

The Military Potential of the People's Liberation Army in the Strategic Regions and Spaces of the European Union

Matthias Postl



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This annex uses open sources on military capabilities and public strategic documents to examine the potential of the Chinese People's Liberation Army (PLA) in strategic regions and spaces of the European Union by using the indicators "force employment" and "capabilities." The "force employment" indicator describes how forces are deployed and refers to China's defence strategy goals. The PLA resources available to operate in the defined strategic regions and spaces determine the "capabilities" indicator.¹

¹ Olivier Minkwitz, "Demokratien und militärische Effektivität. Warum sich Demokratien tendenziell besser schlagen," *Zeitschrift für Internationale Beziehungen* 12, Nr. 2 (2005), 307, <https://doi.org/10.5771/0946-7165-2005-2-301>.

Regions

EU, West Balkans and Eastern Europe

Force employment

China's strategic goal is a mostly autonomous Europe in terms of security and defence policy, which requires the weakening of transatlantic hard power alliances. If the strategy of containing US influence in Europe fails, the alternative will be to enforce bilateral relations with selected EU member states to the extent that EU resolutions and policies directed against China are difficult to achieve in unanimous votes. In this sense, apart from economic engagement, China does not seek military influence but is ready to create disunity.²

Capabilities

The PLA presence within the EU is limited to defence attachés in embassies and structures that carry out PR activities, maintaining contact with political actors and keeping track of security incidents and new developments.

On Chinese territory, the PLA disposes of long-range capabilities reaching out to Europe, for example DF-26 ballistic missiles, H-6 bombers serving as delivery platforms for shorter-range missiles, long-range missiles with nuclear warheads, cyber and space forces.³ Furthermore, the EU foreign investment screening mechanism 2020 assumes that Chinese investors are instrumentalised by governmental institutions for civil-military intelligence activities.⁴

² China's Relations with Central and Eastern Europe: From "Old Comrades" to New Partners (Routledge, 2017), 212-213.

³ "DOD Releases 2020 Report on Military and Security Developments Involving the People's Republic of China," U.S. Department of Defense, September 1, 2020, <https://www.defense.gov/News/Releases/Release/Article/2332126/dod-releases-2020-report-on-military-and-security-developments-involving-the-pe>.

⁴ "EU foreign investment screening mechanism becomes fully operational," European Commission, October 9, 2020, https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1867.

Russia

Force employment

Although Russia and China do not form a bilateral security alliance, their military structures show an increasingly high level of cooperation, accompanied by regular joint military manoeuvres since 2005. The “Sibu/Interaction 2021” joint exercise of August 2021 was the first where a significant number of foreign troops was allowed entry onto Chinese territory. In addition, Russian soldiers operated Chinese weapons for the first time. This can be seen as a further step towards closer mutual security cooperation between Russia and China.⁵

Capabilities

The goal of the joint 2021 exercises was to deepen joint counterterrorism operations between Chinese and Russian forces and demonstrate joint protection of international and regional security and stability. The purpose of the 2020 joint exercise was to exercise joint capability to repel the attack of a notional state adversary and conduct offensive operations, to manage a conflict escalating from a local war to a regional war and improve the multinational operations capability.⁶

The 2019 joint exercise included countering enemy air attacks and conducting combined conventional offensive air and ground operations, thus exhibiting an interstate warfare component.⁷

⁵ “Russland und China: Gemeinsames Manöver,” euronews, August 13, 2021, <https://de.euronews.com/2021/08/13/russland-und-china-gemeinsames-manover>.

⁶ Ingrid Steiner-Gashi, “Russisch-chinesische Manöver schüren Sorgen in den USA,” *kurier.at*, August 10, 2021, <https://kurier.at/politik/ausland/russisch-chinesische-manoever-schuert-sorgen-in-den-usa/401468788>.

⁷ “China Sends Strategic Bombers, Tanks and 1,600 Troops to Russia for Large Military Drill,” *The Diplomat*, September 17, 2019, <https://thediplomat.com/2019/09/china-sends-strategic-bombers-tanks-and-1600-troops-to-russia-for-large-military-drill>.

