



Scandic Journal of Advanced Research and Reviews

ISSN: 2703-965X CODEN (USA): SJARCA
Cross Ref DOI: [dx.doi.org/10.55966/sjarr](https://doi.org/10.55966/sjarr)
Journal homepage: www.sjarr.com

Challenges for the Conventional Deterrence of Pakistan in the Post 2019 Security Situations: Options and Choices

Ishtiaq Ali¹

1. MS Scholar, Department of Political Science, International Islamic University Islamabad, Pakistan.
Ishtiaqalishinwari@gmail.com

Scandic Journal of Advanced Research and Reviews, 2022, 3(03), 001–032

Article DOI: <https://doi.org/10.55966/sjarr.2022.3.3.0054>

Abstract

The study aims at discussing the changing dynamics of conventional deterrence in South Asia especially after the Pulwama-Balakot incident of 2019. The study is evaluated through Descriptive, Exploratory and Predictive data analysis approach. For elaborating different aspects of the study, both primary and secondary data was used. The study conducted in-depth interviews of the experts on the strategic and nuclear environment of the South Asian region. The study is divided in to three parts. In first part of the study, India-Pakistan relations since their independence in 1947 have been discussed. It was followed by discussing how Indian military strategic thinking against Pakistan has been changed from being defensive in Sunderji Doctrine (SD) of 1987 to offensive in the Cold Start Doctrine (CSD) of 2004 and then to the Land Warfare Doctrine (LWD) of 2018. The study then continues on discussing how India has crossed the international border line and conducted so-called surgical strikes inside Pakistani territory after a militant attack on the Indian paramilitary troops in Indian Occupied Kashmir (IoK) in 2019 and how Pakistan responded to the Indian aggression with a military operation codenamed “Operation Swift Retort”. The second part of the study is related to the Indian acquisition of modern sophisticated weaponry from the great powers like US, Israel, Russia etc. and the possible impacts of these weapons systems on the strategic stability of Pakistan. How the weapon systems like Ballistic Missile Defense (BMD) system, Rafale fighter jets, Anti-Tank

Guided Missiles (ATGM), Nuclear Submarine, P8-I Antisubmarine aircraft, Apache attack helicopter, Spy satellites and the armed Unmanned Aerial Vehicles (UAVs) will pose threats to Pakistan, was main theme of the second part of the study. The possibility of any future war between India and Pakistan was also discussed in this section. Third section of the study was related to the possible options for Pakistan to counter the growing Indian conventional superiority. It was discussed that Pakistan should improve its long-range airdefense system, improve the speed, lethality and range of its missiles, acquire or develop nuclear submarine and fifth generation aircrafts, improve Intelligence Surveillance and Reconnaissance (ISR) capabilities along with the acquisition of attack helicopters and enhancing the endurance and range of armed UAVs to counter any future Indian aggression. Overall the Indian military modernization, the acquisition and procurement of modern sophisticated weaponry was discussed in the study. How negatively it will impact Pakistan and what options and choices are available with Pakistan to counter it, was the basic theme of the study. It was also thoroughly examined that Pakistan's nuclear weapons are not for wars, but it's the guarantor of peace in South Asia. It was also examined that Pakistan will never allow any aggression to disturb its strategic stability and will never hesitate to ensure its strategic stability and the basic sovereignty as a state at any cost, even by using its nuclear weapons as a last resort in case of failure of its conventional weapons.

1. Introduction

The heightened state of distrust, emerging asymmetries and unresolved disputes between India and Pakistan is complicating the security situations of South Asia. The peace and stability of South Asian region is at stake due to the arms race and military modernization efforts especially by India. Due to the fear of mutual annihilation, the overt nuclearization has prevented both the states from any military misadventure. But this does not mean that the fear of limited war has gone. There is still the possibility of limited war in South Asia under the Indian military's Cold Start Doctrine. According to CSD, India can launch swift, faster strikes against Pakistan. General (retd.) Deepak Kapoor, a former Indian Army Chief said that, "The possibility of limited war under a nuclear overhang is still a reality in South Asia (Khattak, 2011). However, according to Brig.(retd.) Feroz Hassan Khan,

"In my view there is no limited war in South Asia because that limited war, that India may perceive as Cold Start or Proactive doctrine that is likely to escalate. Up to my research and findings there is no limited war that can remain limited and does not escalate to the point where it crosses the red lines of nuclear threshold and results in nuclear exchange" (Khan, 2021).

Answering a question about the possibility of any limited or a full-fledged war in South Asia, a Pakistani defense analyst, Brig. (retd.) Dr. Muhammad Khan replied,

"No. I would say that an all-out war between India and Pakistan or even limited war seems to be immediately impossible due to the, 1) both are nuclear weapon states. 2) Internationally the great powers like USA and UN feels that there is

always the nuclear dimension of the war. So there shouldn't be a military escalation or war between India and Pakistan. 3) Then the wars have never been fought by the armies, it's the war between the nations. And neither Pakistan nor India can afford to have the losses which would incur in case of a limited war or full-fledged war" (Khan, 2021).

Indian modernization of armed forces is reinforcing the conventional advantage over Pakistan. To revert any threat from its stronger neighbor, India, Pakistan is facing significant challenges in advancing conventional capabilities, which will compel Pakistan to rely on nuclear weapons.

The conventional deterrence, defined as the capability of denying an aggressor his battlefield objectives with conventional forces (Mearsheimer, 2018), has been shifted to nuclear deterrence, after the entrance of both states in the nuclear club in 1998. This has neutralized the Indian military superiority against Pakistan. With the passage of time, Conventional asymmetry is continuously widening between India and Pakistan. As a fourth largest economy of the world, India is spending a huge amount on military modernization. According to military sources and official documents, India in next five to seven years will spend \$130 billion on modernization of the armed forces and to bolster their combat capabilities (Marwat, 2019).

The continuous doctrinal shift i.e. from Sundarji to Land Warfare doctrine 2018 in Indian military strategies and limited war ideas has compelled Pakistan to take countermeasures. Under the nuclear overhand, India has formulated the Cold Start Doctrine (CSD) or Proactive Operations aiming to start limited conventional war against Pakistan within short period of time, giving no time to Pakistan for counter mobilization, nuclear retaliation or opportunity of intervention to the international community (Ladwig, 2007-8). Having weak economy, Pakistan cannot afford arms race with India, for conventional parity. But in order to restore strategic stability and to deter Indian conventional military superiority, Pakistan has introduced the low-yield, short-range ballistic missile system (SRBMs), NASR, which can be used as a last resort against India, in case of failure of conventional weapons (Khan, 2018).

After independence in 1947, India and Pakistan has fought three major wars, the Kargil war and were involved in limited clashes. Because of the enmity of India and Pakistan, South Asian region was once again at the brink of war, after the Pulwama incident that happened on Feb 14, 2019, which killed 42 Indian soldiers. It was the deadliest attack on Indian soil in three decades (Fareed, 2019). Indian Prime Minister threatened to punish those responsible for the attack. To achieve its strategic and political objectives, India under the CSD, launched air strikes with 12 Indian Air Force Mirage-2000 aircraft against Pakistan, bombing an area near Balakot region in Feb 2019, after blaming Pakistan for the Pulwama attack.

