Investigation; Analyses, Tools and Techniques; Evaluation 等範疇[30]。

6. 船級社開辦的課程：

(1) Lloyd's Regsiter: Risk Management and Incident Investigation training course (3 days)[31]。

(2) DNV GL: Incident Investigation (3 days) (USD 1395)；Maritime Risk Management and Incident Investigation(2 days) (1,050 SGD, 20,000 INR)[32]

(3) ABS: Maritime RCA / Incident Investigation (2 days) ($795)[33]

7. 顧問公司開辦的課程：Marine Accident and Incident Investigation Training (2 days) (£485)[34]

5.5 海事調查的實質效益

海事調查章程的核心精神，詳如 CI Code 2.11, 2.12.7, 25.5 所陳，旨在提出安全建議，以防止未來事故的再度發生。

2.11 A *marine safety investigation* means an investigation or inquiry (however referred to by a State), into a marine casualty or marine incident, conducted with the objective of preventing marine casualties and marine incidents in the future. The investigation includes the collection of, and analysis

2.11 海事安全調查係指以防止將來的海事事故和海事事件為目的而進行的對海事事故或海事事件的調查或質詢(不論一個國家對其稱謂如何)。調查包括

[30] https://diversoimpex.hr/en/online-marine-accident-incident-investigation-course/

[31] http://www.lr.org/en/services/training/risk_management_and_incident_investigation.aspx

[32] https://www.dnvgl.com/maritime/maritime-academy/index.html

[33] http://www.abs-group.com/Training/Course-Catalog/Maritime-RCAIncident-Investigation/

[34] 本課程由英國 MAIB 主任調查官講授。http://www.abpmer.co.uk/services/courses-and-conferences/marine-accident-and-incident-investigation-training/

of, evidence, the identification of causal factors and the making of safety recommendations as necessary.	對證據的收集和分析，確定引發因素和提出必要的安全建議。
2.12 A *marine safety investigation report* means a report that contains:	2.12 海事安全調查報告係指包含下列內容的報告：
.7 where appropriate, recommendations with a view to preventing future marine casualties and marine incidents.	.7 適用時，旨在防止將來海事事故和海事事件的建議。
25.5 At any stage during a marine safety investigation interim safety measures may be recommended.	25.5 在海事安全調查的任何階段均可推薦臨時安全措施。

有關這方面的做法，各海事先進國家除了在其各調查案的詳細報告中均已述明外，並透過其年報(Annual Report)向其官長、各有關部門以及社會大眾宣告。茲以美國 NTSB 向國會(Congress)報告的年報資料，英國 MAIB 向交通部長報告的年報資料，加拿大 TSB 向議會(Parliament)報告的年報資料，以及澳大利亞 ATSB 向聯邦政府報告的年報資料為例，簡列如下表，敬供參考：

表 5.5-1 美國 NTSB 2008~2016 年報資料

MS — 2008 At A Glance	
Number of Employees:	HQ: 16
Major Reports and Products Adopted by the Board:	3
Major Accident Launches:	3
Other Accident Launches:	4 Field Investigations
Recommendations Issued:	8
Recommendations Closed:	10

MS — 2009 At A Glance	
Number of Employees: HQ only:	17
Recommendations	
Recommendations Issued	20
Closed in Acceptable Status	14
Closed in Unacceptable Status	4
Major Reports and Products Adopted by the Board	
Major Reports:	4
Summary Reports:	1
Special Investigation Reports:	0
Accident Briefs:	0
Regional Accident Reports:	0
Accident Launches	
Major Accident Launches:	1
Field Investigation Accident Launches:	5

Office of Marine Safety 2010 at a Glance	
Recommendations	
Recommendations Issued	7
Recommendations Closed in Acceptable Status	8
Recommendations Closed in Unacceptable Status	0
Major Reports and Products Adopted by the Board	
Major Reports	1
Accident Briefs	2
Accident Launches	
Major Accident Launches	2
Field Investigation Accident Launches	2

Office of Marine Safety 2011 At A Glance	
Major Accident Launches	1
Field Investigation Accident Launches	1
International Accident Launches	1
Major Reports	3
Accident Briefs	3
Recommendations Issued	27
Recommendations Closed in Acceptable Status	10
Recommendations Closed in Unacceptable Status	3

Office of Marine Safety 2012 At A Glance	
Recommendations Issued	10
Recommendations Closed in Acceptable Status	6
Recommendations Closed in Unacceptable Status	0
Major Reports	2
Accident Briefs	2
Major Accident Launches	1
Field Investigation Accident Launches	4

表 5.5-1 美國 NTSB 2008~2016 年報資料

Table 6: 2013 MS Statistics

Recommendations Issued	11
Recommendations Closed/Acceptable Status	24
Recommendations Closed/Unacceptable Status	5
Major Reports	2
Major Accident Launches	2
Accident Briefs	19
Field Investigation Accident Launches	19
International Marine Investigations	3

Table 7: 2014 MS Statistics

Recommendations Issued	13
Recommendations Implemented	7
Recommendations Closed Unacceptable	4
Major Reports	1
Major Accident Launches	1
Accident Briefs	23
Field Investigation Accident Launches	22
International Marine Investigations	2
Safety Alerts	2

Table 4: CY 2015 MS Statistics

Safety Recommendations Issued	12
Safety Recommendations Implemented	3
Safety Recommendations Closed Unacceptable	1
Major Reports	3
Major Accident Launches	3
Accident Briefs	26
Field Investigation Accident Launches (Briefs)	34
International Marine Investigations Completed	2
International Marine Launches	3
Other Products Produced	1

Table 4: 2016 Office of Marine Safety Statistics

Recommendations Issued	27
Recommendations Closed Acceptable	5
Major Reports	2
Major Accident Launches	2
Accident Briefs	26
Field Investigation Accident Launches (Briefs)	39
International Marine Investigations / SIS (Completed)	7
Public Joint Investigative Hearings with USCG	2
Other Products Produced	5

表 5.5-2 英國 MAIB 2011~2016 年報資料

MAIB ANNUAL REPORT 2011

RECOMMENDATION RESPONSE STATISTICS 2011

57 recommendations were issued in 2011. Of these the percentage of all recommendations that are either ***accepted*** or ***accepted yet to be implemented*** is **93.0 %**.

Throughout the report recommendations are categorised under four broad headings according to the industry sector to which they apply, General Maritime, Commercial Shipping, Fishing Vessels or Leisure Vessels.

Focus	Total	Accepted – Action Implemented	Accepted – Action yet to be Implemented	Partially Accepted	Rejected	No Response Received
Commercial Shipping	28	13	13	2	-	-
Fishing Vessels	12	7	4	-	-	1
Leisure Vessels	8	6	2	-	-	-
General Maritime	9	7	2	-	-	-
Total	57	33	21	2	-	1

Details of all these recommendations are at Sections A-C.

RECOMMENDATION RESPONSE STATISTICS 2004 to 2010

The following table shows the equivalent status of recommendations issued in 2004 to 2010 as published in the MAIB's previous Recommendations Annual Reports.

Year	Total	Accepted Action Implemented	Accepted Action yet to be Implemented	Partially Accepted	Rejected	No Response Received
2010	50	36	14	-	-	-
2009	117	74	29	7	-	7
2008	110	71	31	5	-	3
2007	136	109	23	1	1	2
2006	139	103	30	3	3	-
2005	140	122	14	1	1	2
2004	171	93	52	11	11	4

Of the 193 recommendations ***accepted – yet to be implemented*** (at time of publication of relevant annual report):

- **88.1%** have now been ***fully implemented***
- **11.9%** remain ***planned to be implemented***.

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MAIB ANNUAL REPORT 2012

RECOMMENDATION RESPONSE STATISTICS 2012

54 recommendations were issued in 2012. Of these, the percentage of all recommendations that are either ***accepted*** or ***accepted yet to be implemented*** is **94.4 %**.

Throughout the report recommendations are categorised under four broad headings according to the industry sector to which they apply: General Maritime, Commercial Shipping, Fishing Vessels or Leisure Vessels.

Focus	Subtotal	Accepted Action Implemented	Accepted Action yet to be Implemented	Partially Accepted	Rejected	No Response Received
Commercial Shipping	36	27	9	-	-	-
Fishing Vessels	7	5	-	-	-	2
Leisure Vessels	3	2	-	-	1	-
General Maritime	8	7	1	-	-	-
Total	54	41	10	-	1	2

Details of all these recommendations are at Sections A-C.

RECOMMENDATION RESPONSE STATISTICS 2004 to 2011

The following table shows the equivalent status of recommendations issued in 2004 to 2011 as published in the MAIB's previous Recommendations Annual Reports.

Year	Total	Accepted Action Implemented	Accepted Action yet to be Implemented	Partially Accepted	Rejected	No Response Received
2011	57	33	21	2	-	1
2010	50	36	14	-	-	-
2009	117	74	29	7	-	7
2008	110	71	31	5	-	3
2007	136	109	23	1	1	2
2006	139	103	30	3	3	-
2005	140	122	14	1	1	2
2004	171	93	52	11	11	4

Of the 214 recommendations listed as ***accepted – yet to be implemented*** (at time of publication of relevant annual report):

- **87.4%** have now been ***fully implemented***
- **12.6%** remain ***planned to be implemented***.

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RECOMMENDATION RESPONSE STATISTICS 2013

80 recommendations were issued to **90** addressees in 2013. Of these, the percentage of all recommendations that are either ***accepted*** or ***accepted yet to be implemented*** is **96.7%**.

Year	Total	Accepted Action		Partially Accepted	Rejected	No Response Received
		Implemented	Yet to be Implemented			
2013	90	56	31	1	1	-

1 recommendation has been withdrawn by the MAIB.

RECOMMENDATION RESPONSE STATISTICS 2004 to 2012

The following table shows the equivalent status of recommendations issued in 2004 to 2012 as published in the MAIB's previous Recommendations Annual Reports.

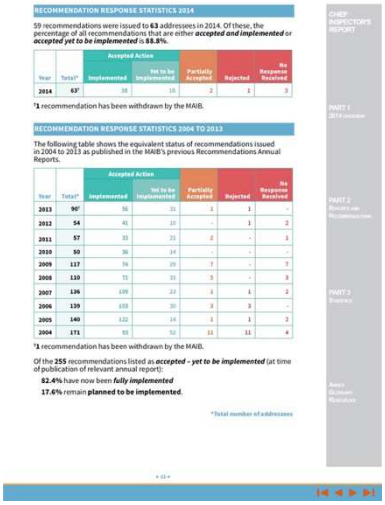
Year	Total	Accepted Action		Partially Accepted	Rejected	No Response Received
		Implemented	Yet to be Implemented			
2012	54	41	10	-	1	2
2011	57	33	21	2	-	1
2010	50	36	14	-	-	-
2009	117	74	29	7	-	7
2008	110	71	31	5	-	3
2007	136	109	23	1	1	2
2006	139	103	30	3	3	-
2005	140	122	14	1	1	2
2004	171	93	52	11	11	4

Of the **224** recommendations listed as ***accepted – yet to be implemented*** (at time of publication of relevant annual report):

- **89.7%** have now been ***fully implemented***
- **10.3%** remain **planned to be implemented**.

CHIEF INSPECTOR'S REPORT
SECTION 1 2013 OVERVIEW
SECTION 2 REPORTS AND RECOMMENDATIONS
SECTION 3 STATISTICS
ANNEX GLOSSARY RESOURCES

表 5.5-2 英國 MAIB 2011~2016 年報資料



RECOMMENDATION RESPONSE STATISTICS 2014

59 recommendations were issued to **63** addressees in 2014. Of these, the percentage of all recommendations that are either ***accepted and implemented*** or ***accepted yet to be implemented*** is **88.8%**.

Year	Total*	Accepted Action: Implemented	Accepted Action: Yet to be Implemented	Partially Accepted	Rejected	No Response Received
2014	63[1]	38	18	2	1	3

[1] 1 recommendation has been withdrawn by the MAIB.

RECOMMENDATION RESPONSE STATISTICS 2004 TO 2013

The following table shows the equivalent status of recommendations issued in 2004 to 2013 as published in the MAIB's previous Recommendations Annual Reports.

Year	Total*	Accepted Action: Implemented	Accepted Action: Yet to be Implemented	Partially Accepted	Rejected	No Response Received
2013	90[1]	56	31	1	1	-
2012	54	41	10	-	1	2
2011	57	33	21	2	-	1
2010	50	36	14	-	-	-
2009	117	74	29	7	-	7
2008	110	71	31	5	-	3
2007	136	109	23	1	1	2
2006	139	103	30	3	3	-
2005	140	122	14	1	1	2
2004	171	93	52	11	11	4

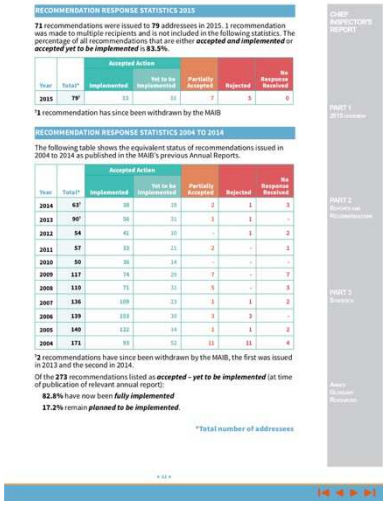
[1] 1 recommendation has been withdrawn by the MAIB.

Of the **255** recommendations listed as ***accepted – yet to be implemented*** (at time of publication of relevant annual report):

82.4% have now been ***fully implemented***

17.6% remain **planned to be implemented**.

*Total number of addressees



RECOMMENDATION RESPONSE STATISTICS 2015

71 recommendations were issued to **79** addressees in 2015. 1 recommendation was made to multiple recipients and is not included in the following statistics. The percentage of all recommendations that are either ***accepted and implemented*** or ***accepted yet to be implemented*** is **83.5%**.

Year	Total*	Accepted Action: Implemented	Accepted Action: Yet to be Implemented	Partially Accepted	Rejected	No Response Received
2015	79[1]	33	33	7	5	0

[1] 1 recommendation has since been withdrawn by the MAIB

RECOMMENDATION RESPONSE STATISTICS 2004 TO 2014

The following table shows the equivalent status of recommendations issued in 2004 to 2014 as published in the MAIB's previous Annual Reports.

Year	Total*	Accepted Action: Implemented	Accepted Action: Yet to be Implemented	Partially Accepted	Rejected	No Response Received
2014	63[1]	38	18	2	1	3
2013	90[1]	56	31	1	1	-
2012	54	41	10	-	1	2
2011	57	33	21	2	-	1
2010	50	36	14	-	-	-
2009	117	74	29	7	-	7
2008	110	71	31	5	-	3
2007	136	109	23	1	1	2
2006	139	103	30	3	3	-
2005	140	122	14	1	1	2
2004	171	93	52	11	11	4

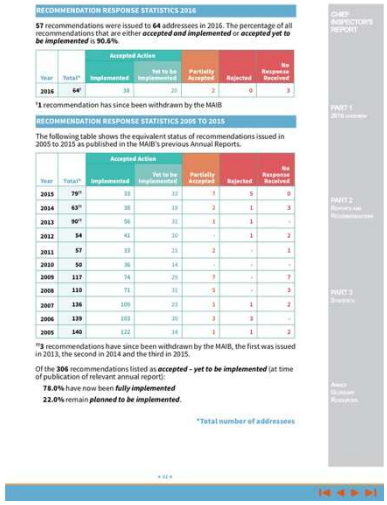
[1] 2 recommendations have since been withdrawn by the MAIB, the first was issued in 2013 and the second in 2014.

Of the **273** recommendations listed as ***accepted – yet to be implemented*** (at time of publication of relevant annual report):

82.8% have now been ***fully implemented***

17.2% remain ***planned to be implemented***.

*Total number of addressees



RECOMMENDATION RESPONSE STATISTICS 2016

57 recommendations were issued to **64** addressees in 2016. The percentage of all recommendations that are either ***accepted and implemented*** or ***accepted yet to be implemented*** is **90.6%**.

Year	Total*	Accepted Action: Implemented	Accepted Action: Yet to be Implemented	Partially Accepted	Rejected	No Response Received
2016	64[1]	38	21	2	0	3

[1] 1 recommendation has since been withdrawn by the MAIB

RECOMMENDATION RESPONSE STATISTICS 2005 TO 2015

The following table shows the equivalent status of recommendations issued in 2005 to 2015 as published in the MAIB's previous Annual Reports.

Year	Total*	Accepted Action: Implemented	Accepted Action: Yet to be Implemented	Partially Accepted	Rejected	No Response Received
2015	79[1]	33	33	7	5	0
2014	63[1]	38	18	2	1	3
2013	90[1]	56	31	1	1	-
2012	54	41	10	-	1	2
2011	57	33	21	2	-	1
2010	50	36	14	-	-	-
2009	117	74	29	7	-	7
2008	110	71	31	5	-	3
2007	136	109	23	1	1	2
2006	139	103	30	3	3	-
2005	140	122	14	1	1	2

[1] 3 recommendations have since been withdrawn by the MAIB, the first was issued in 2013, the second in 2014 and the third in 2015.

Of the **306** recommendations listed as ***accepted – yet to be implemented*** (at time of publication of relevant annual report):

78.0% have now been ***fully implemented***

22.0% remain ***planned to be implemented***.

*Total number of addressees

表 5.5-3 加拿大 TSB 2008~2017 年報資料

Table 1: Safety Outputs by the TSB

Sector	Recommendations[3]	Safety Advisories	Safety Information Letters
Marine	2	7	11
Pipeline	0	0	1
Rail	2	11	12
Air	1	13	8
TOTAL	5	31	32
Note: In 2008-2009, a total of 5 marine safety concerns, 4 rail safety concerns and 1 air safety concern were identified.			

2008-2009

Table 1: Safety Outputs by the TSB

Sector	Recommendations[3]	Safety Advisories	Safety Information Letters
Marine	1	7	9
Pipeline	0	0	0
Rail	4	8	9
Air	6	9	2
TOTAL	11	24	20
Note: In 2009–2010, a total of 1 marine safety concern, 4 rail safety concerns and 5 air safety concerns were identified.			

2009-2010

Table 1: Safety Outputs by the TSB

Sector	Recommendations[3]	Safety Advisories	Safety Information Letters
Air	6	6	3
Marine	0	5	6
Rail	1	9	8
Pipeline	0	2	0
TOTAL	7	22	17
Note: In 2010–2011, a total of 2 air safety concerns, 1 marine safety concern, and 2 rail safety concerns were identified.			

2010-2011

Table 1. Safety communications by the TSB, 2011–2012

Sector	Recommendations	Safety advisory letters	Safety information letters	Safety concerns
Marine	2	7	10	0
Pipeline	0	1	0	0
Rail	0	9	18	0
Air	0	5	0	1
Total	2	22	28	1

2011-2012

Table 1: Safety communications

Sector	Recommendations	Safety advisories	Safety information letters	Safety concerns
Marine	0	6	7	2
Pipeline	0	1	0	0
Rail	6	17	24	2
Aviation	4	1	0	1
TOTAL	10	25	31	5

2013-2014

Table 1: Safety communications

Sector	Recommendations	Safety advisories	Safety information letters	Safety concerns
Marine	0	6	12	0
Pipeline	0	0	0	0
Rail	2	16	5	0
Aviation	0	4	3	2
TOTAL	2	26	20	2

2014-2015

Table 1: Safety communications

Sector	Recommendations	Safety advisories	Safety information letters	Safety concerns
Marine	0	1	11	1
Pipeline	0	0	1	0
Rail	5	20	20	2
Aviation	2	1	1	0
TOTAL	7	22	33	3

2015-2016

Table 2. Safety communications

Sector	Recommendations	Safety advisories	Safety information letters	Safety concerns
Marine	5	5	11	0
Pipeline	0	1	0	0
Rail	1	12	19	1
Aviation	14	2	0	0
TOTAL	20	20	30	1

2016-2017

表 5.5-3 加拿大 TSB 2008~2017 年報資料

Table 1: Safety communications

Sector	Recommendations	Safety advisories	Safety information letters	Safety concerns
Marine	0	5	6	0
Pipeline	0	0	2	0
Rail	0	4	14	2
Aviation	2	5	2	1
TOTAL	2	14	24	3

2012-2013

Table 3. Board assessments of responses to recommendations, 1990–2017

	Marine	Pipeline	Rail	Air	Total Recommendations
Fully Satisfactory	128	20	127	172	447
Satisfactory Intent	5	0	10	22	37
Satisfactory in Part	10	0	7	47	64
Unsatisfactory	4	0	0	22	26
Unable to Assess	0	0	0	6	6
Not Yet Assessed	5	0	1	0	6
Number of recommendations	152	20	145	269	586

1990-2019

表 5.5-4 澳大利亞 ATSB 2011~2017 年報資料

Table 15 Summary of safety issues identified in 2011–12

NUMBER OF SAFETY ISSUES	AVIATION	MARINE	RAIL	TOTAL
Critical	None	None	None	0
Significant	11	12	5	28
Minor	36	17	20	73
Total	**47**	**29**	**25**	**101**

Table 18 Summary of safety actions in the 2011–12

SAFETY ACTIONS	AVIATION	MARINE	RAIL	TOTAL
ASSOCIATED WITH SIGNIFICANT SAFETY ISSUES				
Pro-active industry action	20	12	5	37
SANs	2	0	0	2
Safety recommendations	1	0	0	1
ASSOCIATED WITH MINOR SAFETY ISSUES				
Pro-active industry action	36	13	18	67
SANs	0	3	2	5
Safety recommendations	0	0	0	0
NOT ASSOCIATED WITH A SAFETY ISSUE				
SANs	4	0	0	4
Safety recommendations	0	0	0	0
Total	63	28	25	**116**

Summary of safety issues identified in 2012–13

NUMBER OF SAFETY ISSUES	AVIATION	MARINE	RAIL	TOTAL
Critical	None	None	None	0
Significant	10	20	4	34
Minor	28	13	8	49
Total	**38**	**33**	**12**	**83**

Summary of safety actions in 2012–13

SAFETY ACTIONS	AVIATION	MARINE	RAIL	TOTAL
Associated with Significant safety issues				
Pro-active industry action	12	16	4	32
SANS	0	2	0	2
Safety recommendations	2	12	1	15
Associated with Minor safety issues				
Pro-active industry action	31	9	8	48
SANS	0	0	0	0
Safety recommendations	0	0	0	0
Not associated with a safety issue				
SANS	0	0	0	0
Safety recommendations	0	0	0	0
Total	**45**	**39**	**13**	**97**

Table 3: Number of safety issues identified in 2013–14

SAFETY ISSUE RISK	AVIATION	MARINE	RAIL	TOTAL
Critical	None	None	None	**0**
Significant	25	14	8	**47**
Minor	14	7	35	**56**
Total	**39**	**21**	**43**	**103**

Table 4: Number of safety issues identified in 2014–15

SAFETY ISSUE RISK	AVIATION	MARINE	RAIL	TOTAL
CRITICAL	None	None	None	0
SIGNIFICANT	16	6	17	39
MINOR	4	6	42	52
Total	**20**	**12**	**59**	**91**

Table 8: Numbers of safety actions released in 2013–14

SAFETY ACTION TYPE	AVIATION	MARINE	RAIL	TOTAL
Associated with significant safety issues				
Proactive safety action	16	17	7	40
Safety Advisory Notice	1	2	0	3
Safety Recommendation	10	3	2	15
Associated with minor safety issues				
Proactive safety action	22	9	23	54
Safety Advisory Notice	0	0	2	2
Safety Recommendation	0	0	8	8
Not associated with a safety issue				
Safety Advisory Notice	1			1
Total	**50**	**31**	**42**	**123**

Table 9: Number of safety actions released in 2014–15

SAFETY ACTION TYPE	AVIATION	MARINE	RAIL	TOTAL
Associated with significant safety issues				
Proactive safety action	14	3	16	33
Safety Advisory Notice	0	1	1	2
Safety Recommendation	6	6	1	13
Associated with minor safety issues				
Proactive safety action	4	8	36	48
Safety Advisory Notice	0	2	0	2
Safety Recommendation	0	4	10	14
Total	**24**	**24**	**64**	**112**

Table 5: Number of safety issues identified in 2015–16

SAFETY ISSUE RISK	AVIATION	MARINE	RAIL	TOTAL
CRITICAL	0	0	0	0
OTHER	32	23	30	85
Total	**32**	**23**	**30**	**85**

Table 10: Number of safety actions released in 2015–16

SAFETY ACTION TYPE	AVIATION	MARINE	RAIL	TOTAL
Proactive safety action	31	16	22	69
Safety Advisory Notice	0	3	0	3
Safety recommendation	5	6	14	25
Total	**36**	**25**	**36**	**97**

Table 7: Number of safety issues identified in 2016–17

Safety issue risk	Aviation	Marine	Rail	Total
Critical	1	0	0	**1**
Other	12	10	11	**33**
Total	13	10	11	34

表 5.5-4 澳大利亞 ATSB 2011~2017 年報資料

Table 13: Number of safety actions released in 2016–17

Safety action type	Aviation	Marine	Rail	Total
Proactive safety action	8	11	7	26
Safety Advisory Notice	3	1	0	4
Safety recommendation	8	2	4	14
Total	**19**	**14**	**11**	**44**

各國年報中還包括本計畫所關心的人力、財務報表等詳細資料，如附件 pdf 電子檔案(請參考附錄 D)。

5.6 國際合作

有關海事調查的法源基礎，在聯合國海洋法公約(UNCLOS)第 94 條(船旗國的義務)第 7 項規定：「每一國家對於涉及懸掛該國旗幟的船舶在公海上因海難或航行事故對另一國國民造成死亡或嚴重傷害，或對另一國的船舶或設施、或海洋環境造成嚴重損害的每一事件，都應由適當的合格人士一人或數人或在有這種人士在場的情況下進行調查。對於該另一國就任何這種海難或航行事故進行的任何調查，船旗國應與該另一國合作。」 即以敘明。此外在 2006 海事勞工公約 Regulation 5.1.6「Marine casualties 海事事故」第二項中亦述明：「成員國應相互合作，以便利本規則第 1 款所述的嚴重海事事故調查。」

海事調查章程的立法精神上，如在 CI Code 10.1, 16.3 所陳，亦提出了有關合作的重要性，並強調必須“盡實際可能(extent practicable)”的合作。

10.1 All substantially interested States shall co-operate with the marine safety investigating State(s) to the extent practicable. The marine safety investigating State(s) shall provide for the participation of the substantially interested States to the extent practicable*.

