

**Citation:** Baig, M. A. (2021). The Latent Operational Sway of Modern Indian Conventional Weapons on the Armed Forces of Pakistan. *Global Strategic & Security Studies Review*, V(IV), 48-63. [https://doi.org/10.31703/gsssr.2021\(VI-IV\).05](https://doi.org/10.31703/gsssr.2021(VI-IV).05)

DOI: 10.31703/gsssr.2021(VI-IV).05

p- ISSN: 2708-2121

e-ISSN: 2708-3616

L- ISSN: 2708-2121



## The Latent Operational Sway of Modern Indian Conventional Weapons on the Armed Forces of Pakistan

Pages: 48 – 63

Vol. VI, No. IV (Fall 2021)

URL: [http://dx.doi.org/10.31703/gsssr.2021\(VI-IV\).05](http://dx.doi.org/10.31703/gsssr.2021(VI-IV).05)

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### Abstract

*Attaining and maintaining operations security remains the primary objective of armed forces on modern battlefields. Due to their flexibility in employment, conventional weapons are the true weapons of war and warfare, and in turn, significantly affect the operational environment based on their offensive as well as defensive capabilities. South Asia being a nuclear flashpoint is still characterized by conventional weapons. This paper intends to investigate the traditional weapon modernization undertaken by India and the likely impact of systems such as the Russian-built T-90S Main Battle Tank and S-400 Missile System, French-built Rafale Omni-role aircraft, and the Indian Navy aircraft carrier INS Vikramaditya on the Armed Forces of Pakistan. The paper aspires to examine how and why these weapons and their acquisitions and deployments are likely to affect the operations security of both rival armed forces and recommend several conventional responses to enhance it, with special regard to Pakistan.*

**Key Words:** Operations Security, Conventional Warfare, T-90S, S-400, Rafale, India, Pakistan

### Introduction – The Strategic Situation

The South Asian region hosts two nuclear-armed rivals i.e., India and Pakistan. Both states are deeply driven by shared hostile history and mutual animosity. Together they possess the legacy of colonial rule and are still not able to conclude territorial disputes between them. Disputes including the Kashmir and Sir Creek still sour the Indo-Pak relations and have been the pivotal driving force behind three conventional limited wars fought between them in 1948, 1965, and 1971. Despite these conflicts, both are continuously contending with each other at Siachen glacier, along with numerous border skirmishes and clashes at the Line of Control (LoC), working boundary, and international borders. The most recent Kargil Conflict being fought in 1999, was a unique one. Since, pundits and analysts predicted that after

the acquisition and testing of nuclear devices and delivery platforms by both sides in May 1998 – the conventional war was considered, somehow, irrelevant, and not likely to happen – nevertheless, both states proved the pundits wrong. Similarly, in aftermath of the indigenous-Kashmiri attack on Indian security forces at Pulwama in February 2019, India and Pakistan conducted airstrikes against each other, resulting in the loss of two Indian fighter jets. The crisis between the two, saw another episode attesting to the relevance and importance of conventional weapons in maintaining stability (Scarr et al., 2019).

In aftermath of the Kargil Conflict, military forces on both sides realized the importance and relevance of conventional warfighting, even in the presence of nuclear weapons.

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Conceivably, the realization of this very fact on both sides led them to modernize their conventional warfighting capabilities along with aggressive force postures and military doctrines. Perhaps, this is the reason why the strategic stability in South Asia was referred to as “ugly stability” ([Tellis, 1997](#); [Bratton, 2020](#)). However, the conventional forces, while operating in adverse and diverse environments, are highly dependent on several intervening variables, including the superiority of equipment and operations security (OPSEC). It is understandable that conventional forces due to their capabilities – inherently bring vulnerabilities along with them, whilst contributing towards enhanced or reduced OPSEC. Nonetheless, conventional forces are mobile, agile, manoeuvrable, and flexible, yet they cost an arm and a leg on the defence budget. Likewise, former U.S. Secretary of State George Schultz argued that “when you utter the word conventional, you utter the word expensive” ([Dyer, 1985, p. 190](#)).

In a conventional limited war, apart from doctrine, strategy, tactics, and improvisation – the decisive element remains the traditional forces and their respective equipment. The forces, in turn, are highly dependent upon their efficacy, simplicity, mobility, manoeuvrability, flexibility, lethality, technology, innovation, adaptability, and versatility – with them being operable in all weather conditions. For instance, the Soviet T-34 was simple, lethal, and had had an innovative sloping armour design in relation to almost all of its German counterparts – which ultimately enabled it to overpower German Panzers and turned the tide of the Second World War. Similarly, the Soviet *Katyusha* rocket artillery was mobile, cheap, and effective, along with being profoundly deadly, that significantly put a devastating halt to German Panzers during the Great Patriotic War ([Peck, 2014](#)).

My argument is that the importance of conventional weapons is undeniable since armed forces tend to counter non-conventional threats like nuclear-tipped ballistic missiles, using conventional weapons. For example, early warning radars, close-in weapon systems, kinetic energy interceptors, and ballistic missile defence systems. Similarly, the unconventional use of weapons and warfare

can be countered using conventional weapons and warfare. It is one of the reasons that large military forces around the globe still maintain and rely on conventional forces and modernize them accordingly.

## **An Overview of the Study**

The article presents the relevance of conventional warfare in the Indo-Pak circumstantial context and sheds light on the strategic context of South Asia which hosts two nuclear-armed rivals. It discusses the historical and near-contemporary use of conventional warfare by both nations in the pursuit of each one's political objectives. It draws attention to the growing Indian military modernization in its conventional arsenal, especially by the induction of the Russian-built T-90S tank and S-400 missile system, French-built Rafale fighter jet, and aircraft carrier. It also discusses low-observable instruments such as unmanned aerial vehicles (UAVs). The article focuses on the tactical, operational, as well as strategic implications of such advanced hardware on the Armed Forces of Pakistan.