In retaliation, under the operation Swift Retort, Pakistan Air force also conducted air strikes against India by dropping precision-guided, standoff munitions near the Indian Army's Brigade Headquarters located in Jammu. The Pakistani planes were chased by Indian military aircrafts in which two fighter jet were shot down by Pakistani fighter planes and captured an Indian pilot, which was released two days later as a good will gesture (Sultan, 2020). It was the first time since 1971 that both states were engaged in aerial strikes across international border. After Pakistan announced that its response will be thrice severe, India could not fulfilled its claims of using nuclear weapons, as stated by Indian PM that her nuclear nukes are not for Diwali (a religious festival of Hindus) but it can be used against Pakistan (IANS, 2019). The two nuclear

states were on the brink of the nuclear war, however due to strong conventional deterrence vis-à-vis India; Pakistan has averted the possibility of nuclear war.

Pakistan has balanced the conventional disparity by obtaining the conventional capabilities in certain fields like gunship helicopters, armed UAVs, and second strike capability. But due to the weak economy as compared to India, which is spending billions of dollars on military modernization, Pakistan will face the conventional disparity in several areas vis-à-vis India, especially in the fields of nuclear submarines, spy satellites, fifth generation aircraft, long range air defense system and armed UAVs. The acquisition of S-400 SAM system from Russia, Theatre High Altitude Area Defense (THAAD) system from the United States, the French made Rafale aircraft, and the equipment of SU-30 MKI aircraft with nuclear capable Brahmos supersonic cruise missile, will allow it to attain an effective counter-force capability against Pakistan (Jain, 2019). To counter any threat from India, Pakistan must invest in anti-aircraft, long range anti-tank missiles, nuclear submarines, different types of cruise or ballistic missiles and to achieve the second strike capability.

2. Theoretical Framework. *Theory of Conventional Deterrence by J.J. Mearsheimer*

Commented [WU1]:

Conventional Deterrence is the concept of denying the adversary battlefield objectives through conventional forces. Conventional deterrence is all about persuading an adversary not to initiate a war because the expected costs and risks outweigh the anticipated benefits. The main objective of conventional deterrence is to deny and disallow the aggressor a quick military objective. In the words of John J. Mearsheimer, Conventional deterrence is not only about the defensive or offensive weapons but it also depend upon the political considerations and military strategies. The concept of Conventional deterrence is premised by deterrence by Punishment and deterrence by denial.

Deterrence by denial is denying the aggressor the achievement of its military/ Political objectives on the battlefield. It is the strategy of seeking to deter any action by making it infeasible or unlikely to succeed, thus denying the aggressor confidence in achieving its goals. While deterrence by punishment is based on threatening the severe penalties. It involves in threatening to destroy large portions of an opponent's civilian population and industries. In the South Asian security environment, Pakistan relies on deterrence by denial strategy, which means it will deter any Indian aggression by revamping the conventional forces.

With the introduction of nuclear weapons, it was believed that these weapons will deter the aggression and there is no future relevance of the conventional deterrence. However with the advent of modern sophisticated conventional weapons, the fear of nuclear war became less. States are relying on such conventional weapons for deterring the aggression of an opponent state.

After the nuclearization of South Asia, the nuclear weapons has succeeded so far in preventing a general war, however it is insufficient to prevent aggression under the nuclear overhang. Below the nuclear thresholds, India is increasingly seeking to start a short and limited conventional attack on Pakistan under its Cold Start Doctrine or Proactive military strategy to gain some military/political objectives. The tendency of a limited war against Pakistan can be seen in the recent Pulwama-Balakot crisis, in which India crossed the international border and attacked an open area inside Pakistan. Pakistan has also retaliated conventionally to the Indian aggression.

Pakistan has successfully deterred the Indian aggression with their conventional weapons and hence the fear of a full-fledged war has been averted in South Asia. Indian military is striving hard for conventional dominance vis-à-vis Pakistan for exploiting gap between the nuclear and conventional capabilities to execute a short and limited war. However, if Pakistan maintains conventional deterrence, it will make costly for India any military strategy against Pakistan.

3. Changing Strategic Dynamics in South Asia: *Post Balakot Strike*

3.1. Historical Background: *Unpleasant Past*

Since their independence in 1947, both India and Pakistan are hostile towards each other. The relations between both states have never been cordial. Their history is full of conflicts, war, and appeasements. Both states have gone to war four times in 1948, 1965, 1971, and 1999, since they emerged as independent states from the detritus of the British Indian Empire. There have always been wars, confrontations, limited clashes, border skirmishes, intrusions, and war-like situations. Having a common history and culture, both states should have the warmest ties, but their relations have always remained hostile. Kashmir, water, security, territorial issue (Siachen, Sir Creek), and terrorism are some of the major issues between India and Pakistan.

The most irritating among them is the Kashmir issue. Kashmir issue remained as a bone of contention between the nuclear-armed rival states for more than 70 years. It has remained the main motive behind the wars between India and Pakistan. Out of three major wars, two wars have been fought on the Kashmir issue. Both India and Pakistan are the claimants of sovereignty over Kashmir territory. Pakistan has always supported the Kashmiri demand for the right of self-determination under United Nations Security Council resolutions of 1948-1949. Indian actions to strengthen control over Kashmir by use of force, irrespective of the Human Rights Violations (HRVs) have always been questioned by Pakistan (Hussain, 2016)

After testing nuclear weapons by both India and Pakistan in May 1998, the south Asian region became the nuclear flashpoint due to the unresolved Kashmir dispute. Former US President Bill Clinton has called it the most dangerous place on the earth (Popham, 2000). The recent unilateral withdrawal of the special status of Kashmir, which was granted in Article 35A and 370 of the Indian constitution has further deteriorated the Human rights situations in the valley. Pakistan has rejected the repealing of Article 35A and called it the blatant violations of international law, which prevent any unilateral changes to a disputed territory.

Apart from confrontations, both India and Pakistan are playing proxy wars against each other to defame one another in the international community. India is continuously blaming Pakistan for the unrest in Jammu and Kashmir. India is always accusing Pakistan of any unsolicited activity either in Kashmir or on Indian soil. Either it was the 2001 Indian parliament attack, 2008 Mumbai attacks, 2016 Uri attack, or the recent 2019 Pulwama attack, Pakistan has always been blamed by India, for all the attacks on India without having any proof and evidence. Pakistan has always sought evidence and proof and extended full cooperation on each occasion, but India couldn't present any evidence and has tried to punish Pakistan militarily. The so-called surgical

strikes after the Uri attack and Pulwama attack are evidence of the Indian thinking against Pakistan.

On the other hand, Pakistan has always presented evidence to India and the International community over the alleged Indian involvement in destabilizing Pakistan. India is playing proxy war in Federally Administered Tribal Areas and Balochistan province of Pakistan. Baloch Liberation Army (BLA), the armed wing of the Balochistan separatist movement, which was reportedly involved in an attack on the Chinese consulate in Karachi in November 2018, has been backed by India for anti-state activities inside Pakistan. Afghanistan has always been used by India against Pakistan. According to the officials, an attack on the Chinese consulate in Karachi was planned in Afghanistan with the support of the Indian spy agency RAW (Khan, 2019). Furthermore, the arrestment of *Kulbhushan* Yadav, a serving Indian Navy officer, and his confessional statement is evidence of RAW involvement in anti-state activities in Pakistan.

Several attempts were also made for the improvement of relationships between India and Pakistan, notably the Shimla summit 1972, the Lahore agreement 1999, and the Agra summit 2001. Furthermore, for the normalization of relationships, the process of composite dialogue and various confidence-building measures was also started in 2004-2005 between India and Pakistan. However several terrorist attacks like the 2001 Indian Parliament attack, Samjhauta Express bombing 2007, and Mumbai attacks 2008 have impeded the peace process between both states. Until and unless both India and Pakistan resolve the Kashmir issue, peace will remain an illusion in South Asia.