** The reference to "extent practicable" may be taken to mean, as an example, that co-operation or participation is limited because national laws make it impracticable to fully co-operate or participate.*

10.1 所有有重大利益的國家均須盡實際可能地與海事安全調查國合作。海事安全調查國須盡實際可能地為有重大利益的國家的參與做好安排*。

** 提及“盡實際可能”可被認為意指，例如，合作或參與受限，因為國家法律使全面合作或參與不可行。*

16.3 **Co-operation**：Where it is practicable and consistent with the requirements and recommendations of this Code, in particular chapter 10 on Co-operation, the marine safety

16.3 **合作**：當實際可行並與本規則，特別是關於合作的第 10 章的要求和建議相一致時，海事安全調查國應尋求促進開展

investigating State(s) should seek to facilitate maximum co-operation between substantially interested States and other persons or organizations conducting an investigation into a marine casualty or marine incident.	海事事故或海事事件調查的有重大利益的國家及其它個人或組織之間的合作。

航運市場的國際特性是非常鮮明的。船會跑，船員也會跑，有可能涉及我國管轄船舶或船員在他國出事，亦有可能有他國管轄船舶或船員在我國出事。合作調查、共同調查是有必要的，而且是經常要的。相對的，調查員的能否有共同依循的調查標準與作業程序，能否有彼此認同的價值觀與溝通能力也就顯得格外的重要。

為了加強彼此間的交流，海事調查員間有幾個跨國性的組織，如：

1. Marine Accident Investigators International Forum, MAIIF[35]

2. European Marine Accident Investigators International Forum, EMAIIF

3. EMSA Permanent Cooperation Framework (PCF)[36]

4. Marine Accident Investigators Forum in Asia, MAIFA[37]

[35] https://maiif.org

[36] http://emsa.europa.eu/pcf.html

[37] https://www.maifa.org/

第六章 結論與建議

本項海運安全調查機制之檢討與分析工作，係飛航安全調查委員會提案該會轉型為全運具之運輸安全調查委員會期間，交通部指示本所應深入瞭解國際上各國事故調查機構之實質運作機制，基於海事安全調查已有國際規範，爰針對國內外海運安全調查機構進行盤點、並研擬與國際接軌之改善建議，以供行政院飛航安全調查委員會(108 年 8 月 1 日改制為國家運輸安全調查委員會)、交通部及所屬機關研議參採。

6.1 結論

依本案工作項目臚列研究發現與心得如後：

1. 各國有關海事調查的定義均遵循 Resolution MSC.255(84)《海事事故或事件安全調查國際標準和建議措施規則(Casualty Investigation Code, CI Code)》，以及 Resolution A.1075(28)《協助調查員施行海事調查章程之準則(Guidelines to Assist Investigators in the Implementation of the Casualty Investigation Code (Resolution MSC.255(84)))，特別是：

   (1) 海事安全調查的目的不是為了劃分過失或確定責任，而是為了防止將來發生海事事故和海事事件而進行的調查。

   (2) 海事安全調查應分離於並獨立於任何其它形式的調查。

   (3) 本規則的目的並非排除任何其它形式的調查，包括為民事、刑事和行政訴訟進行的調查。

   (4) 每個船旗國如據其判斷調查會有助於確定現在規定中有哪裡需要修改，或如果事故產生了對環境的有害影響，均有責任對其任何船舶發生的任何事故進行調查。

(5) 對每一個非常嚴重海事事故，均須進行海事安全調查。

(6) 海事安全調查國須向 IMO 提交，對每一個非常嚴重海事事故所進行海事安全調查報告的最終文本。

(7) 調查的最終報告在正常情況下應予公開發表。

(8) 調查的目的係在確定引發因素和提出必要的安全建議，部分國家規定，調查報告所隨附的建議或推薦改善作為事項有 90 天的必須回應期限，有些並訂定有對個人及機關構不予回應時的罰則。

2. 各國的組織因國情不同以及海權歷史背景不同而各有差異，要點如下：

(1) 海運安全調查機構與海事行政機關基本上是不同的，或是平行的。

(2) 海運安全調查機構有直屬中央或聯邦政府型態的一級機關，也有歸屬部會二級機關。有直接向總統或總理報告，也有直接向部長報告，但多強調是「獨立調查」的精神。除此之外，也有極少數屬三級機關所轄管。

(3) 人力規劃也因上述的分類而異。基本上「海運安全調查委員會」很少有超過十人的委員會，基本上約五人上下，但都可以依所調查案例聘請專家參與調查。

(4) 整個以「海運安全調查委員會」建構的委員會有十餘人的組織，少於十人的專任人員也有，在這種運安會下面的海安委員大約都只有三人左右，但也一樣可以依被調查案例聘請專家參與調查。

(5) 上述二種模式的委員會(不管是 Board, Committee, Division, Directroate 或其他模式類型)，除了有「全職」的委員，也有「兼職」的委員。以日本 Board Members 為例，全職有 8 人，兼職 6 人。

(6) 海運安全調查機構的經費也因位階及其規模各有不同，在各國的年報中均有述明，甚有記載人員薪俸水平及差旅支出規定者。

3. 先進國家海運安全調查機構之安全改善建議事項是列入重要紀錄，在每一單一海事調查報告中即已列出，甚至很多國家也列出未回應改善建議的罰則。以澳洲為例，澳洲政府 TSI Act 25A 即規定：90 天回應以及未回應的計點及個人 3,300 機關、16,500 罰鍰規定。在年度報告中更有統計安全改善建議被採納或執行的統計以及相關的敘述。

4. 海運安全調查機構人才專業性與訓練依 IMO Model Course 3.11 Safety Investigation into Marine Casualties and Incidents 的精神所開辦的課程不少，由國家運輸安全調查機構自辦的、船級社開辦的、學術界開辦的也有。雖然有二、三天的課程，但基本上都是以五天的課程為入門款，再外加一個五天的進階課程。就實質內容而論，以英國 Cranfield 大學的碩士班三年(part-time)的(Safety and Accident Investigation - Marine Transport MSc)課程範疇最為嚴謹。

5. 囿於所有的「專業訓練」都不是強制性的，也就很難有個標準；又礙於每位調查官的個人專業素養與領域不盡相同，訓練的出發點不一樣，所需培訓的領域與專業也就不同。所以如果能有融合 IMO 與 Cranfield 二個體系的培訓規劃，以簽證方式讓調查官們依個人需要補其不足，應該是很好的培訓方式。

6. 國際合作以及國際接軌方式是目前我國海運安全調查所欠缺的，但並不代表不可行。參訪交流、派員出國參加訓練課程、申請加入相

關的海事調查團體，甚至如有涉及我國船舶或人員的海事調查案件時，派人出去共同參與調查等等，都是可行的方式。

6.2 建議

本研究案是以資料彙整為主的研究計畫，關於組織與人事之建議如下述：

1. 海運安全調查委員會

本計畫所謂的「海事調查」機制，指的是能獨立行使調查職權的、能專業、能公平、公正、公開的執行調查工作，甚至可以簡單到像荷蘭的 DSB 一樣，只強調：獨立(Independent)、透明(Transparent)、專業(Professional)。

如果這能做到，海事調查機制不管是以獨立設立「海事安全調查委員會、或是海運安全調查委員會(簡稱海安會)」；或是以飛安會為基礎，擴張調查之客體，納入海事安全調查組織與機制，而擴組成立「運輸安全調查委員會(簡稱運安會)」，不管是採取什麼樣的形式存在皆可。

再述明之，依現在的體制說明，如果比照在行政院下設「飛航安全調查委員會」平行再設一個「海運安全調查委員會」，抑或是將原來的「飛航安全調查委員會」變成「運輸安全委員會」下面再分設航空、海事等不同機關均屬可行。

2. 海運安全調查委員會委員

海事調查所牽涉的專業層次需求相當高，有關海運安全調查委員會委員的遴選方面也就顯得格外的重要。航海、輪機、造船、海事安全、人因、程序、法律、航管、港務每個領域都是重要的組成。

依據 CI Code 15.3「適宜地任命有所需特殊專業技能的調查員參加海事安全調查(appointment of investigators with necessary specialist skill)」、「使用顧問對海事安全調查的任何方面提供專家意見(use of consultants to provide expert advice)」的意義所在。建議海運安全調查委員會委員，應找出有擁有各專業背景般的人才，並能依據每個將被調查的事故特性組成專家團隊進行調查工作。

參考文獻

1. 張開國、方銘川、林忠宏、黃正清、葉祖宏、洪憲忠、沈聖智、李信德、陳世宗、徐玉樹、程建宇、丁漢利、吳怡珊(2014)「與 IMO 海運安全公約及國際海事案件處理規範調和之研究」，交通部運輸研究所研究計畫報告。
2. 方銘川、林忠宏、黃正清、陳世宗、張開國、洪憲忠、徐玉樹(2014)``我國海事調查制度之改善研究"，中華民國船舶機械工程學會會刊第 44 期。
3. 李選士、林彬、陳彥宏、鍾政棋、翁順泰、郭俊良等(2014)「海運安全整體研析及管理策略研究」，交通部研究計畫報告。
4. IMO 相關公約規範。
5. 各國海事調查體制。

附錄 1 MSC.255(84) 海事調查章程

RESOLUTION MSC.255(84)*
(adopted on 16 May 2008)
Adoption of the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident
(CASUALTY INVESTIGATION CODE)

MSC.255(84)決議通過的
《海事事故或事件安全調查國際標準和建議措施規則》

PART I GENERAL PROVISIONS

第 I 部分總則

Chapter 1 PURPOSE

第 1 章目的

1.1 The objective of this Code is to provide a common approach for States to adopt in the conduct of marine safety investigations into marine casualties and marine incidents. Marine safety investigations do not seek to apportion blame or determine liability. Instead a marine safety investigation, as defined in this Code, is an investigation conducted with the objective of preventing marine casualties and marine incidents in the future. The Code envisages that this aim will be achieved through States:

1.1 本規則旨在提供一個通用的方法供各國在對海事事故和海事事件進行海事安全調查時採用。海事安全調查不為劃分過失或確定責任。本規則所定義的海事安全調查是為了防止將來的海事事故和海事事件而進行的調查。本規則認為，實現這一 目的的途徑為，各國：

.1 applying consistent methodology and approach, to enable and encourage a broad ranging investigation, where necessary, in the interests of uncovering the causal factors and other safety risks; and

.1 採用一致的方法和途徑，必要時進行和鼓勵大範圍的調查，以發現引發因素和其他安全風險；及

* 依據 Resolution MSC.390(94) (adopted on 18 November 2014)修訂：Amendments to the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) (Resolution MSC.255(84))

.2 providing reports to the Organization to enable a wide dissemination of information to assist the international marine industry to address safety issues.

.2 提交報告給本組織以供將信息廣為散發，幫助國際海運界解決安全問題。

1.2 A marine safety investigation should be separate from, and independent of, any other form of investigation. However, it is not the purpose of this Code to preclude any other form of investigation, including investigations for action in civil, criminal and administrative proceedings. Further, it is not the intent of the Code for a State or States conducting a marine safety investigation to refrain from fully reporting on the causal factors of a marine casualty or marine incident because blame or liability, may be inferred from the findings.

1.2 海事安全調查應分離於並獨立於任何其它形式的調查。但是，本規則的目的並非排除任何其它形式的調查，包括為民事、刑事和行政訴訟進行的調查。另外，本規則的意圖並不是讓進行海事安全調查的國家因發現會指出過失或責任而不完全報告海事事故或海事事件的起因。

1.3 This Code recognizes that under the Organization's instruments, each flag State has a duty to conduct an investigation into any casualty occurring to any of its ships, when it judges that such an investigation may assist in determining what changes in the present regulations may be desirable, or if such a casualty has produced a major deleterious effect upon the environment. The Code also takes into account that a flag State shall* cause an inquiry to be held, by or before a suitably qualified person or persons into certain marine casualties or marine incidents of navigation on the high seas. However, the Code also recognizes that where a marine casualty or marine incident occurs within the territory, including the territorial sea, of a State, that State has a right** to investigate the cause of any such marine casualty or marine incident which might pose a risk to life or to the environment, involve the coastal State's search and

1.3 本規則認識到，按照本組織的公約文件，每個船旗國如據其判斷調查會有助於確定現規定中有哪裡需要修改，或如果事故產生了對環境的有害影響，均有責任對其任何船舶發生的任何事故進行調查。本規則還考慮到船旗國須對某些公海上的海上航行事件由適當的合格人員一人或數人或在這種人員在場的情況下進行調查*。但是，本規則還認識到，在一個國家的領土，包括領海之內發生了對人命或環境構成風險，或涉及到沿岸國搜救當局，或，在其他方面影響到沿岸國的海事事故或海事事件，該國有權** 對此海事事故或海事事件的起因進行調查。

rescue authorities, or otherwise affect the coastal State.

** Reference is made to the United Nations Convention on the Law of the Sea (UNCLOS), article 94 or requirements of international and customary laws.*

*** Reference is made to the United Nations Convention on the Law of the Sea (UNCLOS), article 2 or requirements of international and customary laws.*

** 參閱《聯合國海洋法公約》(UNCLOS)第 94 條，或國際習慣法的要求。*

*** 參閱《聯合國海洋法公約》(UNCLOS)第 2 條，或國際習慣法的要求。*

Chapter 2 DEFINITIONS

第 2 章 定義

When the following terms are used in the mandatory standards and recommended practices for marine safety investigations they have the following meaning.

當下列術語用於海事安全調查法定標準和建議做法之中時，具有下列含義。

2.1 An *agent* means any person, natural or legal, engaged on behalf of the owner, charterer or operator of a ship, or the owner of the cargo, in providing shipping services, including managing arrangements for the ship being the subject of a marine safety investigation.

2.1 代理人係指代表船東，租船人，或船舶經營人，或貨主從事提供航運服務，包括安排船舶接受海事安全調查的任何自然人或法人。

2.2 A *causal factor* means actions, omissions, events or conditions, without which:

2.2 引發因素係指那些行動，疏漏，事件或條件，如果沒有這些因素，則：

.1 the marine casualty or marine incident would not have occurred; or

.1 海事事故或事件將不會發生；或

.2 adverse consequences associated with the marine casualty or marine incident would probably not have occurred or have been as serious;

.2 與海事事故或海事事件有關的不利後果將不會發生或不會如此嚴重；

.3 another action, omission, event or condition, associated with an outcome in .1 or .2, would probably not have occurred.

.3 與第 .1 或 .2 項的後果有關的其它行動，疏漏，事件或條件將可能不會發生。

2.3 A *coastal State* means a State in whose territory, including its territorial sea, a marine casualty or marine incident occurs.

2.3 沿岸國係指在其領土，包括其領水內發生海事事故或海事事件的國家。

2.4 *Exclusive economic zone* means the exclusive economic zone as defined by article 55 of the United Nations Convention on the Law of the Sea.

2.4 專屬經濟區係指聯合國海洋法公約第 55 條所定義的專屬經濟區。

2.5 *Flag State* means a State whose flag a ship is entitled to fly.

2.5 船旗國係指船舶有權懸掛其旗幟的國家。

2.6 *High seas* means the high seas as defined in article 86 of the United Nations Convention on the Law of the Sea.

2.6 公海係指聯合國海洋法公約第 86 條所界定的公海。

2.7 *Interested party* means an organization, or individual, who, as determined by the marine safety investigating State(s), has significant interests, rights or legitimate expectations with respect to the outcome of a marine safety investigation.

2.7 有關方係指海事安全調查國確定的對於海事安全調查結果有重大利害關係、權利或合法期望的組織或個人。

2.8 *International Safety Management (ISM) Code* means the International Management Code for the Safe Operation of Ships and for Pollution Prevention as adopted by the Organization by resolution A.741(18), as amended.

2.8 國際安全管理規則 (ISM 章程) 係指經修訂的本組織以第 A.741(18)號決議通過的《船舶安全操作及防止污染國際管理規則》。

2.9 A *marine casualty* means an event, or a sequence of events, that has resulted in any of the following which has occurred directly in connection with the operations of a ship:

2.9 海事事故係指與船舶操作直接相關而發生的，導致下列情況的事件，或事件後果：

.1 the death of, or serious injury to, a person;

.1 人員死亡，或嚴重受傷；

.2 the loss of a person from a ship;

.2 船上人員失踪；

.3 the loss, presumed loss or abandonment of a ship;

.3 船舶滅失，推定滅失或棄船；

.4 material damage to a ship;

.4 船舶實質損壞；

.5 the stranding or disabling of a ship, or the involvement of a ship in a collision;

.5 船舶擱淺或不能使用，或船舶牽涉到碰撞；

.6 material damage to marine infrastructure external to a ship, that could seriously endanger the safety of the ship, another ship or an individual; or

.6 會嚴重危及船舶本身、其他船舶或個人安全的船舶外部基礎航海結構的實質損壞；或

.7 severe damage to the environment, or the potential for severe damage to the environment, brought about by the damage of a ship or ships.

.7 船舶或多艘船舶的損壞造成的對環境的嚴重損害，或潛在的嚴重損害。

However, a marine casualty does not include a deliberate act or omission, with the intention to cause harm to the safety of a ship, an individual or the environment.

但是，海事事故不包括意圖危害船舶、個人或環境的故意行為和疏漏。

2.10 A *marine incident* means an event, or sequence of events, other than a marine casualty, which has occurred directly in connection with the operations of a ship that endangered, or, if not corrected, would endanger the safety of the ship, its occupants or any other person or the environment.

2.10 海事事件係指海事事故之外的，與船舶操作直接有關而發生的危及，或如不改正將要危及船舶、其乘員或任何其他人員或環境的事件，或事件後果。

2.11 A *marine safety investigation* means an investigation or inquiry (however referred to by a State), into a marine casualty or marine incident, conducted with the objective of preventing marine casualties and marine incidents in the future. The investigation includes the collection of, and analysis of, evidence, the identification of causal factors and the making of safety recommendations as necessary.

2.11 海事安全調查係指以防止將來的海事事故和海事事件為目的而進行的對海事事故或海事事件的調查或質詢(不論一個國家對其稱謂如何)。調查包括對證據的收集和分析，確定引發因素和提出必要的安全建議。

2.12 A *marine safety investigation report* means a report that contains:

2.12 海事安全調查報告係指包含下列內容的報告：

.1 a summary outlining the basic facts of the marine casualty or marine incident and stating

.1 海事事故或海事事件的基本事實概述，及說明是否

whether any deaths, injuries or pollution occurred as a result;

導致任何死亡、受傷或污染；及；

.2 the identity of the flag State, owners, operators, the company as identified in the safety management certificate, and the classification society (subject to any national laws concerning privacy);

.2 安全管理證書所列明的船旗國、船東、經營人、公司及船級社情況(遵守任何國家關於隱私的法律的情況下)；

.3 where relevant the details of the dimensions and engines of any ship involved, together with a description of the crew, work routine and other matters, such as time served on the ship;

.3 相關的任何有關船舶的尺度和引擎細節，以及船員的陳述，工作程序和例如船上工作時間等其它事宜；

.4 a narrative detailing the circumstances of the marine casualty or marine incident;

.4 海事事故或海事事件情況的詳細陳述;

.5 analysis and comment on the causal factors including any mechanical, human and organizational factors;

.5 對引發因素的分析和評論，包括任何機械因素、人的因素和組織因素；

.6 a discussion of the marine safety investigation's findings, including the identification of safety issues, and the marine safety investigation's conclusions; and

.6 對海事安全調查結果的討論，包括確認安全問題，及海事安全調查的結論；及

.7 where appropriate, recommendations with a view to preventing future marine casualties and marine incidents.

.7 適用時，旨在防止將來海事事故和海事事件的建議。

2.13 *Marine safety investigation Authority* means an Authority in a State, responsible for conducting investigations in accordance with this Code.

2.13 海事安全調查當局係指國家中負責按照本規則進行調查的當局。

2.14 *Marine safety investigating State(s)* means the flag State or, where relevant, the State or States that take the responsibility for the conduct of the marine safety investigation as mutually agreed in accordance with this Code.

2.14 海事安全調查國係指船旗國或，按照本規則相互同意負責進行海事安全調查的一個或多個國家。

2.15 A *marine safety record* means the following types of records collected for a marine safety investigation:

.1 all statements taken for the purpose of a marine safety investigation;

.2 all communications between persons pertaining to the operation of the ship;

.3 all medical or private information regarding persons involved in the marine casualty or marine incident;

.4 all records of the analysis of information or evidential material acquired in the course of a marine safety investigation;

.5 information from the voyage data recorder.

2.15 海上安全記錄係指為海事安全調查收集的下列類型的記錄：

.1 為海事安全調查所採集的所有陳述；

.2 與船舶操作有關人員之間的所有通訊;

.3 與海事事故或海事事件有關人員的所有醫療或個人信息；

.4 海事安全調查過程中獲取的所有信息分析或證據材料的記錄；

.5 航行數據記錄儀中的信息。

2.16 A *material damage* in relation to a marine casualty means:

.1 damage that:

.1.1 significantly affects the structural integrity, performance or operational characteristics of marine infrastructure or a ship; and

.1.2 requires major repair or replacement of a major component or components; or

.2 destruction of the marine infrastructure or ship.

2.16 與海事事故相關的實質損壞係指：

.1 以下損壞：

.1.1 嚴重影響航海設施或船舶的結構完整性，性能或運作特性的損壞；及

.1.2 需要重大修理或更換一個或多個主要部件的損壞。或

.2 航海設施或船舶的損毀。

2.17 A *seafarer* means any person who is employed or engaged or works in any capacity on board a ship.

2.17 海員係指船上僱用，聘用或以任何身份在船上工作的任何人。

2.18 A *serious injury* means an injury which is sustained by a person, resulting in incapacitation where the person is unable to function normally for more than 72 hours, commencing within seven days from the date when the injury was suffered.

2.18 重傷係指一個人所受的，從受傷之日起七天之內導致無法保持正常功能 72 小時以上傷害。

2.19 A *severe damage to the environment* means damage to the environment which, as evaluated by the State(s) affected, or the flag State, as appropriate, produces a major deleterious effect upon the environment.

2.19 對環境的嚴重損害係指酌情由受害國，或船旗國評定的對環境造成重大有害影響的環境損害。

2.20 S*ubstantially interested State* means a State:

.1 which is the flag State of a ship involved in a marine casualty or marine incident;or

.2 which is the coastal State involved in a marine casualty or marine incident; or

.3 whose environment was severely or significantly damaged by a marine casualty (including the environment of its waters and territories recognized under international law); or

.4 where the consequences of a marine casualty or marine incident caused, or threatened, serious harm to that State or to artificial islands, installations, or structures over which it is entitled to exercise jurisdiction; or

.5 where, as a result of a marine casualty, nationals of that State lost their lives or received serious injuries; or

.6 that has important information at its disposal that the marine safety investigating State(s) consider useful to the investigation; or

2.20 有重大利益的國家係指：

.1 涉及海事事故或海事事件的船舶的船旗國；或

.2 涉及海事事故或海事事件的沿岸國；或

.3 環境受到海事事故嚴重或重大損害的國家(包括其根據國際法得到承認的水域和領土的環境)；或

.4 海事事故或海事事件的後果對其或其有權行使管轄權的人工島嶼，裝置，或結構造成，或威脅造成嚴重損害的國家；或

.5 海事事故造成其國民死亡或嚴重受傷的國家；或

.6 具有海事安全調查國認為對調查有用的重要信息的國家；或

.7 that for some other reason establishes an interest that is considered significant by the marine safety investigating State(s).

.7 海事安全調查國認為因其它原因而涉及其利益的國家。

2.21 *Territorial sea* means territorial sea as defined by Section 2 of Part II of the United Nations Convention on the Law of the Sea.

2.21 領海係指聯合國海洋法公約第 II 部分第 2 節所定義的領海。

2.22 A *very serious marine casualty* means a marine casualty involving the total loss of the ship or a death or severe damage to the environment.

2.22 非常嚴重海事事故係指涉及船舶全損或人員死亡或嚴重環境損害的海事事故。

Chapter 3 APPLICATION OF CHAPTERS IN PARTS II AND III

第 3 章 第 II 和 III 部分中各章節的適用

3.1 Part II of this Code contains mandatory standards for marine safety investigations. Some clauses apply only in relation to certain categories of marine casualties and are mandatory only for marine safety investigations into those marine casualties.

3.1 本規則第 II 部分包括關於海事安全調查的法定標準。某些條款僅對某些類別的海事事故適用及僅作為對此類別海事事故的海事安全調查的法定要求。

3.2 Clauses in Part III of this Code may refer to clauses in this part that apply only to certain marine casualties. The clauses in Part III may recommend that such clauses be applied in marine safety investigations into other marine casualties or marine incidents.

3.2 本規則第 III 部分中的條款可提及本部分中僅適用於某些類別海事事故的條款。第 III 部分中的條款可建議將此類條款應用於其他海事事故或海事事件的海事安全調查。

PART II MANDATORY STANDARDS

第 II 部分 法定標準

Chapter 4 MARINE SAFETY INVESTIGATION AUTHORITY

第 4 章 海事安全調查當局

4.1 The Government of each State shall provide the Organization with detailed contact information of

4.1 各國政府須向本組織提供其國內執行海事安全調查的海

the marine safety investigation Authority(ies) carrying out marine safety investigations within their State.

事安全調查當局的詳細聯絡信息。

Chapter 5 NOTIFICATION

第 5 章 通知

5.1 When a marine casualty occurs on the high seas or in an exclusive economic zone, the flag State of a ship, or ships, involved, shall notify other substantially interested States as soon as is reasonably practicable.

5.1 當海事事故發生於公海上或專屬經濟區內時，涉案船舶的船旗國須實際可行地盡快通知其它有重大利益的國家。

5.2 When a marine casualty occurs within the territory, including the territorial sea, of a coastal State, the flag State, and the coastal State, shall notify each other and between them notify other substantially interested States as soon as is reasonably practicable.

5.2 當海事事故發生於沿岸國的領土，包括其領水之內時，船旗國和該沿岸國須相互通知，並分別實際可行地盡快通知其它有重大利益的國家。

5.3 Notification shall not be delayed due to the lack of complete information.

5.3 通知不得因信息不全而被延遲。

5.4 **Format and content**: The notification shall contain as much of the following information as is readily available:

5.4 **格式和內容**：通知應盡可能多地包括下列已有信息：

.1 the name of the ship and its flag State;

.1 船舶名稱及其船旗國；

.2 the IMO ship identification number;

.2 IMO 船舶識別號碼；

.3 the nature of the marine casualty;

.3 海事事故的性質；

.4 the location of the marine casualty;

.4 海事事故的地點；

.5 time and date of the marine casualty;

.5 海事事故的時間和日期；

.6 the number of any seriously injured or killed persons;

.6 重傷或死亡人數；

.7 consequences of the marine casualty to individuals, property and the environment; and

.7 海事事故對人、財產和環境造成的後果；及

.8 the identification of any other ship involved

.8 任何其它涉案船舶的確認。

Chapter 6 REQUIREMENT TO INVESTIGATE VERY SERIOUS MARINE CASUALTIES

第 6 章 非常嚴重海事事故調查要求

6.1 A marine safety investigation shall be conducted into every very serious marine casualty.

6.1 對每一非常嚴重海事事故均須進行海事安全調查。

6.2 Subject to any agreement in accordance with chapter 7, the flag State of a ship involved in a very serious marine casualty is responsible for ensuring that a marine safety investigation is conducted and completed in accordance with this Code.

6.2 在按照第 7 章所達成的任何協議之下，涉及非常嚴重海事事故船舶的船旗國負責確保按照本規則進行並完成海事安全調查。

Chapter 7 FLAG STATE'S AGREEMENT WITH ANOTHER SUBSTANTIALLY INTERESTED STATE TO CONDUCT A MARINE SAFETY INVESTIGATION

第 7 章 船旗國與其它有重大利益的國家進行海事安全調查的協議

7.1 Without limiting the rights of States to conduct their own separate marine safety investigation, where a marine casualty occurs within the territory, including territorial sea, of a State, the flag State(s) involved in the marine casualty and the coastal State shall consult to seek agreement on which State or States will be the marine safety investigating State(s) in accordance with a requirement, or a recommendation acted upon, to investigate under this Code.

7.1 在不限制各國單獨進行其自己的海事安全調查權利的條件下，當海事事故發生於某國領土，包括其領海、內水之中時，涉及海事事故的船旗國和該沿岸國須協商以就由哪個或幾個國家按照本規則的要求或建議作為海事安全調查國進行調查而達成協議。

7.2 Without limiting the rights of States to conduct their own separate marine safety investigation, if a marine casualty occurs on the high seas or in the exclusive economic zone of a State, and involves more than one flag State, then the States shall consult to seek agreement on which State or States will be the marine safety investigating State(s) in accordance with a requirement, or a recommendation acted upon, to investigate under this Code.

7.2 在不限制各國單獨進行其自己的海事安全調查權利的條件下，當海事事故發生於公海上，或某國的專屬經濟區之中，並涉及到一個以上的船旗國時，則有關國家須協商就由哪個或幾個國家按照本規則的要求或建議作為海事安全調查國進行調查而達成協議。

7.3 For a marine casualty referred to in paragraph 7.1 or 7.2, agreement may be reached by the relevant States with another substantially interested State for that State or States to be the marine safety investigating State(s).

7.3 對於第 7.1 或 7.2 條所述海事事故，有關國家可與另一個有重大利益關係的國家達成協議，由該國或多國作為海事安全調查國。

7.4 Prior to reaching an agreement, or if an agreement is not reached, in accordance with paragraph 7.1, 7.2 or 7.3, then the existing obligations and rights of States under this Code, and under other international laws, to conduct a marine safety investigation, remain with the respective parties to conduct their own investigation.

7.4 在按照第 7.1、7.2 或 7.3 條達成協議之前，或未能達成協議，則根據本規則，及根據其它國際法，各國進行海事安全調查的現有義務和權利仍由有關各方承擔，以進行其各自的調查。

7.5 By fully participating in a marine safety investigation conducted by another substantially interested State, the flag State shall be considered to fulfil its obligations under this Code, SOLAS regulation I/21 and article 94, section 7 of the United Nations Convention on the Law of the Sea.

