



China

PEOPLE'S LIBERATION ARMY NAVY (PLAN)

Country overview

The People's Republic of China, proclaimed on 1 October 1949, is the world's third-largest country by area (3,695,000 square miles). It is bordered to the northwest by Kyrgyzstan, Kazakhstan, to the north by Mongolia, and Russia, to the south by Vietnam, Laos, Myanmar, India, Bhutan, and Nepal, to the east by North Korea and to the west by Pakistan, Afghanistan, and Tajikistan. It has a 7,830 n mile coastline with the Yellow, East China, and South China seas. There are more than 3,400 offshore islands of which Hainan is the largest. Sovereignty over Taiwan is also claimed. In the South China Sea there are territorial disputes between China, Brunei, Taiwan, Vietnam, Malaysia, Indonesia, and the Philippines and in the East China Sea between China, Japan, and South Korea. The principal ports are Shanghai, Qingdao, Shantou, Xiamen, Tianjin, Guangzhou, Hong Kong, Dalian, and Ningbo-Zhoushan. Overall there are 54,000 n miles of navigable inland waterways including the Yangtze River on which the port of Wuhan is situated. Territorial seas (12 n miles) are claimed. A 200 n mile exclusive economic zone (EEZ) has also been claimed but the limits have not been defined.

Headquarters appointments

Commander-in-Chief of the Navy: Admiral Dong Jun
Political Commissar of the Navy: Admiral Yuan Huazhi
Chief of Naval Staff: To be announced

Fleet commanders

Northern Theatre Navy Commander:

Vice Admiral Wang Dazhong

Eastern Theatre Navy Commander:

Vice Admiral Wang Zhoguai

Southern Theatre Navy Commander:

Vice Admiral Wang Hai

Personnel

- (a) 2021: 235,000 officers and men, including 25,000 naval air force, 8–10,000 marines (28,000 in time of war), and 28,000 for coastal defence
- (b) 2 years' national service for sailors afloat; 3 years for those in shore service. Some stay on for up to 15 years. 41,000 conscripts

Operational numbers

Because numbers of vessels are kept in operational reserve, the Chinese version of the order of battle tends to show fewer ships than are counted by observers.

Organisation

Fleets report to joint theatre commands since 2017. The Northern Theatre Fleet is responsible for the defence of the Yellow Sea and Bohai Sea as well as the maritime gateway to Beijing. The Eastern Theatre Fleet is responsible for the defence of the East China Sea and the Yellow Sea south of Lianyungang, and the north of the Taiwan Strait. The Southern Theatre Fleet is responsible for the South China Sea and the southern part of the Taiwan Strait, including protecting maritime interests in the south, including the Xisha Islands (Paracel Islands) and the Nansha Islands (Spratly Islands). Each of the Northern, Eastern, and Southern fleets has two submarine divisions, four or more destroyer/frigate (DD/FF) units and at least one mine countermeasure vessel (MCMV)

unit. They also have at least one landing division each. All fleets have at least one submarine unit and two Marine brigades.

Bases

Northern Theatre Fleet: Major bases: Qingdao (HQ), Lushun, Huludao. Other bases: Dalian, Xiaopingda (Dalian), Qinhuangdao, Weihai, Chengshan, Qingdao (Guzhenkou, Taolin), Jiangezhuan (Nanyaoawan, Laoshan).

Eastern Theatre Fleet: Major bases: Ningbo (HQ), Shanghai, Zhoushan. Other bases: Xiangshan, Fujian (Fuzhou), Dinghai, Wusong (Shanghai), Wuhan and Daxie dao.

Southern Theatre Fleet: Major bases: Zhanjiang (HQ), Guangzhou, Yulin. Other bases: Beihai, Xichuan Island, Yalong Bay (Sanya), Shantou Harbour, Angchuanzhou (Stonecutter's Island, Hong Kong).

Coast defence

There are semi-fixed sites and mobile coastal defence units equipped with surface-to-surface missiles (SSMs), including the YJ-62 and some with supersonic YJ-12B. There are air defence brigades equipped with HQ-9, HQ-6A, and short-range missiles and guns. Southern Theatre air defence units can be forward deployed to islands. The PLA further operates coastal defence brigades equipped with artillery and MLRS.

Equipment procurement

Although often listed under the name of the designer, equipment has not necessarily been supplied direct from the parent company. It may have been acquired from a third party or by reverse engineering.

Training

The main training centres are:

Dalian: Naval Academy

Guangzhou: Naval Arms Command College

Qingdao: Submarine Academy

Wuhan: Naval Engineering University

Nanjing: Naval Command College

Yantai: Naval Aeronautical Engineering College

Bengbu: Naval School for Non-Commissioned Officers

Marines

Structure changed in 2017 and expanding to eight brigades with conversion of four former PLA units (3rd–6th brigade), establishment of new 7th aviation brigade, and merging naval combat divers and amphibious reconnaissance units of existing two brigades into 8th special forces brigade. HQ, PLANMC, Chaozhou, Guangdong region 1st Brigade, Southern Theatre, Zhanjiang, Guangdong, 2nd Brigade, Southern Theatre, Zhanjiang, Guangdong. 3rd Brigade, Eastern Theatre, Jinjiang, Fujian. 4th Brigade, Eastern Theatre, Jieyang, Guangdong. 5th Brigade, Northern Theatre, Laoshan, Shandong. 6th Brigade, Northern Theatre, Haiyang, Shandong. 7th Aviation Brigade, Zhucheng, Shandong. 8th Special Forces Brigade Jialong (Dragons), Sanya, Hainan.

Naval air force

With 25,000 officers and men and more than 800 aircraft, this is a considerable naval air force primarily land-based. There

is a total of eight Divisions with 27 Regiments split between the three Fleets.

Air bases include:

Northern Theatre Fleet: Dalian, Qingdao, Jinxi, Jiyuan, Laiyang, Jiaoxian, Xingtai, Laishan, Anyang, Changzhi, Liangxiang and Shan Hai Guan.

Eastern Theatre Fleet: Danyang, Daishan, Shanghai (Dachang), Ningbo, Luqiao, Feidong and Shitangqiao.

Southern Theatre Fleet: Foluo, Haikou, Lingshui, Sanya, Guiping, Jialishi and Lingling.

Strength of the Fleet

Type	Active (Reserve)	Building (Planned)
SSBN	6	(4)
SSN	9	2
SSK/SSG	56	(5)
SSA	1	—
Aircraft carriers	2	1 (2)
Destroyers	50	9 (2)
Frigates	44	6 (10)
Corvettes	50	—
Fast attack craft (missile)	82	—
Patrol craft	6	—
LPDs	8	—
LHDs	3	(5)
LSTs	30	—
LSMs	22	—
MCMVs	42	—
Survey/research	17	—
Space tracking ships	4	—
Intelligence vessels	22	2
Training ships	6	—
Submarine support ships	10	—
Supply ships	13	—
Fleet replenishment ships	12	(4)
Support tankers	45	—
Hospital ships	8	1
Icebreakers	2	—

DELETIONS

Destroyers

2020 *Zhanjiang, Zuhai*

2021 *Dandong, Zhaotong*

Frigates

2022 *Beihai, Foshan, Shaoguan*

Corvettes

2021 *Baoding, Bengbu, Huizhou, Ji'an, Jieyang, Huai'an, Huizhou, Huai'an, Meizhou, Shangrao, Suzhou*