## **A brief history of Indo-Pak Armed Conflicts and Operational Art**

The military engagements between India and Pakistan are overshadowed by traditional warfighting, as both states employed and relied on it for the achievement of their respective objectives. Ever since the creation of both states, their militaries remained in a constant state of war, primarily driven or perhaps motivated by irredentism and revanchism ([Baig, 2018a](#)). This hostility saw some remarkable use of conventional force by the commanders on both sides while conducting operations, whereas, benefitting from and exhibiting the operational art. The latter concept, though, theoretically a bit new in South Asia, was quickly studied by both sides and future battle plans were laid out in the light of such an innovative thought.

The operational art was born out of European wars; nevertheless, German and Soviet thinking left an indelible mark on the ‘ways, means and ends’ of the said art. The latter was defined by the U.S. Department of Defence defined as “the cognitive approach by commanders and staffs—supported by their

skill, knowledge, experience, creativity, and judgment—to develop strategies, campaigns, and operations to organize and employ military forces by integrating ends, ways, and means” ([Scott, 2017, p. II-3](#)). One argues that brilliance in execution strengthens the said approach. Alternatively, Showalter argued operational art is an entity that takes place between strategy and tactics while maintaining that it was closely related to Prussia and Germany ([Olsen & Creveld, 2011, p. 35](#)). However, I believe that operational art connects strategy with that tactics while being manifested in the doctrine. In the contemporary equation, India’s Cold Start Doctrine and Pakistan’s New Concept of War Fighting (NCWF) can be regarded as demonstrations of operational art. I argue that the relevance of operational art even in the nuclear and missile age is utterly undeniable.

Remarkably, the Prussian war theorist Clausewitz asserted that “...the essence of war is fighting, and since the battle is the fight of the main force, the battle must always be considered as the true centre of gravity of the war” ([Clausewitz, 1989, p. 248](#)). It can be conceived that for Clausewitz, war was lost and won in major battles i.e., *Hauptschlacht* ([Clausewitz, 1989, p. 29](#)) – and since, battles are fought on the operational level of war, hence the importance of operational art and OPSEC become pedestal.

### Russian-built T-90S Main Battle Tank

The T-90S carries a credible, yet rich legacy since it is the descendent of the Soviet T-34. Macksey cited exceptional German tank commander Guderian who was fearful of the Soviet T-34 tank, long before the start of the Second World War. Subsequently, Guderian’s fears turned into sheer reality, when Germans could not match the armour of T-34 and were left with no choice but to field the new Panther tank. Macksey noted that the T-34 had a 76mm high-velocity gun and outmatched its German counterparts ([Macksey, 1972, p. 144](#)). It was equipped with a V-12 diesel engine producing 500 horsepower with a top speed of 52km/h, and the suspension was Christie-type with five pairs of rubber-tyre wheels on each side having double coil springs for better performance on all terrains ([Brereton, 1967, p. 12](#)). Keegan highlighted that it first appeared on the

battlefield in 1941 and greatly helped in cutting off General Friedrich Paulus’ Sixth Army ([Keegan, 2002, p. 147](#)). The main operational advantage of the T-34 over its German counterparts was that it could engage Germans from in excess of 1,000 yards away; nevertheless, Germans could do the same with a slightly little effect from almost 200 yards ([Macksey, 1972, p. 155](#)) – accordingly, enhancing the vulnerability of Germans. The superior performance of T-34 was noted to be one of the major reasons, which positively contributed towards the Soviet victory over Germans during the Battle of Kursk in July 1943 ([Carr, 2002, pp. 43-52](#)). The T-34 weighed less than 30 tons and featured sloped armour, which considerably deflected incoming shells. Also, its tracks were relatively wider, which enabled it to outperform in mud and snow ([O’Connell, 1989, p. 287](#)). The operational and psychological shock T-34 inflicted on German armoured forces was referred to as the “T-34 Panic” ([Zaloga et al., 1980, p. 16](#)). These striking capabilities of the T-34 in terms of armour, design, engine, suspension, lethal firepower, and mobility, left an indelible mark on the Soviet tank industry, which is visible contemporarily.

The Russian T-90S is among the most capable MBTs on today’s battlefield. It was referred to as ‘The First Tank of the New Russia’ ([Zaloga & Rodriguez, 2018](#)). The T-90S was shown for the first time on June 28, 1993, at the Kubinka test centre ([J. M. Warford, 1997, p. 26](#)). From the early to mid-1990s the Indian arms imports from Russia reached almost \$3.5 billion – the purchase of T-90S was among those deals ([Rahm, 2001, pp. 87-97](#)). An analyst declared the T-90S to be a ‘Hybrid Premium Tank’ since, it incorporated various components from the previous versions such as the T-72 and T-80U ([M. J. M. Warford, 1995, p. 6](#)). The most striking feature of the T-90S was revealed by Vladimir Seryakov in its article titled “T-90S Gun-Missile Tank: New Generation of Russian Tanks” – since it made clear that the tank was capable enough of firing Anti-Tank Guided Missile (ATGM) from its main gun. The T-90S has the latest Agava-2 thermal sight. These credentials make it clear that the T-90S is an able fighting machine with versatile features of fighting. The T-90S can be further strengthened by Explosive Reactive Armour (ERA), which was first co-developed by the Soviet Union and Israel

([Cavanagh, 2017, p. 129](#)). Apart from the innovative invention, one's argument is that ERA has its roots in "Fangrost" ([Williamson, 2005, p. 96](#)) – which was a concrete fortification made on the uppermost surface of the German U-boat bunkers to prevent them from Allied aerial bombing.