Gulf of Aden, Atlantic, Mediterranean Sea

Base Djibouti

Force employment

The Chinese Djibouti Logistics Support Base was put into operation in August 2017 and has become a hub for securing the maritime Silk Road and trade exchanges with Africa. Further, it is supposed to protect over one million Chinese nationals working and living in Africa.⁸

The Djibouti logistics base supports China to implement military co-operation, hold joint exercises and drills, conduct evacuation and rescue operations for Chinese civilians, and protect strategic sea routes. Anti-terrorism and intelligence gathering are also among the base's missions.

The Djibouti base is currently supposed to focus primarily on "Military Operations other than War" (MOOTW) and continue to supply logistics assistance to PLA Navy (PLAN) ships.

It is a "transit point" for UN peacekeeping Chinese troops in Africa and the Middle East. Another task is to conduct anti-piracy missions, for example the mission in the Gulf of Aden. The base is also supposed to serve as a logistic hub in humanitarian relief missions. For example, the PLA Navy, in cooperation with the EU, has conducted escort missions for World Food Program supplies to Somalia on a yearly basis. The location can also be used for cyber and electronic warfare, with the potential advantage of having close access to undersea Internet cables linking Europe to Asia.⁹

⁸ Jean-Pierre Cabestan, "China's Military Base in Djibouti: A Microcosm of China's Growing Competition with the United States and New Bipolarity," *Journal of Contemporary China* 29, Nr. 125 (December 2019), 739, <https://doi.org/10.1080/10670564.2019.1704994>.

⁹ The PLA beyond borders – Chinese Military Operations in Regional and Global Context (Washington, D.C., National Defense University Press, 2021), 93-95, https://ndupress.ndu.edu/Portals/68/Documents/Books/beyond-borders/990-059-NDU-PLA_Beyond_Borders_sp_jm14.pdf.

Capabilities

The facility can accommodate 10,000 people, but Chinese authorities indicate that they would not station more than 2,000 officers and soldiers there.¹⁰ The deployed troops consist of several units, including 3-4 squadrons of integrated security support, two security reconnaissance squadrons, a frigate protection squadron, a helicopter squadron, an intelligence-electronic communications squadron, a health and medical squadron, and a logistics squadron. The deployment also includes a special forces squadron equipped with heavy Z-8F helicopters capable of conducting missions within several hundred kilometres, light armoured vehicles, and modern anti-tank missiles. Since 2008, the PLA Navy has continuously deployed four or five military ships at the base. If needed, the PLA vessels' air defence systems can provide air security as well. The base can host larger PLA naval vessels like the aircraft carrier Liaoning due to a deep-water quay. The helideck is wide enough to land containers launched by transport planes and long enough to land drones, which can be operated from the base. The logistics support base is also designed to resist air attacks. Its weakness is the lack of an airport.¹¹

Strategic Maritime Strongpoints

Force employment

Due to the lack of overseas military bases, strategic civilian ports are supposed to support the PLAN in supplying ships. For direct and open military supply China will use civilian ports only in case of a major conflict. Otherwise, regular supply through civilian ports will suffice for existing missions. According to US security analyses, this dual-use strategic base model is gaining ground, since it offers significant peacetime logistical capabilities as well as intelligence and communications benefits.¹²

¹⁰ Cabestan, "China's Military Base in Djibouti," 737.

¹¹ Ibid., 739.

¹² The PLA beyond borders, 94

Capabilities

95 ports outside China are operated and partially owned by four big Chinese companies, Cosco, Hutchison, China Merchants Port, China Merchant Port (Terminal Link), and a large number of small companies. These four big companies are world leaders in shipping and transportation and complement the PLA's otherwise quite limited overseas logistics capabilities with access to select foreign ports to provide the necessary logistical support for naval operations in such distant waters.¹³

By ocean, there are 31 ports in the Atlantic, 25 in the Indian Ocean, 21 in the Pacific, and 16 in the Mediterranean. 22 ports are located in Europe, 20 in the Middle East and 20 in Africa. Most are located near important sea routes such as the English Channel, the Strait of Malacca, the Strait of Hormuz, the Suez Canal, the Strait of Gibraltar and the Turkish Strait.¹⁴

