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PLA Bets on Combined-Arms Brigade as Its Maneuver Workhorse

by Erick Salisbury, Intelligence Analyst, TRADOC G-2

People's Liberation Army's (PLA) combined-arms brigade (CAB) is the primary ground unit of action of China's self-described "World Class Military" designed to outmatch the U.S. military by 2049.[1] The PLA Army (PLAA) has 78 CABs spread across 13 group armies, which are corps-sized formations. CABs vary in size from approximately 4,500 to 5,000 personnel.[2] Their composition in equipment and personnel and the types of operations they are assigned is roughly equivalent to a U.S. brigade combat team (BCT), with some key differences. The PLAA light CAB includes high-mobility, mountain, air assault, and motorized variants and is similar to U.S. light airborne and air assault BCTs. The PLAA medium CAB consists of wheeled armored vehicles and is similar to a U.S. Stryker BCT. The PLAA heavy CAB comprises tracked armored vehicles like a U.S. armored BCT (ABCT).

A PLAA heavy CAB has more organic maneuver, air defense, and fires units than a U.S. Army ABCT. The heavy CAB has an additional maneuver battalion, an air defense battalion, and multiple launch rockets within its artillery battalion. The U.S. ABCT has artillery and engineer battalions assigned from its parent division.

COMPARING UNITS OF A 2024 PLAA HEAVY CAB TO A 2024 U.S. ABCT[3]

PLAA Heavy CAB	U.S. Army ABCT
4x Armored/Mechanized Battalions	3x Armored/Mechanized Battalions
Reconnaissance Battalion	Armored Recon Cav Squadron
Artillery Battalion (Tube, Rocket, & Long Range ATGMs)	Field Artillery Battalion (Tube only, Task Organized)
Service Support Battalion (Logistics)	Logistics Support Battalion
Operational Support Battalion (w/ Engineer element)	Engineer Battalion (Task Organized)
Air Defense Battalion	

Figure 1: Unit data from Congressional Research Service and TRADOC G-2 China Landing Zone [4]

The heavy CAB's fourth maneuver battalion will likely translate to a brigade advantage in maneuver warfare.[5] In a head-to-head matchup between a heavy CAB and an ABCT, one U.S. maneuver battalion will face two CAB battalions. Each PLAA maneuver battalion in a heavy CAB has two tank companies and two mechanized infantry companies plus supporting elements compared to a U.S. Army battalion that is a mix of three tank/mechanized infantry maneuver companies.[6]

ZBD-04A Chinese Amphibious Infantry Fighting Vehicle (IFV)

ZTZ-99A2 (Type 99A2) Chinese Main Battle Tank (MBT)


PF-98 (Type 98) Chinese 120mm Anti-Tank Rocket

Details of these and other systems can be found at; https://odin.tradoc.army.mil/WEG

The heavy CAB's organic air defense battalion, consisting of three batteries of short-range air defense artillery, surface-to-air missile systems, and man-portable air defense systems will protect key brigade enablers, such as artillery, electronic warfare, logistics, and command and control nodes. The current U.S. ABCT structure does not have an organic air defense battalion. These assets would be task-organized from higher headquarters, depending on the ABCT's mission, potentially putting the ABCT at a disadvantage.

The heavy CAB's artillery battalion has a significant advantage in organic indirect and direct fire support, with both tube and rocket artillery systems, plus a company of long-range antitank guided missile (ATGM) launching vehicles. The CAB employs three batteries of nine 122-mm howitzers and one battery of nine 122-mm rockets. The PLAA added rockets to their CAB to compensate for the comparable lack of range of the tube artillery. Additionally, the mix of tube and rocket fires provides the commander with more flexible fires supporting the CAB's mission. The battalion also has a dedicated anti-tank company outfitted with AFT-10 tracked vehicles capable of firing HJ-10 ATGMs at ranges between eight and ten kilometers. In comparison, U.S. ABCT artillery battalion comprises only three batteries of six 155-mm howitzers with no rockets or ATGM capability.