It was argued that in the year 2000, Russia signed an agreement with India to provide the latter with 310 T-90S tanks, and almost 190 of the total number were to be assembled in India ([Tucker, 2004, p. 186](#)). The T-90S could fire the Refleks 9M119 (A-11 *Sniper*) laser-guided missile from its main turret and the majority of ammunition was stored on the turret as well, which was further protected by ERA bricks for enhanced protection ([Tucker, 2004, p. 188](#)). In materializing the Indo-Russian deal, from 1999 to 2005 almost 75 percent of indigenization for the T-90S was completed; however, the deliveries were delayed ([Ghosh, 2016, p. 139](#)). Nevertheless, the delays do not reflect the inability of the tank. The estimations cited before were made in 2014 and it can be assessed that after almost six years, now, India has more production capacity for the said tank due to the dominant initiative of 'Make in India' ([Rawat et al., 2016](#)). The indigenously-built *Arjun* MBT is powered by a German engine and is almost a dozen tons heavier than the T-90S ([Forty, 2009, p. 164](#)). Arguably, *Arjun's* weight could be a great concern during operations in terms of crossing ditches, streams, marshes, canals, and rice paddies – some common occurrences in regions comprising the Indo-Pak border. Also, the weight of *Arjun* could be a concern for armoured vehicle-launched bridges (AVLB).

### **Russian-built S-400 *Triumf* Missile System**

The Russian S-400 missile system, just like the T-90S, carries a credible bequest of performing outstandingly on the battlefield. According to the *Missile Defense Project* of the *Center for Strategic and International Studies* (CSIS), the S-400 *Triumf* (NATO name SA-21 *Growler*) Missile System was developed during the late 1990s and was first deployed in Moscow in August 2007 ([S-400 \*Triumf\*, 2017](#)). The concept behind S-400 can be traced back to the S-75 (NATO name SA-2 *Guideline*) surface to air

missile ([The Editors of Encyclopædia Britannica, 2017](#)) that actually shot down the United States Air Force (USAF) Lockheed U-2 *Ladybird*, also known as the U-2 Incident – over the Soviet Union on May 1, 1960 ([The Editors of Encyclopædia Britannica, 2017](#)).

The S-400 is one of the most advanced anti-air missile systems in the world. It has a tracking range of 600 kilometres while it can engage targets at the range of 400 kilometres ([Baig, 2018c](#)). The 91N6E target acquisition and battle management radar, 92N6E target engagement and fire control radar, and the N6L6E all-altitude acquisition radar – actually serve as the centre of gravity of the S-400. The combination of multiple specialised radars adds credibility and versatility to the S-400. These radars are jam-resistant and can withstand a strong electromagnetic spectrum aimed at them. Apart from this, the S400 radars can conduct electronic warfare (EW) to jam, sabotage, and even disable enemy airborne radars ([Sharkov, 2017](#)). According to *RAND Corporation*, these radars have the capability of operating in active as well as passive modes ([Bonds et al., 2017, p. 92](#)). The capability to operate in active as well as passive modes gives the radar a significant edge over potential threats i.e., anti-radiation missiles ([Kibaroglu, 2020, pp. 161–181](#)).

It was noted that the newer version of the S-400 has the capability to engage targets at the maximum altitude of 185 kilometres (almost 607,000 feet) ([Gady, 2017](#)). However, it is unclear whether these specific kinds of missiles are operational in Syria or not. It also argued that Russia might use S-400 for anti-access and area denial (A2/AD) purposes ([Gady, 2017](#)). On the other hand, *Sputnik News* reported that the S-400 can engage targets up to the altitude of 27 kilometres (almost 90,000 feet) and retains the capacity of engaging almost every air asset and arsenal including the USAF B-52 *Stratofortress*, BGM-109 *Tomahawk* cruise missile ([Wetzel, 2015](#)) and various tactical ballistic missiles of the U.S.-led Allied Forces ([Sputnik, 2017](#)).

The Russian news agency TASS reported that the S-400 missile system can engage targets flying above 95,000 feet above ground level (AGL). This capability enables S-400 to not only engage any fighter-bomber, strategic carpet and stealth bombers in the possession

of NATO but can also track and destroy incoming ballistic missiles. Since, cruise missiles fly at a low level, primarily to avoid detection, the N6L6E radar retains the capability to track and subsequently destroy such threats. The UAVs are low-observable aircraft, fundamentally due to their relatively small size and less radar signature. They also emit relatively low heat from their respective engines – hence are difficult to be tracked by infra-red search and track systems. Nonetheless, such low radar signature threats can also be engaged by the S-400. Yet again, the N6L6E radar is capable enough to track and acquire these low observable air targets ([BBC News, 2017](#)). Furthermore, the missiles of the S-400 are versatile and highly manoeuvrable. The velocity of these missiles is nearly Mach 14 ([Japaridze M. 2017](#)). These declared capabilities along with many classified capabilities of the Russian S-400 make it a real force multiplier on the battlefield.

