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海巡體系 **大型** 巡防艦 籌獲方向研析

Study on the Procurement
Direction of Larger Frigates
in the Coast Guard System





壹、前言

台灣四面環海，屬於海洋性國家，人民生活受到海洋深刻的影響，海洋孕育者人民生命中潛在的韻律，是海洋護衛者台灣島，也是海洋撫育者台灣島。台灣也是一個典型的海島國家，缺乏豐富的資源與礦產，海上航運自然成為國家的命脈，其生存發展依賴海洋，安全威脅也來自海洋。

台灣在新世紀的開始，針對新安全環境的特質與影響和各種考慮因素，妥慎規劃新安全環境下的海洋戰略，妥適規劃大型巡防艦，確保海洋資源的合理利用、海上安全及周邊水域暢通的相對優勢海權，並尋求與鄰國合作，共同維護海洋秩序，以確保國家安全，這是台灣海洋戰略發展新願景與重要課題。

貳、海巡署面臨新挑戰與任務轉型

2006年5月及4月，我國「2006國家安全報告」及行政院「海洋政策白皮書」明白勾勒出台灣海洋戰略的發展願景，海巡署於此願景框架下，依法執行海疆警衛、警戒、海域安全維護及海洋資源保護、海洋災害防救等事項，任務至為繁重艱鉅。且近年來「聯合國海洋法公約」之實踐與發展，鄰近海域國家紛紛擴張海洋權利，開發海洋資源，發展海洋經濟。隨著世界潮流趨勢之發展，我國近年來亦積極開發與管理海洋，舉凡海上維安、海上交通秩序維護、海難救助、疫病防治、海洋環境維護、漁業資源維護與管理、關注台灣周邊海域情勢發展等，均為海巡署面臨之挑戰與任務。

參、海巡核心任務與大型巡防艦之關聯性

因應海巡署面臨之挑戰與任務，海巡署已刻劃出海域執法、海事服務、海洋事務等三大核心任務，然核心任務與大型巡防艦有著密不可分的關係。

在海域執法方面，大型巡防艦可執行安海專案等海域執法專案工作，以杜絕槍、毒走私及非法入出國等不法活動，且在海上交通秩序維護部分，為能符合國際間對航行安全管理

I. Foreword

Taiwan is surrounded by sea, and an oceanic nation. Its people have been greatly influenced by ocean. The ocean has cultivated the rhythm of people. It is ocean that protects and nurtures Taiwan. Taiwan is a typical island country, which lacks of rich resources and mines. Oceanic transportation naturally becomes the main national industry. Its existence and development depend on ocean, its threats also come from ocean.

At the beginning of a new century, Taiwan has taken into consideration of the characteristics and influences of new secured environment and other reasons. It has planned with care new oceanic strategies in the new secured environment, deployed larger frigates, ensured reasonable uses of oceanic resources, oceanic security, and the relatively better control of nearby waters. Taiwan has also looked for the cooperation from neighboring countries to maintain the order of ocean for an ensured national security. This is the new vision and important topic of Taiwan's oceanic strategy development.

II. The New Challenges and Mission Transformation that CGA Encounters

In April and May of 2006, Taiwan's oceanic strategy development visions have been clearly defined by "2006 National Security Report" and "White Paper of Oceanic Strategy of Executive Yuan". Under the framework of the vision, the CGA has been regulated to take on the jobs such as maritime protection and patrolling, maritime security maintenance, maritime resources protection, and maritime emergency rescue. With recent operation and development of "U.N. Convention on the Law of the Sea", neighboring countries have expanded oceanic rights, exploited oceanic resources, and developed oceanic economy. With the direction of global trend, Taiwan has recently started to participated in developing and managing oceanic matters such as oceanic security, oceanic traffic, oceanic emergency rescue, disease containment, oceanic environment maintenance, fishing resources maintenance and management, and pay attention to the development of neighboring waters. These mentioned tasks are the challenges and missions that CGA encounters.

III. The Relations Between CGA Core Missions and Larger Frigates

In response to the challenges and missions the CGA faces, the administration has planned three core missions of maritime law enforcement, maritime service, and marine affairs. However, these core missions have close connections to larger frigates.

