

**From:** Office of Naval Intelligence, Farragut Technical Analysis Center Naval Platforms Department

**Subject:** (U) UPDATED China: Naval Construction Trends vis-à-vis U.S. Navy Shipbuilding Plans, 2020-2030

**ICOD:** 6 February 2020

(U) SCOPE NOTE: This product offers an overview of Chinese naval construction and force levels through 2030 in comparison with USN shipbuilding plans. Projected People's Liberation Army Navy (PLAN) numbers are general assessments from the Office of Naval Intelligence based on our analysis of PLAN trends, needs, and openly-stated plans. *(update) Projected U.S. Navy numbers are taken from XXXXXXXX*

**(U) Key Points**

- (U) By 2030, China's overall naval "Battle Force" is projected to exceed 400 ships and submarines, compared to a planned **XXX** ships and submarines for the U.S. Navy. Battle force consists of aircraft carriers, surface combatants, submarines, amphibious warfare, mine warfare, combat logistics, fleet support, expeditionary support and sea-basing support ships. Battle Force count is based on criteria specified in SECNAVINST 5030.8C. A significant portion of China's Battle Force consists of the large number of new corvettes and guided-missile frigates recently built for the PLAN. **Note that battle force criteria does not include missile patrol craft. China operates approximately 85 ASCM-armed patrol combatants and craft (PGG/PTG).**

<b>(U) Battle Force Comparison</b>								
	2000	2005	2010	2015	Present	2020 (end)	2025	2030
China	110	220	220	255	350	360	400	425
<b>USN</b>								
<i>*major combatant ships, submarines, mine warfare, seagoing amphibious ships, major auxiliary ships Year totals reflect 31 December of that year</i>								

- (U) China's submarine force continues to grow at a low rate, though with substantially more-capable submarines replacing older units. Current expansion at submarine production yards could allow higher future production numbers.

<b>(U) Submarine Comparison</b>								
	2000	2005	2010	2015	Present	2020 (end)	2025	2030
China TOTAL	62	61	56	63	66	66	71	76
SSN/SSGN	5	4	5	6	7	7	10	13
SSBN	1	1	3	4	4	4	6	8
SS/SSP	56	56	48	53	55	55	55	55
<b>USN TOTAL</b>								
<b>SSN/SSGN</b>								

SSBN								
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- (U) By 2030, China’s force of “Major Surface Combatants” will exceed U.S. Navy force levels, with approximately 200 ships compared to **XXX** ships planned for the USN. *Major Surface Combatants consist of aircraft carriers, cruisers, destroyers, frigates and corvettes.*
  - (U) Similar to Battle Force, a significant portion of China’s Major Surface Combatant numbers consist of the large number of new corvettes and guided-missile frigates being built by the PLAN.

<b>(U) Major Surface Combatants Comparison</b>								
	2000	2005	2010	2015	Present	2020 (end)	2025	2030
China	57	68	75	100	135	145	175	200
<b>USN</b>								
<i>*aircraft carriers, cruisers, destroyers, frigates, corvettes, LCS Year totals reflect 31 December of that year</i>								

- (U) By 2030, the U.S. Navy’s force of “Large Surface Combatants” will still be substantially more than that of China (**XXX** vs. approx. 50). *Large Surface Combatants consist of aircraft carriers, cruisers, and destroyers.*
  - The bulk of the USN fleet consists of these types of ships, while the majority of China’s naval surface combatant force consists of frigates and corvettes, with slower-rate production of cruisers and destroyers.

<b>(U) Large Surface Combatants Comparison</b>								
	2000	2005	2010	2015	Present	2020 (end)	2025	2030
China	19	25	25	26	35	43	55	65
<b>USN</b>								
<i>*aircraft carriers, cruisers, and destroyers only Year totals reflect 31 December of that year</i>								

- (U) China has a robust and efficient shipbuilding infrastructure, with over 20 yards having supported naval surface ship construction over the last decade, and dozens of commercial shipyards that exceed the largest U.S. shipyards in size and throughput.
  - All Chinese naval construction shipyards also build varying amounts of commercial ships. This commercial construction provides profits and supports shipyard design, workforce, and infrastructure development while reducing overhead costs for naval construction. This is in comparison to most USN production yards, which derive the majority of their work and profits from USN contracts vice commercial work.
  - Chinese ship design bureaus and shipyards use modern software, design practices, machinery, and ship construction methods comparable to those used at U.S. shipyards.
  - China builds both domestic and foreign (under license) machinery, control systems, and other ship components. Almost all weapons and sensors on Chinese naval ships are

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produced in-country, and China no longer relies on Russia or other countries for any significant naval ship systems.

