



Russian-Chinese Military Cooperation

AN INCREASINGLY UNEQUAL PARTNERSHIP

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Abstract

This report seeks to establish a detailed understanding of the extent of military cooperation between Russia and China, focusing on military diplomacy and other political aspects of the relationship, military-technical cooperation, and exercises and joint operations. We find that China-Russia military cooperation has not always grown linearly over time. At various points, some aspects of cooperation have undergone periods of rapid expansion, while others stagnated. After undergoing a period of rapid expansion from 2014 to 2019, Russian-Chinese military cooperation has largely plateaued in recent years, with little evidence of continued expansion in either military-technical cooperation or joint military activities since 2020. While mutual symbolic benefits suggest that both countries' leaders will continue to highlight military cooperation, in determining the trajectory of the relationship over the next three to five years, observers should focus on trends in these activities, rather than on political rhetoric.

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Public Release

3/1/2023

This work was created in the performance of Federal Government Contract Number N00014-22-D-7001.

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Approved by:



March 2023

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Executive Summary

There is widespread consensus among analysts that, although Russia and China have been moving toward closer cooperation through the entire post-Soviet era, the trend has accelerated rapidly since 2014. The relationship was boosted by Russian leaders' belief that Russia could survive its sudden confrontation with the West only by expanding alternative relationships. China was the obvious candidate because it had a suitably large economy, was not openly hostile to Russia, and was not planning to impose sanctions in response to the Ukraine crisis. Moreover, the two countries had a record of cooperation dating back to the early 1990s that could serve as a basis for expanded cooperation.

This report seeks to establish a detailed understanding of the extent of military cooperation between Russia and China, focusing on military diplomacy and other political aspects of the relationship, military-technical cooperation, and exercises and joint operations. The goal is to provide an analysis of the dynamic of the cooperative relationship in the period since 2014, including a discussion of what the relationship allows the two partners to accomplish together that they cannot do alone. On the basis of that analysis, we build a discussion of likely trends in the relationship in the near future.

This study is based on a comprehensive collection of Russian- and Chinese-language media reporting and technical articles on bilateral military ties. The analysis covers key bilateral agreements and official statements by both sides, all major arms sales and other forms of military-technical cooperation (MTC), exchanges of military personnel for education and training, joint military exercises and operations, and other relevant military-to-military engagements. The study primarily covers the period from 2014 to November 2022, though key aspects of earlier cooperation are brought in as relevant and some subsequent important developments through February 2023 are addressed.

To assess the level of Sino-Russian military cooperation, we adopt a scale that assesses levels of military cooperation based on seven issue areas, ranging from the establishment of mechanisms of regular consultation at the lowest end to the adoption of a common defense policy at the most advanced levels of cooperation. This methodology allows us to not only estimate the current level of overall military cooperation between Russia and China, but also to analyze its trajectory in the recent past and thereby estimate its potential future trajectory. In addition, by examining components of military cooperation, we can identify specific areas where it is developing faster or slower than the overall average. This examination allows for a more fine-grained analysis of developments in Russian-Chinese military cooperation.

Key findings

China-Russia military cooperation has not always grown linearly over time. At various points, some aspects of cooperation have undergone periods of rapid expansion, while others stagnated. At other points, previously growing areas of cooperation have in turn plateaued. This unevenness in the dynamic of cooperation growth has been most notable in MTC and in joint exercises and operations, while the expansion of political consultations and military diplomacy has been more constant. Despite a number of rhetorical flourishes at leadership summits, after undergoing a period of rapid expansion from 2014 to 2019, Russian-Chinese military cooperation has largely plateaued in recent years, with little evidence of continued expansion in either MTC or joint military activities since 2020.

Over the last two decades, Russia and China have developed well-institutionalized political and military consultation mechanisms that can be rated at a moderate-high level on our military cooperation scale. The most important mechanisms include numerous summits between Presidents Putin and Xi, annual bilateral security consultations at the level of the head of each country's security council and the semi-annual Northeast Asia security dialogue at the deputy foreign minister level. Since 2017, China and Russia have organized their military cooperation plans in five-year roadmaps, with the most recent such plan agreed to in 2021 and lasting through 2025.

The Putin-Xi February 2022 joint statement, made just before Russia's invasion of Ukraine, demonstrated an increase in overlap in the two sides' security concerns, with both leaders focusing on the threat posed by the United States and NATO to international security in general and to their own countries in particular. Chinese officials have refused to criticize Russia's invasion, generally blaming NATO and US threats for causing the war.

MTC grew rapidly for a brief period after 2014, but its trajectory has plateaued since 2019, as a result of the increasing self-sufficiency of China's defense industry and the impact of Western sanctions. Sino-Russian MTC continues to operate at a high level, though there is potential for further growth because some aspects of the interaction remain one-sided, with China most frequently acting as a consumer of Russian technological know-how. Even as arms sales have become a less significant aspect of the overall bilateral military cooperation relationship, joint technology projects and trade in components have rapidly become the most important line of effort in Sino-Russian MTC.

Russia and China demonstrate a high level of cooperation in military exercises and joint operations. As with other aspects of military cooperation, Sino-Russian joint military exercises and operations underwent a rapid period of expansion in the mid-2010s, with increases in the frequency and global reach of joint activities and a transition to increasingly complex exercises designed to improve coordination. As with MTC, the frequency and geography of Sino-Russian

military exercises expanded rapidly in the mid-2010s, but has largely plateaued in the last three years. However, the exercises have continued to become more advanced during this period. The lack of increases in frequency and geographic expansion since 2020 is primarily the result of constraints introduced first by the COVID-19 pandemic and later by Russia's invasion of Ukraine. While the former no longer affects bilateral military activities, the latter may continue to act as a brake on the availability of Russian military assets for exercises with China.

Implications

Russia and China derive clear benefits from their military cooperation. While the most significant benefits come in the form of mutual political support on the international stage, there are also clear benefits in terms of defense industrial production and in improvements in operational capabilities, especially for the Chinese side. There is political symbolism of Russia and China supporting each other in fighting against what they consider US efforts to preserve its global hegemony are also beneficial. Concrete actions such as arms deals and major joint exercises also have a strong symbolic component, showing that the two countries are working together to address global challenges and to strengthen each other's positions in the world. The symbolic benefits of military cooperation are particularly important for Russia as it seeks to counter the perception that it is isolated internationally as a result of its invasion of Ukraine.

On the other hand, there is a clear sense that China gains more from the relationship than Russia does in terms of the material benefits of cooperation. The People's Liberation Army (PLA) has long used military exercises to learn from its Russian counterparts and to improve operationally. The Russian military, which sees itself as more advanced in operational knowledge than its Chinese counterpart, has gained less in practical terms. At the same time, Russia's performance over the last year in its war with Ukraine may introduce some doubts among PLA leaders about the quality of the Russian military, which may in turn affect the perceived utility of what the PLA may be able to learn from joint exercises and operations with the Russian military. While it is far too early to see evidence of such a shift in Chinese perceptions, it is a possibility that observers should consider going forward.

Although the overall rapid expansion of Sino-Russian military cooperation in terms of MTC and joint exercises that was clearly in evidence in 2014–2019 has not been as evident in the last three years, the continued frequency of security consultations and the issuance of statements reaffirming close military ties during the 2020–2022 period suggests that this lull is most likely the product of external circumstances rather than a change in the willingness of either party to continue to pursue the development of an ever-closer military relationship. If this is the case, then it is these circumstances—including Western sanctions and resource constraints faced by

the Russian military as a result of its invasion of Ukraine—that will determine whether there is a renewed push to further expand the military relationship in the coming years.

In determining the trajectory of the relationship over the next three to five years, observers of the MTC sphere should focus on the extent to which China is supplying Russia with military and dual-use technologies and how much real assistance Russia is providing to China through joint projects such as the early warning system and advanced heavy lift helicopters. In the joint exercises and operations sphere, observers should focus on the extent to which China and Russia are conducting military exercises that are provocative to third-party states, such as in the Greenland, Iceland, United Kingdom (GIUK) gap or near US territory in the Pacific, or if either undertakes missions that are primarily of importance to the other, such as joint naval activities in the South China Sea near Taiwan or in the Mediterranean or Baltic Seas. These indicators will be more significant than further ritual statements about unlimited friendship made at summit meetings.

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Introduction

There is widespread consensus among analysts that, although Russia and China have been moving toward closer cooperation through the entire post-Soviet era, the trend has accelerated rapidly since 2014.¹ The relationship was boosted by Russian leaders' belief that Russia could survive its sudden confrontation with the West only by finding an alternative external partner. China was the obvious candidate because it had a suitably complex and diversified economy, was not openly hostile to Russia, and was not planning to impose sanctions in response to the Ukraine crisis. Moreover, the two countries have had a record of cooperation dating back to the early 1990s that could serve as a basis for expanded cooperation.

Since 2014, the bilateral relationship has focused on increased military cooperation, closer economic ties, and an increase in coordination on responses to various issues in international politics. Although some advances have occurred in all three areas, military cooperation has advanced the most.² A great deal of scholarship and analytical writing has addressed the overall trajectory of the Sino-Russian relationship, looking particularly at political and economic relations over the last decade.³ This report focuses specifically and in depth on the two countries' military relationship. As discussed in more detail later in this report, Russia and China have institutionalized a comprehensive mechanism for military consultation, expanded military-technical cooperation (MTC) initiatives and military personnel exchanges, and expanded regular joint military exercises. The goal is to provide an analysis of the dynamic of the cooperative relationship in the period since 2014, including a discussion of what the

¹ For some examples, see Alexander Gabuev, "Friends with Benefits? Russian-Chinese Relations After the Ukraine Crisis, Carnegie Moscow Center," June 29, 2016, <https://carnegie.ru/2016/06/29/friends-with-benefits-russian-chinese-relations-after-ukraine-crisis-pub-63953>; Alexander Korolev, *China-Russia Strategic Alignment in International Politics* (Amsterdam University Press, 2022); Tom Røseth, "Moscow's Response to a Rising China: Russia's Partnership Policies in Its Military Relations with Beijing," *Problems of Post-Communism*, Vol. 66, No. 4, 2019, 268–286.

² Dmitry Gorenburg, "An Emerging Strategic Partnership: Trends in Russia-China Military Cooperation," Marshall Center Security Insights, #54, April 2020, <https://www.marshallcenter.org/en/publications/security-insights/emerging-strategic-partnership-trends-russia-china-military-cooperation-0>.

³ In addition to the materials already cited, note Andrew Radin, et al., "China-Russia Cooperation," RAND Research Report, 2021; Alexander Gabuev, "Friends with Benefits? Russian-Chinese Relations After the Ukraine Crisis," Carnegie Moscow Center, 2016, <https://carnegie.ru/2016/06/29/friends-with-benefits-russian-chinese-relations-after-ukraine-crisis-pub-63953>; Aldo Ferrari and Eleonora Tafuro Ambrosetti, eds. *Russia and China: Anatomy of a Partnership*, ISPI, 2019, <https://www.ispionline.it/en/publicazione/russia-and-china-anatomy-partnership-23001>; Sarah Kirchberger, et al. eds, *Russia-China Relations: Emerging Alliance or Eternal Rivals?*, Springer Verlag, 2022.

relationship allows the two partners to accomplish together that they cannot do alone. On the basis of that analysis, we build a discussion of likely trends in the relationship in the near future.

Methodology

This study is based on a comprehensive collection of Russian- and Chinese-language data on bilateral military ties. The analysis covers key bilateral agreements and official statements by both sides, all major arms sales and other forms of MTC, exchanges of military personnel for education and training, joint military exercises and operations, and other relevant military-to-military engagements. The study's timeframe primarily covers the period from 2014 to November 2022, though key aspects of earlier cooperation are brought in as relevant and some subsequent important developments through February 2023 are addressed

In order to assess the extent of military ties between Russia and China, we adapt a scale originally developed by Alexander Korolev for this work on strategic alignment between Russia and China.⁴ Korolev's scale begins with confidence building measures and goes through a range of increasingly greater integration, up to a common defense policy at the highest level of cooperation. In developing our scale, we remove confidence building measures, as Russia and China moved beyond this lowest level of cooperation in their bilateral relationship in the mid-2000s.⁵ We also add military diplomacy as an additional stage, above the mechanism of regular consultations and below MTC and personnel exchange. Overall cooperation can be divided into early, moderate, and advanced stages, while each of the indicators can also be measured on a spectrum from high to low, as described below.

Early levels of cooperation include regular consultation mechanisms and military diplomacy. For regular consultation mechanisms, the lowest level of cooperation is indicated by a focus on bilateral disputes. Higher levels of cooperation would be indicated by a shift in the consultations' agenda to larger issues, such as global or regional politics, and/or the establishment of unique platforms and forums for consultation. For military diplomacy, the lowest level of cooperation is indicated by irregular meetings of senior military leadership. As cooperation increases, we would expect to see annual meetings of senior military leadership, while at the highest level of cooperation, senior military leadership would be meeting several times each year.

⁴ Alexander Korolev, "How Closely Aligned are China and Russia? Measuring Strategic Cooperation in IR," *International Politics*, 57, 760–789 (2020), <https://doi.org/10.1057/s41311-019-00178-8>

⁵ Alexander Korolev, *China-Russia Strategic Alignment in International Politics* (Amsterdam University Press, 2022), 90.

The moderate level of cooperation includes MTC, personnel exchange, and joint military exercises. For MTC, the lowest level of interaction consists of providing training and assistance related to arms sales. At higher levels, arms sales are accompanied by transfers of military technology. At the highest levels, the partners are jointly producing arms and military hardware components. For personnel exchanges, the lowest level includes short-term technical training of personnel, followed by sending limited numbers of personnel for long-term training or intermittent exchanges, with institutionalized joint professional military education (PME) programs at the highest levels of cooperation. When considering joint military exercises, the spectrum of cooperation is based on frequency, geography, and the content of the exercises. More frequent interactions suggest a higher level of military cooperation. When considering geography, at the lowest level of cooperation, exercises occur in uncontroversial areas in the immediate neighborhood of the participants, while at higher levels the exercises are located in more distant locales (for naval exercises) or in sensitive or contested territories. Finally, in terms of exercise content, at the lowest level of cooperation, the exercises tend to consist of basic joint maneuvers, while at higher levels the partners tend to focus on demonstrated high levels of interoperability through complex operations and/or the establishment of joint military command centers and command code-sharing systems.

Advanced military cooperation is demonstrated through the establishment of integrated military command centers, joint deployments and base sharing, and, at the highest levels, the formulation of a common defense policy. Integrated military command is demonstrated when partners provide forces for joint operations that are placed under the command of the other side's commanders or in a joint command structure, such as a joint operation center. At lower levels of cooperation, such integration occurs episodically and without long-term commitments, such as for specific exercises. At higher levels of cooperation, the partners may establish permanent joint command structures. To demonstrate joint deployments and base sharing, the spectrum of cooperation can range from the partner countries providing each other with access to host nation logistics nodes, to formulating provisional agreements for basing military units or equipment for transit or during contingencies, to small permanent mutual deployments on each other's territory without sophisticated weapons or systems, and finally to the deployment on each other's territory of large permanent contingents with advanced military hardware. Finally, the spectrum of common defense policy begins with binding commitments for joint fulfillment and supply, continues through synchronization of actions for allies' national security, to joint mission planning, and finally to pooling resources for military equipment acquisition.

This methodology, as summarized in Table 2, allows us to not only estimate the current level of overall military cooperation between Russia and China, but also to analyze its trajectory in the recent past and thereby estimate its potential future trajectory. In addition, by examining components of military cooperation, we can identify specific areas where it is developing faster

or slower than the overall average. This examination allows for a more fine-grained analysis of developments in Russian-Chinese military cooperation.⁶

Table 1. Ladder of Military Cooperation

		Indicator	Level	Examples of activities by level
Advanced	7	Common defense policy	High	Joint mission planning; pooling resources for military equipment acquisition
			Low	Binding commitments for joint fulfilment/supply
	6	Joint troop placement/military bases	High	Deployment of large contingents on each other's territory
			Low	Reciprocal access to host nation logistics nodes, provisional agreements for basing units for transit/contingencies
	5	Integrated military command	High	Establish permanent joint command structures
			Low	Forces placed under short-term command of other side's commanders (e.g., exercises)
Moderate	4	Regular joint military drills	High	More frequent, held in more distant/sensitive locales, complex operations, joint command centers
			Low	Infrequent, held in immediate neighborhood of participants, basic joint maneuvers
	3	Military-technical cooperation/personnel exchange	High	Military technology transfers, joint production of arms; institutionalized joint PME programs
			Low	Training and assistance for arms sales; limited number of personnel for intermittent exchanges
Early	2	Military diplomacy	High	Senior military leadership meets annually or more frequently
			Low	Irregular meetings of senior military leadership
	1	Mechanism of regular consultations	High	Shift in consultation agenda to larger issues (global, regional); establishment of new consultation platforms
			Low	Focus on bilateral disputes

Source: CNA.

⁶ This scale could also be used comparatively, to assess relative levels of military cooperation across different country pairs, though such an analysis is beyond the scope of this report.

Report Structure

This report is organized into four chapters. The first chapter discusses key aspects of the political relationship on defense issues, which corresponds to the regular consultation mechanisms and military diplomacy, as well as aspects of advanced military cooperation such as agreements related to integrated military command and joint deployments, as well as steps toward formulating a common defense policy. The second chapter discusses MTC and personnel exchanges. The third chapter focuses on military exercises and joint operations. The fourth and final chapter provides an overall assessment of the trajectory of Russian-Chinese military cooperation on the basis of the analytical framework described above. It also highlights what military cooperation allows Russia and China to do together that they cannot accomplish working separately.

Bilateral Sino-Russian Political Cooperation on Defense Issues

Bilateral political-military cooperation between Russia and the PRC has become more institutionalized since the early 2000s. While this cooperation expands on the basis of bilateral agreements signed in the 1990s, since the signing of the 2001 Sino-Russian Treaty, political-military cooperation between the two countries has involved some joint positions on arms control (despite a couple of areas of difference), annual bilateral security consultations, and, since 2017, five-year roadmaps for bilateral military cooperation. These agreements and interactions have led to highly robust regular consultation mechanisms at the political and military levels, as well as regular interactions in the realm of military diplomacy. Nevertheless, their political-military cooperation, while intensifying, remains in the “moderate” category of our scale, as there is no indication of any imminent plans for joint defense planning, reciprocal basing, or joint command structures.

Chinese and Russian leaders comment effusively on the military dimension to the partnership.⁷ “There is no limit to the mil-to-mil relationship between China and Russia, and there is no end to the China-Russia military cooperation,” said Senior Colonel Wu Qian, a spokesman for the PRC Ministry of Defense, in 2021. He attributed this bright future to communication, pragmatic cooperation such as joint exercises, and the continual development of new cooperation and coordination mechanisms.⁸ Even after the Russian invasion of Ukraine, Putin told the Valdai Discussion Club in October 2022 that Sino-Russian MTC had never worked as “confidentially” in the history of the two countries.⁹

This is a surprising turn of events, considering that in 1969 Soviet and Chinese border forces fought against each other, leading to fears in China of a potential nuclear attack. Although the Soviet Union was the first country to recognize the PRC and the two had forged an alliance beginning in 1950, ideological and political differences undermined their relationship by the end of the decade, leading to a formal split and years of mutual hostility. It was not until the mid-1980s that the two countries would embark on a slow process of rapprochement,

⁷ For a useful summary of these activities, see Richard Weitz, *The China-Russia Alignment: Critical Challenges to U.S. Security* (Santa Barbara: Praeger, 2022), 98-102.

⁸ “There Is No End to China-Russia Military Cooperation: Defense Spokesperson - Ministry of National Defense,” accessed Nov. 16, 2022, http://eng.mod.gov.cn/news/2021-11/25/content_4899687.htm.

⁹ “Putin Discussed Military-Technical Cooperation with China,” [Путин Рассказал о Сотрудничестве с Китаем в Военно-Технической Сфере], RIA Novosti, Oct. 27, 2022, <https://ria.ru/20221027/vts-1827356922.html>.

culminating in Mikhail Gorbachev's historic meeting with Deng Xiaoping in Beijing in May 1989, a time when demonstrations paralyzed the Chinese capital. During their summit, the two leaders agreed to "end the past, open up the future."¹⁰ Five years after the collapse of the Soviet Union, in April 1996, Russia and China embarked on a strategic partnership, and all of the former neighbors then began engaging in confidence-building activities, a process that would lead to the formation of the Shanghai Cooperation Organization on June 15, 2001.

The Sino-Russian Treaty of Good Neighborliness and Friendly Cooperation, signed one month later on July 16, 2001, first outlined the basic parameters of their political-military cooperation.

¹⁰ For a discussion of the Sino-Soviet rapprochement, see Elizabeth Wishnick, *Mending Fences: The Evolution of Moscow's China Policy from Brezhnev to Yeltsin* (Seattle: University of Washington Press, 2001, 2014), 104-5.

Figure 1. Selected Key Statements on Defense Cooperation from the 2001 Sino-Russian Treaty

Article 2	No use of force against each other No threat of force against each other No economic or other pressure against each other Resolve any differences peacefully
Article 7	Encourage confidence-building between the two militaries Bilateral military cooperation is not directed at third parties
Article 8	Pledge not to join an alliance or bloc, or sign a treaty with a third country that would adversely impact the partner’s sovereignty, territorial integrity or national unity
Article 9	Immediately hold consultations in the event of a threat to peace, security interests, or aggression
Article 11	Oppose actions that compromise peace and stability Pledge to coordinate to address any such threats
Article 12	Promote nuclear disarmament, control of chemical weapons, strengthening of bioweapons regime Prevent nuclear proliferation
Article 16	Cooperate in military technology Observe intellectual property rules

Source: “Treaty of Good-Neighborliness and Friendly Cooperation Between the People’s Republic of China and the Russian Federation,” accessed Nov. 21, 2022, https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/2649_665393/200107/t20010724_679026.html.

These articles demonstrate a commitment to continuing cooperation in military technology (Article 16) and confidence-building (Article 7). Article 9 encourages sharing threat assessments and Article 12 intimates common positions on arms control, though, as we will see below, there are some differences between Russia and China on the latter. Article 8 specifically enjoins the two countries to avoid alliances, both with each other and with third parties. Nevertheless, Australia-based political scientist Alexander Korolev views the Sino-Russian treaty as an “implicit defense pact”¹¹—even going so far as calling it a sub-type of an alliance—because of the commitments to nonaggression (Article 2) and mutual consultation

¹¹ Alexander Korolev, *China-Russia Strategic Alignment in International Politics* (Amsterdam: Amsterdam University Press, 2022), 66-7; Alexander Korolev, “On the Verge of an Alliance: Contemporary China-Russia Military Cooperation,” *Asian Perspective*, 15(3) 2019, 237.

in case of a threat to one of the parties (Article 9). However, if we compare this treaty to an actual alliance treaty such as the Collective Security Organization (CSTO) Treaty,¹² the Sino-Russian treaty falls short of alliance commitments. In particular, the Sino-Russian treaty lacks the mutual assistance and defense commitment found in Article 2 of the CSTO Collective Security Treaty and the option of requesting military aid in case of aggression or armed attack threatening stability, safety, territorial integrity, and sovereignty found in Article 4.

China has a ranking for its strategic partnerships that highlights the hierarchy in its engagements with friendly countries, in order of their comprehensiveness.¹³ Although some experts question the extent to which this hierarchy is directly aligned with the CCP's international priorities, it is nonetheless significant that the Sino-Russian partnership (Comprehensive Strategic Partnership for a New Era) ranks first in this hierarchy.¹⁴

For both countries, even though the Sino-Russian partnership falls short of an alliance, their commitment to mutual nonaggression enables them to focus on the threat they each perceive from the US and its allies.¹⁵ This has led PRC Foreign Minister Wang Yi to affirm that China “would unswervingly deepen the “back-to-back” strategic cooperation between China and Russia”¹⁶ and Russian National Security Council Chairman Nikolai Patrushev to call the partnership with China a top foreign policy priority. Speaking in October 2022, Patrushev noted that, in the current circumstances, the two “countries must show even greater readiness for mutual support and development of cooperation.”¹⁷

¹² Collective Security Treaty Organization (CSTO), CSTO Treaty, May 15, 1992, https://en.odkb-csto.org/documents/documents/dogovor_o_kollektivnoy_bezopasnosti/#loaded.

¹³ Helena Lagarda, “From Marriage of Convenience to Strategic Partnership: China-Russia Relations and the Fight for Global Influence,” Aug. 24, 2021 <https://merics.org/en/short-analysis/marriage-convenience-strategic-partnership-china-russia-relations-and-fight-global>.

¹⁴ Beijing's relationship with Pakistan—known as an All-Weather Strategic Coordinative Partnership—ranks second in China's hierarchy and increasingly matches the Sino-Russian partnership in wide-ranging security cooperation and intelligence-sharing because of the security concerns with respect to India that China and Pakistan share. The security problems emerging in the development of the China Pakistan Economic Corridor also have led to intensified bilateral military and security cooperation. Siegfried O. Wolf, “The Growing Security Dimension of the China-Pakistan Economic Corridor,” *ISPI*, Mar. 4, 2020, <https://www.ispionline.it/it/publicazione/growing-security-dimension-china-pakistan-economic-corridor-25316>.

¹⁵ Michael Kofman, “The Emperors League: Understanding Sino-Russian Defense Cooperation,” *War on the Rocks*, Aug. 6, 2020, <http://warontherocks.com/2020/08/the-emperors-league-understanding-sino-russian-defense-cooperation/>.

¹⁶ Yan Yu, “China and Russia ‘Back to Back’, Injecting Stability into the World (Global Hotspots),” *People's Daily Overseas Edition*, <https://baijiahao.baidu.com/s?id=1723054705856835074&wfr=spider&for=pc>.

¹⁷ AP, “‘Mutual Support and Cooperation’: Russia Seeks Closer Security Ties with China,” *ABC News*, Sep. 20, 2022, <https://www.abc.net.au/news/2022-09-20/russias-plans-to-improve-ties-to-china-as-policy-goal/101459924>.

