V-DAY COMMEMORATION

A disassembled DF-5C intercontinental ballistic missile. PHOTOS BY XINHUA

PLA reveals nuclear deterrence system

The missiles highlight the nation's land-, sea- and air-based strategic capabilities

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On Wednesday, China displayed for the first time its nuclear triad, a reliable nuclear deterrence system with land-, sea- and air-based nuclear retaliation capabilities.

Upholding a long-standing practice that has been observed in previous parades, the People's Liberation Army unveiled its new strike missiles near the end of a head-turning parade marking the 80th anniversary of the victory in the Chinese People's War of Resistance Against Japanese Aggression and the World Anti-Fascist War.

Eight types of ballistic missiles paraded down Chang'an Avenue during the magnificent ceremony in central Beijing: the YJ-21 air-launched hypersonic ballistic missile, the DF-17 medium-range hypersonic ballistic missile, the DF-26D intermediate-range ballistic missile, the JL-1 air-launched long-range ballistic missile, the JL-3 submarine-launched intercontinental ballistic missile, and the DF-31BJ, DF-61 and DF-5C intercontinental ballistic missiles.

Each missile designation carries a specific meaning in Chinese: YJ stands for *yingji*, or "Eagle Strike"; DF is the commonly abbreviated name for *dongfeng*, or "East Wind"; JL in the submarine-based missile's name is short for *julang*, or "Massive Wave"; and the air-launched JL stands for *jinglei*, or "Shocking Thunderclap".

Among them, the JL-1, JL-3, DF-26D, DF-31BJ, DF-61 and DF-5C had been classified before the event.

The parade marked the first time the Chinese military publicly revealed its air-based nuclear strike platform. In the past, there was a conspicuous loophole in China's nuclear arsenal as the PLA Air Force did not own a usable air-based projection asset for nuclear warheads.

According to the military, the appearance of the JL-1, JL-3, DF-31BJ and DF-61 "is the first collective show of our land-, sea- and air-based strategic nuclear prowess". They are strategic "trump cards" that can safeguard the national sovereignty and dignity, it stated.

The PLA said the DF-5C is the newest member in the DF-5 family, which is China's first ballistic missile series with intercontinental ranges, and can strike every corner on Earth.

JL-1 air-launched long-range ballistic missile

DF-31BJ intercontinental ballistic missile

JL-3 submarine-launched intercontinental ballistic missile

DF-61 intercontinental ballistic missile

The large-scale debut of new strategic weapons has represented the huge progress China has made in science and technology, especially in the field of defense technology, said Yang Chengjun, a retired missile technology and nuclear strategy expert formerly with the PLA Rocket Force.

"Their appearance (at the parade) was very meaningful because China now faces a slew of big, realistic threats, ranging from foreign forces' intervention in the Taiwan question to their intimidation and provocations in the South China Sea and other hegemonic acts surrounding us, and we do need sufficient and reliable means to respond to those threats. These advanced weapons should act as a reminder to the world that with their strength, China is able to handle whatever challenges our adversaries will pose in front of us," the veteran researcher said.

Speaking about the DF-5C missile, he said that as China's first weapon on active duty that has global range, the new type has the most powerful propulsion system and the longest flight range among all Chinese ballistic missiles.

"Like other intercontinental missile models in our nuclear arsenal, the new type is capable of carrying multiple warheads, and some of them can be dummies, which will effectively confuse the enemy's missile defense system and neutralize their interception efforts," Yang stated.

According to Hu Bo, director of Peking University's Center for Maritime Strategy Studies, the JL-3 is the PLA Navy's newest type of submarine-launched intercontinental ballistic missile and boasts a hit accuracy as good as that of the world's best sea-based strategic missiles.

The new ordnance is at the core of the Navy's efforts to catch up with global sea powers in the nuclear deterrence arena and reinforce its nuclear second-strike capabilities, he noted.

A naval warfare researcher who wished to be identified only as Cui said that the JL-3 can be launched from anywhere its carriers — China's nuclear-powered submarines — can travel, and it has a much longer hit range than its predecessors.

It is difficult to detect and track, and can be used on short notice, he said, noting that it is tasked with realizing the country's sea-based nuclear deterrence and counter-strike goals.

"The core essence of a sea-based nuclear weapon is that it can substantially increase the 'stability and persuasiveness' of our strategic deterrence power," Cui said.

Besides the strategic missiles, the CJ-1000 vehicle-mounted supersonic cruise missile, the YJ-18C ship-launched cruise missile and the YJ-21 air-launched hypersonic ballistic missile were unveiled during the parade, testifying to the PLA's improved capability to stage long-range precision assaults from various dimensions.

Four previously unseen types of hypersonic anti-ship missiles — YJ-15, YJ-17, YJ-19 and YJ-20 — also turned up at the spectacular military show. They can be used by Navy fighter jets, combat vessels and submarines to carry out long-distance, ultrafast precision strikes against hostile ships and land targets, according to the PLA.

Cui said the four YJ-series missiles will be able to form a network that will enable them to work together to carry out ultrafast strikes.

"With all of these missile options, the Navy is able to make any combination to maximize the effect of their strikes. They give the Navy the most powerful portfolio of assault options that no others have ever owned," he noted.

