



ELROM AIR AND SPACE
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FUTURE IMPLICATIONS FOR THE AIR DOMAIN

SARAH FAINBERG, TOMER FADLON, HAIM SCHWARZ

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China's Expanding Presence in MENA: Future Implications for the Air Domain

Research Report (0823E) November 2023

Sarah Fainberg, Tomer Fadlon, Haim Schwarz



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EXECUTIVE SUMMARY

This research report assesses the potential future impact of China's presence on the regional military operational environment in the Middle East and North Africa (MENA), focusing specifically on the air domain. This study aims to go beyond conventional prevailing discussions of China's strategic intentions in MENA, which currently revolve around two main paradigms regarding the People's Republic of China's (PRC) global and regional strategic goals. One is an alarmist narrative warning of Beijing's "aggressive expansionism" and its objective to "undermine U.S. dominance" worldwide, MENA included. The other is a moderate view emphasizing China's "defensive posture," focused primarily on consolidating and protecting its economic and energy interests, both globally and regionally. This study does not seek to support a specific position or attempt to prove the veracity of either narrative. Instead, it examines the potential operational implications of China's development and activities in MENA, as some of these implications have relevance for both interpretations of China's strategy.

Based on an analysis of China's policies and global initiatives, military modernization efforts, patterns of use of force, as well as its increased presence in the global and regional arenas, this report highlights three main factors that may affect the operational environment in MENA in the foreseeable future:

1. **China's influence on MENA's security architecture has been minimal to date but is likely to become more significant in the coming decade.** While Beijing was a main arms exporter to Iran and Iraq in the 1980s, it currently does not act as the primary defense provider to any of the regional actors, nor has it established a significant military presence. Beijing's technology and arms transfers have been limited thus far, targeting mainly niche markets. Yet, with China's expanding interests in the MENA region, coupled with its rapid technological advancement and the region's importance to China's energy needs and global ambitions, the probability of a stronger Chinese presence, including in the security realm, is on the rise. The geopolitical landscape is also evolving. With the United States perceived as having lower engagement in the Middle East prior to the 2023 war between Hamas and Israel, China has found an opportunity to significantly strengthen its

multidimensional presence in the MENA region. However, following the October 7 massacre, China's fluid, multidimensional, and growing presence in MENA may be challenged by the increased geopolitical polarization of the region.

2. **China's defense industry has evolved from producing lower-quality domestic products and relying heavily on imported advanced technologies to now being a robust domestic defense sector that manufactures increasingly sophisticated weapons.** Thanks to significant investments in research and development, along with the acquisition of advanced technologies, China is swiftly narrowing its technological disparity with leading nations and is emerging as a top developer and manufacturer of advanced equipment and weaponry.
3. The penetration of Chinese technology and weapon systems into niche markets, together with Russia's depleted defense industry and export capabilities as a result of the war in Ukraine, and China's intensifying connections with MENA states, increase **the potential for more widespread and higher-quality Chinese technology and arms transfers to regional actors in the foreseeable future.**

Given these developments, China could potentially have an impact on MENA's military-operational environment, particularly in the air domain, through four main channels:

1) Arms sales

Although Beijing's technology and arms transfers to MENA have remained insignificant in terms of scope and quality to date, air forces operating in the area should consider the following potential threats:

- The introduction of advanced Chinese weapons into MENA, such as upgraded unmanned aerial vehicles (UAVs) – China's main niche market in the region. While Chinese UAV systems do not pose a significant threat to the U.S. allies and partners in MENA in the short term, they may do so in the mid- and longer-terms. The first challenge is quantitative. Air forces in the area may have to face a larger fleet of China-produced UAVs, which could consume operational resources needed elsewhere. Second, China has developed UAVs with advanced capabilities, including

AI, which can be used as force multipliers. In addition to complete UAV systems, China can transfer UAV-integrated technological capabilities and production capacities to regional actors (as it has already done), a development that would have tangible effects on the region's operational environment.

- Potential introduction into MENA of advanced Chinese-produced or co-produced weapons, such as long-range active or semi-active radar homing seeker for surface-to-air missiles including air defense against medium-range ballistic missiles and new-generation aircraft with improved performance and new air-to-air capabilities.

2) Transfer of dual-use (civilian/military) technology and military-related resources and know-how to MENA actors

China's technical cooperation in civilian sectors critical to future warfare, such as communication, cyber, space, satellite, drone, nuclear, AI, and digital technology, may accelerate MENA countries' technological development and equip them with new military-related technological capabilities.

- Air forces operating in the area should consider the possibility of Chinese communication technology being introduced into the region, increasing the threat of air-to-air and surface-to-air missiles functioning within a network of detection and launch systems.
- There should be increased attention to the Chinese providing intelligence and satellite services, particularly the BeiDou navigation satellite system, to actors in the MENA region. These services include earth-observation, communication and connectivity, navigation, and positioning capabilities, and even missile launch alerts. One can hypothesize that in the framework of its strategic dialogues with regional players in MENA, including Iran, China might offer satellite services that can be used for both civilian and military purposes. If this happens, it could potentially present new challenges for the air forces operating in the region.
- The fluid and ambiguous nature of China's technological cooperation with regional actors further complicates the situation. Dual-use technologies may be introduced into MENA through multiple, direct, and indirect, channels and serve the security needs of several regional actors,

particularly Iran, and, to some extent, Egypt and Saudi Arabia (within the limitations of Egypt's and Saudi Arabia's partnership with the United States). Those include technology transfers, bilateral technological cooperation agreements, civilian infrastructure, or training of MENA countries' students in China.

3) Impact of Chinese or Chinese-financed civilian or dual-use infrastructure in MENA on the great powers' and regional actors' freedom of action

China's extensive investments in and operation of MENA's infrastructure facilities, such as ports, transportation networks, communication assets, power stations, and industrial plants, could place new constraints on the great powers and regional actors in the region. As a result, they may need to take Chinese interests into account when formulating their operational planning.

4) Potential Impact of China's Expanding Naval Presence in MENA

The possible emergence of the Chinese Navy as a global force, coupled with the considerable significance of the MENA region's maritime routes for China's international trade, increases the likelihood of the establishment of a Chinese naval presence in the region in the future. Whether China will support its naval presence with bases and complement it with additional military facilities (e.g., intelligence facilities) is yet to be seen. However, this possibility cannot be ruled out. China's potential expansion of its naval presence in MENA may have multiple implications – actual and hypothetical – for air forces operating in this area. The following are the principal ones in terms of probability and expected cost:

- PLAN (China's People's Liberation Army Navy) vessels in the region may be used for intelligence gathering.
- China's expansion of its naval presence is likely to result in the establishment of additional Chinese bases across MENA.
- Air forces operating in MENA might have to confront the challenge of the PRC's naval vessels and new naval threats stemming from long-range air defense capabilities that are broadly equivalent to the Russian S-300/S-400 or U.S. Patriot systems.

- If the China–United States rivalry escalates and expands beyond the Asia-Pacific region, the Middle East may become another arena of confrontation between the two.
- In the event of regional armed conflicts in MENA, China may evacuate Chinese citizens (as it did in Libya in 2011), which will place operational constraints on air forces operating in the area.
- The PRC’s general approach to the use of force has been cautious and self-restrained both globally and in its regional vicinity to date. However, the expansion of its presence in MENA may lead to unintentional encounters and friction and increase the risk of miscalculations.

Currently, China’s impact on the regional security architecture remains negligible. However, in the foreseeable future, **its growing presence in MENA may create palpable challenges to the air forces operating in the area.** These forces will need to anticipate the potential operational implications of China’s presence in MENA by analyzing the impact of Chinese-exported capabilities on their freedom of action, monitoring the development of Chinese technological and military capabilities, and considering the associated risks raised by technology and arms transfers to the region.

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INTRODUCTION

CHINA IN MENA: AN AIR DOMAIN PERSPECTIVE

This research report investigates the emerging security presence of the People's Republic of China (PRC) in the Middle East and North Africa (MENA) from an air domain perspective. By examining Beijing's deepening regional presence at the strategic and operational levels, this study assesses China's potential impact on the freedom of action and operational environment of the air forces operating in the area. To this end, this study addresses the following questions:

At the strategic level –

- What are Beijing's strategic objectives in MENA?
- How significant is MENA in China's global strategic outlook?

At the operational level –

- How might the PRC's global economic and commercial expansion, military modernization, and emerging involvement in MENA, including in the technology and military realms, affect the regional environment?
- Compared to U.S. and Russian arms exports to MENA, do Chinese-exported systems, arms, dual-use technologies (that can be used for both civilian and military applications), know-how, and military cooperation present new challenges and threats to air forces operating in the area?
- To what extent might China's dual-use technology and military presence in MENA bolster the posture and air capabilities of pivotal regional actors?

This study is the first to map China's multidimensional inroads into MENA with an operational perspective focusing on the air domain. Drawing on the growing body of literature focusing on the different dimensions of China's security presence in the Middle East,¹ we seek to identify specific aspects of China's regional presence that might affect the air power capabilities and

1 Among the leading policy research centers and working groups investigating China's growing security presence in the Middle East and North Africa, are the Center for Naval Analyses (CNA)'s China and Indo-Pacific Security Affairs Division, the Atlantic Council's Global China Hub, Air University's China Aerospace Studies Institute, Zayed University in Abu Dhabi, and the Institute for National Security Studies (INSS) in Tel Aviv.

regional operational environment of MENA countries. The PRC's deepening security inroads in communication technologies, soft power projection in the informational space, IP theft, and intelligence activities are beyond the scope of this study. While these areas represent tangible security concerns, especially from a U.S. perspective, they are not relevant to the core of our study which is the potential long-term impact of the PRC on the MENA's air domain.

Our approach to China's strategy is based on balance. Prevailing narratives about the expansion of China's security presence tend to reflect either alarmism, presenting China as trying to dislodge the United States as the main military and security hegemon, or leniency, reducing China's security initiatives to an auxiliary function intended solely to protect its economic and energy interests. Our report maintains an open perspective on the range of possibilities regarding China's strategic and military ambitions. We assume that, regardless of the nature of China's ambitions, the operational implications in the air domain will remain largely unaffected.

For a comprehensive understanding of China's strategic landscape, we have considered diverse viewpoints on China. In addition to U.S. academic, governmental, and policy-focused sources, we have integrated insights from countries like India, Japan, Singapore, South Korea, and Australia. Moreover, we have utilized translated Chinese sources from the China Aerospace Studies Institute at Air University.

On the methodological level, this study combines a wide collection of academic and policy-oriented sources with interviews and academic dialogues with leading China experts and research centers, drawing on both secondary and primary sources. Regarding secondary sources, we relied on the existing literature on China's global strategic endeavors, strategic culture, the PLA's modernization, and overall presence in the MENA region. For primary sources, we drew on official Chinese documents and other publications, some of which were published in English and others translated. In addition, we conducted a series of interviews in the summer of 2022 with U.S. experts affiliated with the Center for Naval Analyses (CNA), the Atlantic Council, the U.S. National War College, and Georgetown University. Between April and July 2022, the authors also conducted a series of webinars on China's arms and technological exports to MENA with Indian experts affiliated with the Rajasthan-based Usanas Foundation.

This research report contended with significant methodological limitations stemming from two factors: First, it is difficult to assess the exact scope and modes of China's security inroads in MENA based only on publicly available information, given the PRC's non-transparent culture. Second, the centrality of dual-use technologies in China's domestic industry and export policy present additional obstacles to assessing China's penetration into the regional operational environment and the impact it is having.

In terms of structure, the report's **first chapter** delves into China's central and peripheral interests in the global arena and their implications for the MENA region. The chapter also addresses how China's relations with MENA actors have developed over the past decade. The **second chapter** focuses on the PRC's changing military posture at the global and regional Indo-Pacific levels. In addition to discussing Beijing's strategic vision, it examines China's operational concepts and use of force. The **third chapter** comprehensively analyzes China's systems and dual-use technologies, emphasizing their potential impact on MENA's operational environment. The **fourth chapter** highlights the intricacies of China's engagement in MENA by focusing on four main areas: infrastructure facilities, arms and technology transfers, security cooperation, and military presence. The **concluding chapter** gauges the potential future ramifications of Chinese civilian and military engagements in MENA on the overall regional operational environment.

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CHAPTER 1

CHINA'S STRATEGIC INTERESTS IN THE GLOBAL AND MENA ARENAS

China's ascent stands out as the most pivotal development in global affairs since the end of the Cold War. Such a tectonic shift naturally spurs conjecture regarding Beijing's ambitions and stakes. As China cements its status as a global powerhouse, its influence reverberates worldwide, and the MENA region is unmistakably within its reach. In this chapter, we delve into China's global interests, exploring their impact on its objectives and actions in the MENA region.

At the close of the Cold War, the Western liberal order, led by the United States, had come to dominate the world. This status would begin to be challenged starting in the early 2000s. The second millennium saw China undergoing a comprehensive transformation, largely related to its opening up to the world and the introduction of a market economy. This, in turn, led to unprecedented economic growth, the main engines of which include, among other things, the following:

1. An assertive export policy that turned China into the world's largest exporter of goods in 2008 and, within a few years, the main trading partner of more than 100 countries worldwide. At present, China's share of global trade in goods is nearly 15 percent.² With Chinese industry highly integrated into the global supply chain, China became heavily dependent on the supply of raw materials, energy resources, parts, components, and free access to foreign markets.
2. Large-scale inward foreign investments. Striving for state-of-the-art know-how, China has become one of the largest recipients of foreign direct investments (FDI). According to the OECD, in 2021, FDI into China reached a record 344 billion USD.³ Over the years, FDI has become a source of world-

2 "China: The Rise of a Trade Titan," UNCTAD, April 27, 2021, <https://unctad.org/news/china-rise-trade-titan>.

3 "FDI Flows," Data set, November 15, 2017, <https://doi.org/10.1787/99f6e393-en>.

class technologies, abundant financial resources, employment, professional training of various types, integration with the world economy, and the like.

3. Outward direct investments (ODI). Between 2003 and 2022, the value of domestic investments in foreign entities grew from a few billion USD annually to nearly 150 billion USD a year, and occasionally even more. Securing China's long-term access to advanced technologies, raw materials, and energy sources, ODI has also increased China's integration into the global market and provided it with access to and influence over national infrastructures, financial institutions, state leadership, and international organizations worldwide.

These factors, coupled with the formation of a middle class with a population that has reached half a billion people, led many to believe that China, which benefits from the liberal world order, would have to adopt liberal values, and enact political reforms.⁴ However, China has apparently utilized the economic prosperity, open markets, and relative stability the U.S.-led liberal order has provided to sustain economic growth while only selectively adopting its principles and imperatives. Concurrently, it has increasingly challenged the U.S. leadership and the foundations of the liberal world order, claiming a place at the head of the table alongside the United States and demanding space for competing values. Above all, it has repeatedly clarified that the Chinese Communist Party (CCP) will not accept any revision of China's political order or threats to its unlimited power.

The Belt and Road Initiative (BRI) reflects China's trajectory of leveraging economic projects abroad to increase its political and strategic outreach. Aiming to create connectivity across Eurasia, this initiative requires the construction and management of cross-border land and maritime transportation infrastructure and economic activities throughout countries in this geopolitical realm. The initiative is considered the centerpiece of Chinese leader Xi Jinping's foreign policy, as the Chinese government has invested in some 150 countries and

4 D. G. Blair, "Will Liberal Hegemony Lead to a Cold War in Asia?," in *China and Globalization*, 2021, 29–40, https://doi.org/10.1007/978-981-16-5391-9_3.

international organizations since 2013.⁵ The main goals of this initiative are in line with the interests mentioned above, including:⁶

1. Increasing exports.
2. Expanding markets for products and services of the new economy. The digital Silk Road is a clear expression of this interest, its main goal being to develop information and communication infrastructure, e-commerce, internet banking, smart cities, and industrial computer networks.
3. Diversifying China's land export routes and decreasing dependence on the United States as China's primary trading partner. Ninety percent of China's foreign trade is shipped by sea. The U.S. forward naval presence in the South China Sea and its potential ability to block trade flows from China at any time are the Achilles' heel of China's exports. Consequently, China has built alternative ports and land routes in Pakistan, Thailand, and Myanmar, along with a naval base in Djibouti.
4. Ensuring access to natural resources, especially fuel and energy, of Middle Eastern, Central Asian, and African countries. China has been the top oil importer in the world since 2015, and its dependence on foreign sources for this vital resource has driven the country to conduct a foreign policy that monitors and secures access to oil. It is also worth mentioning that China needs uranium to reliably support the increased capacity of nuclear power plants.
5. Increasing foreign direct investment by Chinese companies. By implementing the BRI, the PRC is realizing its global investment strategy, diversifying its foreign assets, and expanding its transport infrastructure abroad.
6. Creating the Chinese Yuan currency zone in Central and South-East Asia. In order to improve settlements in national currencies, primarily the Yuan, the PRC is developing a unique financial system that will unite regional development banks.

China's economic development has birthed various national interests, evolving significantly as its global stature and self-assuredness have grown. While

5 World Bank Group, "Belt and Road Initiative," *World Bank*, March 24, 2022, <https://www.worldbank.org/en/topic/regional-integration/brief/belt-and-road-initiative>.

6 Yakov Silin et al., "China's Economic Interests in the 'One Belt, One Road' Initiative," *SHS Web of Conferences* 39(January 1, 2017): 01025, <https://doi.org/10.1051/shsconf/20173901025>.

delving deeply into the evolution of these interests is beyond the scope of this report, highlighting the primary ones helps contextualize our subsequent exploration of China's objectives and actions in the MENA region. China's chief national interests include:

1. Safeguarding the CCP's political monopoly in China and the continued existence and dominance of the Communist regime.
2. Maintaining China's sovereignty and achieving territorial integration (including reunification with Taiwan).
3. Restoring (or building from the ground up, depending on one's perspective) and preserving China's position as a world power ("realizing the Chinese dream").
4. Safeguarding China's maritime rights and interests (including, since 2013, China's dominance in the South China Sea).
5. Maintaining sustainable and balanced economic growth and supporting the sustainable development of the country.
6. Safeguarding China's freedom of navigation worldwide, as well as its global access to raw materials, energy sources, markets, and the like.
7. Acquiring genuine innovation capacity and technological self-sufficiency in key areas.

Altogether, under Xi Jinping's leadership China appears resolute in its pursuit for "national rejuvenation".⁷ As global competition and tensions with the United States escalate, especially in MENA, China's interests and engagement in the region have become even more pertinent.

China's Approach to the MENA Region

China's interest in the Middle East since the mid-1990s has focused largely on securing its access to the region's energy sources, and, to a lesser degree, on increasing its share in developing markets. Supplying over 50 percent of China's imported oil and more than 25 percent of its oil consumption, the

7 Eyal Proper, "China's Core Interests and the Rising Tension with the United States: Implications for the World Order," *Strategic Assessment* 23, no. 4 (October 4, 2020): 106–12, <https://www.inss.org.il/publication/chinas-core-interests-and-the-rising-tension-with-the-united-states-implications-for-the-world-order/>.

Middle East has become an irreplaceable source enabling China to meet its energy needs for the foreseeable future (figure 1).

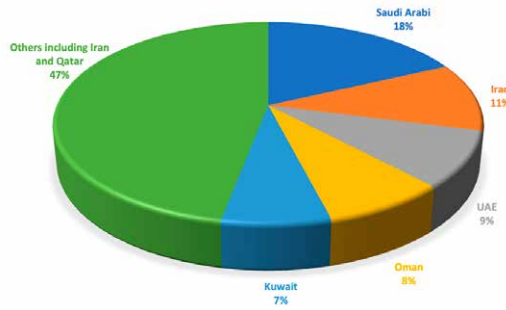


Figure 1: In 2022, the majority of China’s oil imports originated from MENA countries.
 Source: World’s top exports⁸

The Middle East is also a growing destination for Chinese labor, construction companies, export goods, and investments. Between 2004 and 2021, Chinese trade with the Middle East grew from 40 billion USD to over 330 billion USD, increasing the region’s share of China’s total foreign trade from 3.8 percent to over 7 percent (figure 2).

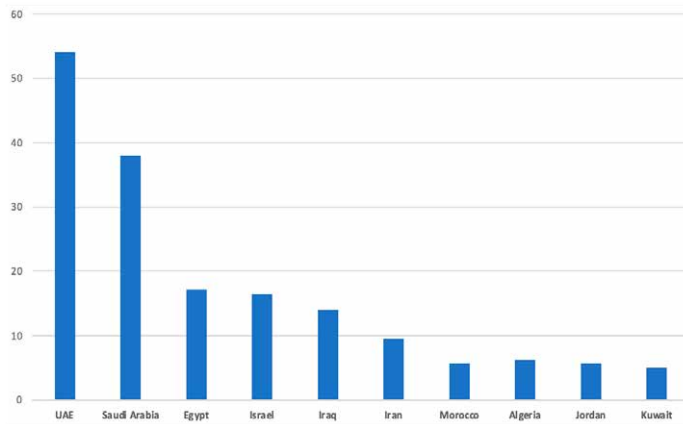


Figure 2: China’s exports to major MENA partners in 2022 (USD billion)
 Source: COMTRADE (USD billion)⁹

8 Daniel Workman, “Top 15 Crude Oil Suppliers to China,” World’s Top Exports, accessed September 29, 2023, https://www.worldstopexports.com/top-15-crude-oil-suppliers-to-china/?expand_article=1.

9 “UN Comtrade Database” (United Nations), accessed October 4, 2023, <https://comtradeplus.un.org/> [accessed October 20, 2023].

China's investments in MENA between 2005 and 2022 totaled 273 billion USD, increasing in recent years (see figure 3). The Middle East's share in China's economy is likely to remain high, or even increase significantly, in the next few decades.