In maritime law enforcement mission, larger frigates can execute projects like An-Hai Proposal to prevent any illegal activities of weapons and drug entry or departure. In oceanic traffic control section, to reach international requirements on navigation safety management, larger frigates can also protect vessel navigations and secure sailors and



之要求，大型巡防艦亦可維護海上船舶航行，保障人員生命、財產安全；在海事服務方面，大型巡防艦執行海上救難工作，並對海上遇險船舶之船員、旅客之緊急人命予以救助及執行各項海難救護任務；大型巡防艦執行海洋環境保護工作，有關海洋污染防治、海洋生態保育及漁業資源維護等均為其執行事項；在海洋事務方面，我國專屬經濟海域與中國大陸、日本及菲律賓等國重疊，海域主權與資源爭端之解決，亦是經緯萬端，我國大型巡防艦應及早籌建、經營及部署。

有鑑於此，應採取積極作為規劃籌建大型巡防艦，才能有效維護海域主權與海洋權益，另為樹立海巡署海域執法權威、提昇海事服務能量及健全海洋事務之管理機制，大型巡防艦不只是海巡署執法的載具，更是我國海權得以發展之最佳後盾。

肆、籌獲大型巡防艦方向

為了賦予大型巡防艦全新的生命力，海巡署應縝密研究策訂未來艦艇之購建計畫，內政部於1998年之「水警警艇整體購建計畫研究」，建議應需202艘艦、艇，以執行海域巡防任務；2003年海巡署之「海巡署艦艇及航空器需求之研究」，復建議海巡署應於未來15年籌建235艘巡防艦、艇（如附表），以因應環境變遷，提供足夠之海域管理、執法及服務能量。

附表--巡防艦、艇需求數量初步規劃表

海域執法艦艇	
巡防艦	19艘
巡防艇	197艘
海事服務艦	
3,500噸級巡護船	5艘
3,000噸級救難兼消防艦	1艘
除污船、艇、海測船	14艘
合計	235艘

assets safety. In maritime service mission, larger frigates can perform oceanic emergency rescue matters. They can give assistance to crew and passengers of the vessels in emergency, and carry on any disaster rescue missions. Larger frigates can perform marine environment protection task. Their capabilities include marine pollution prevention, marine ecology protection, and fishery resources protection. In marine affairs mission, because Taiwan's economic waters have lapped over with China, Japan, and Philippine's, which has triggered disputes on water sovereign and marine resource. Therefore, it better that national larger cruiser fleet can be formed, managed, and deployed.

Owning to the fact, it is urgent to organize and form larger cruiser fleet to effectively maintain the sovereign and right of the sea. The operation of larger frigates can establish the CGA'S authority in maritime law enforcement, elevate maritime service quality, and improve marine affairs' management system. Larger frigates are not only vehicles of law enforcement, but also the aegis of further oceanic right development.

IV. Procurement Direction of Larger Frigates

In order to endow new vitality to larger frigates, the administration should study with care to stipulate future procurement plan of larger frigates. In 1998, the Ministry of the Interior published "Research on Water Police Vessel General Procurement Plan" and suggested that the government should procure 202 vessels and boats to perform maritime patrol mission. In 2003, the CGA's Research on "CGA's Need for Vessel, Boat", and Aircraft indicated that the administration should fund a budget to buy in 235 vessels and boats (see Table below for details) in 15 years to provide sufficient maritime management, law enforcement and service quality in responding to changes of the bigger environment.

