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Testimony Before the House Committee on Armed Services on a hearing on “DOD’s Role in Competing with China”

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Introduction

Chairman Smith, Ranking Member Thornberry, members of the House Committee on Armed Services, I am honored to appear today and offer my thoughts on “DOD’s Role in Competing with China.” I served 34 years on active duty in the U.S. Navy as a surface officer, with approximately 23 years of that time either operating in the Indo-Pacific or being involved in US Asia-Pacific strategy and policy formulation and execution. Since retirement from the navy this has continued to be my primary focus while establishing an Asian research program at CNA and most recently as a commissioner on the US China Economic and Security Review Commission. I want to emphasize that I am appearing today in my personal capacity and my comments reflect my personal views not necessarily those of CNA, The US China Economic and Security Review Commission or the U.S. Navy.

China as a regional hegemon

It is obvious that Washington and Beijing are in a sustained competition for position, power, and influence throughout the world, and especially in Asia. On June 1, 2019 the Department of Defense (DOD) released its *Indo-Pacific Strategy Report* that repeats the claim first made in the Trump Administration’s *National Security Strategy*, that China seeks “Indo-Pacific regional hegemony in the near term and ultimately global preeminence in the long term.”¹

I think it is important to unpack these claims. First regional hegemony. It is absolutely true that all the countries that live in the shadow of China are never going to escape the predicament of geographic proximity to China. That shapes their security situation and political choices. The reality they face is a China that already militarily overshadows and intimidates them, especially if China’s army is able to march or drive to their frontier. Virtually all of the Asian countries that surround China depend upon trade with China for their economic well-being. In every case China is their largest trading partner. Economically they need China far more than China needs them.

¹ The Department of Defense, “Indo-Pacific Strategy Report: Preparedness, Partnership and Promoting a Networked Region,” June 1, 2019, <https://media.defense.gov/2019/Jul/01/2002152311/-1/-1/1/DEPARTMENT-OF-DEFENSE-INDO-PACIFIC-STRATEGY-REPORT-2019.PDF>

China has the ability to wreck their economies. These geo-economic realities provide Beijing with tremendous political, diplomatic and economic leverage.

A fortunate few: Japan Taiwan, the Philippines, Indonesia, Singapore and further afield Australia have the advantage of being separated by the ocean from the threat of overland invasion. However, except for Australia, all are still within range of China's land based air power (thanks to Spratly and potentially Cambodian airfields) and/or short and intermediate range ballistic missile force. In sum, becoming the regional hegemon in East Asia, the Western Pacific, is a credible Chinese objective.

China is working hard, with some success, to bridge the challenges of projecting combat power across the maritime domain to a distant shore. Most immediately in the case of Taiwan. Actually, Taiwan's shore is not all that distant, and the 100 miles of open water—the Taiwan Strait—still presents a serious challenge for the PLA. But as mentioned Beijing's air and missile power, along with cyber-attacks, provide the means to inflict considerable damage and kill lots of people.

DOD leadership have emphasized that the Indo-Pacific is the priority theater for the US military, yet the Middle East morass is seemingly impossible to escape, and causes these assures to ring somewhat hollow. It continues to absorb US forces that otherwise would be available for additional rotational deployments to the Western Pacific. An increased in rotational deployments from all services is something DOD should seek to expand.

It is important that the US be militarily present throughout the Indo-Pacific to reassure our allies and friends they have not been written off. It is important to provide visible reinforcement to the important policy that “the US military will sail, fly or exercise wherever international law permits.” In this respect DOD should be encouraged provide to Congress its detailed plan for Indo-Pacific Security Initiative so that funding for this previously authorized program can be appropriated. Based of the track record of its European counterpart, this initiative could make an important contribution to US posture and readiness in the Indo-Pacific.

Now to be clear, in East Asia the PLA is always going to have a quantitative advantage over America's “first responders” –the US 7th Fleet, the 5th and 7th US Air Forces and the III Marine Expeditionary Force (III MEF). On a day-to-day basis these organizations are woefully outnumbered by the ever-expanding PLA.