Wang Haiyun, a former PRC military attaché in the late Soviet period and in Russia, noted that the history of relations between China and Russia emphasized the importance of avoiding “two-front” warfare. While extolling the importance of the partnership, which he termed a “ballast stone” for bilateral security as well as integral for regional and global security governance, Wang intimated that more work is needed to achieve a “quasi-alliance relationship” of mutual support and coordination. In Wang’s view, the two sides need to work together, first of all, to increase trust and dispel remaining mutual doubts.¹⁸

Over 20 Years of Political and Military Cooperation

The June 2021 statement on the 20th anniversary of the signing of the Sino-Russian Treaty reaffirmed that the two countries would deepen their military cooperation, in accordance with Article 7, and continue their regular security cooperation. In 2005, China and Russia began **annual bilateral security consultations** in alternating capitals between the head of the Russian National Security Council, Nikolai Patrushev, and the head of the Foreign Policy Commission of the Central Committee of the Chinese Communist Party, Yang Jiechi, who was a Politburo member until October 2022. Wang Yi, the former PRC Foreign Minister who was just appointed to the Politburo, will likely replace Yang Jiechi in March 2023. This was China’s first experience with creating a mechanism for security consultations with a foreign state.¹⁹

The talks have been held annually, with the exception of 2020, when the COVID-19 pandemic caused the meeting to be canceled.²⁰ According to Yang Jin, an expert at the Institute of Russian, Eastern European and Central Asian Studies at the Chinese Academy of Social Sciences, prior to the Russian war on Ukraine, these talks focused on areas of instability in the Middle East and the Asia-Pacific region. In Yang’s view, the most recent talks in September 2022 likely highlighted urgent issues such as regional instability in Europe, the situations in the Taiwan

¹⁸ Wang intimated that some in Russia continued to harbor concerns about a potential threat from China and that some in Russia considered Russia to be an unreliable partner. Wang Haiyun (王海运), “Seventy Years of Sino-Russian Military Relations: Review and Reflection,” (中俄军事关系七十年:回顾与思考) *Russian, East European and Central Asian Studies* (俄罗斯中亚东欧研究) 2019 (04).

¹⁹ Korolev 2022, 71-2.

²⁰ Luan Ruoxi, “China and Russia Launch the 16th Round of Strategic Security Consultations, the Timing of the Dialogue Attracts Attention,” *Beijing News*, <https://baijiahao.baidu.com/s?id=1700904838903310206&wfr=spider&for=pc>.

Strait and Afghanistan, and broader issues such as food security, the pandemic, terrorism, separatism, and border security.²¹

After a May 2014 summit between Putin and Xi, Russia and China also agreed to hold twice-yearly Northeast Asia security dialogues at the deputy foreign minister level. Igor Morgulov, who represented Russia in these talks, is now the Russian ambassador to China.²² These talks have addressed key issues in Northeast Asian security, such as tensions in the Korean Peninsula. While this new dialogue mechanism appears to expand the scope of Sino-Russian security discussions,²³ in practice, China and Russia have been holding talks on Northeast Asia for many years, often agreeing to disagree on many issues in this region.²⁴

Since 2017, China and Russia have been planning their military cooperation in **five-year roadmaps**, reportedly at Moscow's initiative.²⁵ These roadmaps are designed to create a structure and plan for military cooperation initiatives and create a conducive environment for potential further deepening of cooperation. They do not in and of themselves suggest a higher level of military integration. As Chinese Ministry of Defense spokesman explained in a June 29, 2017, press conference, regular roadmaps would devise overall implementation plans and introduce a "top-level design" that would promote and accelerate Sino-Russian military cooperation.²⁶ According to Russian Defense Minister Sergei Shoigu, by signing a roadmap for their military cooperation China and Russia would be in a better position to undertake joint security initiatives. Shoigu noted that the "intense contacts between Russian and Chinese officials demonstrate a constructive dialogue on the entire scope of regional and global security issues."²⁷

²¹ Wan Lin, "China, Russia to Hold New Round of Strategic Security Consultation amid Closer Bilateral Ties," *Global Times*, Sep. 18, 2022, <https://www.globaltimes.cn/page/202209/1275494.shtml>.

²² "MID: RF-PRC Dialogue on Security in Northeast Asia Takes Place in the RF," [МИД: диалог РФ-КНР о безопасности в Северо-Восточной Азии пройдет в РФ], RIA Novosti, Apr. 25, 2015, <https://ria.ru/20150425/1060819091.html>

²³ Korolev 2022, 72.

²⁴ Elizabeth Wishnick, "The Sino-Russian Partnership and the East Asian Order," in ed Gaye Christoffersen, *Russia in the Indo-Pacific: New Approaches to Russian Foreign Policy* (New York: Routledge, 2022), 131-135; Elizabeth Wishnick, "The Impact of the Sino-Russian Partnership on the North Korean Nuclear Crisis," *NBR Special Report #78*, March 2019, 7-10.

²⁵ Alexander Khramchikhin, "Russia-China Military Cooperation" [Военное сотрудничество России и Китая] *Nezavisimaya Gazeta*, Sep. 20, 2019, https://nvo.ng.ru/forces/2019-09-20/12_1062_china.html.

²⁶ "China and Russia Sign the 2017-2020 'Roadmap' for Cooperation and Development in the Military Field," *China News Network*, June 29, 2017, <https://www.chinanews.com.cn/mil/2017/06-29/8264778.shtml>.

²⁷ "Russian Defense Minister Suggests Signing Russian-Chinese Military Cooperation Roadmap," TASS, accessed Nov. 27, 2022, <https://tass.com/defense/950215>.

A second roadmap was signed on November 23, 2021, just three months before Russia invaded Ukraine, and was approved in a video conference chaired by Russian Defense Minister Sergei Shoigu and PRC Minister of Defense Wei Fenghe. According to the Chinese Ministry of Defense, the 2021–2025 roadmap would enhance strategic coordination and promote joint military activities such as joint air-sea patrols and exercises. Zhang Junshe, a senior research fellow at the Naval Research Academy of the People's Liberation Army (PLA), called the updated roadmap evidence of “strategic trust” between the two countries and the greater regularization of joint patrols and exercises between their militaries.²⁸ Six months after signing the agreement, China and Russia conducted a joint air patrol over the Sea of Japan.²⁹ The patrol was the first joint Sino-Russian exercise since Russia invaded Ukraine and was timed to coincide with President Biden’s May 24, 2022, meeting with the Quad leaders in Tokyo.³⁰

Sino-Russian Relations and Arms Control

In the 2000s, China and Russia began elaborating shared principles on arms control. Although there are some areas of disagreement between them linked to differences between their own weapons deployments, they put forward two joint statements on strategic stability and several arms control initiatives.

The prevention of the placement of weapons in outer space is one of the earliest **joint arms control efforts** by Russia and China. In 2008, they submitted a draft treaty to the United Nations that narrowly defined *space weapons* as space-to-space weapons, which would not prohibit their own publicly acknowledged weapons, such as ground-based antisatellite systems. Russia and China updated the draft treaty and resubmitted it to the United Nations in 2014.³¹

As an EU Code of Conduct for Outer Space stalled, Russia and China manage to garner support for their draft in the UN General Assembly, which passed a resolution in December 2015 urging discussion based on the Sino-Russian treaty proposal and encouraging countries to pledge that they would not be first to place weapons in space.³² The Sino-Russian draft treaty is an example

²⁸ Fan Anqi and Du Qiongfang, “Chinese, Russian Militaries to Strengthen Strategic Exercises, Joint Patrols: Defense Ministers,” *Global Times*, Nov. 24, 2021, <https://www.globaltimes.cn/page/202111/1239763.shtml>.

²⁹ “Russian, Chinese Strategic Bombers Conduct Joint Air Patrol in Asia-Pacific,” TASS, May 24, 2022, <https://tass.com/defense/1455139>.

³⁰ Edward Wong, “Russia and China Held Military Exercise in East Asia as Biden Visited,” *The New York Times*, May 24, 2022, sec. U.S., <https://www.nytimes.com/2022/05/24/us/politics/russia-china-bombers-biden.html>.

³¹ Todd Harrison, International Perspectives on Space Weapons,” CSIS, May 2020, https://aerospace.csis.org/wp-content/uploads/2020/05/Harrison_IntlPerspectivesSpaceWeapons-compressed.pdf, 15.

³² Harrison, 16.

of their ongoing efforts to play a greater role in global rule-making and in drafting global rules to suit the interests of their own force development plans. Just as they opposed the EU Code of Conduct for Outer Space, Russia and China also voted against a 2020 British proposal for a code of conduct in outer space, which ultimately received 164 votes.³³

In 2016 China and Russia issued their first **joint statement on strategic stability**, which they submitted to the UN Secretary General. In the 2016 statement, the two countries express their opposition to military alliances that adversely affect the security of others, the deployment of US anti-missile systems in East Asia and warn the international community about the threat of the militarization of space and biological/chemical terrorism by non-state actors.³⁴

By 2019, Russian military analyst Vasily Kashin spoke of a qualitative shift taking place in Sino-Russian political-military relations as both countries found themselves in a tense relationship with the United States.³⁵ In June 2019, the year Russia and the PRC observed the 70th anniversary of the establishment of diplomatic relations between the two countries, Putin and Xi upgraded their partnership to “a comprehensive strategic partnership of coordination for a new era.”³⁶ According to former PRC Ambassador to Russia, Li Hui, the upgraded partnership reflected the “highest level of mutual trust, coordination and strategic value among major-country relations, which contributes significantly to development and rejuvenation of the two countries and to world peace, stability and progress.”³⁷ During their summit meeting, on June 5, 2019, Putin and Xi signed a second joint statement on strategic stability, “Strengthening Global Stability in the Modern Era.” This statement focused on the Trump Administration’s decision to withdraw from the Intermediate Range Nuclear Forces (INF) Treaty and decried efforts to achieve “absolute security,” which they argued undermine arms control.³⁸ By

³³ Bradley Bowman Thompson Jared, “Russia and China Seek to Tie America’s Hands in Space,” *Foreign Policy* (blog), accessed Nov. 22, 2022, <https://foreignpolicy.com/2021/03/31/russia-china-space-war-treaty-demilitarization-satellites/>.

³⁴ China and Russian Federation, “Letter Dated 8 July 2016 from the Representatives of China and the Russian Federation to the United Nations Addressed to the Secretary-General,” July 11, 2016, <https://digitallibrary.un.org/record/834364>.

³⁵ Vasily Kashin, “Russia and China: Alliance or Strategic Uncertainty?” *RIAC*, Sep. 2, 2019, <https://russiancouncil.ru/analytics-and-comments/analytics/rossiya-i-kitay-soyuz-ili-strategicheskaya-neopredelennost/>.

³⁶ Li Hui, “A New Journey for China-Russia Relations,” Chinese People’s Institute of Foreign Affairs, <http://www.cpifa.org/en/cms/book/306>.

³⁷ *Ibid.*

³⁸ “Joint Statement by the Russian Federation and the People’s Republic of China on the Strengthening of Global Strategic Stability in the Contemporary Era,” [Совместное Заявление Российской Федерации и Китайской Народной Республики Об Укреплении Глобальной Стратегической Стабильности в Современную Эпоху], President of Russia, June 5, 2019, <http://kremlin.ru/supplement/5412>.

contrast, Lt. General Kong Jun, Commander of the Eastern Theater Command ground force, termed the Sino-Russian partnership a “ballast stone for strategic stability.”³⁹ Similarly, Deputy Foreign Minister Zhang Jun noted that “China and Russia's commitment to maintaining global strategic stability with a clear-cut attitude is conducive to resisting the wrong practices of some individual powers seeking absolute security, and promoting major countries to enhance strategic mutual trust and fulfill international security obligations.”⁴⁰

On December 15, 2020, PRC Defense Minister Wei Fenghe and Russian Defense Minister Sergei Shoigu extended a 2009 **agreement on mutual notification in case of ballistic missile launches** for another 10 years. The PRC press agency Xinhua reported that the two defense ministers stated in their joint videoconference that their countries were “ready to strengthen practical cooperation and enrich bilateral relations.”⁴¹

The **2021 statement on the renewal of the 2001 Sino-Russian treaty** goes into considerable detail about their cooperation in arms control.⁴² The statement highlights areas of agreement that have emerged during the past 20 years of partnership on the use of nuclear weapons, nonproliferation, missile defense, weapons in outer space, and chemical and biological weapons. As we will see below, however, there are some areas of divergence in arms control. Moreover, the Russian war on Ukraine has raised questions about their views of nuclear use and nuclear threats.

³⁹ Kong Jun, “China, Russia to Safeguard Global Strategic Stability, Promote Peaceful Development,” *People's Daily Online*, June 10, 2019, <http://en.people.cn/n3/2019/0610/c90000-9586221.html>.

⁴⁰ “Assistant Foreign Minister Zhang Jun Publishes a Signed Article on Jointly Strengthening Global Strategic Stability between China and Russia,” accessed Nov. 29, 2022, https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/zyjh_665391/201906/t20190614_678745.html.

⁴¹ Xinhua, “China, Russia Extend Notification Agreement for Ballistic Missile, Carrier Rocket Launches,” Dec. 15, 2021, http://www.xinhuanet.com/english/2020-12/15/c_139591997.htm.

⁴² “Joint Statement between the People's Republic of China and the Russian Federation on the 20th Anniversary of the Signing of the “Sino-Russian Treaty of Good-Neighborliness, Friendship and Cooperation” (full text), June 29, 2021, <https://baijiahao.baidu.com/s?id=1703854043237646805&wfr=spider&for=pc>.

Figure 2. 2021 Statement on Arms Control

China and Russia state that a nuclear war cannot be won, cannot be fought, and should never be waged, and pledge to make every effort to avoid conflict among nuclear weapons states.

They reaffirm their commitment to the Nuclear Non-Proliferation Treaty.

The two share concerns about the US withdrawal from arms control treaties, promotion and deployment of antimissile systems around the world.

They oppose the militarization and weaponization of space and reaffirmed their commitment to developing a multilateral instrument based on the draft treaty between China and Russia on the Prevention of the Placement of Weapons in Outer Space and the Threat or Use of Force in Outer Space.

The two sides reaffirmed their adherence to the objectives and tasks of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction.

The two sides emphasized the importance of the "Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction." The two sides emphasized that multilateral negotiations on the International Convention for the Suppression of Acts of Bioterrorism should be carried out within the framework of the Conference on Disarmament in Geneva to deal with the threat posed by bioterrorism.

They agree that multilateral non-proliferation and export controls should not target individual countries and oppose the use of sanctions

Source: "Joint Statement between the People's Republic of China and the Russian Federation on the 20th Anniversary of the Signing of the "Sino-Russian Treaty of Good-Neighborliness, Friendship and Cooperation" (full text), June 29, 2021, <https://baijiahao.baidu.com/s?id=1703854043237646805&wfr=spider&for=pc>

This long list of commitments to arms control belies some counterproductive effects that Chinese and Russian cooperation has had on global governance in this area. Despite their stated commitment to the prohibition of the use of chemical weapons, China sided with Russia in boycotting a May 12, 2020, meeting with UN Security Council members to discuss a report by the Organization for the Prohibition of Chemical Weapons alleging three uses by Syria, Russia's ally.⁴³ China has also been echoing Russian propaganda that accuses the US military of

⁴³ Julia Masterson, "Russia, China Skip Syrian Chemical Weapons Meeting," Arms Control Association, June 2020, <https://www.armscontrol.org/act/2020-06/news-briefs/russia-china-skip-syrian-chemical-weapons-meeting>.

spreading COVID-19 as a bioweapon and establishing bioweapon labs in Ukraine.⁴⁴ The UN Security Council rejected a proposal by Russia to investigate its allegations regarding the US and Ukraine. Only China supported the Russian proposal.⁴⁵

Despite areas of agreement, Russia and China disagree about some aspects of arms control. Although the 2021 statement highlighted their shared concern regarding US withdrawal from arms control agreements, Russia's decision to withdraw from the INF Treaty following the US decision to do so was unwelcome for China. The US claimed that some Russian deployments were in violation of the treaty—while disputing this claim, Russia still opted to withdraw after the US did so. In the absence of this agreement, the US would be free to deploy ground-based missiles in the Indo-Pacific region.⁴⁶ Presumably, Russia could follow suit, potentially deploying ground-based missiles near the Chinese border, though this would not be a major security consideration for the PRC, assuming the Sino-Russian partnership remains strong.⁴⁷ To assuage China's concerns, Russia has pledged that it will not deploy missiles to areas previously prohibited by the INF Treaty unless the US does so first.⁴⁸

Putin's announcement on February 21, 2023 that Russia would withdraw from the New START treaty further compounded PRC fears regarding global strategic stability. PRC Foreign Ministry spokesman Wang Wenbin emphasized that this was the only remaining US-Russia arms control treaty and highlighted its significance for maintaining global and regional peace and supporting efforts to achieve a nuclear weapons-free world.⁴⁹

Previously Russia had been more open to multilateral arms control, especially including British and French capabilities, but Chinese officials have always taken the position that the US and Russia would need to reduce their arsenals substantially before the PRC would consider joining any multilateral arms control agreement. Despite this difference in positions, the Trump

⁴⁴ "People's Republic of China Efforts to Amplify the Kremlin's Voice on Ukraine," *United States Department of State* (blog), May 2, 2022, <https://www.state.gov/disarming-disinformation/prc-efforts-to-amplify-the-kremlins-voice-on-ukraine/>.

⁴⁵ "Security Council Rejects Text to Investigate Complaint Concerning Non-Compliance of Biological Weapons Convention by Ukraine, United States - Ukraine," reliefweb, Nov. 2, 2022, <https://reliefweb.int/report/ukraine/security-council-rejects-text-investigate-complaint-concerning-non-compliance-biological-weapons-convention-ukraine-united-states>.

⁴⁶ Brian G. Carlson, "China-Russia Cooperation in Nuclear Deterrence," in *Russia-China Relations: Emerging Alliance or Eternal Rivals?*, ed. Sarah Kirchberger, Svenja Sinjen, and Nils Wörmer, *Global Power Shift* (Cham: Springer International Publishing, 2022), 153–54, https://doi.org/10.1007/978-3-030-97012-3_8.

⁴⁷ Samuel Charap, *The Demise of the INF: Implications for Russia-China Relations* (RAND Corporation, 2019), 6, <https://doi.org/10.7249/CT507>.

⁴⁸ Carlson, "China-Russia Cooperation in Nuclear Deterrence," 154.

⁴⁹ Foreign Ministry Spokesperson Wang Wenbin's Regular Press Conference on February 22, 2023, https://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/202302/t20230222_11029628.html.

Administration's attempts to use arms control as a wedge between Russia and China were doomed to failure because of the broader alignment of their positions. To encourage Russia to urge China to join the New START treaty and limit strategic nuclear weapons, the Trump Administration even provided Russian negotiators with a classified briefing about the PRC nuclear threat.⁵⁰ Nevertheless, Russia has remained unwilling to press China to join multilateral arms agreements and China has been equally unwilling to participate in any such arrangement.

Sino-Russian Political-Military Cooperation Since February 2022

On February 4, 2022, Putin traveled to Beijing for the opening ceremony of the Olympic Games and signed a joint statement with Xi Jinping. This statement expanded on the 2021 statement in certain key respects:

⁵⁰ David E. Sanger and William J. Broad, "A New Superpower Competition Between Beijing and Washington: China's Nuclear Buildup," *The New York Times*, June 30, 2020, sec. U.S., <https://www.nytimes.com/2020/06/30/us/politics/trump-russia-china-nuclear.html>.

Figure 3. New Points in the February 4, 2022, Sino-Russian Agreement

China expressed support for Russian proposals to create long-term, legally binding security guarantees in Europe [which the US and EU consider to be unacceptable].

Russia and China oppose the further enlargement of NATO and the formation of “closed bloc structures and opposing camps in the Asia-Pacific region.”

They view the US Indo-Pacific strategy in a negative light.

They express serious concern about AUKUS and potential submarine cooperation among its members.

They claim that the US withdrawal from the INF Treaty and potential to deploy or transfer to allies intermediate or short-range missiles in the Asia-Pacific and Europe will have a destabilizing effect.

They urge the US to accept Putin’s 2020 proposal for a moratorium on deployment of missiles previously banned by the INF Treaty.

They claim that US bioweapons activities pose a threat to China and Russia.

They express concern about the politicization of the Organization for the Prohibition of Chemical Weapons [which had accused Syria of using chemical weapons on three occasions].

Source: Russia-China Joint Statement on International Relations, Feb. 4, 2022, <https://china.usc.edu/russia-cina-joint-statement-international-relations-february-4-2022>.

Twenty days after this statement was signed, on February 24, 2022, Russia invaded Ukraine. Despite speculation about PRC’s unease with aspects of Russia’s war on Ukraine, PRC officials have supported Russia rhetorically and longstanding political-military cooperation has continued. Nevertheless, PRC Defense Minister Wei Fenghe has affirmed that China has not provided any material support to Russia for Ukraine and clearly told the Shangri-La Dialogue in June 2022 “that the growth of the China-Russia relationship is a partnership, not an alliance.

It does not target a third party.”⁵¹ Wu Dahui, a prominent Russia scholar with ties to the PLA, further explained that “the China-Russia strategic partnership of coordination has its own logic and tempo of development.” In his view, neither country was interested in an anti-Western alliance.⁵²

⁵¹ “‘Partnership, Not Alliance’: China Downplays Relationship with Russia,” *La Prensa*, June 12, 2022, <https://www.laprensalatina.com/partnership-not-alliance-china-downplays-relationship-with-russia/>.

⁵² Wu Dahui, “Stigmatization by Washington Won’t Stop China-Russia Strategic Coordination - China Military,” *China Military Online*, Sep. 21, 2022, http://english.chinamil.com.cn/view/2022-09/21/content_10186252.htm.

After the September 15, 2022 Sino-Russian summit in Samarkand, Uzbekistan, Putin admitted that Xi had expressed “questions and concerns” on Ukraine but praised his “balanced position.”⁵³ Yet, following this meeting between the two leaders, PLA Senior Colonel Tan Kefei, deputy director of the Information Bureau of the Ministry of National Defense, stated that “China is willing to work together with Russia to fully implement the important consensus reached by the two heads of state, deepen the strategic communication between the two militaries, continue to carry out practical cooperation in various fields...”⁵⁴

The 17th round of Sino-Russian security consultations followed the Samarkand summit and this was the first round of Sino-Russian security talks since the Russian invasion of Ukraine. At the September 19, 2022, meeting Yang Jiechi noted that “China-Russia relations have always maintained a momentum of vigorous development.” He pledged that the two countries would continue to deepen their strategic coordination.⁵⁵ For his part, Patrushev affirmed that “Russia always regards developing relations with China as its diplomatic priority,” committing to deepening strategic communication and coordination.⁵⁶

There was considerable speculation in the US media regarding the questions Xi may have had for Putin. Russian nuclear threats may have been one key area of concern, as nuclear use by Russia would force China to take a position, especially since Chinese officials have stated repeatedly that respect for the UN Charter is their bottom line.⁵⁷ Xi made this very clear in a joint statement with German Chancellor Olaf Scholz where they urged the international community to reject nuclear threats and nuclear use.⁵⁸

Senior Colonel Zhou Bo (retired) told *The Financial Times* that “China can help the world by simply telling Putin: don’t use nuclear weapons”⁵⁹ and urging him to honor the pledge he made

⁵³“Meeting with Chinese President Xi Jinping,” President of Russia, Sep. 15, 2022, <http://kremlin.ru/events/president/news/69356>.

⁵⁴Ministry of National Defense, “There Is No End to China-Russia Military Cooperation: Defense Spokesperson - Ministry of National Defense,” Nov. 25, 2021, http://eng.mod.gov.cn/news/2021-11/25/content_4899687.htm.

⁵⁵“Jiechi Chairs the 17th Round of China-Russia Strategic Security Consultation,” Ministry of Foreign Affairs, September 19, 2022, https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/wshd_665389/202209/t20220920_10768229.html;

⁵⁶ Ibid.

⁵⁷Elizabeth Wishnick, “Still No Limits? The China-Russia Partnership After Samarkand,” *Russia Matters*, Sep. 22, 2022, <https://www.russiamatters.org/analysis/still-no-limits-china-russia-partnership-after-samarkand>.

⁵⁸Jack Lau, “No Nuclear Wars, Chinese President Xi Jinping Says, in Clear Message to Russia,” *South China Morning Post*, Nov. 4, 2022, <https://www.scmp.com/news/china/diplomacy/article/3198505/no-nuclear-weapons-over-ukraine-chinese-president-xi-jinping-says-clear-message-russia>.

⁵⁹“Zhou Bo: China Can Use Its Leverage with Russia to Prevent a Nuclear War - Opinions and Interviews - Center For International Security And Strategy Tsinghua University,” accessed Dec. 1, 2022, <https://ciss.tsinghua.edu.cn/info/OpinionsandInterviews/5408>.

with the other four nuclear powers in January 2022 “that a nuclear war can never be won and should never be fought.”⁶⁰ Although Russian Deputy Foreign Minister Sergei Ryabkov denied that Russia was making nuclear threats against anyone,⁶¹ in 1993, Russia abandoned the Soviet Union’s no first use position, which China maintains.⁶²

China’s February 24, 2023 position paper on Ukraine for the first time clearly connected the Chinese government’s concerns on nuclear issues to the ongoing war, the only new aspect in the PRC statement, which Western audiences largely saw as unlikely to bring about an end to the conflict.⁶³ While Kremlin spokesman Dmitry Peskov saw the PRC statement as worthy of careful analysis, he stated that Russia would continue to pursue its goals in Ukraine and the time was not right for peaceful resolution.⁶⁴

In the 2023 statement, the PRC continued to avoid calling Russia out for its nuclear threat, only reiterating Beijing’s position that “nuclear war can never be won and should never be fought” and stating that “the threat or use of nuclear weapons should be opposed.”⁶⁵ The PRC also expressed its opposition to targeting civilian nuclear power plants and facilities, presumably not just out of concern for Ukraine’s Zaporizhzhia plant but for the safety of its own growing

⁶⁰ The White House, “Joint Statement of the Leaders of the Five Nuclear-Weapon States on Preventing Nuclear War and Avoiding Arms Races,” The White House, Jan. 3, 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/03/p5-statement-on-preventing-nuclear-war-and-avoiding-arms-races/>.