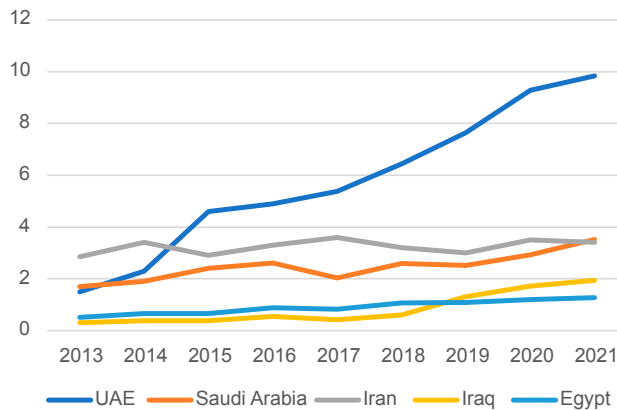


Figure 3: Chinese FDI (stocks) in selected MENA countries (USD billion)
Source: Chinamed¹⁰

China's strategic interest in the Middle East is of significant importance. This interest has witnessed various developments, driven by shifts in China's foreign policy in the Middle East and the evolving international system. Since the Maoist period (1949–1976), China has regarded the predominance of any superpower – be it the Soviet Union or the United States – in MENA as a strategic risk.¹¹ After the U.S. invasion of Iraq in 2003, that concern was somewhat mitigated, as China saw how anti-American resentment increased and how the United States found it difficult to cope with the region's turbulence.

However, China has also regarded that turbulence as the source of rising radical Islamic terrorism in the region. In the mid-2000s, Beijing already perceived the Middle East as a threat to its national security due to connections between Muslim terrorist organizations there (Al-Qaeda, for example) and separatist Uyghur groups in China. The fragmentation of the Middle East since the

10 "ChinaMed: Looking at China's Role in the Mediterranean Region," accessed September 29, 2023, <https://www.chinamed.it/>.

11 Jon B. Alterman and John W. Garver, *The Vital Triangle: China, the United States, and the Middle East* (CSIS, 2008).

early 2010s and the rise of the Islamic State (ISIS) heightened this concern. China fears that jihadist organizations might incite separatist sentiments and terror activity within China's borders by radicalizing the Uyghur minority and providing it with military equipment, know-how, and support. China is also apprehensive that these organizations, in conjunction with terrorist groups in other Muslim states along China's western borders, could execute terror attacks on Chinese territory, especially in Xinjiang. Finally, radical Islamic terrorist organizations could target the ever-increasing number of Chinese workers and facilities in the Middle East (and elsewhere).¹² China's anxiety about Islamic terrorism has been intensified by claims that hundreds of Chinese Uyghurs have joined ISIS in Syria and Iraq. China cannot adequately respond to this threat due to its lack of reliable regional allies and its incapacity and unwillingness to operate there militarily. As Beijing sees it, Uyghur militants could return to China with improved capabilities and motivation to carry out terrorist and other anti-state activities.

However, one should note that China's concern about regional Jihadism has been selective to date: while Beijing voiced concerns on the actions of the Islamic State, it has never explicitly condemned the atrocities committed by Hamas and the Islamic Jihad targeting Israeli civilians nor has it voiced any criticism of the Hamas massacre of over 1400 Israeli civilians on October 7, 2023. Beijing did not officially designate Hamas and Islamic Jihad as terrorist organizations, partly due to China's historical support of the Palestinian movements. The 2023 Hamas-Israel war further consolidated China's strategic alignment with the anti-American camp in the Middle East in the context of a growing regional polarization opposing a loose US-led Western coalition (including Israel and the Sunni Arab States), and a staunch anti-American camp led by Iran and Russia, which China decided to join.¹³

As China relies heavily on access to seaborne energy imports and maritime trade, Beijing also assigns growing importance to the MENA region's geostrategic location at the crossroads between Asia, Europe, and Africa and to MENA's role as a vital nexus point connecting North America and Europe to Asia. Moreover,

12 Andrew Scobell and Alireza Nader, *China in the Middle East: The Wary Dragon* (Rand Corporation, 2016), https://www.rand.org/pubs/research_reports/RR1229.html.

13 Cindy Yu, "The Mask Has Slipped" – Tuvia Gering on China, Israel and Hamas", *The Spectator*, October 16, 2023, <https://www.spectator.co.uk/podcast/the-mask-has-slipped-tuvia-gering-on-china-israel-and-hamas/>.

the MENA region includes some of the world's most important maritime checkpoints; whoever controls them gains a crucial strategic advantage.



Figure 4: The PRC's Sea Lines of Communication to the Persian Gulf
 Source: Shutterstock

As the final and least significant consideration, as China began seeking to position itself as a world power in the late 2000s, it started assigning the MENA region greater diplomatic importance. Conceiving the Arab countries as its natural (though not always actual) allies against the superpowers since the mid-1950s, Beijing sees these MENA nations as potential supporters (or followers) in its effort to challenge the Western-dominated world order.¹⁴ This aspiration is closely linked to the two major interconnected considerations mentioned above. It compels China to increase its presence in that part of the world to somewhat counterbalance U.S. dominance there as long as this does not weaken U.S. efforts to stabilize the region or harm China's relations with the United States on other fronts.

However, while China has generally aimed to avoid Middle Eastern conflicts and confrontations with the U.S. both within and outside of MENA, it has

¹⁴ Ibid. 15-19.

made significant strides in building ties with MENA countries, including those traditionally allied with the U.S., such as the Gulf States. The U.S.'s withdrawal from Afghanistan (2020-2021) and its perceived decreased presence in the region has opened avenues for China to forge closer partnerships in MENA. A prime example of this shift is Xi's December 2022 visit to Saudi Arabia, where he participated in three summits with the host nation, the Gulf Cooperation Council (GCC) countries, and other Arab states. Xi highlighted the trip as heralding a "new era" in Chinese-Arab relations.¹⁵ These gatherings underscored the alignment of policies between China and MENA countries, their robust economic connections, and a shared commitment to non-interference in internal affairs. Notably, Xi's trip also hinted at the potential for enhanced security collaboration between China and these nations. For a long time, the U.S. was viewed as the primary security guarantor in the region, while China's relations centered predominantly on trade and infrastructure. The 2022 summit marked a pivot, highlighting not just trade and energy but also security concerns. It should be noted that this summit did not imply that there will be Chinese "boots on the ground" or a ramping up of military exports to MENA to replace the United States.

Another example of diplomatic engagement in the Middle East is China's self-proclaimed "neutral" stance on the Hamas-Israel war following the attack on October 7, 2023. After the terror attack on Israeli towns near the Gaza border, China's first statement on the conflict did not mention Hamas nor Israel's right to defend itself.¹⁶ Later, Wang Yi, China's top diplomat, mentioned that all countries have the right to self-defense yet claimed that Israel's response went beyond the scope of self-defense. China's response was nearly identical to its usual condemnation of escalating tensions between Israel and Palestinians in the past.¹⁷ Officially, China refrained from attacking the U.S. for its support of Israel, yet official state media promoted anti-American conspiracy theories and engaged in an open anti-Israeli campaign.

15 Tuvia Gering, "Full Throttle in Neutral: China's New Security Architecture for the Middle East," *Atlantic Council*, February 15, 2023, <https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/full-throttle-in-neutral-chinas-new-security-architecture-for-the-middle-east/>.

16 By Tessa Wong, "What China Wants from Israel-Hamas War," *BBC News*, November 1, 2023, <https://www.bbc.com/news/world-asia-china-67237146>.

17 Galia Lavi, "The War in Gaza Hurt China's Position in the Middle East," *INSS*, November 5, 2023, accessed November 5, 2023, <https://www.inss.org.il/publication/china-swords-of-iron/>.

China's pivot towards more active involvement in security matters in the Middle East following the October 7 attack seems to conflict with its official commitment to non-interference. Beijing has explicitly sided with Moscow and Iran on the Palestinian issue, vetoing a U.S.-drafted UN Security Council resolution on the war between Hamas and Israel (October 25) along with Russia, and blaming the war on Israel's treatment of Palestinians and its failure to respect their national rights.¹⁸ China's image as a peaceful and unbiased mediator may have been tarnished by its automatic response, as if the 2023 war was just another flare of tensions in the long Israeli-Palestinian conflict. Yet China aspires to refashion itself as an honest broker through its close relations with Iran, the Palestinians, and other Arab countries.¹⁹

In any case, China's increased engagement with the Gulf countries, its brokering of Saudi-Arabia-Iran deal of March 2023, along with its involvement in the 2023 war between Hamas and Israel, reflect China's overall growing security inroad to MENA.²⁰ In Beijing's view, assistance in security issues for the region is also crucial to maintaining the stability of regimes that are home to Chinese investments.

Chinese interests in MENA can be summarized as follows:

- Securing access to energy resources: China perceives the MENA region as a primary energy source crucial for the country's industrialization efforts. China's energy needs have grown dramatically over the last few years (see figure 5).
- Growing markets and economic partnerships: China's Arab policy paper from 2016 states that the country's interests in the region are mainly focused on energy, trade, and investments.²¹ Figures show that in 2013–2023, MENA countries' trade with China surpassed that with any other single trade partner and is expected to continue growing in the upcoming years.²²

18 James T. Areddy, "In China's Calls for Mideast Peace, Hamas Assault Goes Unmentioned," *WSJ*, October 16, 2023, <https://www.wsj.com/world/middle-east/in-chinas-calls-for-mideast-peace-hamas-assault-goes-unmentioned-b4e0c382>.

19 Wong, "What China Wants from Israel-Hamas War."

20 Ibid.

21 "Full Text of China's Arab Policy Paper," January 13, 2016, accessed October 2, 2023, http://english.www.gov.cn/archive/publications/2016/01/13/content_281475271412746.htm.

22 Amin Mohseni-Cheraghloou, "MENA at the Center of the West: China's 'Opening up to the West' Strategy," Middle East Institute, March 9, 2021, accessed October 2, 2023, <https://www.mei.edu/publications/MENA-center-west-chinas-opening-west-strategy>.

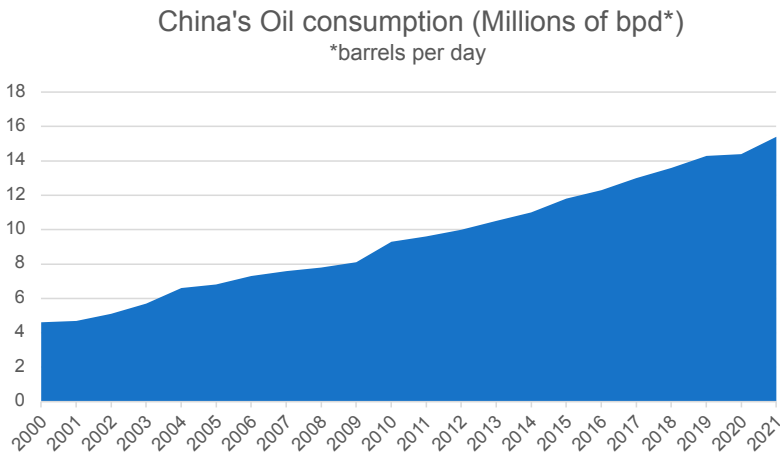


Figure 5: China's Oil Demand Growth

Source: Statista²³

- Growing markets and economic partnerships: China's Arab policy paper from 2016 states that the country's interests in the region are mainly focused on energy, trade, and investments.²⁴ Figures show that in 2013–2023, MENA countries' trade with China surpassed that with any other single trade partner and is expected to continue growing in the upcoming years.²⁵
- Ensuring Freedom of navigation along MENA's Sea lanes.
- Increasing influence over and securing diplomatic support from as many states as possible. China generally demonstrated a preference for the United Arab Emirates, followed by Saudi Arabia and other GCC states, which were favored over Iran (Egypt, Turkey, and Israel were also considered important, each for its own economic and technological reasons). In the diplomatic and political arenas, however, China has increasingly aligned itself with the anti-American axis in the Middle East. Following the October 7, 2023, massacre, Beijing sided with Hamas, aligning itself with Iran and

²³ Statista, "Oil Consumption in China 1998-2022," August 25, 2023, accessed October 2, 2023, <https://www.statista.com/statistics/265235/oil-consumption-in-china-in-thousand-barrels-per-day/>.

²⁴ "Full Text of China's Arab Policy Paper," January 13, 2016, accessed October 2, 2023, http://english.www.gov.cn/archive/publications/2016/01/13/content_281475271412746.htm.

²⁵ Amin Mohseni-Cheraghloou, "MENA at the Center of the West: China's 'Opening up to the West' Strategy," Middle East Institute, March 9, 2021, accessed October 2, 2023, <https://www.mei.edu/publications/MENA-center-west-chinas-opening-west-strategy>.

Russia.²⁶ By presenting itself as a “neutral party” while openly aligning with the anti-American side, China aims to draw the U.S. into the Middle East conundrum, enhance its global reputation, and solidify support from the Global South. Yet Beijing’s policy remained balanced as it needs a strong U.S. presence to prevent a regional escalation that could jeopardize its energy and economic interests in MENA.²⁷

- Growing infrastructure that may sustain potential future semi-military or military presence and activity, with a focus on the maritime domain (the western Indian Ocean, the Persian Gulf, and the Red Sea). Nevertheless, at this juncture, China does not serve as a significant arms supplier nor has it any ambition to act as a security provider to the region.

In order to achieve its diverse objectives, China has had to adopt different sets of policies and means in the hope of positioning itself as a major actor in the region. To maximize economic benefits, China has claimed to adopt an “everyone’s friend” approach, with limited political engagement in the region. In Beijing’s estimation, openly supporting a particular party in regional conflicts or playing a dominant role in their resolution, confronting the United States directly, or actively joining the international effort against local and regional non-state terrorist organizations in the Middle East may result in substantial economic and political costs, and may mire it in the region’s conflicts. On the other hand, “standing aloof” may conflict with China’s other interests in the region. However, with the 2023 Hamas-Israel war deepening the struggle between Washington and Teheran for influence in the Middle East, and with the backdrop of a growing alignment between Russia, China, and Iran during the Russo-Ukraine war, China may encounter increasing challenges in its declared ambition to pursue a multifaceted policy across MENA. Nevertheless, it could leverage this growing rift as an opportunity to

26 On China’s non-condemnation of the atrocities committed by Hamas and its open accusation of Israel for the “historical injustice against Palestine”, see Grant Rumley and Rebecca Redlich, “Tracking the Chinese Statements on the Hamas-Israel Conflict”, Washington Institute for Near East Policy, November 3, 2023, <https://www.washingtoninstitute.org/policy-analysis/tracking-chinese-statements-hamas-israel-conflict>

27 *The Strait Times*, “With Israel-Hamas war, Russia and China hope to turn tables on US”, October 25, 2023, <https://www.straitstimes.com/world/middle-east/with-israel-hamas-war-russia-and-china-hope-to-turn-tables-on-us>.

further undermine U.S. hegemony by fashioning itself as an alternative and “neutral” mediator in the regional conflicts.

Indeed, since the late 2000s and contrary to its traditional approach, Beijing has started building bridges between adversaries, underscoring its involvement in the region’s conflicts. The most remarkable manifestation of this change was China’s successful sponsoring the Iran-Saudi Arabia deal to resume relations in March 2023 following two years of Iraqi- and Omani-facilitated mediation. In addition, China has become somewhat active militarily (or rather, semi-militarily) in the region. Among other activities, it participates partially in the international anti-piracy efforts in the Gulf of Aden, conducts joint military exercises in the region, and has established a military-logistics base in Djibouti in the Horn of Africa in 2017. Most importantly in this respect, the Middle East has become a prominent part of China’s strategic plans since the late 2000s and early 2010s to increase its engagement on its western peripheries, reaching all the way to the western Indian Ocean and MENA.

Arguably, the BRI encapsulates all these goals and ensuing modes of operation while integrating the Middle East into China’s grand vision. By assigning China a dominant role in developing Asian countries’ infrastructures and economies, the BRI is addressing Beijing’s security concerns along its western periphery and providing it with new long-term economic growth engines. At the same time, it is reshaping the global division of spheres of influence and peacefully transforming China into a new type of world power.²⁸

To summarize, China is utilizing a complex set of policies and means to realize a growing list of objectives in MENA. The following are the main ones:

- Forming institutional frameworks, like the China-Arab States Cooperation Forum.
- Recruiting MENA states to international organizations under its leadership, for example, the Shanghai Cooperation Organization (SCO), which Iran joined in July 2023 as a full member and in which Saudi Arabia and the UAE obtained “dialogue partner” status in the spring of 2023.

28 Some scholars even argue that the BRI has become China’s grand strategy, an argument that is well supported by the inclusion of BRI in the Chinese Communist Party’s constitution following the CCP’s 19th Congress. See Clarke 2017; Ehteshami 2018.

- Positioning itself as a potential mediator, calling attention to its distinct advantage over the United States in this field in the form of access to all state and some non-state actors in the region.
- Concluding long-term comprehensive trade agreements with MENA states.
- Large-scale investments in MENA states, including in strategic sectors, such as energy and national infrastructure including communication and digital infrastructure, seaports, power stations, and other sectors.
- Technology transfer agreements, including dual-use, communication, and even military-related areas, such as drones, space, missiles, AI, and nuclear. Certainly, China is not considered a major arms supplier to the region nor a potential competitor of the United States. On the other hand, it may transfer sensitive technologies that the United States and other Western suppliers may avoid, while taking fewer measures to prevent their leaking to third parties, including non-state actors.
- Exercising various soft power and public diplomacy means to shape collective narratives and perceptions, including media, academic and student exchange programs.

To sustain its ambitions in the global and regional arenas, the PRC has developed a complex array of strategic and operational concepts in the military and security realms. These concepts define the dynamics of its power projection and use of force, which will be further explored in the subsequent chapter.

CHAPTER 2

CHINA GOES GLOBAL: IMPLICATIONS FOR THE PEOPLE'S LIBERATION ARMY'S OPERATIONAL CONCEPTS

This chapter delves into China's strategy and operational concepts in the security and military realms. By understanding China's strategic framework, we can better recognize the capabilities that Beijing has developed and might transfer to countries in the MENA region. Moreover, examining China's force projection – including its deployment and use of force in the Indo-Pacific and globally-, may provide insights into China's potential future behavior in MENA.

The chapter unfolds as follows. First, we examine China's strategic culture and how it shapes its approach to global power projection. We then spotlight PRC's key strategic pillars: active defense and asymmetric warfare, expected to be central in confrontations near and far from its borders. Third, we explore Beijing's spectrum of approaches to the use of force, highlighting China's restrained application of military force over the past four decades.

When examining China's strategic discourse and operational concepts, we distinguish between its declarative intentions (often pacifist and defensive) and actual force buildup and deployment (perceived as offensive and belligerent). Notably, there is often a discrepancy between China's ambiguous pronouncements signaling defensive intent and its rising military capabilities and assertive declarations, which may indicate offensive intentions. Recognizing the inherent gap between declarations and actions, we acknowledge that it may be wider in China's case because of its internal political culture and attempts to strategically mislead foreign powers. To meet this methodological challenge, we pay equal attention to the practical measures China has taken in response to developments and to its formal pronouncements. In the event of conflict between the two, we give greater weight to China's practical measures.

China's Strategic Culture and Global Assertiveness

Two main narratives dominate Western scholarship on China's strategic culture. On one end of the spectrum is a pacifist and defensive view of China's strategic thought and military thinking as reflecting the cultural underpinnings

of Confucianism. In the spirit of the writings of ancient Chinese strategist Sun Tzu: “The preferred strategic goal is to win a war without resorting to the use of force,” that is, without taking violent or military actions.²⁹ Indeed, this is the view promoted by the CCP’s propaganda machine. Contemporary Chinese leadership has combined this overarching strategic orientation with Confucian values of harmony and selected principles from the non-aligned movement, emphasizing foreign policy values of cooperation and peace. This hybrid stance is clearly reflected in a foundational text of China’s foreign policy: “Five Principles of peaceful coexistence,” initially articulated by China’s Premier Zhou Enlai in 1953. The principles espoused in this document include mutual respect for sovereignty and territorial integrity, mutual non-aggression, mutual non-interference in the internal affairs of other states, equality and mutual benefit, and peaceful coexistence. Relying on this normative bedrock, China has fiercely rejected accusations about its aggressive conduct and intention, uncompromisingly claiming that it exercises a defensive and non-expansionist military strategy.

On the other end of the spectrum, China is accused of adopting a belligerent and offensive strategy, which is inherently expansionist and aggressive strategy. This analysis envisions that China’s “unstoppable” economic and military expansion will ultimately trigger an “inevitable” violent conflict with the United States with the aim of dislodging the United States as the global hegemon and remaking the international order. This view is prevalent among U.S. security and defense circles and is reflected by the official position of the United States in the past two decades that defines China as a “systemic threat” in the economic-military realms, with a focus on the global technological race.³⁰ This school of thought was associated in the past mostly with the hawkish camp in the U.S. political, military, and media establishments, but since the second half of the 2010s, it has gained broad consensus in Washington. The logic behind this perception of China as an aggressive and revanchist country posits that the Chinese Empire enjoyed an unrivaled hegemonic position

29 “Sun Tzu’s Wisdom behind China’s Diplomacy and Defence Policy,” Embassy of the People’s Republic of China in the United Kingdom of Great Britain and Northern Ireland, February 11, 2012, accessed October 2, 2023, http://gb.china-embassy.gov.cn/eng/ambassador/dshd/2012/201202/t20120211_3384936.htm.

30 Rush Doshi, *The Long Game: China’s Grand Strategy to Displace American Order* (Bridging the Gap, 2023).

for centuries before being humiliated and ultimately destroyed by Western powers, which had exploited it ruthlessly for a century until the CCP liberated and restored the country. After the rebuilding phase was completed in the early 2010s, China shifted its attention to the next phase of building economic-technological-military power that would enable it to restore its historically great, or even hegemonic, power by the mid-21st century.³¹

However, both the defensive and offensive readings of China's strategic vision may be misleading. They offer static and deterministic views of China's strategic thinking that overlooks the pragmatic, even opportunistic, dimensions of China's foreign policy and the regime's prudent and risk-averse tendencies. Additionally, the distinction between a defensive and an offensive approach is essentially subjective and often influenced by the broader information war opposing Beijing and Washington.

At the Declarative Level: A Defensive Posture

A 2019 white paper titled "China's Defensive National Defense Policy in the New Era"³² provides a formal view of the state's strategic environment and goals. On the surface, these are governed by a consistent ambition to preserve the "status quo" in the domestic, regional, and international spheres.

China's most important strategic domestic goal is the preservation of its sovereignty and territorial integrity. This entails the containment and elimination of "separatist" movements in its provinces with large concentrations of ethnic minorities (Tibet, Xinjiang, Inner Mongolia) and, as Beijing sees it, the reintegration of Taiwan into its territory.³³ The struggle against separatist movements has been conducted by various means: militarily, but also economically (the development of these areas), demographically, and educationally. Maintaining constant economic growth and development across the country has been the main tool in this containment effort.