### French-built Rafale Omni-Role Aircraft

The Indian Air Force selected Rafale to be its choice of weapon in its Medium Multi-Role Combat Aircraft (MMRCA) competition – a relatively tough choice to be made from a variety of modern fighter aircraft including, the U.S. F/A-18 E/F *Super Hornet* and F-16IN *Super Viper*, French Rafale, Russian MiG-35, European EF-2000 *Eurofighter* and Swedish *Gripen* ([Kugelmann, 2011, p. 74](#); [Tellis, 2011, p. 77](#)). Ostensibly, there were two main reasons behind the selection of Rafale. First, the IAF has been successfully using the French-built Mirage-2000 for over two decades and employed it successfully against Pakistan during the Kargil Conflict. Second, Rafale's carrier-based role captivated the IAF selectors for possible enhanced cooperation between the navy and air force for future scenarios, since France is using its Rafales' on its aircraft carrier Charles de Gaulle.

The Rafale is truly an Omni-role aircraft, as it was advocated by its manufacturer and intends to ensure the OPSEC of airborne and ground assets ([The Rafale: Omnirole by Design, 2019](#)). Crevel is among the vanguards who are professing the role of airpower in the contemporary era of warfare. In the light of Crevel's arguments, Rafale allows its

operators to achieve air superiority, while maintaining and transmitting collected intelligence, surveillance and reconnaissance to friendly fighting forces in the air, on land, and at sea. This dominance of information with advanced target acquisition, due to its onboard active electronically scanned array (AESA) radar, makes Rafale a real airborne threat to deal with. India could import and install advanced aerial targeting pods from Israel, which are likely to enhance the striking capabilities of IAF Rafales'. The combat radius of Rafale is almost 1900 km using external fuel tanks, which is enough to conduct deep strikes within Pakistan. However, with aftermarket enhancements, Indian Rafales' could become manifold deadly.

### INS *Vikramaditya*

The Indian Navy's new aircraft carrier INS *Vikramaditya* did cost around \$3 billion in 2015 ([Phadke, 2015, p. 16](#)) and is equipped with MiG-29K *Fulcrum* fighter-bomber aircraft. Currently, the Indian Navy operates some 11 MiG-29K, along with 11 Sea Harrier aircraft ([Phadke, 2015, p. 168](#)). The navy plans to order some 45 additional MiG-29K aircraft from Russia ([Shamsi, 2011, p. 103](#)). The carrier features a close-in weapon system (CIWS) and *Barak* surface to air missile systems for point defence and protection against a variety of aerial threats. It houses Ka-31 naval helicopters as well and would likely be able to accommodate the indigenously built *Tejas* aircraft ([Zur et al., 2012, p. 109](#)). The U.S. Navy warships are equipped with a number of *Phalanx* CIWS ([Laur & Llanso, 1998, pp. 168–169](#)), along with RIM-116 *Rolling Airframe Missile* (RAM) ([Laur & Llanso, 1998, pp. 249–250](#)), systems to protect the warships from terrain hugging anti-ship cruise missiles and unguided rockets. Ostensibly, an attempt similar to Israeli Iron Dome systems to protect the heartland from rockets fired by Hamas and other resistance fighting groups ([Stenzler-Koblentz, 2014, pp. 80–82](#)).

The INS *Vikramaditya* due to its Soviet origins features a ski jump to help aircraft is taking-off; on the other hand, Rafale onboard the French carrier Charles de Gaulle uses a catapult launch to assist the aircraft in take-off. Nevertheless, with the signing of the Logistics Exchange Memorandum of Agreement

(LEMOA) between the U.S. and India, now the latter can use the former's aircraft carriers for refuelling and landing ([Baig & Iqbal, 2018, p. 30](#)) – adding an operational range of Indian Navy's strike aircraft.

### **Indian Military's T-90S, S-400, Rafale and INS Vikramaditya – The Latent Sway and How Armed Forces of Pakistan can respond**

The Indian Cold Start Doctrine (CSD) remains at the epicentre of a limited conventional military conflict between India and Pakistan. I argue that initially, CSD was a punitive military instrument; nevertheless, the academic and strategic discourses which surrounded CSD, it is now a part and parcel of the overall Indian Pro-Active Strategy ([Ali, 2016](#)) and has effectively become a political instrument. It was noted that due to the short Indo-Pak territorial distance and favourable terrain; the CSD is an offshoot of the German Blitzkrieg of the Second World War ([Baig & Iqbal, 2018](#)). Operationally, terrain and geography have remained a vital concern in conceiving any operational plan, as cruise missiles serve at the core of China's anti-access/area denial (A2/AD) strategies and are one of the primary hurdles behind the conceiving of America's Air-Sea Battle Doctrine.

### **The Air Defence Dimension**

The sceptics of the S-400 missile system may be right up to some extent in arguing its primary future deployment against China. Nevertheless, while keeping in view the scope of the paper, this missile system is capable enough to counter ballistic missiles, cruise missiles, and is capable enough to counter high to medium altitude aircraft. I believe that if a missile is capable enough to reach high altitudes with impressive hypersonic speeds, is considerably manoeuvrable, and have a seeker and a guidance system supported by a set of radars for target acquisition – can intercept an incoming ballistic missile – then, it would not be a surprise that it can act as an anti-satellite missile. For instance, if the missile does not have a warhead and solely relies on its kinetic energy to kill the target just like the U.S. Terminal High-Altitude Area Defence system (THAAD) and Ground-based Midcourse

Defence (GMD) – even then, the lethality of the system remains constant. If the number of its batteries continues to grow and acquires new radars, sensors, improved missiles with stabilized flight and related technology, it is very much possible that it may become a formidable challenge for Pakistan Air Force (PAF) to operate independently, even in its own territory and airspace. The forward deployment of this system in close proximity to Pakistan can be said as an example and can act as an AWACS killer.