The PLAA heavy CAB employs the same three combat systems that have had some of the most significant impact in the Russia-Ukraine war: unmanned aerial systems (UAS), ATGMs, and fires.[7]

- Despite lacking fighting experience, China has carefully studied both Russia's and Ukraine's prolific and adaptive use of UAS in the Ukraine war—from state-produced military-specific systems to commercial-off-the-self UAS—to determine how to best employ them. While the exact number and type of UAS per CAB is unknown, China is the world's largest producer of UAS, and CABs will have UAS available from squad through brigade echelons. The PLA can field various UAS, ranging from the smallest quadcopters to medium-altitude long-endurance systems. These systems have modern sensor and targeting packages, such as thermals and laser designators. If the PLA can be as responsive as the fighting forces have been in the Russia-Ukraine war, the PLAA CAB will also be prepared to modify drones quickly to match desired mission sets.

DJI Mavic Air 2 Chinese Unmanned Aerial Vehicle (UAV)

Dragonfish Lite Chinese Unmanned Aerial Vehicle (UAV)

CH-3A Chinese Reconnaissance Strike Unmanned Aerial Vehicle (UAV)

Details of these and other systems can be found at; https://odin.tradoc.army.mil/WEG

- The CAB has organic ATGMs, providing long-range, precision, and direct fires. However, The PLAA fields ATGMs across various systems, from legacy man-portable systems, such as the plentiful and widely used Red Arrow 7 series, to modern vehicle-mounted systems, such as the Red Arrow 10.[8] Most armored vehicles in a heavy CAB can fire gun-launched ATGMs, increasing their lethality and flexibility in large-scale combat operations (LSCO). The CAB also has additional organic man-portable ATGM systems.

Red Arrow AFT-10 Chinese Anti-Tank Guided Missile Carrier

HJ-73 (Red Arrow-73) Chinese Anti-Tank Guided Missile (ATGM)

HJ-12 (Red Arrow 12) Chinese Anti-Tank Guided Missile (ATGM)

Details of these and other systems can be found at; https://odin.tradoc.army.mil/WEG

- The PLAA has noted how Ukraine and Russia have used fires to great effect in the ongoing conflict and has correspondingly reinforced the CAB with more fires systems than a U.S. ABCT. The heavy CAB's artillery battalion has 27 122-mm howitzers and nine 122-mm multiple rocket launchers (MRLs).[9] In addition to the CAB-level fires, each maneuver battalion has six 120-mm combination guns that provide direct and mortar-like indirect fires organic to the battalion.[10] The CAB-level 122-mm howitzer and the battalion-level 120-mm combination gun are mounted on the same infantry fighting vehicle chassis as the maneuver units, a modified ZBD-04. This simplifies maintenance and logistics, providing better mobility and protection for fires systems.[11] One drawback of using the standard chassis is that it cannot accommodate a 155-mm cannon tube. This reduces range and lethality compared to a 155-mm howitzer system. The organic 122-mm MRL helps compensate for the heavy CAB's reduced range and lethality.

PZH-11 Chinese 122mm Multiple Launch Rocket System (MLRS)

PLZ-10 (Type 05A) Chinese 120mm Self-Propelled Mortar

PLZ-07 (Type 07) Chinese 122mm Self-Propelled Howitzer (SPH)

Details of these and other systems can be found at; https://odin.tradoc.army.mil/WEG

IMPLICATIONS FOR THE U.S. ARMY

In a confrontation with a PLAA heavy CAB, a U.S. Army ABCT would face challenges in mass, maneuver, protection, and fires due to differences in formations between the CAB and the ABCT and combat systems employed by the CAB.

- A PLAA heavy CAB employs four maneuver battalions, an organic air defense battalion, and an organic mixed fires battalion, which would challenge an ABCT in three main ways. First, an ABCT would be forced to contend with a larger, more flexible maneuver force. Second, an ABCT would face increased difficulty placing aerial ISR assets forward in the face of the heavy CAB's air defense battalion. Finally, despite the ABCT fires having more lethality, the ABCT has fewer tubes and less range than the opposing fires systems.
- The PLAA's employment of UAS across the CAB for various missions, including ISR, strike, and electronic warfare, would also challenge a U.S. ABCT in LSCO because of an increasingly transparent battlefield in multiple domains. This will require the ABCT to prioritize air defense protection planning to enable maneuver. In addition, the ABCT will be vulnerable to UAS strikes with little-to-no warning compared to more traditional fixed/rotary-wing strike assets. Finally, the ABCT will have to contend with challenges in the electromagnetic spectrum from UAS platforms, something the U.S. Army has not encountered in recent operations.
- Many heavy CAB vehicles can fire ATGMs from multiple vectors, including gun tubes, rails, man-portable systems, or purpose-built launch vehicles, such as the AFT-10. This means an ABCT must contend with accurate direct fires at longer ranges. Additionally, an ABCT advancing can expect obstacles and engagement areas placed further from defensive battle positions still covered by direct fire. Given the proliferation of ATGMs in a heavy CAB, armored vehicles of the ABCT could routinely face volley-fired ATGMs, which, while ineffective against frontal armor, could score mobility or firepower kills.
- The heavy CAB's artillery battalion consists of 122-mm cannons and rockets. The cannons are mounted on the brigade's base infantry vehicle's chassis, improving mobility, while the MRLs provide mass and range. A U.S. ABCT can expect the CAB's howitzers further forward to compensate for the shorter range and to use their mobility to rapidly displace. This mobility, combined with the proliferation of UAS and the added firepower of assigned MRLs, will force ABCT commanders to rapidly reposition high-value assets like command-and-control nodes, artillery, and logistics, which could slow the ABCT's battle rhythm, complicate protection, and prevent the massing of combat power.[12]