Not all ports are actually used or considered for use by the Chinese military. Of importance is the extent to which the respective Chinese company controls the operation of the port, the capacity of the port to serve naval vessels, and the specific terms of the concession by the local port authority. On the other hand, a terminal operator has wide discretion in granting access to naval vessels wishing to call, store, and bunker as well as use the dry dock, medical facilities, power supply, and other terminal facilities.¹⁵ There are two Chinese companies likely to make their ports accessible to the PLA: COSCO (China Ocean Shipping Company) operates eight Terminals in Europe and is a key state-owned enterprise that was formerly the only domestic and international shipping operator in China directly controlled by the Chinese Ministry of Transport. Its subsidiary COSCO Shipping Ports, which operates terminals, has taken a number of notable positions in foreign ports, including majority control of the port authority in Piraeus, Greece, with a 100 percent

¹³ "DOD Releases 2020 Report", 128.

¹⁴ Isaac Kardon, "Research & Debate – Pier Competitor: Testimony on China's Global Ports," Naval War College Review, Volume 74, Number 1, Winter 2021, 3, <https://digital-commons.usnwc.edu/nwc-review/vol74/iss1/11>.

¹⁵ Ibid., 4.

stake and the Khalifa port in Abu Dhabi, UAE, to set up the largest freight station in the Middle East.¹⁶

The company China Merchants Port (CM Port) operates the port adjacent to the logistics support base in Djibouti, where it provides regular commercial berthing for PLA Navy structures.

COSCO and CM Port have participated in military-civilian exercises with their container ships and RO/RO (Roll on, Roll off) vessels, including transporting live ammunition and using RO/RO vessels built to military specifications, so cooperation in other areas is expected.¹⁷

Summing up, China is able to carry out its supply for smaller overseas operations through the use of civil military dual use companies and ports. However, these capacities are insufficient in case of a major military conflict.

Arctic Regions

Force employment

China's interest in increasing its cooperation with nations along the so-called "Polar Silk Road" is reflected in China's first Arctic strategy, published in January 2018. To this end, it also declared itself a "near-Arctic state." The intention is "free access" to the arctic maritime routes to thus expand economic interests in the region. China's growing involvement in extracting natural resources in the Arctic has created new opportunities for cooperation but also a conflict of interests between China and Russia. Russian regulations for passage through the Northern Sea Route hinder the PLA Navy to operate in the Arctic. China's de facto acceptance of Russia's claims to control of the NSR route and compliance with Russian regulations is a concession by China to Russia to allow cooperation in reducing the influence of the USA and Canada in the Arctic region. This approach also affects the security interests of the EU Arctic states.¹⁸

¹⁶ Ibid., 5.

¹⁷ Ibid., 7.

¹⁸ "China-Russian cooperation in the Arctic: A cause for concern for the Western Arctic States?", Taylor & Francis, July 5, 2021, 4, <https://doi.org/10.1080/11926422.2021.1936098>.

Capabilities

China officially has no military capabilities in the Arctic. China's presence is limited to two research stations in Iceland and Norway and two icebreakers. Xuelong 1 already crossed the Northwest Passage in 2017 and breaks ice 1.2 meters thick. Xuelong 2 can break ice 1.5 meters thick and is the first polar research vessel that can break ice while moving forward or backward.

Peacekeeping forces

International UN missions in Africa

Force employment

The active promotion of UN-missions' activities is an effective tool by which China seeks to change the global perception of its international role. For this reason, China is participating in international UN-missions with considerable peacekeeping and training staff contingents. China has deployed an average of 2,500 troops continuously on UN missions in recent years. In terms of the strategic rationale and fitting with China's adherence to its basic understanding of the world order in which interventions should only be authorized by the UN, it is argued that China is also using its role in the UN to deploy troops in areas where it has economic interests.

Capabilities

As of May 31, 2021, China had 2,471 uniformed personnel under United Nations command missions. Among them are 2,382 soldiers. Against this background, China is the 9th largest sending state world-wide for UN missions. Deployed are infantry, engineer, helicopter and medical units. In addition, China has sent 73 military observers and staff officers to mission headquarters and 16 police officers.¹⁹

¹⁹ "Troop and police contributors," United Nations Peacekeeping, <https://peacekeeping.un.org/en/troop-and-police-contributors>.