### **The Aerial Dimension**

With the advent of beyond visual range air to air missiles (BVRAAM), the air assets have begun to employ countermeasures including, electronic jamming pods, and deploying flares and chaff as decoys to confuse the incoming homing missiles. The BVRAAMs have significantly threatened AWACS, aerial tankers, transport, and airborne early warning and control system (AEW & CS) aircraft, owing to their extended ranges primarily due to their semi-active and active radar homing guidance systems. The PAF acquired U.S.-built and combat-proven AIM-20 AMRAAM and Chinese-built SD-10 BVRAAMs. These missiles can vividly deny IAF's Rafales' from conducting interdiction, attrition, close air support, and even maritime patrolling near on inside Pakistani territory. However, in terms of avionics and modern aircrafts, PAF must consider procuring European *Eurofighter Typhoon*, Chinese J-20, and J-31 or the Russian-built Su-35. These suggested aircrafts can readily adjust to PAF's network and centrality, while Pakistan Aeronautical Complex retains the potential to service these aircrafts indigenously. Nevertheless, I consider the *Typhoon* to be much more capable in relation to its contenders, due to its highly manoeuvrable design and the successful tests to install thrust-vectoring nozzles on its engines, contributing positively towards its already agile design. The *Typhoon* was introduced back in 2003, whereas, Rafale was introduced in 2001 ([Verbruggen, 2015, p. 64](#)).

### **The Missiles Dimension**

The German philosopher Nietzsche established

an axiom that “the best weapon against an enemy is another enemy” ([Oluwaseun & Khalil, 2012, p. 3076](#)). However, while the former is in the background, I put my argument in the foreground and contend that the best weapon against an advanced weapon is a cheap weapon. One believes that exploiting asymmetry and vulnerability remains the lynchpin of modern warfare. The sophisticated and state-of-the-art weapons, though, sound deadly and intimidating; however, sophistication and advanced technology especially in the traditional realm can be matched and even defeated. For instance, I present the example of a multi-million naval warship which apart from countermeasures and CIWS missile protection, remains vulnerable towards a cruise missile. Interestingly, about the former, Creveld argued that it can be manufactured and bought well below USD 10,000 ([Creveld, 2011, pp. 228–229](#)). While maintaining and strengthening one’s argument also present the innovative yet inexpensive ideas like Kamikaze and Kaiten employed by the Imperial Japanese Navy during the Second World War, which inflicted symbolic yet devastating damage to the U.S. naval warships. One also argues that the employment of such inexpensive or perhaps asymmetric weapons could inflict a significant amount of fear on the hearts and minds of the enemy. Similarly, German *Beetles* ([Hoare, 2014, p. 54](#)) an explosive-packed unmanned ground vehicle (UGV) was relatively a cost-effective weapon, yet they psychologically established German technological superiority over the Allies in the closing years of the Second World War.

One argues that cruise missiles, besides them being inexpensive, are the best weapons to be used against tanks and armoured vehicles. The cruise missiles offer considerable options in terms of payload choice and can carry traditional, chemical, nuclear, and biological warheads. The technologies offered by cruise missiles include Terrain Contour Matching (TERCOM) ([Creveld, 2011, p. 228](#)), Digital Scene Mapping with Area Correlator (DSMAC), and Global Positioning System (GPS), which make them extremely precise and lethal.

The blast radius of cruise missiles can be reduced or increased based on the size of the warhead. Pakistan’s cruise missiles have high subsonic speeds; nevertheless, are capable to be launched from a number of platforms. To counter S-400, Pakistan can use its air-launched and land-based cruise missiles such as *Raad* and *Babur* to conduct Suppression of Enemy Air Defence (SEAD) and Destruction of Enemy Air Defence (DEAD). Also, Pakistan can upgrade its cruise missiles with anti-radiation capabilities to track and detect radiation sources i.e., radar. Otherwise, to counter S-400, Pakistan would have to conduct ‘Wild Weasel’ sort of suicidal aerial attacks, reminiscent of the United States Air Force tactic to take out North Vietnamese surface to air missile sites during the Vietnam War ([Tucker, 2011, pp. 1341–1342](#)).

### The Ground Dimension

The Russian T-90S is a lethal, yet agile killing machine. It has excellent firepower, horsepower, and if it is led by commanders like Rommel, Guderian, or Patton; it may prove unstoppable on the battlefield. Unfortunately, the terrain, topography, geography, and weather conditions prevailing in the Indo-Pak border regions – all benefit T-90S. Especially with the snorkel, it can cross canals and even rivers. The *BRB Canal* separating Lahore from Wagah proved to be a vital strategic asset that prevented the Indian Army’s advance into the former during the 1965 Indo-Pak War. However, it is noticeable that the T-90S is well capable to cross such man-made hurdles. Nevertheless, the effectiveness of this war-fighting machine can be minimized or rendered useless with the employment and deployment of ATGMs and recoilless rifles which are cheap, robust, lethal, and mobile. The ERA bricks mounted around the turret and on the body, though, add psychological dimensions towards the intimidating factor of T-90; nonetheless, repeated strikes or multiple strikes from different angles can expose the turret and help in achieving the disc-jockey effect. While highlighting the importance of ATGMs, it was noted that “The small antitank missiles of today are only the latest in a number of threats to the

tank" ([Tucker, 2004, p. xi](#)). Besides ATGMs and recoilless rifles, Pakistan can upgrade its MBT-2000 and other MBTs to fire ATGMs from their main turret. The deployment of depleted uranium shells, acquisition of a new MBT – with sloped armour, just like the Soviet T-34 and Israeli *Merkava* Mark-IV, can be among the options. Pakistan needs to upgrade its artillery i.e., self-propelled, towed, and rocket with possibly air-burst rounds, and Multiple Rounds Simultaneous Impact (MRSI) technology, to increase the lethality and efficacy.

