



Holistic Maritime Capacity Building: New “Route” to China’s Rise

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Since the commencement of the new millennium, the increased focus on the modernisation of the Chinese navy as part of the overall Defence Forces modernisation has been a much-debated subject globally. While the advancements in the capacity and the capabilities of the Chinese Navy are quite visible, obvious and of vital importance, the strength of the naval forces alone does not and cannot ensure the rise of a nation to great power status. The sea has to be comprehensively understood and then explored as a medium of immense economic, scientific, political, social and military potential, so as to be a contributory factor in building of the Comprehensive National Power. Seen from this perspective, the modernisation of the Chinese Navy forms but only a subset in the exploitation of the greater maritime domain. The capabilities of the Chinese Navy — the sword arm of the maritime domain — can hence be best leveraged in support of the national aims and objectives if there are Chinese influences, interests and stakes in the greater maritime domain. This paper seeks to investigate the various multi-faceted developments in the larger maritime environment, generally focusing on the Chinese seaboard, though not limited in any manner to the regional level only. With its civilian

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maritime activities being indicative of maritime presence in all the three Oceans including in the Arctic and the Antarctic, it may well be assumed that Beijing has understood the “Mantra” towards achieving great power status. And the Global community is possibly witness to the implementation of this Chinese path-breaking strategy.

Introduction

The Chinese President Hu Jintao, during his keynote address at the National Party Congress in Beijing on 8 November 2012 called for “enhancing the Chinese capacity for exploiting marine resources, resolutely safeguarding China’s maritime rights and interests, and building China into a maritime power”¹ against a backdrop of territorial and maritime disputes with neighbours. These comments are particularly significant, as it is the first time that a leader has clearly enunciated a decisive road map for maritime development in a Party Congress.

Though the Chinese media were quick to point out the indispensability of China’s eventual rise as a maritime power, they also acknowledged that the current status of maritime development left a lot to be desired. The public discourse also questioned the effectiveness of current capabilities of the nation by linking it to the recent and ongoing maritime territorial disputes in the East and South China Sea.²

“The People’s Daily” commented that this was the “Century of the Oceans”, and the world’s powers were all making maritime rights and interests a top priority. It noted that the total output value of China’s marine-based industries was 3.2 trillion Yuan (\$508 billion) in 2009, accounting for 9.5% of the country’s GDP. Hence China’s economy relied heavily on marine resources and trouble-free shipping lanes. So Beijing needed to build its naval power in order to protect and expand the national maritime rights and interests. However, despite such proactive assertions about future Chinese aspirations, the media still maintained that China would continue to strive for “harmonious oceans” on the way to becoming a world power, unlike other superpowers that preceded it.³

The above media discourse is well in consonance with what China is striving to achieve in the greater maritime environment. Special emphasis accorded to the build-up of the Chinese Navy as part of the overall Defence Forces modernisation, however,

forms only one prominent part. While the People's Liberation Army (PLA) Navy and its capabilities to address the modern-day maritime challenges undoubtedly presents a major bulwark, mastery over the entire maritime domain stems from comprehensive and continuous interaction with the sea over long a duration. A study of various facets of the sea involving fastidious collection of records, statistics and data over a long period, their collation, analysis and pattern building would yield actionable information, which can be used effectively to exploit the maritime domain to the national advantage.

However, this requires requisite foundation blocks to be painstakingly placed in position with due diligence, to create an appropriate environment for facilitating the nation to "pull together" towards maritime superpower status.

Infrastructure and Enabling Policies — Foundation Blocks for Maritime Power Building

The Chinese leadership had realised this important axiomatic imperative right from the vision set out by Deng Xiaoping in the 1980s. In addition to the planned naval modernisation, the most important focus was imparted to the maritime infrastructure building. This was duly backed and supported by formulation of appropriate policy guidelines for providing the requisite directivity to these endeavours. It was hoped that the resultant outcome would ultimately create the necessary wherewithal for wholesome exploitation of the maritime domain towards greater economic prosperity, and eventually add to the Chinese Comprehensive National Power.