7.5 船旗國全面參加由另一有重大利益的國家所進行的海事安全調查，須被認作履行其根據本規則，海上人命安全公約第 I/21 條，聯合國海洋法公約第 94 條第 7 節所規定的義務。

Chapter 8 POWERS OF AN INVESTIGATION

第 8 章 調查的權利

8.1 All States shall ensure that their national laws provide investigator(s) carrying out a marine safety

8.1 各國均須確保其國內法做出規定，使進行海事安全調查

investigation with the ability to board a ship, interview the master and crew and any other person involved, and acquire evidential material for the purposes of a marine safety investigation.

的調查員能夠登船，詢問船長、船員，及任何其它有關人員，以及為海事安全調查獲取證據材料。

Chapter 9 PARALLEL INVESTIGATIONS

第 9 章 平行調查

9.1 Where the marine safety investigating State(s) is conducting a marine safety investigation under this Code, nothing prejudices the right of another substantially interested State to conduct its own separate marine safety investigation.

9.1 當海事安全調查國按照本規則進行海事安全調查時，其它有重大利益的國家單獨進行其自己的海事安全調查的權利不受妨礙。

9.2 While recognizing that the marine safety investigating State(s) shall be able to fulfil obligations under this Code, the marine safety investigating State(s) and any other substantially interested State conducting a marine safety investigation shall seek to co-ordinate the timing of their investigations, to avoid conflicting demands upon witnesses and access to evidence, where possible.

9.2 在承認海事安全調查國須履行本規則規定的責任的同時，海事安全調查國和任何其它有重大利益的國家在進行海事安全調查時須設法協調其調查的時間，以盡可能避免在要求作證和獲取證據時發生衝突。

Chapter 10 CO-OPERATION

第 10 章 合作

10.1 All substantially interested States shall co-operate with the marine safety investigating State(s) to the extent practicable. The marine safety investigating State(s) shall provide for the participation of the substantially interested States to the extent practicable*.

10.1 所有有重大利益的國家均須盡實際可能地與海事安全調查國合作。海事安全調查國須盡實際可能地為有重大利益的國家的參與做好安排*。

** The reference to "extent practicable" may be taken to mean, as an example, that co-operation or participation is limited because national laws make it impracticable to fully co-operate or participate.*

** 提及"盡實際可能"可被認為意指，例如，合作或參與受限，因為國家法律使全面合作或參與不可行。*

Chapter 11 INVESTIGATION NOT TO BE SUBJECT TO EXTERNAL DIRECTION

第 11 章 調查不受外部指示

11.1 Marine safety investigating State(s) shall ensure that investigator(s) carrying out a marine safety investigation are impartial and objective. The marine safety investigation shall be able to report on the results of a marine safety investigation without direction or interference from any persons or organizations who may be affected by its outcome.

11.1 海事安全調查國須確保進行海事安全調查的調查員是公正而客觀的。海事安全調查須能夠在不受可能受調查結果影響的任何人或組織的指示或干擾下報告海事安全調查的結果。

Chapter 12 OBTAINING EVIDENCE FROM SEAFARERS

第 12 章 從海員獲取證據

12.1 Where a marine safety investigation requires a seafarer to provide evidence to it, the evidence shall be taken at the earliest practical opportunity. The seafarer shall be allowed to return to his/her ship, or be repatriated at the earliest possible opportunity. The seafarers human rights shall, at all times, be upheld.

12.1 如海事安全調查需要海員提供證據，須盡實際可能地儘早取證。海員須盡可能早的獲准返回船舶，或遣返。海員的人權須始終得到維護。

12.2 All seafarers from whom evidence is sought shall be informed of the nature and basis of the marine safety investigation. Further, a seafarer from whom evidence is sought shall be informed, and allowed access to legal advice, regarding:

12.2 所有被要求提供證據的海員均須被告知海事安全調查的性質和根據。另外，被要求提供證據的海員須被告知並獲准得到有關下列各項的法律建議：

.1 any potential risk that they may incriminate themselves in any proceedings subsequent to the marine safety investigation;

.1 海事安全調查之後的任何訴訟中令自己負罪的任何潛在風險；

.2 any right not to self-incriminate or to remain silent;

.2 任何不使自己負罪的權利或保持沉默的權利；

.3 any protections afforded to the seafarer to prevent the evidence being used against them

.3 如向海事安全調查提供證據，為避免該證據被用於

if they provide the evidence to the marine safety investigation.

對抗自身而向該海員提供的任何保護。

Chapter 13 DRAFT MARINE SAFETY INVESTIGATION REPORTS

第 13 章 海事安全調查報告草案

13.1 Subject to paragraphs 13.2 and 13.3, where it is requested, the marine safety investigating State(s) shall send a copy of a draft report to a substantially interested State to allow the substantially interested State to make comment on the draft report.

13.1 在遵守第 13.2 和 13.3 條的條件下，當被要求時，海事安全調查國須向有重大利益的國家送交報告草案供其對報告草案發表意見。

13.2 Marine safety investigating State(s) are only bound to comply with paragraph 13.1 where the substantially interested State receiving the report guarantees not to circulate, nor cause to circulate, publish or give access to the draft report, or any part thereof, without the express consent of the marine safety investigating State(s) or unless such reports or documents have already been published by the marine safety investigating State(s).

13.2 海事安全調查國僅在收取報告的有重大利益的國家保證，未經海事安全調查國明確許可或除非該報告或文件已由海事安全調查國公佈，不散發，並不導致散發，公佈或允許獲得報告草案，或其任何部分時，才受約束遵守第 13.1 條。

13.3 The marine safety investigating State(s) are not bound to comply with paragraph 13.1 if:

13.3 海事安全調查國不受遵守第 13.1 條約束，如果：

.1 the marine safety investigating State(s) request that the substantially interested State receiving the report to affirm that evidence included in the draft report will not be admitted in civil or criminal proceedings against a person who gave the evidence; and

.1 海事安全調查國要求收取報告的有重大利益的國家確認報告草案中所包含的證據將不被用於針對證據提供者的民事或刑事訴訟；並且

.2 the substantially interested State refuses to provide such an affirmation.

.2 該有重大利益的國家拒絕給與確認。

13.4 The marine safety investigating State(s) shall invite the substantially interested States to submit their comments on the draft report within 30 days

13.4 海事安全調查國須邀請有重大利益的國家在 30 天內或其它雙方同意的時間內對報

or some other mutually agreed period. The marine safety investigating State(s) shall consider the comments before preparing the final report and where the acceptance or rejection of the comments will have direct impact on the interests of the State that submitted them, the marine safety investigating State(s) shall notify the substantially interested State of the manner in which the comments were addressed. If the marine safety investigating State(s) receives no comments after the 30 days or the mutually agreed period has expired, then it may proceed to finalize the report.

告草案提出意見。海事安全調查國須在準備最終報告之前，審議所提意見及在接受或否決該意見將對意見提交國的利益有直接影響時，海事安全調查國須通知該有重大利益的國家其意見得到處理的方式。如果海事安全調查國 30 天候或雙方同意的時間到期後未收到意見，則可開始完成該報告。

13.5 The marine safety investigating State(s) shall seek to fully verify the accuracy and completeness of the draft report by the most practical means.

13.5 海事安全調查國須以最實際可行的手段尋求全面核實報告草案的準確性和完整性。

Chapter 14 MARINE SAFETY INVESTIGATION REPORTS

第 14 章 海事安全調查報告

14.1 The marine safety investigating State(s) shall submit the final version of a marine safety investigation report to the Organization for every marine safety investigation conducted into a very serious marine casualty.

14.1 海事安全調查國須向本組織提交對每一非常嚴重海事事故所進行的海事安全調查的海事安全調查報告的最終文本。

14.2 Where a marine safety investigation is conducted into a marine casualty or marine incident, other than a very serious marine casualty, and a marine safety investigation report is produced which contains information which may prevent or lessen the seriousness of marine casualties or marine incidents in the future, the final version shall be submitted to the Organization.

14.2 當對不非常嚴重的海事事故或海事事件進行了海事安全調查，並做出了海事安全調查報告，且其中含有的信息可防止將來的海事事故或海事事件或減少其嚴重性時，其最終文本須提交給本組織。

14.3 The marine safety investigation report referred in paragraphs 14.1 and 14.2 shall utilize all the information obtained during a marine safety

14.3 第 14.1 及 14.2 條所指海事安全調查報告須利用海事安全調查中獲取的全部信息，考

investigation, taking into account its scope, required to ensure that all the relevant safety issues are included and understood so that safety action can be taken as necessary.

慮到其範圍，並要求確保包括並了解了所有與安全有關的問題，以便在必要時採取安全措施。

14.4 The final marine safety investigation report shall be made available to the public and the shipping industry by the marine safety investigating State(s), or the marine safety investigating State(s) shall undertake to assist the public and the shipping industry with details, necessary to access the report, where it is published by another State or the Organization.

14.4 海事安全調查報告的最後文本須由海事安全調查國向公眾及航運界提供，或，如由其它國家或本組織公佈，則海事安全調查國須協助公眾及航運界獲取調查報告的細節。

PART III RECOMMENDED PRACTICES

第 III 部分 建議做法

Chapter 15 ADMINISTRATIVE RESPONSIBILITIES

第 15 章 行政責任

15.1 States should ensure that marine safety investigating Authorities have available to them sufficient material and financial resources and suitably qualified personnel to enable them to facilitate the State's obligations to undertake marine safety investigations into marine casualties and marine incidents under this Code.

15.1 各國應確保海事安全調查當局具有充分的物質和財務資源以及適任的合格人員使其能夠便利該國按照本規則履行對海事事故和海事事件進行海事安全調查的義務。

15.2 Any investigator forming part of a marine safety investigation should be appointed on the basis of the skills outlined in resolution A.1070(28)* for investigators.

15.2 任何參加海事安全調查的調查員均應根據第 A.1070(28)*號決議中所列海事安全調查員的技能加以任命。

15.3 However, paragraph 15.2 does not preclude the appropriate appointment of investigators with

15.3 但是，第 15.2 條並不排除在臨時的基礎上適宜地任命有

* 依據 Resolution MSC.390(94) (adopted on 18 November 2014)修訂："resolution A.996(25)" are replaced by "resolution A.1070(28)".

necessary specialist skills to form part of a marine safety investigation on a temporary basis, neither does it preclude the use of consultants to provide expert advice on any aspect of a marine safety investigation.

所需特殊專業技能的調查員參加海事安全調查，也不排除使用顧問對海事安全調查的任何方面提供專家意見。

15.4 Any person who is an investigator, in a marine safety investigation, or assisting a marine safety investigation, should be bound to operate in accordance with this Code.

15.4 作為海事安全調查員參加或協助海事安全調查的任何人，均應按照本規則行事。

Chapter 16 PRINCIPLES OF INVESTIGATION

第 16 章 調查原則

16.1 **Independence**: A marine safety investigation should be unbiased to ensure the free flow of information to it.

16.1 **獨立性**：海事安全調查應無偏見，以確保自由地獲得信息。

16.1.1 In order to achieve the outcome in paragraph 16.1, the investigator(s) carrying out a marine safety investigation should have functional independence from:

16.1.1 為取得第 16.1 條所述結果，進行海事安全調查的調查員應在職能上獨立於：

.1 the parties involved in the marine casualty or marine incident;

.1 涉及海事事故或海事事件的有關方；

.2 anyone who may make a decision to take administrative or disciplinary action against an individual or organization involved in a marine casualty or marine incident; and

.2 可對涉及海事事故或海事事件的個人或組織做出採取行政或紀律措施決定的任何人；及

.3 judicial proceedings.

.3 司法訴訟。

16.1.2 The investigator(s) carrying out a marine safety investigation should be free of interference from the parties in .1, .2 and .3 of paragraph 16.1.1 with respect to:

16.1.2 進行海事安全調查的調查員應不受第 16.1.1 條的.1、.2 和.3 項所述各方在下列各項上的干擾：

.1 the gathering of all available information relevant to the marine casualty or marine incident, including voyage data recordings and vessel traffic services recordings;

.2 analysis of evidence and the determination of causal factors;

.3 drawing conclusions relevant to the causal factors;

.4 distributing a draft report for comment and preparation of the final report; and

.5 if appropriate, the making of safety recommendations.

.1 收集所有與海事事故或海事事件有關的信息，包括航程數據記錄和船舶交通服務的記錄；

.2 證據分析和確定引發因素;

.3 做出關於引發因素的結論；

.4 分發報告草案徵求意見及準備最後報告；及

.5 如適用，提出安全建議。

16.2 **Safety focused**: It is not the objective of a marine safety investigation to determine liability, or apportion blame. However, the investigator(s) carrying out a marine safety investigation should not refrain from fully reporting on the causal factors because fault or liability may be inferred from the findings.

16.2 **以安全為重點**：海事安全調查的目的並非確定責任或判定過失分擔。但是，進行海事安全調查的調查員不應因調查結果會指明過失或責任而不全面報告引發因素。

16.3 **Co-operation**：Where it is practicable and consistent with the requirements and recommendations of this Code, in particular chapter 10 on Co-operation, the marine safety investigating State(s) should seek to facilitate maximum co-operation between substantially interested States and other persons or organizations conducting an investigation into a marine casualty or marine incident.

16.3 **合作**：當實際可行並與本規則，特別是關於合作的第 10 章的要求和建議相一致時，海事安全調查國應尋求促進開展海事事故或海事事件調查的有重大利益的國家及其它個人或組織之間的合作。

16.4 **Priority** ： A marine safety investigation should, as far as possible, be afforded the same priority as any other investigation, including investigations by a State for criminal purposes

16.4 **優先**：對海事安全調查應盡可能地給與和其他調查，包括國家為刑事目的對海事事故或海事事件進行的調查，同等的優先地位。

being conducted into the marine casualty or marine incident.

16.4.1 In accordance with paragraph 16.4 investigator(s) carrying out a marine safety investigation should not be prevented from having access to evidence in circumstances where another person or organization is carrying out a separate investigation into a marine casualty or marine incident.

16.4.1 按照第 16.4 條，進行海事安全調查的調查員在獲取證據時不應因其他人或組織對海事事故或海事事件進行其它調查而受到阻礙。

16.4.2 The evidence for which ready access should be provided should include：

.1 survey and other records held by the flag State, the owners, and classification societies;

.2 all recorded data, including voyage data recorders; and

.3 evidence that may be provided by government surveyors, coastguard officers, vessel traffic service operators, pilots or other marine personnel.

16.4.2 應準備好隨時提供的證據包括：

.1 船旗國、船東和船級社所持有的檢驗及其他記錄；

.2 所有記錄的數據，包括航行數據記錄儀；及

.3 政府驗船師，海岸警備隊官員，船舶交通服務操作員，引航員或其它海事人員可提供的證據。

16.5 **Scope of a marine safety investigation**：Proper identification of causal factors requires timely and methodical investigation, going far beyond the immediate evidence and looking for underlying conditions, which may be remote from the site of the marine casualty or marine incident, and which may cause other future marine casualties and marine incidents. Marine safety investigations should therefore be seen as a means of identifying not only immediate causal factors but also failures that may be present in the whole chain of responsibility.

16.5 **海事安全調查的範圍**：正確辨別引發因素需要及時和有系統的調查，不局限於眼前的證據，尋找潛在的條件，這可能遠離海事事故或海事事件的發生地點，並可能引起其他將來的海事事故或海事事件。因此，海事安全調查應被看作是一種手段，不僅要辨別直接的引發因素，還要辨明在整個責任鏈中可能存在的缺失。

Chapter 17 INVESTIGATION OF MARINE CASUALTIES (OTHER THAN VERY SERIOUS CASUALTIES) AND MARINE INCIDENTS

第 17 章 海事事故(除非常嚴重事故外)和海事事件的調查

17.1 A marine safety investigation should be conducted into marine casualties (other than very serious marine casualties - which are addressed in chapter 6 of this Code) and marine incidents, by the flag State of a ship involved, if it is considered likely that a marine safety investigation will provide information that can be used to prevent marine casualties and marine incidents in the future.

17.1 如認為海事安全調查可能會提供可防止將來海事事故或海事事件的信息，則應由涉案船舶的船旗國對海事事故(除本規則第 6 章所述非常嚴重事故外)和海事事件進行海事安全調查。

17.2 Chapter 7 contains the mandatory requirements for determining who the marine safety investigating State(s) are for a marine casualty. Where the occurrence being investigated in accordance with this chapter is a marine incident, chapter 7 should be followed as a recommended practice as if it referred to marine incidents.

17.2 第 7 章含有確定海事事故的海事安全調查國的法定要求。當按照本章進行調查的事件為海事事件時，第 7 章應被看作述及海事事件的建議作法而加以遵循。

Chapter 18 FACTORS THAT SHOULD BE TAKEN INTO ACCOUNT WHEN SEEKING AGREEMENT UNDER CHAPTER 7 OF PART II

第 18 章 按照 II 部分第 7 章尋求協議時應考慮的因素

18.1 When the flag State(s), a coastal State (if involved) or other substantially interested States are seeking to reach agreement, in accordance with chapter 7 of Part II on which State or State(s) will be the marine safety investigating State(s) under this Code, the following factors should be taken into account：

18.1 當船旗國，沿岸國(如被涉及)，或其它有重大利益的國家按照第 II 部分第 7 章就哪一個或多個國家為本規則的海事安全調查國而尋求協議時，下列因素應得到考慮：

.1 whether the marine casualty or marine incident occurred in the territory, including territorial sea, of a State;

.1 海事事故或海事事件是否發生於某國領土，包括其領海之中；

.2 whether the ship or ships involved in a marine casualty or marine incident occurring on the high seas, or in the exclusive economic zone, subsequently sail into the territorial sea of a State;

.2 發生於公海上或專屬經濟區中的海事事故或海事事件的涉案船舶是否之後駛入某一國的領海；

.3 the resources and commitment required of the flag State and other substantially interested States;

.3 對船旗國和其他有重大利益的國家的資源和承擔義務要求；

.4 the potential scope of the marine safety investigation and the ability of the flag State or another substantially interested State to accommodate that scope;

.4 海事安全調查的潛在範圍和船旗國或其它有重大利益的國家對此範圍的容納能力；

.5 the need of the investigator(s) carrying out a marine safety investigation to access evidence and consideration of the State or States best placed to facilitate that access to evidence;

.5 進行海事安全調查的調查員獲取證據的需求，及對最適於便利證據獲取的一個或多個國家的考慮；

.6 any perceived or actual adverse effects of the marine casualty or marine incident on other States;

.6 海事事故或海事事件對其他國家的任何可預見的和實際的不利影響；

.7 the nationality of the crew, passengers and other persons affected by the marine casualty or marine incident.

.7 船員、乘客和其他受海事事故或海事事件影響的人的國籍。

Chapter 19 ACTS OF UNLAWFUL INTERFERENCE

第 19 章 非法干涉的行為

19.1 If in the course of a marine safety investigation it becomes known or is suspected that an offence is committed under article 3, 3*bis*, 3*ter* or 3*quarter* of the Convention for the Suppression of Unlawful

19.1 如果海事安全調查過程中得知或懷疑發生了《1988 年制止危及海上航行安全非法行為公約》第 3 條、第 3 條之二、

Acts Against the Safety of Maritime Navigation, 1988, the marine safety investigation Authority should immediately seek to ensure that the maritime security Authorities of the State(s) concerned are informed.

第 3 條之三或第 3 條之四所列的罪行，海事安全調查當局應立即設法確保有關國家的海上保安當局得到通知。

Chapter 20 NOTIFICATION TO PARTIES INVOLVED AND COMMENCEMENT OF AN INVESTIGATION

第 20 章 通知有關方和開始調查

20.1 When a marine safety investigation is commenced under this Code, the master, the owner and agent of a ship involved in the marine casualty or marine incident being investigated, should be informed as soon as practicable of：

20.1 當按照本規則開始海事安全調查時，應盡實際可能地儘早通知被調查的海事事故或海事事件涉案船舶的船長、船東和代理人：

.1 the marine casualty or marine incident under investigation;

.1 被調查的海事事故或海事事件；

.2 the time and place at which the marine safety investigation will commence;

.2 開始海事安全調查的時間和地點；

.3 the name and contact details of the marine safety investigation Authority(ies);

.3 海事安全調查當局的名稱及聯繫細節；

.4 the relevant details of the legislation under which the marine safety investigation is being conducted;

.4 進行海事安全調查所依據的法律的有關細節；

.5 the rights and obligations of the parties subject to the marine safety investigation; and

.5 受到海事安全調查的有關方的權利和義務；及

.6 the rights and obligations of the State or States conducting the marine safety investigation.

.6 進行海事安全調查的國家的權利和義務。

20.2 Each State should develop a standard document detailing the information in paragraph 20.1 that can be transmitted electronically to the master, the agent and the owner of the ship.

20.2 各國應制定詳述第 20.1 款的信息並可電子傳輸給船長、代理人和船東的標准文件。

20.3 Recognizing that any ship involved in a marine casualty or marine incident may continue in service, and that a ship should not be delayed more than is absolutely necessary, the marine safety investigating State(s) conducting the marine safety investigation should start the marine safety investigation as soon as is reasonably practicable, without delaying the ship unnecessarily.

20.3 認識到，涉及海事事故或海事事件的船舶可能繼續營運，及除絕對必要，不應對船舶造成延誤，進行海事安全調查的海事安全調查國應盡實際可能地儘早開始調查，不對船舶造成不必要的延誤。

Chapter 21 CO-ORDINATING AN INVESTIGATION

第 21 章 協調調查

21.1 The recommendations in this chapter should be applied in accordance with the principles in chapters 10 and 11 of this Code.

21.1 本章中的建議應按照本規則第 10 和 11 章中的原則加以實施。

21.2 The marine safety investigating State(s) should ensure that there is an appropriate framework within the State for：

21.2 海事安全調查國應確保國內有適宜的框架以：

.1 the designation of investigators to the marine safety investigation including an investigator to lead the marine safety investigation;

.1 任命海事安全調查的調查員包括領導海事安全調查的調查員；

.2 the provision of a reasonable level of support to members of the marine safety investigation;

.2 向海事安全調查的成員提供合理水平的支持；

.3 the development of a strategy for the marine safety investigation in liaison with other substantially interested States;

.3 與其它有重大利益的國家聯絡，制定海事安全調查的計劃；

.4 ensuring the methodology followed during the marine safety investigation is consistent with that recommended in resolution A.1075(28)*", as amended;

.4 確保海事安全調查中遵循的方法與經修訂的 A.1075(28)*". 號大會決議中所建議的相一致；

* 依據 Resolution MSC.390(94) (adopted on 18 November 2014)修訂："resolution A.884(21)" are replaced by "resolution A.1075(28)".

.5 ensuring the marine safety investigation takes into account any recommendations or instruments published by the Organization or International Labour Organization, relevant to conducting a marine safety investigation; and

.5 確保海事安全調查考慮到本組織或國際勞工組織所公佈的與進行海事安全調查有關的任何建議或文件；及

.6 ensuring the marine safety investigation takes into account the safety management procedures and the safety policy of the operator of a ship in terms of the ISM Code.

.6 確保海事安全調查考慮到船舶經營人按照 ISM 規則的安全管理程序和安全政策。

21.3 The marine safety investigating State(s) should allow a substantially interested State to participate in aspects of the marine safety investigation relevant to it, to the extent practicable.

21.3 海事安全調查國應盡實際可能地允許有重大利益的國家參加與其有關方面的海事安全調查。

21.3.1 Participation should include allowing representatives of the substantially interested State to：

21.3.1 參加應包括允許有重大利益的國家的代表：

.1 interview witnesses;

.1 詢問證人；

.2 view and examine evidence and make copies of documents;

.2 視察和檢驗證據及復製文件；

.3 make submissions in respect of the evidence, comment on and have their views properly reflected in the final report; and

.3 就證據提出建議，對最後報告提出意見並將其看法適當的反映在最後報告中；及

.4 be provided with the draft and final reports relating to the marine safety investigation*.

.4 得到與海事安全調查相關的報告草案和最終報告*。

** The reference to "extent practical" may be taken to mean, as an example, that co-operation or participation is limited because national laws make it impractical to fully co-operate or participate.*

** 提及"盡實際可能地"可被認為意指，例如，合作或參與受限，因為國家法律使全面合作或參與不可行。*

21.4 To the extent practical, substantially interested States should assist the marine safety investigating State(s) with access to relevant information for the

21.4 有重大利益的國家應盡實際可能地幫助海事安全調查國獲取與海事安全調查有關的

marine safety investigation. To the extent practical, the investigator(s) carrying out a marine safety investigation should also be afforded access to Government surveyors, coastguard officers, ship traffic service operators, pilots and other marine personnel of a substantially interested State.

信息。在實際可行的範圍內，進行海事安全調查的調查員應獲准接觸有重大利益的國家的政府驗船師，海岸警備隊官員，船舶交通服務操作員，引航員和其他海事人員。

21.5 The flag State of a ship involved in a marine casualty or marine incident should help to facilitate the availability of the crew to the investigator(s) carrying out the marine safety investigation.

21.5 海事事故或海事事件涉案船舶的船旗國應給與協助，為進行海事安全調查的調查員接觸船員提供方便。

Chapter 22 COLLECTION OF EVIDENCE

第 22 章 收集證據

22.1 A marine safety investigating State(s) should not unnecessarily detain a ship for the collection of evidence from it or have original documents or equipment removed unless this is essential for the purposes of the marine safety investigation. Investigators should make copies of documents where practicable.

22.1 海事安全調查國不應為收集證據而不必要地扣留船舶或從船上取走文件原件或設備除非對海上調查有絕對必要。在可行時，調查員應複製文件。

22.2 Investigator(s) carrying out a marine safety investigation should secure records of interviews and other evidence collected during a marine safety investigation in a manner which prevents access by persons who do not require it for the purpose of the investigation.

22.2 進行海事安全調查的調查員應對詢問記錄和其他海事安全調查中收集的證據加以保護，防止那些為調查的目的對其並不需要的人獲取。

22.3 Investigator(s) carrying out the marine safety investigation should make effective use of all recorded data including voyage data recorders if fitted. Voyage data recorders should be made available for downloading by the investigator(s) carrying out a marine safety investigation or an appointed representative.

22.3 進行海事安全調查的調查員應有效地使用所有記錄的數據，包括航行數據記錄儀，如已安裝。航行數據記錄儀應提供給進行海事安全調查的調查員或所指定的代表以供其下載。

22.3.1 In the event that the marine safety investigating State(s) do not have adequate facilities to read a voyage data recorder, States with such a capability should offer their services having due regard to the：

.1 available resources;

.2 capabilities of the readout facility;

.3 timeliness of the readout; and

.4 location of the facility.

22.3.1 在海事安全調查國沒有適用設施讀取航行數據記錄儀時，有此能力的國家應提供其服務並應慮及：

.1 可用資源；

.2 讀取設施的能力；

.3 讀出信息的及時性；及

.4 設施所在地。

Chapter 23 CONFIDENTIALITY OF INFORMATION

第 23 章 信息保密

23.1 States should ensure that investigator(s) carrying out a marine safety investigation only disclose information from a marine safety record where：

.1 it is necessary or desirable to do so for transport safety purposes and any impact on the future availability of safety information to a marine safety investigation is taken into account; or

.2 as otherwise permitted in accordance with this Code*.

** States recognize that there are merits in keeping information from a marine safety record confidential where it needs to be shared with people outside the marine safety investigation for the purpose of conducting the marine safety investigation. An example is where information from a marine safety record needs to be provided to an external expert for their analysis or second opinion. Confidentiality would seek to ensure that sensitive information is not inappropriately disclosed for purposes other than the marine safety investigation, at a time when it has not been determined how the information will assist in determining the contributing factors in a marine casualty or marine incident.*

23.1 各國應保證進行海事安全調查的調查員僅在下列情況下披露海上安全記錄的信息：

.1 為運輸安全的目的有必要或值得這樣做，並已考慮到對將來的海事安全調查獲得信息的任何影響；或

.2 按照本規則另有准許*。

** 各國均認識到，為進行海事安全調查需要將海上安全記錄中的信息與海事安全調查之外的人共享時對其保密的益處，例如需要將海上安全記錄中的信息向外部專家提供進行分析或提出不同意見。保密將試圖確保在其尚未確定敏感信息將如何幫助確定海事事故或海事事件的作用因素時，不致因非海事安全調查的目的而被不當披露。不當披露會暗示涉及海事事故或海事事件的各方的過失或責任。*

Inappropriate disclosure may infer blame or liability on the parties involved in the marine casualty or marine incident.