Main UNPKOs the PLA participates

(Up to May 31, 2021: Troop and police contributors, United Nations Peacekeeping,
[https://peacekeeping.un.org/en/troop-and-police-contributors.](https://peacekeeping.un.org/en/troop-and-police-contributors))

Mali (MINUSMA)	Force protection unit of 170 troops, engineering unit of 155 troops, and medical unit of 70 troops. Total 395 as of May 31, 2021	In Mali, the engineering unit built and repaired 2,900 m of roads, levelled 400,000 m ² of ground, and installed 667 prefabricated houses; the force protection unit conducted 2,710 armed patrols and security tasks; and the medical unit treated 8,120 patients.
South Sudan (UNMISS)	Infantry battalion of 700 troops. The unit, consisting of three infantry companies and a logistics support company, an engineering unit of 268 troops, and a medical unit of 63 troops. Total 1031 as of May 31, 2021	In South Sudan, the engineering unit built and maintained 5,365 km of roads, repaired 7 bridges, and installed 72 prefabricated houses; the medical unit treated 21,000 patients; the infantry battalion conducted 63 long/short-distance patrols, and carried out 216 armed escorts and 42 inspections in refugee camps, covering a total mileage of 1,020,000 km.
Sudan (UNAMID)	Engineering unit of 225 troops, helicopter unit of 140 troops Closed December 31, 2020, is in the process of troop withdrawal. Total 224 as of May 31, 2021	In Darfur, Sudan, the engineering unit built and repaired 89 km of roads, installed 400 prefabricated houses and drilled 14 wells; the helicopter unit flew 800 sorties totalling 1,150 hours, transporting 5,500 persons and 230 tons of materials. Helicopter Unit Capability 4 Mi-171 medium multipurpose helicopters, an aviation company, a maintenance company, and a logistics support company. Tasks such as air patrol, battlefield reconnaissance, and transportation of personnel and supplies.

Lebanon (UNIFIL)	Multi-functional engineering unit of 180 troops, construction engineering unit of 200 troops, and medical unit of 30 troops. Total 410 as of May 31, 2021	In Lebanon, the engineering unit cleared 10,342 mines and items of unexploded ordnance; completed maintenance tasks on houses and equipment; received and treated 78,900 patients.
DR Congo (MONUSCO)	Engineering unit of 175 troops and medical unit of 43 troops. Total 218 as of May 31, 2021	In the Democratic Republic of the Congo, the engineering unit built 4,650 km of roads and 214 bridges; and the medical unit treated 35,000 patients.

UN Peacekeeping standby forces

Force employment

In 2015, there was an increase to an 8,000-strong rapid reaction force for UN missions, so China should soon be able to conduct interventions with brigade-sized forces. So far, China has the capacity to conduct international interventions with battalion-sized forces. There is a further increase in military operations other than war (MOOTW), such as counterterrorism, humanitarian aid/disaster relief and evacuations of civilians.

Capabilities

The PLA's contributions to the rapid response force include 19 units in six categories: infantry, engineers, transportation, guards, rapid response, and helicopters. 28 company- and battalion-sized contingents from various services of the PLA may be assigned to the force.

It is presumed that the six infantry battalions consist of about an 850-man unit divided into three infantry companies that can "independently conduct combat operations" and a combat support company providing fire support, intelligence reconnaissance and equipment maintenance.

These units are on standby for overseas UN operations at any time.

This level of standby readiness demonstrates that the PLA is capable of handling and executing joint operational tasks within the PLA branches. These are long-distance transport, maintaining morale in deployed forces, repairing and maintaining equipment, supplying food and fuel, treating and evacuating the wounded or sick, pre-deployment training, selecting officers and soldiers, rotating and maintaining battalion-sized units over an extended time period. The PLA expeditionary planning capabilities are distributed among all mainland regional military theater commands²⁰ except the Eastern Theater Command to ensure the capability of planning and executing UN missions and operations. It can therefore be assumed that each of the four other PLA theater commands is capable of providing a battalion - and in the future a brigade - for international operations.

Expeditionary forces for overseas UN missions, however, will continue to play a minor role in the future compared to the PLA as a whole, as most Army personnel continue to focus on domestic threats. In summary, in the near future China's capacity for more intense combat military operations in regions of Africa will increase, but not to fight large-scale wars.