Infrastructure

Ship-building

As part of this process, the ship-building reforms initiated in 1982 by the then Premier Zhu Rongji went on to propel China onto the leading commercial ship-builder in 2010.⁴ The Chinese shipyards are well diversified with good infrastructure. They also undertake ancillary activities like metallurgy, chemical engineering and diesel machinery production, which directly support shipbuilding. Simultaneous construction of warships and commercial ships, generally at the same location, also

enables seamless cross-transfer of technology. Furthermore, two or more shipyards are awarded the contract for constructing ships at a time, to facilitate faster production rate, in addition to generating healthy technological and financial competition.⁵ The resultant accretion in the Chinese maritime capability cutting across various functions and roles is more than evident in the current period. Some of these ship-building achievements and plans are highlighted below:

- *Oceanographic research vessels* – An advanced technology oceanographic research vessel named ‘Kexue’ was commissioned in September 2012. The 100-m long vessel, displacing 4700 tons with a podded electric propulsion system, is equipped with world-class facilities for water body detection, atmospheric exploration, deep-sea exploration and remote sensing research. Capable of global voyages and continuous day–night observations, the ship is seen as a moving laboratory on the sea.⁶ It will serve as one of the key vessels for the country’s oceanographic studies for the next 20 years. China is looking forward to building at least 10 more advanced research vessels in the next 5–10 years to meet the country’s rising demand for marine exploration.
- *Jiaolong deep-sea manned submersible* – A deep sea submersible vessel named ‘Jiaolong’ was unveiled by China after a near-decade long confidential project which was started in 2002 and finally fructified in 2010. Operating with the ‘Xiangyanghong 09’ oceanographic research support ship subordinated to State Oceanic Administration (SOA)⁷, the ‘Jiaolong’ can work efficiently up to a designed depth of 7000 meters.
- *Maritime surveillance and patrol ships* – A total of 36 patrol vessels are being built and will be put into operation under China Marine Surveillance, a maritime law enforcement agency under the SOA, over the next 2 years. The agency already has more than 400 law enforcement vessels of various sizes and dedicated for various roles.⁸
- *Ice breakers* – China would build a modern fleet of ships for polar scientific research, provisions for which have been included in the 2011–2015 Five-year plan period. Accordingly, a new icebreaker is being built. When completed in 2014, it will form an Arctic–Antarctic maritime research team with *Xuelong* (“Snow Dragon”),⁹ an icebreaker that operates in Antarctica expeditions.

- *Ultra-deepwater rig* – China has constructed an ultra-deepwater rig costing close to a billion US Dollars and aims to deploy it initially for exploring the oil and gas deposits in the South China Sea. Commencement of the Rig’s operation will impart another clear signal towards focussed progression of deep water exploration capacity. The Chinese consider the rig much more than a mere exploration platform, if their assertions like “oil rigs are our mobile national territories and a strategic weapon . . .”¹⁰ are to be believed.
- *Submarine rescue ships* – The Chinese Navy reinforced its submarine rescue hardware to a great extent by commissioning the first Dalao (Type 926)-class submarine rescue mother ship with a displacement of 9500 tons in 2010.¹¹ The ship is equipped with the most advanced LR7 deep submarine rescue vessel (DSRV), which is capable of rescuing up to 18 submarine personnel from a depth of 300 m at a time. Another follow-on ship was launched at Guangzhou shipyard in August 2011 to support the submarine rescue effort in other Chinese sea fleets.
- *Diving support vessel* – China’s largest diving support vessel, named *Shenqianhao*, was commissioned in August 2012. The 125-m long ship with 13,000-ton displacement is equipped with a deep-sea saturation diving chamber, which can accommodate up to 12 divers in the pressurised environment. It can lower a diving bell, which takes three divers at a time down to the depth of 300 m.¹² This ship, when operating in tandem with the submarine rescue ships, will qualitatively enhance the PLA Navy’s submarine rescue capabilities.
- *Underwater archaeology vessel* – With a unique and non-traditional usage of the maritime domain in mind, China plans to build its first vessel capable of retrieving archaeological findings from the sea by the end of 2013. The 56-m long boat with a displacement of 860 tons will be electrically propelled.¹³ Archaeologists onboard will be able to detect, locate, map, videotape and excavate underwater archaeological findings. The justification put forward for planning this vessel was ostensibly to protect China’s underwater relics, which face “severe challenges” from rampant looting. The vessel will be used in China’s coastal areas and could sail as far as waters off the Xisha (Paracel) Islands in the South China Sea.