31 Ibid.

32 Xinhau, "China Issues White Paper on National Defense in New Era," The State Council Information Office of the People's Republic of China, July 24, 2019, accessed October 2, 2023, http://english.scio.gov.cn/whitepapers/2019-07/24/content_75026111.htm.

33 Mamtimin Ala and Salih Hudayar, "Independence Is the Only Way Forward for East Turkistan," *Foreign Policy*, August 11, 2021, accessed October 2, 2023, <https://foreignpolicy.com/2021/08/11/independence-east-turkistan-china-uyghurs-xinjiang/>.

The acute need for domestic stability as a precondition for the regime's survival, coupled with the U.S. military deployment in the world and its policies and actions regarding China are the main factors that shape the latter's global and regional threat perception, goals, and strategies. A dominant factor is what China perceives as a U.S.-led comprehensive effort to block its rise militarily, politically, economically, and technologically, as well as in various soft power spheres. Focusing on the strategic aspect, at the regional level, China identifies new threats related to the global power competition and the strengthening of the U.S. military presence in the Asia-Pacific region. There, the People's Liberation Army (PLA) wrestles with an increasingly contested environment following the expansion and intensification of regional alliances. Primary among China's top security concerns are: the extensive U.S. military presence in the Indo-Pacific, including the deployment of substantial forces across the region, close-in reconnaissance, naval and aerial patrols (including in areas that are disputably claimed by China, such as the Taiwan Strait and the South China Sea), and joint military exercises with its regional partners; the U.S.-Japan alliance; the trilateral U.S.-U.K.-Australia security pact (AUKUS) signed in 2021; and the Quadrilateral Security Dialogue (Quad) initiated in 2017 between the United States, the United Kingdom, India, and Japan.

At the global level, the PRC accuses Washington of threatening international "strategic stability." Of greater concern for Beijing is most likely the unchallenged U.S. military dominance in the seas. China acutely depends on foreign trade for its economic development and hence for the regime's survival (according to the World Bank, foreign trade accounted for 37.4 percent of China's GDP in 2022).³⁴ With over 60 percent of its foreign trade maritime-based, China deems free access to sea lanes across the world an existential interest. The superior naval power of the United States poses a high risk to this interest, and China is taking several measures to narrow the ability of the United States to block the movement of goods into and out of Chinese territory. China also faces an increasing security concern concerning its global economic expansion and the potential vulnerability of its economic assets to global and regional threats. With Beijing's owning and operating a growing number of infrastructure facilities, industrial facilities, mines, and other assets worldwide,

34 World Bank, *China Economic Update, December 2022: Navigating Uncertainty – China's Economy in 2023*, 2023, <https://doi.org/10.1596/39522>.

it has become imperative for China to protect these assets against global and regional security risks. In addition, China is committed to ensuring the protection of its citizens abroad against a variety of threats. These include terrorism, cyberattacks, piracy, epidemics, and natural disasters.

An Increasingly Assertive Posture

Notwithstanding benign declarations, China has pursued an increasingly assertive (that is, offensive and revisionist) agenda from a U.S. perspective in the Indo-Pacific and the global arena. In the Indo-Pacific region, China has made territorial claims on over 90 percent of the South China Sea in sheer contravention of the UN Convention on the Law of the Sea.

Claiming to preserve its “territorial integrity” and “national sovereignty” across its “inalienable territories,” China’s South China Sea ambitions are motivated by several key interests. First, China wants to guarantee the freedom of movement of its nuclear-powered ballistic missile submarines (SSBN) conducting continuous at-sea “deterrence patrols” against the United States.³⁵ The second objective is limiting the deterrence capabilities of the United States and its partners and establishing a buffer zone in case of a U.S. attack on China. Third, China is intent on preserving its freedom of maritime transportation through its commercial sea lines of communication (SLOCs). The South China Sea represents a key transportation route between the Pacific Ocean and the Indian Ocean, accounting for a third of China’s global maritime trade and a critical line of communication for oil import from the Persian Gulf through the Malacca Strait (figure 6).³⁶ In line with Beijing’s ambition to control almost the entirety of the South China Sea, Beijing has pursued the goal – at least on paper

35 At the time of writing, China operates a small number of nuclear-powered ballistic missile submarines (SSBNs). See: “China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress”, updated May 15, 2023, 17. <https://crsreports.congress.gov/product/pdf/RL/RL33153/267> [accessed September 19, 2023]. According to the 2022 Pentagon report on Chinese military power, the PRC operates six JIN-Class submarines (SSBNs) which are equipped to carry up to 12 JL-2 or JL-3 submarine launched ballistic missiles (SLMBs): US Department of Defense. “2022 Report on Military and Security Developments Involving the People’s Republic of China, Annual Report to Congress,” 94. <https://www.defense.gov/CMPR/> [accessed September 19, 2023].

36 Riyaz Ul Khaliq, “3 Reasons’ China Tries to Control South China Sea,” AA, February 25, 2021, accessed October 2, 2023, <https://www.aa.com.tr/en/asia-pacific/3-reasons-china-tries-to-control-south-china-sea/2157110>.

– of “solving the Taiwan question” and bringing about “national rejuvenation” by achieving the “peaceful reunification” of “one country, two systems.”



Figure 6: The Strait of Malacca: A Vital Transportation Route for China’s Trade
 Source: Shutterstock

The operational cornerstone of this assertive policy is the People’s Liberation Army (PLA) and the PLA Navy (PLAN) in particular. Since the early 1980s, and mostly since the late 1990s, the PLA has invested considerable efforts in developing its capability to fight high-intensity and short wars against the United States through extensive acquisition and deployment of advanced weapons systems, command, and control alignments (C4ISR), doctrine adaptation, improvement of its logistic capability, buildup of jointness capability, improved training, and the like.³⁷

At the global level, the PRC started to expand the PLA’s presence abroad to transform it into a global expeditionary force by the mid-21st century. Having expanded its economic presence worldwide, China now intends to turn the

37 Joel Wuthnow, Phillip Saunders, and Ian McCaslin, “PLA Overseas Operations in 2035: Inching Toward a Global Combat Capability,” *National Defense University Press Strategic Forum* 309, May 17, 2021, <https://ndupress.ndu.edu/Media/News/News-Article-View/Article/2619700/pla-overseas-operations-in-2035-inching-toward-a-global-combat-capability/>.

PLA into a world-class global military with a growing focus on its overseas presence by the symbolic date of 2049 (the centenary of the founding of the PRC). The geographic focus of PLA combat missions, in particular the PLAN capabilities, is expected to broaden for one or more of the following reasons: to protect China's expanding interests abroad; to deter other forces (mostly those of the United States) from threatening Chinese assets and interests; and/or to promote China's image as a great power at home and abroad.

Second, protecting China's overseas interests may require coordination between multiple services and branches. To this end, China has undertaken various measures to expand its power projection capability. It has broadened its inventory of long-range assets, such as heavy transport aircraft and logistics ships that may support long-range deployments of aircraft carriers and other surface combatants. In 2017, China's first overseas base was opened in Djibouti, with more potentially to follow. More PLA personnel are gaining overseas experience through anti-piracy missions and other operations. Nevertheless, its military buildup efforts are far from complete, and its military power has several weaknesses. Despite the PLA's recent shift to a more global outlook, none of its overseas operations and very few overseas exercises have been carried out jointly with other militaries. The operational level of its aircraft carrier force is unclear, and most importantly, its military forces and high command lack combat experience, as China's last full-scale war took place in 1979.

Whether it initiates a conflict or responds to other powers' aggressiveness, China is expected to implement a mix of operational concepts designed to guide the PLA's regional and global power assertion.

Between Active Defense and Asymmetric Warfare: China's Core Strategic Concepts

Over the years, China has developed two overarching strategic concepts that shape and guide its regional and global strategic ambitions: active defense and asymmetric warfare.

Active Defense

Drawing on Mao's military thought, and mostly developed over the past four decades, the *active defense* concept posits China as "strategically defensive

but operationally offensive” and serves as a pillar of China’s contemporary military thinking. Active defense is based on a major shift in China’s military strategy in the early 1980s, from intentionally luring enemy forces deep into Chinese territory to actively repelling an adversary from the outset and using counter-attack forces.³⁸ In Part III of China’s ninth Defense White Paper, released in May 2015, active defense was presented in the following terms: “The military strategic guideline for a new era adheres to the principles of defense, self-defense and post-strike response, and adopts active defense.”³⁹ In essence, China officially states that it will not initiate an attack but will retaliate if attacked.

Active defense relies on three core principles: forward-edge defense, effective control, and localized war.⁴⁰ Forward-edge defense aims to help the PLA seize the initiative by establishing positional defensive positions and confronting an invading force upon its advance.⁴¹ Second, active defense’s effective control relates to Beijing’s ability to lead systems confrontation and systems destruction warfare by acquiring technological superiority in three key sectors: information, space, and air (with information dominance being a key factor in gaining space and air superiority). China’s military thinking regards Systems Confrontation as the central mode of 21st-century warfare. Contemporary and future warfare is not framed as an open militarized conflict between two armies but as a comprehensive contest between numerous opposing adversarial operational systems.⁴² Also, 21st-century Systems Confrontation is multidomain, extending beyond the traditional domains of land, sea, and air. It is conducted in emerging alternative domains, including space, cyber, electromagnetic, and psychological warfare. Consequently, the PLA’s theory of victory is defined as System Destruction Warfare, which means freezing

38 Timothy A. Ornelas, “China’s Active Defense Military Strategy: Competition Considerations for U.S. Forces Operating in the Indo-Pacific Region,” *Marine Corps Gazette*, October 2021, 57–62, <https://www.mca-marines.org/wp-content/uploads/57-Chinas-Active-Defense-Military-Strategy.pdf>.

39 Wuthnow, Saunders, and McCaslin, “PLA Overseas Operations in 2035: Inching Toward a Global Combat Capability.”

40 Ornelas, *Ibid.*

41 Jeffrey Engstrom, *Systems Confrontation and System Destruction Warfare: How the Chinese People’s Liberation Army Seeks to Wage Modern Warfare* (Rand corporation, 2018), https://www.rand.org/pubs/research_reports/RR1708.html.

42 Engstrom, *Systems Confrontation and System Destruction Warfare: How the Chinese People’s Liberation Army Seeks to Wage Modern Warfare*.

and shattering enemy operational systems⁴³ and disrupting or destroying their information flow systems (C2 networks and infrastructure, intelligence, reconnaissance) and firepower capabilities.⁴⁴ The third component of China's active defense concept is localized war.⁴⁵ Chinese military thinking prior to the 1980s framed warfare as a total war of attrition conducted in the depths of China's vast territory against a comprehensive attacking force. Since the 1980s, China has mostly prepared for limited wars (in terms of timeframe, force size, casualties, and war objectives) around its borders, designed to guarantee swift PLA victories on Chinese terms.

Asymmetric Warfare

The other strategic concept that guides China's military buildup and use of force is asymmetric or irregular warfare. Departing from the PLA's largely abandoned People's War doctrine,⁴⁶ China's military strategies and tactics have mainly focused on the enemy's weaknesses, leveraging them as force multipliers. Conceptualizing warfare as multidomain since the 1990s, China has elevated information superiority as the main driver of operational planning.⁴⁷ In the event of a large-scale conflict, the PLA envisions the seamless and effective integration of irregular warfare, including information supremacy and influence operations, with conventional capabilities. Specifically, China emphasizes two main components of asymmetric or irregular warfare: (1) an integral and coordinated use of information, psychological, legal, and military warfare; (2) extensive use of special operation forces and paramilitary forces, including the PRC's maritime militia. China has placed great importance on

43 Ibid.

44 Ibid, X-XI.

45 Ornelas, "China's Active Defense Military Strategy: Competition Considerations for U.S. Forces Operating in the Indo-Pacific Region."

46 First introduced by Mao Zedong, the People's War doctrine emphasizes gaining the support of the local population. It encourages luring the enemy deep into one's territory, where they become vulnerable due to overextended supply lines. Here, the locals can then capitalize on this vulnerability using mobile and guerrilla warfare tactics to achieve victory.

47 David Knoll, Kevin Pollpeter, and Sam Plapinger, "China's Irregular Approach to War: The Myth of a Purely Conventional Future Fight – Modern War Institute," Modern War Institute, April 27, 2021, accessed October 2, 2023, <https://mwi.usma.edu/chinas-irregular-approach-to-war-the-myth-of-a-purely-conventional-future-fight/>.

the latter as a means of asserting control over disputed territories in China's backyard or harassing the U.S. naval presence.⁴⁸

Between Intelligentized Warfare and A2/AD: China's Operational Concepts

The conceptual umbrella of active defense and asymmetric warfare includes various key concepts and capabilities developed by the PRC over the last three decades. Western scholarship presents these concepts as forming a well-rounded theory and a distinctively "Chinese way of war." Similarly, in Chinese academic military writings, they are described as key components of a coherent military doctrine. In reality, China's operational concepts are a composite of older and more recent military approaches that were often borrowed from Western, particularly U.S., military thinking, such as the anti-access/area-denial (A2/AD) concept.⁴⁹ Rather than forming a coherent military doctrine, they offer a conceptual toolbox that Beijing has developed over the years to address its strategic challenges and shape the development of its coping tactics and systems.

The following paragraphs outline the pivotal operational concepts of China's contemporary military thinking: Intelligentized Warfare (IW) and its critical components (cyber and space); the anti-access/area denial (A2/AD) concept; and civilian-military fusion.

Intelligentized Warfare

Like the U.S. network-centric warfare strategy,⁵⁰ China's information-based warfare strategy is designed to create a high level of shared battlefield awareness, integrate combat forces, and translate information superiority into more effective and better-synchronized combat power. The approach draws upon China's "Three Warfares" doctrine (officially adopted in 2003), combining psychological, media, and legal warfare to weaken the enemy, stopping short of a kinetic conflict. The Chinese intelligentized warfare concept differs

48 Ibid.

49 Rick Chersicla, "Stop Talking about a 'Chinese Way of War,'" *The Diplomat*, March 14, 2023, accessed October 2, 2023, <https://thediplomat.com/2023/03/stop-talking-about-a-chinese-way-of-war/>.

50 Pk Mallick, "NETWORK CENTRIC WARFARE," *ResearchGate*, October 19, 2020, https://www.researchgate.net/publication/344737587_NETWORK_CENTRIC_WARFARE.

from the U.S.'s network-centric warfare strategy in that the Chinese concept is directed both inwards and outwards. China's strategy combines creating high-level situational awareness and distributing information across its forces, with the active disruption of the enemy's ability to build situational awareness and disseminate information across its forces.

In 2019, the PLA took this concept a step forward, maintaining that war is shifting towards "informationization" and that "intelligentized warfare is on the horizon,"⁵¹ soon to surpass the physical and information battlefields. China's intelligentized warfare relates to the cognitive domain and has been conceptualized as an "integrated warfare waged on land, sea, air, space, electromagnetic, cyber, and cognitive arenas using intelligent weaponry and equipment and their associated operation methods, underpinned by IoT [internet of things] information system."⁵² In a sharp departure from the U.S. or European conceptualization of artificial intelligence (AI) and its military uses, in China's view, AI is to be used to gain "intelligence dominance." The goal of its use is to shape the decisions and control the will of decision-makers in the political and military realms and influence the adversary's population from within.⁵³

The cyber domain is critical to the intelligentized warfare doctrine. China has sought dominance in global telecommunications infrastructure and global internet communications technology infrastructure that, combined with other technological breakthroughs, may disrupt the command and control of adversarial countries and sustain a long and all-out spy war.

More importantly, intelligentized warfare was developed to compensate for China's inability, or unwillingness, on account of the high cost, to pursue its ambitions by exercising conventional warfare. The move is consistent with the emphasis that China's strategic culture puts on deception and sapping the enemy's will to fight rather than its military forces. Shifting the war to the cognitive domain thus offers China a comparative advantage and may

51 Sugiura Yasuyuki, "NIDS China Security Report 2022: The PLA's Pursuit of Enhanced Joint Operations Capabilities," The National Institute for Defense Studies, 2022, accessed October 2, 2023, <http://www.nids.mod.go.jp/english/publication/chinareport/>.

52 Koichiro Takagi, "New Tech, New Concepts: China's Plans for AI and Cognitive Warfare," War on the Rocks, April 13, 2022, accessed October 2, 2023, <https://warontherocks.com/2022/04/new-tech-new-concepts-chinas-plans-for-ai-and-cognitive-warfare/>.

53 Ibid.

favorably tilt the balance of forces.⁵⁴ The intelligentized warfare concept includes (among others) the improvement and facilitation of decision-making based on AI, the sophistication of information-processing capabilities, and the use of swarm intelligence⁵⁵ designed to provide intelligence dominance to the PLA and directly fashion the adversary's cognition.

The second key component of intelligentized warfare is China's space strategy. China's Military Strategy Document (SCIO, 2015)⁵⁶ recognizes outer space as a "critical security domain" and an additional combat dimension. Like Western countries, the Chinese strategy acknowledges the growing importance of outer space in its comprehensive response to global strategic challenges and emphasizes mounting threats to its own national space from its Western adversaries. The Chinese space strategy considers the space dimension as key to sustaining its strategic deterrence, supporting its operational capabilities in areas close to China, and protecting Chinese interests overseas. Seeking to develop a significant C4ISR⁵⁷ capability across all dimensions of war, China has developed significant space-based capabilities that can be used independently or in combination with air, maritime, or ground forces to sustain China's information dominance and enhance its global power projection.⁵⁸ The PLA has granted an increasingly important role to space to sustain its situational awareness, intelligence collection, and command and control.

The PLA has also significantly boosted its space warfare capabilities. In 2015, it created a new hybrid armed branch, its Strategic Support Force (SSF). The force is designed to defend the strategic frontiers of China by transitioning from land-based territorial defense to global power projection in emerging

54 Ibid.

55 Swarm intelligence pertains to an area of AI where individual entities, such as drones, satellites, or spacecraft, are empowered by artificial intelligence software to operate collectively. This coordination is achieved through decentralized control, automation, and the principles of self-organization.

56 Xinhau, "China's Military Strategy (Full Text)," The State Council of the People's Republic of China, May 27, 2015, accessed October 2, 2023, http://english.www.gov.cn/archive/white_paper/2015/05/27/content_281475115610833.htm.

57 Command, Control, Communications, Computers – C4 ; Intelligence, Surveillance and Reconnaissance – ISR.

58 "2020 Annual Report to Congress: China's Growing Power Projection and Expeditionary Capabilities," *U.S.- China Economic and Security Review Commission* (Washington, United States of America: U.S. Government Publishing Office, December 2020), accessed October 2, 2023, <https://www.uscc.gov/annual-report/2020-annual-report-congress>.

domains, focusing on outer space and cyberspace. Since its founding, the SSF has apparently operated as a centralizing armed branch designed to merge and synchronize the PLA's space, cyber, information, and psychological warfare capabilities and optimize joint operations under the authority of the General Staff and the political level (Central Military Commission -CMC).⁵⁹ In addition, in 2020, China launched the global BeiDou navigation satellite system, designed to strengthen the PLA's command and control capabilities based on improved situational awareness and more effective messaging for communication. Furthermore, China developed a growing number of land- and sea-based space tracking assets that support targeting for PLA counterspace weapons systems, tracking missile launches, and collecting intelligence designed to project power against the United States and its allies.

China also aims to gain superiority in outer space. A key element in achieving superiority in space is the disruption of the enemy's capabilities. Over the years, China has developed new technologies for space warfighting, including diverse capabilities for tracking and thwarting satellite operations by ground and manned means. The PLA's Strategic Support Forces' functions include jamming satellite communications and GPS signals and, potentially, other counterspace capabilities, such as direct-ascent capabilities.⁶⁰ According to U.S. sources: in 2006, an American satellite was blinded; in 2007, a Chinese kinetic attack from the ground against a satellite was carried out as part of an experiment; in 2010, an attack from orbit (co-orbit) was carried out; and in 2012, cyberattacks on American laboratories dealing with space were carried out.⁶¹

Anti-Access-Area Denial (A2/AD)

Borrowed from Western military thinking, the A2/AD concept has been used and consolidated by China since the early 2000s across the South China Sea, the Taiwan Strait, and the East China Sea, within the first and second island chains (figure 7).

59 Kevin L. Pollpeter, Michael S. Chase, and Eric Heginbotham, "The Creation of the PLA Strategic Support Force and Its Implications for Chinese Military Space Operations," *RAND* (Santa Monica, United States of America: RAND Corporation, November 10, 2017), accessed October 2, 2023, https://www.rand.org/pubs/research_reports/RR2058.html.

60 Ibid, IX.

61 Anthony H. Cordesman, "China Space Strategy and Developments" (CSIS, August 19, 2016), accessed October 2, 2023, <https://www.csis.org/analysis/china-space-strategy-and-developments>.

The first island chain includes the Kuril Islands, Japanese Archipelago, Ryukyu Islands, Taiwan, northwest Philippines, and concludes at Borneo. This chain acts as a primary defense line and establishes the maritime borders between the East China Sea and the Philippine Sea, as well as the South China Sea and the Sulu Sea. Within this chain lie the Bashi Channel and the Miyako Strait, both of which are pivotal maritime chokepoints for China. The second island chain, encompassing the Bonin Islands, Volcano Islands, Mariana Islands, western Caroline Islands, and Western New Guinea, delineates the eastern maritime edge of the Philippine Sea, where the U.S. has vested interests.⁶²



Figure 7: China's First Islands Chain
Source: Shutterstock

The strategic concept of A2/AD responds to China's operational needs deriving from its geographical constraints, global rise to economic power, and expanding economic and strategic interests near its borders. A2/AD is designed to undermine potential military interventions, primarily American, against Chinese military operations in areas adjacent to China. This concept was developed following the Taiwan Strait Crisis (1995) and was adapted

⁶² The USA has increased its presence in the second islands chain and has Compacts of Free Association (COFAs) with Palau, Marshall Islands, and Micronesia.

to the U.S. concept based on the use of forces from the Pacific Ocean, long-range airpower, and aerial and satellite reconnaissance systems. In a classical security dilemma dynamic, China has built an A2/AD fortress to contain the United States, which has bolstered in response its forward presence in the Indo-Pacific (in Japan, South Korea, and Guam, among others) along with its counterstrike and deterrence capabilities.