23.2 States involved in marine safety investigation under this Code should ensure that any marine safety record in its possession is not disclosed in criminal, civil, disciplinary or administrative proceedings unless：

.1 the appropriate authority for the administration of justice in the State determines that any adverse domestic or international impact that the disclosure of the information might have on any current or future marine safety investigations is outweighed by the public interest in the administration of justice; and*

.2 where appropriate in the circumstances, the State which provided the marine safety record to the marine safety investigation authorizes its disclosure.

** Examples of where it may be appropriate to disclose information from a marine safety record in criminal, civil, disciplinary or administrative proceedings may include：*

1 where a person the subject of the proceedings has engaged in conduct with the intention to cause a destructive result; or

2 where a person the subject of the proceedings has been aware of a substantial risk that a destructive result will occur and having regard to the circumstances known to him or her it is unjustifiable to take the risk.

23.3 Marine safety records should be included in the final report, or its appendices, only when pertinent to the analysis of the marine casualty or marine incident. Parts of the record not pertinent, and not included in the final report, should not be disclosed.

23.4 States need only supply information from a marine safety record to a substantially interested State where doing so will not undermine the

23.2 按照本規則參與海事安全調查的國家應確保其所持有的任何海上安全記錄不在刑事、民事、紀律或行政訴訟中披露，除非：

.1 該國司法有關當局認定司法的公眾利益大於披露信息對任何現行或將來的海事安全調查可能會產生的不利的國內或國際影響；及*

.2 當情況適宜時，向海事安全調查提供海上安全記錄的國家授權披露。

** 在刑事、民事、紀律或行政訴訟中適於披露海上安全記錄信息的例子可包括：*

1 被起訴人參與了有意造成破壞性後果的行為；或

2 被起訴人已知會發生破壞性後果的重大風險及考慮到他或她所了解的環境形勢，冒險是沒有理由的。

23.3 海上安全記錄僅應在其與海事事故或海事事件的分析有關時方可包含在最後報告，或其附錄中。無關的部分，及未包含在最後報告中的部分，不應披露。

23.4 各國僅需在不會破壞其正在進行的海事安全調查的公正性和可信性時，向有重大利

integrity and credibility of any marine safety investigation being conducted by the State or States providing the information.

益的國家提供海上安全記錄中的信息。

23.4.1 The State supplying the information from a marine safety record may require that the State receiving the information undertake to keep it confidential.

23.4.1 提供海上安全記錄中的信息的國家可要求接受信息的國家對信息保密。

Chapter 24 PROTECTION FOR WITNESSES AND INVOLVED PARTIES

第 24 章 保護證人和有關方

24.1 If a person is required by law to provide evidence that may incriminate them, for the purposes of a marine safety investigation, the evidence should, so far as national laws allow, be prevented from admission into evidence in civil or criminal proceedings against the individual.

24.1 如法律要求某人提供可能會使其負罪的證據，為了海事安全調查，該證據，在法律許可的情況下，應防止在針對該人的民事或刑事訴訟中作為證據而被接受。

24.2 A person from whom evidence is sought should be informed about the nature and basis of the investigation. A person from whom evidence is sought should be informed, and allowed access to legal advice, regarding：

24.2 被要求提供證據的人應被告知本調查的性質和根據。被要求提供證據的人須被告知並獲准得到有關下列各項的法律意見：

.1 any potential risk that they may incriminate themselves in any proceedings subsequent to the marine safety investigation;

.1 海事安全調查之後的任何訴訟中令自己負罪的任何潛在風險；

.2 any right not to self-incriminate or to remain silent;

.2 任何不使自己負罪的權利或保持沉默的權利；

.3 any protections afforded to the person to prevent the evidence being used against them if they provide the evidence to the marine safety investigation.

.3 如向海事安全調查提供證據，為避免該證據對其自身不利而向該海員提供的任何保護。

Chapter 25 DRAFT AND FINAL REPORT

25.1 Marine safety investigation reports from a marine safety investigation should be completed as quickly as practicable.

25.2 Where it is requested, and where practicable, the marine safety investigating State(s) should send a copy of a draft marine safety investigation report for comment to interested parties. However, this recommendation does not apply where there is no guarantee that the interested party will not circulate, nor cause to circulate, publish or give access to the draft marine safety investigation report, or any part thereof, without the express consent of the marine safety investigating State(s).

25.3 The marine safety investigating State(s) should allow the interested party 30 days or some other mutually agreed time to submit their comments on the marine safety investigation report. The marine safety investigating State(s) should consider the comments before preparing the final marine safety investigation report and where the acceptance or rejection of the comments will have direct impact on the interests of the interested party that submitted them, the marine safety investigating State(s) should notify the interested party of the manner in which the comments were addressed. If the marine safety investigating State(s) receives no comments after the 30 days or the mutually agreed period has expired, then it may proceed to finalize the marine safety investigation report*.

** See chapter 13 where provisions with respect to providing interested parties with reports on request may alternatively be included as a mandatory provision.*

第 25 章 報告草案和最後報告

25.1 應盡實際可能地迅速完成關於海事安全調查的海事安全調查報告。

25.2 在得到要求，並在實際可行時，海事安全調查國應向有關方發送海事安全調查報告的副本，以供評論。但是，如果不能保證有關方未經海事安全調查國明確許可，不散發，並不導致散發，公佈或允許獲得報告草案，或其任何部分，此建議將不適用。

25.3 海事安全調查國應給與有關方 30 天，或其它雙方同意的時間對報告草案提出意見。海事安全調查國應在準備最後報告之前，審議所提意見，並且當接受或否決該意見將對意見提交方的利益有直接影響時，海事安全調查國應通知該有關方其意見得到處理的方式。如果海事安全調查國 30 天后或雙方同意的時間到期後未收到意見，則可開始完成該報告*。

** 見第 13 章，有關在收到要求時向有關方提供報告的規定亦可作為法定要求而納入。*

25.4 Where it is permitted by the national laws of the State preparing the marine safety investigation report, the draft and final report should be prevented from being admissible in evidence in proceedings related to the marine casualty or marine incident that may lead to disciplinary measures, criminal conviction or the determination of civil liability.

25.4 當準備海事安全調查報告的國家的法律許可時，報告草案和最後報告在與海事事故或海事事件有關的，會導致紀律措施、刑事定罪或確定民事責任的訴訟中，應被阻止作為證據接受。

25.5 At any stage during a marine safety investigation interim safety measures may be recommended.

25.5 在海事安全調查的任何階段均可推薦臨時安全措施。

25.6 Where a substantially interested State disagrees with the whole or a part of a final marine safety investigation report, it may submit its own report to the Organization.

25.6 當一個有重大利益的國家不同意整個或部分的最后海上安全報告時，該國可向本組織提交其自己的報告。

Chapter 26 RE-OPENING AN INVESTIGATION

第 26 章 重開調查

26.1 Marine safety investigating State(s) which have completed a marine safety investigation, should reconsider their findings and consider re-opening the investigation when new evidence is presented which may materially alter the analysis and conclusions reached.

26.1 當得到了會對所作的分析和結論造成重大改變的新證據時，已完成海事安全調查的海事安全調查國應重新審議其調查結果，並應考慮重開調查。

26.2 When significant new evidence relating to any marine casualty or marine incident is presented to the marine safety investigating State(s) that have completed a marine safety investigation, the evidence should be fully assessed and referred to other substantially interested States for appropriate input.

26.2 當與任何海事事故或海事事件有關的重大的新證據提交給已完成海事安全調查的海事安全調查國時，該證據應得到全面評定，並轉給其它有重大利益的國家供其酌情提出意見。

附錄 2 Resolution A.1075(28) 協助調查員施行海事調查章程之準則

Resolution A.1075(28)

Guidelines to Assist Investigators in the Implementation of the Casualty Investigation Code (Resolution MSC.255(84))

協助調查員施行海事調查章程之準則

Adopted on 4 December 2013

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

NOTING WITH CONCERN that, despite the best endeavours of the Organization, casualties and incidents resulting in loss of life, loss of ships and pollution of the marine environment continue to occur,

NOTING ALSO that the safety of seafarers and passengers and the protection of the marine environment can be enhanced by timely and accurate reports identifying the circumstances and causes of marine casualties and incidents,

NOTING ALSO the rights and obligations of coastal and flag States under the provisions of Articles 2 and 94 of the United Nations Convention on the Law of the Sea (UNCLOS),

NOTING FURTHER the responsibilities of flag States under the provisions of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (regulation I/21), the International Convention on Load Lines, 1966 (article 23) and the International Convention for the Prevention of Pollution from Ships (MARPOL) (article 12) to conduct casualty investigations and to supply the Organization with relevant findings,

CONSIDERING that each Administration shall conduct investigations of marine casualties and incidents, in accordance with SOLAS regulation XI-1/6, as supplemented by the provisions of the Code of the international standards and recommended practices for a safety investigation into a marine casualty or marine incident (Casualty Investigation Code) adopted by resolution MSC.255(84),

ACKNOWLEDGING that the investigation and proper analysis of marine casualties and incidents can lead to greater awareness of casualty causation and result in remedial measures, including better training, for the purpose of enhancing safety of life at sea and protection of the marine environment,

RECOGNIZING the need for Guidelines to assist investigators in the implementation of the Casualty Investigation Code (resolution MSC.255(84)) to provide, as far as national laws allow, a common approach for States to adopt in the conduct of marine safety investigations into marine casualties and marine incidents,

RECOGNIZING ALSO the international nature of shipping and the need for cooperation between Governments having a substantial interest in a marine casualty or incident for the purpose of determining the circumstances and causes thereof,

HAVING CONSIDERED the recommendations made by the Marine Environment Protection Committee, at its sixty-fifth session, and the Maritime Safety Committee, at its ninety-second session,

1. ADOPTS the Guidelines to assist investigators in the implementation of the Casualty Investigation Code (resolution MSC.255(84)), as set out in the annex to the present resolution;

2. INVITES all Governments concerned to take appropriate measures to give effect to the Guidelines as soon as possible in order to allow effective analysis when conducting a marine safety investigation and taking preventive actions;

3. REVOKES resolutions A.849(20) and A.884(21).

Annex

GUIDELINES TO ASSIST INVESTIGATORS IN THE IMPLEMENTATION OF THE CASUALTY INVESTIGATION CODE (RESOLUTION MSC.255(84))

協助調查員施行海事調查章程(MSC.255(84)決議案)之準則

1 INTRODUCTION前言

1.1 The purpose of these Guidelines is to provide practical advice for the systematic investigation of marine casualties and incidents and to allow the development of effective analysis and preventive action. The overall objective is to prevent similar casualties and incidents in the future. 本準則之目的為提供實用指導作為海上事故與事件有系統之調查，並考慮到有效分析與預防行動，整體目標在防止類似海上事故與事件將來再度發生。

1.2 The ultimate purpose of a marine safety investigation is to advance maritime safety and protection of the marine environment. In the context of these Guidelines, this goal is achieved by identifying safety deficiencies through a systematic safety investigation of marine casualties

and incidents, and then recommending or effecting change in the maritime system to correct these deficiencies. It is not the purpose of a safety investigation to determine liability or apportion blame. 一件海事安全調查之最大目的在提昇海事安全與海洋環境保護，在本準則之內容中，為了達到此目的需藉一套有系統之海上事故與事件調查，認定安全缺失，然後作出建議事項或促使海事制度改變，以矯正此等缺失；而安全調查之目的不在於確定責任或作出處分。

1.3 These Guidelines should result in an increased awareness by all involved in the marine industry of the human, organizational, environmental, technical and external factors that may be involved in marine casualties and incidents. This awareness should lead to proactive measures by the maritime community which in turn should result in the saving of lives, ships, cargo and the protection of the marine environment, improvements to the lives of marine personnel, and safer shipping operations. 本準則理應可以促使涉及航運業之人員，對可能涉入海上事故與事件之人為、組織、環境、技術與外在因素有更進一步認識，此認識將引導航運業採取積極措施，促使人命、船舶、貨物得以挽救，海洋環境得以保護，海上人員安全得以增進，而有更安全海運運作。

1.4 These Guidelines apply, as far as national laws allow, to the investigation of marine casualties or incidents in which either one or more States have a substantial interest because the casualty or incident involves a ship under or within their jurisdiction. 居於涉案船舶發生於有利害關係各國，並受其管轄。此等準則，儘可能在國內法令之庇護下，適用於海上事故或事件調查。

2 DEFINITIONS定義

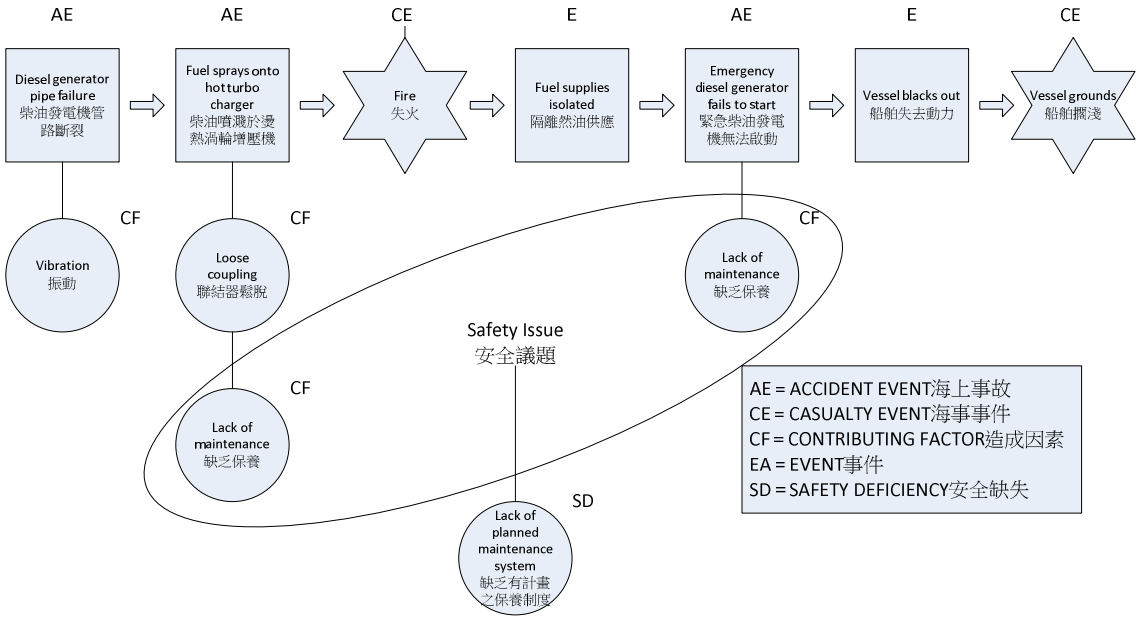
2.1 Table of definitions 表之定義

See chapter 2 of the Casualty Investigation Code (resolution MSC.255(84)) for terms not defined in these Guidelines. 本準則未定義之術語，則引用海上事故調查章程(MSC.255(84)決議案) (以下簡稱該章程)第二章之術語。

Event 事件	An action, omission or other happening. 某一作為、不作為或其他行為者。
Casualty event 海上事故	The marine casualty or marine incident, or one of a number of connected marine casualties and/or marine incidents forming the overall occurrence (e.g. a fire leading to a loss of propulsion leading to a grounding). 海上事故或事件，或一連串相關海上事故及/或海上事故形成整體意外發生之一件事件(如火災導致失去動力，再導致擱淺)。
Accident event 意外事件	An event that is assessed to be inappropriate and significant in the sequence of events that led to the

	marine casualty or marine incident (e.g. human erroneous action, equipment failure). 某一事件經評估認為不妥當，並對事件順序有重大影響，導致海上事故或事件(如人為錯誤之作為、設備故障等)。
Contributing factor 造成因素	A condition that may have contributed to an accident event or worsened its consequence (e.g. man/machine interaction, inadequate illumination). 可能已造成意外事件或使其後更嚴重(如人/機器互相影響、照明不足等)之某一狀況。
Safety issue 安全議題	An issue that encompasses one or more contributing factors and/or other unsafe conditions. 包含一種以上造成因素及/或不安全狀況之某一議題。
Safety deficiency 安全缺失	A safety issue with risks for which existing defences aimed at preventing an accident event, and/or those aimed at eliminating or reducing its consequences, are assessed to be either inadequate or missing. 現有之辯解旨在防止意外事件及/或消除或減輕其後果，經評估為不適當或缺少之一種存在風險之安全議題。

2.2 The following diagram illustrates how a sequence of events leading to a casualty occurrence would be classified using the above terms. 下圖為利用上述術語說明一連串事件導致海上事故發生之例子。



3 QUALIFICATIONS AND TRAINING OF INVESTIGATORS 調查員之資格與培訓

3.1 To achieve a systematic and effective safety investigation the appointed investigators need to have expertise in marine casualty investigation and be knowledgeable in matters relating to the marine casualty or incident. Areas of expertise need to include evidence collection techniques, interviewing techniques, analysis techniques and the identification of human and organizational factors in marine casualties and incidents. 為了達成有系統與有效果之安全調查，經指派之調查員應具備海上事故調查專業知識，並對有關海上事故或事件之事務有見識，專業知識範圍應包括海上事故與事件之取證技巧、訪談技巧、分析技巧、人為因素及組織因素之認知。

3.2 All investigators attending a marine casualty site should have sufficient knowledge in personal safety, taking particular note that the hazards present at a casualty site may well be beyond those encountered in normal ship operations. 所有參與海上事故現場調查員應具有個人安全之足夠知識，特別注意到海上事故現場所呈現之危險性，可能遠遠超過正常船舶運作所遭遇者。

3.3 A marine safety investigation Authority should consider developing a formal training programme to ensure that its investigators acquire the necessary knowledge, understanding and proficiency in marine safety investigation. 海事安全調查當局應慮及制定正規培訓計畫，以確保其調查員學習到應具備之海事安全調查之知識、瞭解與精通。

4 NOTIFICATION AND COOPERATION 通知與合作

4.1 Notification of a marine casualty or incident is to be provided to all affected parties as soon as reasonably practicable. Notification includes informing the parties involved in the casualty or incident according to chapter 20 of the Code, as well as any substantially interested State in accordance with chapter 5 of the Code. Notification should preferably be in a format that ensures a prompt acknowledgement from the addressee. 海上事故或事件之通知應儘合理實務可行地提供給所有影響單位，通知對象包括依據海事調查章程第 20 章所提之涉及海上事故或事件之單位，連同該章程第 5 章所提之任何實質利害關係國。通知最好應使用某一格式，確保可從受文者迅速得到收悉信息。

4.2 If the casualty or incident involves substantial interests of more than one State, the States should quickly reach an agreement on cooperation in accordance with chapter 7 of the Code. This agreement may include, but not be limited to: 如果海上事故或事件涉及實質利害關係超過一個國家，則各國間應迅即依據該章程，以合作方式達成協議，該協議至少包含下列項目：

.1 ensuring that the objectives of each participating State is in accordance with the IMO Casualty Investigation Code; 確保每一參與國之目標為依據國際海事組織海事調查章程；

.2 which State will lead the investigation; 主導調查之國家為那一國；

.3 the possibilities to share casualty information and draft safety investigation reports in accordance with chapter 13 of the Code, with regard to national legislation on confidentiality as well as the potential risk of safety investigation findings being used in criminal and civil lawsuits; and 考慮國家個人隱私法令暨海事安全調查被用於刑事訴訟及民事訴訟之可能風險之下，共同分享海上事故資訊與依據該章程第 13 章所為之海事安全調查報告草案；及

.4 distribution of costs related to the investigation. 有關調查費用之分攤。

4.3 If an agreement in accordance with chapter 7 of the Code cannot be reached, the involved States should seek to share factual information to the greatest extent possible, being guided by the recommended practice in the Code. 如果無法依據該章程第 7 章達成協議，應以該章程所建議之作法作為指南，儘最大可能之程度共同分享事實資訊。

5 INVESTIGATION 調查

5.1 Extent of investigation 調查程度

5.1.1 Marine casualties and incidents can have many causal factors and the underlying safety issues often exist remote from the casualty site. Proper identification of such issues requires timely and methodical investigation, going far beyond the immediate evidence in search for conditions which may cause future occurrences. Marine casualty or incident safety investigations should therefore be seen as a means of identifying not only the accident events, but also safety deficiencies in the overall management of the operation from policy through to its implementation, as well as in regulation, survey and inspection. For this reason safety investigations should be broad enough to meet these overriding criteria. 海上事故與事件可能有許多肇因，而且潛藏之議題經常存在於非海上事故現場之遙遠處，適當找出此等議題需要時間與方法去調查。除當下所造成事故之證據外，進一步探尋一些狀況，此等狀況可能造成將來之事故；因而海上事故或事件安全調查應視為從政策到其施行之整體作業管理中，連同在規則與檢驗中，不僅找出意外事件，還要找出安全缺失。居於此因，安全調查員應有廣闊視野，以符合此等高標準。

5.1.2 The extent of any safety investigation can be divided into five areas: 任何安全調查範圍能分成五類區塊：

.1 people; 人員；

.2 environment; 環境；

.3 equipment; 設備；

.4 processes and procedures; and 過程與程序；及

.5 organization and external influences. 組織與外在影響。

5.2 Initial response 最初始處置

An investigation should be carried out as soon as possible after an occurrence so as to limit the loss of perishable evidence including the degradation of witness memory. To be able to start promptly it is essential that the investigating State has a preparedness plan in place which, among other things, will facilitate: 事故發生之後，應儘速實施調查，俾防止證據毀損(包括證人記憶減退)消失。為了能立即行動，調查國除了其他事務外，持有立即可用之備便計畫，俾方便處理下列事務：

.1 the ready availability of trained investigators; 訓練有素調查員隨叫隨到；

.2 the availability of specialist help, including experts on human and organizational factors; 可得到專業人員協助，包括人因專家及組織因素專家；

.3 ready access to 24-hour contact points for other marine safety investigation Authorities; and 立即聯繫其他海事安全調查當局之 24 小時連絡處；及

.4 the availability of the necessary predictable resources. 必要可預知資源之可用性。

5.3 Site management 現場管理

5.3.1 Site management generally starts even before the investigator deploys to the casualty site. The pre-planning will often need to include: 調查員抵達海上事故現場展開調查之前，一般要啟動現場管理，預先計畫經常將必須包括下列項目：

.1 identification of competencies needed at the casualty site; 認定在海上事故現場所需之技能；

.2 identification of hazards and risks that the investigation team may encounter at the casualty site, and the precautions that need to be taken, as well as the personal protective equipment (PPE) that needs to be carried; 認定調查小組可能在現場遇到之危險性與風險性、採取必要之預防措施及攜備必要之個人防護設備；

.3 identification of particularly vulnerable evidence that needs to be secured as soon as possible including Voyage Data Recorder (VDR) information, documentation of sites that for some reasons cannot be left unchanged until the team arrives, and repatriation of crew members; and 認定須儘速予以保護之特別易受損證據，包括航行數據紀錄儀之資料，居於某些原因無法維持不能變動至調查小組抵達之現場文件，及船員之遣返；及

.4 a draft interview schedule that takes into account repatriation of seamen as well as the fact that persons involved can suffer from trauma. 慮及船員之遣返及涉案人員可能受傷之事實，草擬面談時程表。

5.3.2 There can be many different stakeholders involved in the aftermath of a marine casualty or incident, each with their own legitimate interests and responsibilities. Coordination at the casualty site is vital to make sure that the evidence collection is successful. 可能會有很多利害關係人涉入海上事故或事件之漩渦中，每一關係人均持有其自身權益與責任。在海上事故現場之協調工作相當重要，以求順利取得證據。

5.3.3 When arriving at the casualty site the hazard and risk assessment should be reviewed to identify any additional risks for the team and to put in place any necessary remedial action before the team starts its work. 一抵達海上事故現場，應檢討危險與風險評估，確定任何增加風險之項目，並在調查團隊開始工作前，所有任何必要矯正行動均已就位。

5.4 Start-up meeting 肇始會議

In safety investigations involving more than one State it is generally wise to set up a meeting with representatives of the other substantially interested State(s) at an early stage. The purpose of the start-up meeting is, among other things, to facilitate: 涉及安全調查超過一國以上時，一般在儘早階段與其他實質利害關係國代表一起召開會議是明智之舉。召開會議之目的，除其他目的外，方便處理下列事項：

.1 the sharing of knowledge of what is known about the marine casualty or incident; 共同分享該海上事故或事件已經知道之情況；

.2 the development of an investigation plan; 制訂調查計畫；

.3 the delegation of investigation tasks (international coordination); and 調查任務之代表(國際協調)；及

.4 the identification of additional help in the form of specialists and/or technical expert examination. 認定專業人員及/或技術專家檢查之額外協助。

5.5 Collection of evidence 蒐集證據

5.5.1 During the safety investigation, investigators should aim to gather and record all the evidence and factual data which may be of interest within the scope of the investigation. Physical and documentary evidence and witness statements should be gathered not only at the casualty site, but also from all sources required to fully explain the accident events and their contributing factors (e.g. operation, management, inspection and regulation). 安全調查期間，調查員應集中精神蒐集並記錄所有證據與真實資料，此等證據及資料為調查範圍有利害關係者。實體及文件證據與證人陳述不僅要在出事現場蒐集，還要從被要求完整解釋意外事件及其造成意外事故因素(例如：運作、管理、檢查與規則)之各種來源蒐集。

5.5.2 Evidence collection also needs to be broad enough to cover the human, organizational and environmental factors in relation to the casualty or incident. If a human and organizational factor specialist is required, it is essential to include this expert as early as possible in the

investigation team. 資料蒐集亦需廣泛地涵蓋與海上事故或事件有關之人為因素、組織因素及環境因素。如果需要調查人為因素及環境因素專家，在調查小組中應儘早聘用這方面之專家。

5.5.3 To facilitate a comprehensive evidence collection it is often wise to: 為了方便蒐集周詳的證據，下列方式為明智之舉：

.1 refer to generic checklists while remaining flexible as evidence once collected will often point to new areas of inquiry; and 引用具有屬性之調查表，但保留彈性，其原因為一旦蒐集了證據，將經常會發現所需詳談之新領域；及

.2 use a system to register the evidence collected (evidence log). This is particularly valuable in complex investigations or when more than one State is involved. 使用有系統性之登錄制度，以記錄所蒐集之證據(證據紀錄)，尤其對複雜性調查或超過一國以上涉及調查時，特別有價值。

5.5.4 It is recommended that the fact-finding stage of the investigation process itself be kept separate from the complete analysis of the collected evidence leading to conclusions and recommendations. Fact finding usually includes, but is not necessarily limited to the areas covered in sections 5.6 to 5.10. 建議調查過程所發現事實階段，其本身與引導至調查結論與建議事項之對所蒐集證據予以完整分析，應分開處理，但毋須限制於第 5.6 項至第 5.10 項所涵蓋之領域。

5.6 Inspection of casualty site 海上事故現場之檢查

5.6.1 Inspection and documentation of the casualty site and/or places of interest for the investigation can include inspection of the ship/ships involved, a fairway where the casualty or incident occurred, and underwater survey and filming of the wreckage of a ship. 海上事故現場及/或與調查有利害關係之場所，其檢查與證據可能涵蓋涉案船隻之檢查，發生海上事故或事件水路之調查，暨船舶殘骸之水下檢驗與攝影。

5.6.2 The collection of evidence that can deteriorate or disappear over time will always be the first priority in evidence collection when the investigator(s) arrives at the casualty site. Photo and/or video documentation of the site in general and in detail, and before any removal of evidence, is generally also a high priority. 證據之蒐集可能隨時間消逝而破壞或消失，當調查員一抵達現場，第一優先任務為蒐集證據，一般性與詳細細節以及移除證據前之現場引證照相及/或錄影，通常亦列為最優先者。

5.6.3 Where there is perishable evidence and the investigator(s) may be delayed in arriving at the casualty site, there may be a need to give instructions for the evidence to be preserved. 如有易毀損之證據，而調查員可能延遲抵達海上事故現場，則可能必須對證據如何加以保護給予指示。