2022 *Heze, Quanzhou*

Auxiliaries

2020 *Poyang Hu*

PENNANT LIST

Nuclear submarines		Frigates		Corvettes		Principal amphibious warfare units	
403	Changzheng 03	115	Shenyang	173	Changsha	559	Foshan
404	Changzheng 04	116	Shijiazhuang	174	Hefei	564	Yichang
405	Changzheng 05	117	Xining	175	Yinchuan	565	Huludao
407	Changzheng 07	118	Urumqi			566	Huaihua
408	Changzheng 08	119	Guiyang			567	Xiangfan
409	Changzheng 09	120	Chengdu			568	Hengyang
410	Changzheng 12	121	Qiqihar			569	Yulin
412	Changzheng 10	122	Tangshan	500	Xianning	570	Huangshan
413	Changzheng 11	123	Huainan	515	Binzhou	571	Yuncheng
414	Changzheng 14	124	Kaifeng	518	Ji'an	572	Hengshui
418	Changzheng 15	125	Taiyuan	521	Jiaxing	573	Liu Zhou
419	Changzheng 16	126	Suzhou	522	Ziyang	574	Sanya
420	Changzheng 17	127	Baotou	523	Hebi	575	Yueyang
421	Changzheng 18	128	Shaoxing	524	Samming	576	Daqing
		129	Hangzhou	525	Ma'anshan	577	Huanggang
		130	Fuzhou	526	Wenzhou	578	Yangzhou
		131	Taizhou	527	Lucyang	579	Handan
		132	Ningbo	528	Mianyang	598	Rizhao
		133	Changchun	529	Zhoushan	599	Anyang
		134	Zhengzhou	530	Xuzhou		
		135	Jinan	531	Xiangtan		
		136	Xi'an	532	Jingzhou		
		137	Xiamen	533	Nantong		
		138	Nanjing	536	Xuchang		
		139	Zibo	537	Yixing		
		140	Lishui	538	Yantai		
		141	Huhehaote	539	Wuhu		
		142	Nanning	540	Xichang	585	Baise
		143	Jiaozuo	542	Zaozhuang	588	Quanzhou
		144	Gulin	546	Yancheng	589	Qingyuan
		145	Zhanjiang	547	Linyi	590	Weihai
		146	Shenzhen	548	Yiyang	591	Fushun
		147	Guangzhou	549	Changzhou	592	Luzhou
		148	Wuhan	550	Weifang	595	Chaozhou
		149	Bayannao'er	551	Bayannao'er	597	Qinzhou
		150	Lanzhou	553	Shaoguan	600	Songyuan
		151	Haikou	555	Beihai	601	Wuhai
		152	Kunming	558			

PENNANT LIST — continued

939	Putuo Shan	703	Fenghua	734	Rongcheng	891	Bi Sheng	792	Haiwanxing	265	Dong Biao 265
940	Tiantai Shan	704	Huocui	735	Humin	892	Hua Luogeng	794	Tianlangxing	467	Nan Biao 467
980	Longhu Shan	705	Zhangjiagang	736	Donggang	893	Zhong Tianyou	795	Tianshuxing	861	Changxing Dao
981	Dabie Shan	706	Jingjiang	737	Zhijiang	894	Li Siguang	797	Tianquanxing	862	Chongming Dao
982	Taihang Shan	707	Kunshan	738	Chibi	895	Wu Yunyu	798	Yuhengxing	863	Yongxing Dao
985	Qilian Shan	710	Renhuai	739	—	—	—	799	Jinxing	864	Haiyang Dao
986	Wanyang Shan	711	Jiangshan	741	Xiaoyi	—	Bei Ce 901	—	—	865	Liugong Dao
987	Wuzhi Shan	712	Rudong	742	Taishan	—	Bei Ce 902	—	Training ships	866	Daishan Dao
988	Yimeng Shan	713	Zhiji	743	Changshu	—	Bei Diao 900	—	867	866	Daishan Dao
989	Changbai Shan	714	—	744	Heshan	—	Bei Diao 990	—	868	866	Donghai Dao
991	Emei Shan	715	Wenling	745	Luxi	—	Bei Diao 990	—	885	885	Qinghai Hu
992	Huading Shan	720	Pingdu	746	Kaiping	—	Bei Diao 991	81	Zhaogqing	886	Qiandao Hu
993	Luoxiao Shan	721	Changyi	ex-806	Zhijiang	—	Bei Diao 991	82	Zheng He	887	Weishan Hu
994	Daiyun Shan	722	Yangshuo	ex-816	Haimen	—	Beijingx	83	Shichang	888	Fuxian Hu
995	Wanyan Shan	723	Yongsheng	ex-839	Liuyang	—	Kaiyangxing	83	Qi Jiguang	889	Tai Hu
996	Laotie Shan	724	Daxin	—	—	—	Tianwangxing	86	Polang	890	Chao Hu
997	Yunwu Shan	725	Huarong	872	Zhu Khezen	232	Dong Ce 232	—	—	901	Hulun Hu
998	Kunlun Shan	726	Rongjiang	873	Qian Xuesen	233	Dong Ce 233	429	Hong Hu	902	Dongping Hu
999	Jinggang Shan	727	Qionghai	874	Deng Jiaxian	—	Nan Ce 429	87	Xu Xiake	903	Hoh Xil Hu
Principal mine warfare forces		728	Hejian	875	Qian Sanqiang	—	Nan Ce 430	—	—	904	Gaoyao Hu
701	Xiangshan	732	Wudi	876	Qian Weichang	876	—	88	—	905	Chagan Hu
702	Chongming	733	Xuanwei	—	—	873	—	89	—	906	Hong Hu
—	—	—	—	—	—	—	—	—	—	907	Luoma Hu
—	—	—	—	—	—	—	—	—	—	961	Junshan Hu
—	—	—	—	—	—	—	—	—	—	962	Lugu Hu

SUBMARINES

Strategic missile submarines

Notes: (1) Following the Type 094 (Jin) programme, it is expected that a new Type 096 submarine, which is under development, will enter service in the 2020s. While design details remain sketchy, it is anticipated that the submarines

may carry the larger JL-3 missile, thought to be a derivative of the DF-41 ICBM, which has an estimated range of 12–15,000 km. Construction expected to take place at Bohai.

(2) PLAN nuclear submarines are referred to as Chángzhéng (Long March) plus a number, as well as a pennant. Names and numbers may be assigned to new units after decommissioning.

6 JIN (TYPE 094) CLASS (SSBN)

Name	No
CHANGZHENG 09	409
CHANGZHENG 10	412
CHANGZHENG 11	413
CHANGZHENG 12	414
CHANGZHENG 17	420
CHANGZHENG 18	421

Displacement, tonnes: 8,000 surfaced; 10,000 dived

Dimensions, metres (feet): 137.0 × 11.8 × 8.3 (449.5 × 38.7 × 27.2)

Complement: 140

Machinery: Nuclear; 2 PWR; 150 MW; 2 turbines; 1 shaft
Missiles: SLBM: 12 JL-2 (CSS-N-14); 3-stage solid-fuel rocket; inertial guidance with stellar and satellite reference updates to 7,200+ km (3,995+ n miles) single nuclear warhead of 1 MT or 3–4 MIRV of smaller selectable yield. CEP 300 m approximately.

Torpedoes: 6–533 mm tubes; combination of Yu-3 II; active/passive homing to 13 km (7 n miles) at 35 kt; electric; warhead 205 kg; depth to 350 m and Yu-4B; wire-guided and active/passive homing to 15 km (8.1 n miles) at 40 kt; electric; warhead 309 kg.

Physical countermeasures: Decoys: To be announced.

Electronic countermeasures: ESM: To be announced.

