Chinese nuclear weapons capability

【Overview】

On July 2019, China released a document on its national defense and military policies, which is commonly referred as the "white paper," for the first time in four years. In the paper, China specified that its position regarding its nuclear declaratory policies has not changed (State Council Information Office of PRC, 2019). These declaratory policies include: unconditional no-first-use of nuclear weapons, not to use or threaten the use of nuclear weapons against any non-nuclear weapon state or States Parties of any nuclear weapon free zone treaties, and not to engage in any nuclear arms races with other nations. Since there have been comments from within the Chinese military opposing the no-first-use policy discussions showing doubts about the policy have taken place, but the U.S. Department of Defense stated in the 2020 Annual Report to Congress that there had been no change in Chinese policy (Office of the Secretary of Defense 2020). However, the same report pointed out that there did appear to be changes in the hitherto peace time practice of China in which it separates nuclear warheads from missiles and stores them in central storage as proof of its no-first-use policy. Some researchers have argued that there are no detailed analyses serving as evidence for this supposition (Kristensen, Hans M. & Korda, Matt 2020).

China does not make any public announcements regarding its nuclear weapons power, and this lack of transparency is becoming an issue. According to investigations by researchers China is the only nuclear state under the Nuclear Non-Proliferation Treaty (NPT) that is actually continuing to increase its number of nuclear warheads. In 2020, China overtook France in estimated warheads, becoming the largest nuclear power after the United States and Russia. This increase is still underway. The same authors estimate the number of warheads as having changed from 250 to 260 in August 2015, 270 in April 2017, 280 in April 2018, 290 in April 2019, 320 in April 2020, and 350 in March 2021 (Kristensen, Hans M. & Korda, Matt 2021). In specific terms, the increase in the number of nuclear warheads can be accounted for by the MIRVing of the DF-5, the deployment of the DF-41 (a MIRVed ICBM), the strengthening of the DF31 mobile ICBM and the JL-2 SLBM (Kristensen, Hans M. & Korda, Matt 2020). It should also be noted that the above-mentioned U.S. Department of Defense report estimates the number of Chinese warheads as being in “the low-200s,” but we estimate the actual figure as being 350. With regard to this discrepancy, Kristensen et al. explain that it arises due to the fact that while the U.S. Department of Defense counts only already deployed warheads, Kristensen et al. include equipment existing as weapons or in a state in which they can be put into operational use, and that when this is taken into account the numbers of both more or less tally (Kristensen, Hans M. & Korda, Matt 2020)

These trends, though in no way conscionable, may still be understood within the framework of the afore-mentioned declaratory policies. To enhance odds for survivability in the event of a first strike by the United States while in compliance with no first use, it makes sense to provide ground missiles with road mobility or bolster SLM capabilities. By MIRVing the existing arsenal, furthermore, China can improve the chance for penetrating US missile defense.

Numbers of warheads in the table are all approximate and originally derived from the available documentary sources (Kristensen, Hans M. & Norris, Robert S. 2020). Currently, PRC warheads capable of reaching the U.S. mainland (DF-5A, DF-5B, DF-31A, DF-31AG, and DF-41) are thought to number about 190. Estimates of the Chinese budget related to nuclear weapons are difficult, but if we assume that around 5% of the overall defense budget has been used, the amount spent on nuclear weapons during 2019 was between USD8.9 billion and USD13.4 billion (Zhang, Hui 2020).