5.7 Gathering or recording physical evidence 蒐集或記錄實體證據

5.7.1 Physical evidence can include data from VDR and other electronic devices on board like electronic charting systems, central fire alarm units, as well as nautical charts, weather forecasts obtained on board and logbooks. Physical evidence can also include technical samples of oil, paint or fire residues, and pieces of broken machinery or other broken parts. 實體證據可能包括船上航行數據紀錄儀與其他電子裝置，諸如電子海圖系統、中央火災警報裝置，連同海圖、船上所獲取氣象預報與日誌簿。實際證據亦可能包括油料、油漆或火災灰燼之技術性樣品，以及破損機器之碎片或其他破損部件。

5.7.2 It is essential that the person who collects electronic, documentary or material evidence is skilled in applicable techniques for both collection and storage of that type of evidence to prevent contamination, further deterioration or loss. 蒐集電子證據、引證證據或材料證據之人員應具有如何蒐集，並保存各類型證據之恰當技巧，以避免污損，進而破損或丟失。

5.7.3 Some information of great value can also be obtained from external sources such as CCTV, shore radar and radio surveillance systems and Marine Rescue Coordination Centres. Vessel Traffic Services (VTS) centres may also be able to provide valuable information, including recordings of radio traffic and AIS information. 有些極有價值之資訊亦可從外部來源取得，譬如閉路電視、岸上雷達與無線電監管系統及海上搜救協調中心。船舶交通服務中心亦能提供有價值之資訊，包括無線電交通與自動識別系統之資訊。

5.8 Witness information 證人資訊

5.8.1 Witness interviews should be performed by persons skilled in interviewing techniques to reveal information the witness may be able to provide. The planning of the interview is essential for a successful outcome. Things to be considered include: 證人之訪談應由具有訪談技巧之人士進行，俾證人願意透露事實資訊。訪談之計畫對成功的結果相當重要，列入考慮者包括下列項目：

.1 time and location; 時間與地點；

.2 any need for interpreters; 口譯人員之需要性；

.3 constitution of the interviewing team and the roles of the team members; 訪談小組之編排與小組成員之角色；

.4 the particular needs of the witness; and 證人之特別要求；及

.5 the topic areas to be explored with the witness. 與證人探討之主題。

5.8.2 The interviewee should be informed, before the interview starts, about the purpose of the investigation and the conditions under which he/she will be providing information. The witness should generally be interviewed alone, or be accompanied by someone nominated by the witness. The nominated individual should, however, not be allowed to interfere with the

interview. The witness should under all circumstances be allowed access to legal advice if he/she wants it (see chapter 12 of the Code). 訪談之前，應通知受訪談人員，有關調查之目的與在什麼情況下提供資料，證人通常獨自受訪，或由其指定某人陪同受訪；但該被指定之個人不應被允准妨礙訪談。證人在各種情況下得應其要求，有法律顧問在場(見該章程第 12 章)。

5.8.3 The interview may be recorded or a written record may be made of the interview. A written record should be discussed with the witness to clarify any anomalies. Witness information should be verified wherever possible. Statements made by different witnesses may conflict and further supporting evidence may be needed. 訪談得予以記錄，抑或書面紀錄可從訪談作成。書面紀錄應與證人討論，以澄清任何異常事項。證人資訊應在任何場合下予以澄清。不同證人所作之陳述可能互相矛盾，因而可能需要進一步支援之證據。

5.9 Reviewing of documents, procedures and records 審閱文件、程序與紀錄

5.9.1 Documents to be reviewed can include personal and ship-related certificates, reports from the ship's classification society, maintenance records, the Master's standing orders, etc. An assessment may also be made of the company's Safety Management System from its safety policy through to its implementation within the organization. 需審閱之文件可能包括個人與船有關之證件、該船船級協會檢驗報告、維修保養報告、船長指令等等，亦可從體制內之安全管理政策至其施行情況之安全管理制度作出評估。

5.9.2 Government agencies such as customs, quarantine and State Authorities may have useful information relating to crew lists, the general condition of the ship, ship certificates, etc. Coroners and medical records can provide valuable information. Port authorities and independent surveyors can also hold information of use to an investigation. Applicable regulations may also need to be examined. 政府機構諸如海關、檢疫及國家當局可能持有有關船員名單、船舶一般狀況、船舶證書等等之有用資訊。法醫與醫療紀錄能提供有價值之資訊。港口當局與獨立自主驗船師亦可能持有對調查有用之資訊。可適用之規則可能亦須予以調查。

5.9.3 A good investigation explores the extent of correlation between the documents and reality at all appropriate levels: this will generally require some specialist skills. 良好的調查，在所有適當標準下，探索文件與真實性之間的關連性：關於此事通常要求一些專業技巧。

5.10 Conducting specialized studies (as required) 進行特殊研究(如所要求者)

5.10.1 It can sometimes be necessary to conduct specialized studies to establish how a casualty or incident happened. This can include, for example, metallurgic specialist studies of broken machinery parts, analysis of oil or paint residues, calculation and reconstruction of a ship's stability features, lashing calculations, specialist analysis of weather and sea conditions at the time and place of the casualty or incident, and the use of simulators to reconstruct and analyse a sequence of events.有時可能必須進行特殊研究，以建立發生海上事故或事件之原因，此種情況可包括諸如破損機件之金相分析、油料或油漆殘渣分析、船舶穩定情況

之計算與重建、繫固計算、發生海上事故當時及當地氣象與海象之專業分析及使用模擬設施重建並分析事件之發生順序。

5.10.2 Where a proposed testing of physical evidence is likely to change its state, other interested parties who may be relying on that evidence should be consulted. 當某一實體證據之建議測試可能改變其狀態時，應諮詢可能依賴該證據之其他利害關係單位。

5.11 Reconstruction and analysis 重建與分析

5.11.1 There are several different methods of organizing evidence to support reconstruction and analysis in safety investigation, each having its own benefits and drawbacks. To ensure that a casualty or incident is thoroughly examined from a safety point of view, it is essential that the investigation is done with a systemic perspective. A systemic perspective involves going beyond determining "who did what?" and to look for the conditions that influenced different relevant events, even when these conditions are to be found remote from the casualty site. A systemic perspective also puts human factors into context and includes the interactions between man, machine and the organization. 有數種將證據系統化之方法，以支援安全調查之重建現場與分析，每一種方法都有其優缺點。為了確保一件海上事故或事件從安全觀點徹底地予以檢驗，以系統化之看法作調查相當重要；系統化之看法，涉及超出“誰作什麼”之議題，而且在尋找影響不同相關事件之情況，即使此等情況被發現遠離海上事故現場亦然。系統化之看法，亦將人為因素加入事故來龍去脈，而且包括人員、機器與組織架構間之相互影響。

5.11.2 The analysis methods used will help the investigator to think in a structured way but will also have an effect on where the investigator will put his/her focus. Some methods focus on human factors; some support the understanding of the sequence of events; others are more supportive in a complex safety analysis or in understanding technical failures. Analysis methods should therefore rather be seen as tools in a tool box. A good investigation will choose the optimal set of analysis tools to meet the characteristics of that particular casualty or incident. However, the method or the combination of methods used in each investigation should as a minimum requirement support: 所使用之分析方法將有助於調查員以較明顯架構作考量，而且亦應有調查員本身努力之焦點。有些方法著重於人為因素，有些支持事件順序之瞭解，其他方法在複雜性安全分析或瞭解技術性故障上更有支持作用。因而分析法應被視為工具箱裡之工具更為恰當。良好之調查將選擇一套最佳之分析工具，以符合該特定海上事故或事件之特性，惟每一調查所使用之該方法或該等方法應最少要求支援：

.1 reconstruction of the casualty or incident as a sequence of events; 該海上事故或事件之重建作為事件之順序；

.2 identification of linked accident events and contributing factors at all appropriate levels; and 認定在所有適當程度上關連意外事件與造成因素；及

.3 safety analysis and development of recommendations. 安全分析與建立建議事項。

5.12 Reconstruction of the casualty events and their linked conditions 海上事故之重建及其關連狀況

5.12.1 The first step in analysis is to review the factual information to clarify what is relevant and what is not, and to ensure the information is as complete as possible or practicable. This stage of the analysis should aim at determining how the marine casualty or incident occurred. The reconstruction is preferably done by using a method that enables a graphical description of the sequence of events. This is beneficial since it allows the investigator to discuss and present the case, and in particular to: 分析之第一步驟為審查事實資訊，以澄清何者為有關者，而何者為無關者，並確保資訊儘實際可行地完整。本階段之分析應聚焦於決定海上事故或事件到底如何發生，重建方法最好使用繪圖方式說明事件之順序。此方法允准調查員討論，並介紹情況是其利點，尤其能夠著重於下列各項：

.1 identify gaps in the information; 認定資訊之差異；

.2 identify any conflicts in evidence; 認定證據之任何矛盾；

.3 provide a graphical description of how different events are related; and 提供不同事件如何相關連之圖示說明；及

.4 identify contributing factors and their relation to different accident events. 認定造成因素及其與不同意外事件之關係。

5.12.2 Marine casualty or incident investigation is an iterative process and the reconstruction phase generally identifies a need to make a revision of the evidence collection plan. 海上事故或事件調查為一種重複性過程，而且重建階段，通常認定修正證據蒐集計畫之需要。

5.13 Safety analysis 安全分析

The purpose of a safety analysis is to get a more thorough understanding of the underlying safety issues that can cause or contribute to a casualty or incident. Some investigation analysis methods combine casualty reconstruction and safety analysis into one. Some basic analysis methods can be directly linked to the reconstruction of events, while other safety analysis tools can be derived from different accident causation models and are better used as stand-alone methods. Efficient safety analysis tools: 安全分析之目的，為取得潛藏安全議題之更完整瞭解，而該議題可能會引起或造成海上事故或事件。有些調查分析，將海上事故重建與安全分析合而為一。有些基本分析方法可能直接連接至事件之重建，而其他安全分析工具可能從不同意外所導致結果之模式中取用，最好作為獨立方法。有效安全分析工具如下：

.1 encourage different perspectives of casualty or incident causation; 鼓勵使用海上事故或事件因果關係之不同觀點；

.2 support communication and deeper questioning; 支持溝通與更深層之問題；

.3 enable the identification of safety issues and safety deficiencies, including those remote from the casualty site; and 促使能夠認知安全議題與安全缺失，包括遠離海上事故現場者；及

.4 enhance the development of effective remedial actions at all appropriate levels. 在所有適當標準下，加強制定有效矯正行動。

6 REPORTING 報告

6.1 Reporting requirements 報告要求

6.1.1 MSC-MEPC.3/Circ.4 requires particular marine casualty data to be entered into the GISIS marine casualties and incidents module, together with the final version of a marine safety investigation report. MSC-MEPC.3/通函 4 號要求海上事故數據要輸入至全球綜合船舶信息系統(GISIS)之海上事故或事件模組內，連同海事安全調查報告之最後版本都要輸入。

6.2 Final report 最終報告

6.2.1 To facilitate the flow of information, the final report of the safety investigation should be well structured and cover what is listed in paragraph 2.12 of the Code. The report should, within its different parts, clearly distinguish between facts and analysis. 為了資訊之流通，安全調查之最後報告應妥善架構，並涵蓋該章程第 2.12 項所列者。該報告應在其不同章節，明顯區分事實與分析。

6.2.2 Non-judgmental language should be used in the report reflecting the purpose to enhance maritime safety and protection of the maritime environment. Witnesses' names and personal information which may identify them should remain confidential. 獨一無二之目的在加強海上安全與海洋環境保護，應反映於該報告之非審判文辭。可能讓人知道之證人姓名與個人資料應予以保密不外漏。

6.2.3 In normal investigation practice, gaps in information that cannot be resolved are usually filled by logical extrapolation and reasonable assumptions. Such extrapolation and assumptions should be identified and a statement of the measure of certainty provided. Despite best efforts, analysis may not lead to firm conclusions. In these cases, the more likely hypotheses should be presented. 在正常調查實務中，無法解決之資訊差異，通常將邏輯性之推斷與合理性之假定加入報告，應認知此等推斷與假定，並提出確定措施之陳述。儘管盡最大努力，分析不會導致不變之結果；此種情況，應作出更可能之假定。

6.2.4 If safety recommendations are issued these should be addressed to those that are best placed to implement them, such as shipowners, managers, recognized organizations, maritime authorities, vessel traffic services, emergency bodies, and international and regional maritime organizations and institutions. Safety recommendations should always be supported by the facts and analysis of the safety investigation. To gain acceptance, recommendations need to be practical, necessary and likely to be effective. 如果發表建議事項，此建議應函送至最需要之單位，以供施行，諸如船舶所有人、管理者、經認可機構、海事當局、船舶交通服務

單位、應急機構及國際與區域性海事組織與機構。安全建議事項應總是要有安全調查之事實與分析支撐。為了為接納，建議事項必須講求實用性、必要性與可能性。

6.2.5 Where it becomes apparent during an investigation that there is a safety deficiency that presents a serious potential risk to lives, ships or the environment, action should be taken to inform the people or organization responsible for managing the risk. This may take the form of an interim safety recommendation or some other means of correspondence. It is important not to delay action to address such safety risks until the completion of the investigation. 調查期間，發現安全缺失，該缺失呈現出對生命、船舶或環境有嚴重潛在風險，而此事成為相當明顯時，應採取行動，通知負責風險管理之人士或機構。此事可能採行某一暫行安全建議事項或某些其他回應措施之形式。提出此等安全風險之行動不得耽擱乙事相當重要，直至完成調查為止。

6.3 Consultation 諮商

6.3.1 In accordance with paragraphs 25.2 and 25.3 of the Code, where it is practicable, the investigator should send a copy of a draft marine safety investigation report for comment to the interested parties as defined in paragraph 2.7 of the Code. This allows a process for correcting matters of fact within a report and the consideration of alternative hypotheses or opinions in relation to the analysis. In addition, it allows responsible parties, e.g. the ship operator, to indicate what safety action may have been taken in relation to a safety issue. Any such action taken should be included in the final report. 依據該章程第 25.2 項與第 25.3 項之規定，當實務可行時，調查員應發送一份海事安全調查報告草案給該章程第 2.7 項所定義之有利害關係單位，聽取其意見。此情況允准在報告範圍內修正事實之過程，並考慮有關分析之另外假定或意見。除此之外，此情況允准負責單位，如船舶營運人，詳細說明有關安全議題可能業已採取安全行動；任何已採行之行動應列入最終報告中。

6.3.2 The investigator should consider the comments before preparing the final marine safety investigation report, being guided by paragraph 25.3 of the Code. 調查員在準備最後海事調查報告之前，按該章程第 25.3 項之指南，應慮及此等意見。

6.4 Publication 出版

6.4.1 The final report should be made available to the public and the shipping industry in accordance with paragraph 14.4 of the Code. The Internet is a valuable tool for making a report available to the public. 最後報告應依據該章程第 14.4 項之規定，可供公眾與航業界取用。網路是一良好之工具，將報告公諸於世。

6.4.2 A summary of the marine safety investigation report and any safety recommendations, translated into English and/or other major languages, will enable a global public to gain important safety information from the investigation. 海事安全調查報告及任何安全建議事項概要之英譯本及/或其他主要語言譯本將有助於全球大眾從該調查取得重要資訊。

6.5 Follow-up on safety recommendations 安全建議事項之跟催

6.5.1 Every recommendation addressed to an individual or specific organization should be followed up within a reasonable period following the release of a final safety investigation report with a view to promoting safety action. It is also good practice to reinforce positive safety action taken to address a recommendation by making it public. 為了提升安全行動，每一提至個人或特定機構之建議事項，在分發最終安全調查報告之後，在一合理期限內，應予以跟催。加強正面的安全行動發表建議事項，並將其公諸於世，亦為良好習慣。同樣地，對應負責施行建議事項之個人或機構，並未採取行動者，亦應予以公佈。

APPENDIX 附件
AREAS OF HUMAN AND ORGANIZATIONAL FACTORS INQUIRY
人為因素與組織架構因素偵查之領域

The areas of inquiry set out in this appendix can be used in planning the investigation of human and organizational factors during a maritime safety investigation. Some areas of inquiry overlap or indeed incorporate multiple interactions. The guidance is not meant to be exhaustive, nor is it intended to be a checklist where each point must be investigated every time. Some areas may not be relevant in the investigation of a particular occurrence, while other areas may require deeper investigation. As new human and organizational factors/issues emerge, new areas of inquiry will need to be explored by investigators. 本附件所定之偵查領域得在海事安全調查期間，計劃作為人為因素與組織架構因素調查時予以使用。偵查之某些領域相互重疊或實際上併入多重之相互影響。本指引並非意旨詳盡無遺，亦非打算做成檢查表，作為每次調查所需核對項目。某些領域可能無法與某一特定事故發生之調查有關連，而其領域可能需要更深入調查。由於新的人為與組織架構因素/議題浮出檯面，偵查領域將須由調查員探索。

Skilful interviewing can help the investigator to eliminate irrelevant lines of inquiry and focus on areas of greater potential significance. The order and manner in which questions are asked will depend on who is being interviewed and on his or her willingness and ability to recall and describe personal behaviour and personal impressions. Training in cognitive interviewing techniques will assist investigators in eliciting accurate information from interviewees, and is highly recommended. Further, because human interactions, including interviews, can be subject to misunderstanding, it will normally be necessary to verify, cross-check or augment information received from one person by interviewing others on the same subject(s). 有技巧之面談可以幫助調查員消除不相干方式之偵查，而聚焦於最大可能有意義領域。提出問題之次序與態度端賴偵查對象與其意願與能力，記起並敘述個人印象。認知詢問技術之培訓，將有助於調查員對受訪者引出正確之資訊，而且強烈建議如此為之。再者，因為人員之間之相互影響，包括面談，將會有誤解之處，因而有必要對從某一個人所得之資料，以同樣之主題訪談他人，而對資訊予以查證，交叉比對或增修訂。

While important human and organizational factors/information can be gained through interviewing, investigators must ensure that they also seek additional information through other means. Examination of rosters, procedures, personnel records, safety occurrence reporting records and risk assessment protocols (for example) may provide critical insights into practices, norms and attitudes potentially affecting safety. 當重要人為因素/資訊與組織架構因素/資訊可以透過面談取得時，調查員必須確保其透過其他方式尋找額外資訊。名冊、程序、

個人紀錄、安全事故報告紀錄與風險評估調查報告(例子)可以提供重要卓見進入可能影響安全之實務、準則與態度。

SHIPBOARD ISSUES 船上議題

1 Training and experience 培訓與經驗

- Position or rank held. 所在之職位。
- Certificate held; length of time the certificate has been held; where trained. 所持之證件；已持該證件多久；在何處培訓。
- Experience in the position; both on this ship and over career. 在該職位之經驗；在本船上與職業生涯上。
- Length of time on this contract and overall on board the ship. 本工作合約效期與在船上總共服勤時間。
- Experience on other ships; both with this company and other companies. 在其他船舶之經驗；本公司及其他公司。

2 Shipboard organizational structure and processes 船上組織架構與程序

- The management/department structure on board the ship. 船上管理架構/部門架構。
- The individual's position within the on-board structure; who they work for, who they work with, who they report to and who they assign duties to. 船上組織架構內每一位人員之職位；為誰工作、向誰報告，由誰指派職責。
- Normal day-to-day responsibilities, tasks and duties. 正常日常之責任、工作與職務。
- Description of any interaction with personnel ashore. 與岸上人員任何互相配合之說明。

3 Nature of tasks 工作性質

- Specifics of the task(s) being undertaken at the time of the occurrence, including location. 發生事故時正在承擔工作之特性，包括場所。
- Differences between the task at that time and normal operations. 當時工作與正常作業工作之間差異。
- Description of the social dynamics of the working environment (e.g. alone/pair/team). 工作環境之社會動力說明(例如：單獨/配對/團隊)。
- Understanding of the task. 工作之了解。
- Familiarity with the task; last time it was performed, etc. 熟諳工作；上次執行工作之時間等。

- Available discretion relating to how the task was to be accomplished. 有關如何讓工作完成之可資使用裁量權。
- Training provided for the task; what was the training. 為了該工作所提供之培訓；該培訓之內容。
- Procedures, documents and guidance for the task. 該工作之程序書、文件及指引。
- Equipment used for the task; reliability, previous failures, problems and were the crew familiar with it. 為了該工作所使用之設備；可靠度，先前之故障、問題及船員是否熟悉。
- Physical environment; heat, humidity, noise, confined space, exposure to chemicals, etc. 物理環境；熱、溼度、噪音、侷限空間、暴露於化學品等。
- Workload and/or effort required for the task: 該工作所要求之工作負荷及/或努力程度：
    - To what extent was it within the crew's capability at the time. 當時在其能力下，其達到何種程度？
    - Were there any tasks that were not done because of the workload. 由於此工作之工作負荷是否有尚未完成之工作？
    - Physical effort involved; pushing, pulling, lifting, etc. 所涉及之體力勞動；推、拉、舉等。
    - Mental effort involved; thinking, deciding, calculating, remembering, looking, searching, etc. 所涉及之費神勞力；思考、計算、回憶、注視、尋找等。
    - Time pressure involved; adequacy of time allocated to the task. 所涉及之時間壓力；分配給工作之適當時間。
    - Use of scaling questions may assist here (e.g. "on a scale of 1 to 10, where 1 is very easy and 10 is extremely difficult, how (physically) difficult was this task ..."). 使用記點問題在此可能有幫助(例如：點數從 1 到 10，其中 1 為非常簡單，而 10 為相當困難，在(體力上)本工作有何困難)。

4 Activities prior to occurrence 發生事故前之活動

- Actions and/or activities before coming on watch or reporting for duty. 當值或報到之前，其行動及/或活動。
- Individual's role in the operation being conducted by the ship at the time of the occurrence. 事故發生時船上正在進行作業之個人角色。
- Individual's location on board at the time of the occurrence. 事故發生時個人在船上之位置。
- What was being observed immediately prior to the occurrence; what was seen, heard, felt, smelled, and thought about. 事故發生前一刻發現到什麼；看到、聽到、感覺到、想到什麼。

5 Work period/rest period/recreation pattern 工作期間/休息期間/娛樂期間

- Description of normal duty schedule (e.g. day worker or watchkeeper). 正常工作時程說明(如日間工作人員或當值人員)。
- Description of duty schedule on the day of the occurrence; on the day before and during the week before the occurrence. 事故發生當天、前一天及前一整個星期之工作時程說明。
- Length of time awake and/or on duty at the time of the occurrence. 事故發生當時清醒及/或當值時間。
- Overtime worked on the day of the occurrence; on the day before and during the week before the occurrence. 事故發生當天、前一天及前一整個星期之加班時間。
- Usual sleep/rest routine (what time asleep and awake). 通常睡覺/休息習慣(什麼時候睡覺與睡醒)。
- Sleep/rest routine in the three days (72 hours minimum) leading up to the occurrence: 事故發生三天前睡覺/休息習慣(至少 72 小時)。
    - 72-hour history of time to bed/time to sleep/duty times/nap times. 72 小時之睡覺/工作時間/小憩時間。
    - If there is an indication of reduced sleep beyond 72 hours, collect sleep information beyond 72 hours (as a guide, collect information back to two good nights' rest prior to the occurrence). 如果顯示超過 72 小時有數眠不足，蒐證超過 72 小時之睡眠資料(作為指南，追溯至事故發生前兩晚良好睡眠)。
    - Quality of sleep; disturbances, light sleep, waking, how refreshed when waking. 睡眠品質、打擾、輕眠、驚醒、驚醒時如何恢復。
    - Time of day when sleep is taken (impact on quality). 白天睡覺之時間(影響睡眠品質)。
    - Last extended period of off-duty time. 最後一次下班延長時間。

6 Living conditions and shipboard environment 生活狀況與船上環境

- Description of the adequacy of personal facilities; individual, shared or communal; noisy, cramped, vibrations, temperature, ship's motion, etc. 人員設施妥當之說明；個人用；共用或公用、吵雜、狹窄、震動、溫度、船舶運動等。
- Availability and consumption of alcohol and/or non-prescribed medications. 酒類及/或不明藥物之有無與使用。

7 Physical health 身體健康

- Symptoms of illness experienced within the 72 hours before the occurrence. 事故發生之前 72 小時內有無病況。
- Medications taken (prescribed, not prescribed). 用藥(有處方、沒處方)。

- Description of the last meal consumed prior to the occurrence; what and when. 事故發生之前最後用餐詳述；吃什麼及什麼時候吃。
- Description of existence and regularity of exercise routine. 運動慣例之有無及規律說明。
- Details of any recent medical examinations, illnesses or injuries. 任何最近健檢、生病或受傷詳情。
- Details of any regular or irregular medication, both prescribed and not prescribed. 任何定期或不定期用藥之詳情，處方藥與非處方藥。
- Description of quality of vision (e.g. corrective lenses). 視力之詳述(鏡片度數等)。
- Description of quality of hearing (e.g. hearing aids). 聽力之詳述(助聽器等)。
- Name and contact details of personal physician. 個人醫生之姓名與連繫詳情。

8 Mental health 心理健康

- Length of time spent away from family or loved ones. 離家或離開所愛的人時間多久。
- Extreme emotions at any time in the days before the occurrence; e.g. feelings of extreme sadness, anger, worry, fear (use scaling questions (1 to 10) to determine level). 發生事故前之日子，在任何時刻之極端情緒；如非常傷心、憤怒、擔憂、恐懼之感覺(使用記點之問題(1 至 10)，以決定程度)。
- Important and/or difficult personal decisions made recently; e.g. financial or family worries. 最近重要及/或艱難個人決定，如財務顧慮、家庭顧慮。
- Recent work performance; any concerns from others. 最近工作表現；從他人得到任何關切。
- Stress and/or difficult situations whilst on board and how these were being managed. 在船上之壓力及/或困境，而且如何處理。
- Difficulties with concentration. 無法注意力集中。
- Any mental health issues recently and/or in the past. 最近及/或過去之任何處理健康問題。
- Medications taken (prescribed, not prescribed). 用藥(處方、非處方)。

9 Working relationships 工作關係

- Friendships and/or support from other crew members. 友誼及/或從其他船員之支援。
- Conflicts and/or clashes with other crew members or supervisors.與其他船員或上司衝突及/或打架。
- Trust in other crew members. 信任其他船員。

- Language barriers interfering with work performance. 語言障礙妨礙工作表現。
- Clarity of roles and responsibilities with other crew members. 與其他船員澄清角色與責任。

10 Employment conditions 僱用條件

- Contractual arrangements. 契約性安排。
- Complaints or industrial action and systems for resolution of these. 抱怨，或航業界行動與制度解決抱怨。
- Recent changes to employment conditions. 最近僱用條件之改變。

11 Safety policy 安全政策

- Awareness of the company's safety policy. 公司安全政策之認知。
- Ship's procedures for dealing with safety issues; methods of reporting and addressing safety concerns. 處理安全議題之船上程序；報告與發表安全議題。
- Safety training; type, nature and frequency. 安全培訓、類型、性質與頻率。
- Emergency drills; type, nature and frequency. 緊急演練；類型、性質與頻率。
- Personal protective equipment (PPE) provided. 供應個人防護設備。
- Records and/or knowledge of personal accidents or injuries prior to the occurrence. 事故發生前個人意外事故或受傷之紀錄及/或知識。

12 Staffing levels 人員供應程度

- Sufficiency of staffing/crewing levels on board. 船上人員之充足性
- Appropriate allocation of crew members to duties. 船員適於其所。
- Changes to normal staffing/crewing levels. 正常人員供應標準之改變。

13 Standing orders 當值常規

- Master's standing orders; for all or part of the crew. 船長指令；對所有船員或部分船員。
- How are the orders communicated. 指令如何傳達？
- Are the orders in accordance with the company policies. 指令是否按公司之政策？

14 Level of automation and reliability of equipment 設備自動化及可靠程度

- Complexity of machinery and automated systems. 機器與自動系統之複雜性。
- Training provided for systems. 針對系統提供培訓。
- Competency of crew in using the systems. 船員使用系統之適任性。

- Reliability of systems; any earlier failures. 系統之可靠度；任何以前出現之故障。
- Maintenance of systems. 系統之維修保養。
- Are the systems integrated with each other and with the task requirements. 系統是否互相整合；以及工作所需者。

15 Ship design, motion/cargo characteristics 船舶設計、船舶運動特性/貨物特性

- Ship design, motion or cargo characteristics; any features which interfere with human performance (e.g. obstructed watchkeeper vision). 船舶設計、船舶運動特性或貨物特性；任何影響工作效率之特徵(如擋住當值者之視界)