⁶¹ “Russia changed its tune: Do not threaten anyone with nuclear weapons! Wang Yi first met with Ukrainian Foreign Minister: “Four Shoulds” expounds China’s most authoritative position,” (俄改口：不以核武器威胁任何人！王毅首先会见乌克兰外长：‘四个应该’阐述中方最权威立场) Weixin Official Accounts Platform, Sep. 29, 2022, http://mp.weixin.qq.com/s?_biz=MzAxMzIxOTk5Mg==&mid=2649999641&idx=4&sn=87df7498cdec72094320ddce9f403cc3&chksm=83a288eeb4d501f829288562672d9d232dcc449fd1cc3e9742e701f22c3388067731944ebf0a#rd.

⁶² Richard Weitz, *The New China-Russia Alignment: Critical Challenges to U.S. Security* (Santa Barbara: Praeger, 2022), 127.

⁶³ Foreign Ministry of the People’s Republic of China, “China’s Position on the Political Settlement of the Ukraine Crisis,” Feb. 24, 2023, https://www.mfa.gov.cn/eng/wjdt_665385/2649_665393/202302/t20230224_11030713.html.

⁶⁴ “The Kremlin Commented on China’s Peace Plan for Ukraine,” [В Кремле прокомментировали мирный план Китая по Украине], *Izvestia*, Feb. 27, 2023, <https://iz.ru/1475851/2023-02-27/v-kremle-prokommentirovali-mirnyi-plan-kitaia>.

⁶⁵ Foreign Ministry of the People’s Republic of China, “China’s Position on the Political Settlement of the Ukraine Crisis,” Feb. 24, 2023, https://www.mfa.gov.cn/eng/wjdt_665385/2649_665393/202302/t20230224_11030713.html.

nuclear capacity in case of a future conflict. China obtains 5 percent of its energy from nuclear power but aims to boost its share to 15 percent by 2050.⁶⁶

If China's red line for supporting the Russian invasion is nuclear use, this is a low standard indeed. Nevertheless, while PRC officials appear to be giving Putin considerable leeway in prosecuting his war on Ukraine, they have not been prepared to support Russia materially in any systematic or overt way, beyond providing some dual-use technologies under the radar, increasing energy purchases, and other economic cooperation, as long as this does not result in counter-sanctions.

This is not surprising because China and Russia have long been opposed to participating in military alliances on principle. Moreover, the "no limits" partnership was never meant to be one without any parameters—the "no limits" formulation actually comes from an effort by PRC officials to say that an alliance was unnecessary because the partnership had room to expand as needed.⁶⁷ Both Russia and China have sought to maintain flexibility and autonomy even as they deepen their political-military engagement.

What the February 4, 2022 statement does indicate, however, is greater overlap between PRC and Russian assessments of their security environment. Russia is now more concerned about US activities in the Asia-Pacific with the development of the Quad, including India, a longstanding Russian partner, and this grouping being directed against China, its strategic partner. Now that NATO considers China to be a "systemic challenge,"⁶⁸ China also has more in common with Russia in its opposition to NATO. Previously, China and Russia agreed to disagree on many key security issues, but these differences may be narrowing. The regularity of Sino-Russian engagement on political-military issues may be both a symptom of this and a cause. What continues to be lacking, however, is a joint approach to these perceived threats, either in terms of planning or operations.

⁶⁶World Nuclear Association, "Nuclear Power in China" (updated January 2023), [https://world-nuclear.org/information-library/country-profiles/countries-a-f/china-nuclear-power.aspx#:~:text=Projections%20for%20nuclear%20power%20then,electricity%20\(with%20coal%2064.6%25\)](https://world-nuclear.org/information-library/country-profiles/countries-a-f/china-nuclear-power.aspx#:~:text=Projections%20for%20nuclear%20power%20then,electricity%20(with%20coal%2064.6%25)).

⁶⁷ Xin Zhang, "'Endogenous Drives' with 'No Limits': Contrasting Chinese Policy Narratives on Sino-Russian Relations since 2014," Russian Analytical Digest No. 265, 7, <https://css.ethz.ch/content/dam/ethz/specialinterest/gess/cis/center-for-securities-studies/pdfs/RAD265.pdf>. For a more detailed discussion, see Elizabeth Wishnick, "Strategic Ambiguity and the Sino-Russian Partnership," China Air Force Institute, October 31, 2022, <https://www.airuniversity.af.edu/Portals/10/CASI/documents/Research/CASI%20Articles/2022-10-31%20Strategic%20Ambiguity%20and%20the%20Deterrent%20Value%20of%20the%20Sino-Russian%20Partnership.pdf>.

⁶⁸NATO Brussels Summit Communiqué, June 14, 2021, https://www.nato.int/cps/en/natohq/news_185000.htm.

Assessment

Since establishing their annual bilateral security consultation mechanism in 2005, Russia and China have added additional security consultation mechanisms, such as the Northeast Asia security dialogue. The establishment of the five-year roadmap mechanism for military cooperation in 2017 and its renewal in 2021 has further institutionalized the consultation mechanism framework and has extended it beyond security and into the realm of military diplomacy. Both the frequency and topics of the discussions highlight that the consultation mechanism indicator for Russia-China bilateral cooperation is at the higher end of the moderate level on our scale. Similarly, interactions between high-level Russian and Chinese military officials occur 20 to 30 times a year, placing the military diplomacy indicator also at the higher end of the moderate level.

A series of joint statements in the 2000s show the deepening and growing institutionalization of political-military cooperation between Russia and China. Their February 4, 2022 joint statement in particular shows greater overlap between their security concerns, with China agreeing with Russian positions on European security and NATO. In this statement, the PRC asserts that “The Chinese side is sympathetic to and supports the proposals put forward by the Russian Federation to create long-term legally binding security guarantees in Europe.”⁶⁹ This does not mean that China and Russia have identical security concerns; in terms of political-military cooperation, this is most apparent in their different interests in the aftermath of the US withdrawal from the INF Treaty and their different approaches to nuclear first use.

On Ukraine, China has provided rhetorical support, echoing Russian propaganda blaming NATO for the conflict. The PRC also has abstained on key UN resolutions criticizing the Russian invasion and supported its continued membership in the UN Human Rights Council. Chinese companies largely have observed economic sanctions against Russia and we have not seen any systematic and overt material aid from China for the Russian war on Ukraine, though some PLA-affiliated companies have managed to provide some lethal aid and may be considering more substantial deliveries, as we discuss in the next section. As noted earlier, Xi reportedly raised unspecified concerns with Putin in their September 15, 2022 summit meeting in Samarkand, most likely regarding nuclear threats or potential nuclear use, the only areas where the Chinese leader has come close to criticizing Russian actions in Ukraine. While Putin has expressed gratitude for China’s support, its level falls well short of the mutual aid one would expect in an alliance.

⁶⁹“Joint Statement of the Russian Federation and the People’s Republic of China on the International Relations Entering a New Era and the Global Sustainable Development,” <http://en.kremlin.ru/supplement/5770>.

Nevertheless, the Russian war on Ukraine has not interrupted Sino-Russian political-military cooperation, Chinese efforts to portray itself as impartial notwithstanding. Regular security consultations and the 2021 military roadmap are proceeding as planned. Such institutionalized and regularized interactions, coupled with regular joint military exercises and patrols, give the appearance of strategic coordination, though there may well be differences in perspectives on some of the security issues discussed. Detailed analysis of Chinese and Russian actions in particular regions will be needed to assess whether the two countries act in concert or in parallel, agreeing to disagree for the sake of a shared perception of threat from the US and its allies, and their common concern over domestic regime security. At this juncture, Sino-Russian political-military cooperation displays a moderate level of interaction, achieving a high degree of regularized activities, but still lacking the jointness in strategic planning or in operations that one would expect at a high level of political-military cooperation.

Arms Sales and Other Forms of Military-Technical Cooperation

Military-technical cooperation (MTC), accompanied by military exchange programs, are important measures of the state of Sino-Russian military relations. To assess MTC, it is necessary to review and evaluate its various components, including Russian arms transfers to China, joint technology projects between the two countries (i.e., technology transfers and joint research and development (R&D) and production projects), military exchange and technical training programs, and Russian imports of Chinese systems and technologies. These represent the principal lines of effort between the two countries.

In evaluating the various components of MTC, it is necessary to apply the assessment scale described in the methodology, since some MTC components represent more advanced forms of cooperation than others. For example, joint development and production of major weapons platforms typically requires a far higher degree of cooperation than is needed with the typical arms sale, since the former tends to include the transfer of technology, sustained cooperation between respective defense industries, and greater integration of defense-related activities. As we will show, Sino-Russian MTC has expanded sharply since 2014, and it continues to operate at a high level based on the assessment scale. At the same time, MTC continues to operate within well-circumscribed limits, even though these limits have been relaxed in some areas, such as sales of advanced Russian weapon systems. Most recently, however, the growing challenges presented by unprecedented Western sanctions have become an important limiting factor in Sino-Russian MTC.

The Impact of Russia's Invasion of Ukraine on Russia-China Trade and Energy Ties

While the primary focus of this report is on Russia-China military cooperation, we first briefly examine how Russian-Chinese trade and energy ties have evolved since the 2022 Ukraine invasion. The aim of this assessment is to shed additional light on areas outside of the military domain where Russia and China are currently supporting each other and how that has evolved in the face of Western pressure to reduce cooperation.

Given that the two countries maintain a diverse and multifaceted relationship, it is often the case that a decline in cooperation in one area is compensated by increased cooperation in another. We have seen this in the military domain, where a decline in arms sales starting in

2005 was offset by a sharp increase in the scale and intensity of joint military exercises. Cooperation outside of the military domain has been especially important since the outbreak of the Russia-Ukraine war.

While Beijing has been reluctant to engage in overt forms of military cooperation with Russia out of a desire to avoid the imposition of Western sanction, China has been far more willing to support Russia economically through increased trade and energy ties and through the provision of electronic chips, microprocessors and other components. At the same time, increased trade and energy ties are also driven by the newfound opportunities available to Chinese firms, which are taking advantage of Russia's situation to acquire greater market share in key Russian domestic markets and to cut better deals for themselves.

According to Chinese customs data, cross-border trade between Russia and China increased sharply in 2022, with total trade turnover jumping from \$141 billion in 2021 to \$190 billion in 2022, an increase of nearly 35 percent (See Figure 4).⁷⁰ These totals were more than sufficient to cement China's position as Russia's number one trading partner, a position it has held for more than a decade.⁷¹ While Beijing is not nearly as dependent on Russia, which only ranks as China's 14th largest trading partner, Moscow's importance as a trading partner for China has been growing as well, with Russia currently accounting for more than 3 percent of its global trade turnover in 2022 compared to just 2.1 percent in 2021.⁷² Moreover, China's continuing access to Russian energy sources and advanced military technologies are of great strategic importance for Beijing.

Recent sharp increases in cross-border trade are driven primarily by Western sanctions, which are forcing Russia to redirect its energy exports away from Europe and more towards the Asia-Pacific region, and China in particular. China's determination to stay out of the Western sanctions regime has generated opportunities for both sides to ramp up cross border trade and

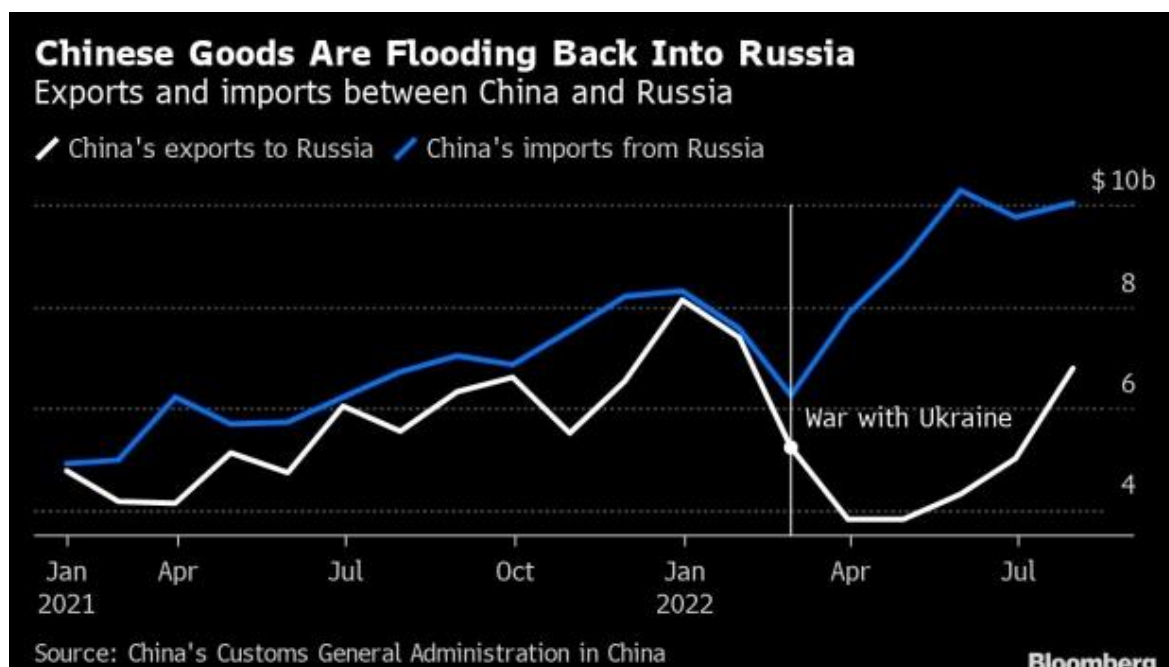
⁷⁰ "China's 2022 trade with Russia hit record \$190 bln – customs," *Reuters*, Jan. 13, 2023, <https://www.reuters.com/world/china-customs-says-trade-with-russia-hit-new-high-2022-2023-01-13/>. Trade totals for 2021 are taken from the UN COMTRADE database. See "Russia-China - All Trade Flows 2021" *UN COMTRADE Database*, accessed Jan. 19, 2023, <https://comtrade.un.org/data>. Russian news agency TASS reported a 29.3 percent increase in total trade between the two side from 2021 to 2022. See "Russia-China trade turnover rises by 29.3 percent to record-breaking \$190 bln in 2022," *TASS*, Jan. 13, 2023, <https://tass.com/economy/1561975>.

⁷¹ Beiye Seow, "Russia and Ukraine: China's Trade Partners in Numbers," *Moscow Times*, Mar. 4, 2022, <https://www.themoscowtimes.com/2022/03/04/russia-and-ukraine-chinas-trade-partners-in-numbers-a76759>.

⁷² "China-Russia relations: A quantum leap?" *European Parliament Think Tank*, Mar. 31, 2022, [https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI\(2022\)729349](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2022)729349); "China's 2022 trade with Russia hit record \$190 bln – customs," *Reuters*, Jan. 13, 2023, <https://www.reuters.com/world/china-customs-says-trade-with-russia-hit-new-high-2022-2023-01-13/>.

financial ties.⁷³ As a result, Russia has been able to sustain energy exports at levels sufficient to support its overall economy, despite recent declines in energy exports to Europe. At the same time, Moscow has been leveraging its continuing access to Chinese export products to purchase a wide range of consumer and industrial products with emphasis on replacing those that it can no longer source from the West.

Figure 4. Chinese Trade with Russia, 2021-2022



Source: "China Exports to Russia Boom Anew in Return to Near Pre-War High," *Bloomberg News*, Aug. 8, 2022, <https://www.bnnbloomberg.ca/china-exports-to-russia-boom-anew-in-return-to-near-pre-war-high-1.1802892>.

For its part, China has been taking advantage of Russia's urgent need for new energy markets to secure lower energy prices and to lock in long-term energy supply contracts. Russian oil and crude petroleum exports are especially important for China, accounting for 48.3 percent of Beijing's total imports from Russia.⁷⁴ By refusing to join the Western sanctions regime against Russia, China has smartly positioned itself to take advantage of Russia's growing need for alternative energy markets. This decision has had two-fold benefits for China. First, by

⁷³ Mark Green, "In the Months Since Russia's Brutal Invasion of Ukraine, Its Trade With China Has Surged," *Wilson Center*, Nov. 8, 2022, <https://www.wilsoncenter.org/blog-post/months-russias-brutal-invasion-ukraine-its-trade-china-has-surged>.

⁷⁴ *Ibid.*

continuing to purchase Russian oil, China has been directly supporting Russia's economy and indirectly supporting its war efforts in Ukraine, measures which allow China to maintain support for their strategic partnership with minimal sanctions risk. At the same time China has been able to buy additional oil from Russia at substantially discounted prices.⁷⁵

Chinese imports of Russian natural gas grew even more dramatically in 2022, increasing from \$3.98 billion in 2021 to \$6.75 billion in 2022, a more than two-fold increase, according to Chinese customs data. Most of the increases were attributable to an influx of Russian LNG to China, as Russia ramped up LNG supplies shipped by train from facilities in Siberia and by sea from LNG facilities originally intended to supply LNG to Europe and other countries. At the same time, Russian natural gas exports to the PRC over the existing Power of Siberia pipeline increased by more than 50 percent in 2022, as China sought to lock in lower prices as a result of Moscow's growing need to replace natural gas markets in Europe.⁷⁶ This in turn has resulted in a further decrease of Chinese dependence on sea-borne energy sources from the Middle East.

Most observers expect Russian-Chinese energy ties to expand even further over the near term, driven by Russia's increasingly urgent need to sustain revenues from energy exports to support its economy. The Russian state budget is particularly dependent on Russian energy exports, influencing how much Russia can spend on its military. Beijing's recent decision to end the zero-Covid policy and reopen its economy is likely to drive increased Chinese energy demand. Based on this confluence of interests, we are likely to see further increases in energy trade going forward, although the benefits to Russia will be offset to some extent based on discounted pricing.⁷⁷

At the same time, Chinese leaders have been boosting trade ties with Moscow as a means to shore up the Russian economy and to provide indirect support for Russia's war effort against Ukraine. Increased trade between the two countries was led by Russian exports, which reached \$114.5 billion in 2022 according to the Chinese customs website.⁷⁸ This represented an increase of more than 43 percent over Russia's exports for 2021, which totaled \$79.8 billion

⁷⁵ Laura He, "China's exports plunge as global demand weakens, but trade with Russia hits record high," *CNN*, Jan. 13, 2023, <https://www.cnn.com/2023/01/13/economy/china-exports-struggle-reopening-2022-intl-hnk/index.html>; Clyde Russell, "Excluding Russian oil from China's imports may give clearer view," *Reuters*, Jan. 17, 2023, <https://jp.reuters.com/article/column-russell-oil-china-russia-idAFL1N34207X>.

⁷⁶ "China's gas imports from Russia double in 2022 amid Ukraine crisis," *msn.com*, Jan. 20, 2023, <https://www.msn.com/en-xl/news/other/chinas-gas-imports-from-russia-double-in-2022-amid-ukraine-crisis/ar-AA16yvKI>; "China's 2022 trade with Russia hit record \$190 bln – customs," *Reuters*, Jan. 13, 2023, <https://www.reuters.com/world/china-customs-says-trade-with-russia-hit-new-high-2022-2023-01-13/>.

⁷⁷ Clyde Russell, "Excluding Russian oil from China's imports may give clearer view," *Reuters*, Jan. 17, 2023, <https://jp.reuters.com/article/column-russell-oil-china-russia-idAFL1N34207X>.

⁷⁸ "Russia-China trade turnover rises by 29.3% to record-breaking \$190 bln in 2022," *TASS*, Jan. 13, 2023, <https://tass.com/economy/1561975>.

according to TASS, Russia's state-owned news agency. Russian exports to China were dominated by trade in energy resources including oil, natural gas, LNG, coal, and fuel oil, which accounted collectively for more than 70 percent of Chinese imports from Russia in 2022. This reflected a further increase in the share of energy in cross-border trade, which increased from 66 percent of total Russian exports to Beijing in 2021. Minerals, natural resources, wood, agricultural products, and seafood were likewise important components of Russian exports to China.⁷⁹

Russian imports from China increased as well during 2022, rising from \$68.5 billion in 2021 to \$76.1 billion in 2022, an increase of nearly 12.8 percent. Russian imports from China were more diverse, with Russia relying on China for a wide range of consumer and intermediate goods. Exports of Chinese electronic components, broadcasting equipment, computers, machinery, boilers, and electrical equipment led the way accounting. While specific numbers are not available for 2022, imports of these products accounted for \$47.7 billion of Russia's total imports from China in 2021 according to UN COMTRADE. Russia also imported a wide range of Chinese consumer goods, including electronics, automobiles, apparel, and footwear.⁸⁰

Trade between the two countries appears poised to grow even further. According to China's ambassador to Russia Zhang Hanhui, Beijing's recent decision to formally end its zero-Covid policy is paving the way for a resumption of travel between the two countries, which will serve to further deepen strategic cooperation.⁸¹ Trade is also likely to be more reliant on use of Chinese renminbi and Russian rubles as Russia seeks to circumvent SWIFT and related sanctions on Russian trade in Western currencies.⁸²

Russian Arms Transfers to China

Russian arms sales to China have long been a mainstay of Sino-Russian MTC, although the volume of trade has undergone several peaks and valleys during the post-Cold War period. From 1991 to 2005, China purchased large volumes of Russian weapon platforms, including

⁷⁹ "Russia-China trade turnover rises by 29.3% to record-breaking \$190 bln in 2022," TASS, Jan. 13, 2023, <https://tass.com/economy/1561975>. By comparison, UN COMTRADE, a more reliable source, reported Russian exports to China at around \$68.7 billion in 2021. "Russia-China, Russian Exports to China 2021" UN COMTRADE Database, accessed Jan. 19, 2023, <https://comtrade.un.org/data>.

⁸⁰ See "Russia-China trade turnover rises by 29.3% to record-breaking \$190 bln in 2022," TASS, Jan. 13, 2023, <https://tass.com/economy/1561975>; "Russia-China, Russian Exports to China 2021" UN COMTRADE Database, accessed Jan. 19, 2023, <https://comtrade.un.org/data>.

⁸¹ "China's 2022 trade with Russia hit record \$190 bln – customs," Reuters, Jan. 13, 2023, <https://www.reuters.com/world/china-customs-says-trade-with-russia-hit-new-high-2022-2023-01-13/>.

⁸² "China-Russia relations: A quantum leap?" European Parliament Think Tank, Mar. 31, 2022, [https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI\(2022\)729349](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2022)729349).

combat aircraft, ships and submarines, air defense systems, and a variety of other weapon systems. Over that period, Russian arms sales to China were averaging around \$2 billion to \$3 billion per year.

During this period, initial weapons sales often paved the way for licensed production agreements, in which Chinese defense firms were granted rights to locally produce Russian weapons in the PRC using Russia-supplied assembly kits. Such agreements entailed a higher degree of cooperation, including the sharing of Russian military technology, enhanced training for PRC personnel, and long-term support. While the Su-27 is the most notable example, China received licensed production rights for a wide range of Russian weapon systems.⁸³

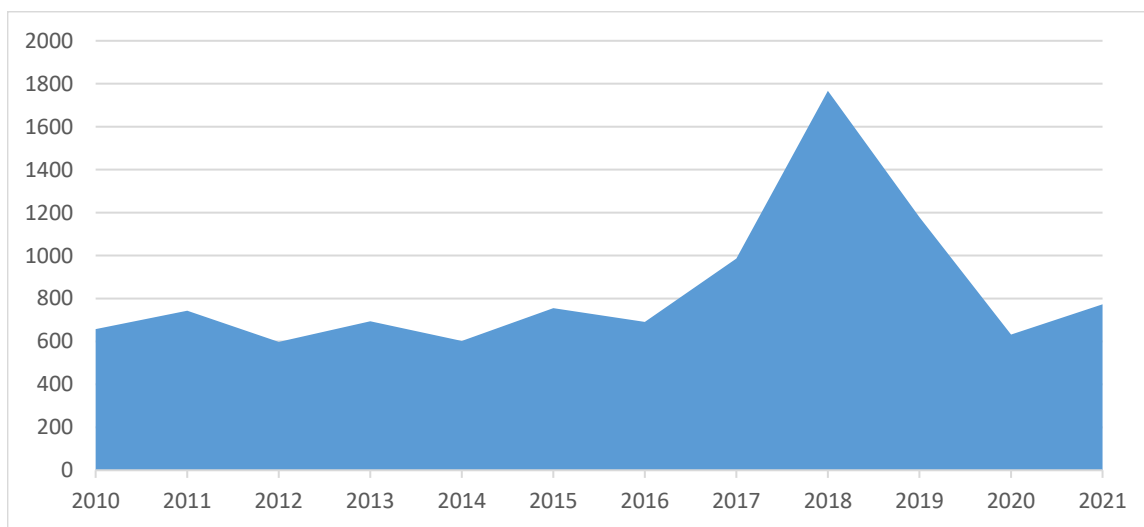
However, from 2005 to 2015, arms sales declined significantly because of a range of factors, including China's growing self-sufficiency in the production of weapons platforms (e.g., ships, combat aircraft), Russian concerns over China's reverse engineering practices, and China's desire to purchase more advanced Russian weapons, which the Kremlin preferred to withhold.⁸⁴ During this "lost decade," Russia and China did not conclude a single major new arms sales agreement, although transfers of Russian transport helicopters and turbofan aircraft engines continued.

As shown in Figure 5, Russian arms sales to China jumped sharply starting in 2015, highlighted by two landmark agreements, including one for the sale of Su-35 combat aircraft for \$2 billion and another for the transfer of S-400 air defense systems worth \$3 billion. These were by far the most notable arms sales agreements between the two sides since 2005. They also demonstrated Russia's newfound willingness to transfer more of its most advanced weapons, since these were the best Russian systems in their class.

⁸³ These include licenses to produce *inter alia* Russian Mi-17 transport helicopters, 152 mm MSTA-S artillery systems, AK-176 naval guns, Kh-31 anti-radiation missiles, Tor surface-to-air missile batteries, Krasnopol guided projectiles, Reflex-M antitank missiles, and the Bakhcha-U combat modules, among other systems. Alexander Gabuev and Vasily Kashin, "Armed friendship: how Russia and China trade arms" [Вооруженная дружба: как Россия и Китай торгуют оружием], *Carnegie Moscow Center*, Nov. 2, 2017, <https://carnegie.ru/2017/11/02/ru-pub-74601>. Lyle Goldstein and Vitaly Kozyrev, "China-Russia Military Cooperation and the Emergent U.S.-China Rivalry: Implications and Recommendations for U.S. National Security," *Journal of Peace and War Studies* (Oct. 2020): p. 28.