Table: Initial Plan for Required Amounts of Frigates, Patrol Boat

Maritime Law Enforcement Vessel	
Frigates	19
Patrol Boat	197
Maritime Service Vessel	
3,500-ton Class Patrol ship	5
3,000-ton Class (Salvage) / Firefighting Vessel	1
Cleaning Boat, Ships, (Surveying Ship	14
Total	235



一、近程發展方向

綜觀全球海巡能量之發展與趨勢，各國之海上執法力量均是由岸際逐步往外推展，若欲至200浬專屬經濟海域、甚至在公海上執法（如附圖1），勢必要具備有足夠之續航力、耐波力、良好的通訊、偵蒐能力、配置適當武力及充足人力之大型巡防艦，始能勝任是項艱鉅之任務。

(I) Short-term Development Goals

Generally, the development and trend of global coast guard forces are gradually pushing their maritime law enforcement ranges from near-cast to outer waters. If a country wants to enforce law over 200 nautical miles of economic waters or even high seas (see Figure 1 for details), it is necessary to be equipped with sufficient cruising radius, wave-resistant ability, well-maintained communication, reconnaissance ability, proper weapons, and larger frigates that carry sufficient crew on board in order to operate the missions with ease.



附圖1-- 海巡能量推展圖（作者繪製）

Figure 1: Development of Coast Guard Forces (Drawn by authors)

海巡署面對前揭蛻變，依據國家海洋政策發展方向、前揭建議，衡酌政府財力狀況，檢討現有172艘艦艇，以4年（2007年至2010年）規劃巡防艦、巡護船汰換期程，總經費為25億6,029萬2千元，提出巡防艦1艘汰換3年計畫及巡護船1艘汰換4年計畫，新建2000噸級巡防艦1艘及1000噸級巡護船1艘，相關計畫預算已於2006年奉行政院核定，並由立法院審議中，若審議通過，將可適度強化海域巡防能量。

Facing the drastic changes, the CGA takes into consideration of the development direction of national marine policies, mentioned suggestions above, government financial abilities, and current status of 172 vessels to make a plan of 4 years (from 2007 to 2010) to organize the replacement phases of frigates and patrol boats. The total expense of the plan will be NT\$ 2.5 billion 62.9 million and 2 thousand. The administration suggests 3-year replacement plan for one frigate, 4-year replacement plan for a patrol ship, one new 2000-ton Class, and one new 1000-ton patrol ship. The relevant budget has been recognized by Executive Yuan in 2006 and is now being audited by Legislative Yuan. Once the budget passes the auditing, it will strengthen the capability of coast patrol.

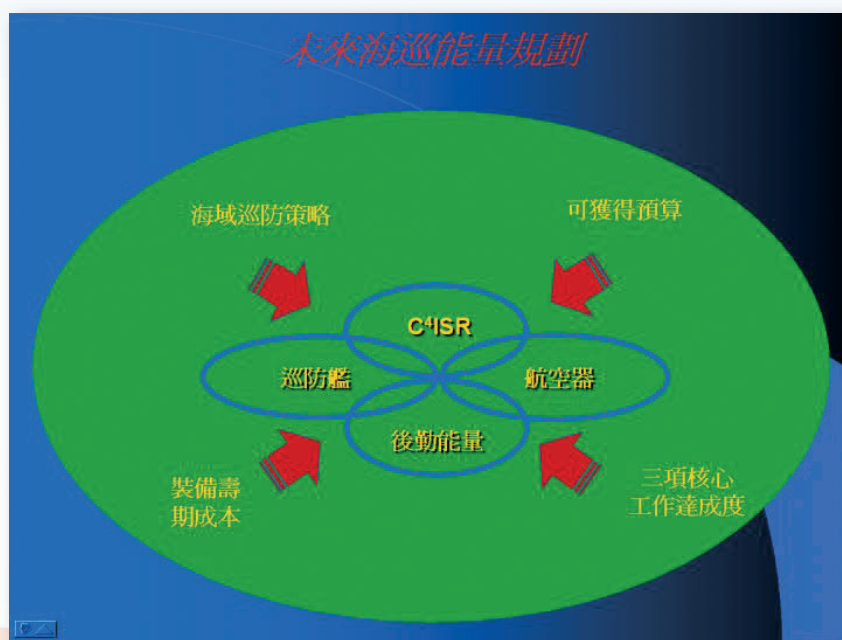


二、中、遠程發展方向

海巡署未來應參考美、日、韓先進國家海域巡防能量及建置規模，衡酌政府財力狀況、巡防艦壽期成本及核心工作達成程度等（如附圖2），並就海巡署大型巡防艦、航空器任務出勤次數、巡護範圍、密度、全壽期維持費、近年海巡署獲分配資源、其他友軍支援能量、指揮管制能量等因子予以評估、分析，逐步籌建符合我國需要及順應世界潮流之大型巡防艦。以下就未來大型巡防艦籌獲方向研析分述：