SHORESIDE MANAGEMENT ISSUES 岸上管理議題

16 Management policies and procedures 管理政策及程序

- Existence of and opinion about the effectiveness of the safety management system, including auditing, analysis, reporting and investigation of the occurrence. 安全管理制度有效性之繼續維持及看法，包括稽查、分析、報告及事故調查。
- Existence of and opinion about the effectiveness of risk assessment and management policies and procedures relating to ships, personnel and the environment. 與船舶、人員及環境有關之風險評估及管理政策和程序有效性之繼續維持及看法。
- Existence of and opinion about the effectiveness of the role of the Designated Person Ashore (DPA). 上指派人員(DPA)角色有效性之繼續維持及看法。

17 Scheduling of work and rest periods 計畫工作與休息時段

- The company's work schedule, relief policy and risk management policy on fatigue. 公司工作時程、消除疲勞政策及疲勞風險管理政策。
- Adherence to these policies. 遵守此等政策。
- Recent changes to these policies. 最近此等政策之改變。

18 Staffing levels 人力配置程度

- The company's policies and practices for determining staffing/crewing levels on board the ship. 船上決定人力配置之公司政策與實務。
- The effectiveness of these policies and practices. .此等政策與實務之有效性。

19 Assignment of duties 工作指派

- The company's policies for determining watchkeeping practices and other duties on board the ship. 決定船上當值實務與其他工作之公司政策。
- The actual watchkeeping practices. 實際當值慣例。

20 Shore-ship-shore support and communications 岸-船-岸之支援與溝通•

- Means and level of support for the ship's master in conduct of operations. 船長執行運作時之支援措施與程度。
- The master's reporting requirements. 船長報告要求。

21 Voyage planning and port call schedules 航程計劃與訪港時程

- Policies, procedures and guidelines provided to the master to enable voyage planning. 提供給船長之政策、程度與準則，以利航程計畫。
- Actual practices for voyage planning. 航程計畫之實際作業。

22 Recreational facilities 娛樂設施

- The company's policies and practices for the provision of welfare and recreational services on board. 提供船上福利與娛樂服務之公司政策與實務。

23 Contractual and/or industrial arrangements and agreements 合約及/或航業界安排與協議

- Contractual arrangements for all crew members. 所有船員僱用合約安排。
- Complaints or industrial action in the last year. 去年之投訴或航業界行動。

24 National/international requirements 國內/國際要求

- Appropriateness of the applicable international conventions and flag State regulations. 可適用國際公約及船旗國規則之適當性。
- Effectiveness of the flag State's implementation of the requirements and recommendations of the applicable international conventions. 可適用國際公約要求與建議書，其船旗國履約之有效性。
- Compliance with the requirements and recommendations of the applicable international conventions and flag State regulations. 可適用國際公約及船旗國要求與建議書之符合情形。

附錄 3　Accident Investigation Authorities, ICAO

Accident Investigation Authorities Addresses

As of December 2017,

https://www.icao.int/safety/AIA/Pages/default.aspx

Afghanistan	President of Civil Aviation Operations, Ministry of Civil Aviation and Tourism
Albania	Ministry of Transport and Infrastructure, National Investigation Body of Accid/Incid in Civil Aviation (OKIIA)
Algeria	Ministère des transports, Direction de l'Aviation civile et de la météorologie
Andorra	National Civil Aviation Administration, Département des Transports et de l'Énergie, Ministère de l'Économie
Angola	Gabinete de Prevenção e Investigação de acidentes Aeronáuticos (GPIAA)
Antigua and Barbuda	See Eastern Caribbean States
Argentina	Junta de Investigaciones de Accidentes de Aviación Civil (JIAAC)
Armenia	Airworthiness Department, General Department of Civil Aviation
Aruba (DT)	Department of Civil Aviation
Australia	Australian Transport Safety Bureau (ATSB)
Austria	Federal Office for Transport, Civil Aviation Safety Investigation Authority
Azerbaijan	State Concern of Civil Aviation
Bahamas	Air Accident Investigation Department (AAID), Ministry of Transport, Aviation and Bahamasair
Bahrain	Assistant Undersecretary for Civil Aviation, Ministry of Transportation
Bangladesh	Aircraft Accident Investigation Group of Bangladesh (AAIG-BD), Civil Aviation Authority Headquarters
Barbados	Technical Director — Aviation
Belarus	Ministry of Transport and Communication, Department of Aviation
Belgium	Air Accident Investigation Unit (Belgium), Service Public Fédéral Mobilité and Transports
Belize	Civil Aviation Department
Benin	Direction de l'Aéronautique Civile
Bermuda (DT)	The Director of Civil Aviation, Department of Civil Aviation
Bhutan	Civil Aviation Division, Ministry of Communication
Bolivia	Unidad de Investigación y Prevención de Accidentes e incidents de Aviación Civil de Bolivia (Unidad AIG)
Bosnia and Herzegovina	Directorate of Civil Aviation – BDDCA
Botswana	Directorate of Accident Investigation (DAI), Ministry of Transport

	and Communications
Brazil	Centro de Investigação e Prevenção de Acidentes Aeronáuticos — CENIPA
Brunei Darussalam	Ministry of Communications, Division of HSSE and investigation
Bulgaria	Aircraft Accident Investigation Unit
Burkina Faso	Direction de l'Aviation Civile
Burundi	Chef du Bureau AIG, Aéroport International du Bujumbura
Cambodia	State Secretariat of Civil Aviation
Cameroon	Civil Aviation Department, Ministry of Transport
Canada	Transportation Safety Board of Canada
Cape Verde	Agencia de Aviação Civil – AAC
Cayman Islands (DT)	Director of Civil Aviation
Central African Republic	Direction Générale de l'Aviation Civile et de la Météorologie
Chad	Direction de l'Aviation Civile
Chile	Dirección General de Aeronáutica Civil
China	Office of Aviation Safety, Civil Aviation Administration of China
China, Hong Kong Special Administrative Region	Accident Investigation Division, Civil Aviation Department
China, Macao Special Administrative Region	Civil Aviation Authority
Colombia	Grupo Investigación de Accidentes, Unidad Administrativa Especial de Aeronáutica Civil Aeropuerto Internacional
Comoros	Direction Générale de l'Aviation Civile et de la Météorologie
Congo	Bureau des Enquêtes et des Accidents d'aviation civile, Aéroport International Maya - Maya de Brazzaville
Cook Islands	Department of Civil Aviation
Costa Rica	Encargado Unidad de Investigaciones Aereas, Dirección General de Aviación Civil
Côte d'Ivoire	Bureau Enquêtes et Analyses des Accidents et Incidents d'Aviation
Croatia	Air, Maritime and Railway Traffic Accident Investigation Agency
Cuba	Dirección de Seguridad Aeronáutica y Operaciones, Instituto de Aeronáutica Civil de Cuba
Cyprus	Cyprus Aircraft Accident and Incident Investigation Board (AAIIB)
Czech Republic	Air Accidents Investigation Institute
Democratic People's Republic of Korea	General Administration of Civil Aviation
Democratic Republic of the Congo	Ministry of the Transportation and Ways of Communication, Permanent office of investigations of aviation Accidents/Incidents
Denmark	Accident Investigation Board
Djibouti	Direction de l'Aviation Civile et de la Météorologie
Dominica (NCS)	See Eastern Caribbean States

Dominican Republic	Comisión Investigadora de Accidentes de Aviación
Eastern Caribbean States	Eastern Caribbean Civil Aviation Authority
Ecuador	Junta Investigadora de Accidentes, Dirección General de Aviación Civil
Egypt	Central Directorate of Aircraft Accident Investigation, Ministry of Civil Aviation
El Salvador	Autoridad de Aviación Civil
Equatorial Guinea	Ministerio de Aviación Civil, Célula de Investigación de Accidentes e Incidentes
Eritrea	Director General, Civil Aviation Authority
Estonia	Estonian Safety Investigation Bureau
Ethiopia	Ethiopia Accident Investigation Bureau
Fiji	Civil Aviation Authority of Fiji
Finland	Safety Investigation Authority, Finland
France	Bureau d'Enquêtes et d'Analyses pour la sécurité de l'aviation civile
Gabon	National Civil Aviation Agency (ANAC)
Gambia	Gambia Civil Aviation Authority
Georgia	Civil Aviation and Maritime Transport Accident / Incident Investigation Bureau (TAIIB)
Germany	Federal Bureau of Aircraft Accidents Investigation
Ghana	Airworthiness Inspector, Ghana Civil Aviation Authority
Greece	Air Accident Investigation and Aviation Safety Board
Grenada	See Eastern Caribbean States
Guatemala	Dirección General de Aeronáutica Civil
Guinea	Direction Nationale de l'Aviation Civile
Guinea-Bissau	Direction Générale de l'Aviation Civile
Guyana	Civil Aviation Authority
Haiti	Office National de l'Aviation civile
Honduras	Comisión de Investigación de Accidentes e Incidentes Aéreos, Agencia Hondureña de Aeronáutica Civil
Hungary	Transportation Safety Bureau (TSB)
Iceland	Aircraft Accident Investigation Board
India	Air Accident Investigation Bureau
Indonesia	National Transportation Safety Committee
Iran (Islamic Republic of)	Ministry of Roads and Urban Development, Civil Aviation Organization, Aircraft Accident Investigation Board,
Iraq	Directorate of Flight Safety, General Establishment of Civil Aviation
Ireland	Air Accident Investigation Unit (AAIU), Department of Transport, Tourism and Sport
Israel	Ministry of Transport, Chief Investigator
Italy	Agenzia Nazionale per la Sicurezza del Volo

Jamaica	Civil Aviation Authority
Japan	Japan Transport Safety Board, Ministry of Land, Infrastructure, Transport and Tourism
Jordan	Jordan Civil Aviation Regulatory Commission, Aircraft Accident Investigation Directorate (AAID)
Kazakhstan	Ministry of Transport and Communications, Accident and Incident Investigation Department
Kenya	The Chief Investigator of Air Accidents, Kenya Ministry of Transport and Infrastructure
Kiribati	The Director of Civil Aviation, Ministry of Information, Communications and Transport
Kuwait	Directorate General of Civil Aviation
Kyrgyzstan	Interstate Aviation Committee
Lao People's Democratic Republic	Department of Civil Aviation
Latvia	Transport Accident and Incident Investigation Bureau
Lebanon	Directorate General of Civil Aviation
Lesotho	Directorate Civil Aviation
Liberia	Directorate of Civil Aviation, Ministry of Transport
Libya	Civil Aviation Authority, Aviation Accident Investigation Bureau
Lithuania	Ministry of Justice of the Republic of Lithuania, Transport Accident and Incident Investigation Division
Luxembourg	Ministère du Développement Durable et des InfrastructuresAdministration des Enquêtes Techniques Aviation Civile, Maritime, Fluvial et Chemin de Fer
Madagascar	Bureau des Enquêtes des Accidents et Incidents de l'Aviation Civile (BEAC), Ministère des Transports
Malawi	Director of Civil Aviation
Malaysia	Air Accidents Investigation Bureau, Ministry of Transport
Maldives	Accident Investigation Coordination Committee, Ministry of Transport and Communication
Mali	Direction Nationale de l'Aéronautique Civile, Ministère des Travaux Publics et des Transports
Malta	Bureau of Air Accident Investigation, Ministry for Tourism
Marshall Islands	Directorate of Civil Aviation
Mauritania	Ministère de l'Équipement et des Transports, Direction de l'Aviation Civile
Mauritius	Department of Civil Aviation
Mexico	Directorate General of Civil Aviation (DGAC), Secretariat of Communications and Transportation
Micronesia (Federated States of)	Division of Civil Aviation Administration, Department of Transportation, Communications and Infrastructure
Monaco	Service de l'Aviation Civile
Mongolia	Air Accident Investigation Bureau Mongolia, Ministry of Road and Transportation of Mongolia

Montenegro	National Commission for Investigation of Accident and Serious Incidents of aircraft, extraordinary events endangering safety of railroad traffic and maritime incidents and accidents
Montserrat (DT)	See Eastern Caribbean States
Morocco	Ministère de l'Equipment, du Transport et de la Logistique, Directorate Générale de l'Aviation Civile, Bureau d'Enquêtes et d'Analyses d'Accidents d'Aviation
Mozambique	National Civil Aviation Administration
Myanmar	Department of Civil Aviation
Namibia	Directorate of Aircraft Accident and Incident Investigation
Nauru	Director of Civil Aviation, Civil Aviation Authority, Government Office
Nepal	Aviation Safety and Civil Aviation Authority Supervision Division, Ministry of Culture, Tourism and Civil Aviation
Netherlands	Dutch Safety Board
Netherlands Antilles (DT)	Directorate of Civil Aviation
New Zealand	The Chief Executive Officer, Transport Accident Investigation Commission
Nicaragua	Dirección General de Aeronáutica Civil, Ministerio de Transporte y la Construcción
Niger	Direction de l'Aviation Civile, Ministère des Transports
Nigeria	Accident Investigation Bureau, Murtala Muhammed International Airport
Norway	Accident Investigation Board Norway
Oman	Directorate General of Civil Aviation and Meteorology
Pakistan	Headquarters, Civil Aviation Authority
Palau	Ministry of Commerce and Trade
Panama	Unidad de Prevención e Investigación de Accidentes (UPIA)
Papua New Guinea	Accident Investigation Commission
Paraguay	Centro de Investigación y Prevención de Accidentes Aeronáuticos, Dirección Nacional de Aeronáutica Civil
Peru	Comisión de Investigación de Accidentes de Aviación – CIAA, Ministerio de Transportes y Comunicaciones
Philippines	Civil Aviation Authority of the Philippines
Poland	Ministry of Infrastructure and Construction, State Commission of Aircraft Accident Investigation (SCAAI)
Portugal	Gabinete de Prevençao e Investigação de Acidentes com Aeronaves e de Acidentes Ferroviários (GPIAAF)
Qatar	Department of Civil Aviation and Meteorology
Republic of Korea	Aviation and Railway Accident Investigation Board, Ministry of Land, Infrastructure and Transport
Republic of Moldova	State Administration of Civil Aviation Investigation Bureau
Romania	Civil Aviation Safety Investigation and Analysis Center - (CIAS),
Russian Federation	Federal Aviation Authorities of Russia State Oversight Flight Safety

	Department, Russian Federation
Rwanda	Aircraft Accident Investigation Office, The Ministry of Infrastructure
Saint Kitts and Nevis (NCS)	See Eastern Caribbean States
Saint Lucia	See Eastern Caribbean States
Saint Vincent and the Grenadines	See Eastern Caribbean States
Samoa	Ministry of Transport: Civil Aviation, Marine and Shipping
San Marino	Ministry of Communications and Transport
Sao Tome and Principe	Direction de l'Aviation Civile
Saudi Arabia	Aviation Investigation Bureau (AIB)
Senegal	Bureau d'Enquête et d'Analyse pour la sécurité de l'aviation civile
Serbia	Center for Investigation of Accidents in Transport
Seychelles	Seychelles Civil Aviation Authority
Sierra Leone	Director of Civil Aviation, Ministry of Transport and Communications
Singapore	Transport Safety Investigation Bureau
Slovakia	Ministry of Transport, Construction and Regional Development of the Slovak Republic, Specializied Unit
Slovenia	Aircraft Accident and Incident Investigation Service
Solomon Islands	Civil Aviation Division, Ministry of Culture, Tourism and Aviation
Somalia	Somali Civil Aviation Authority, Flight Safety Division
South Africa	Civil Aviation Authority, Accidents and Incidents Investigation Division
Spain	Comisión de Investigación de Accidentes e Incidentes de Aviación Civil, Ministerio de Fomento
Sri Lanka	Civil Aviation Authority of Sri Lanka
Sudan	Air Accident Investigation Central Directorate, Civil Aviation Authority
Suriname	Permanent Secretary, Ministry of Transport, Communications and Tourism
Swaziland	Swaziland Aircraft Accident and Incident Investigation Department (AAIID)
Sweden	Swedish Accident Investigation Authority
Switzerland	Swiss Accident Investigation Board SAIB, Aviation Division
Syrian Arab Republic	Directorate General of Civil Aviation
Tajikistan	Ministry of Transport, Accident Investigation Commission
Thailand	Aircraft Accident Investigation Committee, Flight Standards Bureau, Department of Civil Aviation
The former Yugoslav Rep. of Macedonia	Aircraft Accident and Incident Investigation Committee
Togo	Commission Permanente Indépendante Enquêtes Accidents

	d'Aviation (CPI-EAA), Aéroport International Gnassingbe Eyadema, Ancienne Tour de Contrôle (Batîment CDOU)
Tonga	Ministry of Civil Aviation
Trinidad and Tobago	Director General Civil Aviation, Trinidad and Tobago Civil Aviation Authority
Tunisia	Ministère du Transport, Direction Générale de l'Aviation Civile
Turkey	Ministry of Transport Maritime Affairs and Communications, Accident Investigation Board
Turkmenistan	Department of Transport and Communications, National Civil Aviation Administration
Turks and Caicos Islands (DT)	Department of Civil Aviation
Uganda	The Managing Director, Civil Aviation Authority
Ukraine	National Bureau for Incidents and Accidents Investigation of Civil Aircraft (NBAAI)
United Arab Emirates	General Civil Aviation Authority, Regulations and Investigation Section
United Kingdom	Air Accidents Investigation Branch, Department of Transport
United Republic of Tanzania	The Chief Inspector of Air Accidents, Air Accident Investigation Branch
United States	National Transportation Safety Board
Uruguay	Comisión Investigadora de Accidentes de Aviación (C.I.A.I.A.)
Uzbekistan	State Inspection of the Republic of Uzbekistan for Flight Safety Oversight (Gosavianadzor)
Vanuatu	Director of Civil Aviation
Venezuela	General Directorate for Research and Prevention of Air Accidents
Viet Nam	Flight Safety Standard Department, Civil Aviation Administration
Yemen	Civil Aviation and Meteorology Authority, Civil Aviation Sector
Zambia	Department of Civil Aviation
Zimbabwe	Civil Aviation Authority

附錄 4 本研究蒐集資料檔案名稱

運研所海事調查資料

名稱	修改日期	大小	種類
AU-ATSB Human Factors for Transport Safety Investigators course.pdf	2017年12月18日 下午5:32	76 KB	PDF 文件
AU-ATSB Management Organisation Chart.pdf	2017年6月29日 上午6:40	220 KB	PDF 文件
AU-atsb_orgchart_managers_july2017.pdf	2017年6月29日 上午6:40	220 KB	PDF 文件
AU-ATSB-annual-report-2009-10.pdf	2013年1月7日 上午11:58	3.7 MB	PDF 文件
AU-ATSB-annual-report-2010-11.pdf	2011年12月20日 下午12:27	2.4 MB	PDF 文件
AU-ATSB-annual-report-2011-12.pdf	2012年11月1日 上午5:50	7.7 MB	PDF 文件
AU-ATSB-annual-report-2012-13.pdf	2013年10月29日 上午8:39	5.3 MB	PDF 文件
AU-ATSB-annual-report-2013-14.pdf	2014年10月31日 下午1:33	4.9 MB	PDF 文件
AU-ATSB-annual-report-2014-15.pdf	2015年10月30日 上午7:31	3.4 MB	PDF 文件
AU-ATSB-annual-report-2015-16.pdf	2016年10月18日 上午5:37	4.1 MB	PDF 文件
AU-ATSB-annual-report-2016-17.pdf	2017年11月1日 上午5:04	23 MB	PDF 文件
AU-ATSB-annual-review 2008.pdf	2009年6月17日 下午1:01	3.2 MB	PDF 文件
AU-ATSB-annual-review 2009.pdf	2009年12月4日 上午5:49	1.9 MB	PDF 文件
AU-Breach of s.26 of the Transport Safety Investigation Act 2003 – disclosure of the contents of a draf.pdf	2017年12月18日 下午5:28	81 KB	PDF 文件
AU-Documents supporting the Transport Safety Investigation Act 2003.pdf	2017年12月18日 下午5:29	90 KB	PDF 文件
AU-Failure to respond to a Safety Recommendation.pdf	2017年12月18日 下午5:21	69 KB	PDF 文件
AU-Navigation Act 2012.pdf	2017年12月18日 下午5:20	2.6 MB	PDF 文件
AU-Terminology, investigation procedures and deciding whether to investigate.pdf	2017年12月18日 下午5:31	126 KB	PDF 文件
AU-Transport Safety Investigation (Voluntary and Confidential Reporting Scheme) Regulation 2012.pdf	2017年12月18日 下午5:21	751 KB	PDF 文件
AU-Transport Safety Investigation Act 2003.pdf	2017年12月18日 下午5:19	1.3 MB	PDF 文件
AU-Transport Safety Investigation Regulations 2003.pdf	2017年12月18日 下午5:20	887 KB	PDF 文件
Austria-AMEM_Marine_Accidents.pdf	2017年12月12日 上午12:05	780 KB	PDF 文件
Bahamas-Casualty Report Form (CRF1).pdf	2017年8月16日 上午12:21	120 KB	PDF 文件
Bahamas-Ch-268-MerchantShippingAct.pdf	2017年12月16日 下午3:58	537 KB	PDF 文件
Bahamas-Merchant Shipping (Formal Investigations) Rules.pdf	2017年12月16日 下午3:56	54 KB	PDF 文件
Brazil-organo1.jpg	2017年12月16日 下午4:03	523 KB	JPEG 影像
Brazil-organo1.pdf	2017年12月16日 下午4:03	2 MB	PDF 文件
Bulgaria-Aircraft, Maritime and Railway Accident Investigation | Ministry of Transport.pdf	2017年12月16日 下午4:18	240 KB	PDF 文件

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名稱	修改日期	大小	種類
Canada-Canadian Transportation Accident Investigation and Safety Board Act.pdf	2017年11月28日 下午11:32	376 KB	PDF 文件
Canada-Marine Recommendation Index - Transportation Safety Board of Canada.pdf	2017年12月18日 下午5:45	1 MB	PDF 文件
Canada-MarineOcc_Eng.csv	2017年12月18日 下午1:04	3.4 MB	Comm...et (.csv)
Canada-Qualification standards for employment in the core public administration - Canada.ca.pdf	2017年12月18日 下午5:43	44 KB	PDF 文件
Canada-Qualification standards for the core public administration by occupational group or classification -.pdf	2017年12月18日 下午5:44	602 KB	PDF 文件
Canada-Statistical Summary - Marine Occurrences 2016 - Transportation Safety Board of Canada.pdf	2017年12月18日 下午5:46	759 KB	PDF 文件
Canada-Statistical Summary – Marine Occurrences 2014.pdf	2017年12月18日 下午5:48	1.6 MB	PDF 文件
Canada-Statistical Summary – Marine Occurrences 2015.pdf	2017年12月18日 下午5:47	757 KB	PDF 文件
Canada-Transportation Safety Board of Canada - Recommendations - Assessment rating guide.webarchive	2017年12月18日 下午5:45	1.5 MB	網頁封存
Canada-Transportation Safety Board of Canada - Statistical Summary – Marine Occurrences 2010.pdf	2017年12月18日 下午5:49	1.1 MB	PDF 文件
Canada-Transportation Safety Board of Canada - Statistical Summary – Marine Occurrences 2011.pdf	2017年12月18日 下午5:49	1.2 MB	PDF 文件
Canada-Transportation Safety Board of Canada - Statistical Summary – Marine Occurrences 2012.pdf	2017年12月18日 下午5:48	1.1 MB	PDF 文件
Canada-Transportation Safety Board of Canada - Statistical Summary – Marine Occurrences 2013.pdf	2017年12月18日 下午5:48	1.7 MB	PDF 文件
Canada-Transportation Safety Board Regulations (SOR-2014-37).pdf	2017年11月29日 上午1:05	480 KB	PDF 文件
Canada-TSB-Annual Report 2008-2009.pdf	2013年2月14日 下午10:23	432 KB	PDF 文件
Canada-TSB-Annual Report 2009-2010.pdf	2013年2月14日 下午10:23	2 MB	PDF 文件
Canada-TSB-Annual Report 2010-2011.pdf	2013年2月14日 下午10:23	1.5 MB	PDF 文件
Canada-TSB-Annual Report 2011-2012.pdf	2013年2月14日 下午10:23	875 KB	PDF 文件
Canada-TSB-Annual Report 2012-2013.pdf	2013年7月5日 下午8:54	4.7 MB	PDF 文件
Canada-TSB-Annual Report 2013-2014.pdf	2014年8月23日 上午12:27	5.7 MB	PDF 文件
Canada-TSB-Annual Report 2014-2015.pdf	2015年6月18日 上午4:03	1.5 MB	PDF 文件
Canada-TSB-Annual Report 2015-2016.pdf	2016年8月3日 下午7:58	1.9 MB	PDF 文件
Canada-TSB-Annual Report 2016-2017.pdf	2017年7月28日 下午8:20	1.6 MB	PDF 文件
Chile-LAPCHILEmm.pdf	2017年12月14日 下午10:21	7.4 MB	PDF 文件
Chile-provisions_of_the_national_maritime_authority.pdf	2017年12月14日 下午10:16	41 KB	PDF 文件
Croatia-ACT ON THE ESTABLISHMENT OF THE AIR, MARITIME AND RAILWAY CASUALTY INVESTIGATION AGENCY.pdf	2017年12月15日 下午5:19	247 KB	PDF 文件
Croatia-Air, Maritime and Railway Traffic Accident Investigation Agency (AIN).pdf	2017年12月15日 下午4:13	680 KB	PDF 文件
Cyprus - MAIC CIRCULAR 1-2014.pdf	2017年12月11日 上午10:00	172 KB	PDF 文件
Cyprus-17-2014 (30-06-2014).pdf	2015年4月24日 下午7:16	175 KB	PDF 文件
Cyprus-19-2005(12.07.2005).pdf	2015年4月24日 下午7:17	376 KB	PDF 文件
Cyprus-casualty statistics 2000-2010-en.pdf	2015年4月24日 下午7:21	94 KB	PDF 文件
Cyprus-Department of Merchant Shipping - Introduction.pdf	2017年12月16日 下午5:27	93 KB	PDF 文件
Cyprus-MAIC CIRCULAR 1-2014.pdf	2017年11月14日 下午4:17	172 KB	PDF 文件
Cyprus-The Marine Casualties and Incidents Investigation Law of 2012 (No.94(I)-2012).pdf	2017年11月14日 下午4:17	1.1 MB	PDF 文件

運研所海事調查資料

搜尋

名稱	修改日期	大小	種類
Denmark-Act no.457.pdf	2011年7月28日 下午7:41	24 KB	PDF 文件
Denmark-Act on safety investigations of marine accidents.pdf	2017年12月15日 下午5:41	24 KB	PDF 文件
Denmark-Circular letter on fair treatment of seafarers.pdf	2013年2月19日 上午4:23	10 KB	PDF 文件
Denmark-Directive 2009-18-EC.pdf	2012年2月22日 上午3:50	817 KB	PDF 文件
Denmark-DMAIB folder UK.pdf	2017年12月18日 下午5:37	1.6 MB	PDF 文件
Denmark-DMAIB-638.pdf	2012年2月22日 上午3:32	11 KB	PDF 文件
Denmark-DMAIB-Circular letter on fair treatment of seafarers.pdf	2013年2月19日 上午4:23	10 KB	PDF 文件
Denmark-DMAIB-Direktiv om ulykkesundersøgelser UK.pdf	2012年2月22日 上午3:50	817 KB	PDF 文件
Denmark-DMAIB-EngelskL 457 sikkerhedsundersøgelse af ulykker til søs.pdf	2011年7月28日 下午7:41	24 KB	PDF 文件
Denmark-Order no.638.pdf	2012年2月22日 上午3:32	11 KB	PDF 文件
Denmark-REPORTING FORM MERCHANT VESSEL.doc	2017年7月14日 下午3:48	259 KB	Micros...t (.doc)
EU	2017年12月17日 下午11:46	--	檔案夾
Finland-SIA-Rights and obligations of person to be heard.pdf	2017年12月10日 下午9:57	73 KB	PDF 文件
Finland-The Safety Investigation Act 525-2011.pdf	2016年8月22日 下午6:28	73 KB	PDF 文件
France-About us - Bureau d'enquêtes sur les événements de mer (BEAmer).pdf	2017年12月18日 下午5:52	414 KB	PDF 文件
France-BEAMER-FR_Annual-report_2012.pdf	2015年5月28日 下午8:15	274 KB	PDF 文件
France-BEAMER-FR_Annual-report_2013.pdf	2017年12月10日 下午11:37	805 KB	PDF 文件
France-BEAMER-FR_Annual-report_2014.pdf	2017年12月10日 下午11:36	1 MB	PDF 文件
France-BEAMER-FR_Annual-report_2015.pdf	2017年12月10日 下午11:36	1.8 MB	PDF 文件
France-code_transport_L1621-1_L1622-2.pdf	2014年8月22日 下午5:27	302 KB	PDF 文件
France-code_transport_r1621-1_r1621-26.pdf	2017年1月30日 下午6:55	1.1 MB	PDF 文件
France-Full reports - Bureau d'enquêtes sur les événements de mer (BEAmer).webarchive	2017年12月18日 下午5:53	881 KB	網頁封存
France-Simplified reports - Bureau d'enquêtes sur les événements de mer (BEAmer).webarchive	2017年12月18日 下午5:53	870 KB	網頁封存