Port Development

With maritime commerce forming the most significant component of Chinese economic ascendancy, it has become incumbent on the Chinese policy makers and planners to develop its ports as the main gateways through which the trade would flow both ways. Accordingly, the port development infrastructure in China has been accelerated over the last two decades to keep pace with the leap-frogging trade flows. For instance, six Chinese ports including Hong Kong figure in the 10 largest global container ports published by the World Shipping Forum, in terms of throughput in millions of tonne equivalent units (TEUs) handled in the year 2011. Shanghai tops the list having handled 31.74 million TEUs, with Hong Kong, Shenzhen, Ningbo-Zhoushan, Guangzhou and Qingdao taking up the third, fourth, sixth, seventh and eighth positions, respectively. Expanding the list further, 10 Chinese ports figure in the 20 largest ports worldwide, with Tianjin lying at the 11th spot.¹⁴

Deep-sea Scientific Research Base

The setting up of a large Deep Sea Scientific Research Base measuring 26 hectares on land and 62.7 hectares in sea is progressing within the North Sea Fleet's area of responsibility, for institutionalising gainful employment of the oceanographic research vessels, deep-sea submersibles and other hardware brought forth by the ship-building infrastructure.¹⁵ In addition to acting as a comprehensive base for 'Jiaolong' manned submersible, it will be a centralised national facility for the harnessing of ocean resources and providing scientific know-how for deep sea scientific research. It would also be instrumental in developing and making specialised deep sea equipment available and training skilled human resources for deep under-sea work.

Maritime Investigation Laboratory

In order to be on par with the international legal norms and practices in the commercial maritime environment and to strengthen Shanghai's position as an international shipping centre, the City's Maritime Safety Administration announced that China's first laboratory devoted to investigating maritime accidents will open by the end of 2013.¹⁶ The laboratory will offer eight different services. The Shanghai Maritime Safety Administration will operate four services that would specialise in

paint and trace analysis, electronic evidence analysis, accident simulation, document identification and human factor analysis. Shanghai Jiao Tong University will run two facilities that will handle material analysis and ship model testing. Shanghai Maritime University will deal with oil spill detection and analysis, and marine machinery and equipment examination. Investigators will use the laboratory to analyse the causes of serious accidents that involve the loss of lives and property, including ship collisions, explosions, oil spills and sinkings.

International Institute for Arctic Studies

As part of its Arctic exploration effort with due emphasis on international collaborative mechanisms, the first Chinese international Arctic Cooperation and Research Institute will be set up in Shanghai.¹⁷ The new Institute will cover issues like adaptation to climate change and sustainable development, cooperation between Northeast Asia and Northern Europe on Arctic economic development and cooperative strategies and policies. The institute, to be founded by the Polar Research Institute of China with the support of an Icelandic research centre, will initiate research projects, arrange exchange of scholars, organise meetings and publish annual reports among other activities.

Policy Issues

Restructuring of State Oceanographic Administration (SOA)

Currently, China's five maritime law enforcement agencies are governed by different ministries and organs of the State. The two authorities, which are armed and by far the better equipped, staffed and authorised to prosecute by law, are the Maritime Police of the Border Control department under the Ministry of Public Security and the Maritime Safety Administration, which works under the ministry of Transportation. The remaining three unarmed agencies, namely the State Oceanographic Administration, the Fisheries Law Enforcement Command and the maritime anti-smuggling authorities are governed by the Ministry of Land and Resources, Ministry of Agriculture and the General Administration of Customs, respectively.¹⁸

With the task of maritime law enforcement becoming increasingly broad-based with expanded areas, additional responsibilities and often overlapping charters and domains, the above five agencies often working independently within the rules and

procedures framed by the respective ministries could not synergise their efforts into a holistic national endeavour of securing their maritime safety and security needs. The increase in the pitch of sovereignty claims over various islands in the East and South China Seas, and consequent rights over the associated maritime zones in recent times, has added a new dimension to the maritime law enforcement function, both in the security and the economic domains. The above agencies operating in their narrow realms of responsibilities were, at times, found wanting in responding to differing situations and crises of non-traditional nature, which were being encountered more and more often in the last few years.

While the role of the PLA Navy for tackling the traditional threats and challenges to the national sovereignty are clearly understood, the Force is increasingly being mandated to contribute in the non-traditional Military Operations Other than War (MOOTW) roles. As long as the intervention of the PLA Navy is for benign tasks such as Humanitarian Assistance and Disaster Relief (HADR), no “eyebrows” are raised. However, the use of conventional naval capability to resolve low-level security challenges like maritime policing and law and order duties has connotations to the effect of escalating the situation to a level far in excess of requirement. Since China does not possess a formalised “Coast Guard” force, Beijing must have felt the need for an agency that could offer calibrated responses to various degrees of challenges posed in the maritime domain, while reserving the PLA Navy for the more traditional role of war-fighting.