China is after all, the “home team,” with the vast majority of its Army, Air Force and Rocket Forces focused on China's seaward approaches. With but one seaboard, China's entire navy is located along the shores of the East and South China Seas. We cannot match this numerically, but we could greatly improve our qualitative posture; for example, by maintaining a much larger submarine force structure in the region. According to a US Seventh Fleet Fact Sheet,

at any given time there are 8 to 12 SSN's assigned to Seventh Fleet.² Four are permanently stationed in Guam; it would be helpful if four more were stationed in Japan. When combined with rotational deployments from Hawaii and the West Coast, Seventh Fleet submarine presence should be increased to an average of between 12-15. Submarines remain our greatest operational advantage.

Now free of the INF Treaty, DOD is beginning to capitalize on the opportunity to deploy land based conventionally armed ballistic and cruise missiles to the Western Pacific. At this point it appears that this will be a US Army mission assigned to its "Multi-Domain Task Forces." This is still in the fledgling stage, but DOD should be encouraged to make this a priority in order to begin to offset the unchallenged advantage that China Strategic Rocket Force currently enjoys.

Global Preeminence is another matter

I am going to shift now to the second aspect of DOD's official forecast of China's ambitions. Specifically, that over the long-term China seeks global preeminence. Since, DOD did not offer a definition of preeminence; I have taken the liberty of assuming that it includes all the instruments of national power, which includes military power.

China's ability to be militarily preeminent is much more problematic once its forces move away from China and operate beyond the umbrella provided by its land-based air power and ballistic missile forces. It is certainly not preeminent in the Eastern Pacific, the Indian Ocean, the Mediterranean Sea or Atlantic Ocean. There is no question Beijing seeks greatly increased global economic and political influence, we see that playing out daily often in conjunction with threats to withhold trade, or Chinese investment, or Belt and Road (BRI) projects made toward nations that Beijing judges to be insufficiently obsequious. It is difficult to overstate the important role that BRI plays in enhancing Chinese influence globally. In the case of its BRI seaport enhancement projects that stretch from Greece to Malaysia, they improve Chinese trade and economic penetration, while also providing assured access for its navy, and in the future its coast guard.

While Beijing sometimes overplays its heavy handedness, on balance it has successfully formed a broad international herd of states who reliably support, or at least do not contest Beijing's core interests in international fora. They toe the line on Taiwan and Tibet and maintain silence in the face of Beijing's notorious human rights abuses.³ Clearly, China seeks explicit acknowledgement and the attendant deference associated with recognition as a great power. However, they are not close to being preeminent.

² U.S. Seventh Fleet Fact Sheet, <https://www.c7f.navy.mil/About-Us/Facts-Sheet/>

³ See for example, Andrea Kendal-Taylor and Rachel Rizzo, "The U.S. or China? Europe needs to Pick a Side," *Politico Magazine*, August 12, 2019, <https://www.politico.com/magazine/story/2019/08/12/us-china-europe-relations-227614>

Becoming a “great maritime power” is a perquisite for both hegemony in the Western Pacific and preeminence in either the Indian Ocean or globally. In 2012 Xi’s predecessor established the national objective for China to do just that, become a “great maritime power.” Xi enthusiastically supports this objective.⁴

To this end, the PLA remains intent on fielding a capable expeditionary force that could be used throughout the Indo-Pacific and along Africa’s littoral. It is putting in place all the necessary pieces; a large marine corps, a blue water capable amphibious force, aircraft carriers and capable surface combatants needed to gain local sea and air control, but this remains a work in progress.

China is also enhancing its peacetime military position worldwide through foreign military sales to countries such as Thailand, Pakistan, Nigeria, and Algeria, free military education and training and infrastructure projects, often associated with larger BRI initiatives. If this sounds vaguely familiar it should, they are following the US playbook that we perfected during the Cold War.