(II) Mid and Long-term Development Goals

In the future, the CGA should refer to the coast guard forces of advanced countries such as the U.S., Japan, and South Korea. The administration can refer to these countries' force deployment scale, government financial ability, life span and cost of frigates, and vessel performance level (see Figure 2 for details). The CGA can base on the workload of larger frigates, aircraft, patrol ranges, distribution density, vessel maintenance expense, recent CGA resources, military support ration, and commanding status to conduct assessment and evaluation. This will gradually establish a plan for procurement of larger frigates that meet national standards and international trend. The following content is the study on the future procurement direction of larger frigates.



附圖2--未來海巡署能量規劃表（作者繪製）

Figure 2: CGA Force Future Deployment (Drawn by authors.)

（一）應釐清平、戰時海巡署之定位

為明白定位海巡署之角色，有關海上防衛事務，除海軍外，行政院海岸巡防署亦為一重要力量，海巡署現有巡防艦艇，平時除擔任海岸管制區之管制、防止滲透及槍、毒走私、防疫、護漁等攸關國家安全事項，戰時則依據『國防法』第1章第4條及「行政院海岸巡防署組織法」第24條規定，依行政院命令納入國

1. The Roles that CGA Plays During Peace and War Time Should Be Defined

To clearly define the roles of the CGA, we have to know that the administration, which is under Executive Yuan's authority, is another major force in maritime protection matters except the Navy. During peace time, the frigates and patrol boats that the administration currently has are in charge of national security matters such as protection of coast control zones, prevention of illicit weapon and drug entry, disease containment, protection of fishing boats. During war time, the administration is incorporated into national defense system based on Fourth Article in Chapter One of "National Defense Act" and Rule 24 of "Organizational Law of Coast Guard Administration",

防軍事作戰體系。

故依海洋政策白皮書所揭示，戰時，海巡署依相關法律，納入國防軍事作戰體系；平時，海巡署為執行海洋政策白皮書所揭櫫面臨的課題，並依據海岸巡防法執行有關海域犯罪偵防、海上及非通商口岸之查緝走私、非法入出國、海上交通秩序之管制維護及海難救助等為民服務事項，亦依國內相關法令執行有關海洋環境保護、海洋資源之維護及漁業巡護等事項，任務至為繁鉅。惟有釐清海巡署之定位，方能確定海巡體系未來之發展方向。

（二）借重先進國家之海巡機關發展經驗

以美國為例，在其3,400,000平方英里專屬經濟區之執勤範圍內，同時須面對傳統及全新的威脅，美國海岸防衛隊2005年度報告書中，除說明各項任務在2004年度內之執行情形及成效外，亦特別將「整合深水系統」再予列入，以明瞭該隊之成效及所推行政策。

以日本為例，日本海上保安廳2005年度報告書說明各項重點工作，並以維護海洋權益與反恐對策及海保廳之救難二個特集來凸顯其能力，再強調海保廳傳統的工作任務角色，包括海域執法的確保治安，海事服務的生命救助、防範災害、與支援航海，及海洋事務的認識海洋、跨國合作，並剖析新的巡防艦及航空器，以吸引民眾選擇海洋為職業。

而美、日兩國之海巡機關可說是執世界之牛耳，故應以美日為借鏡，汲取優質發展經驗，研訂出海巡體系未來之發展策略。

（三）以我國大型巡防艦之籌獲模式為借鏡

Executive Yuan.

As the White Paper on Marine Policies says, the CGA is regulated to be a part of national defense system during war time while during peace time, the administration is to execute the issues mentioned in the paper. The administration is regulated by the Coast Guard Administration Act to perform maritime crime investigation and prevention, investigation and seize of illegal smuggling, entry, departure on the sea or at non - commercial ports, control and keep of maritime traffic, marine emergency rescue, and other civilian services. The administration also follows relevant regulations to perform marine environment protection, marine resources protection, and fishing boat security. The missions that CGA has are complicated and difficult. Therefore, the future development direction of the administration will be assured only by clearly defining the roles that it plays.