With this possible aim in mind, particularly during a period of tense territorial disputes with neighbouring countries, Beijing has decided to restructure its Oceanic Administration to strengthen maritime law enforcement capability and better protect marine resources. The plan to place all the above five maritime law enforcement agencies under “the State Oceanic Administration” was announced as part of the overall organisational restructuring of the State Council, the Chinese cabinet, during the 12th National Peoples’ Congress (NPC) in March 2013.¹⁹ While the expanded and unified SOA will continue to function under the Ministry of Land and Resources, the Communist Party of China (CPC) leadership announced to head the integrated organisation has named Meng Hongwei, who also holds the concurrent post of Vice Minister of Public Security.²⁰ The law enforcement agency of the expanded administration will be called the Maritime Police Bureau. The restructuring would also involve the setting up of a high-level consultative and coordinating body

named the National Oceanic Commission. The Commission would be charged with creating oceanic development strategies, both for faster economic development and safeguarding maritime rights.

Zoning Plan for Coastal Regions

The State Council, or China's cabinet, approved zoning plans for eight major coastal regions for the 2011–2020 period on 16 October 2012. These regions include coastal provinces of Shandong, Fujian, Zhejiang, Jiangsu, Liaoning and Hebei, as well as Tianjin municipality and the Guangxi autonomous region.²¹ This indicates that the development of the “blue economy”, described by experts as a marine-based economy, has been raised to an unprecedented strategic level in China. Maritime zoning will provide a workable basis for the effective protection of the oceanic environment, as well as the rational exploitation of related resources.

National Marine Functional Zoning Plan

China's State Oceanic Administration issued a plan for maritime development in April 2012, saying that the area of maritime reserves should account for 5% of the country's total sea area by 2020. Named the “National Marine Functional Zoning, 2011–2020”, the plan classifies China's sea area under eight functions, namely mariculture (cultivation of sea animals and plants in their usual habitats, generally for commercial purposes) and fishery; ports; industrialisation and urbanisation; natural resources; maritime preservation; special usage; and reservation areas.²² According to the plan, areas for sea farming will cover over 2.6 million hectares by 2020, natural environment over 2000 km of coastline will be restored and over 35% of the coastline area will be maintained in a natural state.

Resultant Increase in Chinese Non-military Maritime Activities

Deep-sea Exploration

A Chinese oceanographic research ship named ‘Dayang No. 1’ sailed on its first global mission in 2005–6, during which its researchers managed to credibly establish the presence of active hydrothermal vents at Southwest Indian Ocean Ridge (SWIR). Their research was followed up by another expedition to the site in 2007. In 2010–2011, *Dayang Yihao* sailed across all the three oceans, completing a 369-day, 64000-

nautical mile scientific research mission in December 2011. The mission was divided into nine work trips and the ship made stops in South Africa, Brazil, Panama and Ecuador. The scientists discovered a total of 16 hydrothermal vents.²³ The same ship reportedly sailed again for its 26th mission in April 2012, wherein it was known to have conducted a 9-day exploration and research mission in Nigerian waters in August 2012.

Deep-sea Exploration Rights in Southwest Indian Ocean Ridge (SWIR)

Having conducted credible deep-sea exploration activities as explained above in the SWIR since 2005, China submitted a bid for allocation of suitable blocks for deep-sea mining rights to the International Seabed Authority (ISBA). After due deliberation, ISBA allocated 100 in number blocks – each measuring 10 × 10 km – totalling about 10,000 square kilometres in the SWIR for under-sea exploration to a Chinese State owned enterprise, the China Ocean Mineral Resources Research and Development Association (COMRA) in July 2011.²⁴ The exclusive exploration rights would extend for the next 15 years. The allocated area is estimated to have reserves of 420 million tons of poly-metallic nodules rich in copper, iron, lead, zinc, gold and silver, of which about 3 million tons can be exploited in the next two decades.²⁵