⁸⁴ See for example, "Gun Friendship" [Оружейная дружба], *Kommersant*, Mar. 14, 2007, <https://www.kommersant.ru/doc/748089>. [China has long been interested in acquiring Kh-59M air-to-surface antiship missiles, high-precision weapons, electronic countermeasures, and reconnaissance systems. However, the Russian Defense Ministry refused to allow the export of such weapons to China.]

Figure 5. Russian Arms Sales to China (total revenue from 2010-2021, millions of US dollars)



Source: Stockholm International Peace Research Institute (SIPRI) – Importer/Exporter TIV Tables, accessed January 2, 2023, <https://armstrade.sipri.org/armstrade/page/values.php>.

The Su-35 and S-400 transactions were followed by additional agreements signed in 2016 for the sale of D-30 and Al-31 aircraft engines for Chinese combat aircraft, with a combined contract value of around \$1 billion.⁸⁵ The two sides also agreed to new licensed production

⁸⁵ “China buys 463 D30 engines for Y-20 and H-6K, WS-20 to come,” *China Arms*, Jan. 6, 2020, <https://www.china-arms.com/2020/01/d30-engines-for-y20-and-h6k/>; “TRD WS-20: Will China replace the Russian engine?” [ТРДД WS-20. Заменит ли Китай российский двигатель?], *Nauka Technika*, Mar. 31, 2020, <https://naukatehnika.com/ws-20-zamenit-li-kitaj-rossijskie-dvigateli.html>; “What is worthy of China: 10 years of military supplies from Russia” [Что достойно Китая: 10 лет военных поставок из России], *VPK News*, Mar. 17, 2020, https://vpk.name/news/384746_chno_dostoino_kitaya_10 лет_voennyh_postavok_iz_rossii.html; Alexey Nikolsky, “China continues to purchase military aircraft engines from Russia” [Китай продолжает закупку военных авиадвигателей в России], *Vedomosti*, Oct. 25, 2016, <https://www.vedomosti.ru/politics/articles/2016/10/25/662267-voennih-aviadvigatelei-rossii>; SIPRI Arms Transfer Database – Russia-China Trade Registers (2014-2020), Stockholm International Peace Research Institute, accessed Oct. 13, 2022. The first two Russian articles cited claim this transaction involved the sale of 224 D-30 engines in total, to be completed in two batches—one for the Y-20 and another for the H-6K. A disclosure by NPO Saturn indicates that the contract value for the 224 additional engines was set at \$658 million. “PJSC UEC-Saturn [ПАО “ОДК-Сатурн”], *Disclosure Center Corporate Information*, Oct. 27, 2016, <https://www.e-disclosure.ru/portal/event.aspx?EventId=bWMbyatAmk-C12MExVt176w-B-B&attempt=1>. Note that SIPRI reports a larger 2015 transaction for delivery of an additional 625 D-30 engines, but we were unable to corroborate this report. The Al-31 sale had an estimated contract value of between \$500 million and \$625 million. See Nikolsky, “China continues to purchase.”

arrangements, including an agreement to make Russian Be-103 amphibious aircraft in China.⁸⁶ According to reports, China may have also been granted rights to locally produce Russian 3M-54E (SS-N-27) Klub Sizzler antiship missiles (Chinese version is called the YJ-18).⁸⁷ Because of these transactions, revenues from Russian arms sales to the PRC have been averaging around \$1 billion per year since 2015, levels not seen since 2005. Overall, from 1991 to 2021, total revenues from Russian arms sales to China significantly exceeded those realized from all other Russian arms clients except India, Moscow's largest arms client over the last thirty years. The two sides also signed a new roadmap for military cooperation in 2017, adding to perceptions of a revitalized arms trade relationship.⁸⁸

This remarkable turnaround was driven by several factors, including a concerted effort by Russian and Chinese leaders to upgrade relations in response to US measures targeting both countries (e.g., Western sanctions on Russia and the US "Pivot to Asia").⁸⁹ This was further reinforced by Russia's growing economic and diplomatic dependence on China after the deterioration with relations with the West following the annexation of Crimea in 2014, which strengthened China's bargaining power, leading Moscow to set aside concerns over Chinese intellectual property theft and agree to transfer more advanced weapons in a bid to strengthen relations with Beijing.

According to Alexander Gabuev, a leading expert on Russian-Chinese relations, the latter decision was backed by an in-depth interagency study sponsored by the Kremlin of the risks of engaging in new arms sales to China, which found that the threat posed by Chinese reverse engineering was overstated because China's defense base had already advanced much further than Russian leaders had previously believed. Thus, the risks of transferring advanced Russian weapons to China were minimal, since China was rapidly catching up on its own. For the same reason, the Kremlin concluded that opportunities to complete new arms sales to China were closing, which lent greater urgency to completing the Su-35 and S-400 sales while there was

⁸⁶ "Russia to open licensed production of Be-103 amphibious aircraft in China" [Россия откроет в Китае лицензионное производство самолета-амфибии Бе-103], *Vzglyad*, Nov. 3, 2016, <https://vz.ru/news/2016/11/3/841789.html>.

⁸⁷ Alexander Gabuev and Vasily Kashin, "Armed friendship: how Russia and China trade arms" [Вооруженная дружба: как Россия и Китай торгуют оружием], Carnegie Moscow Center, Nov. 2, 2017, <https://carnegie.ru/2017/11/02/ru-pub-74601>, citing "Shoigu: Russia and China have agreed on the supply of anti-ship missiles," *Gazeta.ru*, Feb. 21, 2017, <https://www.gazeta.ru/army/news/9713603.shtml>.

⁸⁸ "Chinese Defense Ministry confirms signing of roadmap for cooperation with Russia," RIA Novosti, June 29, 2017, <https://ria.ru/20170629/1497515469.html>.

⁸⁹ Yu Bin, "Tales of Different Pivots," *Comparative Connections* 14, no. 3 (Jan. 2013), <https://cc.pacforum.org/2013/01/tales-different-pivots/>.

still time.⁹⁰ For its part, Beijing agreed to buy Russian systems in larger volumes, helping to assuage Russian concerns.

Despite the initial surge of large-scale arms agreements, since 2016, Russian arms transfers to the PRC have not lived up to expectations, as the two sides failed to sign a significant new arms sales agreement since then, other than a series of agreements between 2017 and 2019 to purchase a total of 40 Russian Mi-171 transport helicopters for an undisclosed amount.⁹¹ Even then, the Mi-171 transactions were not especially noteworthy, either in terms of their size or military significance; they were merely the latest in a long series of agreements since 1995 involving the transfer of Russian Mi-8/Mi-17 helicopters to China.⁹²

The recent downturn in weapons transfers shows that Russian arms sales are still limited by various factors, including persistent concerns over Chinese reverse engineering practices and the PRC's growing self-sufficiency in weapons production, among other issues.⁹³ As many have noted, China has been steadily closing the technology gap with Russia across a range of weapon systems and is now able to produce surface warships, combat aircraft, ground combat systems, and theater ballistic missiles that, with some exception, are equal or superior to Russian counterparts.⁹⁴ Even more important is the growing effects of Western sanctions, especially since Russia's 2022 invasion of Ukraine, which have dramatically raised the costs for China of additional arms purchases from Russia. The threat of sanctions is now the dominant factor in Chinese decision-making, making future arms sales less likely over the near term, although the transfer of aircraft engines and components will probably continue.

Although the assessment scale does not assign nearly as much weight to arms transfers in measuring the strength of military relations (as compared to "higher" forms of cooperation, such as joint production), the resumption of large-scale arms transfers in 2015 was a major

⁹⁰ Alexander Gabuev, "China and Russia: Friends with strategic benefits." Lowy Institute, Apr. 7, 2017, <https://www.lowyinstitute.org/the-interpreter/china-russia-friends-strategic-benefits>. It should be noted, however, that others have contested the report's findings: if China was rapidly closing the technology gap with Russia, then why did not they just wait to develop their own systems?

⁹¹ SIPRI Arms Transfer Database – Russia-China Trade Registers (2014-2020), *Stockholm International Peace Research Institute*, accessed Oct. 24, 2022.

⁹² SIPRI Arms Transfer Database – Russia-China Trade Registers (1990-2021), *Stockholm International Peace Research Institute*, accessed Oct. 24, 2022.

⁹³ Dmitry Simes, "Russia up in arms over Chinese theft of military technology," *Nikkei Asia*, Dec. 20, 2019, <https://asia.nikkei.com/Politics/International-relations/Russia-up-in-arms-over-Chinese-theft-of-military-technology>; Alexander Gabuev and Vasily Kashin, "Armed friendship: how Russia and China trade arms" [Вооруженная дружба: как Россия и Китай торгуют оружием], *Carnegie Moscow Center*, Nov. 2, 2017, <https://carnegie.ru/2017/11/02/ru-pub-74601>.

⁹⁴ See for example, Andrew S. Erickson and Gabriel B. Collins, "Putin's Ukraine Invasion: Turbocharging Sino-Russian Collaboration in Energy, Maritime Security, and Beyond?" *Naval War College Review* no. 4 (2022), 104-05.

achievement for the two countries, restoring it once again as a central pillar of their relationship. Since 2015, the two sides have reportedly signed \$8 billion in new arms agreements, further strengthening defense ties in the process.⁹⁵

At the same time, Moscow's willingness to transfer some of its most advanced weapon systems to China represented an upgrade in relations, potentially paving the way for future advanced weapons sales. New licensed production agreements are further evidence of the enduring strength of Russia's arms trade with China. For these reasons, Russian arms transfers to China since 2015 warrant a "high" rating, despite the recent downturn in new arms sales. Given constraints on future sales, however, Russian arms transfers are likely to decline over the near term, leading the two to shift more toward joint technology projects.

The relative decline in arms sales is in no way indicative of an overall decline in defense cooperation. It simply illustrates that defense cooperation is shifting into other areas, and in the case of military-technical cooperation, the trend is towards joint technology projects. This conclusion is further supported by the long-term decline in the ratio of Russian arms sales to China from a level of 25 percent of total Russian-Chinese cross-border trade in the mid-1990s to just three percent of total trade most recently. Yet, defense cooperation over this same period has continued to expand and intensify in multiple areas, another key indicator that Sino-Russian relations are not purely transactional.⁹⁶

Technology Transfer and Joint Development

With arms sales facing increased pressure from Western sanctions, joint technology projects (technology transfer and joint development) are fast becoming the principal line of effort in Sino-Russian MTC. Technology transactions are hardly new, however, having been a key component of Sino-Russian military relations since the early 1990s. Over the years, China has commissioned Russia to aid in the development of a wide range of Chinese weapon systems, including the WZ-10 helicopter, L-15 combat trainer, and the PL-12 air-to-air missile, all based on Russian systems and technology.⁹⁷ According to Boris Obnosov, General Director of Tactical

⁹⁵ Kirill Yablochkin, "China to buy arms worth \$8bn from Russia" [Китай закупит у России вооружение на 8 млрд долларов], *Argumenty I Fakty*, Nov. 1, 2016, https://aif.ru/money/market/kitay_zakupit_u_rossii_vooruzhenie_na_8_mlrld_dollarov. Although an estimated 30 percent of this amount is slated for joint technology projects (covered below).

⁹⁶ Michael Kofman, "The Emperors League: Understanding Sino-Russian Defense Cooperation," *War on the Rocks*, Aug. 6, 2020, <https://warontherocks.com/2020/08/the-emperors-league-understanding-sino-russian-defense-cooperation/>.

⁹⁷ Alexander Gabuev and Vasily Kashin, "Armed friendship: how Russia and China trade arms" [Вооруженная дружба: как Россия и Китай торгуют оружием], Carnegie Moscow Center, Nov. 2, 2017, <https://carnegie.ru/2017/11/02/ru-pub-74601>.

Missiles Corporation, Russian “industry [has] traditionally performed a large amount of research and development in the interests of the Chinese aerospace and defense industry,” with joint R&D contracts accounting for nearly one-third of total revenues.⁹⁸

Since 2014, technology projects have been reaching new heights as the two countries have launched a series of joint projects, including, most notably, projects to develop a heavy-lift helicopter, a new conventional submarine, and tactical missiles, among others.⁹⁹ Technology projects have also been expanding into new areas. According to Rostec executive Viktor Kladov, Russia is currently cooperating with China on the development of land, air, and naval systems of various kinds.¹⁰⁰

Technology cooperation is also becoming more strategic, highlighted by the new joint project to develop a Chinese early warning system.¹⁰¹ Moscow and Beijing have also launched a number of joint technology projects involving artificial intelligence, space systems, and other high-tech areas.

The shift toward joint technology projects represents a sharp upgrade in Sino-Russian MTC, reflecting a higher level of cooperation to include the joint design of major weapon systems and the integrated production of components. As Viktor Kladov, Rostec’s director of international policy, noted in 2017 when asked about the growth of Russian arms sales to China:

I think that it is not the quantity that is changing, but the quality of the partnership. What does it mean? Previously, it was only about the purchase of some systems, then other systems. [Today,] we have a large number of technology and R&D projects. And the proportion of such projects is increasing. That is, there is a transition from trade in iron to trade in intelligence, intellectual developments.¹⁰²

The increased emphasis on technology projects is driven by a range of factors, including, first and foremost, China’s relentless desire to acquire advanced Russian military technologies to

⁹⁸ “KTRV announced assistance to China in the creation of missile weapons” [В КТРВ заявили о помощи Китаю в создании ракетного вооружения], *Lenta.ru*, Aug. 14, 2017, <https://lenta.ru/news/2017/08/14/china/>.

⁹⁹ *Ibid.*

¹⁰⁰ “An unprecedented level of trust.” Russia and China are jointly designing a submarine” [Беспрецедентный уровень доверия. РФ и КНР вместе проектируют подлодку] Aug. 25, 2020, Radio Sputnik, <https://radiosputnik.ria.ru/20200825/armiya-2020-1576275670.html>.

¹⁰¹ Vladimir Petrovsky, “Russia Helps China Build Missile Early Warning System” [Россия помогает Китаю создавать систему раннего оповещения о ракетном нападении], *interaffairs.ru*, Oct. 14, 2019, <https://interaffairs.ru/news/show/24125>.

¹⁰² “Viktor Kladov: Rostec cooperates with China in the most advanced technologies” [Виктор Кладов: Ростех сотрудничает с Китаем в самых передовых технологиях], *rostec.ru*, Nov. 8, 2016, https://rostec.ru/news/4519345/?sphrase_id=4902557.

further its own defense production. Russia's defense industry still maintains a lead over China in several key areas, including *inter alia* air and missile defense, submarine technology, and long-range precision strike. The PLA Navy would benefit in particular from greater access to Russian submarine technology, including advanced quieting technology, acoustic systems, and nuclear propulsion.¹⁰³ While Moscow remains wary of transferring its most advanced weapons systems, it has been more willing to share other important technologies. Moreover, Moscow's growing dependence on China since Russia's 2022 invasion of Ukraine has strengthened Beijing's hand in bargaining for technology transfer.

For Russia, technology projects are proving to be an effective way to maintain its preeminent position in China's defense market despite the recent decline in arms sales. Finally, and perhaps most importantly, both sides see technology projects as an effective means to evade Countering America's Adversaries Through Sanctions Act (CAATSA) sanctions, since they are easier to conceal in contrast to major weapon sales.

Still, there are clear limits on the degree of cooperation in this area. In the military domain, joint technology projects still tend to be relatively one-sided in nature, focused mainly on transferring Russian technology to China, but with little going the other way. Specifically, so-called "joint development" projects have by and large been vehicles for Russia to contribute technology, components, and expertise as part of a larger Chinese-led project aimed at fulfilling a Chinese requirement.¹⁰⁴ At the same time, Russia's role in these projects tends to be relatively limited.

The ongoing advanced heavy-lift helicopter (AHL) project is a good case in point. While the project was initially touted as a "co-equal partnership" between Beijing and Moscow, over time, Russia's role was reduced to that of a subcontractor responsible for development of the transmission and tail rotor, while providing technology and engineering support on the overall design.¹⁰⁵ The Chinese make no bones about using the project to obtain technology and know-how from Russia. According to Wang Xiaowei, a Chinese expert on Russian studies at the prestigious China University of Political Science, cooperation with Moscow on this project

¹⁰³ Erickson and Collins, p. 104.

¹⁰⁴ Since 2014, this is starting to change as Russia increasingly looks to the PRC for components and technologies it can no longer obtain from the West, as further discussed below.

¹⁰⁵ Yuri Ponomarev, "China decided to create its first heavy helicopter with the help of Russia" [Китай решил создавать свой первый тяжелый вертолет с помощью России], zhukvesti.ru, Nov. 16, 2021, <https://www.zhukvesti.ru/articles/detail/35712/>; Inna Sidorkova, Serdyukov-RBC: "10-15 Years Ago We Could Not Imagine Anything Like That" [Сердюков — РБК: 10-15 лет назад такого и во сне нельзя было представить], RBC, July 26, 2018, <https://www.rbc.ru/interview/politics/26/07/2018/5b5879b99a7947f04c57a600>.

would help China overcome its longstanding deficiencies in heavy-lift rotary wing aircraft.¹⁰⁶ By contrast, boosting Russian technology is rarely mentioned as a goal. Quite the contrary—based on reports, the management of Russian Helicopters has been reluctant to transfer the underlying technology to China.¹⁰⁷

Russia nevertheless benefits from the project. First, it gives Russian defense firms their first opportunity since the Soviet era to participate in development of a new heavy-lift helicopter, advancing their own knowledge in the process.¹⁰⁸ Second, Russian Helicopters expects to profit handsomely from the project, based on projected sales of up to 200 helicopters to the PLA and other Chinese entities.¹⁰⁹

This pattern has been repeated for other projects as well, including the recently announced “joint project” to develop an early warning system for China, the first joint strategic weapons project undertaken by the two countries in many decades.¹¹⁰ Despite the fanfare surrounding this project, Russia has thus far been officially awarded just a single contract to develop modeling software for the new system, although Russian experts are also reportedly advising the Chinese on telemetry, tracking and command, and other aspects of the system.¹¹¹ Nevertheless, Moscow’s involvement in the new system demonstrates Russia’s continuing

¹⁰⁶ “China and Russia to Jointly Develop Heavy Lift Helicopters,” China Military Online, Mar. 18, 2019, http://eng.chinamil.com.cn/view/2019-03/18/content_9452246.htm.

¹⁰⁷ Vasily Kashin, Ma Bin, Yuki Tatsumi, and Zhang Jian, “Sino-Russian Relations: Perspectives from Russia, China, and Japan,” National Bureau of Asian Research, Special Report 79 (May 2019) p. 8, https://www.nbr.org/wp-content/uploads/pdfs/publications/sr79_sino-russian_relations_may2019.pdf.

¹⁰⁸ “Heavy helicopter with Chinese accent” [Тяжелый вертолет с китайским акцентом], *Kommersant*, Aug. 27, 2019, <https://www.kommersant.ru/doc/4072763>.

¹⁰⁹ “Sergey Chemezov: Cooperation between Rostec and China can be called large-scale” [Сергей Чемезов: Сотрудничество Ростеха с КНР можно назвать масштабным], *rostec.ru*, Aug. 29, 2017, <https://rostec.ru/news/4520994/>; “Heavy helicopter with Chinese accent” [Тяжелый вертолет с китайским акцентом], *Kommersant*, Aug. 27, 2019, <https://www.kommersant.ru/doc/4072763>.

¹¹⁰ Vladimir Petrovsky, “Russia Helps China Build Missile Early Warning System” [Россия помогает Китаю создавать систему раннего оповещения о ракетном нападении], *Interaffairs.ru*, Oct. 14, 2019, <https://interaffairs.ru/news/show/24125>. Although Chinese leaders have thus far neither confirmed nor denied its existence, the joint project was announced by President Putin himself, and since then has received considerable media coverage inside Russia. Russian officials and well-placed experts have also released several additional details regarding the project, giving further credence to these reports.

¹¹¹ Dmitry Stefanovich, “How will Russia help protect China from a missile attack?” Russia Council for International Affairs, Oct. 7, 2019, <https://russiancouncil.ru/analytics-and-comments/interview/kak-rossiya-pomozhet-zashchitit-kitay-ot-raketnogo-napadeniya/>; “Russia and China cooperate in the field of space control”, [РФ и Китай сотрудничают в сфере контроля космического пространства], *Interfax-AVN*, Feb. 23, 2020, <https://www.militarynews.ru/story.asp?rid=1&nid=527667&lang=RU>; “The Diplomat (USA): Russia will help China develop an early warning system,” *inosmi.ru*, Oct. 28, 2019, <https://inosmi.ru/amp/20191028/246116882.html>.

importance for China in building a world-class military.¹¹² According to PLA National Defense University professor Yang Yucai, China would benefit from Russian assistance in building such a system, as China required “a more sensitive missile attack warning system” to defend against missile attacks coming from the other side of the Pacific and against intermediate-range missiles.¹¹³ The new project also paves the way for future cooperation on strategic systems, an area in which Russia has deep expertise.¹¹⁴

Despite these shortcomings, the increased emphasis on joint technology projects represents a higher form of defense cooperation and an upgrade in relations, while promoting the further integration of the Russian and Chinese defense industries. According to Korolev, “as MTC moves into more advanced stages, [it] is increasingly characterized by long-term projects for the joint design and production of arms and their components. This increases mutual dependence and...high level coordination between multiple institutions.”¹¹⁵ Moreover, such projects typically involve the sharing of sensitive technologies, which requires a higher degree of sustained cooperation and trust. This is especially the case with technology transfers, which by their very nature require the sharing of sensitive weapons technology. This example aptly sums up the net effects of increased technology cooperation between Russia and China.

In contrast to arms sales, joint technology projects are likely to remain at a relatively high level for the foreseeable future despite Western criticism of Chinese defense cooperation with Russia. Driven by China’s growing confrontation with the United States, the PLA’s appetite for advanced military technology has increased sharply, driving it to pursue a variety of measures to acquire such technologies. Russia remains the PRC’s primary source of foreign military technology, which is spurring further cooperation. Russian submarine technology, air defense systems, military space, early warning systems, and ballistic missile defense are the most likely areas for future cooperation.¹¹⁶ Given recent trends, it seems more likely than not that Russia

¹¹² “Sohu (China): cooperation of the strong. Putin agreed to help China build a missile attack warning system. Russian experts: this has never happened before” [Sohu (Китай): сотрудничество сильных. Путин согласился помочь Китаю в создании системы предупреждения о ракетном нападении. Российские эксперты: такого еще не было], inosmi.ru, Oct. 8, 2019, <https://inosmi.ru/20191008/245976330.html>.

¹¹³ Yang Yucai, “China-Russia Missile Defense Cooperation Needed,” *Global Times*, Oct. 14, 2019, <https://www.globaltimes.cn/content/1166852.shtml>. For more on China’s public response, see “Defense Ministry’s Regular Press Conference on Oct. 31,” PRC Ministry of National Defense, Nov. 1, 2019, http://eng.mod.gov.cn/news/2019-11/01/content_4854326.htm.

¹¹⁴ “The Diplomat (USA): Russia will help China develop an early warning system” [The Diplomat (США): Россия поможет Китаю в разработке системы раннего предупреждения], inosmi.ru, Oct. 28, 2019, <https://inosmi.ru/amp/20191028/246116882.html>.

¹¹⁵ Alexander Korolev, “On the Verge of an Alliance: Contemporary China-Russia Military Cooperation,” *Asian Security* 15, no. 3 (2019): p. 236.

¹¹⁶ Erickson and Collins, p. 104-09.

will continue to serve primarily as a subcontractor on Chinese-led projects while contributing technology and know-how. Nevertheless, Moscow's participation in such projects will help it to maintain an important role in China's defense markets.

At the same time, the growing threat from Western sanctions is driving relations away from the most overt forms of cooperation, such as arms sales, which are easier to detect and sanction. By contrast, joint technology projects are often easier to hide, making them an attractive option for both Russia and the PRC. For all of these reasons, the growing role of joint technology projects between China and Russia since 2015 also warrants a "high" rating. Still, given the increased sanctions risk since Russia's invasion of Ukraine, China is likely to moderate its level of technology cooperation with Russia, at least for the time being.

Russian Imports of Chinese Dual-Use Technology

Russian imports of Chinese dual-use systems and technologies have recently emerged as another important line of effort in Sino-Russian MTC. Driven primarily by Ukrainian and Western technology embargoes imposed against Russia in the aftermath of the 2014 Ukraine crisis, Russia is turning increasingly to China (and to other countries) to secure replacements for critical Ukrainian and Western components, technologies, and manufacturing equipment. Since 2014, Russia has been using three separate channels to acquire Chinese dual-use systems and technologies. These include joint R&D projects, the acquisition of Chinese technologies, and direct transfers of Chinese components.

There has been a notable increase in joint R&D agreements between Russian and Chinese defense firms since 2014. According to Rostec, a total of 14 of its holding companies are currently cooperating with China in the development of commercial and dual-use technologies, including joint development of electronic and optoelectronic products and titanium and aluminum semi-finished products.¹¹⁷ As an example, Rostec and Chinese aerospace giant Aviation Industry Corporation (AVIC) signed an agreement to collaborate on the development of "fixed-wing and helicopter manufacturing, engine production, materials, avionics, and other products]."¹¹⁸

¹¹⁷ "Rostec goes to the East," rostec.ru, Sep. 5, 2014, <https://rostec.ru/news/4514485/>. See also "Rostec develops cooperation with China in the field of radio-electronic equipment," rostec.ru, Sep. 6, 2019, <https://rostec.ru/news/rostekh-razvivaet-sotrudnichestvo-s-kitaem-v-sfere-radioelektronnogo-oborudovaniya/>.

¹¹⁸ Jon Grevatt, "Airshow China 2014: ROSTEC, AVIC Sign Collaboration Agreement," *Jane's Defense Weekly*, Nov. 12, 2014.