運研所海事調查資料

搜尋

名稱	修改日期	大小	種類
Germany-BSU_Flyer.pdf	2017年12月10日 下午11:00	1.6 MB	PDF 文件
Germany-BSU-01-Basicdata_UK.pdf	2017年12月10日 下午10:54	347 KB	PDF 文件
Germany-BSU-02-Collision_UK.pdf	2017年12月10日 下午10:54	96 KB	PDF 文件
Germany-BSU-03-Fire_Explosion_UK.pdf	2017年12月10日 下午10:54	79 KB	PDF 文件
Germany-BSU-04-Grounding_UK.pdf	2017年12月10日 下午10:55	97 KB	PDF 文件
Germany-BSU-05-Human_Factor_UK.pdf	2017年12月10日 下午10:55	58 KB	PDF 文件
Germany-BSU-06-Occupational_Accident_UK.pdf	2017年12月10日 下午10:55	45 KB	PDF 文件
Germany-BSU-07-Time_Sheet_UK.pdf	2017年12月10日 下午10:55	48 KB	PDF 文件
Germany-BSU-08-Water_ingress_UK.pdf	2017年12月10日 下午10:55	153 KB	PDF 文件
Germany-BSU-annual_statistics_2007.pdf	2016年5月31日 下午6:44	1.1 MB	PDF 文件
Germany-BSU-annual_statistics_2008.pdf	2016年5月31日 下午6:44	500 KB	PDF 文件
Germany-BSU-annual_statistics_2009.pdf	2016年5月31日 下午6:44	2.3 MB	PDF 文件
Germany-BSU-annual_statistics_2010.pdf	2016年5月31日 下午6:44	677 KB	PDF 文件
Germany-BSU-annual_statistics_2011.pdf	2016年7月12日 下午6:23	3.1 MB	PDF 文件
Germany-BSU-annual_statistics_2012.pdf	2016年5月31日 下午6:44	2.1 MB	PDF 文件
Germany-BSU-annual_statistics_2013.pdf	2016年5月31日 下午6:44	1.7 MB	PDF 文件
Germany-BSU-annual_statistics_2014.pdf	2016年5月31日 下午6:44	2.4 MB	PDF 文件
Germany-BSU-annual_statistics_2015.pdf	2016年9月29日 下午8:29	4.6 MB	PDF 文件
Germany-BSU-annual_statistics_2016.pdf	2017年12月10日 下午11:07	6.3 MB	PDF 文件
Germany-Structure_BSU.pdf	2017年12月10日 下午10:49	44 KB	PDF 文件
Gibraltar-MACIO-Shipping Guidance 053.pdf	2017年12月11日 下午1:08	370 KB	PDF 文件
Greece-N.4033-2011.pdf	2014年2月10日 下午6:31	4.2 MB	PDF 文件
Greece-N.4150-2013 (art.18).pdf	2014年2月10日 下午6:32	1 MB	PDF 文件
Greece-NEAR MISS RESOLUTION HBMCI.pdf	2014年2月27日 下午7:54	368 KB	PDF 文件
Greece-YA 611.22-14-3013 - RES.MSC.255(84).pdf	2014年12月4日 下午3:21	1 MB	PDF 文件
Greece-YA 3522.3.06.2006.pdf	2014年10月15日 下午7:16	147 KB	PDF 文件

運研所海事調查資料

搜尋

名稱	修改日期	大小	種類
HK-chart_e_mpd.pdf	2017年12月17日 上午11:24	28 KB	PDF 文件
HK-Organisation.pdf	2017年12月17日 上午11:25	392 KB	PDF 文件
HK-Organization Chart of Marine Accident Investigation and Shipping Security Policy Branch.pdf	2017年12月17日 上午11:26	277 KB	PDF 文件
HK-Regulations and Reporting Requirements.pdf	2017年12月17日 上午11:26	234 KB	PDF 文件
HK-Types of Marine Accident Investigation Carried out by Marine Department.pdf	2017年12月17日 上午11:27	203 KB	PDF 文件
Iceland-Act on the Icelandic Transport Authority.pdf	2017年12月15日 下午9:44	122 KB	PDF 文件
IMO	2017年12月17日 下午11:45	--	檔案夾
India-Annex 1-Information flow.pdf	2017年12月17日 下午12:08	80 KB	PDF 文件
India-Directorate General of Shipping / Govt Of India.pdf	2017年12月17日 上午11:45	895 KB	PDF 文件
India-PART XII Investigations And Inquiries.pdf	2017年12月17日 上午11:45	888 KB	PDF 文件
India-SOP - Casualty.pdf	2017年12月17日 下午12:06	65 KB	PDF 文件
Ireland-Code of Business Conduct.pdf	2017年12月15日 下午9:56	1.6 MB	PDF 文件
Ireland-Merchant Shipping (Investigation of Marine Casualties) Act, 2000.pdf	2016年9月14日 下午5:11	87 KB	PDF 文件
Ireland-S.I. No. 276-2011 - European Communities (Merchant Shipping) (Investigation of Accidents) Regulations 2011.pdf	2016年9月14日 下午5:11	120 KB	PDF 文件
Japan - Chapter 4 Marine accident and incident investigations.pdf	2017年12月12日 上午12:14	1.5 MB	PDF 文件
Japan-JTSB-annualreport2012.pdf	2015年3月18日 上午11:50	5.4 MB	PDF 文件
Japan-JTSB-annualreport2013e.pdf	2015年3月18日 上午11:50	3.4 MB	PDF 文件
Japan-JTSB-annualreport2014e.pdf	2015年3月18日 上午11:51	10.2 MB	PDF 文件
Japan-JTSB-annualreport2015e.pdf	2015年12月15日 下午1:14	10.9 MB	PDF 文件
Japan-JTSB-annualreport2016e.pdf	2016年10月25日 下午1:15	9.3 MB	PDF 文件
Japan-JTSB-annualreport2017e.pdf	2017年9月26日 下午4:52	8.9 MB	PDF 文件
JP-Act for Establishment of the Japan Transport Safety Board.pdf	2017年12月17日 下午12:26	55 KB	PDF 文件
JP-Marine Accidents and Incidents to be investigated.pdf	2017年12月17日 下午12:27	21 KB	PDF 文件
Korea-KMST-Chronology.pdf	2017年12月18日 下午6:06	222 KB	PDF 文件
Korea-KMST-Organisation.pdf	2017年12月18日 下午6:06	243 KB	PDF 文件

運研所海事調查資料

名稱	修改日期	大小	種類
Latvia-By-laws of the Transport Accident and Incident Investigation Bureau.doc	2016年12月22日 下午8:43	34 KB	Micros...t (.doc)
Latvia-Cab._Reg._No._973_-_By-laws_of_the_Aircraft_Accident_and_Incident_Investigation_Bureau.doc	2017年12月15日 下午10:15	34 KB	Micros...t (.doc)
Latvia-Maritime Code.doc	2016年12月22日 下午9:09	421 KB	Micros...t (.doc)
Latvia-Procedures for Investigation of Marine Casualties and Marine Incidents.doc	2016年12月22日 下午8:38	177 KB	Micros...t (.doc)
Liberia-Rev-rlm-109_RLM-260_1-25-2010_1.pdf	2016年12月20日 下午4:06	251 KB	PDF 文件
Liberia-RLM-109-1_RLM-260_Rev.12-2009.pdf	2016年12月20日 下午4:06	533 KB	PDF 文件
Lithuania-2016 Annual Report (EN).pdf	2017年12月15日 下午10:35	399 KB	PDF 文件
Luxemburg-Grand-Ducal Regulation of 13 October 2011 establis...he investigation of accidents in the maritime transport sector.pdf	2017年12月15日 下午11:26	95 KB	PDF 文件
Luxemburg-maritime-notification-casuality.pdf	2017年12月15日 下午11:19	540 KB	PDF 文件
MAIBAnnualReport_2012.pdf	2014年10月1日 下午6:18	641 KB	PDF 文件
MAIIF	2017年12月17日 下午11:45	--	檔案夾
Malta-Merchant Shipping (Accident and Incident Safety Investigation) Regulations 2011.pdf	2017年12月15日 下午11:34	100 KB	PDF 文件
Marshall Island-Report of Personal Injury or Loss of Life.pdf	2017年3月24日 下午11:54	170 KB	PDF 文件
Marshall Island-Report of Vessel Casualty or Accident.pdf	2016年1月20日 上午3:14	221 KB	PDF 文件
MGN_564_MAIB_Consultation_Response.pdf	2017年12月10日 下午4:24	209 KB	PDF 文件
MGN_564.pdf	2017年12月10日 下午4:25	285 KB	PDF 文件
MSC_MEPC_3_Circ_4.pdf	2017年8月1日 下午10:14	493 KB	PDF 文件

運研所海事調查資料

名稱	修改日期	大小	種類
NetheraInds-OVV_verkorte_brochure_EN.pdf	2016年9月15日 下午6:10	402 KB	PDF 文件
Netherlands-2015-07-06_Kingdom_Act_Dutch_Safety_Board_(nieuwe_vertaling).pdf	2017年12月16日 上午9:20	119 KB	PDF 文件
Netherlands-Coordination_protocol_Dutch_Safety_Board_-_Public_Prosecutor.pdf	2015年7月21日 下午4:44	23 KB	PDF 文件
Netherlands-Explanatory_Statement_Kingdom_Act_Dutch_Safety_Board.pdf	2015年7月21日 下午4:44	126 KB	PDF 文件
Netherlands-OVV_Intro_factsheet_EN.pdf	2016年9月15日 下午6:10	380 KB	PDF 文件
New Zealand-ce-expense-disclosure-workbook.xlsx	2017年12月16日 上午10:04	27 KB	Micros...k (.xlsx)
New Zealand-ce-expense-disclosures-guide-agency-staff-2017.docx	2017年12月16日 上午10:04	33 KB	Micros...(.docx)
New Zealand-CEO expenses Quarter 1, 2, 3 & 4 - 2014-15.xls	2017年1月13日 上午8:41	72 KB	Micros...ok (.xls)
New Zealand-CEO expenses Quarter 1, 2, 3 & 4 - 2015-16.xls	2017年1月13日 上午8:41	80 KB	Micros...ok (.xls)
New Zealand-Commissions of Inquiry Act 1908.pdf	2017年3月29日 上午11:35	219 KB	PDF 文件
New Zealand-Maritime Transport Act 1994.pdf	2017年9月22日 下午8:03	1.9 MB	PDF 文件
New Zealand-TAIC Organisation chart .jpg	2017年12月16日 上午10:10	254 KB	JPEG 影像
New Zealand-TAIC Organisation chart .pdf	2017年8月3日 上午4:55	181 KB	PDF 文件
New Zealand-Transport Accident Investigation Commission Act 1990.pdf	2017年4月26日 上午10:02	525 KB	PDF 文件
Norway-About us | aibn.pdf	2017年12月18日 下午5:55	118 KB	PDF 文件
Norway-AIBN-Annual report 2013.pdf	2017年12月10日 下午11:58	4 MB	PDF 文件
Norway-AIBN-Annual report 2014.pdf	2017年12月10日 下午11:58	3.5 MB	PDF 文件
Norway-AIBN-Annual report 2015.pdf	2017年12月10日 下午11:58	3.4 MB	PDF 文件
Norway-AIBN-Annual report 2016.pdf	2017年12月10日 下午11:57	3.8 MB	PDF 文件
Norway-AIBN-reporting-of-marine-casualties-and-occupational-injuries.html	2017年12月11日 上午12:02	79 KB	HTML 文件
Norway-AIBN-The AIBN method 2017-Framework and Analysis Process for Systematic Safety Investigations.pdf	2017年12月11日 上午12:41	1.5 MB	PDF 文件
Norway-DIRECTIVE FOR THE ACCIDENT INVESTIGATION BOARD NORWAY.pdf	2017年12月16日 上午10:14	26 KB	PDF 文件
Norway-Directive_for_the_AIBN.pdf	2017年12月16日 上午10:14	26 KB	PDF 文件
Norway-Marine | aibn.pdf	2017年12月18日 下午5:56	130 KB	PDF 文件
Norway-Notification and reporting duty for accidents - Norwegian Maritime Authority.pdf	2017年12月18日 下午5:56	88 KB	PDF 文件
Norway-Organisation-map.png	2017年12月18日 下午5:56	60 KB	PNG 影像
Norway-Published reports - marine | aibn.pdf	2017年12月18日 下午5:57	141 KB	PDF 文件

運研所海事調查資料

名稱	修改日期	大小	種類
Panama-Res.-No.106-135-DGMM-9-Sept-2013-NUEVO-REGLAMENTO-DE-INVEST.-DE-ACCIDENTE-2013-1.pdf	2017年12月16日 上午10:19	1.3 MB	PDF 文件
Peru-National Maritime Authority.pdf	2017年12月16日 上午10:28	1.8 MB	PDF 文件
Peru-organigrama.png	2017年12月16日 上午10:40	138 KB	PNG 影像
Philippines-orgchart.jpg	2017年12月16日 上午10:47	481 KB	JPEG 影像
Philippines-orgchart.pdf	2017年12月16日 上午10:45	202 KB	PDF 文件
Poland-1-Ustawa_o_PKBWM.pdf	2017年4月7日 下午4:13	253 KB	PDF 文件
Poland-2-Dz_U_2012_1157.pdf	2017年4月7日 下午4:09	915 KB	PDF 文件
Poland-3-Dz_U_2012_1163.pdf	2017年4月7日 下午4:08	883 KB	PDF 文件
Poland-4-Dz_U_2012_1159.pdf	2017年4月7日 下午4:12	871 KB	PDF 文件
Poland-5-Dz_U_2012_1176.pdf	2017年4月7日 下午4:09	934 KB	PDF 文件
Poland-6-Dz_U_MTBiGM_2013_42.pdf	2017年4月7日 下午4:08	432 KB	PDF 文件
Poland-7-Casualty_Investigation_Code_Res_MSC_255_84.pdf	2017年5月25日 下午5:16	264 KB	PDF 文件
Portugal-DL_140-2012.pdf	2012年10月8日 下午9:50	213 KB	PDF 文件
Portugal-Lei_18-2012.pdf	2012年10月8日 下午9:48	233 KB	PDF 文件
Romania-annex_9-Sofia_2014_Romania.jpg	2017年12月16日 下午10:12	583 KB	JPEG 影像
Romania-annex_9-Sofia_2014_Romania.pdf	2017年12月16日 上午11:13	3.4 MB	PDF 文件

運研所海事調查資料

名稱	修改日期	大小	種類
Slovenia-ORG-MZIP-2013-01_06-z_organi_ANG.jpg	2017年12月16日 上午11:18	286 KB	JPEG 影像
Slovenia-ORG-MZIP-2013-01_06-z_organi_ANG.pdf	2017年12月16日 上午11:17	9 KB	PDF 文件
Slovenia-Organigram_MZI_eng.pdf	2017年12月16日 下午10:37	30 KB	PDF 文件
South Africa-saf163889.pdf	2017年12月17日 下午2:18	154 KB	PDF 文件
South Africa-SAMSA Act, 1998.pdf	2014年9月5日 上午1:58	154 KB	PDF 文件
Spain-AreportCIAIM2009(英).pdf	2017年10月26日 下午4:24	9.1 MB	PDF 文件
Spain-CIAIM_informe_anual_2014_WEB.pdf	2017年10月26日 下午4:25	983 KB	PDF 文件
Spain-CIAIM_informe_anual_2015_WEB.pdf	2017年10月26日 下午4:24	3 MB	PDF 文件
Spain-CIAIM_informe_anual_2016_WEB.pdf	2017年12月16日 上午11:28	1.1 MB	PDF 文件
Spain-CIAIMMarinecasualtynotification.pdf	2017年10月26日 下午4:24	945 KB	PDF 文件
Spain-Report2010(英文).pdf	2017年12月16日 上午11:39	1.3 MB	PDF 文件
Sweden-SHK annual report 2013.pdf	2015年6月12日 下午5:25	793 KB	PDF 文件
Sweden-SHK annual report 2014.pdf	2015年6月12日 下午5:28	807 KB	PDF 文件
Sweden-SHK annual report 2015.pdf	2016年3月29日 下午7:46	687 KB	PDF 文件
Sweden-SHK annual report 2016.pdf	2017年3月22日 下午11:24	803 KB	PDF 文件
Sweden-SHK-Accident Investigation Act (1990-712) .pdf	2015年6月12日 下午5:25	106 KB	PDF 文件
Sweden-SHK-Accident Investigation Act (1990-712).pdf	2015年6月12日 下午5:25	106 KB	PDF 文件
Sweden-SHK-Accident Investigation Ordinance (1990-717) .pdf	2015年6月12日 下午5:25	125 KB	PDF 文件
Sweden-SHK-Accident Investigation Ordinance (1990-717).pdf	2015年6月12日 下午5:25	125 KB	PDF 文件
Sweden-SHK-Ordinance (2007-860) providing instructions for SHK .pdf	2015年6月12日 下午5:25	13 KB	PDF 文件
Sweden-SHK-Ordinance (2007-860) providing instructions for SHK.pdf	2015年6月12日 下午5:25	13 KB	PDF 文件
Sweden-SHK-Regulation (EU) No 996-2010.pdf	2015年6月12日 下午5:25	829 KB	PDF 文件
Sweden-SHK-Regulation (EU) No. 1286-2011.pdf	2017年12月10日 下午11:21	1 MB	PDF 文件
Switzerland-742_161_OSITI_en.pdf	2017年6月28日 下午9:44	360 KB	PDF 文件
Turkey-20120402_144700_204_2_64.pdf	2017年12月17日 下午2:58	388 KB	PDF 文件

UK-Gibraltar-Shipping Guidance Notice – 053.pdf	2017年12月15日 下午9:22	370 KB	PDF 文件
UK-Gilbraltar-Gibraltar Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 (2014-033).pdf	2014年8月5日 下午6:11	367 KB	PDF 文件
UK-MAIB_Annual_Report_2011.pdf	2014年10月1日 下午6:26	3.7 MB	PDF 文件
UK-MAIB_Annual_Report_2012.pdf	2014年10月1日 下午6:18	641 KB	PDF 文件
UK-MAIB_Annual_Report_2013.pdf	2014年10月1日 下午5:56	10 MB	PDF 文件
UK-MAIB_Annual_Report_2014.pdf	2015年7月27日 下午4:02	8.5 MB	PDF 文件
UK-MAIB_Annual_Report_2015.pdf	2016年7月28日 上午2:49	7.5 MB	PDF 文件
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UK-MAIB_AnnualReport2016.pdf	2017年8月1日 下午9:01	7.5 MB	PDF 文件
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UK-MAIB-292-ukpga_19950021_en.pdf	2017年7月15日 下午6:25	35.9 MB	PDF 文件
UK-MAIB-AccidentReportForm-ElectronicFormV2.pdf	2016年1月22日 下午7:05	2.8 MB	PDF 文件
UK-MAIB-Human_Element_strategy_and_research.pdf	2017年12月10日 下午4:33	257 KB	PDF 文件
UK-MAIB-InformationLeaflet_CHS_May2015.pdf	2016年4月2日 下午11:21	2.4 MB	PDF 文件
UK-MAIB-InformationLeaflet_UK_May2015.pdf	2016年4月2日 下午10:52	2 MB	PDF 文件
UK-MAIB-mgn458.pdf	2014年2月18日 下午8:12	278 KB	PDF 文件
UK-MAIB-uksi_2012 No 1743_en.pdf	2017年12月11日 下午1:26	113 KB	PDF 文件
UK-MAIB-uksi_2013 No 2882_en.pdf	2017年12月11日 下午1:27	14 KB	PDF 文件
United States Coast Guard's Management of the Marine Casualty Investigations Program.pdf	2017年12月11日 下午11:55	1.7 MB	PDF 文件
USA-NTSB-2010-Annual-Report.pdf	2017年12月8日 上午4:47	1.7 MB	PDF 文件
USA-NTSB-2011-Annual-Report.pdf	2017年12月8日 上午4:47	2.1 MB	PDF 文件
USA-NTSB-2012-Annual-Report.pdf	2017年12月8日 上午4:47	2.1 MB	PDF 文件
USA-NTSB-2013-Annual-Report.pdf	2017年12月8日 上午4:47	2.5 MB	PDF 文件
USA-NTSB-2014-Annual-Report.pdf	2017年12月8日 上午4:47	10.5 MB	PDF 文件
USA-NTSB-2015-Annual-Report.pdf	2017年12月8日 上午4:47	3.8 MB	PDF 文件
USA-NTSB-2016 Annual Performance Report Final.pdf	2017年12月8日 上午4:47	1.3 MB	PDF 文件
USA-NTSB-2016-Annual-Report.pdf	2017年12月8日 上午4:47	6.6 MB	PDF 文件
USA-NTSB-2017-Annual-Performance-Report.pdf	2017年12月8日 上午4:47	847 KB	PDF 文件
USA-ntsb-org-chart-2016.pdf	2017年12月16日 下午11:36	106 KB	PDF 文件
USA-NTSB-TransportationFatalites_2014_2015.pdf	2017年12月14日 上午12:01	109 KB	PDF 文件
USA-NTSB-TransportationFatalites-2015-2016.pdf	2017年12月14日 上午12:01	25 KB	PDF 文件

EU

名稱	修改日期	大小	種類
2014.09-15-19 CSC 課程講義	2014年9月29日 下午3:48	--	檔案夾
2017.09-04-08 CSC 課程講義	2017年9月13日 下午1:46	--	檔案夾
EMCIP 01-notes.pdf	2017年12月10日 下午1:37	293 KB	PDF 文件
EMCIP 02-casualty type.pdf	2017年12月10日 下午1:37	12 KB	PDF 文件
EMCIP 03-Accidents to people - Deviation.pdf	2017年12月10日 下午1:38	16 KB	PDF 文件
EMCIP 04-ship types.pdf	2017年12月10日 下午12:58	17 KB	PDF 文件
EMCIP 05-model.pdf	2017年12月10日 下午1:39	28 KB	PDF 文件
EU 01-Directive 2009/18/EC.pdf	2017年12月10日 上午12:28	817 KB	PDF 文件
EU 02-Regulation (EC) No 651/2011.pdf	2017年12月10日 上午12:29	746 KB	PDF 文件
EU 03-Regulation (EC) No 1286/2011.pdf	2017年12月10日 上午12:29	1 MB	PDF 文件
EU EMCIP 01 REGULATION (EC) No 1406/2002.pdf	2017年12月10日 下午2:12	87 KB	PDF 文件
EU EMCIP 02 DIRECTIVE 2009/18/EC.pdf	2017年12月10日 下午2:12	817 KB	PDF 文件
EU EMCIP 03 REGULATION (EU) No 1286/2011.pdf	2017年12月10日 下午2:12	1 MB	PDF 文件
EU EMCIP 04 REGULATION (EU) No 651/2011.pdf	2017年12月10日 下午2:12	746 KB	PDF 文件
EU EMCIP 05 msc-mepc_3-circ_2.pdf	2017年12月10日 下午2:12	256 KB	PDF 文件
EU EMCIP 06 msc-mepc_3-circ_3.pdf	2017年12月10日 下午2:12	321 KB	PDF 文件
EU EMCIP 07 msc-mepc_3-circ_4.pdf	2017年12月10日 下午2:12	493 KB	PDF 文件
EU EMCIP 08 European Statistics of accidents at work (ESAW) - Methodology (2012) .pdf	2017年12月10日 下午2:12	689 KB	PDF 文件
EU EMCIP 09 ILO reg.5.16.pdf	2017年12月10日 下午2:12	13 KB	PDF 文件
EU EMCIP 10 EMCIP current taxonomy – Glossary of reporting attributes.pdf	2017年12月10日 下午2:16	8.8 MB	PDF 文件
EU EMCIP 11 EMCIP revised taxonomy (business edition May 2017).pdf	2017年12月10日 下午2:13	2.3 MB	PDF 文件
EU EMCIP Annual Overview of Marine Casualties and Incidents - Summary 2011-2015.pdf	2017年12月10日 下午2:33	11 MB	PDF 文件
EU EMCIP Annual Overview of Marine Casualties and Incidents 2014.pdf	2017年12月10日 下午2:29	6.9 MB	PDF 文件
EU EMCIP Annual Overview of Marine Casualties and Incidents 2015.pdf	2017年12月10日 下午2:31	9.5 MB	PDF 文件
EU EMCIP Annual Overview of Marine Casualties and Incidents 2016.pdf	2017年12月10日 下午2:40	31.4 MB	PDF 文件
EU-EMSA-Annual-overview-of-marine-casualties-and-incidents-2017_final.pdf	2017年12月11日 下午1:54	25.9 MB	PDF 文件
PCF1 salient points as approved at PCF2 v2.pdf	2017年12月10日 下午1:22	99 KB	PDF 文件
PCF2 salient points as approved by PCF 3.pdf	2017年12月10日 下午1:32	155 KB	PDF 文件
PCF3 salient points approved PCF4.pdf	2017年12月10日 下午1:22	69 KB	PDF 文件
PCF4 salient points.pdf	2017年12月10日 下午1:27	82 KB	PDF 文件
PCF5-salient-points.pdf	2017年12月10日 下午1:27	78 KB	PDF 文件
PCF6-salient-points.pdf	2017年12月10日 下午1:23	205 KB	PDF 文件
PCF7-draft-salient-points.docx	2017年12月10日 下午1:23	57 KB	Micros...(.docx)

2014.09-15-19 CSC 課程講義

名稱	修改日期	大小	種類
00. Agenda SAFEMED III AI core skills course.pdf	2014年9月8日 下午4:47	107 KB	PDF 文件
01. Ordre du jour Enqu\210tes accidents et incidents de mer.pdf	2014年9月8日 下午4:45	109 KB	PDF 文件
02. Flag State Implementation within SAFEMED III project.pdf	2014年9月26日 下午2:16	628 KB	PDF 文件
03. Introduction.pdf	2014年9月26日 下午2:17	469 KB	PDF 文件
04. CSC EMSA and AI.pdf	2014年9月26日 下午2:20	571 KB	PDF 文件
05. Operational readiness & work processes.pdf	2014年9月26日 下午3:13	994 KB	PDF 文件
06. Human Factors.pdf	2014年9月26日 下午2:12	3.6 MB	PDF 文件
07. Accident site.pdf	2014年9月26日 下午3:17	2.4 MB	PDF 文件
08. Witness Interviewing.pdf	2014年9月26日 下午2:13	1.8 MB	PDF 文件
09. Evidence collection.pdf	2014年9月26日 下午3:18	1.7 MB	PDF 文件
10. Analysis.pdf	2014年9月26日 下午2:13	1.6 MB	PDF 文件
11. Developing Recommendations.pdf	2014年9月26日 下午2:14	1 MB	PDF 文件
12. Accident Investigation purpose and principles.pdf	2014年9月26日 下午3:04	1.3 MB	PDF 文件
13. EMCIP and database searches.pdf	2014年9月26日 下午3:20	751 KB	PDF 文件
14. Investigation reports.pdf	2014年9月26日 下午3:20	639 KB	PDF 文件
15. IMO Casualty Reporting as Admin.pdf	2014年9月26日 下午3:21	2.4 MB	PDF 文件
16. List of participants SAFEMED III core skills for accident investigation.pdf	2014年9月29日 下午3:43	124 KB	PDF 文件