Deep-sea Manned Submersible Operation

The ‘Jiaolong’ manned submersible conducted a series of deep diving missions in June 2012 in the seas around the Mariana Trench in the central Pacific Ocean which culminated in the Record-breaking test dive of 7020 meters on 25 June 2012.²⁶ This technology-intensive achievement will definitely be the mainstay of future Chinese deep-sea exploration effort. In fact, the global interest over China’s deep-sea exploration and mining effort increased only when the deep-sea diving exploits of the ‘Jiaolong’ manned submersible were publicised. Apprehensions about this niche technology being used for military ends like interception of undersea communication cables, retrieval of foreign weaponry on the ocean floor and repair or rescue submarines and clandestine missions in future, were also raised in certain quarters.²⁷

National Maritime Survey

The Chinese maritime survey fleet consists of 19 survey ships with 11 of them displacing about 1500 tons. In order to bring them all under one central authority for

better management and synergistic output, State Oceanic Administration (SOA) announced the establishment of a national maritime survey fleet on April 18, 2012.²⁸ The ships are separately owned by SOA, Chinese Academy of Sciences (CAS), Ministry of Education (MOE) and other government sectors and institutions with maritime interests. According to SOA, the main task of the maritime survey fleet is to undertake comprehensive research tasks as part of major national research projects, international maritime research cooperation and inter-governmental cooperative projects.

Sea Surveys and Surveillance by Drones

The Liaoning provincial marine patrol Centre had launched the pilot unmanned aerial vehicle (UAV) programme in end 2011, mainly to monitor the coastal areas of Dalian, Jinzhou and Panjin, covering an area of 980 km². Based on the results of this pilot project, the State Oceanic Administration announced in October 2012 that 11 coastal provinces will each set up a dedicated airbase for UAVs by early 2013.²⁹ Each airbase will be equipped with at least one drone for maritime surveillance. Beijing sees many advantages in tasking the UAVs for these roles, as real-time data fed from UAVs is more accurate. UAVs can also be deployed in adverse weather conditions and cover much larger areas than equipment like wave estimation machines.

Arctic Research Expeditions

China is stepping up its activities in a warming and changing Arctic Ocean Basin. While its objectives still remain unclear, it is increasingly active and seeks to extensively participate in the international polar affairs including maintenance of international legal order in the polar areas. With the world's largest non-nuclear research icebreaker, *XueLong*, China has embarked on five Arctic research expeditions in recent years. In July–August 2012, the *Xuelong* completed its first trip through the Northeast sea passage after transiting through five marginal seas of the Arctic — the Chukchi Sea, East Siberian Sea, Laptev Sea, Kaka Sea and Barents Sea.³⁰ It is the first such voyage by a Chinese vessel, which opened an Arctic route connecting the Pacific and the Atlantic for future Chinese scientific expeditions. The ship returned to Shanghai at the end of September 2012 after sailing for more than 17000 nautical miles. In 2010, the vessel had embarked on a research voyage to 88° North latitude, which is only about 120 nautical miles from the North Pole. Chinese research

scientists from that expedition had travelled to the North Pole by ship's helicopter on 20 August 2010.³¹

Research Expeditions and Stations at Antarctic

China has launched 28 expeditions to the Antarctic since 1984. It plans to launch five more by 2015. The *Xuelong* icebreaker is also being used for these expeditions. China is also planning to purchase its first fixed-wing aircraft — most probably from the USA — to facilitate aviation support during Antarctic research expeditions.³²

China has set up its third Antarctic research station and the first one inland in 2009. The 'Kunlun' station covering an area of 550 m² was erected at Dome Argus (Dome A), a location on the highest icecap at 4093 m above the sea level, by the 25th Chinese expedition team.³³ It has plans to build a fourth station in the next 5 years. China had previously built two research stations in Antarctica. The Changcheng (Great-Wall) Station, built in February 1985, is located south of King George Island. The Zhongshan Station, built in February 1989, is located south of Prydz Bay on the Mirror Peninsula, east of Larsemann Hills. China has also set up six seismic observatories between its Zhongshan and Kunlun Stations.³⁴

Conclusion

The list of infrastructure-building, policy formulations and the resultant accretion in maritime related activities mentioned above is not comprehensive by any means and can be considered purely indicative at best. However, it provides a window for the global community to peep through and get a clear sense of the purpose, directivity and fastidiousness with which the Chinese are proceeding towards a holistic interaction with the maritime environment. For instance, substantial progress on maritime transportation infrastructure starting from the development of modern ports with high cargo processing rates and quick ships turnaround time, along with the associated linkages and facilities in the hinterland, have not been dealt with. Similarly, ongoing widespread offshore oil exploration and drilling activity, which is dependent on huge infrastructural support, both at sea and ashore, has not been illustrated. Nevertheless, the material presented above should suffice to support the argument that President Hu Jintao's call for capacity building to exploit maritime

resources, towards making China a maritime power, during the 18th Party Congress, was not a “one-off” remark.