### The Unmanned Dimension

Crevelde referred to UAVs as "low cost" weapons ([Crevelde, 2011, p. 231](#)). Pakistan can mount tactical and lightly armed UAVs on its MBTs to provide them with enhanced firepower along with increased situational awareness by means of electro-optical sensors ([Baig, 2018b](#)). These relatively few UAVs can perform exceptionally well, even in such circumstances, where there is a modern fog of war, i.e., no or little communications available with the HQ due to the adversarial electronic and cyber warfare capabilities. Similarly, these tactical UAVs can conduct Kamikaze attacks on the T-90S and other armoured vehicles, including the command and control platforms to help in paralyzing the enemy. These remotely piloted aircraft can also help in gathering intelligence, surveillance, and reconnaissance (ISR) and transmitting the information to the network can help in adjusting artillery and close air support fire for better accuracy and precision. Even if these UAVs are not armed, they still can help in recalibrating and fine-tuning fire support. The softening up of hard targets is actually what Germans did by using their Ju-87 *Stuka* dive bombers during the Second World War and such aircraft were an integral part of the *Wehrmacht's* Blitzkrieg ([Fowler, 2002, pp. 7, 35](#)). However, the Israeli Iron Fist active protection system (APS) can be mounted on the T-90S to enhance its OPSEC against Pakistani ATGMs and armed UAVs; nevertheless, the high cost of both Iron Dome and Iron Fist is likely to discourage India from acquiring such platforms. However, under the initiative 'Make in India' ([Rawat et al., 2016](#)), the transfer of

technology and indigenization can take place with the primary aim of reducing the manufacturing costs of such high-end technology weapon systems.

### The Cyber Dimension

Furthermore, Pakistan can learn a lot from North Korea, since the latter while exploiting its asymmetric capabilities in relation to its potential enemies, has resorted to cyber and electronic warfare on a massive scale. Cyber and electronic warfare can effectively disrupt enemy communications and can deny access from a stand-off range in a non-kinetic manner while employing jamming, sabotage, and disruption tactics to distort the spectrum of conflict. I argue that information, cyber, and electronic warfare tactics are the means by which a neo-Clausewitzian 'modern fog of war' can be created; however, brilliance in execution remains the central concern in such endeavours.

### The Naval Dimension

The importance of naval power remains at the core of modern military forces, especially in the conventional realm. The INS *Vikramaditya* currently employs *Sea-Harrier* and MiG-29K as its primary striking force; however, it is likely that it may deploy Rafale to further its capabilities. The aircraft carriers project power like no other naval asset can; nonetheless, apart from their capabilities, it also has certain vulnerabilities. Large vessels cast a large radar signature and are hard to conceal their position in times of war. Similarly, their manoeuvrability is limited due to their relatively lower speed and large turning radius. These structural limitations, though, strategically seem negligible; nevertheless, they turn the tide of war in operations and in tactical terms. Interestingly, here Clausewitzian dictum dictates war when he asserted that the actual fighting takes place on the tactical level. The Pakistan Navy can exploit tactical vulnerabilities and overwhelm its enemy's large surface vessels by learning from the pioneer of *Kriegsmarine* Grand Admiral Karl Doenitz's *Rüdeltaktik* ([Llewellyn-Jones, 2006, p. 5](#); [Owen, 2007, p. 127](#)) i.e., the Wolf Pack tactics ([Fontenoy,](#)

[2007, pp. 34–36](#)). It was Doenitz's U-boat Wolf Packs that were quite close to turning the Atlantic War in their favour; nevertheless, the 'Breaking of Enigma Code' ([Folly, 2004, p. 40](#)) compromised OPSEC of the German Navy. This compromise was suspected by Doenitz of treason ([Hadley, 1995, p. 153](#)) – however, the leak in vital operational information led to the U-boat's demise.

Historically, it was noted that Pak Navy's PNS *Ghazi* submarine deterred the Indian Navy in a dramatic manner during the 1965 Indo-Pak War ([Cheema, 2002, pp. 99–100](#)) and later, the PNS *Hangor* even sank the Indian Navy frigate INS *Khukri* on December 9, 1971, using torpedo during the 1971 Indo-Pak War ([Preston, 1998, p. 90](#)). The Pak Navy must enhance its submarine fleet and arm itself with silent nuclear-armed submarines. Such endeavours would not only guard its maritime territory, ensure free navigation of important sea lines of communication (SLOCs), but would allow forming Wolf Packs in launching a barrage of torpedoes and submarine-launched cruise missiles (SLCMs) to prevent any Indian-led naval blockade in case of a conflict. The U.S.-built P-8 Poseidon is one of the most advanced anti-submarine warfare and maritime patrol aircraft in Indian possession ([Hanif, 2017, p. 96](#)) which can effectively guard INS *Vikramaditya* against Pak Navy submarines. Similarly, the Indian Navy inducted a Russian-built Akula II submarine as INS *Chakra* ([Hackett, 2017, p. 291](#)) which is nuclear-armed and super silent. It is capable of air-independent propulsion (AIP) which makes it hard to be detected by SONAR. Consequently, the P-8 along with INS *Chakra* not only strengthens the OPSEC of *Vikramaditya* but can also help in furthering the chances of a successful India-led blockade against Pakistan. Every weapon in the possession of conventional military forces is an instrument for inflicting death and destruction on the enemy. They do so while remaining and maintaining friendly forces relatively safe – due to their mobile and most of the time being at a stand-off range.