3.2. Doctrinal Shift in India- (2001-2018): *Defensive to Offensive*

Instead of resolving the outstanding issues through dialogue and negotiations between themselves, India and Pakistan have always resorted to different offensive and defensive strategies informally through the use of force to resolve issues. India is continuously changing its military strategies from defensive to offensive primarily to coerce Pakistan.

From Sunderji doctrine (1981-2004) to Cold Start doctrine (2004) and then to Indian Army Land warfare doctrine (2018), India is continuously bringing changes in its military strategies and becoming more aggressive from being defensive in the 1980s. Sunderji doctrine, which was adopted by India in 1981 was defensive in nature, according to a statement by former defense minister George Fernandes. The basic principle of which was to cut Pakistan into two pieces. According to this doctrine, the Indian forces were divided into three different strike groups. These strike groups were further divided into seven holding corps. These corps were to be stationed in the strategically important areas on the Indo-Pak border, inside India to strike deep inside Pakistan. These strike groups were to be mobilized within 72 to 96 hours, to rapidly gain its objectives in case of any proactive action by Pakistan (Khan, 2018).

However, the limitations of the Sunderji doctrine were exposed in Operation Parakaram in 2001, following the attack on the Indian parliament by five gunmen. India linked these terrorists to the Pakistan-based militant group, although Pakistan has nothing to do with it. India mobilized 800,000 troops against Pakistan on the Indo-Pak border. It was clearly signaling to Pakistan, that India is willing to go to war to end Pakistani support to militants. However, India didn't get its

objectives due to the inability of her troops to present a timely threat to Pakistan. It almost took three weeks for the Indian military for mobilization and deployment of strikes groups, giving much time to the Pakistan army for counter mobilization. Further, the role of the United States as an intermediary has diffused the tensions between the two nuclear-armed states. Resultantly after ten months standoff, due to the nuclear factor and the intervention of the international community, both states agreed to deescalate tensions on the Indo-Pak border (Khattak, 2018).

The failure of operation Parakaram and the exposition of deficiencies in the Indian conventional war-fighting strategy against Pakistan have compelled Indian strategic thinkers to come up with a new limited war strategy under the nuclear overhang, known as Cold Start Doctrine (CSD). The goal of this military strategy is to launch smaller scale, quick and decisive retaliatory conventional strikes against Pakistan within 48 to 96 hours, not giving enough time to Pakistan for counter mobilization and the International community to intercede. It is an offensive war-fighting strategy to punish Pakistan without a full-blown nuclear war.

Under the Cold Start Doctrine, the Indian military requires the transformation of the three larger Strikes corps into eight smaller division-sized Integrated Battle Groups (IBGs) consisting of mechanized infantry, armor, and artillery each capable of the limited offensive operation. These IBGs would have the support of the Indian Air force and Indian Navy for providing highly mobile fire support and these would be prepared to launch multiple strikes against Pakistan in eight different locations. These IBGs will be positioned on forward and highly advanced areas along the Indo-Pak border. The main objective of the Indian's Cold Start war strategy is the shallow penetration into Pakistan territory and to capture some limited area of 50-80 kilometers, which would be used as a bargaining chip in post-conflict negotiations to compel Pakistan to accept India's dictates (Ladwig, 2008).

To operationalize its Cold Start Doctrine (CSD), India is continuously upgrading and replacing old weapons with new sophisticated ones and has already entered into several military agreements with great powers like the US, Russia, and Israel. From 2004-2010 India has conducted several military exercises on the Indo-Pak border to test their war-fighting capabilities as a coercive message to Pakistan. The operationalization of the Cold Start Doctrine (CSD) will intensify the security dilemma of the two nuclear-armed states in the region.

To counter the Indian Cold Start Doctrine (CSD), Pakistan has also taken serious countermeasures. Pakistan Army has conducted military exercises codenamed Azm-e-Nau, in which Army practiced the synergy, integration, and offensive-defense concepts to operationalize its conventional response to this limited war strategy. Further, the development of a surface-to-surface multi-tube ballistic missile, Hatf IX (Al Nasr), also known as Tactical Nuclear Weapon with a range of 60 km was another response to deter the limited war strategy under Cold Start Doctrine. However, according to Brigadier (Retd.) Feroz Hassan Khan,

“Cold Start Doctrine is becoming old, more probably it has become redundant. You have not seen any such thing, like Cold Start in the Pulwama incident. It was a very expensive doctrine that was giving the less advantage and more costly and still risking the use of nuclear weapons in the process. Risk factors were greater, the gains were lessen and it was very expensive in terms of cost factor. It is a total

fallacy that CSD will have escalation control where they can start and seize the operation on their own terms and conditions. It is based on very dangerous assumption” (Khan, 2021).

Also in the words of Zawar Haider Abidi,

“Cold Start Doctrine is dead. In my opinion it was never a viable doctrine right at the outset. Breaking the strike punch into number of smaller IBG opposite a sufficiently strong adversary could never be a sensible decision to any tactic commander” (Abidi, 2021).

The development of Tactical Nuclear Weapon or SRBM combined with other strategic weapons is a part of Full Spectrum Deterrence (FSD) posture. Announced in 2013, the basic aim of FSD is to deter the entire spectrum of threats from a limited to an all-out war. FSD is a qualitative not a quantitative response to India’s strategic objectives under Cold Start Doctrine (CSD). FSD is to deter the Indian aggression towards Pakistan on all fronts. Pakistan has deterred the Indian nuclear superiority by conducting nuclear tests in 1998 and has balanced the equation. By conducting military exercises called Azm-e-Nau exercises, in which the army has tested the military skills and abilities, Pakistan gave a conventional response to India. Furthermore, the development of TNWs was to deny space for Indian aggression for waging any limited war. The main objective of these TNWs is to restore the credibility of deterrence and to prevent even a limited war, which can escalate to a full-fledged nuclear war. In the words of Lt Gen (Retd) Khalid Kidwai, Pakistan Nuclear weapons are aimed at deterring Indian aggression and will be used as a last option when the very existence of our state is under threat (Jaffery, 2018).

3.3. Balakot Surgical Strike and Operation Swift Resort

The Pulwama-Balakot crisis has added another chapter to the instability of the South Asian region. Once again Kashmir issue has brought the two nuclear-armed neighbor states to the brink of a full-blown war. But thanks to the presence of nuclear weapons, that have not let the situations escalate to a major war, although the fear of using nuclear weapons remained very low during the crisis.

It all started with the suicide attack by a young local Kashmiri boy from Indian Occupied Kashmir (IOK) on an Indian Paramilitary convoy carrying Central Reserve Police Force (CRPF) causing the death of over forty Indian soldiers. Without any investigations India alleged Pakistan for the incident, basing a video clip that was released by Jaish e Mohammad (JeM), a banned militant group in Pakistan, after the incident. Pakistan denied Indian claims, asked for actionable intelligence, and offered cooperation in the investigation of the incident. To hide the failed policies of his government, Indian Prime Minister Narendra Modi exploited the incident for political gains in the backdrop of India’s ongoing general elections. In a statement after the attack, the Indian PM pledged a crushing response. Pakistan cautioned a retaliatory response to any misadventure of Indian aggression (Ahmad, 2019).

To take revenge of its military personnel and to punish Pakistan, four mass formation of Indian Air force jets violated Pakistani airspace and approached Pakistani territory from Sir Creek, Rahim Yar Khan, Fazalika, and Balakot areas of Kashmir on 26th February 2019. 12 Mirage-

2000 jets, 8 SU-MKIs supported by early warning, and Air refueling aircraft approached the Balakot area in Khyber Pakhtunkhwa Province. Six Mirage jets were armed with Spice 2000 standoff bombs while the other six Mirage and SU-MKI were flying in air superiority roles. The Indian strike aircraft released their Israeli origin spice 2000 munitions from a safe distance and fled the scene. Only four aircraft were able to drop their payloads while the remaining fled without any damage to Pakistan. Contrary to the claims of the Indian foreign minister that we have targeted ‘the biggest training camp of Jaish-e-Muhammad, it was revealed that there were no human casualties. Only a few pine trees and a crow were died.