In contrast to the one-sided joint technology projects described above, such agreements also tend to be more collaborative in nature, with the fruits of combined research projects expected to benefit both sides. As an example, in 2014, Russian Technologies and China's AVIC signed a strategic cooperation agreement to pursue joint R&D projects targeting the aerospace sectors in Russia, China, and third countries.¹¹⁹ While little is known about the results of these projects, they do not seem to have had a major effect on Russia's defense production capabilities as of yet, since there are no indications of any major breakthroughs. Moreover, Russian experts who are familiar with these projects believe they have been limited by the persistent technological nationalism prevailing in both countries, which is hindering progress.¹²⁰

Since 2014, Russia has also been relying more heavily on Chinese commercial and dual-use technologies to sustain its defense base. Leading Chinese tech firms, such as Huawei, have gained greater access to Russian domestic markets as economic ties have strengthened, which has been driving Russian imports of Chinese commercial and dual-use technologies, some of which have military applications. For example, Chinese firms have been actively cooperating with Russian firms on artificial intelligence and robotics.¹²¹ Similarly, transfers of high-end Chinese telecommunications equipment are helping to advance Russian military communications.¹²²

As a further example, in 2017, the Russian and Chinese space agencies established a new program to promote cooperation on space science and exploration, materials and technologies, satellite systems; remote sensing, and the monitoring of "space debris," all of which have potential military applications. Transfers of Chinese commercial and dual-use technology may be slowing, however—at least in some cases—because of growing concerns among Chinese firms over the risks of doing business with Russia. For example, Huawei recently reorganized its business operations in Russia, moving a number of its personnel from Russia to Kazakhstan and Uzbekistan.¹²³

Likewise, since 2014, spurred by events in Ukraine, Russia has been gradually attempting to increase imports of Chinese components. In 2016, Russia sought to acquire Chinese marine

¹¹⁹ "Russia in the sky of China," rostec.ru, Nov. 12, 2014, <https://rostec.ru/news/4515009/>.

¹²⁰ Sergei Karaganov, "View from 2019" [Взгляд из 2019 года Сергей Караганов] in *To the Great Ocean: A chronicle of the turn to the East [к великому океану: хроника поворота на Восток]*, Valdai Club, p. 289, <https://ru.valdaiclub.com/files/28988/>.

¹²¹ Tom O'Connor, "Russia Is Building an Army of Robot Weapons, and China's AI Tech Is Helping," *Newsweek*, May 24, 2021, <https://www.newsweek.com/russia-building-army-robot-weapons-chinas-ai-tech-helping-1594362>.

¹²² Samuel Bendett & Elsa Kania, "A new Sino-Russian high-tech partnership," Australian Strategic Policy Institute, Oct. 29, 2019, <https://www.aspi.org.au/report/new-sino-russian-high-tech-partnership>.

¹²³ "Huawei is forced to transfer employees from Russia to Kazakhstan," *Russia's News*, Sep. 4, 2022, <https://russiasnews.com/huawei-is-forced-to-transfer-employees-from-russia-to-kazakhstan/>.

diesel engines to replace German engines formerly used on Russia's Buyan-M small missile corvette. However, after performance problems emerged during testing of the new Chinese engines, the Russian Navy discontinued the program.¹²⁴ Russia experienced similar problems in testing other Chinese engines for the Karakurt corvette and the Rook coastal defense vessel.¹²⁵ In the end, Russia's experimental purchases of Chinese marine diesel engines proved to be short-lived.

Russia also experienced problems during initial attempts to substitute Chinese electronic components for use in defense production after the country was cut off from Western sources following Russia's 2014 intervention in Ukraine. Initial efforts to purchase several billions of dollars' worth of Chinese microchips in 2014 had to be scaled back when they failed to meet Russian specifications.¹²⁶ Likewise, during the 2015–2016 timeframe, the two sides held extended discussions on a potential deal to trade Russian RD-180 rocket engines for more advanced Chinese microchips and manufacturing equipment, but ultimately failed to agree on terms.¹²⁷ In the case of microchips, however, Russia and China eventually found satisfactory alternatives, since China is reportedly supplying around one-third of Russia's imported

¹²⁴ "Non-perpetual motion machine: how industry and the Navy are looking for a way out of the diesel crisis" [Невечный двигатель: как промышленность и ВМФ ищут выход из дизельного кризиса], *flotprom.ru*, Aug. 8, 2018, <https://flotprom.ru/2018/%D0%9E%D0%B1%D0%BE%D1%80%D0%BE%D0%BD%D0%BA%D0%B0348/>; "Chinese diesel engines broke down on the lead Rybinsk boat of project 21980" [Китайские дизеля сломались на головном рыбинском катере проекта 21980], *BMPD LiveJournal*, Mar. 28, 2017, <https://bmpd.livejournal.com/2515970.html>.

¹²⁵ "The Russian Navy refused to remotorize Karakurt" [ВМФ России отказался от ремоторизации Каракуртов], *Морские Вестни России*, Oct. 10, 2018, <http://www.morvesti.ru/news/1681/74686/>.

¹²⁶ Boris Lyubimov, "Backlog and dependence of Russia in the computer element base" [Отставание и зависимость России в компьютерной элементной базе ИА Красная Весна Читайте материал целиком по ссылке], <https://rossaprimavera.ru/article/otstavanie-i-zavisimost-rossii-v-kompyuternoy-elementnoy-baze>, *rossaprimavera.ru*, Sep. 16, 2016, <https://rossaprimavera.ru/article/otstavanie-i-zavisimost-rossii-v-kompyuternoy-elementnoy-baze>; "Russia Looking To China For Military, Aerospace Components," *SpaceDaily*, Aug. 7, 2014, http://www.spacedaily.com/reports/Western_Sanctions_Seealso_Russia_Looking_to_China_for_Military_Aerospace_Components_999.html.

¹²⁷ "China a step closer to acquiring RD-180," *China Space Report*, June 20, 2016, <https://chinaspacereport.com/2016/06/20/china-a-step-closer-to-acquiring-rd180/>; "Space Exchange: China Offers Electronics for Russian Engines," *Sputnik*, Apr. 19, 2016, <https://sputniknews.com/russia/201604191038250546-russia-china-space/>; "Россия и Китай не договорились о поставках ракетных двигателей," *Izvestia*, Apr. 8, 2016, <http://izvestia.ru/news/609157>.

chips.¹²⁸ In 2020, for example, China accounted for 56.5 percent of Russian imports of electronics components and 19.7 percent of integrated circuits.¹²⁹

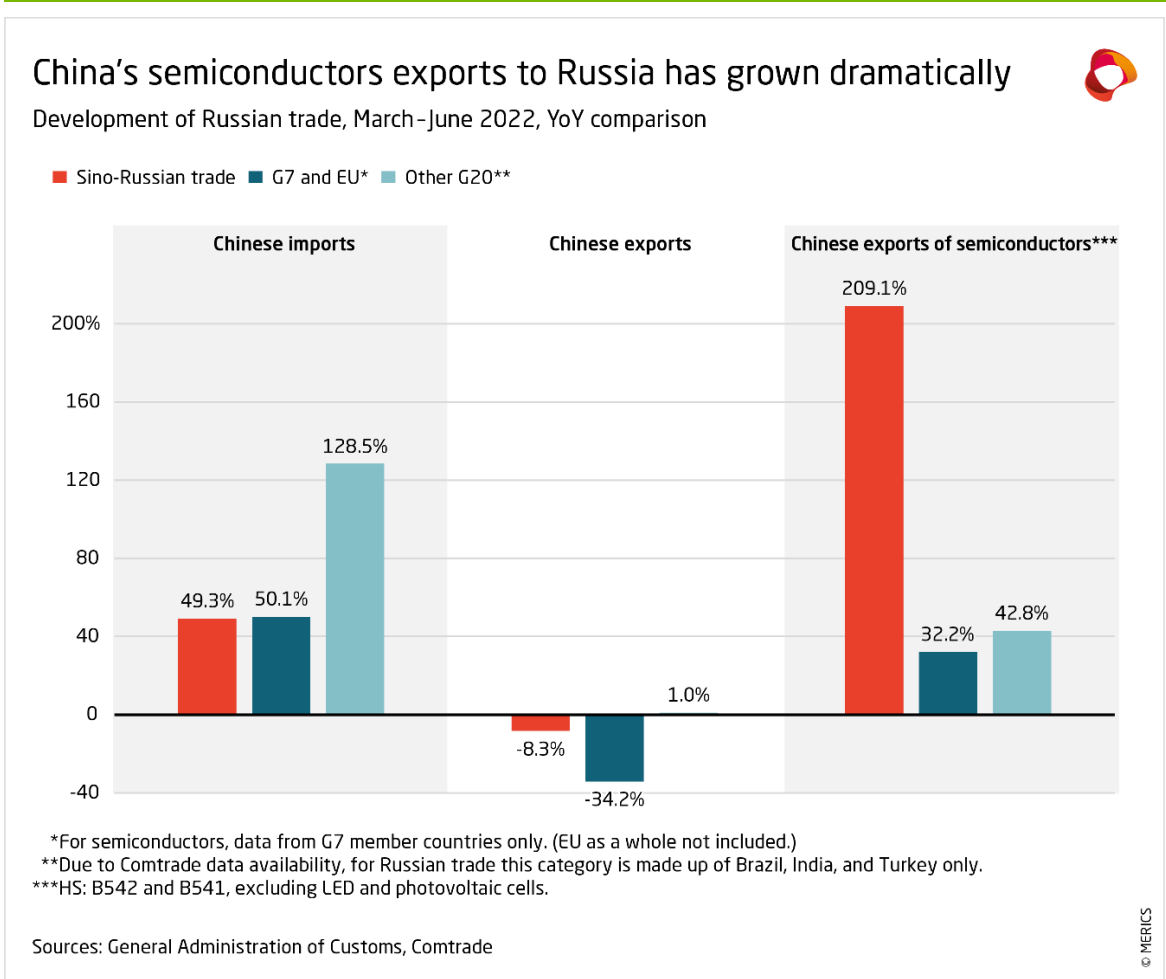
Exports of Chinese microchips and electronic components to Russia have increased sharply since Moscow's invasion of Ukraine. According to Chinese customs data, shipments of Chinese electronic components reached \$50 million during the first five months of 2022, more than double the amount exported to Russia during the previous year (See Figure 6). Exports of Chinese printed circuit boards also experienced double-digit growth since the beginning of 2022. Such exports demonstrate that many Chinese electronic manufacturers and distributors remain willing to do business with Russia despite increased US pressure. Chinese assistance has been hindering Western efforts to isolate the country's economy and cripple its military. Chinese exports have been limited by deficiencies in Chinese microchips, which continue to lag behind those produced in the United States, Taiwan and South Korea. According to recent reports, up to 40 percent of Chinese chips exported to Russia have proven defective.¹³⁰

¹²⁸ Maria Shagina and Emily Kilcrease, "Can Russia Rebuild its Tech Sector with China's Help?" *War on the Rocks*, June 2, 2022, <https://warontherocks.com/2022/06/can-russia-rebuild-its-tech-sector-with-chinas-help/>.

¹²⁹ "China's response key to Russia's semiconductor supply," *Argus*, Mar. 4, 2022, <https://www.argusmedia.com/en/news/2308450-chinas-response-key-to-russias-semiconductor-supply>.

¹³⁰ Xinmei Shen, "Defect rate of Chinese chips shipped to Russia surged to 40 per cent after Western sanctions, local newspaper says," *SCMP News*, Oct. 20, 2022, <https://www.scmp.com/tech/tech-war/article/3196632/defect-rate-chinese-chips-shipped-russia-surged-40-cent-after-western-sanctions-local-newspaper-says>.

Figure 6. Chinese Exports of Semiconductors to Russia, 2022



Source: Francois Chimitz, Antonia Hmaid, "China moves to fill the void left by Russian sanctions – on its own terms," MERICS, Aug. 26, 2022, <https://merics.org/en/short-analysis/china-moves-fill-void-left-russian-sanctions-its-own-terms>.

Although Beijing could likely export more advanced chips to Russia, so far it has refrained from doing so, having been warned by the United States that its own access to US chip-making technology would be jeopardized by such actions.¹³¹ In July 2022, the US Commerce Department sanctioned five Chinese electronics companies for assisting Russia's defense

¹³¹ Maria Shagina and Emily Kilcrease, "Can Russia Rebuild its Tech Sector with China's Help?" *War on the Rocks*, June 2, 2022, <https://warontherocks.com/2022/06/can-russia-rebuild-its-tech-sector-with-chinas-help/>.

industry.¹³² There is evidence that US pressure has constrained further exports by at least some Chinese companies.¹³³ Given these problems, and the risks involved in Chinese chip exports, it is difficult to predict the future trajectory of this line of effort.

Since Russia's 2022 invasion of Ukraine, Russia has also been turning to China for military systems, components, and supplies to support the war effort, albeit without much success. According to US sources, in February 2022, Russia requested Chinese uncrewed aerial systems.¹³⁴ Facing intense pressure from the West, Beijing has thus far declined to transfer armed drones out of concern for Western threats of retaliation.¹³⁵

By February 2023, US officials, including Secretary of State Blinken and CIA Director Bill Burns reported that the PRC was seriously considering sending lethal aid to Russia.¹³⁶ China immediately dismissed these reports as disinformation, but the German magazine *Der Spiegel* then published details about negotiations between Xian Bingo Intelligent Aviation Company, a Chinese company with ties to PLA contractors, and the Russian military for delivery of 100 ZT-180 prototype drones, similar to Iran's Shaheed 136 Kamikaze drone that Russia already uses in Ukraine, and capable of delivering a 35-50 kg warhead.¹³⁷ Western media also reported that

¹³² Brian Spegele, "Chinese Firms Are Selling Russia Goods Its Military Needs to Keep Fighting in Ukraine," *Wall Street Journal*, July 15, 2022, <https://www.wsj.com/articles/chinese-firms-are-selling-russia-goods-its-military-needs-to-keep-fighting-in-ukraine-11657877403>.

¹³³ "China cut tech exports to Russia after U.S.-led sanctions hit," *Washington Post*, May 17, 2022, <https://www.washingtonpost.com/world/2022/05/17/china-russia-tech-exports/>.

¹³⁴ Alberto Nardelli and Jennifer Jacobs, "Russia Wants Armed Drones From China For Ukraine War, US Warns Europe," *Bloomberg*, Mar. 15, 2022, <https://www.ndtv.com/world-news/russia-wants-armed-drones-from-china-for-ukraine-war-us-warns-europe-2823355>.

¹³⁵ Jim Sciutto, Kaitlan Collins, Kylie Atwood, "Russia has requested military and economic assistance from China, US officials say," *CNN*, Mar. 14, 2022, <https://www.cnn.com/2022/03/13/politics/jake-sullivan-meeting-chinese-counterpart-ukraine>; "China will not sell [Russia any drones]. Russian defense industry under sanctions" ["Китай не продаст даже через "левое" ИП". Российская "оборонка" в условиях санкций] *sibreal.org*, June 27, 2022, <https://www.sibreal.org/a/rossiyskaya-oboronka-v-usloviyah-sanktsiy/31915547.html>.

¹³⁶ "Secretary Antony J. Blinken with Chuck Todd of NBC Meet the Press," U.S. Department of State, Feb. 19, 2023, <https://www.state.gov/secretary-antony-j-blinken-with-chuck-todd-of-nbc-meet-the-press-3/>; Sophia Barkoff, "CIA Director Confirms Possibility of Chinese Lethal Aid to Russia," *CBS News*, Feb. 25, 2023 <https://www.cbsnews.com/news/cia-director-bill-burns-china-russia-lethal-aid/>.

¹³⁷ "China Reportedly Negotiating with Russia to Supply Kamikaze Drones," *Spiegel International*, Feb. 23, 2023, <https://www.spiegel.de/international/world/the-war-in-ukraine-china-is-reportedly-negotiating-with-russia-to-supply-kamikaze-drones-a-13909157-4740-4f84-830e-fb3c69bc1dff>. Xian Bingo reportedly has ties to Poly Defence Investment Group, a subsidiary of Poly Group, which reportedly falsified records to send Russia navigation equipment for military helicopters in August 2022. Ian Talley and Anthony DeBarros, "China Aids Russia's War in Ukraine, Trade Data Shows," *The Wall Street Journal*, Feb. 4, 2023, <https://www.wsj.com/articles/china-aids-russias-war-in-ukraine-trade-data-shows-11675466360>; "Chinese Company Discusses Selling Drones to Russia, Reports *Der Spiegel*," *The Straits Times*, Feb. 25, 2023,

companies linked to the PLA were considering selling parts for Russia's SU-27 aircraft, as well as artillery ammunition (122-millimeter and 152-millimeter rounds).¹³⁸ Russia may have also received other weapons, as Ukrainian forces reportedly found Chinese 60 mm mortar rounds at abandoned Russian positions.¹³⁹ In January 2023, the US Treasury imposed sanctions on Spacety, a small private Chinese company (also known as the Changsha Tianyi Space Science and Technology Research Institute) for providing radar satellite images of Ukraine to Russia's Wagner Group, a "private" military company with close ties to the Kremlin and the Russian military.¹⁴⁰ On the whole, however, US officials have found no evidence of any systematic Chinese efforts to supply lethal aid to Russia in violation of Western sanctions, though on February 22, 2023 Deputy Pentagon spokesperson Sabrina Singh cautioned that China had yet to disavow the possibility of providing such assistance in the future.¹⁴¹

Despite increased imports of Chinese technology, Russian efforts to acquire advanced military and dual-use technology from China have thus far fallen well short of their potential. Imports of Chinese technologies have been hindered by two related factors. First, most Russians continue to harbor a strong sense of technological nationalism, making them reluctant to purchase non-Russian military technologies. This is especially true with respect to China, where Russia has long considered itself to be the "big brother" when it comes to military affairs. Such sentiments have been further reinforced by Russia's traditional desire to remain self-sufficient in the production of weapon systems for its military. This in turn is driven at the strategic level out of fears of becoming overly dependent on Chinese military technologies and at the defense industry level by a strong desire among Russian defense firms to preserve exclusive access to Russian domestic arms markets. The combination of these two factors has made Russians hesitant to buy military systems from China, except in the most pressing cases.

<https://www.straitstimes.com/world/europe/chinese-company-discusses-selling-drones-to-russia-reports-der-spiegel>.

¹³⁸ "China Reportedly Negotiating with Russia to Supply Kamikaze Drones," *Spiegel International*, Feb. 23, 2023, <https://www.spiegel.de/international/world/the-war-in-ukraine-china-is-reportedly-negotiating-with-russia-to-supply-kamikaze-drones-a-13909157-4740-4f84-830e-fb3c69bc1dff>; Ellen Nakashima, John Hudson, and Karen DeYoung, "China Considers Selling Russia Artillery Shells, US Officials Say," *Washington Post*, Feb. 24, 2023, <https://www.washingtonpost.com/national-security/2023/02/24/china-russia-artillery-ukraine/>.

¹³⁹ Petr Chernik, "Who supplies Russia with "Chinese" mines" [Кто поставляет России "китайские" мины], *Unian.net*, Sep. 19, 2022, <https://www.unian.net/world/kto-postavlyayet-rossii-kitayskie-miny-11984445.html>.

¹⁴⁰ Andrew Jones, "U.S. Sanctions Chinese Satellite Firm for Allegedly SAR Imagery to Russia's Wagner Group," *SpaceNews*, Jan. 27, 2023, <https://spacenews.com/u-s-sanctions-chinese-satellite-firm-for-allegedly-supplying-sar-imagery-to-russias-wagner-group/>.

¹⁴¹ David Vergun, "DOD Official Says U.S. Not Yet Seeing China Giving Lethal Aid to Russia," *DOD News*, Feb. 22, 2023, <https://www.defense.gov/News/News-Stories/Article/Article/3306439/dod-official-says-us-not-yet-seeing-china-giving-lethal-aid-to-russia/>; Jeanne Whalen, "Companies in China are aiding Russia's military, U.S. alleges," *Washington Post*, June 29, 2022, <https://www.washingtonpost.com/business/2022/06/29/russia-ukraine-china-military-entity-list/>.

Second, and most importantly, Chinese leaders have been loath to risk US and Western sanctions for the transfer of Chinese military systems and technology to Russia, and this too has had a profound effect in limiting such transfers.

Nevertheless, the recent increase in Russian efforts to acquire critical technologies from China, coupled with the growing array of commercial, dual-use, and military joint R&D programs, are precursors for a potential upgrade in MTC. Russia's increased willingness to opt for Chinese solutions, driven by the growing convergence between Russia and China, the impact of Western sanctions, and most recently by Russia's urgent need to replace losses in Ukraine, has opened avenues for further imports of Chinese systems and technologies. For now, however, Russian imports of Chinese technology are still operating at a comparatively "low" level based on our assessment scale. Moreover, given the current geopolitical climate, such efforts are likely to be tempered over (at least) the near term by the PRC's desire to avoid Western sanctions. Over the longer term, however, these initial steps could help pave the way for an increase in joint projects for R&D and joint production of advanced weapons.

Exchanges of Military Personnel

Exchanges of Russian and Chinese military personnel and technical specialists have been another important line of effort between the two countries, albeit one that has received less coverage in the West. Russia and China have been exchanging military personnel since the early 1990s. Yet, such exchanges have been largely one-sided in nature, with the number of Chinese personnel being sent to Russia far exceeding the number of Russians dispatched to China.

Starting in the early 1990s, officers from all branches of the PLA regularly attended military education programs in Russia. In fact, Russia remains by far the main destination for PLA officers receiving military education and training overseas.¹⁴² According to Russian Defense Minister Sergei Shoigu, 3,600 Chinese military personnel have been trained in Russian military

¹⁴² Cheng Li, "The Increasing Presence of Russian-Educated Chinese Military Leaders," Brookings Institute, Oct. 10, 2022, <https://www.chinausfocus.com/2022-CPC-congress/the-increasing-presence-of-russian-educated-chinese-military-leaders>.

universities since 1991.¹⁴³ Over the years, military exchange programs have also become increasingly institutionalized, based on a series of agreements signed since 1996.¹⁴⁴

Military exchanges between Russia and China have expanded in recent years as relations between the two countries have intensified. Increased tensions with the West have also driven Beijing to send more of its military personnel to study in Russia as opportunities to attend Western military academies have been closed.¹⁴⁵ Russia provides both short-term and long-term educational exchange opportunities for the PLA, providing programs geared for both military commanders and technical specialists. High-ranking PLA officers typically attend the General Staff Academy of Russian Armed Forces, which offers broad-based educational programs on military strategy and tactics. The academy reportedly accepts 12 to 20 high-ranking PLA officers every year.¹⁴⁶

PLA officers also attend other Russian military academies, including the Combined Arms Academy of the Armed Forces, the Gagarin Air Force Academy, and the Military Academy of Logistical Support.¹⁴⁷ The prevalence of long-term military exchanges is an important indicator of the value placed by the Chinese on Russian military education, since they do not engage in such exchanges with other countries. Military exchanges afford Chinese officers the opportunity to study modern military operations and theory with their more experienced

¹⁴³ Alexander Gabuev and Vasily Kashin, "Armed friendship: how Russia and China trade arms, [Вооруженная дружба: как Россия и Китай торгуют оружием], Carnegie Moscow Center, Nov. 2, 2017, <https://carnegie.ru/2017/11/02/ru-pub-74601>. Chinese sources claim the number of PLA officers who have been educated in Russia is closer to 2,000. See for example Wang Haiyun (王海运), "China-Russia Military Relations in 70 Years: Review and Reflection" (中俄军事关系七十年:回顾与思考), *Russian, East European & Central Asian Studies* (俄罗斯东欧中亚研究), no. 4 (2019): 41-45.

¹⁴⁴ Alexander Korolev, "On the Verge of an Alliance: Contemporary China-Russia Military Cooperation," *Asian Security* 15, no. 3 (2019): p. 243; Veronika Bondareva, "Military-technical cooperation between Russia and China. Dossier" [Военно-техническое сотрудничество России и Китая. Досье], TASS, Sep. 2, 2015, <https://tass.ru/info/2228966>.

¹⁴⁵ Alexander Korolev, "On the Verge of an Alliance: Contemporary China-Russia Military Cooperation," *Asian Security* 15, no. 3 (2019): p. 243; Cheng Li, "The Increasing Presence of Russian-Educated Chinese Military Leaders," Brookings Institute, Oct. 10, 2022, <https://www.chinausfocus.com/2022-CPC-congress/the-increasing-presence-of-russian-educated-chinese-military-leaders>.

¹⁴⁶ Alexander Korolev, "On the Verge of an Alliance: Contemporary China-Russia Military Cooperation," *Asian Security* 15, no. 3 (2019): p. 243; Cheng Li, "The Increasing Presence of Russian-Educated Chinese Military Leaders," Brookings Institute, Oct. 10, 2022, <https://www.chinausfocus.com/2022-CPC-congress/the-increasing-presence-of-russian-educated-chinese-military-leaders>.

¹⁴⁷ "U.S. House of Representatives expresses concern after receiving proposal for Chinese military officers to study in Russia," Sina News, Oct. 14, 2003, <http://news.sina.com.cn/c/2003-10-14/1059916023s.shtml>; Cheng Li, "The Increasing Presence of Russian-Educated Chinese Military Leaders," Brookings Institute, Oct. 10, 2022, <https://www.chinausfocus.com/2022-CPC-congress/the-increasing-presence-of-russian-educated-chinese-military-leaders>.

Russian counterparts. Moreover, Chinese graduates are often promoted into senior PLA positions, yet another indicator of their perceived importance for Beijing.¹⁴⁸

More recently, Russia and China have been adding new exchange programs as well. Recently, for example, the two countries established a new exchange program to promote cooperation in space that provides for the cross-training of personnel and the sharing of information about space-related technologies.¹⁴⁹

In addition to basic and advanced military education programs, PLA officers and technical personnel frequently receive training in Russia on the operation and maintenance of advanced Russian weapon systems.¹⁵⁰ Technical weapons training has been taking place since the early 1990s, when 200 Chinese airmen were given in-depth training on the operation of Russian Su-27 fighters at Russia's Krasnodar Aviation Institute.¹⁵¹ Moscow, in turn, sends advisors to China from time to time to train PLA personnel on how best to employ Russian weapon systems.