The Chinese rightfully believe that the “national defence force” is one of the essential requirements for safeguarding maritime sovereignty; other imperatives of economic strength, infrastructure construction and effective law enforcement deserve equal emphasis. While it is globally common knowledge that in the maritime domain, the Chinese Navy is undergoing a fast-paced modernisation, it is posited that a nation cannot become a maritime power by concentrating on this facet alone, to the neglect of the other building blocks. Reasonable control over broad spectrum of maritime environmental elements through patient, painstaking and persistent research, capacity-building and sustainable strategies would be required for that outcome.

When seen in this context, President Hu Jintao’s exhortation should be considered more as an acknowledgement of the maritime “*means*” that China has consciously embarked upon, rather than a mere guideline, to meet the ultimate “*end*” of achieving the superpower status.

Notes

1. Xinhua, “Hu calls for efforts to build China into maritime power”, 8 November 2012. http://news.xinhuanet.com/english/special/18cpcnc/2012-11/08/c_131959403.htm (accessed 15 January 2013).
2. *Global Times*, “‘Maritime power’ a priority at National Congress,” Chinese Media Digest, 13 November 2012. <http://www.globaltimes.cn/DesktopModules/DnnForge%20-%20NewsArticles/Print.aspx?tabid=99&tabmoduleid=94&articleId=744050&moduleId=405&PortalID=0> (accessed 15 January 2013).
3. *Global Times*, “‘Maritime power’ a priority at National Congress”. Ibid.
4. Research in China, “China Shipbuilding Industry Report, 2009–10”. <http://www.researchinchina.com/Htmls/Report/2010/5848.html> (accessed 15 January 2013).
5. Commander Kamlesh K. Agnihotri, The Chinese Navy’s Submarine Arm: Lynchpin of “Active Defence”, *Maritime Affairs: Journal of the National Maritime Foundation of India*, 8 (2) (2012): 95–122, p. 105.
6. *China Daily*, “China’s most advanced research ship delivered”, 29 September 2012. http://www.chinadaily.com.cn/china/2012-09/29/content_15793490.htm (accessed 15 January 2013).

7. *Global Times*, “China’s Jiaolong succeeds in world’s first 7,000-meter dive”, 24 June 2012. <http://www.globaltimes.cn/content/716680.shtml> (accessed 15 January 2013).
8. Xinhua, “China’s maritime surveillance agency to gain more ships”, 8 June 2012. http://news.xinhuanet.com/english/china/2012-06/08/c_131640844.htm (accessed 15 January 2013).
9. Chinese CCTV, “China’s second icebreaker enters detail design phase”, 23 October 2012. <http://english.cntv.cn/20121023/100208.shtml> (accessed 15 January 2013).
10. The quote is attributed to Wang Yilin, the chairman of China National Offshore Oil Company (CNOOC). See Xinhua, “China begins deep-water drilling in South China Sea”, 9 May 2012. http://news.xinhuanet.com/english/china/2012-05/09/c_131576610.htm (accessed 15 January 2013).
11. *Kanwa Asian Defense* online, “PLA Navy Completes Training & Education of Submarine Rescue Ship”, July 2011. The details of Type 926-class submarine rescue ship and the LR7 rescue submersible are also available in pages 160 and 166 respectively of Stephen Saunders, *Jane’s Fighting Ships* 2011–12.
12. *China Daily*, “Ship Advances Deep-sea Salvage Rescue Work”, 6 August 2012. http://china.org.cn/china/2012-08/06/content_26150053.htm (accessed 15 January 2013).
13. Xinhua, “China building first vessel for underwater archaeology”, 24 October 2012. http://news.xinhuanet.com/english/china/2012-10/24/c_131927865.htm (accessed 15 January 2013).
14. World Shipping Forum, “Top 50 World Container Ports”. <http://www.worldshipping.org/about-the-industry/global-trade/top-50-world-container-ports> (accessed 5 April 2013).
15. Wang Yuanyuan and Liu Baohua, “Construction on deep sea base going smoothly”, *Shenzhen Daily*, 9 August 2011. http://www.szdaily.com/content/2011-08/09/content_5922495.htm (accessed 15 January 2013).
16. Zhou Ping, “Shanghai to open maritime investigation lab in 2013”, *Global Times*, 28 October 2012. <http://www.globaltimes.cn/content/740915.shtml> (accessed 15 January 2013).
17. *China Daily*, “China to open int’l institute for Arctic studies”, 18 August 2012. http://usa.chinadaily.com.cn/china/2012-08/18/content_15686337.htm (accessed 15 January 2013).
18. Lyle J. Goldstein, “Five Dragons Stirring Up the Sea: Challenges and Opportunities in China’s Improving Maritime Enforcement Capabilities”, Naval War College/CMSI New Port, USA, Study No. 5 (April 2010), pp. 5–20.
19. Wu Jiao and Pu Zhendong, “Nation merging maritime patrol forces”, *Peoples’ Daily* online, 11 March 2013. http://www.chinadaily.com.cn/cndy/2013-03/11/content_16296490.htm (accessed 5 April 2013).
20. Xinhua Net, “Leadership of Restructured Oceanic Authority Unveiled”, 19 March 2013. http://news.xinhuanet.com/english/china/2013-03/19/c_132245035.htm (accessed 3 April 2013).