International Disaster relief

Force employment

Participation in HA/DR (High Availability, Disaster Recovery) missions offers China the advantage of demonstrating its responsibility as a global power and making good public relations out of them without large financial outlays.²¹ Beijing views the PLA's international engagement in HA/DR exercises, conferences and competitions as extremely useful for improving diplomatic relations and enhancing China's soft power. Like other countries, the extent to which relief is provided is also driven by interests and depends on economic and political relations.²²

²⁰ The PLA has five Theater Commands: the Eastern Theater Command, the Southern Theater Command, the Western Theater Command, the Northern Theater Command and the Central Theater Command.

²¹ Gregory Coutaz, *Image-building as Impetus for the Growth of the People's Liberation Army (PLA)'s Engagement in International Humanitarian Assistance and Disaster Relief (HA/DR) Operations*, 18. Aufl. (Leiden Koninklijke Brill NV *European Journal of East Asian Studies*, 2019), 60, <https://doi.org/10.1163/15700615-01801006>.

²² *Ibid.*, 57-58.

Capabilities

The capacities for international disaster relief operations of the PLA are versatile. They may include air or maritime transport units, engineers, medical personnel. There is a dedicated search and rescue unit called CISAR (China International Search and Rescue) which was deployed, for example, during the earthquake in Japan. Furthermore, the PLA has two hospital ships that can be sent to disaster areas and recently a hospital aircraft in which 30 patients can be treated. An example of capacities for HA/DR operations can be shown in the involvement of the PLA on the Earthquake in Nepal 2015. China deployed three helicopters, eight transport aircraft; more than 500 PLA personnel, delivered at least 449 tons of relief supplies, did transport tasks of relief personnel and equipment. In addition, China undertook search and rescue missions, transport of injured or trapped persons, and medical assistance.²³

Non-traditional security spaces

Cyberspace

Force employment

For China, cyberspace is one of the key areas specified in the national security strategy. In the National Defence Strategy of July 24, 2019, cyberattacks are defined as a major threat. Consequently, China has been expanding its cyberwarfare capabilities in both offense and defence. As stated in the Defence Strategy, the PLA is thus resolutely committed to national cyber sovereignty and information security.²⁴

The latest revision of China's "military strategic guideline" aims at winning informatized local wars. In peacetime, China's cyber forces are continuously

²³ "Meet Chinese military's first 'flying hospital'," China Military Online, July 12, 2021, http://eng.chinamil.com.cn/view/2021-07/12/content_10060454.htm.

²⁴ China's National Defense in the New Era, The State Council Information Office of the People's Republic of China, First Edition, July 2019, http://english.www.gov.cn/archive/whitepaper/201907/24/content_WS5d3941ddc6d08408f502283d.html.

building up superiority over potential opponents with the aim to seize the initiative by designing the cyberspace conditions of possible future conflicts.²⁵

The threshold for China to activate its cyber forces globally and also in the EU is relatively low, since cyberattacks can be attributed to non-governmental criminal hacker groups. The strategy of deploying cyber forces in dual use on the principle of civil-military fusion makes it difficult to identify the source of attack.²⁶

Capabilities

The electronic warfare units are the Cyber Operation and Electronic Warfare Force, which reports to the PLA Strategic Support Force's (SSF) Network Systems Division. Current electronic warfare units appear to include three types of brigades: the Electronic Countermeasures Brigade, the Electronic Satellite Countermeasures Brigade, and the Technical Intelligence Brigade for mission command support. Electronic warfare capabilities are supported by ground-based electronic equipment, (un)manned electronic warfare aircraft, and satellites for signal collection. Although the current PLA capabilities of electronic warfare drones and satellites are not fully known, combat readiness can be expected.²⁷ The new "Cyber Force" enables the PLA to enter information operations in peacetime and wartime to prepare the battlefield in conjunction with cyber intelligence and reconnaissance.²⁸

²⁵ Elsa B. Kania, "Artificial intelligence in China's revolution in military affairs," *Journal of Strategic Studies* (May 2021), 521, <https://doi.org/10.1080/01402390.2021.1894136>.

²⁶ Simone Dossi, "On the asymmetric advantages of cyberwarfare. Western literature and the Chinese journal *Guofang Keji*," *Journal of Strategic Studies* (March 2019), 294, <https://doi.org/10.1080/01402390.2019.1581613>.