To equal the score with India, the Pakistan Air force (PAF) finally commenced Operation Swift Retort on 27th February 2019. At around 9:00 AM in broad daylight, PAF launched a package comprised of 12 F-16 and 8 JF-17 in air superiority role and two strikes formation of 04 Mirage and 02 JF-17 aircraft. The whole package was supported by SAAB 200 Erieye, AWACS, and DA electronics warfare aircraft. Two JF-17 aircrafts armed with two bombs each released their payloads against two Indian Army brigade Head Quarters in Poonch and Rajauri sectors, Narian Support Depot in the Naushera sector which worked as a forward ammunition Depot of the Indian military.

In the words of Air Marshal Haseeb Paracha, India claimed to have dropped five bombs while Pakistan decided to drop six bombs on four different targets. Not to respond was not an option, to respond was a compulsion. We were politically directed to drop the bombs away from the actual target to avoid war. We were fully capable of hitting our targets but due to the stability of the region, we didn’t destroy our targets as a responsible state. It was to convey the message that Pakistan is capable of counter surgical strikes. PAF has intentionally engaged military targets because it was the military that was involved in the surgical strikes against Pakistan (Operation Swift Retort, 2019).

In response to Pakistan’s counter strikes, the Indian Air Force chased Pakistani fighter jets. In the subsequent air battle, IAF lost their own two aircraft, Sukhoi SU-30MKI and Mig-21 Bison with Pakistani missiles, and one of their Wing commander Abhinandhan Varthaman, flying Mig-21 Bison was taken into captivity by Pakistan Army which was later released by Pakistan as a goodwill gesture. According to former DG ISPR, Major General Asif Ghafoor, two Indian fighter jets were downed in today’s operation. One fell in our space, another on their (Indian) side (Ghafoor, 2019). India claimed that a Pakistani F-16 was also shot down by IAF during the fight, a claim that was refuted by United States officials and experts. PAF's response has made the Indians so confused that they mistakenly shot down their own MI-17 Helicopter killing all six personnel on board (Mirza, 2019).

Answering a question about the possibility of any Balakot type misadventure by India in the future, Brigadier (Retd.) Dr. Muhammad Khan replied,

“In my opinion India will never go for any such misadventure. The way India has been treated by PAF pilots in the broad daylight of 27th February 2019, it was very shameful on the part of India because India was claiming to be the great and very professional military. So to avoid any future humiliation, India will have to think thousand times before going for such misadventure in future” (Khan, 2021).

Also in the words of Dr. Noman Omar Sattar,

“Indian military modernization will certainly have an impact on Pakistan’s security, as this implies up gradation, superiority in some cases and numbers. But this does not necessarily imply a Balakot type misadventure. That depends on the immediate strategic context, and a need for swift response. But India would certainly have that in mind, that is, to be prepared for such a contingency” (Sattar, 2021).

It was nowhere seen during the 2019 crisis that Pakistan’s nuclear threshold have been breached because Pakistan has successfully demonstrated his deterrence solely with conventional means both at sea and air. According to Dr. Rabia Akhtar,

“The Pulwama-Balakot Crisis stressed home the point that Pakistan’s adequate conventional capabilities translated into an effective deterrent at the conventional level, and helped level the scores and terminate the crisis, way below the nuclear threshold. It well and truly established that Pakistan’s nuclear threshold is not as low as it is commonly perceived. Through a combination of a robust conventional response and existential nuclear deterrence, Pakistan was able to retain escalation dominance” (Akhtar, 2021).

On the other side, after the Pakistan’s kinetic response to Indian air strikes, India operationalized its naval combat units comprising Carrier Battle Group with INS Vikramaditya, nuclear powered ballistic missile submarine (SSBN) the INS Arihant, and score of other ships, destroyers and frigates on Arabian Sea for operations against Pakistan (Nagi, 2019). It was also reported that India has deployed its missiles close to Pakistan’s border and was threatening to launch missile strikes against six Pakistani targets. Pakistan promised an immediate and scaled up retaliation with its own missile strikes “three times over” (Milgani, 2019). These plans were never materialized which kept the nuclear conflagration very low during the crisis. According to Dr. Tughral Yamin,

“When two nuclear armed neighbors are locked in combat there is always a possibility of it escalating into a nuclear war. Operation Swift Retort created the necessary effect. India was made to realize that Pakistan will not take any military aggression lying down and the response would always be swift and effective” (Yamin, 2021).

The employment of airpower inside Pakistani borders was technical an act of war. If Pakistan destroyed Indian military installations during his counter-strikes on 27th February and if Pakistan destroyed India’s nuclear submarine in the Arabian Sea, the situation would have escalated very dangerously. Further the returning of captured Indian pilot as a goodwill gesture has poured cold water on the hot war like situations. Pakistan’s calculated response with conventional means have nullified all the misperceptions that in case of any war with India, Pakistan will respond with its nuclear weapons due to the conventional disadvantage vis-à-vis India. Although there was no nuclear signaling from Pakistan, but any miscalculation from either side may have triggered uncontrollable events that could have led to a full blown nuclear war.

3.4. Lessons Learnt in the Post 2019 Stand Off

After the overt nuclearization of South Asia in 1998, the Pulwama-Balakot incident was perhaps the most serious crisis of its nature where the air forces of both the states have crossed the Line of Control and conducted aerial strikes against one another. It was not the first crisis, since both the states are in continuous crises-like situations after their independence in 1947. It was unique in nature that has brought the region to the brink of a nuclear war. It has indicated a higher threshold for risk acceptance by both Pakistan and India.

Here are a few lessons that we can argue to be learned from the Pulwama-Balakot crisis.

1. Pakistan has sent a clear and loud message to the world that whosoever will challenge the sovereignty of Pakistan, will be given a befitting response. Pakistan will retaliate against the aggression on its soil for the invincibility of its sovereignty.
2. The new concept of surgical strikes has been enforced in the region that can lead to an uncontrolled escalation. India under his Cold Start Doctrine (CSD) will keep on exploring ways to launch similar attacks in the future as well below the nuclear threshold. The doors for surgical strikes are open now in the region.
3. There are still more weaknesses in the Indian Air defense system. It was unable to intercept and target the Pakistan aircraft which crossed the Line of Control (LoC) during the Pulwama-Balakot crisis, targeted the Indian land, and returned untouched.
4. The Indian Air Force capabilities are redundant. It lacks the Beyond Visual Range (BVR) missile firing capability. The induction of Rafale jets armed with Meteor missile will change the equation for IAF in the future.
5. There are limitations in the Air defense capabilities of both India and Pakistan. Both the states can conduct surgical strikes against one another. Due to a long border of 2,600 KM, the Air forces of both states can't make it safe and secure. There would always be chances for the air forces of both parties to sneak in and conduct surgical strikes against one another.
6. Due to the presence of nuclear weapons, the war remained limited only to aerial skirmishes. It didn't escalate to a full-fledged war.
7. The conventional capabilities of Pakistan are deterring Indian aggression so far. The current conventional asymmetry between India and Pakistan is not decisive. But the growing conventional gap between India and Pakistan will embolden India to launch such strikes against Pakistan in the future.
8. Compared to the past crises between India and Pakistan, United States didn't remain a reliable broker in the region. Instead of mediation between India and Pakistan during the Pulwama crisis, the US has encouraged Indian belligerence and military action against Pakistan, while urging Pakistan to avoid military action in response to Indian provocation. The role the US has played in the Pulwama-Balakot episode raises concerns for future crisis dynamics and crisis management endeavors in South Asia.
9. If India attempts to launch such strikes in the future, it should take into consideration the possible costs that may not always be in India's favor.
10. Pulwama incident has internationalized the Kashmir issue and brought it on top of the international agenda. It has put the Kashmir issue a core dispute between Pakistan and India and a nuclear flashpoint that needs immediate attention of the international community.