### Analysis and Afterthought

It was predicted that ([Baig, 2017](#)) after the deployment of S-400 in Syria in November 2015, it will shoot down U.S. BGM-109 *Tomahawk* cruise missiles (*'Low Efficiency': Only 23 Tomahawk Missiles out of 59 Reached Syrian Airfield, Russian MoD Says, 2017*). As the S-400 greatly compromised the OPSEC of U.S.-led Allied Forces. The effectiveness of the S-400 can be understood from the report by the Israeli newspaper which declared its deployment in Syria as a threat to its air superiority ([Gross, 2015](#)) Russia deployed S-400 in its European enclave of Kaliningrad ([Deutsche Welle, 2016](#)) which raised alarms in Brussels since it covered the strategically important tri-junction of the Suwalki Gap ([Fetterman, 2018, pp. 39–47](#)) – the sequel and reminiscent of Fulda Gap of the Cold War. Russian President Putin also deployed S-400 on the disputed Kuril Islands ([Tsvetkova et al., 2016](#)) – the unfinished front of the Second World War and the bone of contention between Moscow and Tokyo. It can be observed that Russia deployed a traditional weapon such as S-400 on strategic locations as an A2/AD weapon. Likewise, India is likely to deploy S-400 in such strategic locations, which not only serve as defensive but also assist in conducting offensive operations inside Pakistani territory to deny the latter's air assets to operate on its own territory. The S-400's long-range, speed of its missiles, and its radar's ability to not only withstand intense electronic warfare but to conduct offensive electronic operations – augments its versatile capabilities.

An Indian retired Major General argued that “an S-400 based at Halwara airbase, can bring down an F-16 flying over Lahore in just 34 seconds...the missile system is, therefore, a force multiplier that can dramatically influence the outcome of a war” ([Mehra, 2017](#)). Mehra was quite right in his calculations, and I present an illustrated example of such a hypothetical deployment. It can be seen in the figure that PAF's forward operating air bases including PAF *Mushaf* at Sargodha come well under the umbrella of S-400's striking radius. Likewise, if a battery of S-400 is deployed at IAF's Pathankot Air Force Station, then, it would further shrink PAF's operational space.

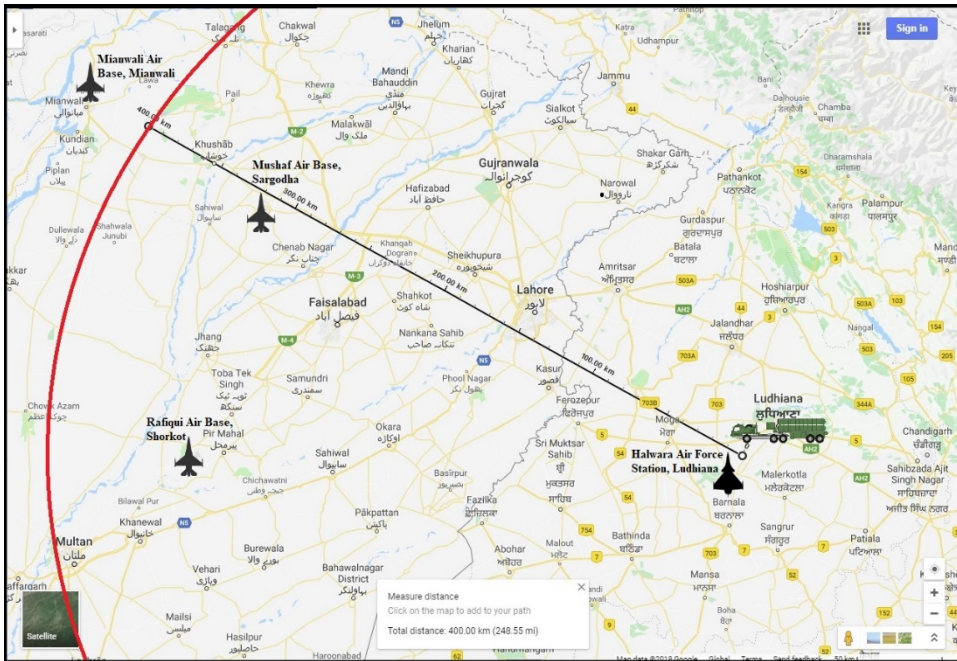


Figure 1: The hypothetical deployment of S-400 at IAF's Halwara Air Force Station, Ludhiana, India (Google, 2019).

The Indo-French Rafale deal though is under severe political criticism following the allegations of corruption and kickbacks, reminiscent of the Bofors artillery guns scandal in the late 1980s (Latif, 2012, p. 18; Phadke, 2015, p. 207). However, the basic advantage Rafale possesses over the existing fleet of IAF is its carrier-based operational capability. The strike operations conducted by the French Air Force in Libya and Africa in support of anti-Gaddafi fighters, against the Islamic State, the groups affiliated with Boko Haram, and several splinter cells of Al-Qaeda; manifested and exhibited the capabilities of Rafale (Hackett, 2017, pp. 78-79).