2017.09-04-08 CSC 課程講義

名稱	修改日期	大小	種類
1 Introduction_EGI.pdf	2017年9月13日 上午10:03	600 KB	PDF 文件
2_CSC EMSA and AI.pdf	2017年9月13日 上午10:04	763 KB	PDF 文件
3-4 Accident Investigation purpose and principles.pdf	2017年9月13日 上午10:04	2.7 MB	PDF 文件
5-6 Operational readiness & work processes.pdf	2017年9月13日 上午10:04	1.6 MB	PDF 文件
7 Accident site.pdf	2017年9月13日 上午10:05	6.7 MB	PDF 文件
8-9 Evidence collection.pdf	2017年9月13日 上午10:07	6.1 MB	PDF 文件
10-11 Human Factors Sept 2017.pdf	2017年9月13日 上午10:07	5 MB	PDF 文件
12-15 Witness Interviewing 2017.pdf	2017年9月13日 上午10:09	3.5 MB	PDF 文件
16-17 Analysis Sept 2017.pdf	2017年9月13日 上午10:10	3 MB	PDF 文件
18 Developing Recommendations 2017.pdf	2017年9月13日 上午10:10	1.6 MB	PDF 文件
19 Investigation reports.pdf	2017年9月13日 上午10:11	1.6 MB	PDF 文件
20 EMCIP_ECFA.pdf	2017年9月13日 上午10:11	1.1 MB	PDF 文件
Agenda CSC MS Sept 2017 - delegates.pdf	2017年9月13日 上午10:14	188 KB	PDF 文件

IMO

名稱	修改日期	大小	種類
Casualty Analysis Procedure (FSI 17-WP.1, annex 2).pdf	2015年3月23日 下午10:13	46 KB	PDF 文件
Casualty Analysis Process.pdf	2015年3月23日 下午10:17	80 KB	PDF 文件
Casualty, Reporting as Administration final (annex to FSI 20/INF.19).pdf	2017年12月11日 上午12:55	3.4 MB	PDF 文件
III 3.pdf	2017年2月1日 下午7:15	50 KB	PDF 文件
IMO Model Course 3.11 Safety Investigation into Marine Casualties and Incidents (2014).pdf	2015年6月15日 下午4:16	18.5 MB	PDF 文件
IN-THE-FIELD JOB AID FOR INVESTIGATORS.pdf	2016年6月29日 下午5:36	506 KB	PDF 文件
Lessons Learned - Complete Consolidated version Others.pdf	2015年11月25日 上午12:33	282 KB	PDF 文件
Lessons Learned - Consolidated Version Capsizing - Sinking.pdf	2015年11月25日 上午12:28	346 KB	PDF 文件
Lessons Learned - Consolidated version contact collision.pdf	2017年3月16日 下午11:24	514 KB	PDF 文件
Lessons Learned - Consolidated version Fatality - Injuries.pdf	2016年10月13日 下午9:15	557 KB	PDF 文件
Lessons Learned - Consolidated version Fire explosion.pdf	2015年11月25日 上午12:31	374 KB	PDF 文件
Lessons Learned - Consolidated version grounding.pdf	2015年11月25日 上午12:32	185 KB	PDF 文件
Lessons Learned - FSI 11.pdf	2015年3月23日 下午10:13	32 KB	PDF 文件
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Lessons Learned - FSI 15.pdf	2015年3月23日 下午10:14	161 KB	PDF 文件
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Lessons Learned - FSI 20.pdf	2015年3月23日 下午10:16	263 KB	PDF 文件
Lessons Learned - FSI 21.pdf	2015年3月23日 下午10:17	315 KB	PDF 文件
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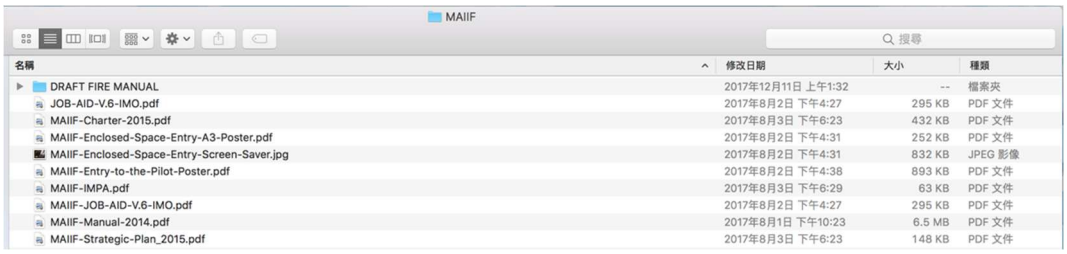
MLC-2006.pdf	2017年8月1日 下午10:19	1.1 MB	PDF 文件
MSC MEPC.7-circ.7.pdf	2015年3月23日 下午10:15	130 KB	PDF 文件
MSC_25584.pdf	2017年8月1日 下午10:11	104 KB	PDF 文件
MSC-Circ.539-ADD.2.pdf	2015年3月23日 下午10:15	848 KB	PDF 文件
MSC-Circ.753.pdf	2015年3月23日 下午10:15	177 KB	PDF 文件
MSC-Circ.802, MEPC-Circ.332.pdf	2015年3月23日 下午10:15	25 KB	PDF 文件
MSC-MEPC.3-Circ.3.pdf	2017年12月11日 上午12:56	321 KB	PDF 文件
MSC-MEPC.3-Circ.4 Rev 1 Revised harmonized reporting procedures - Reports required under SOLAS regulations I21.pdf	2015年3月23日 下午10:17	495 KB	PDF 文件
Process to Associate interest to a Marine Safety Investigation, Jul 2015.pdf	2017年12月11日 上午12:55	2.3 MB	PDF 文件
Questinaire.pdf	2016年6月29日 下午5:37	411 KB	PDF 文件
Res_A.98724.pdf	2017年8月1日 下午10:19	116 KB	PDF 文件
Res_A.107528.pdf	2017年8月1日 下午10:13	291 KB	PDF 文件
Res. A.646(16).pdf	2015年3月23日 下午10:15	85 KB	PDF 文件
Res. MSC.255(84) Casualty Iinvestigation Code.pdf	2015年3月23日 下午10:15	145 KB	PDF 文件



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名稱	修改日期	大小	種類
DRAFT FIRE MANUAL	2017年12月11日 上午1:32	--	檔案夾
JOB-AID-V.6-IMO.pdf	2017年8月2日 下午4:27	295 KB	PDF 文件
MAIIF-Charter-2015.pdf	2017年8月3日 下午6:23	432 KB	PDF 文件
MAIIF-Enclosed-Space-Entry-A3-Poster.pdf	2017年8月2日 下午4:31	252 KB	PDF 文件
MAIIF-Enclosed-Space-Entry-Screen-Saver.jpg	2017年8月2日 下午4:31	832 KB	JPEG 影像
MAIIF-Entry-to-the-Pilot-Poster.pdf	2017年8月2日 下午4:38	893 KB	PDF 文件
MAIIF-IMPA.pdf	2017年8月3日 下午6:29	63 KB	PDF 文件
MAIIF-JOB-AID-V.6-IMO.pdf	2017年8月2日 下午4:27	295 KB	PDF 文件
MAIIF-Manual-2014.pdf	2017年8月1日 下午10:23	6.5 MB	PDF 文件
MAIIF-Strategic-Plan_2015.pdf	2017年8月3日 下午6:23	148 KB	PDF 文件

DRAFT FIRE MANUAL

名稱	修改日期	大小	種類
Guide-for-Conducting-Marine-Fire-Investigations-Chapter-0.pdf	2017年8月2日 下午5:09	25 KB	PDF 文件
Guide-for-Conducting-Marine-Fire-Investigations-Chapter-1.pdf	2017年8月2日 下午5:09	204 KB	PDF 文件
Guide-for-Conducting-Marine-Fire-Investigations-Chapter-2.pdf	2017年8月2日 下午5:09	99 KB	PDF 文件
Guide-for-Conducting-Marine-Fire-Investigations-Chapter-3.pdf	2017年8月2日 下午5:09	686 KB	PDF 文件
Guide-for-Conducting-Marine-Fire-Investigations-Chapter-4.pdf	2017年8月2日 下午5:09	155 KB	PDF 文件
Guide-for-Conducting-Marine-Fire-Investigations-Chapter-5.pdf	2017年8月2日 下午5:09	144 KB	PDF 文件
Guide-for-Conducting-Marine-Fire-Investigations-Chapter-6.pdf	2017年8月2日 下午5:09	198 KB	PDF 文件
Guide-for-Conducting-Marine-Fire-Investigations-Chapter-7.pdf	2017年8月2日 下午5:09	129 KB	PDF 文件

附錄 5　Resolution A.1070(28) IMO Instruments Implementation Code (III CODE)

Resolution A.1070(28)

Adopted on 4 December 2013

(Agenda item 10)

IMO INSTRUMENTS IMPLEMENTATION CODE (III CODE)

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

RECALLING ALSO that, through resolution A.1018(26), it approved the time frame and schedule of activities for the consideration and introduction of an institutionalized IMO Member State Audit Scheme,

RECALLING ALSO that, by resolution A.1054(27), it adopted the Code for the Implementation of Mandatory IMO Instruments, 2011, which provides guidance for the implementation and enforcement of IMO instruments and forms the basis of the Voluntary IMO Member State Audit Scheme, in particular concerning the identification of the auditable areas,

BEING AWARE of the request of the seventh session of the United Nations Commission on Sustainable Development (CSD 7) that measures be developed to ensure that flag States give full and complete effect to the IMO and other relevant conventions to which they are party, so that the ships of all flag States meet international rules and standards,

RECOGNIZING that parties to the relevant international conventions have, as part of the ratification process, accepted to fully meet their responsibilities and to discharge their obligations under the conventions and other instruments to which they are party,

REAFFIRMING that States have the primary responsibility to have in place an adequate and effective system to exercise control over ships entitled to fly their flag, and to ensure that they comply with relevant international rules and regulations in respect of maritime safety, security and protection of the marine environment,

REAFFIRMING ALSO that States, in their capacity as port and coastal States, have other obligations and responsibilities under applicable international law in respect of maritime safety, security and protection of the marine environment,

NOTING that, while States may realize certain benefits by becoming party to instruments aiming at promoting maritime safety, security and the prevention of pollution from ships, these benefits can only be fully realized when all parties carry out their obligations as required by the instruments concerned,

NOTING ALSO that the ultimate effectiveness of any instrument depends, inter alia, upon all States:

(a) becoming party to all instruments related to maritime safety, security and pollution prevention and control;

(b) implementing and enforcing such instruments fully and effectively; and

(c) reporting to the Organization, as required,

BEING DESIROUS to further assist Member Governments to improve their capabilities and overall performance in order to be able to comply with the IMO instruments to which they are party,

CONSCIOUS of the difficulties some Member States may face in complying fully with all the provisions of the various IMO instruments to which they are party,

MINDFUL of the need for any such difficulties to be eliminated to the extent possible; and recalling that the Organization has established an Integrated Technical Cooperation Programme for that reason and purpose,

NOTING FURTHER that the Maritime Safety Committee and the Marine Environment Protection Committee have developed requirements for adoption by Contracting Governments to the International Convention for the Safety of Life at Sea, 1974, the Protocol of 1988 relating to the International Convention on Load Lines, 1966, the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, and the International Convention on Standards of Training, Certification and Watchkeeping, 1978, respectively, which will make the use of the Code referred to in operative paragraph 1 mandatory,

RECALLING FURTHER its consideration of requirements for adoption by Contracting Governments to the International Convention on Load Lines, 1966, the International Convention on Tonnage Measurement of Ships, 1969 and the Convention on the International Regulations for Preventing Collisions at Sea, 1972, which will also make the use of the Code referred to in operative paragraph 1 mandatory,

HAVING CONSIDERED the recommendations made by the Marine Environment Protection Committee, at its sixty-fourth session, and the Maritime Safety Committee, at its ninety-first session,

1 ADOPTS the IMO Instruments Implementation Code (III Code), set out in the annex to the present resolution;

2 REQUESTS the Maritime Safety Committee and the Marine Environment Protection Committee to keep the Code under review and, in coordination with the Council, to propose amendments thereto to the Assembly; and

3 REVOKES resolution A.1054(27) on the Code for the Implementation of Mandatory IMO Instruments, 2011.

Annex

IMO INSTRUMENTS IMPLEMENTATION CODE (III CODE)

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PART 1 – COMMON AREAS

Objective

1 The objective of this Code is to enhance global maritime safety and protection of the marine environment and assist States in the implementation of instruments of the Organization.

2 Different States will view this Code according to their own circumstances and should be bound only for the implementation of those instruments to which they are Contracting Governments or Parties. By virtue of geography and circumstance, some States may have a greater role as a flag State than as a port State or as a coastal State, whilst others may have a greater role as a coastal State or a port State than as a flag State.

Strategy

3 In order to meet the objective of this Code, a State is recommended to:

.1 develop an overall strategy to ensure that its international obligations and responsibilities as a flag, port and coastal State are met;

.2 establish a methodology to monitor and assess that the strategy ensures effective implementation and enforcement of relevant international mandatory instruments; and

.3 continuously review the strategy to achieve, maintain and improve the overall organizational performance and capability as a flag, port and coastal State.

General

4 Under the general provisions of treaty law and of IMO conventions, States should be responsible for promulgating laws and regulations and for taking all other steps which may be necessary to give those instruments full and complete effect so as to ensure safety of life at sea and protection of the marine environment.

5 In taking measures to prevent, reduce and control pollution of the marine environment, States should act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another.

Scope

6 The Code seeks to address those aspects necessary for a Contracting Government or Party to give full and complete effect to the provisions of the applicable international instruments to which it is a Contracting Government or Party, pertaining to:

.1 safety of life at sea;

.2 prevention of pollution from ships;

.3 standards of training, certification and watchkeeping for seafarers;

.4 load lines;

.5 tonnage measurement of ships; and

.6 regulations for preventing collisions at sea.

7 The following areas should be considered and addressed in the development of policies, legislation, associated rules and regulations and administrative procedures for the implementation and enforcement of those obligations and responsibilities by the State:

.1 jurisdiction;

.2 organization and authority;

.3 legislation, rules and regulations;

.4 promulgation of the applicable international mandatory instruments, rules and regulations;

.5 enforcement arrangements;

.6 control, survey, inspection, audit, verification, approval and certification functions;

.7 selection, recognition, authorization, empowerment and monitoring of recognized organizations, as appropriate, and of nominated surveyors;

.8 investigations required to be reported to the Organization; and

.9 reporting to the Organization and other Administrations.

Initial actions

8 When a new or amended instrument of the Organization enters into force for a State, the Government of that State should be in a position to implement and enforce its provisions through appropriate national legislation and to provide the necessary implementation and enforcement infrastructure. This means that the Government of the State should have:

.1 the ability to promulgate laws, which permit effective jurisdiction and control in administrative, technical and social matters over ships flying its flag and, in particular, provide the legal basis for general requirements for registries, the inspection of ships, safety and pollution prevention laws applying to such ships and the making of associated regulations;

.2 a legal basis for the enforcement of its national laws and regulations including the associated investigative and penal processes; and

.3 the availability of sufficient personnel with maritime expertise to assist in the promulgation of the necessary national laws and to discharge all the responsibilities of the State, including reporting as required by the respective conventions.

Communication of information

9 The State should communicate its strategy, as referred to in paragraph 3, including information on its national legislation to all concerned.

Records

10 Records, as appropriate, should be established and maintained to provide evidence of conformity to requirements and of the effective operation of the State. Records should remain legible, readily identifiable and retrievable. A documented procedure should be established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records.

Improvement

11 States should continually improve the adequacy of the measures which are taken to give effect to those conventions and protocols which they have accepted. Improvement should be made through rigorous and effective application and enforcement of national legislation, as appropriate, and monitoring of compliance.

12 The State should stimulate a culture which provides opportunities for improvement of performance in maritime safety and environmental protection activities, which may include, inter alia:

.1 continual training programmes relating to safety and pollution prevention;

.2 regional and national drills on safety and pollution prevention, which engage a broad spectrum of maritime-related national, regional and international organizations, companies and seafarers; and

.3 using reward and incentive mechanisms for shipping companies and seafarers regarding improving safety and pollution prevention.

13 Further, the State should take action to identify and eliminate the cause of any non-conformities in order to prevent recurrence, including:

.1 review and analysis of non-conformities;

.2 implementation of necessary corrective action; and

.3 review of the corrective action taken.

14 The State should determine action needed to eliminate the causes of potential non-conformities in order to prevent their occurrence.

PART 2 – FLAG STATES

Implementation

15 In order to effectively discharge their responsibilities and obligations, flag States should:

.1 implement policies through issuing national legislation and guidance, which will assist in the implementation and enforcement of the requirements of all safety and pollution prevention conventions and protocols to which they are parties; and

.2 assign responsibilities within their Administrations to update and revise any relevant policies adopted, as necessary.

16 A flag State should establish resources and processes capable of administering a safety and environmental protection programme, which, as a minimum, should consist of the following:

.1 administrative instructions to implement applicable international rules and regulations as well as developing and disseminating any interpretative national regulations that may be needed including certificates issued by a classification society, which is recognized by the flag State in accordance with the provisions of SOLAS regulation XI-1/1, and which certificate is required by the flag State to demonstrate compliance with structural, mechanical, electrical, and/or other requirements of an international convention to which the flag State is a party or compliance with a requirement of the flag State's national regulations;

.2 compliance with the requirements of the applicable international instruments, using an audit and inspection programme, independent of any administrative bodies issuing the required certificates and relevant documentation and/or of any entity which has been delegated authority by the State to issue the required certificates and relevant documentation;

.3 compliance with the requirements related to international standards of training, certification and watchkeeping of seafarers. This includes, inter alia:

.1 training, assessment of competence and certification of seafarers;

.2 certificates and endorsements that accurately reflect the competencies of the seafarers, using the appropriate terminology as well as terms that are identical to those used in any safe manning document issued to the ship;

.3 impartial investigation to be held of any reported failure, whether by act or omission that may pose a direct threat to safety of life or property at sea or to the marine environment, by the holders of certificates or endorsements issued by the State;

.4 arrangements for the withdrawal, suspension or cancellation of certificates or endorsements issued by the State when warranted and when necessary to prevent fraud; and

.5 administrative arrangements, including those involving training, assessment and certification activities conducted under the purview of another State, which are such that the flag State accepts its responsibility for ensuring the competence of masters, officers and other seafarers serving on ships entitled to fly its flag;

.4 the conduct of investigations into casualties and adequate and timely handling of cases involving ships with identified deficiencies; and

.5 the development, documentation and provision of guidance concerning those requirements found in the relevant international instruments that are to the satisfaction of the Administration.

17 A flag State should ensure that ships entitled to fly its flag are sufficiently and efficiently manned, taking into account relevant and existing measures such as the Principles of Safe Manning adopted by the Organization.

Delegation of authority

18 With regard only to ships entitled to fly its flag a flag State authorizing a recognized organization to act on its behalf, in conducting the surveys, inspections and audits, issuing of certificates and documents, marking of ships and other statutory work required under the conventions of the Organization or under its national legislation, should regulate such authorization(s) in accordance with the applicable requirements of the international mandatory instruments to:

.1 determine that the recognized organization has adequate resources in terms of technical, managerial and research capabilities to accomplish the tasks being assigned, in accordance with the required standards for recognized organizations acting on behalf of the Administration set out in the relevant instruments of the Organization1 ;

.2 have as its basis a formal written agreement between the Administration and the recognized organization which, as a minimum, includes the elements set out in the relevant instruments of the Organization2, or equivalent legal arrangements, and which may be based on the model agreement for the authorization of recognized organizations acting on behalf of the Administration3 ;

.3 issue specific instructions detailing actions to be followed in the event that a ship is found unfit to proceed to sea without danger to the ship or persons on board, or is found to present an unreasonable threat of harm to the marine environment;

.4 provide the recognized organization with all appropriate instruments of national law and interpretations thereof giving effect to the provisions of the conventions and specify, only for application to ships entitled to fly its flag, whether any additional standards of the Administration go beyond convention requirements in any respect; and

.5 require that the recognized organization maintain records, which will provide the Administration with data to assist in interpretation of requirements contained in the applicable international instruments.

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1 Appendix 1 of the Guidelines for the authorization of organizations acting on behalf of the Administration (resolution A.739(18)).

2 Appendix 2 of the Guidelines for the authorization of organizations acting on behalf of the Administration (resolution A.739(18)).

3 MSC/Circ.710-MEPC/Circ.307.

19 No flag State should mandate its recognized organizations to apply to ships, other than those entitled to fly its flag, any requirement pertaining to their classification rules, requirements, procedures or performance of other statutory certification processes, beyond convention requirements and the mandatory instruments of the Organization.

20 The flag State should establish or participate in an oversight programme with adequate resources for monitoring of, and communication with, its recognized organization(s) in order to ensure that its international obligations are fully met, by:

.1 exercising its authority to conduct supplementary surveys to ensure that ships entitled to fly its flag effectively comply with the requirements of the applicable international instruments;

.2 conducting supplementary surveys as it deems necessary to ensure that ships entitled to fly its flag comply with national requirements, which supplement the international mandatory requirements; and

.3 providing staff who have a good knowledge of the rules and regulations of the flag State and those of the recognized organizations and who are available to carry out effective oversight of the recognized organizations.

21 A flag State nominating surveyor(s) for the purpose of carrying out surveys, audits and inspections on its behalf should regulate such nominations, as appropriate, in accordance with the guidance provided in paragraph 18, in particular subparagraphs .3 and .4.

Enforcement

22 A flag State should take all necessary measures to secure observance of international rules and standards by ships entitled to fly its flag and by entities and persons under its jurisdiction so as to ensure compliance with its international obligations. Such measures should include, inter alia:

.1 prohibiting ships entitled to fly its flag from sailing until such ships can proceed to sea in compliance with the requirements of international rules and standards;

.2 the periodic inspection of ships entitled to fly its flag to verify that the actual condition of the ship and its crew is in conformity with the certificates it carries;

.3 the surveyor to ensure, during the periodic inspection referred to in subparagraph .2, that seafarers assigned to the ships are familiar with:

.1 their specific duties; and

.2 ship arrangements, installations, equipment and procedures;

.4 ensuring that the ship's complement, as a whole, can effectively coordinate activities in an emergency situation and in the performance of functions vital to safety or to the prevention or mitigation of pollution;

.5 providing, in national laws and regulations, for penalties of adequate severity to discourage violation of international rules and standards by ships entitled to fly its flag;

.6 instituting proceedings, after an investigation has been conducted, against ships entitled to fly its flag, which have violated international rules and standards, irrespective of where the violation has occurred;

.7 providing, in national laws and regulations, for penalties of adequate severity to discourage violations of international rules and standards by individuals issued with certificates or endorsements under its authority; and

.8 instituting proceedings, after an investigation has been conducted, against individuals holding certificates or endorsements who have violated international rules and standards, irrespective of where the violation has occurred.

23 A flag State should develop and implement a control and monitoring programme, as appropriate, in order to:

.1 provide for prompt and thorough casualty investigations, with reporting to the Organization as appropriate;

.2 provide for the collection of statistical data, so that trend analyses can be conducted to identify problem areas; and

.3 provide for a timely response to deficiencies and alleged pollution incidents reported by port or coastal States.

24 Furthermore, the flag State should:

.1 ensure compliance with the applicable international instruments through national legislation;

.2 provide an appropriate number of qualified personnel to implement and enforce the national legislation referred to in subparagraph 15.1, including personnel for performing investigations and surveys;

.3 provide a sufficient number of qualified flag State personnel to investigate incidents where ships entitled to fly its flag have been detained by port States;

.4 provide a sufficient number of qualified flag State personnel to investigate incidents where the validity of a certificate or endorsement or of the competence of individuals holding certificates or endorsements issued under its authority are questioned by port States; and

.5 ensure the training and oversight of the activities of flag State surveyors and investigators.

25 When a flag State is informed that a ship entitled to fly its flag has been detained by a port State, the flag State should oversee that appropriate corrective measures are taken to bring the ship in question into immediate compliance with the applicable international instruments.

26 A flag State, or a recognized organization acting on its behalf, should only issue or endorse an international certificate to a ship after it has determined that the ship meets all applicable requirements.

27 A flag State should only issue an international certificate of competency or endorsement to a person after it has determined that the person meets all applicable requirements.

Flag State surveyors

28 The flag State should define and document the responsibilities, authority and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention.

29 Personnel responsible for, or performing surveys, inspections and audits on ships and companies covered by the relevant international mandatory instruments should have as a minimum the following:

.1 appropriate qualifications from a marine or nautical institution and relevant seagoing experience as a certificated ship's officer holding or having held a valid management level certificate of competency and having maintained their technical knowledge of ships and their operation since gaining their certificate of competency; or

.2 a degree or equivalent from a tertiary institution within a relevant field of engineering or science recognized by the flag State; or

.3 accreditation as a surveyor through a formalized training programme that leads to the same standard of surveyor's experience and competency as that required in paragraphs 29.1, 29.2 and 32.

30 Personnel qualified under paragraph 29.1 should have served for a period of not less than three years at sea as an officer in the deck or engine department.

31 Personnel qualified under paragraph 29.2 should have worked in a relevant capacity for at least three years.

32 In addition, such personnel should have appropriate practical and theoretical knowledge of ships, their operation and the provisions of the relevant national and international instruments necessary to perform their duties as flag State surveyors obtained through documented training programmes.

33 Other personnel assisting in the performance of such work should have education, training and supervision commensurate with the tasks they are authorized to perform.

34 Previous relevant experience in the field of expertise is recommended to be considered an advantage; in case of no previous experience, the Administration should provide appropriate field training.

35 The flag State should implement a documented system for qualification of personnel and continuous updating of their knowledge as appropriate to the tasks they are authorized to undertake.

36 Depending on the function(s) to be performed, the qualifications should encompass:

.1 knowledge of applicable, international and national, rules and regulations for ships, their companies, their crew, their cargo and their operation;

.2 knowledge of the procedures to be applied in survey, certification, control, investigative and oversight functions;

.3 understanding of the goals and objectives of the international and national instruments dealing with maritime safety and protection of the marine environment, and of related programmes;

.4 understanding of the processes both on board and ashore, internal as well as external;

.5 possession of professional competency necessary to perform the given tasks effectively and efficiently;

.6 full safety awareness in all circumstances, also for one's own safety; and

.7 training or experience in the various tasks to be performed and preferably also in the functions to be assessed.

37 The flag State should issue an identification document for the surveyor to carry when performing his/her tasks.

Flag State investigations

38 Marine safety investigations should be conducted by impartial and objective investigators, who are suitably qualified and knowledgeable in matters relating to the casualty. Subject to any agreement on which State or States will be the marine safety investigating State(s), the flag State should provide qualified investigators for this purpose, irrespective of the location of the casualty or incident.

39 The flag State is recommended to ensure that individual investigators have working knowledge and practical experience in those subject areas pertaining to their normal duties. Additionally, in order to assist individual investigators in performing duties outside their normal assignments, the flag State is recommended to ensure ready access to expertise in the following areas, as necessary:

.1 navigation and the Collision Regulations;

.2 flag State regulations on certificates of competency;

.3 causes of marine pollution;

.4 interviewing techniques;

.5 evidence gathering; and

.6 evaluation of the effects of the human element.

40 It is recommended that any accident involving personal injury necessitating absence from duty of three days or more and any deaths resulting from occupational accidents and casualties to ships of the flag State should be investigated, and the results of such investigations made public.

41 Ship casualties should be investigated and reported in accordance with the relevant international instruments, taking into account the Casualty Investigation Code, as may be amended, and guidelines developed by the Organization4. The report on the investigation should be forwarded to the Organization together with the flag State's observations, in accordance with the guidelines referred to above.

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4 Refer to the mandatory Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code), adopted by the Organization by resolution MSC.255(84) and the Guidelines to assist investigators in the implementation of the Casualty Investigation Code, adopted by the Organization by resolution A.1075(28).

Evaluation and review

42 A flag State should, on a periodic basis, evaluate its performance with respect to the implementation of administrative processes, procedures and resources necessary to meet its obligations as required by the international instruments to which it is a party.

43 Measures to evaluate the performance of flag States should include, inter alia, port State control detention rates, flag State inspection results, casualty statistics, communication and information processes, annual loss statistics (excluding constructive total losses (CTLs)) and other performance indicators as may be appropriate, in order to determine whether staffing, resources and administrative procedures are adequate to meet its flag State obligations.