

INDIAN DEPLOYMENT OF S-400 SYSTEMS IN THE WESTERN STATE OF PUNJAB

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(Views expressed in the brief are those of the author, and do not represent those of ISSI)



On December 21, 2021, the Russian and Indian news agencies announced that India deployed the first battery of state-of-the-art S-400 Air Defence System (ADS) purchased from Russia on its territory.¹ The deployment was made in the western state of Punjab bordering Pakistan.

As per news reports, India deployed the S-400 ADS in the Punjab sector to counter aerial threats from Pakistan and China (India's regional rivals with whom India has multiple disputes).

The deal for the acquisition of S-400 ADS by India, worth US\$ 5.5 billion, was signed between Russia and India in October 2018.² One year later, India reportedly made an advanced payment of US\$ 800 million to expedite the production & deployment of the advanced ADS by September 2021.³ A step that might have originated from the insecurity and desperation of Indian policymakers that was stemming from several regional developments that year: intensification of border dispute (in India's north) with China that led to heavy militarization in the sector; the February 2019 Balakot misadventure against Pakistan; and August 05 revocation of Article 370 & 35-A of the Indian constitution regarding the special status of Illegally Indian Occupied Jammu & Kashmir (IIOJK).

¹ "India deploys first battery of S-400 air defence system in western Punjab state - media", TASS Russia News Agency, published on December 21, 2021. <https://tass.com/defense/1378439>

² Franz-Stefan Gady, "India, Russia sign \$5.5 billion S-400 deal during Modi-Putin Summit", The Diplomat, published on October 05, 2018. <https://thediplomat.com/2018/10/india-russia-sign-5-5-billion-s-400-deal-during-modi-putin-summit/>

³ Franz-Stefan Gady, "India makes \$800 million advance payment for Russian S-400 Air Defense Systems", The Diplomat, published on November 20, 2019. <https://thediplomat.com/2019/11/india-makes-800-million-advance-payment-for-russian-s-400-air-defense-systems/>

Acquisition of the S-400 ADS squadrons (five) by India is one of the major defence-related purchases made by India recently. It is part of India's military modernization drive in which the country plans to spend more than US\$130 billion in the next decade or so across all armed forces.⁴ An interesting point to note here is that this modernization roadmap was also announced in the year 2019.

However, it is pertinent to analyze the efficacy and utility of high-end and expensive military hardware such as the S-400 Air Defence System. This would also help in addressing several concerns and apprehensions that might have been raised in Pakistan and China (against whom this ADS is actually deployed), after the deployment of this system by India.

According to the Indian media, the procurement of the S-400 ADS is a 'game-changer'.⁵ It was hailed as the 'world's best' and analogized with Hindu mythological weapons such as *Brahmastra*,⁶ which has left adversaries like Pakistan and China trembling.⁷

But given the Indian media's tendency for hyperbole, it's important to ask whether the S-400 ADS is really something that Pakistan or for that matter China really be concerned about?

From one perspective, of course, it should be an important concern because the S-400 is an advanced weapons system that is claimed to be highly capable of effectively engaging & countering cruise missiles, UAVs (unmanned aerial vehicles), fighter jets, & terminal ballistic missiles. The very deployment of these systems in the bordering state of Punjab by India reiterates the force posture and threat perception of the country. Not to mention, this deployment comes under a 'trigger-happy' government that is highly prone to military misadventures.

Furthermore, such large acquisition of weapons systems is a provocative measure that will fan the ongoing arms race in the region which is already proving to be detrimental to the region's overall progress and stability.

⁴ "India to spend a whopping USD 130 billion to modernise forces", The Economic Times, published on September 10, 2019. <https://economictimes.indiatimes.com/news/defence/india-to-spend-a-whopping-usd-130-billion-for-military-modernisation-in-next-5-7-years/articleshow/71053542.cms?from=mdr>

⁵ "How the S-400 air defence system can be a game-changer for India", India Today, published on October 05, 2018. <https://www.indiatoday.in/programme/india-first/video/how-s-400-air-defence-system-can-be-a-game-changer-for-india-1356945-2018-10-05>

⁶ Sudhir Chaudhary, "India got 'Brahmastra', S-400 raised concerns of China and Pakistan", Zee News, published on November 16, 2021. <https://zeenews.india.com/hindi/india/russia-started-delivery-of-worlds-most-dangerous-missile-defense-system-s-400-to-india/1028405>

⁷ Vikash Jat, "India will get S-400 this year: China and Pakistan tremble with this missile", Sanjeevni Today, published on October 05, 2021. <https://sanjeevnitoday.com/national/india-will-get-s-400-this-year-china-and-pakistan-tremble/cid5411686.htm>

Nevertheless, it is still important to assess the technical, economic, and political aspects of the S-400 ADS in order to determine whether this purchase was really worth it or not.

According to several military practitioners and analysts, the S-400 ADS is overrated and over-hyped. Although Russia has been quite successful in marketing the S-400 ADS & managed to get some high profile buyers like China, Turkey, and Belarus, it is yet to win the trust of the majority of experts and practitioners around the world.

The first and foremost reason why the S-400 ADS purchase was not a feasible choice by India is the fact that China has also procured the same ADS from Russia back in 2018 & deployed its initial regiment in Tibet region, bordering India.⁸ This takes away any element of surprise or technical advantage that India would have achieved vis-a-vis its adversary if the system was alien to it. But since China possesses this technology, along with other indigenous ADS systems such as HQ-9/P, and probably has its tech incorporated into the system which can be used to its advantage during a conflict, the purchase of S-400 ADS seems like a waste of finances.