2. Observe the Experiences of Coast Patrol Units in Advanced Countries

Take the U.S. as an example, the United States Coast Guard is in charge of 3,400,000 square mile of the exclusive economic zone. It has to, at the same, face traditional and new threats. In its 2005 report, the USCG detailed the performance and results of each mission in 2004. The unit also listed "integrated deep water system" to explain the results and policies of the unit.

As for Japan, the 2005 Annual Report of the Japan Coast Guard explained the functions of each job. The unit also highlighted the protection of marine rights and anti-terror strategies, and emergency rescue ability to show its specialties. The report emphasized the traditional role that JCG plays, which provides maritime law enforcement and security; marine services such as emergency rescue, accident prevention, supportive navigation; and maritime affairs such as oceanic introduction, cross-border cooperation. The report also analyzed the specification of new frigates and aircraft to attract civilians to work for the force.

The coast guard units of the above countries are the best of the fellow organizations. Therefore, we should learn from them and utilize their experiences to stipulate the future development strategies of coast guard system.

3. Based on the Mode of National Military Larger Frigate Procurement

Take larger Frigate procurement project of the Ministry of National Defense as example, its procurement mode is as followed: (1) The Department of Strategic Planning outlines the vision of future national defense goals, study overall national defense strategic environment. Then the department will stipulate far-sighted



以國防部規劃籌購大型巡防艦為例，籌獲模式如后：一、先由國防部戰略規劃司勾勒國防願景，研析整體國防戰略環境，並策訂前瞻、周延之國防政策，精進軍事戰略計畫作為。二、國防部另依據國家目標，訂定海軍軍事戰略目標，緊接著評估海軍兵力結構，再予資源分配，並配合計畫預算制度（PPBS），以達成海洋戰略目標。三、專案成案前需經整合評估室作整體評估，評估事項包含「遠程想定」、「模擬分析」及「專案評估報告」等三大部分，經過前揭綜合評估後，再經下列流程，納入「海軍十年建軍構想」、「海軍五年兵力整建」及「海軍年度施政計畫」執行。四、最後，再藉由聯合作戰演訓中心之電腦兵推演訓後所發現之戰備議題缺失，來進行檢討與分析，以作為海軍建軍構想與兵力整建方向之需求參考，並據以形成海軍戰備與海軍軍事投資建案決策。故國防部規劃紀德及成功級等大型巡防艦之籌獲方式，評估決策過程嚴謹，均可作為海巡署未來規劃之參考。

（四）以最差情勢想定，精算最佳化之大型巡防艦需求

海巡署應配合台灣周邊海域情勢之發展，設想周邊海域最差情勢想定，分析大型國安巡防艦功能與任務。例如，於北方、東部及南方等海域，均應設想與鄰國之想定狀況，概略律定出周邊海域巡邏區之大型國安巡防艦需求基數，在兼顧「執勤安全」和「功能效益」下，精算出最佳化之巡防艦數量，提供未來政府決策參考。

（五）成立「大型巡防艦籌獲任務編組」

and complete defense policies to improve physical military strategic plans; (2) The MND stipulates the strategic goals of the Navy based on the national targets. Then the (Ministry) will assess the structure of the Navy, allocate resources accordingly, and achieve marine strategic goals with PPBS; (3) Before the project is set, it will be assessed by the integrated assessment section. Items for assessment include "Long-term Targets", "Simulation Analysis", and "Project Assessment Report". After the assessment, the project will be performed after following process; "Concept of Navy Structure in a Decade", "Five-year Force Modification of Navy", and "Annual Plans for Operation of Navy"; (4) The project will finally be tested in a computer generated war game by the Joint Operations Exercise and Training Center to find the defects of the readiness equipment for further discussion and analysis. (This) operation will be the basic reference of Navy structure and forces rearrangement. The data will also serve as the deciding factors for Navy warfare and military investment. Therefore, the MND's procurement plans for Kidd- and Chengkong - class frigates were stipulated with care. These two plans can both serve as the future reference for the planning of the CGA.