Radar: Surface search/navigation: Type 359; I-band.

Sonars: Hull mounted passive/active; flank arrays. Passive intercept array. Towed array.

Programmes: Nuclear-powered ballistic missile submarines. The first of class became operational as a submarine in mid-2007 and as an SSBN in 2014, based on reports that the JL-2 missile had entered operational service. There was a gap of several years between the launch of the fourth boat and the final pair, which were noted to be undergoing

Builders	Laid down	Launched	Commissioned
Bohai Shipyard, Huludao	2001	28 Jul 2004	Mar 2007
Bohai Shipyard, Huludao	2003	2006	2010
Bohai Shipyard, Huludao	2004	Dec 2009	2012
Bohai Shipyard, Huludao	2006	2011	2015
Bohai Shipyard, Huludao	—	2017	Apr 2020
Bohai Shipyard, Huludao	—	—	23 Apr 2021



JIN CLASS

4/2019, Mark Schiefelbein/AFP via Getty Images / 1768014

outfitting alongside from 2017 and 2018 respectively. The sixth was commissioned in April 2021.

Structure: Likely to have significant commonality with the Type 093 (Shang-class) SSN, with the addition of a missile compartment midships, behind the fin. The raised casing structure encompasses the ballistic missile tubes. Hydrodynamic improvements appear to have been introduced progressively, including a more rounded shape to the forward part of the fin noted on one boat in 2016,

and reduction of the number of openings in the casing on one boat, which participated in the April 2019 Fleet Review. Several boats have a tube above the upper rudder, which suggests they are equipped with a reliable towed array. Modifications on final pair reported to include updates to sonars, radar, and torpedo armament.

Operational: The boats are based at Yulin-Yalongwan on Hainan. The first operational deterrent patrol may have been conducted in 2016 but has not been confirmed.



JIN CLASS

6/2019, Ships of the World / 1748542

Attack submarines

Notes: Following the Type 093/093A/093B (Shang)-class programme, construction of a new Type 095 class is reported to have started, with a view to entering service in the 2020s. The submarine is expected to be a guided-missile attack submarine (SSGN), fitted with a vertical launch system, which would deliver a submarine-based land-attack and anti-ship cruise missile capability. The boats are also likely to reflect technological improvements, with particular regard to noise-quietening, which may include pump-jet propulsors replacing propellers.

6 + 2 SHANG (TYPE 093/093A/093B) CLASS (SSN)

Name	No	Builders	Laid down	Launched	Commissioned
CHANGZHENG 07	407	Bohai Shipyard, Huludao	1994	24 Dec 2002	Dec 2006
CHANGZHENG 08	408	Bohai Shipyard, Huludao	2000	Dec 2003	Jun 2007
CHANGZHENG 13	415	Bohai Shipyard, Huludao	2009	2012	2015
CHANGZHENG 14	417	Bohai Shipyard, Huludao	2010	2013	2016
CHANGZHENG 15	418	Bohai Shipyard, Huludao	2011	2015	2017
CHANGZHENG 16	419	Bohai Shipyard, Huludao	2011	2016	2018
-	-	Bohai Shipyard, Huludao	-	May 2022	-
-	-	Bohai Shipyard, Huludao	-	Jan 2023	-

Displacement, tonnes: 6,000 dived

Dimensions, metres (feet): 106 x 11.5 x 7.5 (347.8 x 37.7 x 24.6)

Speed, knots: 30 dived

Complement: 100

Machinery: Nuclear: 1 PWR; 150 MW; 2 turbines; 1 shaft

Missiles: SSM: YJ-82 inertial guidance and active radar terminal homing to 33.3 km (18 n miles) at Mach 0.9; warhead 165 kg; sea-skimmer. Sub-launched versions of YJ-18 and CJ-10 may be carried.

Torpedoes: 6–533 mm bow tubes; combination of Yu-6: wire-guided and active/passive and wake homing; thermal; Yu-9: wire-guided and active/passive and wake homing; electric; and Yu-10: active/passive homing to 50 km (27 n miles) at 50 kt (est).

Physical countermeasures: Decoys.

Electronic countermeasures: ESM.

Radar: Surface search/navigation: Type 359; I-band.

Sonars: Hull mounted passive/active; flank array; passive intercept array. Towed array (from hull 414 onwards).

Programmes: Designed in conjunction with Russian experts.

The first two boats (Type 093, locally also 09III) entered service in 2006 and 2007, and are known as the Shang I class. At least one modified boat (Type 093A) is reported to have entered service about 2015. Design features include hydrodynamic improvements to the sail. Three further



SHANG CLASS

5/2015, Ships of the World / 163220

modified boats (Type 093B) are reported. These boats feature a hump aft of the sail, and small differences from boat to boat. Initial reports of a hull stretch and installation of vertical launch tubes in 093B were not supported by imagery

released. Satellite imagery appears to show that two further submarines were launched in May 2022 and January 2023.

Operational: Two Type 093B participated in the PLA Navy parade in April 2018.



TYPE 093B

2018, Ships of the World / 1741950

3 HAN (TYPE 091/091G) CLASS (SSN)

Name	No	Builders	Laid down	Launched	Commissioned
CHANGZHENG 03	403	Bohai Shipyard, Huludao	1980	1983	21 Sep 1984
CHANGZHENG 04	404	Bohai Shipyard, Huludao	1984	1987	Nov 1988
CHANGZHENG 05	405	Bohai Shipyard, Huludao	1987	8 Apr 1990	Dec 1990

Displacement, tonnes: 4,500 surfaced; 5,550 dived

Dimensions, metres (feet): 96 (403), 101 (404–405) x 10 (403–405) x 7.4 (315.0, 331.4 x 32.8 x 24.3)

Speed, knots: 25 dived; 12 surfaced

Complement: 75

Machinery: Nuclear; turbo-electric; 1 PWR; 90 MW; 1 shaft

Missiles: SSM: YJ-82; inertial guidance and active radar terminal homing to 33.3 km (18 n miles) at Mach 0.9; warhead 165 kg; sea-skimmer.

Torpedoes: 6–533 mm bow tubes; combination of Yu-3 (SET-65E); passive homing to 13 km (7 n miles) at 35 kt; electric; warhead 205 kg; depth to 350 m and Yu-4B; wire-guided and active/passive homing to 15 km (8.1 n miles) at 40 kt; electric; warhead 309 kg.

Mines: 36 in lieu of torpedoes.

Electronic countermeasures: ESM: Type 921-A; radar warning.

Radar: Surface search: Snoop Tray; I-band.

Sonars: Trout Cheek; hull-mounted; active/passive search and attack; medium frequency. DUUX-5; passive ranging and intercept; low frequency.

Programmes: First of this class delayed by problems with the powerplant. Although completed in 1974 it was not fully operational until the 1980s.

Modernisation: The basic Russian ESM equipment was replaced by a French design. A French intercept sonar set has been fitted.

Structure: From 404 onwards the hull has been extended by some 5 m although this was not to accommodate missile tubes as previously reported. SSMs may be fired from the torpedo tubes. Diving depth 300 m (985 ft).

Operational: All based in North Sea Fleet at Jianggezhuang (Nanyaowan, Laoshan district). 403 and 404 started mid-life refits in 1998, which completed in early 2000. 405 started



HAN 404

5/1996, Ships of the World / 0506277

mid-life refit in 2000 and was reported completed in 2002. The first of class 401 was decommissioned in 2000 and became an exhibit at the naval museum in Qingdao in 2016

and 402 in 2005. The boats are reputed to be relatively noisy and likely to be readily detected by modern passive sonars, so have limited operational utility.

