



History of China's Type 99 Main Battle Tank

OE Watch Commentary: While details of China's armament development programs can be opaque, retrospectives about the development of the Type 99 Main Battle Tank—including interviews with its chief designer, Zhu Yusheng—provide some useful insights into their thought processes and the progress of the industry since the 1980s and are noted in the accompanying excerpted article from the *PLA Daily*.

In the 1970s, China had mostly Type 59 tanks (a first generation tank, by their counting) and no plans for a second generation tank. With the opening of China in the late 1970s and a reprioritization toward conventional military modernization, in the early 1980s Chinese leaders focused on building the PLA's core military capabilities, including recognizing the need for a new main battle tank (MBT), to be designated the Type 99.

The Type 99 represented a change from previous practice where COSTIND [国防科工委] and the General Staff Department [总参谋部] jointly made decisions. In the case of the new MBT, the Central Military Commission—China's top military body, and the State Council, the civilian government—directly issued orders to “independently build and develop [自行研制] a tank up to ‘2000-level’ [2000水平] (i.e. that would remain capable through the new millennium).”

Primary research responsibility fell to the 201 Research Institute of China Ordnance Industries Group [中国兵器工业集团], better known in the west as NORINCO.

In 1984, Zhu Yusheng, a one-armed 66-year-old PLA veteran was pulled out of retirement in the early 1980s to be the lead designer [总设计] of the new tank. Though up to the task, Zhu recalled the challenge designing the new tank represented, noting that China would have to jump from first generation tanks to third generation, despite essentially no progress having been made for 20 years. “Its not like [other nations] were asleep” (and not developing new technology during these years) he said in an interview later posted through *CCTV*.

Due to the requirement of building the tank using as much-self developed technology as possible, the engineers needed to design their own main gun, engine and overcome other similar problems. According to a documentary about the development of the tank, NORINCO engineers only needed 16 years to develop the Type 99, comparable to the 14 years needed for the German Leopard 2.

Since the completion of the Type 99, China has continued to upgrade the design. In 2000s, NORINCO began work on a new variant, the 99A, which incorporated even more modern features.

Mao Ming, the lead designer of the Type 99A—is a senior expert at NORINCO who has been researching tanks and armored vehicle design for more than 30 years. He has received first class National Science and Technology Progress [国家科技进步一等奖] awards twice and a special distinction of making “Major Contribution to High Tech Weapons Development [高技术武器装备发展建设工程重大贡献奖]” from the Chinese Communist Party, the Central Military Commission and the State Council. Mao also worked in a laboratory that developed a new generation of amphibious fighting vehicles in the 1990s and helped develop a new armor penetrating round for the Type 99's main gun, capable of defeating even the most advanced types of armor. The new tanks include advanced countermeasures, optics and other sensors. As noted in the accompanying excerpt from *The Observer Online*, Mao has stated that the Type 99A “is China's first ‘informationized tank’”

While the Type 99 and its modernized follow-on variants proved expensive and are supplemented by larger numbers of lighter Type 96 tanks, the Type 99's development represented a watershed for the Chinese armament industry, promoting widespread modernization of design techniques and adoption of modern technology and demonstrating that it could produce advanced weaponry. **End OE Watch Commentary (Wood)**





Continued: History of China's Type 99 Main Battle Tank

Source: “99A主战坦克总设计师: 让国产坦克插上信息化‘翅膀’ (99A MBT Chief Designer: Informationize Our Tanks),” *PLA Daily*, 16 March 2018. <http://www.chinanews.com/mil/2018/03-16/8469092.shtml>

As one of the key components of the Army's equipment, for modern armies, the MBT plays a major role in determining the combat effectiveness of units. As a large country with a long land border, the performance of China's MBTs is very important for national defense.

Despite much speculation from foreign observers, the Type 99 was not developed with a specific enemy in mind or following a particular model for its development. The primary goal was to become the main equipment for China's armored units, and be viable after 2000. However, it should be said that, given the state of Chinese industry and technology at the time, this was a very high bar...

In the mid-1980s, many of the basic technologies of China's weapons industry were not as good as those of developed countries such as the United States. There were huge gaps in design capabilities and technical equipment. There were only a handful of computers in design institutes and factories, and CNC machine tools and CNC machining centers. Moreover, due to the influence of the international political and military situation, the weapon industry system has been plagued by losses for more than a decade since the mid-1980s, and scientific research work also lagged. On this basis, it is difficult to imagine the main battle tanks in which all aspects of performance can be comparable to those of the West or the former Soviet Union. This put Zhu under tremendous pressure.

At that time, there was a public opinion that Western tank design style represented by the United States should be adopted. But Zhu always believed that this kind of East-West style should not be used in the new tanks. He believed China should design its own main battle tanks according to the determined general requirements of the development goals. It should not matter whether a design element came from the East and the West, as long as it helps us succeed. Moreover, it is necessary to take the road of self-reliance, independent research and development, reflecting Chinese characteristics, and taking into account the actual needs of the war.

Source: “金戈铁马 99式主战坦克研发纪实 (‘Golden Halberds and Iron Horses’, Record of the Type 99 Main Battle Tank's Research and Development),” *CCTV, Memories of the Military Industry*, Episode 7. 2014. http://list.youku.com/albumlist/show/id_22498728.html

Source: “99式坦克之父祝榆生逝世 享年96岁 (Zhu Yusheng, Father of the Type 99 MBT Passes Away at 96),” *The Observer Online*, 31 October 2014. https://www.guancha.cn/military-affairs/2014_10_31_281645.shtml

...“It is China's first ‘informationized tank’,” — Mao Ming, the lead designer of the Type 99A

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“ZTZ-99A Main Battle Tank”

Source: By Tyg728 [CC BY-SA 4], https://upload.wikimedia.org/wikipedia/commons/2/27/ZTZ-99A_MBT_20170716.jpg.