4. Optimize the Need of Larger frigates based on the Worst Situation

The CGA should coordinate itself with the development of Taiwanese coasts to simulate the worst situation that might be happened in the near coast. This can analyze the missions and functions of larger frigates. For example, in northern, eastern, and southern waters, it should outline any possible scenarios involving neighboring countries to roughly define the required amount of larger frigates in the coast patrol zones. The administration should calculate the optimal amount of frigates needed that is both law enforcement secured and functional able as the reference for the government to make decisions.

5. Form "Mission Team of Larger Frigates" Procurement"

With the operation and formation of 2000-ton class Frigate in 2008, the CGA's larger frigates will become the guardian of national economic waters. However, it still needs optimal calculation and assessment in the amount of larger frigates and aircraft, helicopter landing aided facilities, communication system, artillery types, fire control system, and night vision system structure. Besides, the crew number of larger frigates, training, and logistic matters should also be taken into





隨著2008年海巡署2000噸級巡防艦下水、成軍，大型巡防艦將成為我國專屬經濟海域之守護者，然大型巡防艦及航空器之數量、直昇機輔降系統、通聯系統、火炮型式、射控系統、夜視系統等構型尚需精算、評估，另大型巡防艦之接艦人力、訓練、整體後勤亦應審慎規劃，故應成立「大型巡防艦籌獲任務編組」，全力推動專案執行，以建立朝海域發展之新興海巡能量。

伍、結語

台灣在大航海時代被世界列強割據時，已經成為地球東西勢力的縫合線，地理位置至為重要。從17世紀開始，台灣更成為國際海上活動的中繼站，在東亞形成台灣、福建和日本九州的三邊貿易，更是當時的亞太營運中心。21世紀隨著國際間對海洋的重視，也是全球致力於開發利用與保護海洋的新世紀，台灣於此潮流中，更應以積極保護與永續經營的態度面對海洋。

sincere consideration. Therefore, it is necessary to form Mission Team of Larger Frigates' Procurement for a dedicated effort to propel the execution of project. Only by achieving this can the administration strengthen its abilities to catch up with marine development.

V. Conclusion

During the Great Voyage era, Taiwan was occupied by world powers. It was the stitching line of eastern and western strength, making it a geographically importance location. Starting from 17th century, Taiwan has become the relay station of maritime activities, achieving the three-side trade among Taiwan, Fukien, and Kyushu, Japan n East Asia. It was also the Asia-Pacific operation center at that period. With the increasing global attention to marine traffic, the 21st century is a new century for devoted global development and protection of the sea. In this global trend, Taiwan should also treat ocean with ultimate protection measures and sustainable attitude.

However, Taiwan is like an unsinkable aircraft carrier. Larger frigates are the protection of this aircraft carrier. In the future, this carrier will not only sail to the vast ocean, but also take on the responsibility of securing national marine rights, consolidating maritime law enforcement job, and strengthening maritime services and affairs. In the future, the Coast Guard Administration will gradually plan to procure larger frigates, reinforce law enforcement ability, and expand maritime affair services range. The



而台灣更是一艘不沉的航空母艦，大型巡防艦則是航空母艦之屏衛艦，未來不只航向浩瀚無垠的海洋，也要擔負起積極維護我國海洋權益、落實海域執法與強化海事服務的重任。海巡署未來應陸續規劃籌建大型巡防艦，充實海域執法實力及擴充海洋事務服務能量，有效提昇打擊海上犯罪、海難防救及維護海洋資源之能力，積極維護國家海洋主權，逐步成為「開放海洋」、「服務民眾」及「確保安全」的優質機關。

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administration will effectively prevent maritime crime, strengthen marine emergency, and protect marine resources abilities. CGA will keep the marine sovereign of Taiwan and develop into an excellent agency that keeps marine usage open, provides service to the public, and secures marine safety.

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