In order to address Chinese ambitions for military preeminence in the Indian Ocean region, DOD might spend effort and offer assistance in encouraging friends and allies to copy a concept from the PLA and develop their own local anti-access area denial concepts to protect their own maritime approaches from Chinese expeditionary activities. Such an approach would include as a minimum a system of wide area surveillance, which could come from an information sharing arrangement with Washington, land-based air power with anti-ship cruise missiles, land-based missiles and submarines. Australia provides a good example today.

The China Dream and a World Class Military

China’s ambitions are not a secret. General Secretary Xi Jinping has spelled them out since he assumed power in 2012. Xi Jinping’s grand strategic vision, known as the “China Dream,” is to achieve what he terms “the great rejuvenation of the Chinese nation by 2049,” the 100th anniversary of the founding of the People’s Republic. Importantly “the Dream” includes the development of a military commensurate with being a great power; indeed, given Xi’s formulation it would be impossible to accomplish “the Dream” without a powerful military, especially a navy because so much of China’s wealth generation rests on imports of natural resources and trade in finished goods. According to Dr. James Mulvenon: “At the strategic level, he [Xi] linked the “realization of the Chinese dream” to “the dream of strengthening the military forces.” For Xi a powerful PLA is a necessity for achieving “the Dream.”⁵

⁴ For example, “Xi Jinping Stresses the Need To Show Greater Care About the Ocean, Understand More About the Ocean and Make Strategic Plans for the Use of the Ocean, Push Forward the Building of a Maritime Power and Continuously Make New Achievements at the Eighth Collective Study Session of the CPC Central Committee Political Bureau,” Xinhua, July 31, 2013.

⁵ James Mulvenon, “The Cult of Xi and the Rise of the CMC Chairman

During his first work report as General Secretary to the 19th Party Congress in 2017 Xi made this linkage explicit, stating he wanted China's entire military establishment, to be a "world class" force by 2049, and he wants ongoing modernization to be largely completed by 2035, just 15 years away.⁶ Neither Xi nor other senior officials have defined what "world class" means, but "world class" carries the connotation of being "second to none," being in the "top tier," or being the "best in the world."

One little appreciated aspect of becoming a "world class military" is its linkage to what the Chinese call "military civil fusion." This is firm policy, not a fortunate happenstance. The intent is to spur innovation that capitalizes on artificial intelligence, new materials, and new energy. These technologies underpin further innovations. The aim is to link these outcomes to Chinese military modernization. The goal is to eliminate barriers between the commercial and defense sectors to aid in long term Chinese military development. A good discussion of "military-civilian fusion can be found in the 2019 Annual Report by The US-China Economic and Security Review Commission.⁷

As a former strategic planner, I think it is prudent to assume the worst when an authoritarian leader sets a specific objective of becoming "world class." Xi's "world-class" military goal should be viewed as a general, high-level concept of force development and not as a strategy for how China plans to use its armed forces. The goal of developing a "world-class" military is to catapult the PLA into the top tier of military powers. It wants to be able compete effectively against the best. One way to think about this question is to expect China to achieve widely-recognized benchmarks of what it means to be a top-tier military today (e.g., aircraft carriers, nuclear weapons, long range bombers, space assets and capabilities).⁸ It is also focused on the future, China's 2019 Defense White Paper reaffirms that its vision of future warfare is one that emphasizing information technology, intelligence, surveillance, and reconnaissance, and precision strike capabilities.⁹

Responsibility System," *China Leadership Monitor*, Winter 2018, Issue 55, January 23, 2018, <https://www.hoover.org/sites/default/files/research/docs/clm55-jm-final.pdf>.

⁶ Xi Jinping, "Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a new Era," Delivered at the 19th National Congress of the Communist Party of China, October 18, 2017,48. http://www.xinhuanet.com/english/download/Xi_Jinping%27s_report_at_19th_CPC_National_Congress.pdf:

⁷ 2019 Report to Congress of the U.S.-China Economic and Security Review Commission, <https://www.uscc.gov/sites/default/files/2019-11/2019%20Executive%20Summary.pdf>

⁸ M. Taylor Fravel, Testimony Before the U.S. China Economic and Security Review Commission, June 20, 2019, https://www.uscc.gov/sites/default/files/Fravel_USCC%20Testimony_FINAL.pdf.