Chinese nuclear weapons capability

The numbers that have changed since last year are highlighted in red

Updated: June 1, 2021

Type / designation	NATO designation	Range(km)	Yield (kt)	No. of warheads	Remarks
Deployed				0	1)
Reserve / Nondeployed				350	
Ground-based ballistic missile				258	
Dong-Feng DF-4	CSS-3	5,500+	3,300	6	2)
Dong-Feng DF-5A	CSS-4 M2	13,000+	4,000 - 5,000	10	3)
Dong-Feng DF-5B	CSS-4 M3	13,000+	3×200- 300	50	3)
Dong-Feng DF-15	CSS-6	600	?	?	4)
Dong-Feng DF-21	CSS-5	2,150	200 - 300	40	5)
Dong-Feng DF-26	?	4,000+	200 - 300	20	6)
Dong-Feng DF-31	CSS-10 M1	7,200	200 - 300	6	7)
Dong-Feng DF-31A	CSS-10 M2	11,200	200 - 300	36	8)
Dong-Feng DF-31AG	CSS-10 M3?	11,200	200 - 300	36	9)
Dong-Feng DF-41	CSS-X-20	12,000	3 × 200-300	54	10)
Submarine-launched ballistic missile (SLBM)				72	11)
Julang JL-2	CSS-NX-14	7,000+	200 – 300?	72	12)
Airborne bombs				20	
Nuclear bomb				20	13)
Air-launched ballistic missile	?	?	?	?	14)
Total inventory				350	

【Notes】

1) Since the nuclear warheads are stored separately from missiles, they are viewed not as operationally deployed but as reserve / nondeployed warheads. (**Kristensen, Hans M. & Korda, Matt 2020**) As regards submarine-launched ballistic missiles, because China is not known to always maintain a submarine on an underwater patrol/deterrence mission, we treat it likewise (see Note 12).

2) The characters **東風** are romanized as Dong-feng. China's last remaining mobile, liquid-fueled missile. All or some are deployed in tunnels. According to U.S. intelligence agencies, they probably have single warheads. Deployed in 1980. They are capable of reaching India, part of Russia and Guam (**Kristensen, Hans M. & Norris, Robert S. 2015**). Currently being replaced by the DF-31 and expected to fully retire soon.

3) The characters **東風** are romanized as Dong-feng. Liquid-propellant. Silo-based. There are the single-warhead DF-5A and MIRVed DF-5B. Last year's data puts the number of multiple independently targetable reentry vehicle (MIRV) at three, but the latest U.S. Department of Defense report puts the figure at five (**Office of the Secretary of Defense 2020**). We have recalculated the figure and assumed there are 10 DF-5A (with 10 warheads) and 10 DF-5B (with 50 warheads).

4) If deployed, this is the only short-range nuclear missile currently deployed by China. The U.S. CIA thought the August 1990 nuclear tests were possibly to develop warheads for short-range ballistic missiles, and estimated that deployment would start in September 1993. The DF-15 is thought to be mostly for dual nuclear and non-nuclear use. The number of warheads cannot be estimated (**Kristensen, Hans M. & Korda, Matt 2020**).

5) The characters **東風** are romanized as Dong-feng. The range of the CSS-10 M1 is 1,750km but that of the M2 variant is estimated to be 2,150km (**Kristensen, Hans M. & Norris, Robert S. 2015**). This is the mainstay of China's intermediate-range missile force. Solid-propellant. 2-stage Mobile. According to U.S. intelligence agencies, they probably have single warheads. Deployed in 1981. The DF-21 also carries a conventional warhead (anti-ground and anti-ship). In last year's evaluation it was stated that China had the same number of replacement warheads as is the case with their conventional warheads, but it is now thought that the number of nuclear warheads is not higher than the number of missiles (**Kristensen, Hans M. & Korda, Matt 2020**).

6) The characters **東風** are romanized as Dong-feng. 16 missiles appeared in a military parade in 2016, and again in 2017. They are road-mobile with a range of 4,000km, putting Guam within range. Their target accuracy is high. They are believed to be nuclear/non-nuclear dual use and some contend China may launch the DF-26 carrying conventional warheads aimed at U.S. aircraft carriers, calling it a "carrier killer" (**Kristensen, Hans M. & Korda, Matt 2019**). The U.S. Department of Defense describes it as nuclear capable in its report (**Office of the Secretary of Defense 2019**). This missile program is being enhanced. There are an estimated 100 launchers, but those with nuclear capability are 20, and the replacement warheads are assumed to be conventional (**Kristensen, Hans M. & Korda, Matt 2020**).