As noted in the methodology section, the exchange of military personnel attending foreign military institutions is an important indicator of the strength of relations, since such programs tend to foster "compatibility in terms of military thinking and approaches to warfare."¹⁵² This aptly describes Russian and Chinese military exchange programs, which have benefitted both sides by strengthening ties, promoting mutual understanding, and enhancing trust through open discussions of common military challenges. This in turn has helped to promote common perspectives on military strategy and policy.

Although military exchanges still tend to be fairly one sided, with Chinese personnel by and large receiving education and training in Russia, the scale of these programs and their high degree of institutionalization indicate that such programs are likely to continue at a high level. Moreover, since these programs tend to receive little scrutiny in the West, they are unlikely to carry the same high political costs for either side going forward. For all of these reasons,

¹⁴⁸ Cheng Li, "The Increasing Presence of Russian-Educated Chinese Military Leaders," Brookings Institute, Oct. 10, 2022, <https://www.chinausfocus.com/2022-CPC-congress/the-increasing-presence-of-russian-educated-chinese-military-leaders>.

¹⁴⁹ Jyotsna Backshi, "Russia-China military-technical cooperation: Implications for India," *Strategic Analysis* 24, no. 4 (2000): p. 643.

¹⁵⁰ Cheng Li, "The Increasing Presence of Russian-Educated Chinese Military Leaders," Brookings Institute, Oct. 10, 2022, <https://www.chinausfocus.com/2022-CPC-congress/the-increasing-presence-of-russian-educated-chinese-military-leaders>; Alexander Gabuev and Vasily Kashin, "Armed friendship: how Russia and China trade arms, [Вооруженная дружба: как Россия и Китай торгуют оружием], Carnegie Moscow Center, Nov. 2, 2017, <https://carnegie.ru/2017/11/02/ru-pub-74601>.

¹⁵¹ Jyotsna Backshi, "Russia-China military-technical cooperation: Implications for India," *Strategic Analysis* 24, no. 4 (2000): p. 641, https://ciaotest.cc.columbia.edu/olj/sa/sa_jul00baj01.html.

¹⁵² Alexander Korolev, "On the Verge of an Alliance: Contemporary China-Russia Military Cooperation," *Asian Security* 15, no. 3 (2019): p. 236.

Russian-Chinese military exchange programs merit a “high” rating based on the assessment scale.

Assessment

Since 2014, MTC has been a central component of Sino-Russian military affairs. The resumption of major arms sales has been an important achievement for both sides, for a time elevating them to levels not seen since 2005. Coupled with the Kremlin’s newfound willingness to transfer more of its most advanced weapon systems to China, arms sales have become once again a major force in Russian-Chinese military relations, despite the recent downturn in sales since 2019. Moreover, the recent pause in major arms sales has itself been offset by a sharp increase in joint technology projects, which have now become the most important factor in bilateral MTC.

Technology projects have been driving cooperation to new levels, characterized by long-term projects, closer cooperation, and deeper integration of the countries’ respective defense industries. At the same time, military exchange programs continue to operate at a high level, further reinforcing military ties between Moscow and Beijing, while fostering a shared outlook on both military and strategic problems between their respective militaries. Finally, the gradual increase in Russian imports of Chinese technology is helping to expand cooperation into new areas, while fostering greater cross-border cooperation and a more balanced relationship. For all of these reasons, Sino-Russian MTC as a whole continues to operate at a “high” level. Whether the two sides can overcome the persistent challenges that have hindered development of MTC in the past and the new threats posed by unprecedented Western sanctions remains to be seen.

Military Exercises and Operations

The armed forces of China and Russia participate together in a range of combined exercises, including bilateral, trilateral, and broader multilateral exercises. The two countries have reportedly participated together in a total of 45 bilateral or multilateral military exercises and joint patrols from 2005 through the end of research for this report in November 2022. In recent years, China and Russia have conducted over a dozen iterations of both longstanding and relatively new bilateral and multilateral exercises, which include the following:

- **Peace Mission:** an exercise series focused on counterterrorism that began in 2005. Initially bilateral between China and Russia. Later iterations became multilateral, involving other members of the Shanghai Cooperation Organization (SCO).
- **Joint Sea:** a bilateral China-Russia naval exercise series that began in 2012.¹⁵³ The 10th iteration of the exercise was held in 2021.
- **Strategic command staff exercises:** a series of Russia-led regional exercises (Vostok, Tsentr, Kavkaz, and Zapad) that culminate the Russian military's annual training cycle. China has participated in the exercises every year since 2018.
- **Trilateral exercises:** involving naval forces of South Africa and Iran, respectively, in 2019 and 2022.
- **Cooperation:** a counterterrorism series between paramilitary forces of China and Russia. The most recent iteration, the fifth of the series, was held in 2019.

The emergence of combined air and naval patrols has been a key development in China-Russia military cooperation in recent years. Since 2019, China and Russia have carried out seven iterations of combined air or naval patrols in areas of the West Pacific. Although often described in media reports as “joint” activities, the patrols have been “combined” in the sense that each iteration has involved only a single military service on each side. The patrols to date include five iterations of annual “joint air patrols” in the Sea of Japan and East China Sea since 2019 and two iterations of annual “joint naval patrols” in waters surrounding Japan and near Alaska, respectively, since 2021. However, each of the naval patrols has taken place following a combined exercise involving PRC and Russian naval ships (Joint Sea 2021 and Vostok 2022, respectively) and can be viewed as a continuation of that exercise rather than a separate activity.

¹⁵³ “Russian-Chinese exercise Naval Interaction. Dossier,” [Российско-китайские учения “Морское взаимодействие”. Досье], TASS, July 25, 2017, <https://tass.ru/info/1960969>.

Assessing Cooperation through Military Exercises and Operations

Joint military exercises and operations have traditionally been an important aspect of overall military cooperation. The extent of such cooperation can be measured on a spectrum based on the frequency, geography, and content of the activities. Frequency is the most straightforward metric, as it is just a question of how often Russia and China have their militaries working together.

In terms of geography, the baseline level of cooperation involves exercises on the uncontested territory of one of the participating states, well away from any disputed or sensitive territories—for example, the Russian Far East or China’s northern and central territories. In the case of naval exercises or operations, this includes participating states’ territorial waters or nearby international waters—for example, the Sea of Okhotsk and the Yellow Sea. More advanced cooperation would be signaled by locating exercises in disputed or sensitive territories, such as Xinjiang, Tibet, western Russia, or the Caucasus, or near the borders of other states with whom one of the involved parties has tensions, such as India, Taiwan, Georgia, or Ukraine. Similarly, higher level naval cooperation would also involve activity near disputed or conflictual zones, such as in the South China or Black Seas, or in distant waters, such as the Mediterranean or Arctic for China or the Indian Ocean for both countries. Deployment in such areas requires a greater level of investment and commitment, since deployment in contested zones demonstrate a willingness to incur costs in relations with other parties in order to back the partner’s regional agenda by engaging in the activity.

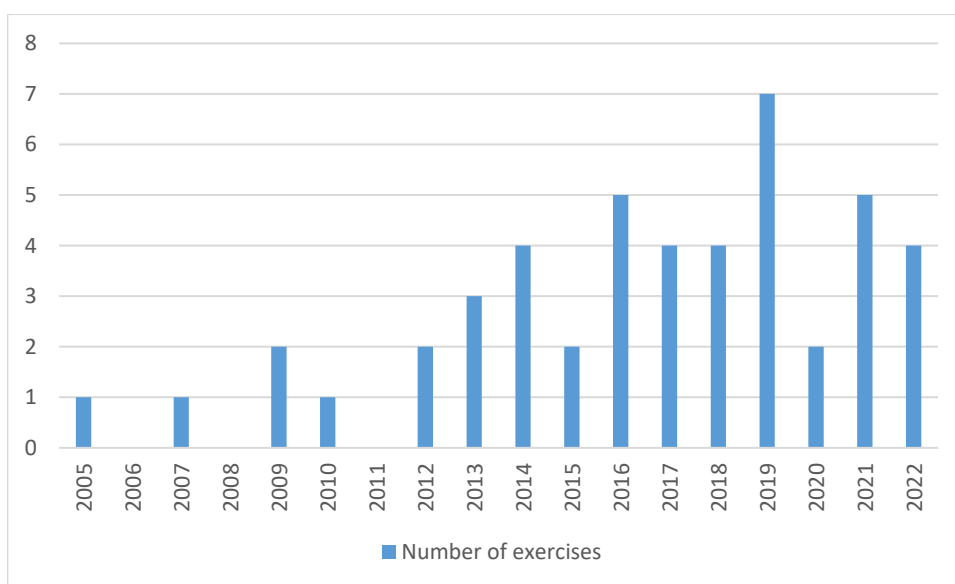
A similar spectrum applies to the content of joint exercises. At the low end, exercises may simply consist of joint maneuvers, while higher levels of cooperation are signaled by more complex operations, involving a much greater degree of interoperability. At the highest levels of cooperation, the partners may establish joint military command centers and develop systems to share command codes. As trust and interoperability between the participating militaries continue to increase, the governments may choose to establish integrated military commands. In such circumstances, the two sides may provide forces for joint operations that are under the command of officers from the other country, or operating under joint command structures. They may establish joint operation centers, either for particular operations or on a permanent basis. While even the most basic integrated military command shows a stronger level of military ties than even relatively advanced joint exercises without integrated command structures, the level of cooperation signified by such structures may also be measured along a spectrum. At the baseline level, integrated military commands are established episodically, such as for specific exercises, and without making long-term commitments. At the highest level,

such commands operate on a permanent basis. The following sections apply these concepts to assess Russian-Chinese military exercise and operations.

Frequency

The first joint military exercise involving Russia and China, held in 2005, was the Peace Mission exercise. Exercises were then held more or less every two years through 2012—some bilaterally and some through the multilateral framework of the SCO (see Figure 7). The period from 2012 to 2014 saw a steady increase in the frequency of exercises. After that, the frequency stabilized at an average of four exercises per year. A sharp increase in 2019 proved temporary, as the following year, restrictions related to the COVID-19 pandemic led to an even sharper temporary decline. The subsequent rebound has been limited by continuing COVID limitations, as well as by constraints related to Russia’s war in Ukraine in 2022, resulting in a plateau in frequency at the average level of the last decade.

Figure 7. Russia-China Military Exercises by Year



Source: CNA.

In the early years, the only continuous exercise series was Peace Mission, a ground forces exercise focused primarily on counterterrorism that was initially bilateral and then multinational as part of the SCO framework. After initially being held biannually, these exercises were held annually from 2009 to 2014, with the exception of 2011. Since then, their frequency has dropped off to every two to three years. The second major longstanding exercise series is the naval exercise Joint Sea (sometimes also called Naval Interaction). These are

purely bilateral naval exercises that were held at least annually from 2012 to 2017 and then biannually since then. Since 2018, the Chinese military has participated in Russia's annual strategic command staff exercises, which are multiservice exercises that take place in September and rotate among the four main Russian strategic commands. The two countries have also conducted regular joint strategic air patrols in East Asia since 2019. A variety of other exercises have been conducted on an ad hoc basis over the years, including missile defense exercises in 2017 and 2018 and a variety of naval, paramilitary and border security events held over the years.¹⁵⁴

While joint military activity between Russia and China has become somewhat more frequent over the years and has also become increasingly routinized, it remains relatively infrequent when compared with the frequency of joint military activity by their most significant adversaries. NATO generally conducts approximately 100 multinational exercises a year, generally with participation of all or most of the major member states.¹⁵⁵ The US and UK conducted 10 major joint exercises just in one month in 2012.¹⁵⁶ And US and Japanese forces conduct training together on an almost constant basis.¹⁵⁷ Also, it remains unclear whether the decline in frequency of Russia-China military exercises after 2019 is a temporary blip or the beginning of a new plateau in the cooperative relationship between the two militaries. As a result, the frequency of military exercises may be assessed as “moderate” on the cooperation scale.

Geography

The geography of Russia-China military exercises and joint patrols has gradually expanded over the years. As shown in Figure 8, the vast majority of land-based exercises have been conducted in Northern or Eastern China or in Moscow, Siberia, and the Russian Far East. The exceptions include Peace Mission exercises conducted in Central Asian member states of the SCO, such as Tajikistan and Kazakhstan, as well as Chinese participation in Russian strategic command exercises in the Caucasus in 2020. With the exception of an early Peace Mission exercise in Xinjiang, land-based exercise locations have, until recently, avoided controversial locations such as southern and western regions of China and western regions of Russia. Most

¹⁵⁴ A full list of exercises may be found in Appendix A.

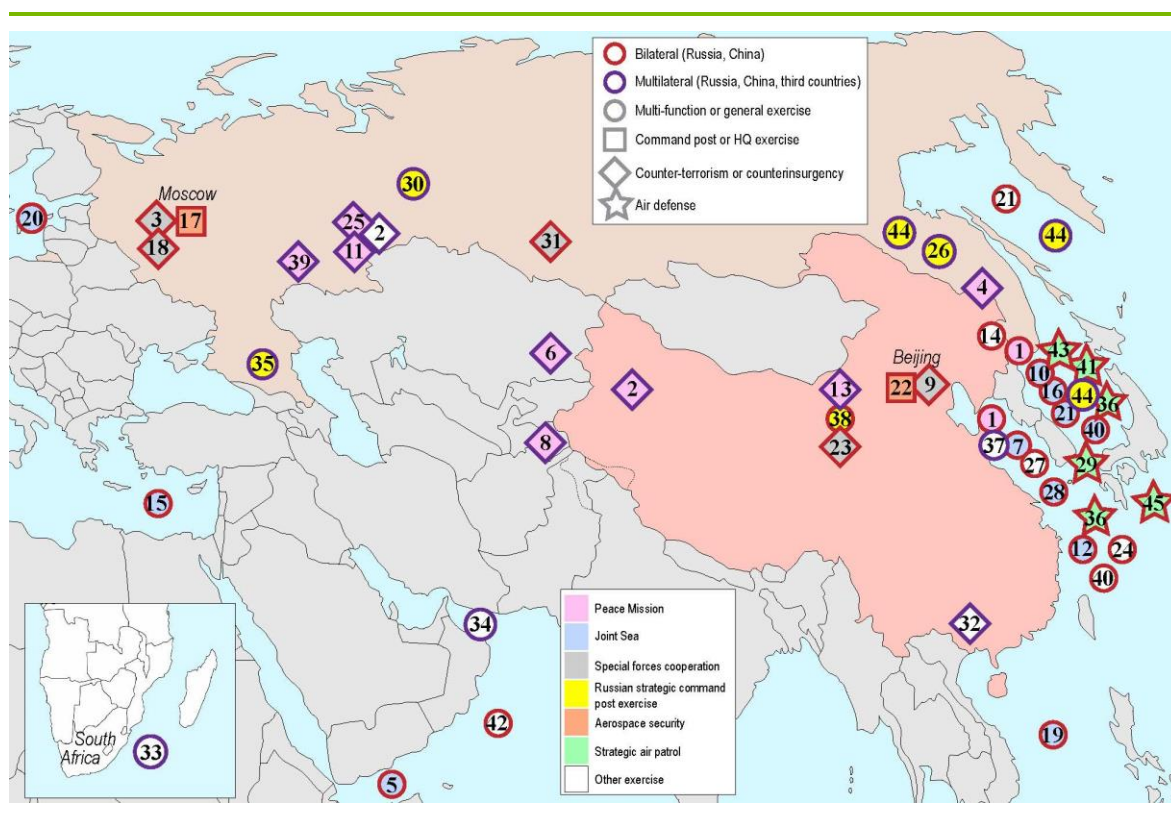
¹⁵⁵ Key NATO and Allied exercises in 2021, NATO Factsheet, Mar. 2021, https://www.nato.int/nato_static_fl2014/assets/pdf/2021/3/pdf/2103-factsheet_exercises.pdf

¹⁵⁶ Joint Fact Sheet: U.S. and UK Defense Cooperation, Office of the Press Secretary, White House, Mar. 14, 2012, <https://obamawhitehouse.archives.gov/the-press-office/2012/03/14/joint-fact-sheet-us-and-uk-defense-cooperation>

¹⁵⁷ Kirk Spitzer, “U.S. and Japanese Forces Lock and Load With One Eye on China,” *Time*, Sep. 23, 2014, <https://time.com/3419988/us-japan-ground-self-defense-force-joint-training-okinawa-china/>

notably, although China has participated in Russian strategic command exercises annually since 2018, it did not send forces to Russia’s Western Military District for Zapad-2021. Instead, Russian troops traveled to northwestern China and conducted a separate exercise with units from the 77th Group Army, which is oriented toward India and Tibet.¹⁵⁸ This event suggests that Russia was perhaps more willing to send its troops to an exercise with possible ramifications for its partnership with India than China was to alarm its Western economic partners in Europe, which in turn suggests that China may now be the dominant partner in the relationship.

Figure 8. Russia-China Military Exercise Locations



Source: CNA.

^a The numbers in this map refer to the full list of exercises found in the Appendix.

Approximately half of the 18 naval exercises that Russia and China have conducted since 2005 have taken place in or near the two countries’ territorial waters, especially in the Yellow Sea

¹⁵⁸ R. M. V Pavan Raghavendra, “Zapad/Interaction-2021: A New Milestone in China-Russia Joint Military Exercises,” ICS Research Blog, Aug. 25, 2021, <https://icsin.org/blogs/2021/08/25/zapad-interaction-2021-a-new-milestone-in-china-russia-joint-military-exercises/>

and the Sea of Japan. While the locations of exercises conducted outside territorial waters were in some cases selected because they were convenient for other participants or because Chinese and Russian ships were already in the area, a number of exercises were held in sensitive areas that were clearly chosen for the purposes of political signaling.

The earliest bilateral naval exercise, which took place in 2009, was carried out in the Gulf of Aden because Chinese and Russian ships were already conducting counterpiracy operations in the region. Similarly, a joint rescue and counterterrorism exercise in the Mediterranean in January 2014 was not perceived in the West as having any political signaling intent, given the content of the exercise.¹⁵⁹ The locations of two trilateral naval exercises in 2019 off the coast of South Africa and in the Gulf of Oman and Indian Ocean were chosen to allow for the participation of South African and Iranian navies, respectively. At the same time, both exercises were described as efforts by both Russia and China to highlight their global influence and the ability of their navies to reach distant shores.¹⁶⁰ A similar trilateral exercise with Iranian participation took place in the Arabian Sea and the Gulf of Oman in January 2022, and another trilateral exercise with South Africa is scheduled to take place in early 2023.¹⁶¹

By contrast, the first part of the Joint Sea 2015 and Joint Sea 2017 exercises, which took place in the Mediterranean and Baltic Seas respectively, were designed to highlight to NATO the growing Russian-Chinese naval partnership. Similarly, Joint Sea 2016 took place in the South China Sea, signaling that Russia was willing to send its navy to work with China in the vicinity of a maritime zone disputed between China and a number of Southeast Asian states.¹⁶² Although most of Naval Interaction 2021 took place in the Sea of Japan, not far from Russian and Chinese naval home ports, the exercise included passage through two straits in Japanese territorial waters in order to complete a circumnavigation of Japan's Honshu Island. This action was designed to highlight the partners' willingness to work together in a sensitive maritime

¹⁵⁹ Sam LaGrone, "China and Russia Kick Off Joint Naval Drills," USNI News, May 21, 2014, <https://news.usni.org/2014/05/21/china-russia-kick-joint-naval-drills>

¹⁶⁰ Liu Zhen, "China, Russia and South Africa team up for first joint naval drill," *South China Morning Post*, Nov. 27, 2019, <https://www.scmp.com/news/china/diplomacy/article/3039469/china-russia-and-south-africa-team-first-joint-naval-drill>; Peter Fabricius, "South Africa's military drills with Russia and China raise eyebrows," *Daily Maverick*, Nov. 29, 2019, <https://www.dailymaverick.co.za/article/2019-11-29-south-africas-military-drills-with-russia-and-china-raise-eyebrows/>

¹⁶¹ "Iran, China and Russia hold naval drills in north Indian Ocean," Reuters, Jan. 21, 2022, <https://www.reuters.com/world/india/iran-china-russia-hold-naval-drills-north-indian-ocean-2022-01-21/>; "Second Russian/Chinese/SA naval exercise set for February," DefenceWeb, Nov. 4, 2022, <https://www.defenceweb.co.za/featured/second-russian-chinese-sa-naval-exercise-set-for-february/>

¹⁶² James Goldrick, "Exercise Joint Sea 2017: A new step in Russo-Chinese naval cooperation?" *The Interpreter*, July 10, 2017, <https://www.lowyinstitute.org/the-interpreter/exercise-joint-sea-2017-new-step-russo-chinese-naval-cooperation>

zone and accept an exercise plan that could only be seen as a deliberate provocation by Japan.¹⁶³

The pattern of exercise locations described above highlights a gradual shift toward greater willingness on the part of both sides to engage in activities that are more likely to raise concerns with other states. The pattern of avoiding staging bilateral exercises in controversial locations that was present in the early years of cooperation has largely dissipated since 2015, although some exceptions remain, such as China's absence at Zapad-2021. The geographic reach of exercises has also largely plateaued since 2020, with no new locations used in the last three years. Nevertheless, we can assess that the indicator of geographic reach of military exercises has moved from "moderate-low" before 2015 to "moderate-high" since then.

Content

From the earliest days of cooperation, bilateral Russia-China military exercises have primarily focused on deconfliction in order to enable the two countries' military forces to operate together in the event of a conflict. The very first bilateral exercise, Peace Mission 2005, saw the introduction of command codes that "allowed[ed] for the transmission of orders and communication between Russian and Chinese pilots. Subsequent iterations of the Peace Mission series added elements of a joint defense simulation in 2009 and Russian and Chinese aircraft operated together in one squadron in 2010.¹⁶⁴ While the earliest naval exercises were limited to joint maneuvers and other basic operations, starting with the 2014 Joint Sea exercise, the two navies began to set up joint command centers for their naval exercises as a way of improving communication across command staff.¹⁶⁵

The level of coordination has grown in subsequent years, including several recent instances in which the two sides have conducted training designed to improve the use of each other's military equipment. Most notably, in Kavkaz 2020, PLA personnel worked with Russian interpreters to become familiarized with the use of Russian infantry fighting vehicles (IFVs)

¹⁶³ Brad Lendon, "Why Russian and Chinese warships teaming up to circle Japan is a big deal," CNN, Oct. 25, 2021, <https://www.cnn.com/2021/10/25/asia/china-russia-naval-flotilla-circles-japan-intl-hnk-ml/index.html>

¹⁶⁴ Alexander Korolev, *China-Russia Strategic Alignment in International Politics* (Amsterdam University Press, 2022), 87.

¹⁶⁵ "Russian, Chinese navies hold joint drills in Mediterranean," Reuters, May 17, 2015, <https://www.reuters.com/article/uk-russia-china-navy-drills/russian-chinese-navies-hold-joint-drills-in-mediterranean-idUKKBN0020H620150517>; Tom Parfitt, "Russia-China clinch tightens with joint navy exercises in Mediterranean," *The Telegraph*, May 11, 2015, <https://www.telegraph.co.uk/news/worldnews/europe/russia/11596851/Russia-China-clinch-tightens-with-joint-navy-exercises-in-Mediterranean.html>

and the operational procedures of missile launchers.¹⁶⁶ This most recent trend in advancement of coordination culminated in Zapad/Interaction 2021, an exercise in which Russian personnel use a variety of weapon systems provided by the PLA, such as Type-11 assault vehicles and Type-08 wheeled IFVs. For the first time, the two sides set up a bilingual Chinese-Russian command information system that interconnected the two sides' combat systems, enabled teleconferencing, and allowed the transfer of combat documents.¹⁶⁷ The presence of fighters in the fourth strategic air patrol was seen as a sign that this patrol was more oriented toward warfighting. According to Chinese analysts, "since strategic bombers are not designed to engage in air-to-air combat, having fighter jets as escorts is also combat-oriented."¹⁶⁸

Russian and Chinese analysts have argued that these combined exercises and patrols are improving the two sides' ability to work together to respond to a variety of threats. Commenting on Joint Sea 2021, Bai Yaoping—the Chinese director of the exercise and Deputy Commander of the PLA's Northern Theater Command Navy—said the two navies had shown that their ability to respond together to maritime security threats had reached an "unprecedented height."¹⁶⁹ An article about Zapad/Interaction 2021 by former PLA Second Artillery Engineering Academy professor Song Zhongping said that the exercise was necessary for Beijing and Moscow to "strengthen unity" in response to "US-led Western countries' continued suppression" and the "three forces" (terrorism, extremism and separatism).¹⁷⁰ The Russian Ministry of Defense echoed these sentiments, arguing that the exercise will "strengthen Russian-Chinese relations and create an all-encompassing partnership...increasing the level of military cooperation and friendship between the two

¹⁶⁶ Luo Shunyu, Yang Xiaobo, Li Hui, Wang Xueyu, Wang Lianbin, "Kavkaz-2020 Strategic Exercise: Chinese Troops Adapt to Russian Equipment, Highlighting Bilateral Friendship," China Military Online, Sep. 17, 2020, http://eng.chinamil.com.cn/view/2020-09/17/content_9904512.htm.

¹⁶⁷ "Russian Troops Try China's Equipment for Zapad/Interaction-2021 Joint Exercise," China Military Online, Aug. 5, 2021, http://eng.chinamil.com.cn/view/2021-08/05/content_10071643.htm; Liu Xuanzun, "China, Russia Joint Drills Conclude with Live-Fire Anti-Terrorism Operation Featuring J-20," *Global Times*, Aug. 13, 2021, <https://www.globaltimes.cn/page/202108/1231427.shtml>.

¹⁶⁸ Guo Yuandan and Liu Xuanzun, "China's J-16 fighter Jets Deployed in Latest Joint Strategic Patrol With Russia," *Global Times*, May 29, 2022, <https://www.globaltimes.cn/page/202205/1266846.shtml>.

¹⁶⁹ Sun Jingang (孙金钢), "Interview with Rear Admiral Bai Yaoping: China and Russia's Ability to Respond Together to Maritime Security Threats Reaches New Height" (访柏耀平少将: 中俄共同应对海上安全威胁能力达到新高度), China Military Online, Oct. 25, 2021, http://www.81.cn/hj/2021-10/25/content_10102308.htm.