⁹ The State Council of the People's Republic of China, *China's National Defense in the New Era*, Beijing July 2019, 4.

I trust that DOD is as concerned as I am about how little we apparently know about what a “world class” Chinese military would actually consist of. I assume it will be big, but how big and with what kind of capability? Is it going to be a copy of the US force structure, with Chinese characteristics of course? Adding a section to its annual report to Congress on Chinese Military and Security developments that specifically addresses the “world class” military objective would be a useful way to focus more attention on this Chinese objective.

China has “sea lane anxiety.”

The United States and its friends and allies currently have important military leverage because of China’s economic dependence on maritime trade in raw materials, especially hydrocarbons. Its strategists are obsessed with notion that America is bent on containing China, and the PLA’s mission includes trying to prevent this since any attempt at military containment would almost certainly focus on Beijing sea-lanes of communications (SLOCs). Reading official PLA defense documents suggests, justifiably, that the PLA is suffering from a case of “SLOC anxiety.”¹⁰

Many of China’s traditional sea-lanes in the Indo-Pacific have been rebranded as the “Maritime Silk Road” and as such are part of Xi global BRI initiative to make China the center of global trade and economic development. In the Indian Ocean China’s long SLOC presents China’s navy with a very difficult defensive problem.

China is bent on addressing this by establishing a network of bases or places, what the PLA sometimes calls outposts, along the Indian Ocean littoral. Djibouti is the first.

The PLAN has also commissioned or launched over 130 modern ships capable of operating in the Indian Ocean, or for that matter anywhere in the world, while remaining on station for months at a time. Today this is far and away the second largest and most modern “blue water” navy in the world. These ships have all been built over the past 15 years, and includes two aircraft carriers, thirty-six modern multi-mission guided missile destroyers (DDG), thirty modern frigates, twenty-six submarines and ten replenishment ships. Significantly, this is simply a current count on the way to unknown endpoint. China continues to build blue-water capable ships and submarines with no publicly known numerical force structure objective. (Attachment 1 to this testimony includes a detailed breakdown.)

¹⁰ The State Council Information Office of the People’s Republic of China, *China’s Military Strategy*, May 2015, **9**, <http://eng.mod.gov.cn/Database/WhitePapers/index.htm>. The strategy has this to say about sea lanes, “With the growth of China’s national interests...the security of overseas interests concerning energy and resources, strategic sea lines of communication (SLOCs), as well as institutions, personnel and assets abroad, has become an *imminent issue*. (emphasis added.)”

Operationally, the Chinese navy and I suspect eventually the Chinese air force will be increasing drawn into the Indian Ocean in larger numbers than its current small anti-piracy Task Forces because of the BRI and SLOC anxiety. This is something DOD needs to monitor closely lest PLA deployments and “forward presence” operations begin to tip the scales toward the Chinese preeminence that DOD has written about.

Influence Operations

A central PRC objective is to make the global environment “safe” for the Chinese Communist Party, for the Party to be recognized and accepted as the legitimate government of China, rather than as some sort of a way station on the way to democracy. Beijing vehemently rejects what it terms the threat of “peaceful evolution” to a more representative form of government. Accordingly, it pursues “influence activities” to create sympathetic views of its government, policies, society, and culture, as part of a worldwide effort to shape international narratives about and policies toward China.