11. The presence of Non-state actors has the potential to trigger a crisis. The third actor i.e. Non-state actors can push Pakistan and India into a war.
12. The possibility of limited war remains a possibility for both the states that can escalate to an all-out war. India will be trying to explore the ways for conducting kinetic actions against Pakistan while remaining below its nuclear threshold, for which Pakistan will respond in Quid Pro Quo Plus validating its Full Spectrum Deterrence (FSD) posture.
13. To achieve her political objectives, India is continuously using her military superiority as a compellence tool.

4. Challenges to Pakistan's Conventional Deterrence

4.1. S-400 Long Range Air Defense System: *Threat to PAF*

The S-400 is one of the most sophisticated surface-to-air missile systems in the world. It has a range of 400 Kilometers and can shoot down up to 80 targets simultaneously including low-flying drones, hostile aircraft, and other aerial threats at various altitudes and long-range missiles (Hussain, 2020). S-400 has the tracking capability of 600 KM and even before entering into the user's airspace, it can detect aircraft and Unmanned Aerial Vehicles (UAVs). S-400 is a multi-layered system, integrating multifunctional radar with autonomous detection and targeting systems. It has equipped with four different types of missiles, launchers, and a command and control system. It has the capability to shoot down missiles or any hostile aircraft from 400 KMs to 40 KM outside its territory (Ahmad, 2016). The S-400 missile has a maximum speed of 17000 KM/H when launched by the system, which is 22 times faster than the average passenger plane. It can destroy Supersonic cruise missiles at the range of 60 KM and can hit the target at a maximum altitude of 27,000 meters.

India signed a \$5 billion deal in October 2018 to buy the S-400 system from Russia during a visit to New Delhi by the Russian President (Saberin, 2018). The acquisition of the S-400 system by India will create a strategic imbalance in South Asia that will further deteriorate the already fragile security situations. The S-400 system will provide a significant boost to India's national missile defense system which has been developed to protect its major cities, military installations, missile sites, and nuclear facilities from any foreign threats. S-400 system will provide India, a strong defense shield against any incoming missile or aerial threat. The perception that S-400 will make it impossible for Pakistan to respond to Indian aggression as it did in the post-Pulwama raid, will further embolden India to conduct another limited-scale military assault on Pakistan in the future.

However, according to Mr. Toby Dalton,

“Pakistan’s nuclear weapons deter Cold Start (but not the next Balakot). I can understand how Indian BMD could impact perceptions of vulnerability in Pakistan, if flaunted as cover for a disarming first strike. But the technical reality of BMD to date is far less impactful and concerning – whether for the US, Russia, China, or India. With diversity of delivery options and mobile missiles – to include a sea-based leg in the future - I don’t think this should be as big a concern for Pakistan” (Dalton, 2021).

Also according to Zawar Hiader Abidi,

“As far as BMDs are concerned, the system is not yet operational in India. No contemporary BMD system is battlefield tested. The BMD system India has opted for is under the US Radar for sanctions as it happened with Turkey. Moreover, Pakistan’s MIRV and cruise missile capability would take care of India’s BMD capability if and when it is operationalized” (Abidi, 2021).

The ability of S-400 to engage the adversary’s hostile aircraft inside its territory gives it a strong offensive option. The fear of all-out war in South-Asia is unlikely but can’t be ruled out between nuclear-armed India and Pakistan. In case of a warlike scenario, the S-400 system will provide a strong defensive shield to vulnerable points of India on one hand and on the other hand, it can shoot down PAF combat planes even inside Pakistan. This will limit the PAF movements even inside its territory and may not be able to perform operational tasks. The deployment of S-400 will make it very challenging and costly for PAF to raid against Indian targets with manned aircraft. This system will encourage India in adopting a more aggressive conventional as well as nuclear posture against Pakistan.

4.2. Rafale and SU-30 MKI: Air Dominance

The Rafale is a French-made twin-engine combat aircraft, having Omni-role capabilities that can carry out a wide range of long and short-range missions with the smallest number of aircraft. It has the capability to participate in air and sea-based missions, reconnaissance missions, high accuracy strikes, and nuclear deterrence duties. Rafale can carry a wide range of potent weapons. Armed with modern electric warfare capabilities along with laser designation pods to precisely hit the target from air to ground enables it to track eight targets simultaneously. Equipped with lethal missiles, AASM can hit the target at 10m accuracy. Having a twin-gun pod and a Nexter 30mm DEFA 791B cannon, it has a firing capacity of 2500 rounds a minute. The Rafale has the capacity to carry various types of warheads at the speed of 1850 KM with a maximum speed of 1915 KM (Rafale Multirole Combat Fighter).

The 4+ generation aircraft that has loaded with the radar-guided deadlier BVRAAM (Beyond Visual Range Air to Air Missile) Meteor having an extended range of 120 KM enabling it to hit the target over long distances even in severe weather conditions. This will directly threaten

Pakistani F-16s loaded with AMRAAM (Advanced Medium-Range Air-to-Air Missile) having a range of 100 KM. This will certainly limit the ordinary operations of F-16 and F-17 fighter jets even inside Pakistan's territory and will make it more challenging for PAF to keep IAF at bay in any future conflict. This will give India an upper hand in her conventional military capabilities which will allow her to exert its dominance and force that can prove to be a dangerous assumption for the region. The acquisition of Rafale will provide India air dominance and unrivaled deep strike capability in the region which will enable her to target the enemy's fighter jets even in their border range.

SU-30MKI

Airpower has become an important element in modern military warfare. Air and space power has changed the dimensions of modern warfare not only in terms of precision and lethality but also in logistics, information, and intelligence, mission support, mobility, and survivability. Predicting the future wars to be intense and quick, the possession of a strong air force is necessary for a state to have air dominance over its enemies. In the South Asian context, India under its Cold Start Doctrine (CSD) and proactive military strategies is focusing on quick and tactical operations against Pakistan under the nuclear threshold, for which it is modernizing its all branches of the military along with the air force. To achieve its strategic objective against Pakistan, IAF has procured modern aircraft like SU-30 MKI and Rafale from foreign strategic partners.

The Sukhoi SU-30 MKI is a Russian-made twin-engine multirole fighter aircraft. It is an air-superiority aircraft that is equipped with 30mm Gsh-30-1 cannon with 150 rounds of ammunition. The most prominent capability of SU-30 comes from its access to BrahMos supersonic cruise missiles which can hit the target in the range of 290 KM. Having a maximum flight range of 3000 KM/h, the fighter has the ability to deliver different types of warheads including air-to-surface missiles. The fighter has an advanced search and tracks radar system and Israeli listening targeting pod for guiding laser-guided munitions and air-to-surface missiles. Currently, there are 260 SU-30 MKIs in IAF service (Su-30MKI Multirole Fighter Aircraft, 2020).