7) The characters **東風** are romanized as Dong-feng. Solid-propellant. 3-stage. Mobile. Initially deployed in 2006. According to U.S. intelligence agencies, they probably have single warheads. They are gradually being replaced by DF-31AG. The U.S. Department of Defense estimates the range at 7,200 km (**Office of the Secretary of Defense, 2020**).

8) The characters **東風** are romanized as Dong-feng. Solid-propellant. 3-stage. Mobile. Available in both road- and rail-mobile platforms (**Gertz, Bill 2016**). Deployed in 2007. According to U.S. intelligence agencies, they probably have single warheads. Although they have single warheads, they are thought to be accompanied by decoys for missile defense. Documentation suggests MIRV (6-10 warheads) capability. The U.S. Department of Defense confirmed that, on April 19, 2016, double test launches were conducted from a road-mobile platform (**Gertz, Bill 2016**). The U.S. Department of Defense estimates the range as 11,200 km (**Office of the Secretary of Defense, 2020**). Twelve have been deployed per one brigade, and it is estimated that there are three such brigades in existence (**Kristensen, Hans M. & Korda, Matt 2020**).

9) The characters **東風** are romanized as Dong-feng. The People's Liberation Army's 90th anniversary parade in 2017 showcased a modified transporter erector launcher (TEL), fueling speculation for a new ICBM. A 2019 report from the U.S. Department of Defense described the DF-31AG as nuclear capable (**Office of the Secretary of Defense 2019**). While the launcher is modified, its delivery capacity, in terms of warheads, is estimated to be the same (**Kristensen, Hans M. & Korda, Matt 2020**).

10) The characters **東風** are romanized as Dong-feng. Road-mobile or Silo, in development. The U.S. Department of Defense reported on the weapon in 1997 but remained quiet for a long time. In 2014, the DOD made another reference, and described that it was in development. Eighteen of the weapons were displayed at a military parade in October 2019. Likely MIRV-capable (**Office of the Secretary of Defense 2019**). The number of MIRVs is estimated at three (**Kristensen, Hans M. & Korda, Matt 2020**). Likely solid fuel (**Gertz, Bill 2016**).

11) Six Jin Class strategic nuclear submarines are armed with the missiles. Six of the submarines are in active service, with four under operational deployment (**Kristensen, Hans M. & Korda, Matt 2020**). It is not known if the Jin fleet has been committed to strategic deterrence patrols. Peace time patrols will necessitate a formal change in China's basic doctrine and require upgrades in communications as well as command and control systems (**Kristensen, Hans M. & Korda, Matt 2019**) (**Kristensen, Hans M. & Korda, Matt 2020**).

12) The characters **巨浪** are romanized as Julang. Single warheads. A variant of the DF-31. Plans are to carry them on the Jin-class (type 094) nuclear submarine. 12 launch tubes. Launch tests had initially failed, but were successful in 2013. U.S. intelligence agencies anticipate that the missile will achieve initial operational capability in 2013-2014 (**Kristensen, Hans & Norris, Robert S. 2015**). The U.S. Department of

Defense estimates the range at 7,200km (**Office of the Secretary of Defense 2020**). With this limited range, it would take an advance into the far ends of the Pacific to cover all key cities in the U.S. mainland. It is thought that the missiles on all of China's submarines are equipped with nuclear warheads.

13) Of the 100-120 轰 (Hong) H-6 bombers (NATO designation: B-6), 20 are thought to have a nuclear mission. Combat radius 3,100 km. Deployed in 1965. For some time it had not been clear if China's bomber fleet had any nuclear mission. A 2019 U.S. Department of Defense report details the high-capability H-6K as being a dual nuclear-conventional bomber (**Office of the Secretary of Defense 2019**).

14) Under development. Intended to be loaded on the redesigned H-6N bombers. The U.S. Department of Defense has given them the tentative name of CH-AS-X-13 (**Kristensen, Hans M. & Korda, Matt 2020**).

【Source】

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