In this effort, all the instruments of Chinese national power, especially its economic strength and concomitant diplomatic influence, especially in the UN and UN agencies and its increasingly global military capability are harnessed “to control the global narrative about China in order to coopt people and governments overseas into supporting China’s foreign and domestic policy positions. The campaign targets all regions of the world and involves use of informational, institutional, and technological instruments to influence a wide variety of actors in foreign societies.”¹¹

Washington needs whole of government activity that is sustained over the long term to provide a counter narrative. In the case of DOD, obviously policy experts in OSD play a key role in delivering America’s narrative. Another potential resource is available. Below the four-star officer level, who are out and about, other uniformed leaders are engaged on daily basis with foreign audiences both uniformed and civilian. In my experience, the vast majority shy away from any discussion of US policy approaches that stray beyond cooked strategy comments or the mission of the moment. That is not the case with PLA officers who go abroad and are practiced at reciting the litany of alleged American transgressions. It is worth investigating whether it is good idea to arm all our uniformed leaders with the information necessary to factually explain

¹¹ Task Force Report, “Course Correction : Toward an Effective and Sustainable China Policy,” eds. Orville Schell and Susan Shirk, Asia Society Center on US-China Relations and UC San Diego School of Global Policy and Strategy 21st Century China Center, February 2019, p. 41.

US policy and interests, while commenting on what China is up to. They must be able to respond to questions.

Concluding thoughts:

Time does not permit a detailed comments on China's very bold ambitions in space. Both the United States and China are dependent on space-based assets for military operations in peace and war. But beyond the purely military uses of space, Beijing has produced a sweeping civil-military master plan that is aimed at making them the world's leading space power. It is not simply a statement of aspirations, but a detailed approach to development of capabilities that they have been executing quite well. For example, this year, China will have completed its network of the Beidou global navigation system that has more satellites than our original GPS system. Significantly, it has better coverage of the Indo Pacific than GPS. This major economic implications for the global positioning industry. Rather than merely repeat the excellent assessment and related recommendations found in in the 2019 Report to Congress by the U.S. China Economic and Security Review Commission, I recommend that DOD and the new Space Force be asked to report to this committee on the implications for US security on China's space ambitions.

I think there is too much talk about the fact 60% of the US military is stationed in the Indo-Pacific largely in Hawaii and along the western seaboard. This constant refrain could lead to miscalculations abroad, suggesting that the US would only employ slight less than two-thirds of its military capabilities in a dust up with China. We need to make clear that should a crisis arise that could lead to conflict it is the ENTIRE United States military, not just 60%, that would be involved, including in the case of the US Navy, the bulk of the Atlantic Fleet.

Finally, the long-term challenge to US important national interests comes from China and not from anywhere in the Middle East or Russia. We must adopt a long-term plan, that, as I mentioned, is whole of government. For DOD, that must begin with a predictable level of funding, that is not disrupted annually, with continuing resolutions and the like. The only way that DOD can plan for a long-term competition is with predictable strategic policies that value our alliances and a predictable resource base. A good starting point is DOD's 2019 Indo-Pacific Strategy Report. It is not a perfect document, it is too glossy and too long, but it lays out a sensible strategic approach. However, it lacks clout, it needs to be signed by the President not an interim Secretary of Defense. I suggest that it be recast, shortened to not more than 10 pages, vetted on Capitol Hill and be approved by the White House.

I look forward to your questions.

Attachment 1

China's blue water Navy

It is difficult to appreciate the magnitude of PLANs development of a blue water navy without context. One way is to compare them to the other great navies of the world. The chart below does this. This comparison *is not an order of battle inventory* in which every ship of every class is counted. Rather it is a comparison of the number of Chinese blue water warships to other nations with who have historically demonstrated the ability to operate globally. The ship count totals are projected to the 2020-2021-time frame.

Exhibit 1: “Blue water” Capable Ships of Major Naval Powers (In commission or fitting out after launch) ca. 2021

	China	UK	France	Japan	India	Russia	United States
Carriers	2	2	1	2 (Izumo class being adapted for F-35B aircraft.)	2	1	11
Aegis-like Destroyer	36	6	2	12	4	0	90 (CG and DDG)
Modern Frigate (FFG)	30	13	8 (FREMM)	0	4	10	0 (25 LCS are not FFG's)
Large Amphibious	9	5	3	3+2 DDH	1	0	34
Combat Logistics	10	3	3	5	5	3 very old	30
SSN	8	6	5	0	1	17+8 SSGN	53+4 SSGN
SS (Song 8/Yuan 22)	30	0	0	22	16	19	0
SSBN	6	4	4	0	1	13	14
Total	124	39	26	44	33	71	236 (plus 25 LCS)