Patrol submarines

Notes: An unknown number of midget submarines have been reported in service. A 36 m boat (displacement 450 tonnes approximately) observed at Wuhan Shipyard in October 2014.

20 + (5) YUAN (TYPE 039A/B/C) CLASS (SSK)

No	Builders	Launched	Commissioned
330	Wuchang Shipyard, Wuhan	31 May 2004	2006
331	Wuchang Shipyard, Wuhan	31 Aug 2007	2009
332	Wuchang Shipyard, Wuhan	Nov 2007	2009
333	Wuchang Shipyard, Wuhan	Apr 2008	2010
334	Wuchang Shipyard, Wuhan	Oct 2010	2011
335	Wuchang Shipyard, Wuhan	Oct 2010	2011
336	Wuchang Shipyard, Wuhan	Nov 2010	2012
337	Wuchang Shipyard, Wuhan	16 Dec 2010	2011
338	Jiangnan Shipyard, Changxingdao	7 Jun 2011	2012
339	Wuchang Shipyard, Wuhan	29 Jul 2011	2012
340	Wuchang Shipyard, Wuhan	28 Aug 2011	2012
341	Jiangnan Shipyard, Changxingdao	26 Nov 2011	2012
342	Wuchang Shipyard, Wuhan	Dec 2013	2013
343	Wuchang Shipyard, Wuhan	2016	2015
344	Wuchang Shipyard, Wuhan	2016	2017
345	Wuchang Shipyard, Wuhan	Dec 2016	2017
346	Jiangnan Shipyard, Changxingdao	2017	2018
347	Wuchang Shipyard, Wuhan Wangpucon	2020	2018
348	Wuchang Shipyard, Wuhan Wangpucon	2021†	2021
349	Jiangnan Shipyard, Changxingdao		2022

Displacement, tonnes: 2,725 surfaced; 3,600 dived

Dimensions, metres (feet): 77.2 × 8.4 × 6.7 (253.3 × 27.6 × 22.0)

Machinery: Diesel-electric; 4 diesels; 1 motor; 2 Stirling AIP; 1 shaft

Missiles: SSM: YJ-82; inertial guidance and active radar terminal homing to 33.3 km (18 n miles) at Mach 0.9; warhead 165 kg; sea-skimmer. A sub-launched version of YJ-18 may be carried.

Torpedoes: 6 – 533 mm bow tubes. Combination of Yu-6: wire-guided and active/passive and wake homing; thermal; and Yu-9: wire-guided and active/passive and wake homing; electric.

Physical countermeasures: To be announced.

Radar: Navigation: I-band.

Sonars: Bow-mounted; active/passive search and attack; medium; medium frequency. Flank array; passive search; low frequency. Towed array (on boats completed from 2021).

Weapon control systems: To be announced.

Programmes: The first of class was launched at Wuchang Shipyard, (central) Wuhan, in May 2004 and underwent extensive trials before the second was launched in 2007. An increased building tempo in 2010 suggested a requirement for new boats to replace older classes. Wuchang appears to be the lead shipyard (at a new site east of Wuhan from about 2018) but some boats have been constructed at Jiangnan Shipyard, Changxingdao, near Shanghai. Designations 039B/C reflect observed major variants rather than official PLAN nomenclature. A total of 17 reported to have been built by 2020, and a total of 25 projected by 2025 according to a 2021 US DoD assessment.

Structure: The boat appears to be a Chinese indigenous design. Shorter and broader than the Song class, it exhibits some of the features of the Russian Kilo class design including a teardrop-shaped hull with a distinctive 'hump' and large fin. The teardrop shape suggests a pressurised double hull construction. The stern of the boat resembles the Song class; the single shaft has a seven-bladed propeller.

The submarine is covered with anechoic tiles. The submarine is believed to incorporate air-independent propulsion using Stirling engine technology. Type 039B commissioned from about 2011 feature flank array sonar and modifications to the sail to improve acoustic performance and addition of a sensor on the sail and deletes the sensor on the forward edge of the sail fitted on 039A boats. Several earlier boats converted to 039B standard. A further improved 039B version launched from late 2013 features further hydrodynamic improvements, including a raked and more curved sail. Further modification noted on a boat completed at Wuchang in 2021, and may be referred to as 039C. Features include an extended aft casing and a larger top rudder section featuring a payout tube, indicating the inclusion of a towed array sonar. The sensor on the forward edge of the sail fitted on 039B variant 2 boats was deleted and the sail features advanced shaping, including a chine.

Operational: Basing: 330–339 in East Sea Fleet; 340–341 in North Sea Fleet. 342–346 in South Sea Fleet.



YUAN CLASS (Type 039A)

6/2011, Ships of the World / 1406475



YUAN CLASS (Type 039B)

6/2019, Ships of the World / 1748544

13 SONG CLASS (TYPE 039/039G) (SSG)

No	Builders	Laid down	Launched	Commissioned
320	Wuchang Shipyard, Wuhan	1991	25 May 1994	Jun 1999
321	Wuchang Shipyard, Wuhan	1995	11 Nov 1999	Apr 2001
322	Wuchang Shipyard, Wuhan	1996	28 Jun 2000	Dec 2001
323	Wuchang Shipyard, Wuhan	1998	May 2002	Nov 2003
324	Wuchang Shipyard, Wuhan	1999	28 Nov 2002	Dec 2003
325	Wuchang Shipyard, Wuhan	2001	3 Dec 2002	2004
314	Wuchang Shipyard, Wuhan	2001	19 May 2003	2004
315	Wuchang Shipyard, Wuhan	2002	29 Sep 2003	2004
316	Wuchang Shipyard, Wuhan	2002	28 Aug 2004	2005
326	Wuchang Shipyard, Wuhan	2002	Jul 2004	2005
328	Jiangnan Shipyard, Shanghai	2002	Aug 2004	2005
327	Wuchang Shipyard, Wuhan	2003	Sep 2004	2006
329	Jiangnan Shipyard, Shanghai	2003	Nov 2004	2006

Displacement, tonnes: 1,700 surfaced; 2,250 dived

Dimensions, metres (feet): 74.9 × 7.5 × 5.7

(245.7 × 24.6 × 18.7)

Speed, knots: 22 dived; 15 surfaced

Complement: 60 (10 officers)

Machinery: Diesel-electric; 4 MTU 16V 396 SE; 6,092 hp(m) (4.48 MW) diesels; 4 alternators; 1 motor; 1 shaft

Missiles: SSM: YJ-82; inertial guidance and active radar terminal homing to 33.3 km (18 n miles) at Mach 0.9; warhead 165 kg; sea-skimmer. A sub-launched version of YJ-18 may be carried.

Torpedoes: 6–533 mm tubes. Combination of Yu-6; wire-guided and active/passive and wake homing; thermal; and Yu-9; wire-guided and active/passive and wake homing; electric.

Mines: In lieu of torpedoes.

Electronic countermeasures: ESM: Type 921-A; radar warning.

Radar: Surface search: I-band.

Sonars: Bow-mounted; passive/active search and attack; medium frequency. Flank array; passive search; low frequency; intercept.

Programmes: First of class (Type 039) started sea trials in August 1995, as a result of which substantial modifications were made. Second of class (Type 039G) trials started in early 2000 and third in early 2001. Jiangnan Shipyard, Shanghai, joined the building programme in 2002 and constructed the eleventh and thirteenth boats.