In the first stage of A2/AD development, China focused on building up defense capabilities to protect its territorial sovereignty and waters from external threats. In the second stage, the Chinese military was instructed to develop the ability to prevent political separatism in Taiwan, prevent U.S. military intervention in the maritime space, including in the South and North China Seas, and acquire the ability to act in the first island chain, and later in the second island chain. The current goals set for the Chinese military demand global operational capabilities anywhere its intervention is required to protect Chinese interests.⁶³

In order to meet its operational need for freedom of action at sea, in the areas of the first and second island chains, China replaced its traditional air defense strategy, which was defensive, with the concept of A2/AD, which includes offensive defense components.⁶⁴

At this juncture, Beijing's A2/AD concept aims to achieve two objectives:

1. Deter the approach of American long-range forces by threatening the fleet through long-range reconnaissance, submarines, long-range missile attacks on ships; establishing threats based on island facilities such as the

63 U.S. Department of Defense, "Military and Security Developments Involving the People's Republic of China," *U.S. Department of Defense* (Office of the Secretary of Defense, November 3, 2021), accessed October 2, 2023, <https://www.defense.gov/News/Releases/Release/Article/3230516/2022-report-on-military-and-security-developments-involving-the-peoples-republi/>. Air University (AU), "ITOW: Report to the 20th National Congress of the Communist Party of China," November 4, 2022, accessed October 2, 2023, <https://www.airuniversity.af.edu/CASI/Display/Article/3209912/itow-report-to-the-20th-national-congress-of-the-communist-party-of-china/>. Canadian Security Intelligence Service, "Chinese Military Innovation in Emerging Technologies," Government of Canada, May 11, 2018, accessed October 2, 2023, <https://www.canada.ca/en/security-intelligence-service/corporate/publications/china-and-the-age-of-strategic-rivalry/chinese-military-innovation-in-emerging-technologies.html>.

64 Assaf Heller, "Confronting Air Defense: Trends and Implications for Israel's Air Force and Civil Aviation," *Elrom Center for Air and Space Studies*, June 2022.

capability to target naval Guam base; creating threats to aircraft refueling operations, command and control systems, and transport planes using anti-aircraft and long-range ground-to-air missiles; and posing threats to satellites using physical means.

2. Hinder the enemy's ability to deploy and operate aircraft, UAVs, and missiles near Chinese airspace using jamming technology, ground-to-air missile systems, and interference.

In short, the A2/AD concept is designed to distance enemy forces from and block entry into the area and to prevent the freedom of action required to carry out their operational goals.

China's A2/AD fortress is multidomain and comprises sufficient aerial and naval capabilities for its mission as well as comprehensive information warfare. It includes land and sea-launched capabilities, such as submarines, anti-ballistic weapons, anti-ship, anti-air, anti-ballistic weapons, and space-based systems, including C4ISR and BeiDou capabilities. Specifically, the A2/AD concept has led to the development of long-range air operations capabilities, effective air defense at long ranges from the coast and on ships, the ability to control and monitor areas of operation, and the ability to implement information warfare as part of the use of force.

It should be noted that China's potential global operations in the future will require the PLA to develop a broader range of capabilities and long-distance power projection, including additional long-range air intelligence, satellite surveillance and reconnaissance capabilities, command and control abilities, a navy with a closely attached air force, global air mobility capabilities, air refueling capabilities, and worldwide bases.

On the speculative question of China's overseas military basing, the U.S. defense community has often raised the specter of China establishing a host of naval bases and logistics facilities that will enable the PLA to build a robust military presence beyond the South China Sea. Whether the strategic objective would be to protect China's shipping routes and ever-expanding economic interests, bolster its ability to resist sanctions, position China as a relevant player in the great power competition, or establish it as a world-class military with long-range power projection capabilities is yet to be clarified. Similarly, the very existence of such a strategy remains hypothetical at this

stage (though it is not unlikely).⁶⁵ This presumed strategy concerns China's military basing beyond East and Southeast Asia, where there is positive evidence of China's expanding military presence, mostly in the South China Sea. If China implements such a strategy, it could plausibly consolidate a military presence at Gwadar in Pakistan (or open a military base there, according to U.S. official sources).⁶⁶ Equatorial Guinea, Cambodia, Bangladesh, Myanmar, and Bahrain are also candidates for potential Chinese bases. The likelihood of some manner of Chinese military base being established in countries like Oman, Saudi Arabia, Iran, and Yemen, predicted by some analysts,⁶⁷ seems less pronounced but cannot be ruled out at this stage.⁶⁸

Civil-Military Integration

Chinese strategists emphasize the strong connection between military forces, war, and the civilian economy. They have adopted various policies and structures to utilize civilian technological, economic, and human resources to advance the country's military goals. Currently, this strategic principle is mostly manifested in the form of civilian means used during armed conflicts (for example, fishing boats to harass civilian boats of rival countries in the South China Sea) and the harnessing of civilian high-tech companies to China's accelerated military R&D effort: a national policy known as military-civil fusion.⁶⁹

65 For claims about the existence of such a strategy, see for example: Cristina L. Garafola, Stephen Watts, and Kristin J. Leuschner, "China's Global Basing Ambitions: Defense Implications for the United States," *RAND* (Santa Monica: RAND Corporation, December 8, 2022), accessed October 2, 2023, https://www.rand.org/pubs/research_reports/RRA1496-1.html.

66 H I Sutton, "China's New High-Security Compound in Pakistan May Indicate Naval Plans," *Forbes*, June 2, 2020, accessed October 2, 2023, <https://www.forbes.com/sites/hisutton/2020/06/02/chinas-new-high-security-compound-in-pakistan-may-indicate-naval-plans/?sh=27c709d01020>.

67 Garafola, Watts, and Leuschner, "China's Global Basing Ambitions: Defense Implications for the United States."

68 This includes military forces, but also military facilities such as intelligence and communication devices.

69 See Yoram Evron and Richard A. Bitzinger, "MCF in China," in *The Fourth Industrial Revolution and Military-Civil Fusion* (Cambridge University Press, 2023), <https://doi.org/10.1017/9781009333290>.

Behind China's Declarative Assertiveness: A Restrained Use of Force

The above concepts notwithstanding, since the 1950s, and more so since the 1980s, China's use of military force has been highly restrained, mostly used as a deterrent, preventative measure, or to mark its red lines. China's accelerated military buildup since the early 2000s and the development of its military thinking under Xi Jinping has not changed this.

Under Xi Jinping, China has developed a new operational concept of using force, drawing on the above-mentioned operational concepts. The new concept, termed the "peaceful employment of military force" (which is misleadingly understood in the West as a "grey zone" or a "hybrid" use of force) is intended to prevent an adversary from crossing China's red line. In essence, the PRC approaches the notion of force employment as a continuum ranging between the "peaceful use of force" in peacetime and, at the other end of the spectrum, the "full-scale use of force" in wartime (figure 8).

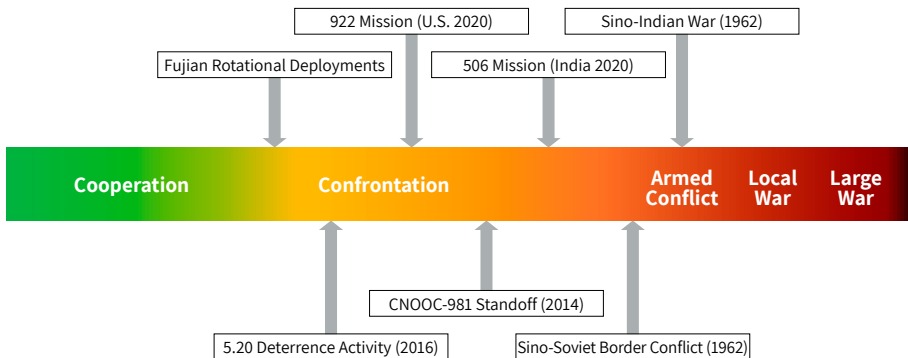


Figure 8: China's Spectrum of the Use of Force in Historical Perspective
 Source: Elrom Center for Air and Space Studies⁷⁰

As Roderick Lee and Marcus Clay show in their seminal study, the concept of "peaceful use of force" redefines the use of force as a preventive instrument designed to achieve peace and stability.⁷¹ China presents itself as resorting

⁷⁰ Graph prepared based on research conducted by Roderick Lee and Marcus on China's Use-of-Force Spectrum: Roderick Lee and Marcus Clay: Roderick Lee and Marcus Clay, "Don't Call It a Gray Zone: China's Use-of-Force Spectrum," War on the Rocks, May 9, 2022, accessed October 2, 2023, <https://warontherocks.com/2022/05/dont-call-it-a-gray-zone-chinas-use-of-force-spectrum/>.

⁷¹ Roderick Lee and Marcus, *Ibid.*

to force only when necessary, claiming that force is the only language its adversaries understand. However, China emphasizes the importance of employing force judiciously and only where necessary to shape its strategic environment, safeguard its interests within its neighborhood, and prevent or curtail militarized conflicts. As Xi Jinping stated in 2020: “[The] Chinese people understand fully that [China] must use the languages that invaders understand to communicate with them. It is to use war to stop war, to use force to prevent conflict/war, and to use [war] victory to win peace and earn respect.”⁷² China’s strategic thinkers and analysts have also used the concept of Non-War Military Activities (NWMA), which was officially enshrined in the 2006 national defense white paper⁷³ and which is to play a key role alongside warfighting and deterrence to protect China’s interests and control its operational environment in an increasingly globalized system.⁷⁴ In Chinese academic writings, NWMA (which are inspired by the U.S. doctrine of military operations other than war) are divided into four categories: “confrontational,” “law enforcement,” “aid and rescue,” and “cooperative.”⁷⁵ Operations may include anti-piracy missions, aid and rescue operations, border patrol missions, or basing to support military operations overseas.

To better clarify China’s approach to force, we present three case studies of its force deployment and employment in peacetime: the establishment of China’s first overseas military base in Djibouti in 2017; the China-India skirmishes along the Sino-Indian border in 2020–2021, and the Chinese navy fighter jet’s intercept of a U.S. Air Force reconnaissance plane over the South China Sea in December 2022. These three case studies illustrate different stages of the use of force along a continuous spectrum where none escalated into open confrontation or an “armed conflict.”

72 Roderick Lee and Marcus, *Ibid.*

73 “China’s National Defense in 2006,” Andrew S. Erickson, July 23, 2019, accessed October 2, 2023, <https://www.andrewerickson.com/2019/07/china-defense-white-papers-1995-2019-download-complete-set-read-highlights-here/>.

74 Kevin Bilms, “Beyond War and Peace: The PLA’s ‘Non-War Military Activities’ Concept,” *Modern War Institute*, January 26, 2022, accessed October 2, 2023, <https://mwi.usma.edu/beyond-war-and-peace-the-plas-non-war-military-activities-concept/>.

75 Kevin Bilms, *Ibid.*

New Baseline Military Deployment

Reversing a long-standing tradition of not establishing overseas military bases or stationing troops abroad, in 2017 the PLA established its first overseas military base. It was built in Djibouti on the strategic Bab-El-Mandeb Strait on the Red Sea, a strategically crucial artery for sea shipping. China's baseline military deployment directly borders a U.S. naval foothold with some 4,000 staff based in Djibouti at the United States' only permanent military base in Africa (Camp Lemonnier). China claims that the Djibouti base is designed to serve as a logistics base for China's Gulf of Eden international mission. However, the United States sees it as a platform designed to bolster China's intelligence and intelligence capabilities and as a protector of Beijing's vital economic interests along the Red Sea.⁷⁶Based on a detailed U.S. Department of Defense Annual Report on China⁷⁷ and high-resolution satellite imagery,⁷⁸ it appears that the PLAN marines are stationed at the base in Djibouti, equipped with wheeled armored vehicles and artillery. However, they remain dependent on nearby commercial ports due to their lack of experience using the recently established pier on the base. Satellite imagery reveals that the naval base appears fully operational and designed to accommodate the PLAN aircraft carriers, vessels and submarines to withstand external assault.

Beyond deploying its military presence with its first overseas military base, Beijing has resorted to force to restrict Djibouti's sovereign airspace over its brand-new naval base. In 2018, the State Department denounced the active interference with U.S. flights by PLA personnel in Djibouti and accused the PLA of directing military-grade blinding lasers at U.S. aircraft, causing eye injuries

76 Robert Uri Dabaly, Indu Saxena, and Arushi Singh, "China's Military and Economic Prowess in Djibouti: A Security Challenge," Air University (AU), November 18, 2021, accessed October 3, 2023, <https://www.airuniversity.af.edu/JIPA/Display/Article/2847015/chinas-military-and-economic-prowess-in-djibouti-a-security-challenge-for-the-i/>.

77 U.S. Department of Defense, "China Military Power Report," *U.S. Department of Defense* (Washington, United States of America: U.S. Department of Defense, November 29, 2022), accessed October 3, 2023, <https://www.defense.gov/CMPR/>.

78 Vishnu Som, "Exclusive Satellite Pics: China's New 'Mission Indian Ocean' Targets India," NDTV, August 18, 2022, accessed October 3, 2023, <https://www.ndtv.com/world-news/chinas-indian-ocean-base-in-djibouti-fully-operational-warship-docked-in-satellite-pics-3264696>.

to two pilots in a C-130.⁷⁹ However, as the U.S. Department of Defense report noted, Chinese laser blinding was done on only a few, separate occasions and apparently was not intended to create an escalation. China's establishment of the Djibouti base and its resorting to non-kinetic attacks against U.S. aircraft (such as the use of blinding lasers) indicate its growing willingness to use traditional overseas infrastructure, whether military or civilian, beyond its traditional activity of intelligence collection and projecting soft power.

A Controlled and Short Military Confrontation: 2020 India-China Standoff

China's border standoff with India in the summer of 2020 is an example of China using greater force while stopping short of an armed conflict. Since the 2014 Depsang crisis, the PLA had been conducting its "506 Special Mission," involving rotational deployments of forces along the Sino-Indian Border. In June 2020, Indian and Chinese soldiers clashed in a contested part of the Himalayas, resulting in casualties. However, the number of deaths was limited, the combat operations quickly ended, and the event remained under the threshold of an armed conflict. Moreover, the Chinese forces (similar to the Indian ones) took measures to avoid escalation. In many cases, they limited themselves to cold weapons and even unarmed hand-to-hand combat.

China's Growing Readiness to Use Force: Chinese interception of a U.S. reconnaissance plane in December 2022

In the last decade, the Chinese military has been increasingly assertive and sometimes aggressive in its encounters with the United States and its allies and partners in the Indo-Pacific. In 2022 alone, multiple incidents were reported involving the PLA and the United States and U.S. ally and partner forces. In February 2022, a Chinese Navy ship directed a laser at an Australian patrol aircraft. China denied using lasers, claiming that sailing on the high seas is a "fully legitimate and legal operation," whereas the Australians saw it as a deliberate "act of intimidation."⁸⁰ Later, a Chinese fighter jet chased another

79 Courtney Kube and Corky Siemaszko, "Pentagon Accuses Chinese of Blinding Djibouti-Based U.S. Pilots with Lasers," NBC News, May 3, 2018, accessed October 3, 2023, <https://www.nbcnews.com/news/africa/pentagon-accuses-chinese-blinding-djibouti-based-u-s-pilots-lasers-n871096>.

80 Kathrin Hille and Nic Fildes, "Chinese Naval Vessel Aims Laser at Australian Surveillance Plane," *Financial Times*, February 20, 2022, accessed October 3, 2023, <https://www.ft.com/content/ab9b6235-762e-494e-a698-0ff510d21cbd>.

Australian military plane in international airspace over the South China Sea, and a Chinese fighter buzzed a Canadian surveillance plane. This series of incidents and near-collision cases reached its peak in December 2022, when a Chinese Army Navy J-11 fighter jet flew within three meters of a U.S. Air Force RC-135 reconnaissance plane during an interception over the South China Sea.⁸¹ The U.S. plane had no choice but to make an evasive maneuver in order to avoid a direct collision. According to China's official statements, their pilot "was lawfully conducting routine operations over the South China Sea in international airspace," while, according to the United States, the Chinese pilot "performed an unsafe maneuver."⁸² The December 2022 incident unfolded against the backdrop of cumulative coercive actions, particularly over the disputed South China Sea, and illustrates a growing readiness to use force and test the U.S. red lines.

The three cases mentioned above illustrate two characteristics of China's use of force. First, it is remarkably restrained and controlled, avoiding potential escalation into a larger confrontation. Second, with very few exceptions, China's use of military force is restricted to its traditional area of influence and around its borders. Nevertheless, for all its restraint, China has also demonstrated its growing willingness to use force to control and to shape its operational environment.

Drawing on this chapter's analysis of China's strategic and operational concepts regarding the use of force, the subsequent chapter delves into China's military buildup. It specifically scrutinizes the weapons and technologies that the PRC has developed, as there is potential for such systems and expertise to be transferred to MENA countries.

81 "Unsafe Intercept of U.S. Aircraft over South China Sea," DVIDS, December 21, 2022, accessed October 3, 2023, <https://www.dvidshub.net/video/869869/unsafe-intercept-us-aircraft-over-south-china-sea>.

82 Jesse Johnson, "Chinese Fighter Jet Came within Three Meters of U.S. Spy Plane," *The Japan Times*, December 30, 2022, accessed October 3, 2023, <https://www.japantimes.co.jp/news/2022/12/30/asia-pacific/us-china-close-encounter/>.

CHAPTER 3

WEAPONS DEVELOPMENT IN CHINA AND ITS POTENTIAL IMPACT ON MENA AIR FORCE ACTIVITIES

Over the past twenty years, the Chinese Air Force (PLAAF), like other PLA branches, has undergone extensive changes and modernization. These adjustments partly arise from the implementation of the anti-access/area-denial (A2/AD) concept, which seeks to deter adversaries from introducing their forces into the battle space and restricts their freedom of action within that area. As a result of these changes, the PLAAF has undergone a transition from an outdated air force used primarily to defend Chinese airspace with aging aircraft and air defense systems to a modern air force that operates advanced weapons enabling defensive and offensive operations over long ranges. If deployed in the Middle East, these capabilities could present new challenges to the air forces operating in the region.

The strategic goals that General Secretary Xi Jinping has set for the PLA have changed. In his October 2022 address to the Chinese Communist Party's 20th Congress, he emphasized the need to transform the PLA into a "world-class military" by the middle of the century.⁸³ To meet this goal, intermediate objectives have been set to develop a mechanized, information-based, and intelligent military. This initiative, referred to as "mechanized, informatized, and intelligentized" in China, focuses on the following areas (the various terms used below are Western concepts that reflect the changes that China is undergoing):

- Transitioning to advanced weaponry and equipment that enables networking and operation as a system of systems in all dimensions of warfare.
- Widespread control and use of information technologies and AI.
- Integration of cyber warfare in a systematic and structured manner in the operation of the force and awareness campaigns.
- Control of the space domain.

83 U.S. Department of Defense, "Military and Security Developments Involving the People's Republic of China." See also: Air University (AU), "ITOW: Report to the 20th National Congress of the Communist Party of China."

While China's heightened presence and the PLAAF's technological development are not directed against forces operating in the Middle East, it is nonetheless possible that in the future, Chinese arms or technology will arrive in the area. It is more probable that technologies will be exported to countries in the region than that the Chinese military will establish a military presence there.

This chapter presents the technological development trends and the Chinese arms that an air force operating in the Middle East theater may encounter in the coming decades. The emphasis is on the technology challenges and changing threat that these systems pose to air forces in the region compared to known weapons in use today.

Developing Technological Infrastructure

The notion that China's military power depends on its ability to develop advanced independent technologies began to be understood during Mao Zedong's rule in the 1950s and became more prominent after his death. China's technological infrastructure was originally based on cloning technologies acquired from various sources, primarily the USSR and then Russia, gaining knowledge through intelligence activities, and promoting technology manpower by sending students abroad, mainly to the United States, for engineering and science studies in key technology fields.⁸⁴

Currently, military technological infrastructure is built on three pillars: adopting and adapting leading global technologies; establishing specialized universities to meet the military's needs; and preparing technology personnel.⁸⁵ The last pillar relies on collaboration between civilian and military industries to develop and transfer advanced technologies.⁸⁶

84 Mark Ashby et al., "Defense Acquisition in Russia and China," *RAND* (Santa Monica, United States of America: RAND Corporation, July 14, 2021), accessed October 3, 2023, https://www.rand.org/pubs/research_reports/RRA113-1.html.

85 Air University (AU), "ITOW: Report to the 20th National Congress of the Communist Party of China."

86 Air University (AU), "ITOW: Report to the 20th National Congress of the Communist Party of China." Michael C. Horowitz and Lauren Kahn, "DOD's 2021 China Military Power Report: How Advances in AI and Emerging Technologies Will Shape China's Military," *Council on Foreign Relations*, November 4, 2021, accessed October 3, 2023, <https://www.cfr.org/blog/dods-2021-china-military-power-report-how-advances-ai-and-emerging-technologies-will-shape>. U.S. Department of Defense, "Military and Security Developments Involving the People's Republic of China."

From the mid-1980s until the end of the 2010s, as part of the deepening cooperation between the United States and China, the United States aided the development of technological infrastructure in China through knowledge transfers, receiving a consistent stream of large groups of students from China in the United States. Washington also helped the Chinese to establish national research institutes in fields such as genetic engineering, robotics, AI, mechanics, biotechnology, laser technologies, supercomputers, and manned spaceflight.⁸⁷ At the same time, China continued to acquire advanced military and space technology from Russia.

In 2015, the Chinese military published a document “China’s Military Strategy”⁸⁸ that signaled an intention to develop a new generation of military technologies that would advance China’s capabilities against the U.S. military and shift the balance of warfare in China’s favor. The strategy of scientific and technological innovation is based on the absorption of foreign technologies along with innovation and advancements in AI, unmanned weapon systems, and directed-energy weapons. It also focuses on developing advanced capabilities in quantum technology which will give China defensive and offensive advantages in intelligence, encryption, and information.

A significant component in the development of military technologies and the pursuit of security technology leadership is the strategy of military-civil fusion, which connects technologies developed in the private market in China to security technologies.⁸⁹ This strategy increases the number of individuals and organizations actively involved in military-civil technology development, brings the achievements resulting from competition in the civilian market to the security world, allows for rapid transfer of technology developed in the civilian sector (dual use) to the military, and enables the military to use technologies tested in the civilian world, leading improved reliability for the military forces using these technologies.