SU-30 MKI is the most advanced aircraft currently in the Indian Air Force (IAF). SU-30 and BrahMos are individually the most powerful weapons. But when the SU-30, the most supermanoeuvrable aircraft in the world is equipped with a destructive cruise missile, they become a dramatic force multiplier. The blistering speed of Sukhoi will add extra momentum to the destructive power of the BrahMos cruise missile. Combined with the S-400 system, Rafale aircraft, and BrahMos cruise missiles, the SU-30 will enhance the offensive attacking capabilities of IAF against their rival states. This will give IAF the air superiority to launch deep punitive airstrikes inside the enemy territory from a safe standoff distance on any target at sea or on land in all-weather conditions. Answering a question about the possible air superiority of Rafale and SU-30 MKI over Pakistan Air Force (PAF), Toby Dalton replied,

"I'm not sure if you mean "over" Pakistani territory or as compared to PAF in general. I don't think at this point India is buying those systems (Rafale and SU-30 MKI) in large enough numbers that it threatens to give India carte blanche in

Pakistani air space. I assume Pakistan is mindful of its air defense needs” (Dalton, 2021).

4.3 Nuclear Submarines: Assured Second Strike Capability

INS Arihant

INS-Arihant is India’s first indigenously made nuclear ballistic missile submarine. The submarine was launched in 2009 and commissioned in the Indian Navy after it was declared fit for operations in 2016. By inducing the nuclear submarine to its fleet, India has joined an elite club of six countries US, Russia, France, China, and the UK that possess nuclear submarines. The submarine is equipped with twelve K-15 Sagarika missiles having a range of 750 km and four K-4 submarines launched ballistic missiles with a range of 3500 km. It can also remain in waters for months thereby decreasing their detecting chances (Som, 2018). The induction of the Arihant submarine has successfully established a nuclear-triad for India which means the ability to launch nuclear missiles from different platforms on land, undersea, and in the air.

INS Arighat

The INS-Arighat is the second of four Arihant-class nuclear-powered ballistic missile-carrying submarines. It was launched by India in November 2017 and is commissioned in 2021 after successful sea-trials. Equipped with a 750 km range of K-15 submarine-launched ballistic missiles, the submarine has the capability to carry four missiles (Vikrant, 2020).

S4 and S4* Submarines

The third and fourth vessels of the Arihant class, **S4**, and **S4***, which India is planning to build under the ATV (Advanced Technology Vessel) project, each armed with a ballistic missile carrying nuclear warhead were launched by 2020 and 2022. These submarines are more powerful and larger than the INS-Arihant reportedly being outfitted to carry eight ballistic missiles, twice the size of Arihant missile load (Unnithan, 2017).

INS Chakla-III

Along with indigenously made Arihant-class submarine, India also signed an agreement in March 2019 worth \$3 billion with Russia for the lease of an Akula class nuclear-powered attack submarine for a period of ten years. These submarines, known as Chakla-III will be delivered to the Indian Navy in 2025. The submarine will be equipped with conventional land-attack and anti-ship missiles and torpedoes and does not carry nuclear weapons. It will be the third nuclear attack submarine to be leased to the Indian Navy. The first submarine was taken on lease in 1998 for a period of three years and the second one was known as Chakra-II in 2012 for ten years period. India is looking for extending its lease as it’s going to expire in 2022.

In 2015, the Indian government approved the indigenous construction of six nuclear-powered attack submarines with a total project cost of Rs 1 Lakh crore (Pandit, 2020). Work on the project has already been started. “It has kicked off,” Indian Naval Chief Admiral Sunil Lamba

told the media about the project on the eve of Navy Day. “It is a classified project. The process has started (PTI, 2017).

While the Arihant submarine is equipped with 12 K-15 ballistic missiles, each equipped with one nuclear warhead, the Indian Navy plan to deploy K-4 missiles on an indigenously developed Arihant submarine. The test-fire of the K-4 missile with an estimated range of 3500 km has been conducted in January 2020. The other units of K-class missiles, K-5 and K-6 SLBM, with expected ranges of 5000 km and 8000 km respectively are also under-development. K-6 SLBM is to be deployed on the S-5 class submarines, which India is planning to construct after the S-4* submarine completion (Afzal, 2020). The extended range of these missiles will enable India to hit any target inside Pakistan and China. India’s focus on developing and deploying long-range nuclear-capable ballistic missiles is directed towards countering Pakistan and the growing influence of China in the Indian Ocean region.

The induction of these nuclear submarines with the full range of nuclear-capable missiles will complete its nuclear triad and will provide India the second strike capability against its enemies. It will enable India to easily reach the enemy’s targets both at sea and on land. These submarines will strengthen India’s sea-based nuclear deterrence while reducing the chance for the enemy to strike first.

The deployment of nuclear submarines in the waters will increase the chances of accidental nuclear escalation. Pakistan on its part will try to deter the growing Indian influence in the Indian Ocean Region, which will increase the risks of nuclear war as it was seen in the 2019 Balakot crisis where the Indian nuclear-submarine was detected by the Pakistan Navy near Pakistan coastal areas. Such steps by India will have serious repercussions for Pakistan and for the stability of already fragile situations of the South-Asian region.

4.4. Long Range Israeli Armed UAVs: *Surgical Strikes*

To boost its surveillance and fire-power capabilities, India is acquiring the Unmanned Aerial Vehicles (UAVs), from its strategic partner Israel, which is also the key-supplier of UAVs to India. With the upgrade in the reconnaissance capabilities, the Indian armed forces will be able to get pin-point intelligence of the hideout areas that are inaccessible for humans. It will also enable the forces to monitor these areas from far-off distances and control them through the satellite communication system.

Israeli Heron and Heron TP

Heron is a Medium-altitude long-endurance (MALE) Unmanned Aerial Vehicle (UAV), developed by Israeli Aerospace Industries (IAI). Having a top speed of 250 km/h, it can continuously operate for 52 hours at a maximum altitude of 10,000 meters. It has the capability to carry a payload of 1000 kg (ETD, 2020).

In September 2015, India also acquired 10 Heron TP UAVs worth \$400 million from Israel. It is the most advanced UAV developed by Israel. The drone is capable of carrying a 1000 kg payload with a maximum take-off weight of 5300 kg and enduring for 40 hours in all weather

conditions. Under the “Project Cheetah”, India is to upgrade the drones of all three-services with laser-guided bombs and missiles to carry out offensive strikes against enemies (Ahronheim, 2019).

The acquisition of these satellites by India will enhance India’s offensive deep strikes capability against enemies with less risk to personnel. Other features of the drone include surveillance, reconnaissance, target acquisition, missile defense, intelligence gathering, and aerial refueling.

Israeli Harop Drones

Harop is an anti-radiation drone developed by Israel Aerospace Industries (IAI). It is a SEAD-optimized (Suppression of Enemy Air Defenses) loitering munition designed to loiter the battlefield and attack targets by self-destructing close to them. It has a loitering capability for up to six hours. Equipped with sophisticated sensors, the Harop drone has a 23kg warhead (Desk, 2020). The drone has been designed to perform stealth operations. It has the combined capabilities of a UAV and a lethal missile. It can search, identify and loiter above the targets before destroying them. These drones are destructive for the enemy’s radar sites, missile sites, and other strategic installations.

Rustom-2

India has successfully flight-tested the indigenously developed prototype reconnaissance drone Rustom-2 in October 2020. It is a medium-altitude long-endurance drone that has achieved eight hours of flying at an altitude of 16,000 feet. It is expected that the drone will achieve eighteen hours of continuous flying and a height of 26,000 feet by 2020 end. It has the capability of carrying a varied combination of payloads (350 kg) depending on the mission objectives including electronic intelligence systems, synthetic aperture radar, and situational awareness systems (Report, 2018).