SOURCES

1 The State Council Information Officer of the People's Republic of China, "China's National Defense in the New Era" July 2019, Foreign Languages Press Co. Ltd., Distributed by China International Book Trading Corporation, Beijing, China

2 U.S. Department of Defense. 2023. "Military And Security Developments Involving The People's Republic of China 2023 Annual Report To Congress". The Office of the Secretary of Defense

3 The U.S. Army is restructuring the ABCT, expected to be completed by 2029. Key changes include moving the RSTA Squadron to the Division level and equipping the ABCT's Armored Cavalry Troop with robotic combat vehicles. Artillery will be consolidated at the Division, with each ABCT still having a direct support Paladin Battalion. Additionally, while the number of Combat Aviation Brigades (CABs) remains the same, one CAB will incorporate a company of robotic combat vehicles; Hadley, Kevin, Savannah Spencer, and Justin Martens. 2023. Review of How the Army 2030 Divisions Fight. Edited by Michael Whitney. TRADOC Proponent Office—Echelons above Brigade, February.

4 Congressional Research Service, Updated December 29, 2023, "Defense Primer: Organization of U.S. Ground Forces", https://crsreports.congress.gov | IF10571 – Version 8 – Updated; TRADOC G2, China Landing Zone, bite-size-china, "Heavy Combined-Arms Brigades", https://oe.tradoc.army.mil/china-landing-zone-how-china-fights/#china-landing-zone-bite-size-china

5 For more information about the possible equipment, makeup, capabilities & characteristics of the maneuver battalions and companies within the heavy CAB, please see TRADOC resources such as ATP 7-100.3 and the Worldwide Equipment Guide that can be found on the China Landing Zone at https://oe.tradoc.army.mil/china-landing-zone-how-china-fights /.

6 The State Council Information Officer of the People's Republic of China, "China's National Defense in the New Era" July 2019, Foreign Languages Press Co. Ltd., Distributed by China International Book Trading Corporation, Beijing, China

7 admin, Techinformed. "One Year on: 10 Technologies Used in the War in Ukraine." TechInformed, September 11, 2023. https://techinformed.com/one-year-on-10-technologies-used-in-the-war-in-ukraine/.

8 Army Training Publication (ATP) 7-100.3, "Tank Destroyers, Assault Guns, and Anti-tank Guided Missile Vehicles," August 2021, p207, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN34236-ATP_7-100.3-001-WEB-3.pdf; DOD Report to congress, 1 January 2023. https://media.defense.gov/2023/Oct/19/2003323409/-1/-1/1/2023-MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA.PDF

9 Army Training Publication (ATP) 7-100.3, "Combined Arms Brigades," August 2021, p 40, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN34236-ATP_7-100.3-001-WEB-3.pdf

10 DOD Report to congress, "PRC and Taiwan Forces Data," 1 January 2023, p. 203 https://media.defense.gov/2023/Oct/19/2003323409/-1/-1/1/2023-MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA.PDF

11 China-Arms, PLZ-07 self-propelled howitzers drill on Tibetan Plateau, https://www.china-arms.com/2021/07/plz-07-self-propelled-howitzer-drill-plateau/ July 29, 2021

12 Military Factory, Norinco PHZ-11, Tracked Multiple Launch Rocket System (MLRS), https://www.militaryfactory.com/armor/detail.php?armor_id=1295 , 2020