87 Michael Pillsbury, “Only China Could Go to Nixon,” in *The Hundred-Year Marathon: China’s Secret Strategy to Replace America as the Global Superpower* (St. Martin’s Griffin, 2016), 70–73.

88 Xinhau, “China’s Military Strategy (Full Text).”

89 Air University (AU), “ITOW: Report to the 20th National Congress of the Communist Party of China.”, 51; Horowitz and Kahn, “DOD’s 2021 China Military Power Report: How Advances in AI and Emerging Technologies Will Shape China’s Military.” U.S. Department of Defense, “Military and Security Developments Involving the People’s Republic of China.”

From the perspective of the Chinese military, which has been developing technologies for the PLAAF and air defense in recent years, efforts to obtain and autonomously advance technology are evident in the following domains:

- Stealth platforms.
- Acquiring expertise in scramjet propulsion for high-speed capabilities.
- Developing radar capabilities, including AESA (Active Electronically Scanned Array) technology.⁹⁰
- Developing advanced capabilities in the field of imaging IR (IIR) missile seekers and IR countermeasures.
- Developing unmanned systems, including autonomous and networked operations.
- Developing capabilities for exo-atmospheric defense and attack.
- Developing advanced defensive and offensive capabilities in cyber and communication networks.

When considering future weaponry,⁹¹ it is crucial to analyze the notable progress made by China in developing energy-based weapon technologies⁹² and military capabilities based on quantum technology.⁹³

Building Military Power

Parallel to the development of operational needs and technological infrastructure in China, there has been a shift in Beijing's approach to building military power. The expression "approach to building military power" pertains to the nation's strategy for integrating technological advancements into its

90 AESA technology allows great flexibility in shaping beams with different characteristics both in terms of signal shape and transmission energy. These radars represent a significant challenge for ECM systems, ELINT systems, passive radars and stealth platforms.

91 Canadian Security Intelligence Service, "Chinese Military Innovation in Emerging Technologies."

92 Destroying a target with concentrated energy without a physical interceptor. Several R&D programs of different levels of advancement currently exist in different countries for the development of powerful laser weapons, HPM weapons based on high energy pulses that damage electronic systems, particle beam transmission, and plasma weapons.

93 The use of quantum technology for military purposes is expected to significantly improve calculation capabilities, accuracy and sensitivity of measurement sensors and improve encryption and communication capabilities.

armed forces. Excluding its nuclear, ballistic missile, and submarine sectors, China's strategy has transitioned from full procurement to wholly indigenous development (figure 9).



Figure 9: China's approach to force building: stages of development
 Source: Elrom Center for Air and Space Studies

The Chinese originally acquired the weapons systems used by its air force by procuring systems mostly from Russia. This included the purchase of Mig-21C planes, which marked the start of the Chinese air force and local aircraft industry.⁹⁴ In parallel, China's air defense systems were initially based on both Russian systems, such as the SA-2 and, and on Western systems, such as the French Crotale.⁹⁵

Cloning

In parallel to purchasing air weapons systems, China began producing copies of systems it acquired. The copies were based on manufacturing licenses, reverse engineering, technological espionage, or purchasing/receiving dual-use technologies. Sometimes the weapon systems were copied with changes needed to address technological implementation difficulties and, at other times, to improve performance.

Improvements

Copied systems were initially inferior to the original, but with advances in their independent technological capabilities, the Chinese were able to incorporate significant improvements, enabling the Chinese systems to perform better than the originals.

94 Yefim Gordon and Dmitriy Komissarov, *Chinese Air Power: Current Organisation and Aircraft of All Chinese Air Forces* (Midland Publishing, 2010), 7-10.

95 Carlo Kopp, "PLA Area Defence Missile Systems," *Air Power Australia*, June 27, 2014, accessed October 3, 2023, <https://www.ausairpower.net/APA-PLA-IADS-SAMs.html#mozTocId502105%20Technical%20Report%20APA-TR-2009-0302>.

Self-development

While taking “inspiration” from existing systems, when China dominates the key technologies required for the development and production of arms, there seems to be a trend of development efficiency. Developers work on the core operational technologies, copying what is needed to save steps in development. For example, they might use the aerodynamic configuration of an existing air-to-air missile, while making significant changes to all other components, such as the engine, navigation system, and guidance, ultimately rendering them completely different from those in the original missile.

Below are some examples to illustrate the changes in the development processes of Chinese air-based weapon systems:⁹⁶

License Production and Progressive Changes

The nascent PLAAF began by acquiring interceptors from the USSR, including the Mig-21 and Mig-19 models. In 1961, China started producing the Chinese version of the Mig-21 under a license from the USSR, the Chinese version of the Mig-21, called J-7. The Chinese continued to develop the plane and, over the years, replaced the engine, improved the radar, increased the fuel capacity, and made structural changes. Some of the changes were copies of more advanced models of the Mig-21, and some were developed by the Chinese alone. The most advanced version of this aircraft is the J-7G, which entered service in 2003, equipped with a Chinese turbofan engine, a Chinese pulse Doppler radar based on Elta’s radar (El/M-2001), a helmet-mounted display, and air-to-air missiles, including the PL-8, a Chinese heat-seeking missile originally based on Rafael’s Python 3 missile.

Full Replication and Development Based on Advanced Chinese Technologies

In the early 1990s, China was the first customer to purchase 48 Su-27SK fighter jets from Russia. In 1996, the Chinese signed a contract to assemble Su-27SK jets in China under the name J-11. The first models assembled in China had

96 Air University (AU), “CASI Webinar on the PLA Air Force,” July 22, 2022, accessed October 3, 2023, <https://www.airuniversity.af.edu/CASI/Articles/Article-Display/Article/3093854/casi-webinar-on-the-pla-air-force/>. See also: Yefim Gordon and Dmitriy Komissarov, *Chinese Air Power: Current Organisation and Aircraft of All Chinese Air Forces* (Midland Publishing, 2010), 45-91.

many defects due to low workmanship. In 2002, the Chinese began to develop a Chinese version of the Su-27 named J-11B, in breach of agreements signed with Russia. About 90 percent of parts and systems used in the aircraft were already developed and manufactured in China, including turbofan engines (WS-10A), air-to-air missiles (Type 1474), and advanced avionics. A similar process was applied to the dual-seat Su-35MK fighter jet purchased in small quantities from Russia. The aircraft was reverse-engineered and went into production in China under the name J-16, with a carrier-based version called J-15. The advanced Chinese versions surpass the original Russian ones in the field of active electronically scanned array (AESA) radar and air-to-air armament.

Independent Development with Inspiration from Others

China's first fifth-generation fighter jet development began in the early 2000s as a competitor to the American F-22. The aircraft, named the J-20 in 2010, is currently in operational service, and all its components, including the engine, are produced in China. The J-20, a twin-engine stealth fighter with high maneuverability, has hidden weapon bays to preserve its stealth capabilities, along with the ability to carry weapons on external points, if necessary, at the expense of reducing its stealth. While externally, the aircraft has a unique shape, it does share certain similarities with the American and Russian fifth-generation fighter jets (such as a similar air intake structure to the F-35, a similar cockpit structure to the Su-57, and the composition and placement of the radar and avionics systems resembling the F-35), indicating that the designers were inspired by these aircraft during the development process.

Today, Chinese arms development has led to modern combat systems combining technologies copied from Western and Eastern systems known worldwide and unique Chinese technologies and developments. (figure 10).

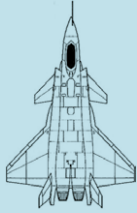
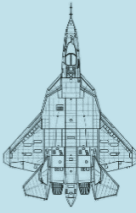
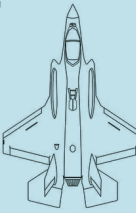

				
	J-20	Su-57	F-35	F-22
First flight	2010	2010	2006	1997
IOC	2017	2020	2015	2005
Manufacturer	China	Russia	USA	USA
Wingspan	15 meters	14 meters	10.7 meters	13.6 meters
Length	23.0 meters	19.8 meters	15.7 meters	18.9 meters
Max. Velocity	2 Mach	2 Mach	1.6 Mach	2.5 Mach
Max Takeoff weight	35,000 Kg	37,000 Kg	31,800 Kg	36,500 Kg

Figure 10: Fifth-Generation Stealth Fighters Compared.
 Source: Elrom Center for Air and Space Studies

The Evolution of Air Weaponry

Fighter Aircraft

The Chinese Air Force today is an advanced force⁹⁷ operating fourth and fifth-generation fighter⁹⁸ jets that have undergone comprehensive modernization, including advanced avionics based on modern Chinese-made radars, air-to-air missiles parallel to the most advanced Western missiles, and precision air-to-ground armaments.

97 Air University (AU), “CASI Webinar on the PLA Air Force.” See also: Gordon and Komissarov, *Chinese Air Power: Current Organisation and Aircraft of All Chinese Air Forces.*, 45-91.

98 About half of the total are 3rd generation aircraft, half are 4th and 4.5 generation aircraft, and a tiny number are 5th generation aircraft.

The backbone of the Chinese fighter jet fleet consists of 4.5 generation planes of various types. Only a few multi-mission planes are Russian-made Su-27/30/35s, while most of the fleet comprises Chinese-made J-10s and copies of the Su-27/30 family of planes, such as the J-11/16.

China has developed a fifth-generation stealth fighter, – the J-20 – making it the third country in the world to develop and produce fifth-generation aircraft. They are currently developing the next model of the J-20 and a smaller plane – the J-31. Although China is advancing in developing fifth-generation planes and sees itself as a leader in the future development of advanced-generation planes, due to cost considerations, aircraft production will continue to focus on fourth-generation planes, in addition to converting older-generation planes into 4+ configurations.

Missiles

China also began acquiring Russian air-to-air missiles and producing copies of Russian, European, American, and Israeli missiles. In this field, due to the lower technological complexity, Chinese production has surged to the forefront of performance and capabilities worldwide.⁹⁹

The leading short-range missile in China is the PL-10, with a range of up to 20 km, equipped with an IIR imaging seeker, TVC,¹⁰⁰ and laser proximity fuses, and capable of withstanding up to 55g and firing up to 90 degrees off-boresight (in combination with a helmet-mounted sight). The IIR technology enables effective IR countermeasures and independent lock-on capabilities at long ranges. The missile is likely capable of launching without locking. The missile is valued for its competitive capabilities with the world’s leading American ASRAAM and European IRIS-T missiles.

The leading radar-guided missile in China for medium to long range is the PL-15, with a range of up to 200 km. The PL-15 is based on a dual-mode active and passive seeker with AESA technology that allows for improved ECCM and two-way data link communication. This missile is currently the main weapon most of China’s advanced aircraft carry, including the J-20.

99 Thomas Newdick, “A Guide to China’s Increasingly Impressive Air-To-Air Missile Inventory,” *The War Zone*, September 1, 2022, accessed October 3, 2023, <https://www.thedrive.com/the-war-zone/a-guide-to-chinas-increasingly-impressive-air-to-air-missile-inventory>.

100 Thrust Vector Control.

The missile's performance is estimated to be equivalent to that of the most advanced Western missiles.

Another long-range missile, the PL-20, is currently in development for ranges beyond 300 km. The missile follows a semi-ballistic trajectory to extend its range. Its navigation is based on two-way communication with other systems providing target data (AWACS, ground-based radars, other airborne radars, and possibly even satellite data), GNSS navigation, and active final guidance using advanced AESA technology, and possibly even IIR imaging. The combination of an RF active seeker and an IIR imaging seeker presents a new threat that requires the deployment of countermeasures against both seekers simultaneously.

It should be noted that China also produces an air-to-air missile specifically designed for helicopters. This is a small missile developed from the family of shoulder-held (MANPADS) missiles produced by China, with a dual-channel IR seeker to increase immunity against flares. It can reach targets at an off-boresight angle of up to 60 degrees. This missile has been seen only on helicopters to date, but it could be adapted for UAVs.

Chinese fighter jet technology is currently very advanced. It includes advanced engines, AESA radar systems, passive and electro-optical sensors, and avionics systems that combine all these capabilities into an advanced weapon system with high capabilities. These technologies are found in the most advanced aircraft and are gradually being integrated into older models too.

UAVs

Over the past twenty years, China has become involved in the realm of UAVs at an accelerating pace and has acquired a leading global position.¹⁰¹ Hundreds of different models were created by military and civilian industry actors and university development teams in recent years. Some have passed the Chinese military's performance threshold and moved on to full development and production.

Currently, China's UAVs include a range of capabilities that provide solutions for intelligence, long endurance, long ranges, precision attacks, low RF and

101 Canadian Security Intelligence Service, "Chinese Military Innovation in Emerging Technologies."

IR signatures, and ECM missions. These capabilities are comparable to UAVs of this type produced worldwide.

China is developing UAVs through a very large variety of actors, including universities and civilian bodies, this diversity accelerating improvements in different spheres, including AI-based autonomy, the operation of “swarms” of independent drones, and operations in conjunction with manned aircraft. These models have not yet reached operationality, but with the technological developments in the UAV field and China’s investment in the area, they will likely become operational within a few years.

In order to enable the operation of UAVs at long ranges within the framework of A2/AD, China is developing the capability for long-range assistance, attack, and intelligence at sea. Additionally, China is working on deploying autonomous UAVs from ships, including unmanned vessels.

The existing Chinese UAV systems and their development directions differ little if at all from those familiar in other parts of the world. However, China emphasizes the development of autonomous tools, and the resources it invests in the field are yielding significant progress.

ECM Systems and Cyber Warfare in the Airspace

At the beginning of 2016, China established a dedicated force within the PLA’s Strategic Support Force (PLASSF) tasked with developing capabilities in space, cyber, and ECM and integrating them into overall military activities. Given the national strategic importance of these domains and their proximity to civilian issues (space and cyber), the command authority of the PLASSF may combine military command authority with direct leadership authority. This force is not a separate branch but a force composed of different units that integrate with the other military branches. The establishment of this force is intended to ensure that the military operates as a system that integrates information, cyber, and ECM into all its activities, both in defense and offense. In recent years, the Chinese military has practiced this capability to an unknown extent and frequency.

In terms of command and control, and decision-making systems, the Chinese government has set the goal of modernizing the military and integrating information among systems in the System of Systems (SoS) framework with

a global perspective on AI within the decade. In light of the ongoing effort and resource allocation, as reflected in the civilian industry, we can expect to see advanced systems to support decision-making and, occasionally, autonomous decision-making, in the operation of force at all levels, from the national level to the operator of the means of force.

Furthermore, as mentioned earlier, there are ongoing efforts to deploy air-based weapon systems by an external sensor network, which is expected to lead to embedding network operation capabilities for air-to-air, ground-to-air, and sea-to-air missiles.

Air Defense System

The Chinese air defense system includes a long-range detection system, various types of ground-to-air missiles that provide coverage from low altitudes to outside the atmosphere, command and control systems, and various ECM systems.¹⁰²

The detection system includes modern AESA systems that use active technology, low-frequency radar capabilities for detecting low-observable targets, over-the-horizon detection capabilities, and the use of passive radars for detecting emitting targets or detecting targets based on their radiation reflections from the RF environment.

102 Kopp, "PLA Area Defence Missile Systems." See also: Pollpeter, Chase, and Heginbotham, "The Creation of the PLA Strategic Support Force and Its Implications for Chinese Military Space Operations." An additional good reference is: Hsia-Huang Shu, "2021 Report on the Defense Technology Trend Assessment: China's Missile Defense Capability," *Institute for National Defense and Security Research* (Taipei: Institute for National Defense and Security Research, December 6, 2021), accessed October 3, 2023, <https://indsr.org.tw/en/respublicationcon?uid=16&resid=1893&pid=2344&typeid=1>. Also consult: Roderick Lee, "China's Recent Ballistic Missile Defense Test May Have Actually Been an Anti-Satellite Test," Air University (AU), February 9, 2021, accessed October 3, 2023, <https://www.airuniversity.af.edu/CASI/Display/Article/2497584/chinas-recent-ballistic-missile-defense-test-may-have-actually-been-an-anti-sat/>. Bonny Lin and Cristina L. Garafola, "Training the People's Liberation Army Air Force Surface-to-Air Missile (SAM) Forces," *RAND* (Santa Monica, United States of America: RAND Corporation, August 30, 2016), accessed October 3, 2023, https://www.rand.org/pubs/research_reports/RR1414.html. United States Army, *Army Techniques Publication ATP 7-100. 3 Chinese Tactics August 2021* (Fort Belvoir, VA, United States of America: Army Publishing Directorate, 2021). Liu Xuanzun, "Serbia Displays 'powerful, Affordable' Chinese Air Defense Missiles for the 1st Time, 'Not Meant as a Threat but Rightful National Defense Development,'" *Global Times*, March 1, 2022, accessed October 3, 2023, <https://www.globaltimes.cn/page/202205/1260709.shtml>.

The Chinese air defense system is built in layers that provide protection from short-range to beyond the atmosphere:

- A large shoulder-fired missile system is distributed throughout the military units. Most of the missiles are based on Russian systems from the SA-18 family. Given the primary development capabilities of heat-seeking air-to-air missiles, it can be assumed that advanced shoulder-fired missiles contain IIR technologies and good protection against flares.
- Short-range systems produced by China include HQ-7 (based on the French CROTAL system) and HQ-9 (based on the Italian ASPIDE system). These systems were copied many years ago but have since undergone changes and improvements and are now used to protect strategic sites and ships.
- Medium to long-range systems include many outdated HQ-2 systems based on the SA-2, integrated with advanced mobile systems such as HQ-16 and HQ-12/22, which seem to be of Chinese origin and contain components from SA-11/17 systems. These systems, especially the HQ-22, are not copied from other systems but rather are inspired by Russian and Western systems, mainly the Patriot.

The long-range Chinese air defense system is based on the S-300PMU/U1/U2 and S-300V systems produced by Russia and local versions of them, such as the HQ-9/18/19. The locally produced versions have changed compared to the original Russian versions in response to various operational needs and advanced technological capabilities. Some of the systems' fire control radars operate in the C-band rather than the X-band. Chinese-made missiles feature navigation that combines commands with TVM.¹⁰³ China has developed missiles with passive radar seekers for long-range systems capable of countering both EW and stand-off ECM aircraft.

In recent years, China has acquired several Russian S-400 batteries, and in the coming years, a Chinese-made version of this system, incorporating technologies from advanced Western systems, is expected to be integrated.

The missile defense system is integrated with a modern air defense detection system, including low-frequency radar and the integration of over-the-horizon detection technologies and passive missile systems that enable targeting

103 Track Via Missile.

based on their radiation emissions or radiation reflections from the radio frequency environment. China has a multi-layered ballistic missile defense system based on atmospheric and exo-atmospheric interception systems. The atmospheric layer utilizes systems based on the S-300 PMU2 and S-300V (HQ-9B/19/26, HQ-29 naval system). Information regarding these systems suggests parallel capabilities to the Patriot PAC-3, SM-3, and THAAD, but the reliability of this information is unclear. The exo-atmospheric systems are based on China's domestic DN-1/2/3 and SC-19 technologies. These exo-atmospheric interception technologies have been successfully tested against ballistic missiles and satellites from 2007 to 2021. In 2013, a successful test was conducted to intercept a geostationary satellite.

In addition to ballistic missile threats, the Chinese are developing a range of capabilities for space-based power projection and destruction of satellites through collisions with other spacecraft, ECM capabilities, and energy-based laser weapons.

The Chinese strategy for military development and A2/AD implementation will also aim to continue the development of the air defense system to provide defense capabilities at ranges beyond the country's borders. In the present and near future, China's air defense capabilities will rely on the following technologies:

- Advanced detection radar systems featuring over-the-horizon capabilities, employing AESA active antenna arrays.
- Fire control radar systems based on S-300 signal processing concepts, transmitting in the C band.
- Long-range passive missiles designed to counter electronic warfare (EW) threats and non-combat aircraft.
- Dual-mode, radar, and infrared-guided missiles are likely to be developed, given the dominance of seeker technologies.
- China may also develop air defense capabilities based on directed-energy weapons, although no specific information is available.
- China will continue to develop systems for detecting and intercepting ballistic missiles and satellites outside the atmosphere.

China will also continue to develop its naval air defense system, likely by adapting existing defense systems for ships. In addition, China seeks to establish a comprehensive command and control system to unify and optimize overall air defense capabilities.

These technologies will enable China to create a layered air defense system capable of effectively defending against various threats. The technological advancements discussed in this chapter are poised to elevate China's air force to one of the most capable in the world.¹⁰⁴ The question for the upcoming years is whether these technological advancements will be exported to the air forces of other countries, particularly in the MENA region.

Drawing on previous chapters about Beijing's global and Middle Eastern strategy, its global power assertion, and a comparative analysis of its military capabilities, the next chapter addresses China's growing security inroads in the MENA region, with a focus on trends already changing its operational environment or that may affect it in future.

104 On this question, see the comprehensive edited volume published by VORTEX: Vortex. Studies on air and space power, *People's Liberation Army Air Force* (CESA, 2023), <https://www.calameo.com/cesa/books/006940288b84632feacc2>.

CHAPTER 4

CHINA'S EXPANDING PRESENCE IN MENA AND ITS EMERGING SECURITY DIMENSIONS

Drawing on previous chapters' discussions about Beijing's global and Middle Eastern strategy, its military thinking and operational concepts, and emerging military capabilities, this chapter maps China's growing presence and activities in MENA by focusing on their security dimensions that may be relevant to the air domain.

China's presence in MENA has been mostly limited to the civilian sphere and to economic, commercial, diplomatic, and soft power activities. As shown in Chapter 1, China has pursued a set of strategic objectives in MENA that are manifested mainly as various kinds of economic engagements, including large-scale investments, trade in energy resources, and the construction and operation of infrastructure projects. The Belt and Road Initiative (BRI) represents a major means of advancing these and other economic endeavors, as well as a political-economic end in itself.¹⁰⁵ Beijing also strengthened its diplomatic presence in the Middle East by recasting itself as a regional power broker for the first time, brokering the détente between Iran and Saudi Arabia in March 2023. Moreover, China sought to take advantage of its relations with Iran and Arab leaders, as well as its competition with the U.S. to broker a possible ceasefire following Hamas' attack on October 7th.¹⁰⁶ At the same time, the U.S.'s quick military response, which consisted of naval forces dispatched to the region, demonstrated that the U.S. remained a vital security provider in the Middle East.¹⁰⁷ Finally, Beijing has worked to increase its soft power in

105 As mentioned in this report's introduction, whether China's growing security cooperation with regional actors, along with its broadening civilian presence, primarily serve its economic objectives or reflect the ambition of a growing security presence in MENA designed to limit the U.S. regional presence by taking advantage of Washington's perceived disengagement is beyond the scope of this research. Rather, our goal is to explore potential operational outcomes arising from China's increasing presence in the region and their implications for the air domain.