HQ-9B

The United States is also one of the largest suppliers of defense hardware to India. Apart from Israel, India is also willing to invest \$3 billion for the purchase of 30 MQ-9B guardian drones from the United States while six of these drones (two each for Army, Navy, and Air force) are to be purchased outright and delivered in the next few months for a total of \$600 million. The MQ-9B can carry infra-red/electro-optical multi-mode radar and multi-mode maritime surveillance radar, electronic support measures, laser designators, and various weapons packages. It is a medium-altitude long-endurance (MALE) armed drone, capable to remain on task for 35 hours and can float above the target at 45,000 feet (Report, 2020).The drone not only collects information through surveillance and reconnaissance but can also locate the target and destroy it with missiles and laser-guided bombs. The drone is specifically useful for maritime searches.

Drones play a dominant role in technological advancement in today’s warfare. The drones are used by the states to keep their eyes across the borders. It has the ability of precise targeting with no physical loss to personnel. According to Dr. Rabia Akhtar,

“Certainly, India’s capacity to carry out such attacks will increase as a result of these acquisitions. So, yes, it can conduct strikes going forward. This is especially true because India has a set of political aims that it wants to achieve through the application of force against Pakistan. Buoyed by the procurement of heavy-ticket defense article and the growing strategic bonhomie with Washington, New Delhi could definitely initiate a limited incursion against Pakistan. Its escalation into a total war will, however, be impeded by the laws of deterrence” (Akhtar, 2021).

The acquisition of such armed-UAVs by India will have serious repercussions for Pakistan’s security. It will enable India to monitor the deployment of troops and their movement across Pakistan’s borders. These drones will not only enhance the surveillance capabilities of India, but they can also locate and detect the target and also can destroy it with loaded weaponry. It will embolden India to conduct aerial surgical strikes inside mainland Pakistan without risking the lives of military personnel.

4.5. P-8I Anti-Submarine Aircraft: Threat to Pakistan’s Submarines

To secure its maritime interests and to dominate the Indian Ocean region, the Indian Navy has been developing weapons, systems, and sensors as part of the modernization of its maritime forces. To counter the growing influence of her enemies in the Indian Ocean region and her aspiration of achieving the status of Blue Water Navy, India is continuously adding nuclear-powered submarines, conventional powered submarines, latest radars, destroyers, frigates, and aircraft carriers to the Indian Navy. The induction of these weapons will pose a serious threat to Pakistan’s maritime interests in the days to come.

The continuous evolution and modernization of the Indian Navy will make it the sole regional power dominating the Indian Ocean (IO) region and beyond. It has immense economic and strategic importance; therefore the dominance over the Indian Ocean is vital for India. To protect, secure, and establish hegemony in its main thrust areas that include the Arabian Sea, Bay of Bengal, and Indian Ocean region, which is home to 75% of the world’s maritime trade, India has already inducted eight US-made P8-I aircraft along with other weapons to its navy (Khattak, 2011).

The P8-I is a long-range multi-mission maritime reconnaissance and anti-submarine warfare aircraft manufactured by Boeing. The aircraft is equipped for long-range anti-surface warfare (ASuW), anti-submarine warfare (ASW), maritime patrol and intelligence, surveillance, and reconnaissance (ISR) missions. The aircraft can fly higher up to 41000 feet at a maximum speed of 789 KM/h. Having the ability to remain on task at a station for four hours, the P8-I aircraft has a maximum range of 1200+ nautical miles. The aircraft is equipped with Mark 54 torpedoes, depth charges, and Harpoon Block-II anti-ship missiles, which can be fired against land and sea targets. It also has the additional features of Magnetic Anomaly Detection (MAD) system, multimode radar, and APY-10 surveillance radar, which provides accurate information in all weather, day, and night missions (P-8I Multimission Maritime Patrol Aircraft, India, 2021).

The acquisition of P8-I aircraft by India will be a force multiplier and will significantly boost the maritime surveillance, reconnaissance, and combat capabilities of the Indian Navy which will

offer a technological edge over the Pakistan Navy. The P8-I aircraft also has the ability to detect and track the naval movements of the enemy, which means that Pakistan's submarines, aircraft carriers, and Unmanned Aerial Vehicles (UAVs) will be under grave threats of detection and destruction in any future conflict. It will be responsible for countering both coastal and high sea threats and protecting the country's economic and energy interests. Along with coastal patrolling responsibility, P8-I can also be used for other critical missions like anti-piracy, search-and-rescue, and supporting other military operations.

The growing Chinese influence in the Indo-Pacific has worried India and its allies in the West. India considers China as a threat to her aspirations of becoming a regional and ultimately an influential global power. They leave no stone unturned to counter the growing Chinese influence in the region. India along with her allies has opposed the construction of the China-Pakistan Economic Corridor (CPEC), which has to be built on the oil-rich Persian Gulf with Chinese cooperation. Therefore India feels the desire for a strong Navy with modern weaponry to limit and counter the influence of her enemies especially China.

4.6. BrahMos Hypersonic Cruise Missile: *Pre-emptive Strike*

To enhance the fireworks of its Navy, India is acquiring BrahMos cruise missiles along with other sophisticated weapons to enhance the fireworks of its warships. These missiles have already been deployed on the warships of the maritime forces. With the aspiration to be the world power and to be at par with great powers like the United States, China, and Russia, India is motivated to acquire sophisticated weapons and to advance its weapons and technology. Therefore it has entered into several deals with great powers like the US, Russia, France, and Israel.

The BrahMos, a joint venture of India and Russia, is a ramjet-powered, single warhead, short-range supersonic anti-ship/land-attack cruise missile. The BrahMos has a maximum flight range of 290 KM with supersonic speed. The stealth technology of the BrahMos missile makes it less visible to radars and other detection methods. It has the ability to carry conventional warheads weighing 200-300 kgs having a maximum speed of Mach 2.8, the fastest in the world. The BrahMos has the capability of being launched from the ground, fighter jets, submarines, and warships. It's known to be four times faster than the US-made Tomahawk missile, which gives BrahMos the capability of better-penetration than other sub-sonic cruise missiles. Being an anti-ship missile, BrahMos has the capability of hitting land-based targets over a 360-degree horizon (Sudakov, 2010).

Currently, India and Russia are working on the development of the BrahMos-II, a hypersonic version of the BrahMos missile, with an extended range of 450 KM. The new version of the BrahMos missile will be capable to destroy the enemy's weapons storage facilities and underground bunkers with a greater speed of 8,575 KM/h (seven times faster than sound speed) (Singh, 2017). The missile will act as a strategic asset for India which will deter any future threat from Pakistan and China. The deployment of an Indian hypersonic cruise missile will give India an upper hand to conduct aerial first strikes against Pakistan's strategic assets. This will have dire consequences for Pakistan since their Nuclear and strategic assets will be in the Indian BrahMos missiles range and in case of any future war it will be vulnerable to destruction.

The development of hypersonic weapons by India will tilt the strategic belt in India's favor which will have serious consequences for Pakistan. Pakistan doesn't want to indulge in an arms-race with India but it will motivate Pakistan to move towards a state of ready deterrence. The fear of the first strike from India on its soil will compel Pakistan for countermeasures. To balance the equation, Pakistan may eventually come under-pressure to obtain or develop its own hypersonic missile program, to develop adequate defensibility measures in all arms of the military, and to enhance the readiness of its nuclear weapons. Any misadventure from India may lead to the exchange of nuclear weapons between the two nuclear-armed states as Pakistan will ultimately rely on nuclear weapons in case of any aggression from India. A mixture of qualitative and quantitative enhancements of its nuclear force will be the best option to counter the Indian aggression.