Chinks in S-400 ADS' armour are explained in detail in a report by the Swedish Defence Research Agency (FOI) titled, "Bursting the Bubble: Russian A2/AD in the Baltic Sea Region".¹⁰ The report termed the system's capabilities & countermeasures to be over-rated among other assessments about its shortcomings.

Secondly, the "aerial threats" being faced by India are from a large and diverse range of missiles & aircrafts and it is not possible for any single system to effectively counter this complex challenge. Even the S-400 ADS has its limitations in this regard.

Experts like Justin Bronk, Sebastian Roblin & Petr Topychkanov are also skeptical about the efficiency of the S-400's radar system. The S-400 ADS uses 5 types of missiles covering different ranges from 40 km till 400 km (9M96E, 9M96E2, 48N6E2, 48N6E3 & 40N6). According to CSIS' *Missile Threat*, the current deployment status of the 40N6 (400 km range) missile is unclear, and questions remain as to

⁸ Franz-Stefan Gady, "China's military accepts first S-400 missile air defence regiment from Russia", *The Diplomat*, published on July 26, 2018. <https://thediplomat.com/2018/07/chinas-military-accepts-first-s-400-missile-air-defense-regiment-from-russia/>

⁹ "Why Subramanian Swamy doesn't want India to use S-400 missiles against China", *The Week*, published on June 13, 2020. <https://www.theweek.in/news/india/2020/06/13/why-subramanian-swamy-doesnt-want-india-to-use-s-400-missiles-against-china.html>

¹⁰ Dalsjö, Berglund & Jonsson, "Bursting the Bubble: Russian A2/AD in the Baltic Sea Region: Capabilities, Countermeasures, and Implications", FOI, published in March 2019. <chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.html?pdfurl=http%3A%2F%2Fwww.diva-portal.org%2Fsmash%2Fget%2Fdiva2%3A1410288%2FFULLTEXT01.pdf&clen=2751898>

whether the S-400's radar capabilities would allow the 40N6 to make full use of its maximum range.¹¹

Questions about the system's effective utility in mountainous terrain & its deployment time are also raised by several experts. It is concluded that the system's deployment time is much more than advertised and it is helpless against hypersonic projectiles and warfare in high altitudes. Aerial threats to India currently from Pakistan and China are majorly from high altitude terrains (such as Kashmir region, Aksai Chin and Tibet). Given these conditions and circumstances, the S-400 ADS purchase seems like a bad decision from a cost-benefit-risk analysis.

According to a RAND study¹², for an effective air defence, a properly integrated & networked system is required. A missile system is one of the components of that comprehensive air defence structure. There are additional components and equipment that add more costs and complexities. Furthermore, despite its economic wherewithal & plans for heavy military spending, the full lifecycle costs of all the pieces of equipment needed will levy a huge cost on the Indian exchequer (a cost that usually exceeds the original purchase amount in seven years approximately).

Moreover, the S-400 search and fire control radar's view is limited to the horizon of the earth. Due to this, its search radars have to be placed on elevated spots or tall masts in order to enhance its visibility. Radars are even positioned on special air crafts called AWACS (airborne warning & control aircraft systems) and on stationary balloons called "aerostats". The acquisition of such support systems & their maintenance combined with fuel expenses exponentially increases the overall cost of the S-400 ADS which decreases its product value & discourages potential buyers. The number of these support systems can increase by the number and types of targets that they're expected to defend (size of AWACS fleet, radars etc.).

In addition, the overall cost of the S-400 ADS is further increased by the cost of installation and maintenance of another defence layer deployed for the protection of the same AD system itself. This layer consists of the short-range missiles that are there for the protection of the S-400 against any enemy attack.

Experts also believe that S-400 ADS is vulnerable to massive operational failures due to various other advanced weapons systems and countermeasures/strategies e.g. offensive stand-off range weapons

¹¹ "S-4- Triumph", Missile Threat, CSIS Missile Defence Project, last updated on July 06, 2021. <https://missilethreat.csis.org/defsys/s-400-triumf/>

¹² Wilson & Parachini, "Russian S-400 Surface-to-Air Missile System: Is it worth the sticker price?", RAND Corporation, The RAND Blog, published on May 06, 2020. <https://www.rand.org/blog/2020/05/russian-s-400-surface-to-air-missile-system-is-it-worth.html>

(SOW), electronic countermeasures (ECM), and multi-role fighter aircrafts to name a few. Besides this, UAVs (drones) and low-flying cruise missiles (in swarms) are also some of the most effective measures that can be adopted to defeat S-400 ADS.

Since S-400 ADS is an advanced piece of military equipment, it requires a highly trained military workforce in order to operate and maintain it. And looking at the long withstanding problems being faced by the Indian military today (from lack of rations to effective leadership challenges) it would be an uphill task for India to train and maintain the relevant manpower for the job.

Additionally, India is also likely to face political repercussions for its purchase of the S-400 ADS from Russia. The United States voiced its unease and concern about this purchase in the past and have also stated that India might be facing CAATSA restrictions (Countering America's Adversaries Through Sanctions) as a result. Now that the purchase has materialised, the US is yet to decide whether to levy sanctions against India or give a waiver (the latter being the likely possibility). However, it is unlikely that Indo-US relations will get affected majorly because of this but it will definitely generate some friction.

In conclusion, in the absence of a larger integrated and networked missile defence system, the individual purchase of S-400 ADS by India is nothing more than a political gimmick and as rightly stated by senior US defence expert John Parachini, expensive military extravagance.

Indian policymakers should be very careful about letting such acquisitions and procurements give them any sense of invincibility or a false sense of security/confidence which might lead them to any misadventures against its adversaries. India should pragmatically assess its will and capabilities and that of its adversaries (Pakistan & China) as well, which in this case are nuclear powers.