Sources: DOD Annual Reports to Congress: Military and Security Developments on the PRC 2012, 2018, 2019, Janes Defense Weekly's announcements of ship commissioning's, IISS Strategic Balance 2018 and 2019 for all countries listed in the table, Websites for the Indian Navy, Royal Navy, French Navy, Rick Joe's *Diplomat* series on the future of the PLA Navy, Ronald O'Rourke's, semi-annual update of his Congressional Research Service report China Naval Modernization, Office of Naval Intelligence (ONI) *The Russian Navy 2015*, and ONI's *The PLA Navy: New capabilities and Missions for the 21st Century*.

This chart illustrates that in terms of modern warships and submarines China either matches or far outstrips any erstwhile naval competitors, except the United States. While the PLAN's far seas capabilities are very impressive when measured against the rest of the world, America's far seas naval forces still overshadow the PLAN. Virtually all of America's warships are blue water capable since they are expected to operate globally. The United States has both a qualitative and quantitative advantage in aircraft carriers, high-end air defense cruisers and destroyers, large amphibious ships and nuclear attack submarines. On the other hand all of China's ships, both the "blue water" ships listed above plus who have not been included because they are not "blue water" in mission or employment history but are dedicated to "near seas" roles, are homeported in East Asia whereas most the US Navy is homeported thousands of miles away. What this means in practice is that on a daily basis virtually all of the Chinese Navy is either in port in China or operating in home waters in and around the "First Island Chain."

A Big Uncertainty: How large will the PLAN be in 2035?

We know Xi wants a "world class force." He was not the first to indicate China needed a big navy; former party Secretary Hu Jintao, also established an ambitious objective in 2012 saying "Building strong national defense and powerful armed forces that are *commensurate with China's international standing* and meet the needs of its security and development interests is a strategic task of China's modernization drive..."¹² We also already know that China has not yet seen fit to publish its intended navy force structure objective, it remains a state secret. A few experts like Rick Joe and James Fanell have published projections of PLAN strength in 2030. What follows below is my estimate of overall PLAN warship strength in 2035.¹³

¹² Full text of Hu Jintao's Report at the 18th Party Congress," Xinhua, 17 November 2012, http://news.xinhuanet.com/english/special/18cpcnc/2012-11/17/c_131981259.htm

¹³ See, James Fanell, "The Rise of China's Navy: A Discussion with Captain James Fanell," *Hudson Institute*, May 21, 2019, <https://www.hudson.org/research/15045-transcript-the-rise-of-china-s-navy-a-discussion-with-capt-james-fanell>. Fanell projects 450 surface ships and 110 submarines in 2030. See also Rick Joe, "Predicting the Chinese Navy of 2030," *The Diplomat*, February 13, 2019, <https://thediplomat.com/2019/02/predicting-the-chinese-navy-of-2030>. Joe predicts a total of 110 surface combatants (not including corvettes or fast attack craft), 84 submarines, 4 carriers, and 11 major amphibious assault ships for a total of 209 of these classes of ships in 2030.

To speculate on what the PLA would look like in 15 years a good starting point is to assess what it has done over the past 15 years. Over the last 15 years China commissioned or has launched 124 blue water capable ships (listed in chart above) I am counting only surface combatants, including the carrier, major amphibious assault ships, submarines and large fleet replenishment ships. Over the same 15 years China has constructed the approximately 115 warships destined for operations only in China's near seas. So, over the last decade and a half it has added a total of approximately 240 new warships to its navy. During several of these years China's most modern ship yards were not yet in production, so it is not unreasonable to forecast that over the next 15 years it could commission or launch 140 more blue water ships in order to grow far seas capacity and to replace ships some of today's blue water ships that were commissioned between 2005 and 2010. *In sum, my forecast of just the PLAN's blue water capability in 2035 is around 262 warships.*