²⁷ Tae Park, Changhyung Lee and Soyeon Kim, "Analysis of Electronic Warfare Capability of the People's Liberation Army Strategic Support Force (PLASSF): Its Impacts and Implications on Korean Security," *Korean Journal of Defense Analysis* Vol. 33, Nr. 1 (March 2021), 136, <https://doi.org/10.22883/kjda.2021.33.1.006>.

²⁸ Elsa B. Kania and John Costello, "Seizing the commanding heights: the PLA Strategic Support Force in Chinese military power," *Journal of Strategic Studies* (May 2020), 244, <https://doi.org/10.1080/01402390.2020.1747444>.

Cyberspace Information Operations

The PLA is capable of conducting APT (Advanced Persistent Threat) attacks to gather information. APT operations are often enabled by “spear phishing.” This kind of operations is not only aimed at tapping information of value, but also at penetrating networks responsible for critical infrastructures. In the event of an armed conflict China could introduce viruses into foreign critical infrastructure to disable social or military capabilities. According to US defence analysts, the detection of user habits to paralyse, damage, or stealth against antivirus software has therefore been in the focus of China’s recent digital defence development.²⁹

In the frame of its defence strategy, China has identified dependence on foreign technology as a major source of vulnerability. Therefore, China is expanding and developing its own technological knowledge in the digital domain with remarkable speed and financial sources. The development of the 5G structure at a global scale exemplifies China’s strategic intention to counterbalance the USA, which has dominated digital infrastructure worldwide so far.³⁰

Electronic warfare capability

China has the same electronic warfare capabilities comparable to the USA and Russia. The units can operate unmanned electronic warfare aircraft and submarines with radar jamming, communications disruption, and more active electronic warfare capabilities will be deployed. They can draw on a wide range of equipment, such as detectors for every spectrum of radio waves to electronic jamming devices for various war situations, which can also be connected in a network. They are therefore capable of networked electronic warfare on land, sea and air.³¹ Electronic warfare units operate ground-based equipment, drones, and satellites for electronic warfare.³² China also disposes of several passive radar systems, synthetic aperture radar satellites, and signals intelligence satellites.

²⁹ The PLA beyond borders, 302.

³⁰ Dossi, “On the asymmetric advantages of cyberwarfare,” 300-301.

³¹ Park, Lee and Kim, “Analysis of Electronic Warfare Capability of the PLASSF,” 134.

³² Ibid., 119.

China's unmanned electronic warfare drones

China not only manufactures 70 percent of the world's drones but has also experienced tremendous growth in the unmanned aircraft sector. The PLA has already developed the ChiHong-5/7 drone and stealth UAVs that can be used for electronic warfare, presumably by replicating American UAVs. Many civilian UAVs can be equipped with electronic warfare devices, transforming them into unmanned aerial vehicles for electronic warfare.³³ There is also a development of drone submarines which are used for covert, long range reconnaissance and attack missions against strategic targets.³⁴

Satellites for electronic warfare

The PLA operates a large number of satellites with global outreach and has deployed optical, communications and SAR (synthetic aperture radar for observations at night or during inclement weather) satellites in low Earth and geostationary orbit for surveillance and reconnaissance. The signals intelligence satellites also enable China to conduct electronic warfare via satellites worldwide.³⁵

The PLA's signals intelligence satellites mainly consist of the Yaogan series. In 2019, the PLA launched the 30th Yaogan-satellite, a low-earth orbit satellite known for collecting signals intelligence with a set of three satellites. China is expected to have the second-largest number of information, surveillance, and reconnaissance (ISR) satellites after the United States in the near future. It is difficult to estimate the capacity of the military satellites because the data have not been made publicly available.

³³ Ibid., 133.

³⁴ Stephen Chen, "China military develops robotic submarines to launch a new era of sea power," South China Morning Post, July 22, 2018, <https://www.scmp.com/news/china/society/article/2156361/china-developing-unmanned-ai-submarines-launch-new-era-sea-power>.

³⁵ Park, Lee and Kim, "Analysis of Electronic Warfare Capability of the PLASSF," 130.