¹⁷⁰ Song Zhongping, "China, Russia Joint Military Exercise to Combat Terrorism and Chaos Left By US," *Global Times*, Aug. 2, 2021, <https://www.globaltimes.cn/page/202108/1230335.shtml>.

countries' armed forces, demonstrating decisiveness, and the ability of Russia and China to...jointly defend peace and security in the region.”¹⁷¹

Combined bilateral exercises have served to increase mutual understanding and trust between China and Russia's armed forces. Media reports have contended that China and Russia's conduct of frequent military exercises, and particularly the incorporation of high-end military hardware in those exercises, has demonstrated the high and growing level of trust between the two sides. An article on Zapad/Joint Interaction 2021 that was published on the PLA's official website stated that in recent years, the militaries of China and Russia had “tried out each other's equipment in joint exercises” against the backdrop of “the ever-growing strategic mutual trust of the two militaries.”¹⁷² A report on Joint Sea 2021 contended that the inclusion of some of the PLA's newest hardware in the exercise, such as a Renhai-class cruiser, demonstrates the PLA's openness and its trust of the Russian military.¹⁷³ Separate PRC media reporting on Joint Sea 2021 stated that the conduct of submarine rescue drills between the navies of China and Russia showed a high degree of mutual trust, given the sensitivity of “submarine performance parameters.”¹⁷⁴ On the Russian side, in discussing recurring joint air patrols, Sergey Shoigu noted that the two countries' strategic air and air defense forces are working together to detect and track US strategic bombers operating near both countries in order to ensure Russian and Chinese border security.¹⁷⁵ However, while extolling the breadth of bilateral cooperation, these analysts and officials stop short of claiming that China and Russia are on a path to conducting integrated joint operations against the United States or other adversaries in the future.

Russia's combined exercises with China are constantly developing and expanding, with continually increasing scope and complexity. As former Chinese assistant defense attaché Wang Haiyun put it, since 2005, combined exercises between China and Russia “expanded from

¹⁷¹ “The opening ceremony of the joint Russian-Chinese operational-strategic exercise “Sibu / Interaction-2021” was held in China” [В Китае прошла церемония открытия совместного российско-китайского оперативно-стратегического учения «Сибу/Взаимодействии-2021»], Russian Ministry of Defense, Aug. 10, 2021, https://function.mil.ru/news_page/country/more.htm?id=12376389@egNews.

¹⁷² “Russian Troops Try China's Equipment for Zapad/Interaction-2021 Joint Exercise,” China Military Online, Aug. 5, 2021, http://eng.chinamil.com.cn/view/2021-08/05/content_10071643.htm.

¹⁷³ Li Tang (李唐), Sun Fei (孙飞), and Han Cheng (韩成), “A Look Back at the China-Russia ‘Joint Sea 2021’ Exercise and First Maritime Joint Patrol” [回眸中俄“海上联合-2021”演习和首次海上联合巡航], China Military Online, Oct. 28, 2021, http://www.81.cn/hj/2021-10/28/content_10102967.htm.

¹⁷⁴ “China-Russia ‘Joint Sea-2019’ Exercise Makes Two ‘First Times’,” China Military Online, May 5, 2019, http://eng.chinamil.com.cn/view/2019-05/05/content_9495927.htm.

¹⁷⁵ “Shoigu announced the intensification of joint combat training with China” [Шойгу заявил об активизации совместной с КНР боевой подготовки], Interfax, Nov. 23, 2021, <https://www.interfax.ru/russia/804567>.

land, air and sea to new and sensitive fields such as information [and] anti-missile tech” and from “operational and tactical levels to strategic levels.”¹⁷⁶ PRC media reports highlight various “firsts” in combined exercises to signify growth in the bilateral defense relationship. These include: the first time that PRC and Russian submarine rescue vehicles docked at each other’s submarines and transferred sailors out (Joint Sea 2019),¹⁷⁷ the first time antisubmarine warfare search operations were conducted in Russian airspace (Joint Sea 2021),¹⁷⁸ the first “strategic” exercise organized by China to which a foreign military was invited (Zapad/Interaction 2021),¹⁷⁹ and the first time the PLA sent units from three services to participate in a Russian strategic command staff exercise at the same time (Vostok 2022).¹⁸⁰ Dmitri Trenin summarizes the overall trend, arguing over time these exercises have become more ambitious, moving from practicing counterterrorist operations in the early years of the relationship to working out joint actions in regional wars more recently.¹⁸¹

A similar dynamic is in place for joint patrols, which have been portrayed as becoming more complex and operationally significant, increasingly normalized, and gradually expanding in scope. For example, the author of a *Tank & Armoured Vehicle* article on the second joint air patrol argues that the greater complexity of the second patrol (which featured more/different types of aircraft) was more significant in “tactical terms” than the first patrol, which was more important in “strategic terms.”¹⁸² Commenting on the fourth air patrol, an unspecified military expert speaking to the *Global Times* said that the patrol was the first time China has revealed

¹⁷⁶ Wang Haiyun, “Military Ties the Linchpin of China-Russia Relations,” *Global Times*, June 4, 2019, <https://www.globaltimes.cn/content/1153097.shtml>.

¹⁷⁷ “China-Russia ‘Joint Sea-2019’ Exercise Makes Two ‘First Times’,” China Military Online, May 5, 2019, http://eng.chinamil.com.cn/view/2019-05/05/content_9495927.htm.

¹⁷⁸ Li Tang (李唐), Sun Fei (孙飞), and Han Cheng (韩成), “A Look Back at the China-Russia ‘Joint Sea 2021’ Exercise and First Maritime Joint Patrol” [回眸中俄“海上联合-2021”演习和首次海上联合巡航], China Military Online, Oct. 28, 2021, http://www.81.cn/hj/2021-10/28/content_10102967.htm.

¹⁷⁹ “Regular Press Conference of the Ministry of National Defense on August 26,” China Military Online, Aug. 30, 2021, http://eng.mod.gov.cn/news/2021-08/30/content_4893499.htm.

¹⁸⁰ Mei Shixiong, Liu Min and Xu Yizhen, “Highlights of Chinese Participating Troops at Vostok-2022 Military Exercise,” China Military Online, Sep. 6, 2022, http://eng.mod.gov.cn/news/2022-09/06/content_4920361.htm.

¹⁸¹ Dmitri Trenin, “Large, but not the main ones. How Russia and Europe can adapt to the confrontation between the US and China” [Крупные, но уже не главные. Как России и Европе адаптироваться к противостоянию США и Китая], Carnegie Moscow Center, Nov. 20, 2019, <https://carnegie.ru/commentary/80191>

¹⁸² Bei Shang (北上), “Soaring Back to Back, Interpretation of Second China-Russia Air Force Strategic Patrol” [背靠背的翱翔 中俄空军第二次战略巡航解析], *Tank & Armoured Vehicle* (坦克装甲车辆), no. 4 (2021): 22.

detailed information about sending fighter jets for escort during a China-Russia joint patrol.¹⁸³ The fifth air patrol included exchange visits of warplanes to airfields in each other's territories. According to an unnamed Chinese expert, landing at each other's airfields will help the pilots and ground maintenance staff familiarize themselves with each other's airfields and warplanes."¹⁸⁴ More extensive access to airfields in the Russian Far East could help China establish "new aerial vectors of approach to Japan or to reconnoiter/interdict American air approaches from Alaska."¹⁸⁵

Future iterations could see the inclusion of more diverse platforms and air and naval patrols could be carried out at the same time (rather than as separate operations). A *Global Times* report published following China and Russia's third joint air patrol cited unspecified experts who claimed that "a joint sea-air patrol between the two sides in the future cannot be ruled out."¹⁸⁶ Retired PLA Air Force Major General Fu Qianshao said that future iterations of joint air patrols could see an increase in the number and types of aircraft, potentially including "aerial tankers that could extend the range of other participating aircraft."¹⁸⁷ The fifth joint air patrol suggested some initial steps in both of these directions, with Chinese (but not Russian) ships engaged in a concurrent naval patrol in the Tsushima Strait, while Russian Su-30 and Su-35 fighter jets escorted the Russian and Chinese bombers during the patrol.¹⁸⁸

The increasing complexity of Russia-China military exercises, together with the introduction of joint naval and air patrols, suggests that the content of such exercises may be rated as high on the scale of military cooperation. Although joint exercises do not achieve a high level of interoperability as commonly understood by Western militaries, such interoperability is not necessary for Sino-Russian cooperation given that the primary goal of the two militaries is to

¹⁸³ Guo Yuandan and Liu Xuanzun, "China's J-16 fighter Jets Deployed in Latest Joint Strategic Patrol With Russia," *Global Times*, May 29, 2022, <https://www.globaltimes.cn/page/202205/1266846.shtml>.

¹⁸⁴ Liu Xuanzun, "Chinese, Russian air forces hold 2nd joint strategic patrol of the year with 1st warplane exchange visits," *Global Times*, Nov. 30, 2022, <https://www.globaltimes.cn/page/202211/1280801.shtml>

¹⁸⁵ Andrew S. Erickson and Gabriel B. Collins, "Putin's Ukraine Invasion: Turbocharging Sino-Russian Collaboration in Energy, Maritime Security, and Beyond?" *Naval War College Review* no. 4 (2022), 109.

¹⁸⁶ Fan Anqi and Du Qiongfang, "Chinese, Russian Militaries to Strengthen Strategic Exercises, Joint Patrols: Defense Ministers," *Global Times*, Nov. 24, 2021, <https://www.globaltimes.cn/page/202111/1239763.shtml>.

¹⁸⁷ Guo Yuandan and Liu Xuanzun, "China, Russia Hold Second Joint Aerial Strategic Patrol, Which Could Become 'Routine'," *Global Times*, Dec. 22, 2020, <https://www.globaltimes.cn/content/1210708.shtml>.

¹⁸⁸ Dzirhan Mahadzir, "Chinese, Russian air forces hold 2nd joint strategic patrol of the year with 1st warplane exchange visits," USNI News, Nov. 30, 2022, <https://news.usni.org/2022/11/30/japanese-korean-fighters-scrambled-in-response-to-joint-russia-china-bomber-patrol>

establish a capacity to fight side-by-side, rather than truly working together in combat operations.¹⁸⁹

Benefits of Joint Exercises and Operations for Russia and China

In this section, we examine why Russia and China have been developing and expanding their joint military exercise program. Military exercises have both symbolic and substantive utility for both China and Russia. Symbolically, conducting high-profile and increasingly sophisticated combined naval exercises allows Beijing and Moscow to project images of themselves as great naval powers to internal and external audiences. The symbolism of support for military activities in disputed or symbolically important areas is especially significant. Chinese willingness to participate in naval exercises with the Russian Navy in the Baltic Sea and to visit the Black Sea port of Novorossiysk prior to an exercise in the Mediterranean was widely viewed as a political statement in support of Russia and as an act of reciprocity for Russia's willingness to engage in exercises in disputed maritime zones in the South China Sea. Russian analysts highlight the political benefits of bilateral exercises with China, arguing, sometimes with some hyperbole, that they are an effective means of countering US pressure against both countries. As Aleksey Maslov, the director of the Institute for Asia and Africa Studies at Moscow State University, noted, closer military ties help Russia and China expand "joint programs for geopolitical development" in areas where they have "common interests in the military-strategic sphere."¹⁹⁰ According to Vasily Kashin of the Institute for Far East Studies at the Russian Academy of Sciences, these exercises have helped Russia and China achieve a level of military coordination approaching that of NATO.¹⁹¹

Chinese media reports suggest that China's exercises and joint patrols with Russia can be used to send political or deterrence signals to the US and other countries or non-state actors. For example, one media report commenting on a trilateral naval exercise with Iran said that the exercise showed China's and Russia's support for Iran following the United States' withdrawal

¹⁸⁹ Michael Kofman, "The Emperors League: Understanding Sino-Russian Defense Cooperation," *War on the Rocks*, Aug. 6, 2020, <http://warontherocks.com/2020/08/the-emperors-league-understanding-sino-russian-defense-cooperation/>.

¹⁹⁰ Irina Taran, Elizaveta Komarova, "Increasing interaction in key areas: how Russia and China strengthen their strategic partnership" [«Наращивают взаимодействие в ключевых сферах»: как Россия и Китай укрепляют стратегическое партнёрство], *RT*, Sep. 8, 2022, <https://russian.rt.com/world/article/1046029-kitai-rossiya-sotrudnichestvo-rost-razvitiie>

¹⁹¹ Vasily Kashin, "Tacit Alliance: Russia and China Take Military Partnership to New Level" [Необъявленный союз. Как Россия и Китай выходят на новый уровень военного партнерства], *Carnegie Moscow Center*, Oct. 18, 2019, <https://carnegie.ru/commentary/80096>

from the Iran nuclear deal in mid-2018.¹⁹² Senior Colonel Li Shuyin, commenting on the SCO exercise Peace Mission 2021, said that such exercises were capable of “sending a clear signal” to international terrorist organizations that SCO members were “capable of defeating them.”¹⁹³ A Chinese media report on the third China-Russia joint air patrol claimed that the patrol was a “practical action to warn some countries outside the region and some neighboring countries, like AUKUS and QUAD, not to stir up trouble.”¹⁹⁴ A *Global Times* article published in December 2020 argued that China and Russia had sent “strong messages” to Washington through a joint air patrol in response to pressure from the US in the waning months of the Trump Administration.¹⁹⁵ An article by Yang Jin, an associate research fellow at the Institute of Russian, Eastern European and Central Asian Studies under the Chinese Academy of Social Sciences, said that it “made sense” for “some analysts” to view China and Russia’s joint air patrols as “a strong response to [the] US’ hostile actions.”¹⁹⁶ An unnamed analyst speaking to the *Global Times* under conditions of anonymity said that the selection of the Sea of Japan and East China Sea as locations for China and Russia’s joint air patrols indicated that the two countries have “constant and common concerns” about the strategic stability of those regions.¹⁹⁷ A *Global Times* report on the first joint naval patrol between China and Russia cited an unnamed expert who said that the two navies’ “encirclement” of Japan on the patrol was significant in that “many key military installations are located on that side, including the US Navy base in Yokosuka.”¹⁹⁸

Benefits of signaling aside, some Chinese writings have raised concerns about China’s ability to control the narrative in international public opinion at the time of combined exercises with

¹⁹² Zhang Han, “China-Russia-Iran Joint Military Drill Cautions US: Analyst,” *Global Times*, Dec. 26, 2019, <https://www.globaltimes.cn/content/1174934.shtml>.

¹⁹³ Li Chun, “Tradition and change” Co-Exist in Peace Mission 2021 Exercise,” China Military Online, Sep. 27, 2021, http://eng.mod.gov.cn/news/2021-09/27/content_4895697.htm.

¹⁹⁴ Wang Qi, “Chinese, Russian Bombers Hold Joint Patrol, Safeguarding World Strategic Stability Amid Western Provocations,” *Global Times*, Nov. 19, 2021, <https://www.globaltimes.cn/page/202111/1239423.shtml>.

¹⁹⁵ Yang Sheng, “China-Russia Strategic Ties to Be Strengthened, Sending Strong Signal to New US Govt,” *Global Times*, Dec. 23, 2020, <https://www.globaltimes.cn/content/1210830.shtml>.

¹⁹⁶ Yang Jin, “China-Russia Joint Air Patrols a Strong Signal For Regional Stability,” *Global Times*, Dec. 23, 2020, <https://www.globaltimes.cn/content/1210821.shtml>.

¹⁹⁷ Guo Yuandan and Liu Xuanzun, “China, Russia Hold Second Joint Aerial Strategic Patrol, Which Could Become ‘Routine’,” *Global Times*, Dec. 22, 2020, <https://www.globaltimes.cn/content/1210708.shtml>.

¹⁹⁸ Liu Xuanzun, “Chinese, Russian warships Circle Around Japan; Base of US Provocations Within Reach,” *Global Times*, Oct. 22, 2021, <https://www.globaltimes.cn/page/202110/1237037.shtml>.

Russia.¹⁹⁹ For example, a media report on Joint Sea suggested that combined exercises with Russia are viewed as risky ventures, as it claimed that “even a subtle movement of the naval fleet might lead to political and diplomatic issues.”²⁰⁰ Chinese authors have also sought to portray China-Russia exercises in a more positive light than those of the United States and its allies, even if the basic objectives of each side’s exercises (deterrence signaling) are the same. For example, an article in the journal *Tank & Armoured Vehicle* claimed that the objectives of exercises like Zapad/Interaction 2021 were “completely unlike” the “Cold War-style” exercises that were “directed at specific countries,” since they sought to highlight “presence” rather than “force” by ensuring that their forces were “not overlooked” in considerations of strategic balance of power.²⁰¹

Substantively, military exercises enable Chinese forces to learn from their Russian counterparts and to improve operationally, which is particularly valuable given the Chinese military’s lack of operational experience. Chinese writings describe combined exercises with Russia’s armed forces as useful opportunities for the PLA to learn tactics, techniques, or procedures from Russian personnel. The Russian military’s comparatively recent combat experience—excluding the current Russia-Ukraine conflict, which is not directly mentioned in Chinese writings on China-Russia military cooperation—is cited as one reason why lessons learned from Russia are particularly valuable to the PLA.²⁰²

¹⁹⁹ PRC subject matter experts’ concerns about the signals the PLA sends to foreign audiences are not limited to combined military exercises. The concerns extend to unilateral activities conducted by the PLA Navy outside the First Island Chain. For example, a 2018 journal article by authors affiliated with the PLA’s Naval Command College stated that as operations far from home were increasing in frequency and duration, the PLA Navy was attracting “high levels of domestic and foreign attention” and the “levels of risks are unprecedented.” See Chen Li (谡力), Song Guopeng (宋国鹏), and Wei Zheng (韦政), “On ‘Go Global’ Strategy in New Era” [新时代人民海军“走出去”问题研究], *Journal of Naval University of Engineering (Comprehensive Edition)* (海军工程大学学报(综合版)), no. 54 (2018): 32-37.

²⁰⁰ “Highlights of the China-Russia Joint Sea-2021 Military Exercise and Joint Cruise,” China Military Online, Oct. 26, 2021, http://eng.mod.gov.cn/news/2021-10/26/content_4897957.htm.

²⁰¹ Luo Shanai (罗山爱), “Flashing the Sword at Qingtongxia—Interpreting the China-Russia ‘Zapad Interaction 2021’ Exercise” [亮剑青铜峡——解读中俄“西部·联合-2021”演习], *Tank & Armoured Vehicle* (坦克装甲车辆), no. 17 (2021): 14.

²⁰² PRC media reporting since the start of the Ukraine conflict in February 2022 has been considerably more cautious in how it describes the benefits of military cooperation with Russia. For example, during Vostok 2022, a PRC Ministry of National Defense (MND) spokesperson claimed the PLA’s participation in the exercise was “unrelated to the current international and regional situation” and intended to deepen military cooperation with all participating countries. PRC media reports at the time also criticized Western media for speculating that the PLA’s involvement in the exercise demonstrated support for the Russia-Ukraine war, arguing that Western observers had failed to notice the other countries participating in Vostok 2022.

A media report on Vostok 2018 quoted Senior Colonel Li Xincheng, a PLA helicopter pilot, as saying that almost all Russian helicopter pilots participating in the exercise had participated in the Syria conflict (i.e., a reference to Russian military intervention in the Syrian civil war), meaning the pilots had “very rich real combat experience.” Li said the PLA stood to learn from the performance of Russian equipment, which had been tested on “the real battlefield.”²⁰³ An article on Tsentr 2019 that was published on the PLA’s official website stated that “working and coordinating with the richly experienced Russian troops on the battleground” was “without any doubt of great reference value for China’s military modernization.”²⁰⁴ A separate article on the PLA’s official website, this one on Zapad/Interaction 2021, identified the Russian military’s “more flexible and applicable” counterterrorism tactics among aspects that the PLA would benefit from studying.²⁰⁵

Although Chinese media will sometimes state that such exercises also provide opportunities for the Russian military to learn from China, it was relatively rare in our analysis of Chinese writings to see specific examples of Russian forces learning from the PLA.²⁰⁶ Russian media outlets tend to avoid such discussions altogether. Instead, for the Russian side, these exercises reflect a desire to improve operational or strategic deconfliction, while setting the tone for military-to-military ties at the highest echelons. Russian analysts focus on China filling Russia’s increasing need for political support, as well as on a mutual increase in perception of threat from the United States driving both countries’ need to build bilateral trust. As deputy defense minister Anatoly Antonov noted on the first day of Joint Sea 2015, the exercise was held in the European theater because “[our] Chinese colleagues stressed the need to restructure the current world order, move away from double standards and strengthen equal and mutually beneficial relations in the world.”²⁰⁷ The Russian Ministry of Defense described the 2019

²⁰³ Ge Yunfei, “How Chinese and Russian Troops Benefit from Drills,” CGTN, Sep. 14, 2018, https://news.cgtn.com/news/3d3d674e336b544d7a457a6333566d54/share_p.html.

²⁰⁴ Wu Jian, “What’s Worth Seeing About China-Russia “Tsentr-2019” Exercise?,” China Military Online, Sep. 18, 2019, http://eng.chinamil.com.cn/view/2019-09/18/content_9627849.htm.

²⁰⁵ “Exercise ZAPAD/INTERACTION-2021: 265 Tons of Ammunition Fired In 45 Minutes,” China Military Online, Aug. 16, 2021, http://eng.chinamil.com.cn/2021special/2021-08/16/content_10079747.htm.

²⁰⁶ In one such example, a PRC media report on Vostok 2018 quoted Chi Xuwen, the chief of staff of a PLA pontoon-bridge battalion, as saying that during an unspecified drill with Russia in 2015, the PLA side demonstrated some floating bridge-building skills that the Russian did not have. According to Chi, in a drill held in 2016, the PLA side found that the Russians had begun to use those skills. See Ge Yunfei, “How Chinese and Russian Troops Benefit from Drills,” CGTN, Sep. 14, 2018, https://news.cgtn.com/news/3d3d674e336b544d7a457a6333566d54/share_p.html.

²⁰⁷ Sergey Kosyakov, “Russia and China have started joint exercises in the Mediterranean sea” [Россия и Китай начали совместные учения в Средиземном море], *DW*, May 11, 2015, <https://tinyurl.com/23jh8z3z>.

iteration of the joint air patrol with China as being “carried out with the aim of deepening and developing Russian-Chinese relations...as well as strengthening global strategic stability.”²⁰⁸

Mutual access to each other’s military facilities has the potential for creating strategic advantages, especially for China. As noted above, the ability to routinely access Russian air bases would allow the Chinese air force to pose a greater threat to Japan, while also potentially improving its ability to limit US vectors of attack from Alaska. In addition, access to Russian Pacific Fleet facilities would enable the PLA Navy to increase its ability to sustain a continued naval presence in the Sea of Japan.²⁰⁹ Similarly, Russian access to Chinese military facilities could allow Russia to threaten South Korea and Japan from the West, in the event of a conflict.

Assessment

China and Russia’s joint exercise and military operations program underwent a significant expansion in the middle of the previous decade. Between 2012 and 2019, the two countries initiated a range of new continuing exercise series, including Joint Sea, Cooperation, and trilateral naval exercises with Iran and South Africa. The two countries also began regular strategic air patrols and China also began to routinely participate in Russian strategic command post exercises. The geography of the exercises also expanded during the period, with naval exercises taking place in distant and contested regions such as the Mediterranean, Baltic, and South China Seas. The geographical locations of Russian-Chinese military exercises show that willingness to travel to sensitive locations for bilateral exercises increased starting in 2015. This suggests a growing level of mutual trust and willingness to take political risks to highlight the strength of the two countries’ military partnership. During this period, the exercises also became more advanced, with a higher degree of coordination through the establishment of joint operational command centers. These efforts led to increased familiarity with how the other partner military operates.

That said, the level of cooperation in exercises has largely plateaued starting in 2020. A drop in the frequency of exercises that year caused by the COVID-19 pandemic has not been fully reversed. The geographic reach of exercises and joint patrols has not expanded to new areas since the 2019 trilateral naval exercises off the coast of South Africa. While the complexity of exercises has continued to expand, advances in this field have become more gradual, staying at the level of episodic establishment of integrated military commands, and with no sign that the

²⁰⁸ Mikhail Korostikov, “Five aircraft – three opinions” [Пять самолетов — три мнения], *Kommersant*, July 24, 2019, <https://www.kommersant.ru/doc/4040255>

²⁰⁹ Erickson and Collins, 109.

two countries may look to establish a more permanent level of integration in the foreseeable future.

Overall, Russian-Chinese military exercises thus continue to operate at a high level, though this level has largely plateaued in the last three years because of a combination of unfavorable external circumstances. Given the increasing operational constraints facing the Russian military as a result of its continuing war against Ukraine, this level of cooperation is likely to continue in the short term, with a further expansion of bilateral exercises unlikely while the war goes on.

Russia-China Military Cooperation: An Overall Assessment

Military cooperation between Russia and China has expanded dramatically over the last decade. In this chapter, we return to the scale discussed in the introduction and assess the extent of cooperation in each of the issue areas. We then assess the overall trajectory of the relationship in recent years, which allows us to make some probabilistic forecasts of how the partnership might develop in the next five to eight years. Finally, we discuss what benefits the two partners derive from their military cooperation relationship, in the context of capabilities that the relationship provides them or actions that it allows them to undertake that they could not have or do if acting alone.

Summary of Findings

China-Russia military cooperation has not always grown linearly over time. At various points, some aspects of cooperation have undergone periods of rapid expansion, while others stagnated. At other points, previously growing areas of cooperation have in turn plateaued. This unevenness in the dynamic of cooperation growth has been most notable in MTC and in joint exercises and operations, while the expansion of political consultations and military diplomacy has been more constant.

Consultation and Diplomacy

As we highlight in the introduction, early levels of cooperation include regular consultation mechanisms and military diplomacy interactions. We find that over the last two decades, Russia and China have developed well-institutionalized political and military consultation mechanisms that can be rated at the higher end of the moderate level on our military cooperation scale. Basic parameters for both political and military cooperation are outlined in the 2001 Sino-Russian Treaty of Good Neighborliness and Friendly Cooperation, which some analysts have described as an implicit defense pact because of its commitments to nonaggression and mutual consultation in case of a threat to one of the parties. It falls short of a full-fledged alliance because it lacks explicit commitments to mutual assistance and defense, as well as any option of requesting military aid in the event that one of the parties is attacked or threatened.