I think this mix would include many more submarines, perhaps doubling the size of the PLAN current submarine force. Submarines will increasingly be valued since they cannot, yet, be tracked from space. The number of nuclear attack submarine will be a larger proportion of the overall submarine force. If the anticipated new nuclear submarine construction hall at Huludao actually has the capacity that enthusiasts have suggested it would not be unreasonable to estimate that over the next 15 years, the PLAN could commission an average 1.5 SSN's annually.¹⁴

The need for air cover for surface ships operating away from China leads to the question of how large will the PLAN carrier force become? It seems that three will be operation by 2025, and the issue is how many more carriers does the PLAN think it needs, and how many will it have in the water by 2035. The track record of PLAN carrier and airwing development has been a careful unhurried approach. The PLAN has demonstrated admirable caution in how it has elected to take a measured approach to introducing carrier aviation into the navy. I see no reason for that to change. A third larger catapult equipped carrier is apparently under construction, it is estimated to considerably larger than the *Liaoning* and her near sister, somewhere in the range of 85,000 tons.

This is an entirely new, and unproven design. On a ship of this complexity, the construction and fitting out process could take some time. As the United States has learned to its dismay with its new design *Ford Class* carrier, the urge to stuff as much new technology as possible into the ship can result in expensive delays.¹⁵ The PLAN also needs to invest in new air

¹⁴ Rick Joe, "Pondering China's Future Nuclear Submarine Production," *The Diplomat*, January 23, 2019, <https://thediplomat.com/2019/01/pondering-chinas-future-nuclear-submarine-production>.

¹⁵ For instance, this paragraph summarizes the problem of many new systems being introduced simultaneously: "The delays in the ship development and initial trials pushed both phases of initial operational testing until FY21 and FY22. The delay in the ship's delivery and development added approximately 2 years to the timeline. As noted in previous annual reports, the CVN 78 test schedule has been aggressive, and the development of EMALS [Electromagnetic Aircraft Launch System], AAG [Advanced Arresting gear], AWE [Advanced Weapons Elevator],

frames for the PLAN's carrier fleet, the search for a replace for its carrier capable J-15 "Flying Shark" aircraft is already underway. If one assumes a six-year building and outfitting period, and the design remains relatively stable the PLAN could have a five to six carrier force by 2035. By that time *Liaoning*, if it is still in commission, will probably have been relegated to the status of a carrier aviator training ship.

PRC shipyards have demonstrated the ability to turn out destroyers, frigates and corvettes in quantity so building capacity is not an issue. The PLAN will have an important voice in determining the precise mix of surface combatants, but it may also be forced to make sub-optimal choices if economic or leadership developments cause its budget share to drop. I would guess that over the next 15 years the numbers of these classes of ships will grow with an emphasis on improved ASW capability and on long range surface to air missiles systems.

Turning to the near seas category of warships I estimate that its "near seas" unit strength will remain constant, in the range of 160 ships (115 of which were commissioned since 2005). The biggest change will be ongoing replacement of the 60 odd single mission *Houbei* class fast attack craft with frigates or corvettes that retain the same ASCM punch but also add ASW capability.

Finally, my guess is that the PLAN in 2035 will consist of approximately 260 blue water ships of the classes discussed above, plus another 160 smaller ships, or special mission units that are really not well suited for distant water operations. *The result will be a 420 ship PLAN that will be the world's largest, by far. (This number does not include minesweepers, small amphibious ships and sundry auxiliary ships.) By any measure this sort navy will have to be judged "world class."*

DBR [Dual Band Radar], and the Integrated Warfare System delayed the ship's first deployment to FY22," Ronald O'Rourke, "Navy Ford (CVN-78) Class Aircraft Carrier Program, *Congressional Research Service* RS 20643, July 24, 2019, <https://fas.org/sgp/crs/weapons/RS20643.pdf>, 21.