Outer Space

Force employment

Outer Space is a crucial area in China's strategic agenda.³⁶ The potential of China's Outer Space capabilities is to be evaluated in the same way as the cyber capabilities. The EU is not considered a military rival due to its low military space capabilities in contrast to the US Space Force. However, the EU also has capabilities and interests that may create conflicting issues in the Outer Space. In this context, EU countries with NATO membership are particularly affected. The active and prompt defence of space capacities is an inherent component of China's military strategy. Strategically, China takes a defensive position but is aiming at leading the initiative on the operational level in the Outer Space.

China's Outer Space operations capabilities

Space Deterrence

China has the capability for deterrence actions against all possible adversaries in open space, as has been demonstrated in military exercises and tests. Furthermore, the PLA is able to quickly deploy attack and counter-attack forces in open space that can respond to all enemy reactions. China's space defence is able to destroy infrastructure in open space by hard and soft kill methods and to intercept data streams and to block them. China is thereby able to stop the entire activity of opponents in space but also in orbit.

Space Blockade

China is capable of blockading space to prevent an adversary from entering space to gather or transmit information. In addition, launches can be blocked by delaying launch windows through cyber forces. Further, information blockades can be established by electronic warfare forces, which can take various forms. For example, an adversary's data links can be disrupted, or an orbiting satellite can be neutralized by hijacking its control systems or preventing ground control from issuing instructions. Alternatively, the data

³⁶ China's National Defense in the New Era

collected or transmitted by the satellite can be contaminated or disrupted. Another option is to “blind” a satellite by use of low-power energy weapons directed towards its sensors or other systems.³⁷

Offensive Space Operations

The PLA is capable of conducting and planning “integrated operations” in space and can take the initiative in an offensive campaign in space.³⁸ China is also enhancing its capabilities to develop hit-to-kill operations in space that often overlap with the development of ballistic missiles and missile defence systems. The HQ/SC-19 and DN-3 anti-satellite missiles have demonstrated the ability to hit satellites and other spacecraft in Earth orbit up to the altitude of a few 100 km.³⁹

The PLA developed co-orbital robotic satellites such as the Shiyang-7 (SY-7). These satellites keep their attack capabilities hidden until the moment of attack. Since 2008, China has deployed several “tracking satellites,” of which ten or more are supposed to have been launched in the last decade.

Defensive Space Operations

China is capable of conducting defensive space operations. The defensive space operations capabilities include defence against ballistic missiles, cruise missiles, and defence of space infrastructure. This involves a combination of active and passive measures, including stealth properties as well as diminishing radar, infrared, and electronic signatures of spacecraft to disguise their own capabilities and identity.⁴⁰ The PLA is capable of tracking objects in support of space defence or ballistic missile defence through four large phased array radars (LPARs). The radar bases are located in the cities of Hui'an, Korla, Longgangzhen, and Shuangyashan. China is continuously expanding its early warning capability using Great Wall satellites, which are comparable to US space-based infrared sensor satellites, ground-based X-band radars, and air assets.⁴¹

³⁷ The PLA beyond borders, 325-326.

³⁸ Ibid., 327.

³⁹ Kania and Costello, “Seizing the commanding heights,” 249.

⁴⁰ The PLA beyond borders, 327.

⁴¹ Kania and Costello, “Seizing the commanding heights,” 249.

Space Information Support

Space-based systems enable the PLA to provide information support to focus on joint operations in distant territories. Key tasks of “information support from space” for ground, air, and naval forces of which China is capable include Reconnaissance and surveillance from space, missile early warning, communications and data transmission, tracking, navigation services, and Earth monitoring such as geodesy, hydrography, and meteorology. It can also provide “battlefield support,” a terminology used by the PLA to characterize combat-relevant survey, mapping, meteorological, oceanographic, communications, and navigation information that expeditionary forces would support in a hostile overseas operating situation. China has upgraded its Bei Dou navigation satellite system from a regional capability to one with global reach, becoming only the third country to operate its own tracking and navigation system. Bei Dou’s global navigation reach also has impacts on the PLA’s precision strike abilities, as well as its communications function. For military communications purposes, China is building a limited but increasing number of satellites for data transfer and communications.⁴² The Gaofen project has enabled new imaging capabilities, from high-resolution optical imagery to synthetic aperture radar satellites. The Gaofen-7 satellite is the latest model and can provide advanced imaging capabilities. Jilin-1 is an advanced high-resolution optical remote sensing satellite.

⁴² Ibid., 243.