The most important mechanisms include annual bilateral security consultations at the level of the head of each country's security council, in place since 2005 and held without fail every year

except in 2020, when they were canceled because of the COVID-19 pandemic. In addition, in 2014, regular and frequent bilateral talks on Northeast Asia security issues were institutionalized into a semiannual security dialogue at the deputy foreign minister level. Finally, since 2017, China and Russia have organized their military cooperation plans in five-year roadmaps, with the most recent plan agreed to in 2021. In addition to a number of exercise and joint operations, this roadmap includes mechanisms for regular meetings at all levels of the defense establishment, up to and including between the two countries' defense ministers.

The topics of discussion in bilateral consultation mechanisms have over time moved far beyond their origin in the early 2000s of dealing with bilateral territorial disputes. Prior to 2014, the primary focus remained on developing and expanding bilateral military cooperation, including both arms sales and joint exercises. As Russia expanded its relationship with China (in the aftermath of its 2014 crisis in relations with the West), the two countries began to coordinate more broadly on security issues, including mutual threat perceptions vis-à-vis the West, positions on each other's territorial and geopolitical disputes with third countries, and efforts to expand cooperation on strategic issues, such as the development of joint missile early warning systems.

Military-Technical Cooperation and Personnel Exchange

Sino-Russian MTC has varied over the decades since the end of the Cold War. After a period of extensive growth in Russian arms sales to China from 1991 to 2005, MTC was fairly limited during the following decade because of a combination of growing Chinese self-sufficiency and Russian reluctance to share its most advanced technologies with a potential competitor on the global arms market. As with several other areas of military cooperation, Russian arms sales to China briefly, rapidly grew after Russia's 2014 conflict with Ukraine, which led Russia to moderate its reluctance to sell China advanced weapons systems. However, this growth was not sustained in recent years, as China continued to increase its self-sufficiency.

Even as arms sales have become a less significant aspect of the overall bilateral military cooperation relationship, joint technology projects have rapidly become the most important line of effort in Sino-Russian MTC. The two sides have launched a variety of joint military production projects, including a heavy-lift helicopter, a new conventional submarine, and tactical missiles, as well as high-tech projects with potential military applications in spheres such as artificial intelligence and space systems.²¹⁰ Most critically, Russian assistance in the development of a Chinese missile launch early warning system highlights the expansion of cooperation to strategic defense. At the same time, when discussing purely military technology

²¹⁰ For more on these topics see Kevin Pollpeter et al. "China-Russia Space Cooperation," CNA, Jan. 2022 and Jeffrey Edmonds et al. "Artificial Intelligence and Autonomy in Russia," CNA, May 2021, 159-164, <https://www.cna.org/reports/2021/05/Artificial-Intelligence-and-Autonomy-in-Russia.pdf>.

development, the partnership has remained somewhat one-sided, with little evidence of technology transfer from China to Russia. Russia has turned to China in its efforts to replace key Ukrainian and Western dual-use components, especially in electronics, although these projects are mostly in early stages and have not yet had a significant effect on Russian defense production. Some projects initiated after 2014, especially the purchase of Chinese marine engines, have been curtailed because Chinese equipment was found to be of insufficient quality. China has also to date refrained from overt efforts to help Russia avoid Western sanctions. Nevertheless, the shift from arms sales to joint projects with technology transfers suggest an increase in defense industry integration, with higher levels of mutual dependence and institutional coordination. Overall, Sino-Russian MTC continues to operate at a high level, though there is potential for further growth because some aspects of the interaction remain one-sided, with China most frequently acting as a consumer of Russian technological know-how.

Although personnel exchanges have likewise expanded in recent years and now include areas such as space cooperation, they have remained largely one-sided, with China sending personnel to study in Russia but little to no reciprocation from the Russian side. Despite this one-sided nature, the scale of these programs and their level of institutionalization leads to a high rating on the assessment scale.

Military Exercises and Joint Military Operations

Russia and China demonstrate a high level of cooperation in military exercises and joint operations. As with other aspects of military cooperation, Sino-Russian joint military exercises and operations underwent a rapid period of expansion in the mid-2010s. During this period, Russia and China started several new series of military exercises, most of which have continued to the present day. As a result, the frequency of bilateral and multilateral military exercises with Russian and Chinese participation increased from 2012 to 2019. The two partners also expanded the geographic reach of their exercise program, with naval exercises taking place in more distant regions, while all kinds of military exercises took place in more sensitive locations. The content of the exercises also suggested an effort to increase complexity in order to achieve a higher degree of coordination. The launch of joint air and naval patrols in 2019 and 2021, respectively, highlights an effort to move beyond exercises and into real world operations, though to date the patrols differ little in practice from military exercises.

Joint exercises have included efforts to integrate the use of each other's military equipment and facilities, as well as the establishment of temporary joint command centers for the purpose of conducting specific exercises and operations. All of these activities have allowed both sides to increase trust and cooperation at the operational level. At the same time, working together with Russian forces that have experienced battlefield conditions in operations in Syria and Ukraine has helped the Chinese military to improve operationally by learning more advanced

tactics and procedures, as part of its effort to compensate for its overall lack of operational experience. The exercise program has also provided symbolic benefits to both sides, allowing both China and Russia to demonstrate that they are working together against US threats and efforts at “world domination.”

Advanced Military Cooperation

As noted in the introduction to this report, advanced military cooperation is demonstrated through the establishment of integrated military command centers, joint deployments and base sharing, and, at the highest levels, the formulation of a common defense policy. Russia and China have demonstrated relatively few aspects of such advanced cooperation. The episodic establishment of joint operation centers for specific exercises and the occasional use of each other’s military facilities, as described in the military exercises section of this report, remain the only cases of advanced military cooperation. As noted in the introduction, such episodic instances are judged as indicators of a low level of integrated military command. Beyond that, Russia and China have not shown any indication of planning to establish permanently operating joint command structures. Beyond specific exercises, they have also generally not provided each other with access to host nation logistics nodes, nor have they sought to negotiate agreements for basing military units or equipment on each other’s territory, either permanently or temporarily. Finally, neither side appears interested in discussing the formulation of a common defense policy at any level, even the lowest levels, such as commitments for joint fulfillment and supply. As a result, we assess that China and Russia have not reached an advanced level of defense cooperation, though they have taken some very preliminary initial steps in that direction.

Summary

Based on the above discussion, Table 2 summarizes the current state of Russia-China military cooperation. As shown in the table, military cooperation between Russia and China is currently at the moderate level, with all early and moderate cooperation level indicators at high level, while there are very limited signs of any cooperation at the advanced level.

Table 2. Assessment of current status of Russia-China military cooperation

		Indicator	Level	Examples of activities by level	
Advanced	7	Common defense policy	High	Joint mission planning; pooling resources for military equipment acquisition	
			Low	Binding commitments for joint fulfilment/supply	
			Absent		
	6	Joint troop placement/military bases	High	Deployment of large contingents on each other's territory	
			Low	Reciprocal access to host nation logistics nodes, provisional agreements for basing units for transit/contingencies	
			Absent		
	5	Integrated military command	High	Establish permanent joint command structures	
			Low	Forces placed under short-term command of other side's commanders (e.g., exercises)	
	Moderate	4	Regular joint military drills	High	More frequent, held in more distant/sensitive locales, complex operations, joint command centers
Low				Infrequent, held in immediate neighborhood of participants, basic joint maneuvers	
3		Military-technical cooperation/personnel exchange	High	Military technology transfers, joint production of arms; institutionalized joint PME programs	
			Low	Training and assistance for arms sales; limited number of personnel for intermittent exchanges	
Early		2	Military diplomacy	High	Senior military leadership meets annually or more frequently
				Low	Irregular meetings of senior military leadership
	1	Mechanism of regular consultations	High	Shift in consultation agenda to larger issues (global, regional); establishment of new consultation platforms	
			Low	Focus on bilateral disputes	

Source: CNA. Note: The highlighted boxes indicate the current level of engagement in each category.

Trajectory of the Bilateral Relationship

Russian-Chinese military coordination has continued to advance in the last year. The Putin-Xi February 2022 joint statement, made just before Russia's invasion of Ukraine, demonstrated an increase in overlap in the two sides' security concerns, with both focusing on the threat posed by the United States and NATO to international security in general and to their own countries in particular. Chinese officials have refused to criticize Russia's invasion, generally blaming NATO and US threats for causing the war. However, China has expressed some displeasure at Russia's nuclear saber rattling. Nevertheless, the most recent round of security consultations, held in September 2022, resulted in pledges from both sides that they would work to continue to deepen bilateral strategic coordination. The level of institutionalization of interactions suggests that the Russian and Chinese security establishments regularly engage in strategic coordination, even if they do not always share the same views on some of the security issues that they discuss.

At the same time, after undergoing a period of rapid expansion from 2014 to 2019, Russian-Chinese MTC has largely plateaued in recent years. Relatively few new arms sales contracts have been signed since 2016. Cooperation in joint development project continues to expand, but relatively few of these projects have led to completed products. China has also avoided any actions that might be perceived as helping Russia avoid the sanctions that were placed on it by Western countries, both after the 2014 conflict and after Russia's full-scale invasion of Ukraine in 2022. As a result, much of the cooperation remains relatively one-sided, with Russia continuing to provide technology and know-how to China, while the import of Chinese military technology into Russia remains relatively limited. Personnel exchange programs are similarly one-sided, though in the opposite direction, with Chinese military personnel going to Russia for educational opportunities but little to no movement in the opposite direction. In other words, China continues to exploit favorable conditions to gain military know-how from Russia, while Russia has to date gained relatively little other than financial compensation and symbolic statements of support in return. The unequal nature of the relationship suggests that Russia needs China more than the other way around and that China is using this dependence for its own benefit. That said, there is certainly potential for an increase in Chinese military-technical assistance to Russia in the coming years, as the Russian defense industry increasingly comes to feel sanctions-related constraints in components and machine tools. Chinese companies are likely to exploit these opportunities—openly for products that do not fall under Western sanctions and covertly for products that do.

As with MTC, the frequency and geography of Sino-Russian military exercises expanded rapidly in the mid-2010s, but has largely plateaued in the last three years. The exercises have continued to become more advanced during this period, however. The lack of increases in frequency and geographic expansion since 2020 is likely primarily the result of constraints

introduced first by the COVID-19 pandemic and then by Russia's invasion of Ukraine. While the former no longer affects bilateral military activities, the latter may continue to act as a brake on the availability of Russian military assets for exercises with China. However, this constraint is primarily relevant to Russian ground forces, so naval and air exercises and joint operations may begin to expand again in the coming years, although the location of these exercises may be limited by Chinese desire to avoid unnecessarily escalating tensions with Russia's adversaries, particularly in Europe. The one recent innovation is the increase in Russian willingness to provide China with access to Russian military facilities, as suggested by activities during the most recent joint air patrol.

Although the overall rapid expansion of Sino-Russian military cooperation in terms of MTC and joint exercises that was clearly evident in 2014–2019 has not been evident in the last three years, the continued frequency of security consultations and the issuance of statements reaffirming close military ties during the 2020–2022 period suggests that this lull is most likely the product of external circumstances rather than a change in the willingness of either party to continue to pursue the development of an ever-closer military relationship. If this is the case, then it is these circumstances, including Western sanctions and resource constraints faced by the Russian military as a result of its invasion of Ukraine, that will determine whether there is a renewed push to further expand the military relationship in the coming years.

What Russia and China Have Gained from Military Cooperation

Russia and China derive clear benefits from their military cooperation. While the most significant benefits come in the form of mutual political support on the international stage, there are also clear benefits in terms of defense industrial production and in improvements in operational capabilities, especially for the Chinese side.

There is political symbolism of Russia and China supporting each other in fighting against what they consider US efforts to preserve its global hegemony. To this end, joint statements by senior leaders, such as the February 2022 announcement of a “friendship without limits” by Presidents Putin and Xi, highlight that the two countries have similar strategic positions on global issues. Concrete actions such as arms deals and major joint exercises also have a strong symbolic component, showing that the two countries are working together to address global challenges and to strengthen each other's positions in the world. The symbolic benefits of military cooperation are particularly important for Russia as it seeks to counter the perception that it is isolated internationally as a result of its invasion of Ukraine. The willingness of Chinese leaders to meet with Russian leaders at the highest levels, and the statements of support that

are regularly issued after such meetings, have been highlighted by Russia as a sign that Western efforts to isolate it are failing.

Announcements by Russian leaders that they will help China develop its missile early warning system highlight that the two countries are willing to share information about strategic weapons systems, which has great symbolism regardless of the subsequent practical level of cooperation in the development of the system in question. Chinese willingness to participate in naval exercises in the Baltic Sea, or to sail ships into Novorossiysk in the prelude to a naval exercise in the Mediterranean, highlights political support for Russia in the context of its post-2014 confrontation with NATO. Similarly, Russia's willingness to participate in an exercise with China in the South China Sea can be taken as support for China in its maritime territorial disputes with neighboring Southeast Asian states.

There is a clear sense that China gains more from the relationship than Russia does in terms of the material benefits of cooperation. The PLA has long used military exercises to learn from its Russian counterparts and to improve operationally, with activities with the Russian military being seen in China as particularly valuable given the contrast between the PLA's lack of operational experience and the Russian military's experience in operations in Ukraine and Syria. China could also gain strategically from potential access to Russian military facilities in the Far East, though there is little indication that Russia is willing to grant such access in the foreseeable future. The Russian military, which has long seen itself as more advanced in operational knowledge than its Chinese counterpart, has gained less in practical terms. At the same time, Russia's performance over the last year in its war with Ukraine may introduce some doubts among PLA leaders about the quality of the Russian military, which may in turn affect the perceived utility of what the PLA may be able to learn from joint exercises and operations with the Russian military. While it is far too early to see evidence of such a shift in Chinese perceptions, it is a possibility that observers should consider going forward.

For many years, China has leaned heavily on Russian weapons exporters to help facilitate its military modernization. This assistance has been particularly critical because for most of the post-Cold War era, its defense industry lagged far behind its Russian counterpart and China was not able to purchase weapons from the West to catch up. Russian arms sales to China helped to erode US military superiority in East Asia. Moreover, by assisting China principally in the maritime and aerospace domains, Russia has supplied weapons that pose a comparatively smaller threat to Russia and a comparatively larger threat to the United States. That said, Chinese dependence on Russian arms supplies is clearly waning as its defense industry becomes increasingly self-sufficient. Most of the armaments that China has in the past bought from Russia can now be produced domestically. On the other hand, the enactment of comprehensive Western sanctions against Russia in the aftermath of Russia's invasion of Ukraine has increased Russian dependence on Chinese components such as electronics and on Chinese machine tools. For the most part, China has been very careful to avoid providing any

equipment to Russia that might violate Western sanctions, though the US Treasury imposed sanctions on a few PRC companies that provided military aid and US officials caution that the PRC has not fully rejected the prospect of such assistance in the future.

The clearest benefits that both China and Russia derive from their military cooperation are in the realm of symbolism and mutual political support. While China has long gained more in terms of practical benefits than Russia from MTC and joint exercises, these benefits have been declining over time. While Russia now potentially stands to gain from joint defense industrial projects and from the potential import of components that it can neither produce domestically nor import from the West because of sanctions, China has not expressed a willingness to fulfill this need for Russia. Whether the military relationship will move beyond the plateau of the last three years and into another round of expansion will thus hinge primarily on the perceived importance of closer political ties between China and Russia.

In determining the trajectory of the relationship over the next three to five years, observers of the MTC sphere should focus on the extent to which China is supplying Russia with military and dual-use technologies and how much real assistance Russia is providing to China through joint projects such as the early warning system and advanced heavy lift helicopters. In the joint exercises and operations sphere, observers should focus on the extent to which China and Russia are conducting military exercises that are provocative to third-party states, such as in the GIUK gap or near US territory in the Pacific, or if either undertakes missions that are primarily of importance to the other, such as joint naval activities in the South China Sea near Taiwan or in the Mediterranean or Baltic Seas. In addition, any indication that either side is willing to grant the other long-term access to its military facilities would be a sign of a significant advance in military cooperation and mutual trust. These indicators will be more significant than further ritual statements about unlimited friendship made at summit meetings.

Appendix: China-Russia Military Exercises, 2005–2022

Name/Date	Participants	Size	Locations	Activities
1. Peace Mission 2005 August	Russia, China	8000 PRC, 2000 RF	Vladivostok, Shandong Peninsula	Neutralizing anti-aircraft defenses, enforcing maritime blockades, amphibious assault
2. Peace Mission 2007 August	Russia, China, SCO	1600 PRC, 2000 RF, 2900 other	Xinjiang, Chelyabinsk	Suppressing Islamist insurgency and/or popular rebellion
3. Sodruzhestvo 2007 August	Russia, China	Less than 200	Moscow region	Paramilitary counterterrorism
4. Peace Mission 2009 July	Russia, China, SCO	6500, incl 1300 from PRC & RF	Khabarovsk, Jilin	Theater-level combined antiterrorist campaign
5. Peace Blue Shield 2009 Sept	Russia, China	Several ships	Gulf of Aden	Joint maneuvers/counterpiracy by ships already in AOR
6. Peace Mission 2010 Sept	Russia, China, SCO	1000 RF, 1000 PRC, 3000 other	Southeast Kazakhstan	Counterterrorism
7. Joint Sea 2012 April	Russia, China	RF: 7 ships, PRC: 18 ships	Yellow Sea	Join air defense, joint antisubmarine warfare, maritime replenishment, naval escort, and rescue of hijacked ships
8. Peace Mission 2012 June	Russia, China, SCO	350 RF, 350 PRC, 1300+ other	Tajikistan	Counterterrorism, counterinsurgency, air and ground strikes, encirclement and suppression, pursuit and vertical interception
9. Cooperation 2013 June	Russia, China	Less than 100	Beijing	Counterterrorism, paramilitary
10. Joint Sea 2013 July	Russia, China	RF: 9 ships, PRC: 13 ships	Peter the Great Gulf/Sea of Japan	Fleet air defense, antisubmarine warfare and surface warfare, and humanitarian assistance and disaster relief drills

Name/Date	Participants	Size	Locations	Activities
11. Peace Mission 2013 July-Aug	Russia, China	900 RF, 600 PRC	Chelyabinsk	Campaign-level counterterrorism
12. Joint Sea 2014 May	Russia, China	RF: 6 ships PRC: 8 ships	East China Sea	Antisubmarine warfare, joint air defense operations, ship-to-ship combat, and search and rescue
13. Peace Mission 2014 August	Russia, China, SCO	1000 RF, 5000 PRC	Inner Mongolia, China	Counterterrorism, counterinsurgency, liberating occupied zone
14. Border Defense Cooperation 2014 November	Russia, China	Personnel not reported	Jilin province, China	Border defense drill
15. Joint Sea 2015 May (I)	Russia, China	RF: 2 ships, PRC 2 ships	Mediterranean Sea	Joint air defense, antiship, antisubmarine, and antifrogman drills
16. Joint Sea 2015 August (II)	Russia, China	RF: 18 ships, PRC 7 ships	Sea of Japan	Amphibious operations, antisubmarine, and air defense drills
17. Aerospace Security 2016 April	Russia, China	Command staff	Moscow	Computer-enabled missile defense exercise
18. Cooperation 2016 July	Russia, China	Personnel not reported	Moscow, Smolensk regions	Counterterrorism, paramilitary
19. Joint Sea 2016 Sept	Russia, China	RF: 5 ships PRC: 12 ships	South China Sea	Antisubmarine operations, joint air defense, island seizure, and search and rescue drills. China sent 10 surface ships, 2 submarines, 11 fixed-wing aircraft, and 8 helicopters; Russia sent 3 surface ships, 2 supply ships, 2 helicopters, and amphibious vehicles
20. Joint Sea 2017 June (i)	Russia, China	RF: 3 ships, PRC: 3 ships	Baltic Sea	Antisubmarine, anti-air, and antisurface operations
21. Joint Sea 2017 Sept (ii)	Russia, China	Total of 13 ships	Sea of Japan and Sea of Okhotsk	Joint submarine rescue and antisubmarine drills

Name/Date	Participants	Size	Locations	Activities
22. Aerospace Security 2017 Dec	Russia, China	Command staff	Beijing	Computer-enabled missile defense exercise
23. Cooperation 2017 Dec	Russia, China	Less than 200	Yinchuan, China	Counterterrorism, paramilitary
24. Joint Russian-Chinese exercise, 2018 June	Russia, China	10 warships; 3,000 servicemen	East China Sea	Joint Russian-Chinese exercise, limited detail available
25. Peace Mission 2018 August	SCO, Russia, China, India, Pakistan	1700 RF, 750 PRC	Chelyabinsk	Counterterrorism, air strikes
26. Vostok 2018 Sept	Russia, China, Mongolia	300,000 RF, 3200 PRC	RF Eastern MD	Strategic C2, combined arms operations, annual capstone operational exercise
27. Unnamed naval 2018 Oct	Russia, China	RF: 2 ships PRC: not reported	Yellow Sea	Joint tactical maneuvers and communications
28. Joint Sea 2019 May	Russia, China	RF: 5 ships, PRC: 7 ships	Yellow Sea, East China Sea	Live fire drills, joint air and antisubmarine defense, joint submergence rescue
29. Joint aerial strategic patrol 2019 July	Russia, China	RF: 2 Tu-95, PRC: 2 H-6K	Sea of Japan, East China Sea	Combined aerial patrol
30. Center 2019 Sept	Russia, China, India, Pakistan, SCO countries	130,000 RF, 1600 PRC	RF Central MD	Strategic C2, combined arms operations, tactical skills, annual capstone operational exercise
31. Sodruzhestvo 2019 Oct	Russia, China	Less than 100	Novosibirsk	Paramilitary, counterterrorism
32. Unnamed special ops 2019 Nov	Russia, China, other ASEAN countries	800+	Guangxi, China, Eastern Military District	ASEAN Spetsnaz exercise, counterterrorism

Name/Date	Participants	Size	Locations	Activities
33. Naval Operation Mosi 2019 Nov-Dec	Russia, China, South Africa	RF: 3 ships, PRC: 1 ship, SA: 2 ships	Off the coast of South Africa	Protecting navigation and maritime economic activity, surface gunnery, helicopter cross-deck landings
34. Operation Maritime Security Belt 2019 Dec	Russia, China, Iran	RF: 3 ships, PRC: 1 ship, Iran: 6 ships	Gulf of Oman, Indian Ocean	Counterterrorism, counterpiracy, maritime rescue
35. Kavkaz 2020 Sept	Russia, China, Pakistan, Myanmar, Armenia, Belarus	80,000 RF, Ground forces and 3 ships deployed	RF Southern MD	Strategic C2, combined arms operations, tactical skills, annual capstone operational exercise
36. Joint aerial strategic patrol 2020 Dec	Russia, China	RF: 2 Tu-95, PRC: 4 H-6K	Sea of Japan, East China Sea	Combined aerial patrol
37. Chinese naval parade 2021 April	China, Russia, 10 other countries	RF: 4 ships PRC: 32 ships	Qingdao, Yellow Sea	Passex
38. Sibiu/ Interaction 2021 Aug	Russia, China	10,000 total	Ningxia Hui Autonomous Region, China	Combined arms operations, joint air offensive and defensive operations, counterterrorism, tactical drills and movement
39. Peace Mission 2021 Sept.	Russia, India, Kazakhstan, China, Kyrgyz Republic, Pakistan, Tajikistan, Uzbekistan, Belarus	RF: 2000 servicemen Others: 1400 servicemen	Donguz training ground, Orenburg region	Antiterrorist operations, counterterrorism cooperation, tactical techniques and methods for joint military administration
40. Joint Sea 2021 Oct	Russia, China	10 total warships	Sea of Japan, East China Sea	Tactical naval maneuvering, antimine support, artillery fire at sea targets, combined naval patrol

Name/Date	Participants	Size	Locations	Activities
41. Joint aerial strategic patrol 2021 Nov	Russia, China	RF: 2 Tu-95s PRC: 2 H-6K	Sea of Japan, East China Sea	Combined aerial patrol
42. Peaceful Sea 2022 Jan	Russia, China	Combined total; 5 naval vessels, ship-borne helicopters and marines	Western Arabian Sea	Search and liberation drills, tactical maneuvering, antipiracy effort
43. Joint aerial strategic patrol 2022 May	Russia, China	RF Tu-95s PRC: H-6 bombers	Sea of Japan	Combined aerial patrol lasting 13 hours
44. Vostok 2022 Sept	Russia, China, CSTO, SCO, Azerbaijan, Algeria, Syria, Armenia, Belarus, India, Kazakhstan , Kyrgyzstan, Tajikistan	50,000 servicemen , 140 aircraft, 60 warships, boats and support vessels	Russian Far East, Sea of Japan, Okhotsk Sea, Telembam Uspenovsky, Lagunnoye	Headquarters communication, coalition troop response, air defense, offensive and defensive action, combined naval patrol
45. Joint aerial strategic patrol 2022 Nov	Russia, China	RF: Tu-95s, Su-30SM, Su-35S PRC: H-6K	Sea of Japan, East China Sea, West Pacific	Combined aerial patrol lasting 8 hours, exchange visits of warplanes to airfields in each other's territories

Sources: Phillips C. Saunders, Kenneth Allen, and John Chen, Excel file, Chinese Military Diplomacy, 2003-2016, National Defense University, Institute for National Strategic Studies, July 2017, <https://ndupress.ndu.edu/Media/News/Article/1249864/chinese-military-diplomacy-20032016-trends-and-implications/>; Office of the Secretary of Defense, "Annual Report to Congress: Military and Security Developments Involving the People's Republic of China," Department of Defense, 2018, <https://media.defense.gov/2018/Aug/16/2001955282/-1/-1/1/2018-CHINA-MILITARY-POWER-REPORT.PDF>; "China: People's Liberation Army Exercises with Foreign Armed Forces in 2018," Unclassified//FOUO, Open Sources Enterprise, Document No. CHW2019041502119207; Richard Weitz, "Assessing Chinese-Russian Military Exercises: Past Progress and Future Trends," CSIS, July 9, 2021, <https://www.csis.org/analysis/assessing-chinese-russian-military-exercises-past-progress-and-future-trends>; Russian and Western media reporting, as cited elsewhere in this report.

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DRM-2023-U-034684-Final

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