Structure: Only the first of class built with stepped fin. All subsequent boats conventional in appearance. Distinctive

fixed horizontal hydrodynamic stabiliser extends behind fin. Comparable in size to Ming class but with a single highly skewed propeller and an integrated spherical bow sonar. The forward hydroplanes are mounted on the fin below the bridge. Some of the details are speculative and the latest hulls of the class may have benefited from experience gained with the Kilos. The diesel engines are likely to be reverse engineered. Sonars are reported to be of French design.

Operational: Basing: North (315, 316, 320, 321, 322, 323, 327, 328); East (314, 324, 325); South (326, 329). In October 2014 China's MND confirmed a submarine had been deployed to the Indian Ocean in support of counter-piracy operations. Song class 329 subsequently observed during port visit to Colombo. An unidentified Song-class submarine visited Malaysia January 2017.



SONG CLASS

4/2004, Ships of the World / 1042142



SONG CLASS 315 and 316

6/2005, Hachiro Nakai / 1153050

12 MING CLASS (TYPE 035G/B) (SSK)

306–313 359–360 362–363

Displacement, tonnes: 1,584 surfaced; 2,114 dived

Dimensions, metres (feet): 76 × 7.6 × 5.1

(249.3 × 24.9 × 16.7)

Speed, knots: 18 dived; 15 surfaced; 10 snorting

Range, n miles: 330 at 4 kt dived; 8,000 at 8 kt snorting

Complement: 57 (10 officers)

Machinery: Diesel-electric; 2 6E390ZC diesels; 5,200 hp(m) (3.82 MW); 2 shafts

Torpedoes: 6–533 mm tubes (8 tubes, including 2 aft in early units). Yu-4A; wire-guided and passive homing to 15 km (8.1 n miles) at 40 kt; electric; warhead 309 kg; 16 weapons.

Mines: 32 in lieu of torpedoes.

Radar: Surface search: H/LJQ-353A; I-band.

Sonars: H/SQZ-262C (Pike Jaw); hull-mounted; active/passive search and attack; medium frequency DUUX 5; passive ranging and intercept; low frequency

Programmes: Improved version of Project 633 (Romeo). First three completed between 1974 and 1979 one of which was scrapped after a fire and another (232) has been decommissioned. These were Type ES5C/D. Building resumed at Wuhan Shipyard in 1987 at the rate of one per year to a modified design ES5E (Type 035G). The programme was thought to have ended with hull number 14 (363) launched in May 1996, but 305 was launched in June 1997 followed by 306 in September 1997, 307 in May 1998, 308 in October 1998, 310 in June 2000, 311

in September 2000, 312 in May 2001, and 313 in April 2002. Boats 309–313 are reported to be a further modified design (Type 035B).

Structure: Diving depth, 300 m (985 ft). Only the later models have the DUUX 5 sonar. Hull 20 is reported to have a 2 m extension to its machinery space. Early units have a small 'step' in the forward fin.

Operational: Basing: South (305–308, 310–313); North (356–363). Fitted with Magnavox SATNAV. Older units are being decommissioned as the number of Yuan class increases. Two refurbished boats (ex-356 and ex-357) sold to Bangladesh and handed over November 2016 at Lushun naval base.

10 KILO (PROJECT 636/636M) CLASS (SSK)

No	Builders	Laid down	Launched	Commissioned
366	Admiralty Yard, St Petersburg	16 Jun 1996	26 Apr 1997	26 Aug 1997
367	Admiralty Yard, St Petersburg	28 Aug 1997	18 Jun 1998	25 Oct 1998
368	Admiralty Yard, St Petersburg	19 Oct 2002	27 May 2004	10 Dec 2004
369	Admiralty Yard, St Petersburg	19 Oct 2002	19 Aug 2004	30 Apr 2005
370	Admiralty Yard, St Petersburg	7 Mar 2003	24 Feb 2005	15 Jun 2005
371	Admiralty Yard, St Petersburg	11 Aug 2003	26 May 2005	14 Sep 2005
372	Admiralty Yard, St Petersburg	7 May 2003	25 Aug 2005	30 May 2006
373 (ex-B 340)	Nizhny Novgorod	Jul 1992	8 May 2004	8 Aug 2005
374 (ex-B 701)	Severodvinsk Shipyard	29 May 2003	4 Jun 2005	17 Nov 2005
375 (ex-B 702)	Severodvinsk Shipyard	29 May 2003	17 Jul 2005	24 Nov 2005

Displacement, tonnes: 2,325 surfaced; 3,076 dived**Dimensions, metres (feet):** 73.8 x 9.9 x 6.6 (242.1 x 32.5 x 21.7)**Speed, knots:** 17 dived; 10 surfaced**Complement:** 52 (13 officers)**Machinery:** Diesel-electric; 2 diesels; 3,650 hp(m) (2.68 MW); 2 generators; 1 motor; 5,900 hp(m) (4.34 MW); 1 shaft; 2 auxiliary motors; 204 hp(m) (150 kW); 1 economic speed motor; 130 hp(m) (95 kW)**Missiles:** SLCM: Novator 3M-54E1 (SS-N-27B) anti-ship; inertial guidance and active radar terminal homing to 300 km (162 n miles) at Mach 0.6–0.8; warhead 450 kg; seaskimmer.**Torpedoes:** 6—533 mm tubes; 18 torpedoes. Combination of TEST-71ME/TEST-71ME-NK anti-submarine; wire-guided (option); active/passive homing to 23.2 km (12.5 n miles) at 35 kt; 17.2 km (9.3 n miles) at 40 kt; electric; warhead

205 kg; depth to 400 m (1,312 ft), and Type 53–65; passive wake homing to 19 km (10.3 n miles) at 45 kt; thermal; warhead 300 kg.

Mines: 24 in lieu of torpedoes.**Electronic countermeasures:** ESM: Squid Head or Brick Pulp; radar warning.**Radars:** Surface search: MRP-25E (Snoopy Tray); I-band.**Sonars:** MGK-400E (Rubikon) suite; bow-mounted; passive; low/medium frequency (Shark Teeth); active transmit array (Shark Fin); MG-519M Arfa-M (Mouse Roar) mine detection/search and attack; active; high frequency.**Weapon control systems:** MVU-119 EM Murena TFCs.**Programmes:** The first four boats were ordered in mid-1993.

The first two were Project 877EKM hulls built for a former Warsaw Pact country and subsequently cancelled. Both since decommissioned. The third and fourth are Project 636 variants. A contract for a further eight 636M variants armed

with SS-N-27 was signed on 3 May 2002. The first of these was originally laid down at Nizhny Novgorod for the Russian Navy, but was never completed due to lack of funding. It is likely to be the last submarine to have been built at the shipyard. Five of the boats were built by Admiralty Yard, St Petersburg and the remaining two boats at Severodvinsk. The programme was completed in 2006.

Structure: Double-hull construction with six watertight compartments. Normal diving depth is 240 m with 300 m available in emergency. At least two torpedo tubes can fire wire-guided weapons. Some modifications carried out after arrival in China including a possible new electronic support measures.**Operational:** The first six (366–371) based at Xiangshan in the East Sea Fleet and the remainder (372–375) based at Yulin in the South Sea Fleet. The two Project 877EKM boats were decommissioned in late 2021.