In a hypothetical war scenario, if S-400 is deployed close to the Indo-Pak international border and CSD is executed – then how PAF would conduct its operations in order to provide close air support (CAS) to the Pak Army and minimise air superiority of the IAF? The S-400 is a formidable weapon system that retains

the capability to conduct offensive defence as well as defensive offence while denying the enemy airspace and creating a paralyzing effect on its air power. The S-400 is an expensive system and is likely to be flanked by radar-guided Gatling gun systems and anti-aircraft artillery to detect, intercept, and destroy incoming anti-radiation missiles and precision-guided munitions. I argue that to take out advanced anti-air missile systems such as the S-400, a light-weight electro-optical guided UAV or an aerial target drone can be designed to have a low radar signature to minimize detection. Such a lightweight, yet medium budget weapon system can fly an extremely low flight towards the target – undetected. It is likely that India may acquire active defence technology like the Iron Dome (Shapir, 2013, pp. 81-84) from Israel, which could help it in countering Pakistan's rocket artillery, cruise missiles, and precision-guided munitions. India could flank the S-400 with Iron Dome against potential Pakistan's attempt of using U.S.-built

AGM-88 HARM against the S-400's radar to render it useless. It is worrisome for Pakistan that in 2020, India acquired AN/MPQ-64 FI *Improved Sentinel* radars from the U.S. under the Integrated Air Defence Weapon System (IADWS) deal which can readily provide target acquisition data to the Indian indigenously produced Self-Propelled Air Defence Gun Missile System (SPAD-GMS). The latter is a dedicated short-range area defence (SHORAD) system and can precisely destroy low-observable targets of various sorts mid-air (*India – Integrated Air Defense Weapon System (IADWS) and Related Equipment and Support, 2020*). According to *SIPRI Yearbook 2020*, it is worthy to note that India has a defence budget of 71.1 billion USD for the fiscal year 2019-20, which ranks third in the world (*SIPRI Yearbook 2020: Armaments, Disarmament and International Security, 2020*, pp. 241-242). Such huge military spending would definitely increase its capabilities manifold; however, the ultimate test of military capabilities remains a conflict.

### Concluding Remarks

The article demonstrated the amplified potential of the Indian Armed Forces by the virtue of modernization undertaken in the traditional realm, and the likely impact of modern conventional weapons such as the Russian-built T-90S Main Battle Tank and S-400 Missile System, French-built Rafale Omni-role aircraft, and the Indian Navy aircraft carrier INS *Vikramaditya* on the Armed Forces of Pakistan. The paper examined how these sophisticated weapon systems and their future acquisitions and deployments are likely to affect the OPSEC of both rival armed forces. The paper also recommended a number of conventional responses to enhance it, with special regard to Pakistan. It was noted that warfare evolved with the advancement in technology and innovation, while creativeness in tactics greatly shaped the warfare and war itself (*Samuels, 2017, pp. 308-335*). The operational art remains the most dominant theory involving conventional forces and I believe that every traditional weapon strengthens the relevance and efficacy of the concept. The T-90S, S-400, Rafale, and aircraft carrier INS *Vikramaditya* being constituent elements of conventional warfighting forces

are augmenting the Indian Armed Forces in enhancing their operational capabilities; both in terms of offensive as well as defensive, along with the potential of a show of force and to project power way beyond its continental boundary, airspace, and shores.

Though, the China-Pakistan Economic Corridor (CPEC) is termed by Pakistani leadership as a “game-changer” ([Our Correspondents, 2017](#); [Subohi, 2015](#)) – nevertheless, what if the United States chokes China's SLOCs in the Southern Pacific by the virtue of its Air-Sea Battle Doctrine (*Air-Sea Battle 2013*; [Krepinevich, 2010](#)), and India implements a blockade of Pakistan's SLOCs in the Arabian Sea spearheaded by its aircraft carrier and other modern conventional weapon systems? However, such a happening might be perceived as “unthinkable” ([Schreer, 2013](#)) – nevertheless, Krepinevich quite beautifully put that “...intentions can change overnight...one must focus on the military capabilities of other states” ([Krepinevich, 2010, p. vii](#)). In this regard, Clausewitz argued that defence is strong but negative and has a passive purpose, whereas, the offence is weak but positive and has an ambitious purpose ([Clausewitz, 1989, p. 358](#); [Echevarria II, 2007, p. 155](#)) – however, the T-90S, S-400, Rafale, and INS *Vikramaditya* – could efficiently and effectively play both roles. It is gravely concerned and believed that if India acquires T-90S and Rafale in large numbers and achieve centrality in operational terms, then a potential continental spearheaded attack led by T-90S under close air support provided by Rafale, while, maintaining air supremacy by means of the S-400 to condense PAF's airpower or to abridge its operational capabilities, especially under the auspices of CSD – would be a nightmare for the defenders of Pakistan. It is arguable that Rafale and S-400, together, can create an intense electromagnetic spectrum while securing India's OPSEC and jeopardizing Pakistan's. This kind of attack retains the potential of having a naval dimension while becoming a strategic nightmare for Pakistan if the Indian Navy by means of its aircraft carrier imposes a blockade in the Arabian Sea. In this case, one might contemplate, China has the diplomatic power to pressurize India to lift such a deadly blockade; nevertheless, if Beijing is also choked by Washington's naval power, then what

options Islamabad would be left with? Here Walt's arguments come into play who asserted the weaknesses of alliances and strategic partners while stressing to rely on the states' own muscles.

While keeping in view Clausewitz's dictum of 'destruction of enemy's main fighting force' ([Clausewitz, 1989, p. 30](#)) – the Indian Armed Forces are becoming more capable in rappings of swiftly delivering a destructive yet lethal blow to the defenders of Pakistan. However, for destruction, firepower being the pivot of the 2<sup>nd</sup> Generation of Warfare (2GW) ([Echevarria II, 2005, p. v](#)) remains relevant even in today's modern warfare and war. It can be deduced

from Simon's arguments that India tripled its defence budget during the 1980s ([Simon, 1993, p. 87](#)) and now the increase in budget is finally paying off. It can be concluded that the constant and continuous Indian military modernization by means of indigenization, transfer of technology, joint ventures, and import of defence and military equipment, such as the T-90S MBT, S-400 missile system, Rafale, and aircraft carrier; India is fulfilling the constituent doctrinal elements of the Cold Start and is moving towards turning the dream into reality – at least in terms of capabilities; nonetheless, the intentions are tense altogether.

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