- Chinese naval ship design and material quality is in many cases comparable to USN ships, and China is quickly closing the gap in any areas of deficiency.
- (U) China is capable of building any type of surface warship, and is currently building modern aircraft carriers, cruisers, destroyers, frigates, corvettes, large amphibious ships, mine warfare ships, and large auxiliary ships.
- (U) The timeline for typical guided-missile destroyer construction in China is roughly comparable to the timeline for building a similar USN ship in a U.S. shipyard.
- (U) “Backbone” surface ship programs (frigates and destroyers) have been relatively consistent over the past five years, while production of more specialized or low-volume types (large amphibious ships, large auxiliaries, mine warfare) is sporadic and more cyclical in nature. We expect both of these trends to continue through 2030.
- (U) Nuclear submarines are solely produced at Huludao Shipyard and typically undergo two to four years of outfitting and sea-trials before becoming operational. Since 2006, eight nuclear submarines have reached IOC, for an average of one every 15 months. This trend will likely continue as China improves its nuclear submarine technology in coming years. China’s naval nuclear capability currently enables production of nuclear submarines and is expanding to include nuclear-powered surface vessels. China claims by 2020 these nuclear surface vessels will include floating nuclear power plants (FNPP) to provide power to remote military and civilian areas. The capability will also enable nuclear-powered ice breakers, which China contracted in 2016, and possibly other surface nuclear vessels such as nuclear powered aircraft carriers (CVN).
- (U) Diesel-Electric submarines are produced at two shipyards and typically undergo approximately one year of outfitting and sea-trials before becoming operational. China currently produces air-independent propulsion conventional submarines (YUAN class) at a consistent rate.
- (U) Nuclear Technology: China started building nuclear submarines roughly 20 years behind the U.S., completing its first around 1976. The gap between China and the U.S. in naval nuclear technology will continue to narrow through China’s efforts in development and acquisition. China continues to improve its marine nuclear power capability through indigenous technology development and acquisition of international nuclear power technology. China’s acquisition of civil nuclear technology stands to – in some cases significantly – reduce the cost and time to design and manufacture a marine or naval nuclear power plant to sufficient quality, reliability,

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performance, and safety standards. Small Modular Reactor (SMR) technology is increasingly available commercially, including marine SMRs. Naval reactors are SMRs.

**(U) Backup Points and Additional Program Notes**

- (U) China commissioned its first domestically-built aircraft carrier recently. China is currently building its second domestic aircraft carrier, a new design using catapult launch systems, which is expected to be commissioned by 2024. China has two shipyards expected to be used for aircraft carrier production, though several other large commercial yards could, in theory, also build carriers.
- (U) China is now building multiple units of the new RENHAI cruiser class at two shipyards (these yards also build LUYANG III/LUYANG III MOD class destroyers). China uses a semi-modular construction technique resulting in relatively short “on the ways” assembly times (usually less than 12 months), with longer outfitting times pier-side. These timelines are intended to keep assembly ways and docks available for both naval and commercial construction, whereas outfitting pier space is more available.
- (U) China’s most numerous surface ships programs are the JIANGKAI II guided-missile frigate (of which 30 units have been commissioned from 2008 to 2019; no additional units are currently under construction), and the JIANGDAO corvette, of which over 50 units have been commissioned in the last seven years with another 15 currently in production. China sees the JIANGKAI II as the workhorse of the fleet, and constantly deploys them to Gulf of Aden counter-piracy patrols, task forces, exercises, and international visits. The JIANGDAO corvette is taking over regional (South China Sea, East China Sea) and coastal patrol duties formerly played by older frigates and patrol combatants. The PLAN has not built any missile patrol craft since completing the HOUBEI PTG class in 2008, and we do not project any further construction of this type of ship in the near future. Indeed, the PLAN is consistently removing patrol types from service in recent years.
- (U) China builds large amphibious ships (LPD) in a relatively short time span, and is currently building three large amphibious assault ships (LHA), the first of which was launched in 2019.
- (U) China is investing heavily in specialized large oceangoing auxiliary ships, which it can build in relatively short timelines. These include large fast combat support ships, combat stores ships, replenishment oilers, ocean survey ships, hospital ships, intelligence collection ships, submarine rescue ships, salvage and rescue ships, and several other types for specific mission sets.

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IN REPLY REFER TO  
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Ser N00J / 044  
April 21, 2020

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Subj: FOIA Request DON-NAVY-2020-006455

Dear Mr. Aftergood:

This is a final response to your Freedom of Information Act (FOIA) request of March 31, 2020, addressed to the Office of Naval Intelligence (ONI). Your request was assigned the above referenced Department of Navy FOIA number **DON-NAVY-2020-006455**. You requested a copy of an unclassified Office of Naval Intelligence Information paper that was recently prepared for the Senate Armed Services Committee, titled, "UPDATED China: Naval Construction Trends vis-a-vis U.S. Navy Shipbuilding Plans, 2020-2030, February 2020."

Our review of our records and systems revealed that while ONI authored this version of the subject document, we do not possess the final version of the document that was submitted. Also, we have redacted information from this document because it contains names that are exempt from disclosure pursuant to 5 U.S.C. 552 (b) (6), which protects information that is personal and private in nature where release would result in an unwarranted invasion of privacy.

If you are unsatisfied with this response, you may contact the Navy FOIA Public Liaison at [DONFOIAPublicLiaison@navy.mil](mailto:DONFOIAPublicLiaison@navy.mil) or by telephone at 703-697-0031. Please ensure you have your assigned FOIA number available. Alternatively, you are advised of your right to appeal this determination. To exercise this right refer to the above referenced number and send your appeal and justification to the Judge Advocate General (Code 14), Department of the Navy, Building 33, Washington Navy Yard, 1322 Patterson Avenue, SE, Suite 3000, Washington, DC 20374-5066. Your appeal must be received by that office within 60 calendar days from the date of this letter. A copy of this letter should accompany your appeal statement and we recommend you label your letter and envelope with the notation "Freedom of Information Act Appeal."

Since there are no fees associated with processing your request, ONI did not make a determination on your request for a fee waiver. The Office of Naval Intelligence is the Official Denial Authority for your request. Camille V'Estres is your point of contact for this request, and may be reached at 301-669-3432 or by email at [camille.vestres@navy.mil](mailto:camille.vestres@navy.mil).

*Sarah J. Cottrill*

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By direction