106 "As China Strengthens Ties with Russia, the Israel-Hamas War Deepens Their Divide with the U.S.," NBC News, October 22, 2023, <https://www.nbcnews.com/news/world/israel-hamas-war-china-russia-us-putin-xi-jinping-biden-middle-east-rcna121168>.

107 Lavi, "The War in Gaza Hurt China's Position in the Middle East."

MENA by attempting to influence media coverage, academic discourse, and public opinion in its favor.

Compared to the United States and Russia, China's imprint on the region's security architecture has remained negligible thus far. Beijing's exports of arms and dual-use technologies to the region are minor in scope and inconsequential in quality compared to those of the United States, Russia, France, or Italy. In addition, Beijing's arms and technological exports are limited to niche markets, primarily drones. Under such conditions, it is unsurprising that China is not the main defense provider of any regional actor, nor that it has yet to develop any significant defense relations in the wider Middle East.

Despite its still modest scope, China's regional security presence has steadily grown since the early 2010s, specifically in four areas that may become relevant to the air forces operating in the area in the foreseeable future:

- 1) Extensive involvement in infrastructure projects with possible defense-related implications (primarily ports and other transportation infrastructures, communication and digital infrastructures, industrial parks, and smart cities).
- 2) Technology transfers to MENA countries (communication, digital technology, cyber, and space, and potentially civilian nuclear technology).
- 3) Defense cooperation and security-related activities in MENA other than arms transfers, such as joint military exercises, military bases, and anti-piracy operations.
- 4) Notwithstanding the reservations noted above about China's arms exports, the advancement of its defense industry over the last two decades increases the likelihood that its arms and military technology transfers to the region will increase significantly, both quantitatively and qualitatively, within the next decade or two.

This chapter first presents China's rationale and modus operandi in MENA, and then outlines the dynamics of China's emerging presence in these four areas. This is followed by a general conclusion highlighting their potential operational implications for the air domain.

Rationale and Modus Operandi

China's rationale for its presence in MENA is subject to different interpretations. As mentioned in Chapter 1, China's expanding presence in the MENA region seems to be primarily a function of its economic ambitions and energy needs. Of secondary importance China's growing presence and influence in the region serve to establish its global influence beyond the Asia-Pacific sphere, specifically in the context of superpower competition.¹⁰⁸

Regarding China's modus operandi in MENA, the PRC's regional presence has exhibited several distinctive characteristics.

China's presence in MENA has been multi-faceted and traditionally bound by the official policy principle of non-alliance, staying aloof from the region's conflicts, and remaining "everyone's friend." In addition, China seems to avoid conflicts with the United States over Middle East-related issues. China's accommodating approach to the United States in the Middle East has stemmed from its need for the stabilizing effect on the region that Washington provides.¹⁰⁹ At the same time, China has increasingly leveraged the regional conflicts as a platform to counter the United States, as exemplified by its refusal to condemn Hamas and its de facto alignment with Iran and Russia in the aftermath of the October 7, 2023 massacre.

Regardless of those increased geopolitical tensions, China's technical-security cooperation with MENA countries has been mainly pragmatic, transactional, and ad hoc. It generally tends to overlook client countries' domestic and foreign conduct of and does not necessarily choose to impose sanctions on any regimes. For example, China has not hesitated to sell equipment to countries in conflict, as seen in its unconditioned sales of armed drones that were ultimately used in conflict zones, primarily in Yemen and Libya.¹¹⁰ It should also be noted that China's arms exports are less expensive than their

108 Tarun Chhabra et al., "Global China: Regional Influence and Strategy," *Brookings* (Washington D.C, United States of America: The Brookings Institution, July 7, 2020), accessed October 3, 2023, <https://www.brookings.edu/articles/global-china-regional-influence-and-strategy/>.

109 Some U.S. experts even believe that Beijing is interested in a sustained presence of the 5th Fleet, which can secure economic stability and further investment opportunities. Interview with a senior U.S. official, Washington DC, July 2022.

110 Seima Oki, "China Increasing Arms Exports to Middle East and Eastern Europe," *Asia News Network*, May 5, 2022, accessed October 3, 2023, <https://asianews.network/china-increasing-arms-exports-to-middle-east-and-eastern-europe/>.

Western equivalents, allowing a wide array of actors to purchase advanced Chinese technologies at a lower cost.¹¹¹ Beijing also offers flexible payment options and terms to its clients. Consequently, China is perceived as a potential provider of last resort for security goods, including in cases where states cannot obtain certain types of weapons or systems from the United States due to restrictions and constraints that the latter imposes. For example, GCC countries are interested in buying from China the technologies and know-how that the United States has refused to provide them, primarily armed drones and anti-drone systems.¹¹²

More significantly for our study, China is willing to transfer both arms systems and arms production capabilities. For example, in March 2022, China and Saudi Arabia created a joint venture (“Aerial Solutions”) to collaboratively design and manufacture military drones in the Kingdom, and including wireless detection systems and radar, flight control, and communication systems.¹¹³ China’s joint venture approach has implications that may be relevant to the air domain, as China may further enable its clients to initiate their own weapons programs, while the latter may increasingly rely on Chinese technology. Also, we should note that China’s willingness to allow its partners to achieve self-production could potentially empower previously non-threatening actors.

Finally, unlike the United States and Russia, China does not present itself as a provider or guarantor of security in MENA. From Beijing’s perspective, its growing cooperation with regional actors in the technological-military sector does not amount to a security umbrella for any of them. China does not enter into formal alliances, nor does it make security commitments to these countries, and the comprehensive strategic partnerships it forms in the region do not include any commitment to providing security assistance to the other party.

111 Melissa Shostak and Cortney Weinbaum, “How China Is Building Influence Through Arms Sales,” RAND, December 9, 2022, accessed October 3, 2023, <https://www.rand.org/blog/2022/12/how-china-is-building-influence-through-arms-sales.html>.

112 “Grant Rumley,” The Washington Institute for Near East Policy, accessed October 3, 2023, <https://www.washingtoninstitute.org/experts/grant-rumley>.

113 Agnes Helou, “Chinese and Saudi Firms Create Joint Venture to Make Military Drones in the Kingdom,” *Defense News*, March 9, 2022, accessed October 3, 2023, <https://www.defensenews.com/unmanned/2022/03/09/chinese-and-saudi-firms-create-joint-venture-to-make-military-drones-in-the-kingdom/>.

China's Multi-Dimensional Presence in MENA and its Possible Security Implications

China's emerging security presence in MENA is fluid and multidimensional, and includes transfers of dual-use technology, weapons sales, joint military exercises, and even very limited military basing. In addition, China's extensive involvement in the region's construction and operations of infrastructure facilities may bear certain security implications.

Construction and Operation of Infrastructure Projects

A notable vector of China's presence in the region is its involvement in infrastructure projects, including commercial ports and other transportation infrastructure and, to a lesser extent, industrial parks and smart cities. China's expanding regional presence rests on two main concepts: the Industrial Park – Port Interconnectivity, Two-Wheel and Two-Wing Approach, and the Port-Park-City model.

First, the Industrial Park-Port Interconnectivity concept was introduced in June 2018 as a China-Arab states initiative to provide a common and integrated framework for clusters of commercial and industrial projects.¹¹⁴ The central concept is to integrate China's main industrial parks in Egypt, the United Arab Emirates, Saudi Arabia, and Oman with neighboring ports (Khalifa Port in Abu Dhabi, the Port of Djibouti, Port Said in Egypt, and others).¹¹⁵ As Jonathan Fulton observed, this framework is designed to connect commercial projects through investing in ports and industrial parks, connecting supply chains, and establishing (and connecting) commercial clusters in the Persian Gulf, the Arabian and Red Seas, and the Mediterranean. The two-wheel model refers to cooperation in the field of energy (traditional and low-carbon energy), while the two-wing concept refers to cooperation in the field of technology (AI,

114 "Wang Yi: China and Arab States Should Jointly Forge the Cooperation Layout Featuring 'Industrial Park-Port Interconnection, Two-Wheel and Two-Wing Approach,'" Ministry of Foreign Affairs, the People's Republic of China, July 10, 2018, accessed October 3, 2023, https://www.fmprc.gov.cn/eng/gjhdq_665435/2675_665437/2903_663806/2905_663810/201807/t20180712_536469.html.

115 Ibid.

5G, and space technology) and finance.¹¹⁶ China's rationale is two-pronged: meeting its growing hydrocarbon needs and expanding its export markets by leveraging the MENA countries' need to industrialize and grow their economies.¹¹⁷ China's concept of connecting existing and emerging commercial clusters and markets has thus far mainly involved the UAE, Egypt, Oman, Saudi Arabia, Djibouti, and Egypt.

Second, the PRC has advanced the Port-Park-City model of development (otherwise known as the "Shekou" model based on the Shekou Industrial Park in China's Guangdong Province created in 1979), using it to achieve significant economic and political clout within a host country. According to this model, applied in Pakistan, Belarus, Togo, and Sri Lanka, Chinese companies are contracted to establish industrial parks that are connected to ports, which together form the basis for the creation of a new city.¹¹⁸ In the MENA region, the paradigmatic example of this model is the Djibouti complex, where, upon completing its construction of new deep-water multipurpose port in 2017, China inaugurated a new Free Trade Zone that included a trading park, and started building a new city with the goal of promoting an integrated system of growth.

Those two concepts of regional engagement – Industrial Park-Port Interconnectivity and Port-Park-City model – reflect China's growing interest in gaining extensive economic and political influence in MENA. As a matter of fact, its investments in critical infrastructure and construction contracts in MENA (including Turkey) have grown significantly since the mid-2000s. In 2022, China invested over 6.7 billion USD in MENA compared to 290 million USD in 2005¹¹⁹ (Chinese investments and contracts in the Middle East and

116 Jonathan Fulton, "China's Emergence as a Middle East Power," in *The Routledge Handbook of China – Middle East Relations*, 1st ed. (Routledge, 2021), 5–6, <https://www.taylorfrancis.com/chapters/edit/10.4324/9781003034520-2/china-emergence-middle-east-power-jonathan-fulton>.

117 David Moore and Amir Kordvani, "Belt and Road Initiative – The View from Middle East and North Africa," *CMS*, 2021, accessed October 3, 2023, <https://cms.law/en/int/publication/belt-and-road-initiative/bri-view-from-MENA>.

118 Matthew P. Funaiolo, Brian Hart, and Lily McElwee, "Dire Straits: China's Push to Secure Its Energy Interests in the Middle East," *CSIS*, February 3, 2023, accessed October 3, 2023, <https://features.csis.org/hiddenreach/china-middle-east-military-facility/>.

119 Amna Puri-Mirza, "Value of Investment from China in the MENA Region 2005-2022," *Statista*, May 12, 2023, accessed October 3, 2023, <https://www.statista.com/statistics/1384069/china-investment-in-MENA/>.

North Africa (including Turkey) totaled some 273 billion USD between 2005 and 2022.¹²⁰ China's investment in critical regional infrastructure has grown tremendously since the inception of the BRI in 2013, partly because the Chinese fill an investment gap for regional actors that cannot meet their infrastructure needs based on national budgets. Dominika Urhová noted that between 2013 and 2022, the PRC invested at least 123 billion USD in MENA. As of 2023, 21 Arab countries were part of the BRI, with Iraq being the biggest benefactor.¹²¹

In this framework, Chinese shipping giants, such as Hutchison Ports, Shanghai International Port Group, and COSCO Shipping, have invested billions of dollars for stakes in ports throughout the region, from the port of Duqm in Oman on the shores of the Arabian Sea, through the ports of Khalifa in the UAE, Basra, and Umm Kasr in Iraq along the Persian Gulf, Aqaba in Jordan, Abu Qir, Alexandria, and El Dekheila, and East Port Said in Egypt, and the Haifa Bay Port in Israel, to the El Hamdania Port in Algeria on the Mediterranean.¹²² In the past few years, some of the most prominent investments were in Jordan (Aqaba Port), Egypt (Alexandria Port), and the UAE (Port of Khalifa).

Combined with its investments in a network of ports in MENA, Chinese companies injected significant investments into industrial park development across the region. As Jonathan Fulton noted, those infrastructure investment projects (ports-park complexes) are related to four complexes of ports and industrial parks in the region where it plans to establish supply chains and build business clusters.¹²³ These complexes include the Khalifa Industrial Zone (Abu Dhabi), the Industrial Park in Duqm (Oman), Jazan City for Primary and Downstream Industries (Saudi Arabia), and the TEDA-Suez Zone in Ain Sokhna (Egypt). Those parks are expected to be connected to four ports: the Khalifa

120 "China Global Investment Tracker," American Enterprise Institute, accessed October 3, 2023, <https://www.aei.org/china-global-investment-tracker/>. See also, House Committee on Foreign Affairs, "China Regional Snapshot: Middle East and North Africa," Foreign Affairs Committee, October 25, 2022, accessed October 3, 2023, <https://foreignaffairs.house.gov/china-regional-snapshot-middle-east-and-north-africa/>.

121 Beijing invested \$10.5 billion in Iraq as part of its BRI investment in 2021 alone. file:///C:/Users/User/Downloads/iqtisadi_2022_dec.pdf/. 3-4.

122 Oded Eran, "China Has Laid Anchor in Israel's Ports," *Strategic Assessment* 19, no. 1 (April 2016), https://www.inss.org.il/strategic_assessment/china-has-laid-anchor-in-israels-ports/.

123 Jonathan Fulton, "China's Gulf Investments Reveal Regional Strategy," Arab Gulf States Institute in Washington, July 29, 2019, accessed October 3, 2023, <https://agsiw.org/chinas-gulf-investments-reveal-regional-strategy/>.

Port Free Trade Zone (also in Abu Dhabi), Oman's Duqm Special Economic Zone Authority, the PLA Support Base in Djibouti, and Port Said in Egypt.¹²⁴

In addition, within the framework of the BRI's Digital Silk Road initiative, China has been involved in developing smart cities by combining physical infrastructure and AI technology such as facial recognition, cloud services, and other smart services.¹²⁵ Specifically, China has invested in developing smart cities along the shores of the Red Sea, including in Saudi Arabia, which has received considerable attention for Neom, a futuristic city already under construction (figure 10).

Extensive Chinese investment in critical infrastructure, particularly ports, may have some operational implications from an air domain perspective.

First, Beijing could leverage its civilian presence, particularly its economic investments and infrastructure (commercial ports, industrial parks, and "smart cities"), as a soft security inroad into the region. Certainly, a robust Chinese military presence seems unlikely in the future, and China's interests and activities, including its growing investment in ports, industrial parks, and smart cities, are anchored mainly in economic and commercial engagement¹²⁶ aiming to develop its economic cooperation with MENA countries and to expand interconnectivity projects.¹²⁷

However, considering the Chinese concept of military-civilian fusion and the close connections between Chinese private corporations and military entities, the potential operational significance of China's involvement in infrastructure in MENA cannot be overlooked. In peacetime, port infrastructure is designed to serve the routine needs of ships, especially commercial but also military vessels (such as refueling, replenishing supplies, and other services).

124 Ibid.

125 Maha Abdelrahman, "From Gallons to Gigabytes: China's Digital Silk Road and the Arab World," *Mapping Connections* (blog), 2022, accessed October 3, 2023, <https://www.china-mena-connections.org/blog/from-gallons-to-gigabytesnbspchinas-digital-silk-road-and-the-arab-worldnbspnbsp>.

126 USIP, "China's Impact on Conflict Dynamics in the Red Sea Arena," *United States Institute of Peace* (United States Institute of Peace, April 27, 2020), accessed October 3, 2023, <https://www.usip.org/publications/2020/04/chinas-impact-conflict-dynamics-red-sea-arena>.

127 Jonathan Fulton, Degang Sun, and Naser Al-Tamimi, "China's Great Game in the Middle East," ed. Camille Lons, ECFR, October 21, 2019, accessed October 3, 2023, https://ecfr.eu/publication/china_great_game_middle_east/.

The PRC's potential to exploit civilian infrastructure for intelligence collection,¹²⁸ or to facilitate military access for Chinese military ships presents cause for concern.¹²⁹ Additionally, there is anxiety over the possibility that China could utilize civilian shipping to transport military supplies. These Western concerns arise from the Chinese strategic community's perception of civilian infrastructure. China envisions using its network of commercial ports and civilian facilities for dual-use purposes, including intelligence gathering and logistical support to aid the PLA in its overseas missions.¹³⁰ China's global expansion has placed new responsibilities on the PLA that actually surpass its overseas operational capacity. The disparity between these new responsibilities and the lack of infrastructure to support them led the PLA to look to China's commercial strongholds, such as ports built, operated, or owned by the PRC as an appealing (temporary) substitute, enabling it to compensate for its otherwise limited overseas presence. As Isaac Kardon has noted, the Chinese strategic community has increasingly referred to these commercial ports as "overseas strategic strongpoints" that can support the PLA's overseas missions and operations in times of need.¹³¹ Officially, these commercial ports are officially recognized as serving an array of functions, including military ones. According to Kaldon, Zheng Chonhway, a former PLA engineer, presented China's strategic stronghold model at the Maritime Power Strategy Forum held in Xiamen in late 2016 and emphasized that in addition to their various civilian functions serving economic interests, commercial ports are intended to support "intelligence collection," "marine monitoring," and "military operations and military operations other than

128 Isaac Kardon, "China's Military Diplomacy and Overseas Security Activities," Carnegie Endowment for International Peace, January 26, 2023, accessed October 3, 2023, <https://carnegieendowment.org/2023/01/26/china-s-military-diplomacy-and-overseas-security-activities-pub-89687>.

129 Zachary Hutchings, "Chinese Maritime Expansion and Potential Dual-Use Implications on Critical Maritime Chokepoints," National Geospatial-Intelligence Agency, July 20, 2021, accessed October 3, 2023, https://www.tearline.mil/public_page/bri-maritime-dual-use-hypothetical#overview. "Military and Security Developments Involving the People's Republic of China 2020," *U.S Department of Defense* (Office of the Secretary of Defense, 2020), accessed October 3, 2023.

130 Isaac B. Kardon, "China's Overseas Base, Places, and Far Seas Logistics," in *The PLA beyond Borders: Chinese Military Operations in Regional and Global Context*, ed. Joel Wuthnow et al. (Washington D.C., United States of America: National Defense University Press, 2021), 74, <https://ndupress.ndu.edu/Publications/Books/PLA-Beyond-Borders/>.

131 *Ibid.*, 77.

war.” Consequently, China’s strategic strongholds are specifically designed to establish a symbiotic relationship between the expansion of China’s Maritime Silk Road and the growth of the Chinese Navy’s outreach, escort capabilities, and combat effectiveness.¹³²

Concerns have also been raised regarding China’s extension of civilian infrastructure in MENA, including a significant network of Beijing-built or financed ports, pipelines, roads, railways, industrial parks, and even complete cities. Since 2013, MENA has witnessed the completion of over two hundred large-scale infrastructure and energy projects by China.¹³³ As of 2021, a significant 19 percent of commercial ports built, operated, or owned by China were located in the Mediterranean area, making it the second-highest concentration of Chinese ports after the Indian Ocean (27 percent).¹³⁴ A notable example is the Khalifa port in the UAE, located north of Abu Dhabi. This port operates under a 35-year agreement as part of China’s BRI expansion. The presence of a Chinese shipping conglomerate at the port has sparked worries from Washington about China’s activities there. U.S. officials have expressed their concerns, citing intelligence leaks indicating the purported construction of a secret facility by the PLA at the Khalifa port.¹³⁵ 2022-2023 Pentagon documents leaks also revealed U.S. apprehensions surrounding China’s reputed “Project 141,” an initiative apparently aiming to establish five overseas military bases and ten logistics support sites by 2030, all intended to serve China’s strategic interests.¹³⁶ However, it is worth noting that as of now, the actual realization of these assessments and plans remains uncertain and yet to be seen.

From an air domain perspective, the impact of the regional civilian infrastructure and assets that China has invested in, such as commercial ports, smart cities, and industrial parks, initially and mainly motivated by economic reasons,

132 Ibid, 79.

133 Gering, “Full Throttle in Neutral: China’s New Security Architecture for the Middle East.”

134 Isaac B. Kardon, “China’s Overseas Base, Places, and Far Seas Logistics,” in *The PLA beyond Borders: Chinese Military Operations in Regional and Global Context*, ed. Joel Wuthnow et al. (Washington D.C., United States of America: National Defense University Press, 2021), 78, <https://ndupress.ndu.edu/Publications/Books/PLA-Beyond-Borders/>.

135 John Hudson, Ellen Nakashima, and Liz Sly, “Buildup Resumed at Suspected Chinese Military Site in UAE, Leak Says,” *The Washington Post*, April 26, 2023, accessed October 4, 2023, <https://www.washingtonpost.com/national-security/2023/04/26/chinese-military-base-uae/>.

136 Ibid.

is of primary concern. In addition, these developments may also affect air operations in the area. With the significant expansion of Chinese civilian infrastructure in the region (figure 11), air forces operating in the same airspace may soon find themselves compelled to consider Chinese interests during their operational planning.



Figure 11: Chinese Investments in MENA Infrastructure
 Source: Elrom Center for Air and Space Studies

Technology Transfers to MENA Countries

The second vector of China’s expanding presence in MENA is technical cooperation with local states, mainly in the civilian domain, focusing on communication, AI, digital technology, cyber, and space. In this sector, China’s technological know-how is particularly attractive to local countries clearly seeking economic diversification, including a transition to the digital economy.