21. *China Daily*, “China approves marine zoning of coastal regions”, 16 October 2012. http://www.chinadaily.com.cn/china/2012-10/16/content_15822498.htm (accessed 15 January 2013).
22. *China Daily*, “China issues plan for maritime development, reservation”, 26 April 2012. http://www.chinadaily.com.cn/business/2012-04/26/content_15152578.htm (accessed 15 January 2013).
23. Out of 16, five were found in the South Atlantic Ocean and 11 in the East Pacific Ocean. See Dolma Tsering, “China’s Deep Sea Exploration: Research and Capacity Building”, 4 July 2012. National Maritime Foundation website, <http://maritimeindia.org/china%E2%80%99s-deep-sea-exploration-research-and-capacity-building> (accessed 15 January 2013).
24. International Seabed Authority, Selected Decision and Documents of the Seventeenth Session (11–22 July 2011), Decision ISBA/17/C/16 dated 19 July 2011. <http://www.isa.org/jm/files/documents/EN/SelDecisions/SD17/EN-1.pdf>, p. 109 (accessed 15 January 2013).
25. Sunil Kr. Agarwal, “China Moves in for ‘Deep-sea mining’ in the Southwest Indian Ocean”, 3 August 2011. National Maritime Foundation website <http://www.maritimeindia.org/sites/all/files/pdf/Final%20Version%20of%20the%20Commentary%20on%20ISBA.pdf> (accessed 15 January 2013).
26. *Global Times*, “China’s Jiaolong succeeds in world’s first 7,000-meter dive”, *ibid.*
27. See Dolma Tsering, ‘China’s Deep Sea Exploration: Research and Capacity Building’, n. 23 *ibid.*
28. Xinhua, “China launches maritime survey fleet”, 19 April 2012. http://www.china.org.cn/china/2012-04/19/content_25182786.htm (accessed 15 January 2013).
29. Miranda Shek, “Drones to conduct sea surveys”, *Global Times*, 30 August 2012. <http://www.globaltimes.cn/content/729971.shtml> (accessed 15 January 2013).
30. *China Daily*, “Chinese icebreaker continues Arctic voyage In high-latitudes”, 26 August 2012. http://usa.chinadaily.com.cn/china/2012-08/26/content_15706733.htm (accessed 15 January 2013).
31. Joseph Spears, “A Snow Dragon in the Arctic”, *Asia Times* online, 8 February 2011. <http://www.atimes.com/atimes/China/MB08Ad01.html> (accessed 15 January 2013).
32. *Global Times*, “New aircraft to improve capability in the Antarctic”, 27 September 2011. <http://www.globaltimes.cn/NEWS/tabid/99/ID/677171/New-aircraft-to-improve-capability-in-the-Antarctic.aspx> (accessed 15 January 2013).
33. Sina English, “China sets up 3rd Antarctic research station”, 28 January 2009. <http://english.sina.com/technology/2009/0128/214520.html> (accessed 15 January 2013).
34. Xinhua, “Chinese Antarctic inland exploration team sets up seismic observatory”, 4 January 2010. http://news.xinhuanet.com/english/2010-01/04/content_12753968.htm (accessed 15 January 2013).