China debuts 'revolutionary' battle tank model

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China made public on Wednesday its first model of a fourth-generation main battle tank, which features an unmanned turret, advanced radar, an active protection system and augmented reality technology.

Looking at its exterior, the biggest difference between the new Type 100 tank and its predecessors is the futuristic, unmanned turret that houses the main weapon, which appears to be a 105-millimeter-caliber gun, a coaxial machine gun and a remote-controlled weapon station.

Previously, all Chinese tanks were built with manned turrets, with a commander and gunner inside.

An unmanned turret has several advantages. It can store more ammunition and mission payloads, and more armor can be used to protect the tank's hull, which houses the crew.

Also mounted on top of the turret is an active protection system that works with a quad-faced phased array radar.

The radar is responsible for conducting 360-degree threat detection. As soon as it spots an incoming shell, rocket or missile, it will track the threat and guide the protection system to fire a mini rocket to destroy the target at short range.

There are also multiple cameras and sensors distributed around the battle machine to detect potential threats.

Yu Shuo, a defense industry observer, said the Type 100 features good strategic and tactical mobility, meaning it can be rapidly deployed by air and road.

He said the new type is likely to be propelled by a hybrid power pack, making it much quieter than previous Chinese tanks. This enables the tank to move silently and launch surprise attacks. The hybrid power pack also gives the tank the ability to use high-power weaponry such as anti-drone lasers.

Though the new tank is a lot lighter than its predecessors, it is still able to eliminate heavy-duty tanks covered with thick armor and can fend off incoming armor-piercing ammunition.

Besides its own weapons, the new type is capable of controlling and organizing other unmanned planes and ground vehicles in combat, Yu said.

"These uncrewed platforms will become a 'force multiplier' to the tank units. They will provide longer reconnaissance and hit ranges, and better situational awareness to the crew. Their presence will also reduce the possibility of direct encounters between our tanks and the enemy's, thus improving the crew's survivability," he explained.

"We can call the Type 100 a revolutionary model and the best in all operating tanks on Earth," he stated.

Yu added that the combat support vehicle that appeared after the Type 100 in the parade will be a close partner to the new tank.

The vehicle also has mighty automatic weapons, an advanced radar and sensors, and an active protection system. Moreover, it is equipped with a vertical launching system capable of firing missiles and loitering munitions — small strike drones that can maintain a holding pattern in the air while scanning for targets, according to him.

"The use of loitering munitions enables our armor units to detect and take out enemy targets from afar, before the enemies know where we are," the observer said.

Besides large equipment, Yu said there is a small but notable device used by crew members on the Type 100 — the augmented reality-enabled headset.

An AR headset is connected to external cameras and sensors mounted on the tank, providing its crew with a real-time, 360-degree view of the battlefield. This literally allows operators to "see through" the armor of their vehicle. Furthermore, it can display information about the vehicle's systems.

In addition to improving visibility, the device is likely to allow for direct control of the tank's weapons, which means the gunner can identify targets simply by turning his head or focusing his gaze, and the turret and weapons move automatically.

Xiao Ning, chief editor of Weapon magazine, speculated that the new-generation tank will have a good "intranet system" that connects its inner instruments and helps crew members communicate better.

He also echoed Yu's remarks about drones, stating that in future warfare, unmanned platforms will play an indispensable role in armor combat that has long been dominated by tanks.

A land armament researcher who wished to be identified as Song said that despite many people claiming tanks have become "obsolete" after seeing "tragic stories of tanks in recent conflicts", it has been proven that the big machines are still irreplaceable in armored warfare and counter-insurgency operations.

"Therefore, we need to continue to upgrade our tanks to make them fit in evolving war patterns," he said.

According to Song, after studying the essential elements of next-generation tanks for many years, designers and engineers in military powers have reached a general consensus: new-generation hardware should include at least a partially electric propulsion system, an active protection system, an unmanned turret, battlefield information processors and network-centric warfare operation capability.

"Considering technological and technical advancements over these past years, we no longer classify tanks based on the caliber of their main guns and the thickness of their armor plates as researchers did to the previous three generations of tanks. Instead, we now categorize them in accordance with how many new technologies and apparatuses they possess. Therefore, it is fair to call the Type 100 a fourth-generation model," he said.

The researcher also explained the reasons why the Type 100 is smaller and lighter than the Type 99A.

"The new tank will be deployed not only in conventional combat scenarios like those on flatland or a plateau, but also in urban battles and counter-insurgency operations, so its overall design must fit in all of those environments. Moreover, factors such as road conditions, air transport capacity and manufacturing and operational costs have decided that new tanks should not be bigger and heavier than the previous ones," he said.

The current cornerstone of China's armored forces, the Type 99A, was introduced in the early 2000s. Its contents include a diesel engine, reactive armor, a 120-mm smoothbore gun and a modern fire-control system.

In addition to the new tank, the Chinese military displayed during the parade several new airborne fighting vehicles that are expected to tremendously enhance the operational capability of its paratroopers.

Multiple combat support robots in service with the People's Liberation Army Ground Force were also carried by trucks to take part in the event.