Tech Routes to MENA

GCC countries are trying to transition from a hydrocarbon revenue-dependent economy to a capital- and technology-based one.¹³⁷ For them, China’s fifth- and sixth-generation communication technology, cloud computing, and

137 KN Pandita, “China Takes The ‘Tech Route’ To Boost Ties with the Middle East; US Looks at Beijing-Gulf Synergy with Alarm,” *The EurAsian Times*, December 4, 2022, accessed October 4, 2023, <https://www.eurasiantimes.com/china-takes-the-tech-route-to-boost-ties-with-the-gulf-nations/>.

cybersecurity are critical elements for supporting this transition. Among MENA countries, Egypt, Saudi Arabia, Turkey, and the UAE have already signed Digital Silk Road MOUs (Memoranda of Understanding) with Beijing. While MOUs are mainly declarative documents, they nevertheless indicate the intention of the signatories to advance their cooperation in this domain. Moreover, China and its leading provider of ICT infrastructure, Huawei, are already playing a central role in the digital transformation strategies of Saudi Arabia, Morocco, Egypt, and the UAE.¹³⁸

China's Space Silk Road in MENA

China, which has risen as a major space power, is an attractive provider of space technology solutions to MENA countries. Beijing has signed several space agreements with Algeria (2016), Saudi Arabia (2017), the UAE (2018), and Egypt (2019). To what extent these agreements – which include space exploration, satellite development, and space launches – will lead to tangible collaborative projects or are mainly declarative is yet to be seen. However, their existence testifies to the growing appeal of China as a global provider of space technology, China's increased interest in cooperating with MENA countries in the space domain, and the growing willingness of MENA actors to turn to China to boost their space capabilities.

Of notable interest among the different indications of potential growing cooperation between China and MENA countries in space is the rapidly growing partnership of China with Saudi Arabia and the UAE. China assisted in establishing a joint space center in Riyadh in 2018 and later in 2018, with two Saudi-designed earth-observation satellites launched from China as part of this project.¹³⁹ In 2017, the King Abdulaziz City of Science and Technology and the China National Space Administration signed an MOU regarding joint

138 China's extensive technology transfers to MENA countries and its expanding digital footprint fall outside the scope of this research that is limited to the air domain. For a detailed overview of contracts and agreements signed in the field, see: Dale Aluf, "China's Digital Footprint Grows in the Middle East & North Africa," Mapping Global China, accessed October 4, 2023, <https://mapglobalchina.com/chinas-digital-footprint-grows-in-the-middle-east-north-africa/>.

139 "Two Saudi-Designed Satellites Launch into Space," *Arab News*, December 8, 2018, accessed October 4, 2023, <https://www.arabnews.com/node/1417021/saudi-arabia>.

space missions;¹⁴⁰ as a result, Saudi Arabia took part in the Beijing-initiated Chang'e-4 Moon mission in 2018.¹⁴¹

Moreover, China has established a foundation for expanding cooperation in space and space technology with the UAE. In September 2022, the China National Space Administration signed an MOU with the UAE's Mohammed bin Rashid Space Centre to collaborate on joint space projects, including future lunar missions.¹⁴² Two months later, in December 2022, during the first China-GCC summit held in Riyadh, president Xi emphasized his country's ambition to increase space collaboration with the Saudis and Emiratis, declaring that "China stands ready to work with GCC countries on remote sensing and communications satellites, space utilization, aerospace infrastructure, and the selection and training of astronauts."¹⁴³ It should be noted that those declarations signal mainly China's intention of deepening space cooperation with GCC countries rather than a comprehensive plan of action.

Additionally, it is noteworthy that China's collaboration with Egypt in the space domain is growing. In 2023, Beijing provided a set of satellites to Cairo in the framework of a larger space cooperation program, designed to transfer space technology and know-how to Egypt. The stated goal is to develop Egypt's capacity to assemble, integrate and test satellites, and ultimately develop its own aerospace industry.¹⁴⁴

China's emerging cooperation in space and space technology with MENA countries reflects its growing ambition to establish a new Space Silk Road, otherwise referred to as a "Belt and Road Initiative Space Information Corridor." China's Space Silk Road would be developed among the BRI states and would

140 "Saudi Arabia to Contribute to China's Chang'e-4 Moon Mission," SpaceWatch, accessed October 4, 2023, <https://spacewatch.global/2017/03/saudi-arabia-contribute-chinas-change-4-moon-mission/>.

141 "Saudi Arabia Takes Images of Moon in Joint Mission with China," *Arab News*, June 15, 2019, accessed October 4, 2023, <https://www.arabnews.com/node/1322351/saudi-arabia>.

142 Neesha Salian, "UAE, China Sign MoU to Collaborate on Joint Space Projects," *Gulf Business*, September 18, 2022, accessed October 4, 2023, <https://gulfbusiness.com/uae-china-sign-mou-to-collaborate-on-joint-space-projects/>.

143 Andrew Jones, "China Looks to Build Space Partnerships with Gulf Nations," SpaceNews, December 30, 2022, accessed October 4, 2023, <https://spacenews.com/china-looks-to-build-space-partnerships-with-gulf-nations/>.

144 Andrew Jones, "China Looks to Build New Space Partnerships with Egypt Satellite Project," SpaceNews, June 29, 2023, accessed October 4, 2023, <https://spacenews.com/china-looks-to-build-new-space-partnerships-with-egypt-satellite-project/>.

complement the already existing land-based Silk Road and Maritime Silk Road.¹⁴⁵ It would include China's growing outreach in earth observation, communications, navigation, and positioning as well as product development (Key Areas for Future Cooperation, 2016).¹⁴⁶ At the heart of the Space Silk Road initiative lies the BeiDou navigation and positioning system, which has positioned itself as a new competitor to the U.S. Global Positioning System—GPS, Europe's Galileo, and Russia's Glonass.

China's cooperation with Iran in space began much earlier than that with the Gulf countries. As far back as 1998, Iran had already signed agreements with China (and Russia) to collaborate on the design, construction, and launch of satellites.¹⁴⁷ Since then, Beijing has been assisting Tehran in developing satellites and launching satellites, and providing technologies and expertise that can be used for accuracy in space but also in missiles.¹⁴⁸

Following the U.N. Security Council's passage of Resolution 2231 endorsing the 2015 nuclear deal between Iran and a group of world powers and lifting international sanctions on Iran, Chinese arms transfers to Iran came to a near halt. The resolution did maintain the ban on transferring conventional arms to Iran for five years or until the United Nations could confirm that all of Iran's nuclear activities were for peaceful purposes. Despite the arms transfer restrictions, Iran managed to acquire advanced military technology from China in the space domain. In October 2015, an important agreement was signed between the Iranian defense electronics company, Salran, and Chinese defense and aerospace companies, enabling Iran to utilize China's BeiDou 2 Navigation Satellite System. The deal apparently involved incorporating BeiDou satellite positioning, navigation, and timing (PNT) equipment into Iranian missiles,

145 "SWMEThemes: China's Space Silk Road and the Middle East – What Is the Chinese Space Silk Road?," SpaceWatch, accessed October 4, 2023, <https://spacewatch.global/2017/08/swmethemes-chinas-space-silk-road-middle-east-chinese-space-silk-road/>.

146 Ibid.

147 John Krzyzaniak, "Part 1: Explainer – Iran's Space Program," The Iran Primer, August 9, 2022, accessed October 4, 2023, <https://iranprimer.usip.org/blog/2022/jun/03/explainer-irans-space-program>.

148 Arie Egozi, "Iran's Space Program to Accelerate with Support from China and Russia," Raksha Anirveda, June 19, 2021, accessed October 4, 2023, <https://raksha-anirveda.com/irans-space-program-to-accelerate-with-support-from-china-and-russia/>.

UAVs, and other military assets.¹⁴⁹ The Beidou 2 system, a competitor to GPS systems, can enhance the accuracy, effectiveness, and lethality of missiles and drones, became operational in 2020. Iran gained access to the BeiDou 2 system in 2021, making it one of only two countries with such access, the other being Pakistan.¹⁵⁰

Transfer of Cyber Technology

China has also expanded its role as a high-tech technology provider across the region, particularly in the fields of digital technology and, to some extent, cybersecurity. Concerning the latter, China has signed cyber cooperation agreements with Saudi Arabia and the UAE, which include, among other things, joint research and information sharing. These developments and China's growing regional interests expanded in 2021 when China and the Arab League signed a data security cooperation initiative.¹⁵¹

Chinese and Iranian relations have grown significantly in cybersecurity, including bolstering defensive, surveillance, and tracking capabilities (in 2012, for example, Chinese companies assisted the Iranian regime in tracking down citizens).¹⁵² Since then, the collaboration has gradually deepened. As a result of Western sanctions against Iran, China has gradually taken advantage of the vacuum left by the Western sanctions to become Iran's main supplier of cyber infrastructure.¹⁵³

149 "Iran and China Defence and Intelligence Cooperation: The Space Dimension," SpaceWatch, November 2016, accessed October 4, 2023, <https://spacewatch.global/2016/11/irans-growing-dependency-on-chinas-beidou-satellite-navigation/>.

150 "Iran & China: Military Ties," The Iran Primer, June 28, 2023, accessed October 4, 2023, <https://iranprimer.usip.org/blog/2023/jun/28/iran-china-military-ties>.

151 "China-League of Arab States Cooperation Initiative on Data Security," Ministry of Foreign Affairs of the People's Republic of China, March 29, 2021, accessed October 4, 2023, https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/2649_665393/202103/t20210329_9170559.html.

152 Steve Stecklow, "Special Report: Chinese Firm Helps Iran Spy on Citizens," *Reuters*, March 22, 2012, accessed October 4, 2023, <https://www.reuters.com/article/us-iran-telecoms-idUKBRE82L0B820120322>.

153 Ghazal Vaisi, "The 25-Year Iran-China Agreement, endangering 2,500 Years of Heritage," Middle East Institute, March 1, 2022, accessed October 4, 2023, <https://www.mei.edu/publications/25-year-iran-china-agreement-endangering-2500-years-heritage>.

China's increasing technology transfers in MENA may have several operational implications.

First, and most importantly, these technologies are dual-use, raising concerns about their potential military applications. As mentioned in Chapter 3, China's economic and industrial development has relied on the fusion of the civilian and military sectors, giving rise to uncertainties and suspicions regarding the military potential of its otherwise civilian technologies.

Second, China's transfer of communication technology to MENA countries might boost the recipients' surveillance capabilities, a topic often raised in the U.S. security establishment, but which falls beyond the scope of this report on the air domain.

Third, and more significantly for this study, China is likely to enable MENA countries to develop weapons based on dual-use Chinese technology through technological cooperation. China may accelerate the technological development of MENA countries and diversify their technological capabilities in sectors likely to shape the dynamics of the future battlefield, such as communication, cyber, space, and AI. For example, legitimate cyber cooperation limited to cybersecurity and surveillance capabilities may enable recipient countries to develop offensive cyber capabilities that could affect the regional operational environment. To date, there is no conspicuous indication that China has transferred offensive cyber capabilities, but at least hypothetically, such a possibility exists and needs to be accounted for by the air forces operating in the region. This applies to Iran as well, whose cooperation with China in space and space surveillance may allow it to develop new military capabilities or upgrade existing ones.¹⁵⁴

Furthermore, Iran relies on Chinese technology to enhance its military capabilities, such as the Chinese BeiDou satellite system for precision targeting and navigation, which could serve as force multipliers for Iranian systems.¹⁵⁵ Finally, as noted in Chapter 3, the possible supply of Chinese satellite services to Iran will enable it to strengthen its air defense capability. As a result, the air forces operating in the area must strengthen their capabilities to face such a

154 Interview with a senior China expert, Washington, DC, July 2022.

155 "Iran and China Defence and Intelligence Cooperation: The Space Dimension."

challenge, especially if China transfers systems for exo-atmospheric missile launches to Iran.

Arms Transfers

China's arms exports to MENA countries are much more limited than those of the great powers, accounting for only a small proportion of China's global military exports.¹⁵⁶ Nevertheless, China's military exports to MENA have increased since the second decade of the 21st century, mainly since 2015, elevating China to the rank of fifth or sixth largest military exporter to the MENA region in 2023.¹⁵⁷ It should be noted, however, that while China's rise in relative terms has been significant, its share of the market has remained negligible in absolute terms.

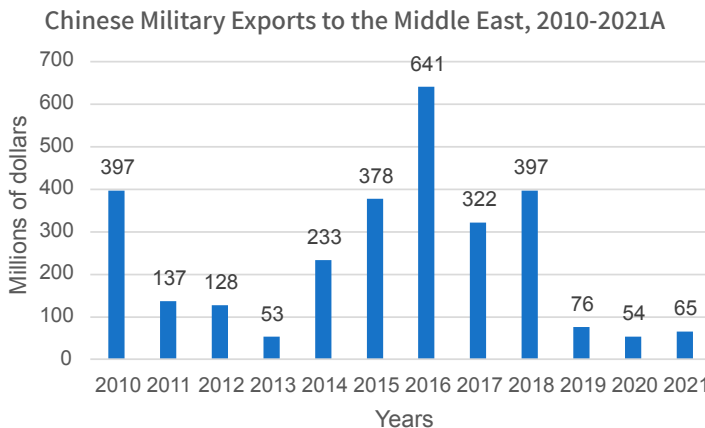


Figure 12: TIV of arms exports from China, 2010-2021 by recipient country¹⁵⁸
Source: SIPRI

156 In terms of sources, it should be noted that publicly available data about China's technology and arms exports paint an incomplete picture. First, China's increasing fusion of its civilian and military sectors, along with its strategy of exporting advanced dual-use technologies, tends to blur the distinction between civilian and military exports and makes it difficult to track the exact scale of Chinese security-related exports to the region. Second, the sources do not necessarily include the full scope of military technology transfers and transactions operated between Beijing and regional actors.

157 Hiddai Segev and Ofer Riemer, "Not a Flood, but a Rising Current, Chinese Weapons Sales to the Middle East", in Assaf Orion and Galia Lavi (eds), *China-Israel Relations: Opportunities and Challenges* (Ramat Aviv, Institute for National Security Studies, 2019), 80-97. <https://www.inss.org.il/wp-content/uploads/2019/08/Hiddai.pdf> [accessed: June 20, 2023].

158 SIPRI, "TIV of Arms Exports from China, 2010-2021" (Stockholm International Peace Research Institute, Unpublished), https://armstrade.sipri.org/armstrade/html/export_values.php.

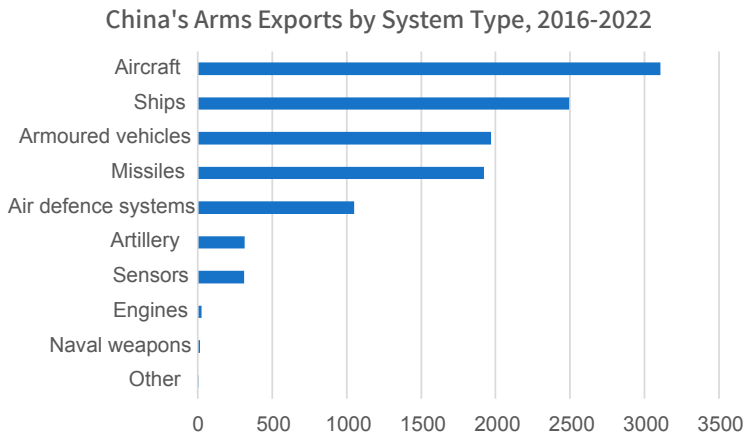


Figure 13: TIV of arms exports from China, 2016-2022 by weapon category¹⁵⁹
Source: SIPRI

China's main arms purchasers between 2011 and 2022 were Saudi Arabia, Sudan, the UAE, Iran, Iraq, Turkey, and Egypt, in decreasing order.¹⁶⁰ It is important to note that while China has increased its arms exports, there is still debate about the quality and reliability of these weapons. First, they are generally perceived as less reliable due to their relatively poor quality, maintenance problems, and lack of operational testing on the battlefield.¹⁶¹ In addition, they have rarely been used by Middle Eastern countries, leaving many experts with unanswered questions regarding their quality and reliability.¹⁶² These factors may explain why China's arms exports remain low to date in absolute terms.

159 SIPRI, "TIV of Arms Exports from China, 2016-2022," Data set (Stockholm International Peace Research Institute, Unpublished), https://armstrade.sipri.org/armstrade/html/export_values.php.

160 Grant Rumley, "China's Security Presence in the Middle East: Redlines and Guidelines for the United States," *The Washington Institute* (The Washington Institute for Near East Policy, October 18, 2022), accessed October 4, 2023, <https://www.washingtoninstitute.org/policy-analysis/chinas-security-presence-middle-east-redlines-and-guidelines-united-states>.

161 Remarks by Maj. Gen. Rajiv Narayanan, Elrom-Usanas Foundation Dialogue, July 2022.

162 Prakash Nanda, "Cheaper, But Not Reliable: Why Chinese Weapons Are Fast Losing 'Edge' In Global Arms Export Market Despite Tall Claims," *EurAsian Times*, January 7, 2022, accessed October 4, 2023, <https://www.eurasiantimes.com/chinese-weapons-are-losing-edge-in-global-arms-market/>.

However, Beijing has identified niche markets in which it has a comparative advantage over the United States and Russia.¹⁶³ Chinese systems are valued because of their comparative technological advantage, particularly in unmanned aerial vehicles (UAVs). China has forged a leading position for itself in this field over the past two decades, in the Middle East in particular. China has provided armed drones and anti-drone systems to Saudi Arabia, the UAE, Egypt, Iraq, and Jordan.¹⁶⁴ Those niche exports have an additional comparative advantage for the Gulf countries' air forces because they do not pose interoperability problems with U.S. technologies. For example, the Saudi and Emirati Air Forces have used Chinese drones mainly for surveillance and reconnaissance, without encountering interoperability issues with U.S. technology.¹⁶⁵

China's drone production provides comparable capabilities to that of its Western counterparts (intelligence gathering, long-range, precision, and low signature operations). However, as mentioned in the previous chapter, China's distinct comparative advantage lies in its promising future development. China has embarked on the fast-paced development of drones by mobilizing civilian bodies, including top universities that, by working together, have accelerated the pace of development and improved the sophistication of China's drone industry, especially in terms of autonomous tools, AI-operated drones, and drone swarms operating in conjunction with manned aircraft.¹⁶⁶ The latter models are not yet operational but their future availability makes China an increasingly attractive potential partner for MENA countries, especially given that China has not hesitated about selling drones together with their production technologies and that the United States has refrained thus far

163 April Herlevi, "China as a Niche Arms Exporter," *CNA* (blog), August 31, 2021, accessed October 4, 2023, <https://www.cna.org/our-media/indepth/2021/08/china-as-a-niche-arms-exporter/>.

164 Atul Chandra, "Why China's Armed UAVs Are a Global Export Success, and Its Fighter Jets, Not so Much," *Defence Procurement International*, November 5, 2021, accessed October 4, 2023, <https://www.defenceprocurementinternational.com/features/air/china-has-disrupted-the-military-drone-market#:~:text=Chinese%20defence%20exports%20have%20been,markets%20for%20military%20drone%20exports.>

165 Interview with Jeffrey Payne, Washington, DC, July 2023.

166 Patrick Carroll, "Investigating Potential Uses of Swarm Logic in Civilian and Military Unmanned Systems," *Patrick Carroll* (blog), May 23, 2021, accessed October 4, 2023, <https://pcarroll2525.com/2021/05/23/investigating-potential-uses-of-swarm-logic-in-civilian-and-military-unmanned-systems/>.

from selling drones to security partners in the region¹⁶⁷ From an air domain perspective, in the near future, this trend could empower some countries that previously did not represent any threat in the field of UAVs within the regional operational environment, mostly due to China's autonomous drone swarm development.

China's exports of arms and technologies exports have evinced different dynamics and logics in the Gulf countries, Iran, and North Africa, which we shall examine in the following subsections.

China's Arms Exports to the Gulf States

China's role in arms transfers to the Gulf states has been overshadowed by the United States, which remains the leading supplier. However, this assessment may not capture the full extent of Chinese exports, and the quality of Chinese-manufactured weapons could alter it. China's arms exports to the Gulf are partly driven by the Gulf states' need to rapidly build their military capabilities, especially in the face of U.S. hesitation about exporting certain weapons and advanced technologies. China has taken advantage of this vulnerability and urgency by providing the Gulf states with surface-to-surface missiles, advanced laser weapon systems, and armed drones.¹⁶⁸ Additionally, China has established joint ventures to enhance co-production, such as the partnership with Saudi Arabia for manufacturing CH-4 UAVs and their joint venture for military drone design and production in the Kingdom.¹⁶⁹

From the perspective of the Gulf States, it is probable that China is not an alternative to the United States (despite the U.S. Republican narrative of "displacement"), and they understand that there is no real substitute to the F-35 for their national security. Gulf countries mainly look to China as a supplier of low-cost arms and refuse to see their relations with the United States and China as a zero-sum game, whereas the United States insists on framing those relations as such.¹⁷⁰

167 Rumley, "China's Security Presence in the Middle East: Redlines and Guidelines for the United States."

168 Hiddai Segev and Ofer Riemer, *Ibid.*

169 Helou, "Chinese and Saudi Firms Create Joint Venture to Make Military Drones in the Kingdom."

170 Remarks by Commodore Gopal Suri, Elrom-Usanas Foundation Dialogue, July 2022.

China's Arms Exports to Iran

China has long been an exporter of arms to Iran, reaching back to the Iran-Iraq war in the 1980s, during which China equipped Iran with large quantities of weaponry. China's arms exports to Iran came to almost a complete halt following the conclusion of the JCPOA (Joint Comprehensive Plan of Action) in 2015. However, as Tuvia Gering notes, China seems to have continued to supply Iran with anti-ship technologies, armored personal carriers (Type-86), and shoulder-held missiles (MANPADS) for years after the UN embargo was imposed by exploiting a loophole relating to orders placed before 2006.¹⁷¹ The transfer of such technologies to Iran, along with surface-to-surface missile systems that have bolstered Iran's capacity in the Strait of Hormuz could affect air forces operating in the region.

Iran represents a significant commercial and strategic asset for China. Iran holds strategic importance due to its potential as a land route for China's access to the European continent. Additionally, in the event of the expansion of the PLAN, Iran could also emerge as a valuable partner in facilitating such endeavors. For example, the Iranian port of Chabahar became an asset for the BRI to be connected to the Chinese-led Pakistani port of Gwadar. Such developments have the potential to provide China with increased power projection and intelligence capabilities in the region.¹⁷²

China's Arms Exports to North Africa

In North Africa, China is perceived positively as a superpower with neither a colonial history nor colonial ambitions, and as a "genuine" and constructive counterpart for fair cooperation. China also engages in military cooperation with North African countries, which has increased significantly over recent years.¹⁷³ By developing joint ventures and cooperation with China, North

171 Tuvia Gering and Jason M. Brodsky, "Not 'Business as Usual': The Chinese Military's Visit to Iran," Middle East Institute, May 16, 2022, accessed October 4, 2023, <https://www.mei.edu/publications/not-business-usual-chinese-militarys-visit-iran>.