KILO CLASS

1/2008, A Sheldon-Duplaix / 1335695

Auxiliary submarines**Notes:** A new 'sail-less' submarine was launched at Jiangnan Changxingdao shipyard in October 2018. Commercial satellite imagery captured on 18 September 2019 confirms a length of about 45 m and pressure hull diameter of about 4–4.5 m. Estimated displacement of 500–1,000 tonnes. The boat was noted at sea in March 2019, however, subsequently returned to the shipyard. May have an experimental role.**1 TYPE 032 (QING) CLASS (SSA)**

Name	No	Builders	Laid down	Launched	Commissioned
-	201	Wuchang Shipyard, Wuhan	2008	9 Sep 2010	16 Oct 2012

Displacement, tonnes: 3,797 surfaced; 6,628 dived**Dimensions, metres (feet):** 92.6 x 10 x 6.85 (303.8 x 32.8 x 22.5)**Speed, knots:** 14 dived; 10 surfaced**Complement:** 88**Machinery:** Diesel-electric; AIP**Missiles:** SLBM: 2 launch tubes in aft section of sail.

SLCM: 4 launch tubes in casing forward of the sail.

Torpedoes: 1—533 mm. 1–650 mm.**Radar:** To be announced.**Sonars:** To be announced.**Comment:** The only unit of this design of submarine was launched at Wuhan in September 2010. Approximately one-third larger than the Yuan class, its design includes an unusually large 22 m long sail, which is thought to encompass two vertical missile tubes. It is believed to be conventionally powered and equipped with air-independent propulsion (AIP). A mid-May 2011 image of the submarine in dry dock indicates that there is an extension at the base of the hull under the fin similar to that seen in early Soviet

ballistic missile-carrying submarines. Such an extension would maximise the length of missile tube that could be installed. This suggests that the principal role of the boat is to serve as a ballistic-missile trials platform. May also undertake other underwater test and trials, including launch of anti-ship and cruise missiles from four launchers in the forward casing. Reported to be able to accommodate up to 200 crew and trials personnel for up to three days. Operates from the North Sea Fleet test base at Xiaopingdao.

AIRCRAFT CARRIERS**Notes:** (1) The former Russian aircraft carrier *Minsk* is a tourist attraction at Shenzhen and Kiev is at a military theme park in Tianjin. (2) Follow-on plans for further carriers have been noted in Chinese press. On

15 March 2018 it was reported that a Type 004 carrier design is expected to be in the order of 90,000–100,000 tonnes, nuclear-powered and equipped with electromagnetic catapults. In late November

2019 it was reported that the Chinese government had put on hold plans for Type 004 construction. Chinese media claims that Type 004 will be equipped with EMALS.

(3) As of 2019 about six aircraft carriers were expected by the mid-2030s, with nuclear propulsion a possibility for the later ships. The programme may be subject to delays due to technical constraints.

0 + 1 TYPE 003 CLASS (CVM)

Name	No	Builders	Laid down	Launched	Commissioned
FUJIAN	18	Jiangnan Shipyard, Changxingdao	2016	17 Jun 2022	2024

Displacement, tonnes: 80,000 full load (est)**Dimensions, metres (feet):** 315 (est) x 75 x 9 (1,033.5 (est) x 246.1 x 9?)**Speed, knots:** 30**Machinery:** 8 boilers; 4 turbines; 4 shafts**Missiles:** SAM: HHQ-10; passive IR/anti-radiation homing to 9 km (4.9 n miles).**Guns:** H/PJ-11 (Type 1130) 30 mm; 11 barrels per mounting; 10,000 rds/min combined to 4 km (2.2 n miles); on-mount search and track radar and EO/R director.**Radar:** Air search: To be announced. Air/surface search: Type 346B (Dragon Eye); E/F-band.

Fire control: To be announced.

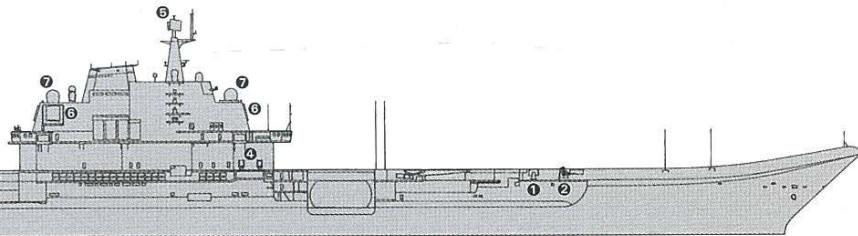
Navigation: I-band.

Fixed-wing aircraft: 40 J-15T (est) and KJ 600.**Comment:** Assembly of a new aircraft carrier, understood to be the first Type 003, commenced at Jiangnan Changxingdao about July 2020. Configured for catapult-assisted take-off but arrested recovery (CATOBAR), improving the

range/payload capability of embarked fixed-wing aircraft compared with ski-jump launch and enabling launch of KJ-600 early warning aircraft. The use of electro-magnetic catapults is a possibility.

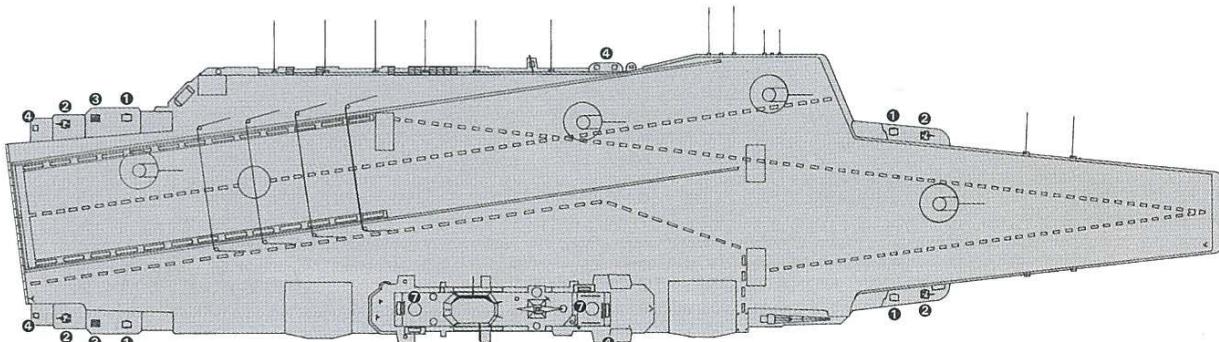
2 TYPE 001 AND TYPE 002 (MODIFIED PROJECT 1143.6) (MODIFIED KUZNETSOV/OREL) CLASSES (CVM)

Name	No	Builders	Laid down	Launched	Commissioned
LIAONING (ex-Varyag, ex-Riga) SHANDONG	16 17	Nikolayev South/Dalian Shipyard Dalian Shipyard	6 Dec 1985 2015	4 Dec 1988 26 Apr 2017	25 Sep 2012 17 Dec 2019
Displacement, tonnes: 45,900 (16), 50,000 (17) standard; 58,500 (16), 70,000 (17) full load					
Dimensions, metres (feet): 306.5 oa; 280 wl × 70 (16), oa; 37 wl × 9.1 (1,005.6 × 918.6 × 229.7 × 121.4 × 29.9)					
Flight deck, metres: 306.5 × 70 (1,005.6 × 229.7)					
Aircraft lift: 2					
Speed, knots: 30					
Range, n miles: 3,850 at 29 kt; 8,500 at 18 kt					
Complement: 1,960 (200 officers; 626 air crew) + 40 flag staff					
Machinery: 8 boilers; 4 turbines; 200,000 hp(m) (147 MW); 4 shafts					
Missiles: SAM: 3 HHQ-10 18-cell launchers ①; passive IR/ anti-radiation homing to 9.0 km (4.9 n miles).					
Guns: 3 H/PJ-11 (Type 1130) 30 mm ②; 11 barrels per mounting; 10,000 rds/min combined to 4 km (2.2 n miles).					
A/S Mortars: 2 RBU-6000 type 12-barrel launchers ③.					
Physical countermeasures: Decoys: 4 Type 726 trainable launchers ④; IR flares and chaff. Can fire anti-torpedo decoys and HE mortars.					
Electronic countermeasures: ESM/ECM: Intercept and jammers.					
Radar: Air search: 1 Type 382 (derived from Fregat-MAE5/ Top Plate) ⑤; 3D; D/E-band.					
Air/surface search: 1 Type 346 (Dragon Eye) (Type 346A on 17) ⑥; 3D; E/F-band.					
Air search/fire control: 2 Type 364 (Seagull C); G/H-band ⑦.					
Surface search: 1 Type 366 (derived from Mineral-ME1/Band Stand); I-band.					
Navigation: To be announced.					
CCA: To be announced.					