172 Soroush Aliasgari and Marin Ekstrom, "Chabahar Port and Iran's Strategic Balancing with China and India," The Diplomat, October 21, 2021, accessed October 4, 2023, <https://thediplomat.com/2021/10/chabahar-port-and-irans-strategic-balancing-with-china-and-india/>.

173 Dr. Sarah Feuer, "China in North Africa," remarks delivered in the framework of a webinar held between the Elrom Center for Air and Space Studies and the Usanas Foundation, 2022.

African countries reduce their reliance on Western alliances and seek to expand their technological infrastructure and to improve the overall quality of life in the region.

Until recently, Chinese military exports to Algeria included mainly small arms, but in recent years, these exports have gradually increased both in the volume and quality of exported arms. Algeria has received several advanced armaments from China, such as YJ-12B anti-ship cruise missiles,¹⁷⁴ C-803 anti-ship missiles, CH-4 UAVs, DWL-002 passive radar systems,¹⁷⁵ and Type-056 frigates, among others. The sale of new naval vessels, including changes in long-range air defense capabilities (at a technological level of S-300 or Patriot), could affect an air force operating in the region and require attention to developing warning and ECM systems. It is noteworthy that Algeria encountered some challenges regarding the quality of certain arms imported from China, particularly the CH-4 drones, which experienced crashing incidents in 2021.¹⁷⁶

China sees Egypt as a significant actor in the BRI. Located on the Suez Canal, the country controls a major trade route within the BRI. China has a critical role in President El-Sisi's 2030 vision, which aims to achieve an economic and social breakthrough in the country. Chinese corporations have invested heavily in mainly infrastructure and energy-related projects throughout Egypt, estimations of its investments there alone reaching some USD7 billion in 2021 alone. China and Egypt also hold joint military exercises in the Red Sea, and Egyptian military purchases from China since the 2000s have focused mainly on armed drones, which, in the short term, do not constitute a significant challenge to air forces operating in the region.¹⁷⁷

Overall, there has been a notable increase in relative terms in Chinese arms exports to MENA countries, which potentially strengthens China's position

174 Kazim Abdul, "Algeria Strengthens Coastal Defence with Deadly YJ-12B Anti-Ship Cruise Missile," *Military Africa*, May 20, 2022, accessed October 4, 2023, <https://www.military.africa/2022/05/algeria-strengthens-coastal-defence-with-deadly-yj-12b-anti-ship-cruise-missile/>.

175 "The Chinese Anti-Stealth DWL 002 Detection System Deployed in Algeria," *MENA Defense*, December 1, 2019, accessed October 4, 2023, <https://www.MENAdefense.net/algeria/the-chinese-anti-stealth-dwl-002-detection-system-deployed-in-algeria/>.

176 "Chinese CH-4B Drones Keep Crashing in Algeria for Technical Fault," *Global Defense Corp*, March 11, 2021, accessed October 4, 2023, <https://www.globaldefensecorp.com/2021/03/11/chinese-ch-4b-drones-keep-crashing-in-algeria-for-technical-fault/>.

177 Hiddai Segev and Ofer Riemer, *Ibid.*

as a valuable partner in these nations' strategic national development in various domains, including the military sector. Despite the low quality and poor reliability of Chinese arms, the potential for MENA countries to further rely on Chinese arms transfers and co-production could be influenced by four significant factors:

- The local countries' pressing demands for advanced technology and China's increasing focus on the Middle East for arms exports due to the potential disruption of other transportation corridors for China's arms transfers.
- China's transactional approach to arms and technology transfers in MENA paves the way for increasingly problematic Chinese transfers to the region in the near future.
- The gradual U.S. disengagement from the Middle East and its potential impact on its exports to the region.
- The consequences of the war in Ukraine on Russia's ability to maintain a significant and high-quality level of exports to the Middle East.

Operationally, China's arms exports to MENA may have several operational implications that air forces operating in the area should consider:

First, despite their limited scope and low quality, Chinese arms exports have increased the number of drones, missiles, artillery systems, and certain other categories of weapons present in MENA. At this juncture, this increase remains inconsequential. However, any future increases in Chinese exports could affect the freedom of action of air forces operating in the area. For example, should China continue to flood MENA countries with low-cost and easily available drones, the proliferation of UAVs may compel the air forces operating in the area to mobilize resources needed for other operations.

As previously mentioned, Chinese arms exports, combined with technology exports, may also contribute to upgrading and diversifying the MENA countries' defensive and offensive capabilities and help them acquire, develop, and produce weapons considered essential in future warfare, such as drones with integrated AI technology. Because China's exports are less expensive and easily available, they may boost and diversify the force buildup of countries with limited budgets and poor infrastructure.

Emerging Military Presence

China's emerging military presence in MENA is characterized by increased defense cooperation with MENA countries and the slow (and still very limited) establishment of a military presence (base and anti-piracy operations).

China has expanded its partnerships, entering into agreements for comprehensive security partnerships with pivotal states in MENA (Saudi Arabia, the UAE, Iran, Algeria, Egypt) and strategic partnerships across the region. The content of those partnership agreements is not available, giving rise to considerable speculation. The proliferation of these defense cooperation agreements testifies primarily to the increasing interest of China and regional actors in deepening their cooperation, including in the security field. China and Iran have also signed a strategic cooperation deal estimated at USD400 billion over 25 years. However, with its details remaining confidential, it is unclear what China's main investments in the country will be and what amount will be allocated to weapons production, infrastructure, or Iran's nuclear program.¹⁷⁸

Of note is the growing cooperation between China, Russia and Iran, in the global and regional arenas, as exemplified by the joint military drills that China has conducted with Iran and Russia in the MENA region.

China and Iran have conducted joint military drills since their first joint naval exercise in 2014.¹⁷⁹ The strategic agreement between the two countries, signed in 2021, may strengthen these ties and expand their military cooperation.¹⁸⁰ Indeed, in March 2023, China, Iran, and Russia held a joint military exercise in the Gulf of Oman for five days.¹⁸¹ Joint China, Iran, and Russia drills are intended to deter the United States and its allies and to project Chinese power in the region. This cooperation may also strengthen Iran's strategic position in the Persian Gulf, where we have seen growing Iranian engagement with

178 Remarks by Maj. Gen. Rajiv Narayanan, Elrom-Usanas Foundation Dialogue, July 2022.

179 Hiddai Segev, "China and Iran: Resurging Defense Cooperation?", Institute for National Security Studies, May 10, 2021, accessed October 4, 2023, <https://www.inss.org.il/publication/china-iran/>.

180 Vaisi, "The 25-Year Iran-China Agreement, Endangering 2,500 Years of Heritage."

181 Dion Nissenbaum and Chun Han Wong, "China, Russia, Iran Hold Joint Military Drills in Gulf of Oman," *WSJ*, March 15, 2023, accessed October 4, 2023, <https://www.wsj.com/articles/china-russia-iran-hold-joint-military-drills-in-gulf-of-oman-aba5f55e>.

the RQ-4 Global Hawk interception, the Aramco attack, and interference with ships using the Gulf trade routes.

China has also conducted military drills and exercises with Saudi Arabia and the UAE. The goals are mainly improving military cooperation between the countries, strengthening counter-terrorism capabilities and promoting defensive capabilities to achieve regional stability.¹⁸²

The foregoing represents just a small sample of Chinese military-technical cooperation in the region. Based on this, some conclusions can be drawn:

- China-Iran cooperation is long-lasting and on a different scale than China's cooperation with other countries in the region. The level of China-Iran partnership might grow as a result of the deepening conflict between the United States and Iran over the future of the Middle East.
- The other main partners are the oil-rich countries, Saudi Arabia and the UAE.
- Over the years, China's involvement in the region has grown in many fields that are not directly related to economic interests.

An additional vector of China's security inroads in MENA is the expansion of its military presence. For all China's alleged military basing ambitions (establishment of a military base in Djibouti in 2017 and a purported – and later abandoned – project of building a military base in a port north of Abu Dhabi), one should note that the reassertion of Pax Americana may limit Beijing's presence in MENA, and that China lacks a chain of military bases essential for maintaining a sustained military presence across the region.¹⁸³

From a U.S. perspective, however, China's military expansion in MENA, however minor and insignificant it may be at the time of writing, represents a “mind-blowing” development.¹⁸⁴ Military deployment and bases in the region once seemed imaginary, but after the launch of the BRI and with its growing global interests, Chinese military presence seems positioned to secure China's wider economic interests. Therefore, the question is not whether China will

182 Yoel Guzansky and Assaf Orion, “Slowly but Surely: Growing Relations between Saudi Arabia and China,” INSS, January 29, 2017, accessed October 4, 2023, <https://www.inss.org.il/publication/slowly-surely-growing-relations-saudi-arabia-china/>.

183 Interview with Professor Jonathan Fulton, July 2023.

184 Interview with a senior China expert, Washington, DC, July 2022.

increase its military presence but rather, to what extent and where the PLA will be deployed to sustain China's regional expansion.

The growing naval presence of China in the larger Middle East, particularly in the Gulf of Aden, holds significant importance. China has been actively conducting numerous anti-piracy operations in the region, further strengthening its maritime engagement. As a response to a series of murders and kidnappings targeting Chinese expatriates and sailors, the PLA has provided escort services to over seven thousand Chinese and foreign ships, deploying forty-one task forces from 2008 to 2023. China's anti-piracy endeavor has not only safeguarded maritime security but has also contributed to refining the Chinese navy's experience and capabilities.¹⁸⁵

China has also promoted its presence and interests along the shores of the Red Sea between the Horn of Africa and the Arabian Peninsula, where it has struck a balance between an expansion of its commercial presence and its military one. China recognizes the Red Sea and the Gulf of Aden as a critical maritime corridor for ensuring the flow of Chinese goods from the Indian Ocean to the Mediterranean and as platform for deepening its economic inroads into Middle Eastern and African countries. To safeguard its interests and ensure its access to coastal facilities along the Red Sea, Beijing has expanded its regional port presence through the initiatives and activities of Chinese-state owned enterprises.¹⁸⁶

Beijing understands this zone is also critical to the United States and Russia, which have both increased their security presence in the Red Sea, the United States via its Djibouti base and Russia through its bolstered presence in port Sudan. In 2017, Beijing established its first overseas military support base in Djibouti, adjacent to a U.S. military base, Camp Lemmonier near Djibouti, serving as the Central Command of the U.S. Combined Joint Task Force – Horn of Africa, an area where Beijing has developed its infrastructure network, in part to accommodate power-projecting aircrafts and vessels.¹⁸⁷

185 Gering, "Full Throttle in Neutral: China's New Security Architecture for the Middle East."

186 Leonardo Jacopo Maria Mazzucco, "China's Dual Strategy in the Red Sea: Balancing Economic Expansion and Military Presence," Gulf International Forum, accessed October 4, 2023, <https://gulfif.org/chinas-dual-strategy-in-the-red-sea-balancing-economic-expansion-and-military-presence/>.

187 Gering, *Ibid.*

The PRC has chosen not to intervene in Iran's escalating illicit arms smuggling to its armed groups abroad and other arms purchasers via the Red Sea. Instead, it has turned a blind eye to Iran's various smuggling activities, which include ship-to-ship transfers and the use of smaller vessels in unregulated areas on the Western shore of the Red Sea. China's approach seems to prioritize maintaining a low profile in response to Iran's expanding naval presence on the Red Sea, as it has its own vested interests at stake. Despite the U.S. sanctions imposed in 2019, China has continued to purchase Iranian oil through its officially non-state, semi-independent "teapot" petrochemical refineries.¹⁸⁸

Operationally, an increased Chinese naval presence could potentially facilitate their establishment of additional military bases and the deployment of additional forces in the region. According to a RAND report, Oman, Bahrain, Saudi Arabia, Iran, and Yemen could be considered viable locations for establishing future Chinese bases.¹⁸⁹ This development would require air forces operating in the area to consider those potentially expanding Chinese military assets in their operational planning. Finally, the expansion of Chinese facilities and military presence may result in unintentional encounters and incidents with air forces operating in the vicinity, potentially restricting the latter's freedom of action.

188 "Teapot" refineries are small and privately owned. Claire Jungman and Daniel Roth, "Uncovering the Chinese Purchasers of Iranian Oil," United Against Nuclear Iran, August 30, 2023, accessed October 4, 2023, <https://www.unitedagainstnucleariran.com/blog/uncovering-chinese-purchasers-of-iranian-oil>.

189 Garafola, Watts, and Leuschner, "China's Global Basing Ambitions: Defense Implications for the United States."

CONCLUSION:

CHINA'S POTENTIAL FUTURE IMPACT ON MENA'S AIR DOMAIN

There are two main paradigms regarding China's global and regional strategic goals. The first is an alarmist narrative that warns of China's "aggressive expansionism" and its objective to "undermine the U.S. dominance," including in MENA. The second, more moderate view emphasizes China's "defensive posture" and its primary focus on protecting its economic and energy interests, whether globally or regionally. This study does not support a specific position or attempt to prove the veracity of either of the narratives.

Instead, this research report shows that China's interest in the Middle East and North Africa has grown significantly since the early 2000s for economic and commercial reasons and as part of the global great power competition. As shown in Chapter 1, China's regional interests are multifold. In the economic realm, Beijing has sought to secure access to energy sources and to expand its markets and economic partnerships. It has also endeavored to preserve its freedom of navigation along the region's sea lanes. In the context of the great powers' competition, China has looked for ways to increase its influence over and secure diplomatic support from as many states as possible, thus far with a preference for the UAE, followed by Saudi Arabia and other GCC states, all favored over Iran. Egypt, Turkey, and Israel are also considered important, each for different reasons. Yet the strengthening of alliances in the Middle East and the escalating conflict of influence between a U.S.-led coalition and an Iranian-Russian partnership, which China has aligned with, may pose a challenge to Beijing's goal of advancing its interests by engaging with all conflicting parties in the region. For both economic and strategic purposes, China has also sought to initiate possible platforms for a future military or semi-military presence and activity to defend its regional assets, particularly in the maritime domain (Western Indian Ocean, Persian Gulf, and the Red Sea).

China's presence in the Middle East and North Africa has grown steadily, mostly in the civilian sector, as illustrated in Chapters 1 and 4. As the region is one of the cornerstones of its Belt and Road Initiative, China has expanded its partnerships there, consolidating comprehensive partnerships with pivotal states in MENA (Saudi Arabia, the UAE, Iran, Algeria, Egypt). In some cases, these partnerships have strategic components, such as joint military exercises and arms transfers, installation of 5G communication infrastructure, and investments in the energy sector. It has also bolstered its political and diplomatic presence across the region, refashioning itself as a regional power broker and increasing its soft power presence by using its media, academic, cultural, and technological influence.

At the operational level, China's presence in the Middle East and North Africa has grown steadily, mostly in the civilian sector, as illustrated in Chapters 1 and 4. The region has become the cornerstone of the Belt and Road Initiative, China has expanded its partnerships, entering into comprehensive security partnerships with pivotal states in MENA (Saudi Arabia, the UAE, Iran, Algeria, and Egypt) and strategic partnerships across the region while expanding its network of Huawei 5G contracts and investing in the energy sector. It has also bolstered its political and diplomatic presence across the region, refashioning itself as a regional power broker. In addition, it has increased its soft power presence by using media, cultural, and technological tools of influence.

China's rising regional economic and political presence resonated in the security realm, primarily via Beijing's technology and arms transfers to MENA countries, the establishment of its first overseas base in Djibouti, conducting anti-piracy missions off the Horn of Africa, and holding joint military drills with Russia and Iran in the Gulf of Oman, as illustrated in Chapter 4.

Based on an analysis of China's strategy, military thinking, and modernization efforts, as well as its expansion in the global and regional arenas, **this report highlights four main factors that may affect the operational environment in MENA the foreseeable future:**

- **China's imprint on MENA's security architecture has been minimal to date but may become more significant in the coming decade.** Beijing's technology and arms transfers have remained limited in scope and quality

and have primarily focused on niche markets. China has not served as the main defense provider to any regional actors nor established any significant military presence in the region. However, given China's growing interests in the MENA region, its increasing interaction with MENA countries, the MENA region's relevance for China's world power aspirations, and its rapid technological advancement, the likelihood of a more robust Chinese presence in MENA, including in the security realm, is increasing. China's demonstrative alignment with Iran and Russia during the 2023 Hamas-Israel conflict raises questions about the future of China's engagement in the security realm in MENA and how it might impact its security cooperation with Tehran.

- **China's defense industry has transitioned from low-quality domestic production and a pronounced dependency on imported advanced technologies to well-developed domestic production characterized by increasingly advanced weaponry.** In the past, China's defense industry relied on outdated Soviet, and then Russian technology. However, China has become a developer and producer of advanced equipment and weaponry through its acquisitions of foreign military and dual-use technologies and continuous efforts to upgrade its defense industry.
- **The combination of China's advances in technology and weapon systems in attractive sectors, Russia's depleted defense industry and export capabilities, China's intensifying connections with MENA states, and Beijing's limited self-restraints regarding arms sales increases the potential for more wide-scale and higher-quality Chinese technology and arms transfers to regional actors in the foreseeable future.**

Due to limited available data, uncertainties remain regarding future technological agreements and arms transactions between China and regional actors in MENA. However, considering China's growing regional presence, advances in technology, and production of more advanced weapon systems, along with the associated risks of technology and arms transfers, it can be argued that **China might ultimately have a meaningful impact on MENA's operational environment, particularly in the air domain, through four main channels:**

1) Arms sales

Although Beijing's technology and arms transfers to MENA have remained insignificant in terms of scope and quality to date, air forces operating in the area should consider the following potential threats:

- The introduction of advanced Chinese weapons into MENA, such as upgraded unmanned aerial vehicles (UAVs) – China's main niche market in the region. While Chinese UAV systems do not pose a significant threat to U.S. allies and partners in MENA in the short term, they may do so in the mid- and longer-terms. The first challenge is quantitative. Air forces in the area may have to face a larger fleet of China-produced UAVs, which could consume operational resources needed elsewhere. Second, China has developed UAVs with advanced capabilities, including AI, which can be used as force multipliers. In addition to complete UAV systems, China can transfer UAV-integrated technological capabilities and production capacities to regional actors (as it has already done), a development that would have tangible effects on the region's operational environment.
- Potential introduction into MENA of advanced Chinese-produced or co-produced weapons, such as long-range active or semi-active radar homing seeker for surface-to-air missiles including air defense against medium range ballistic missiles and new-generation aircraft with improved performance and new air-to-air capabilities.

2) Transfer of dual-use (civilian/military) technology and military-related resources and know-how to MENA actors

China's technical cooperation in civilian sectors critical to future warfare, such as communication, cyber, space, satellite, drone, nuclear, AI, and digital technology, may accelerate MENA countries' technological development and equip them with new military-related technological capabilities.

- Air forces operating in the area should consider the possibility of Chinese communication technology being introduced into the region, increasing the threat of air-to-air and surface-to-air missiles functioning within a network of detection and launch systems.

- There should be increased attention to the Chinese providing intelligence and satellite services, particularly the BeiDou system, to actors in the MENA region. These services include earth-observation, communication and connectivity, navigation, and positioning capabilities, and even missile launch alerts. One can hypothesize that during its strategic discussions with regional players in the Middle East and North Africa (MENA), including Iran, China might offer satellite services that can be used for both civilian and military purposes. If this happens, it could potentially present new challenges for the air forces operating in the MENA region.
- The fluid and ambiguous nature of China's technological cooperation with regional actors further complicates the situation. Dual-use technologies may be introduced into MENA through multiple, direct, and indirect, channels and serve the security needs of several regional actors, particularly Iran, and, to some extent, Egypt and Saudi Arabia (within the limitations of Egypt and Saudi Arabia's partnership with the United States). Those include technology transfers, bilateral technological cooperation agreements, civilian infrastructure, or training of MENA countries' students in China.

3) Impact of Chinese or Chinese-financed civilian or dual-use infrastructure in MENA on the great powers' and regional actors' freedom of action

China's extensive investments in and operation of MENA's infrastructure facilities, such as ports, transportation networks, communication assets, power stations, and industrial plants, could place new constraints on the great powers and regional actors in the region. As a result, they may need to take Chinese interests into account when formulating their operational planning.

4) Potential Impact of China's Expanding Naval Presence in MENA

The possible emergence of the Chinese Navy as a global force, coupled with the considerable significance of the MENA region's maritime routes for China's international trade, increases the likelihood of the establishment

of a Chinese naval presence in the region in the future. Whether China will support its naval presence with bases and complement it with additional military facilities (e.g., intelligence facilities) is yet to be seen. However, this possibility cannot be ruled out. China's potential expansion of its naval presence in MENA may have multiple implications – actual and hypothetical – for air forces operating in this area. The following are the principal ones in terms of probability and expected cost:

- PLAN (China's People's Liberation Army Navy) vessels in the region could be used for intelligence gathering.
- China's expansion of its naval presence is likely to result in the establishment of additional Chinese bases across the region.
- Air forces operating in MENA might have to confront the challenge of the PRC's naval vessels and new naval threats stemming from long-range air defense capabilities that are broadly equivalent to the Russian S-300/S-400 or U.S. Patriot systems.
- If the China–United States rivalry escalates and expands beyond the Asia-Pacific region, the Middle East may become another arena of confrontation between the two.
- In the event of regional armed conflicts in MENA, China may evacuate Chinese citizens (as it did in Libya in 2011), which will place operational constraints on air forces operating in the area.
- The PRC's general approach to the use of force has been cautious and self-restrained both globally and in its regional vicinity to date. However, the expansion of its presence in MENA may lead to unintentional encounters and friction and increase the risk of miscalculations.

Currently, China's impact on the regional security architecture remains negligible. However, in the foreseeable future, **its growing presence in MENA may create palpable challenges to the air forces operating in the area.** These forces will need to anticipate the potential operational implications of China's presence in MENA by analyzing the impact of Chinese-exported capabilities on their freedom of action, monitoring the development of Chinese technological and military capabilities, and considering the associated risks raised by technology and arms transfers to the region.

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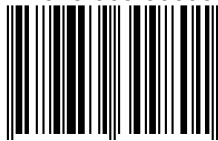
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