LIAONING

(Scale 1 : 1,800, Ian Sturton / 1483593



LIAONING

(Scale 1 : 1,800, Ian Sturton / 1483595



LIAONING

4/2021, Japan MoD / 1793131



LIAONING

7/2017, Source withheld / 2014634

DESTROYERS

8 + 2 (2) RENHAI (TYPE 055) CLASS (CGHM)

Name	No	Builders	Laid down	Launched	Commissioned
NANCHANG	101	Jiangnan Shipyard, Changxingdao	2014	28 Jun 2017	12 Jan 2020
LASA	102	Jiangnan Shipyard, Changxingdao	2015	28 Apr 2018	2 Mar 2021
DALIAN	105	Dalian Shipyard Industry Company	2016	3 Jul 2018	23 Apr 2021
YAN'AN	106	Dalian Shipyard Industry Company	2016	3 Jul 2018	Feb 2022
ANSHAN	103	Jiangnan Shipyard, Changxingdao	2017	12 Sep 2019	Nov 2021
ZUNYI	107	Dalian Shipyard Industry Company	2017	26 Dec 2019	Nov 2022
WUXI	104	Jiangnan Shipyard, Changxingdao	2018	9 May 2020	Mar 2022
XIANYANG	108	Dalian Shipyard Industry Company	2018	30 Aug 2020	Dec 2022

Displacement, tonnes: 11,000 standard; 13,000 full load

Dimensions, metres (feet): 180.0 × 21 × 6.6 (590.6 × 68.9 × 21.7)

Speed, knots: 30

Range, n miles: 5,000 at 12 kt

Complement: 280 (30 officers)

Machinery: COGAG; 4 QC-280 gas turbines; 150,000 hp (112 MW); 2 shafts; cp props

Missiles: 112-cell Universal VLS (64 fwd, 48 aft) for a mix of SLCM, SSM, SAM, and A/S missiles ①.

SLCM: CJ-10 derivative, land-attack; inertial guidance with satellite reference updates to 2,000 km (1,080 n miles) at Mach 0.67, warhead HE 500 kg or nuclear (est).

SSM: YJ-18A (CH-SS-NX-13); inertial guidance with satellite reference updates and active radar terminal homing to 537 km (290 n miles) (est) at Mach 0.8 (cruise) and Mach 3 (attack); warhead 200 kg. YJ-100; inertial guidance with satellite reference updates to 800+ km (432 n miles) at Mach 0.9 (est). YJ-21 hypersonic anti-ship ballistic missile to 1,000 km+ (540 n miles+); Mach 10 (attack).

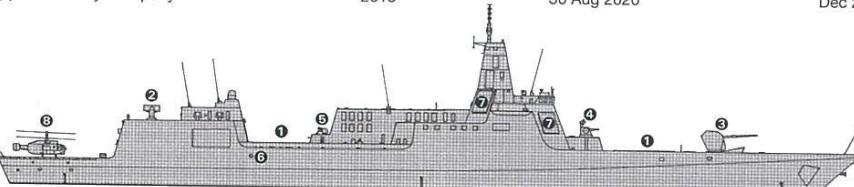
SAM: HQ-9A/B; command guidance and semi-active radar terminal homing to 150 km (81 n miles) at Mach 3; warhead 90 kg. 1 HHQ-10 24-cell launcher; passive IR/anti-radiation homing to 9 km (4.9 n miles) ②.

A/S: CY-5/Yu-8 rocket-assisted ASW weapon; fired from VLS; missile range 30 km (16.2 n miles) at Mach 0.9; payload Yu-11.

Guns: 1 H/PJ-38 130 mm/70 ③. 1 H/PJ-11 (Type 1130) 30 mm; 11 barrels per mounting; 10,000 rds/min combined to 4 km (2.2 n miles); on-mount search and track radar and EO/IR director ④. 2–30 mm ⑤.

Torpedoes: 6 (2 triple) tubes ⑥.

Physical countermeasures: Decoys: 4 Type 726B 24-barrelled 122 mm trainable launchers; IR flares and chaff.



(Scale 1 : 1,500), Ian Sturton / 1707322

RENHAI CLASS

Can fire anti-torpedo decoys and HE mortars. 4 launchers for inflatable floating decoys.

Electronic countermeasures: ESM/ECM: Type 726 EW suite including Type 726-1 radar intercept, Type 726-2 direction finder, Type 726-5 further radar intercept, Type 726-3 radar jammer.

Radar: Air search/fire control: Type 346B (Dragon Eye) ⑦; E/F-band.

Surface search: To be announced.

Navigation: I-band.

Sonars: Bow mounted. Towed sonar suite (passive line and active VDS).

Combat data systems: To be announced.

Helicopters: 2 Z-20F ⑧.

Programmes: Cruisers with ASuW, ASW, and AAW capabilities. Previously also referred to as destroyers. Construction of the first ship began at Jiangnan Shipyard, Changxingdao (near Shanghai), in December 2014. Construction at a second line at Dalian confirmed by 2018. Sea trials of the first-of-class commenced in 2018. Eight launched by mid-2020. Further

hulls observed under construction, including two at Dalian in January 2022 satellite imagery, and total of 12–15 estimated to equip all three fleets. In April 2022, the PLAN released footage of a hypersonic missile launch test from a Type 055. The missile is likely the YJ-21 hypersonic anti-ship ballistic missile.

Structure: Large conventionally powered surface combatants. The ships feature an integrated mast housing a number of flat panel arrays. Sensors are likely to be based on the Type 346 (Dragon Eye) radar while armaments include 112 (64 forward, 48 aft) vertical launch tubes for a mixture of land-attack, anti-ship, surface-to-air, and anti-submarine missiles.

Operational: The principal role of this large scale, high-capability class is likely to be carrier battle group protection, comparable to the 'air-defence commander' role of the US Navy's Ticonderoga-class cruisers. In April 2021 101 joined the escort group for the aircraft carrier *Liaoning* on a deployment to the Pacific Ocean east of Taiwan. The first batch of eight was completed and commissioned by December 2022. 101–104 assigned to Northern Theatre Fleet; 105–108 assigned to Southern Theatre Fleet. A further batch is expected to equip Eastern Theatre Fleet.



NANCHANG

4/2021, Japan MoD / 1793132



NANCHANG

10/2021, Sub Zifa/China News Service via Getty Images / 2014907

2 LUZHOU (TYPE 051C) CLASS (DDGHM)

Name	No
SHENYANG	115
SHIJIAZHUANG	116

Builders	Laid down	Launched	Commissioned
Dalian Shipyard	2002	28 Dec 2004	28 Nov 2006
Dalian Shipyard	2003	26 Jul 2005	17 Jan 2007

Displacement, tonnes: 7,000 full load

Dimensions, metres (feet): 155.0 × 17.0 × 6.0 (508.5 × 55.8 × 19.7)

Speed, knots: 29

Complement: 266 (30 officers)

Machinery: 4 boilers; 2 steam turbines; 2 shafts

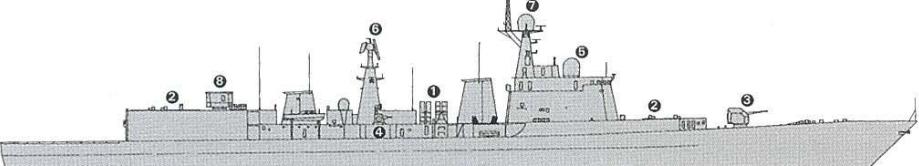
Missiles: SSM: 8 YJ-83 (2 quad) ①; inertial guidance and active radar terminal homing to 180 km (97.2 n miles) at Mach 0.9; warhead 165 or 190 kg; sea skimmer.

SAM: 3K-41M/S-300FM Fort-M (SA-N-20 Gargoyle); 6 B-204 octuple rotary drum VLS (2 fwd, 4 aft) ②; 48 48N6 missiles; inertial guidance with command updates and track via missile (TVM) radar terminal homing to 150 km (81 n miles) at Mach 5.8; altitude 10–27,000 m (33–83,583 ft); warhead 143 kg.

Guns: 1 – H/PJ-87 100 mm/56 ③; 25 rds/min to 22 km (11.9 n miles); weight of shell 15.6 kg. 2 H/PJ-12 (Type 730A) ④ 30 mm 7 barrels per mounting; 4,200 rds/min combined to 4 km (2.2 n miles).

Torpedoes: 6–324 mm Type 7424 (2 triple) tubes; Yu-7 active/passive homing to 14 km (7.6 n miles) at 43 kt; thermal; warhead 45 kg.

Physical countermeasures: Decoys: Type 726-4 DLS; 2–18 barrelled 122 mm trainable launchers; IR flares and chaff. Can fire anti-torpedo decoys and HE mortars. 2 Type 946 15-barrelled launchers.



(Scale 1 : 1,200), Ian Sturton / 1164337

SHENYANG

Radar: Air search: Fregat-MAE-3 (Top Plate) ⑤; 3D; E-band. Air/surface search: Type 364 (Seagull C) ⑥; G/H/I/J-bands. Surface search/fire control: Morena/Mineral-ME1/2 (Band Stand) ⑦; I-band active and D/E/F/G/H-band passive (for SSM). Fire control: Volna (Tomb Stone); I/J-band (for Rif-M) ⑧. Type 344 (MR 34); I-band (for 100 mm). Type 347G(2) (LR 66); I-band (for Type 730). Navigation: I-band.

Sonars: H/SJD-9; hull-mounted; active search and attack; medium frequency.

Combat data systems: To be announced. Satcom.

Weapon control systems: Mineral-ME3 (Band Stand) ⑨; datalink (for SSM).

Helicopters: Platform only.

Programmes: The requirement for these ships arose from a need to address AAW deficiencies. It may predate the Luyang programmes and could have been delayed by procurement of the SAM system. The last steam turbine surface combatants built for the PLAN.

Structure: Design appears to be based on the Type 051B (Luhai). Less stealthy than the Type 052 (Luyang) classes, although the dimensions are similar. Two vertical launch system (VLS) launchers are installed in the platform in front of the bridge and four in the aft superstructure. The AAW system is controlled by a Tomb Stone (Flap Lid) phased-array radar installed on a structure behind the mast.

Operational: Unusual for ships of this size to lack the ability to embark a helicopter but the 4 aft missile silos occupy the space required for a hangar. Based in the North Sea Fleet.



SHIJIAZHUANG

6/2019, Japan MoD / 1751522

1 LUHAI (TYPE 051B) CLASS (DDGHM)

Name	No
SHENZHEN	167

Builders	Laid down	Launched	Commissioned
Dalian Shipyard	Jul 1996	16 Oct 1997	4 Jan 1999

Displacement, tonnes: 6,000 standard; 6,500 full load

Dimensions, metres (feet): 153 × 16.5 × 6 (502.0 × 54.1 × 19.7)

Speed, knots: 29

Range, n miles: 4,500 at 14 kt

Complement: 250 (42 officers)

Machinery: 2 steam turbines; 94,000 hp(m) (70.1 MW); 2 shafts; cp props

Missiles: SSM: 16 YJ-12 ① (4 quad); inertial guidance and active radar terminal homing to 250–500 km (135–270 n miles) at Mach 2–4; warhead 250 kg (all data provisional).

SAM: 32-cell H/AJK-16 VLS forward ②; 32 HHQ-7; inertial guidance with command updates and semi-active radar terminal homing to 40 km (21.6 n miles) at Mach 4.5; warhead 70 kg.

Guns: 2–100 mm/56 (twin) ③; 25 rds/min to 22 km (11.9 n miles); weight of shell 15.6 kg. 2 H/PJ-11 (Type 1130) 30 mm ④; 11 barrels per mounting; 10,000 rds/min combined to 4 km (2.2 n miles).

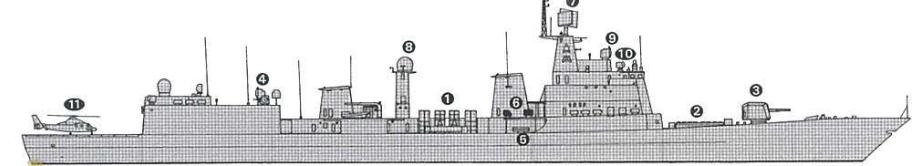
Torpedoes: 6–324 mm Type 7424 (2 triple) tubes ⑤; Yu-7; active/passive homing to 14 km (7.6 n miles) at 43 kt; thermal; warhead 45 kg.

Physical countermeasures: Decoys: Type 726-4 DLS; 4–24 barrelled 122 mm trainable launchers ⑥; IR flares and chaff. Can fire anti-torpedo decoys and HE mortars.

Electronic countermeasures: ESM: Type 826.

ECM: Type 984; I-band jammer; Type 985; E/F-band jammer.

Radar: Air search: Type 382 ⑦; 3D; dual-band (E/F and G/H).



(Scale 1 : 1,200), Ian Sturton / 1693933

Air/surface search: Type 364 (Seagull C) ⑧; G/H/I-J-bands. Fire control: Type 344A (MR 34); I-band (100 mm) ⑨. 4 MR-90 Orehk (Front Dome); H/I-bands (for HHQ-16) ⑩.

Navigation: I-band.

Sonars: H/SJD-9; hull-mounted; active search and attack; medium frequency.

Combat data systems: ZKT/ZKB. Satcom.

Weapon control systems: 2 GDG 776 optronic directors.

Helicopters: 2 Z-9C or Ka-28 Helix ⑪.

fire-control radar associated with this system, suggesting a dependency on third-party targeting supplied by datalink. The 8-cell launcher for HHQ-7 has been replaced with a 32-cell launcher for HHQ-16 and the four 37 mm twin gun mountings have been replaced by two Type 1130 close-in weapon systems (CIWS). Improvements have also been made to the radar systems.

Structure: Modernisation required large sections of the superstructure to be removed. Main and secondary masts have been modified and the quarterdeck enclosed. Shenzhen is one of very few PLAN surface combatants with a twin hangar, although it has never been observed operating two helicopters.

Operational: Based at Zhanjiang. In 2007 it was the first PLAN warship to visit Japan since the founding of the People's Republic of China.



SHENZHEN (before modernisation)

10/2003, US Navy / 1764016