4.7. Spy Satellites: *Real Time Information*

The Intelligence or Reconnaissance satellites that are commonly known as Spy satellites are the robotic observatory platforms that are orbiting the earth to gather the information that can be used for military, intelligence, and political purposes. By using a radar system, these satellites are collecting information about civilian and military installations in other states. It plays a key role in obtaining real-time information about enemy states.

India's hegemonic desires in the region also motivate her to dominate space and boost its defense surveillance capabilities. To sever this purpose India needs real-time information about her enemy's military installations which can be collected by using spy satellites. These satellites will provide India with dedicated military satellite intelligence, troop deployment, and target locations enabling it to keep a watch on all Volatile Regions (VOs). To improve the overall space program and to boost its surveillance and reconnaissance capabilities, India has carried out close cooperation with great powers like Israel.

RISAT-II (Remote Sensing Radar Imaging Satellite)

After the Mumbai attacks in 2008, the Indian military in collaboration with its strategic-ally Israel took a drastic step and launched the RISAT-II spy satellite in 2009. Having a weight of 300 kg, it has been placed in orbit about 340 miles (550 km) above the earth. Equipped with SAR (Synthetic Aperture Radar), it has the capability to collect data in all weather conditions i.e. darkness, haze, clouds, and dust storms. The satellite will not be used only for military surveillance and defense duties but it will also be able to enhance Indian capability in earth observation with special reference to flood monitoring, natural disasters, landslides, cyclones, and disaster management (RISAT-2 (Radar Imaging Satellite-2), 2012).

EMISAT

The full form of EMISAT is Electromagnetic Intelligence Satellite. Made by the Indian Space Research Organization (ISRO) and Developed by the Defense Research Development Organization (DRDO) together, it was launched on 1 April 2019. The satellite will enhance the

Indian surgical warfare capability. Having a weight of 436 kg, it has been placed in 748 kilometers orbit (DS M. , 2019). The satellite has the ability to detect hidden enemy radars, to monitor electronic or any kind of human activities on the border. The satellite is aimed at collecting electromagnetic signals from foreign radars that will drastically improve the Surveillance and Reconnaissance capabilities of the Indian Armed forces.

GSAT-7 (Geostationary Satellites)

To improve the country's maritime security and intelligence gathering, ISRO launched its first exclusive defense satellite, GSAT-7, on 29 September 2013 on the Ariane-5ECA rocket launched by a French company, Arianespace. Primarily used by the Indian Navy, it is also known as INSAT-4 or Rukmini. It is India's first military communication satellite. GSAT-7 is said to be a multi-band satellite, weighing 2650 kg that can carry payloads operating in Ultra-high, S-band, C-band, and Ku-band. The satellite will provide the Indian Navy a 2000 nautical miles footprint in the Indian Ocean region. The lifetime of the satellite is seven years. The satellite was injected into a Geosynchronous Transfer Orbit (GTO) around 36000 km above the equator (Chandize, 2013).

These satellites will give a major push to Indian maritime security. It will provide the vital inputs and communication capabilities to be used by Indian warships, submarines, maritime surveillance aircraft, the Indian Air Force (IAF), and the Indian Army over-the-land movements for effectively coordinating their operations in the Indian Ocean, Arabian Sea, and Bay of Bengal region. These satellites will be able to get precise information on Pakistani territory, troop deployment, sensitive military installations, logistics, and China-Pakistan Economic Corridor (CPEC), which will impose security challenges for Pakistan. These Surveillance and Reconnaissance capabilities will further embolden India to launch pre-emptive strikes against Pakistan which may lead to an all-out nuclear war.

GSAT-7A

GSAT-7A is an advanced military communication satellite launched by the Indian Space Research Organization (ISRO) in December 2018. Primarily used by Indian Air Force (IAF), it can also support the aerial activities of Indian Army and Indian Navy operations, where required. Weighing 2,250 kg, the satellite was injected to rise to an eventual Geostationary Orbit (GEO) about 36,000 km above the earth. It has a lifetime of eight years and has the capability to carry a payload of 2000 kg to its geosynchronous orbit at about 36000 km and 5000 kg to low earth orbit at 600 km. the satellite can detect flying military aircraft and can interlink with different ground radars and airbases by using Airborne Early Warning and Control (AWAC) aircraft (Ramesh, 2018).

The satellite will not only interlink all the airbases but will also provide a boost for drones and Unmanned Aerial Vehicles (UAVs) global operations. The GSAT-7A will augment the IAF Network Centric Warfare (NCW) capabilities for optimum utilization of resources during a future conflict.

CCI-Sat (Communication Centric Intelligence Satellite)

To boost its military intelligence, India has developed the country's first spy satellite, CCI-Sat. This satellite has been developed by Defense Research and Development Organization (DRDO) and will be launched by ISRO by 2014. The satellite will help Indian intelligence agencies to keep a close watch on the hot spots in the neighborhood. Besides Surveillance, the satellite has the capability of picking images and supporting communication and conversation across the border. According to G Bhoopathy, director of Defense Electronic Research Laboratory (DRDL), 'the satellite will orbit the earth at an altitude of 500 km and by-passing on the surveillance data to the intelligence, it will cover the hostile region in the Indian neighborhood and will be much better than Riset-2" (Balagi, 2010).

These satellites are vital for Command, control, computers, communication, and information (C4I). The acquisition of these satellites will enable the Indian armed forces to keep a watch on the activities across its eastern and western borders. It will provide India the information on hostile radars as well as identifying the military activities along the Pakistani border. The Pakistani armed forces, nuclear assets, and other sensitive installations will be highly vulnerable to detection, monitoring, and targeting by the Indian military. The space-based military capabilities and its advanced space technology may tempt India to launch a quick pre-emptive strike against Pakistan endangering the regional security and balance of power in the South-Asian region.

Pakistan lags far behind as compared to Indian space technology. To secure and advance its interests, Pakistan needs to catch up with the regional space programs. Pakistan should develop space-based detection, tracking, and communication capabilities to deter the possible Indian first pre-emptive strikes. The advancement in stealth technologies for strategic purposes will be a possible way to counter Indian space technology. To ensure its security against India, Pakistan can develop anti-satellite technology which can also be a possible way for countering Indian aggression.

5. Options for Pakistan

5.1. Induct HIMADS from China- HQ-9

The induction of S-400 by India, which is expected to be the game changer, will tilt the balance of power towards India. In the South Asian regional context, it will have serious repercussions for the Pakistan Air Force which will compel Pakistan to acquire or develop a system for its air defense. To equal the score with India, Pakistan is procuring the HQ-9 long-range air defense system from China. According to an official of the Ministry of Defense Production, Pakistan is considering the acquisition of four units of HQ-9 or FD-2000 to enhance its air defense systems (Khan, 2018).

The HQ-9 is an advanced long-range, all-weather, and all altitude surface-to-air missile system. Indigenously developed by China, it has been intended to counter airborne threats like supersonic

aircraft, UAVs, cruise missiles, helicopters, and air-to-ground missiles. It can counter the target at a range of 200 km and an altitude of 30,000 meters. The radar used by HQ-9 has detection and tracking range of 120 and 90 km respectively. It can track about 100 airborne threats and can engage more than 50 targets. It is capable to carry 36 missiles armed with a 180-kilo warhead at a maximum speed of Mach 4.2 (FD-2000. Long-range air defense missile system - China, 2022).

Pakistan is strengthening its air defense capabilities for its “defense by denial” strategy. The procurement of the HQ-9 system will make its defense by denial strategy more credible. This system will fulfill Pakistan’s long-range air defense requirements. It will boost the air capabilities of the Pakistan military. It will enable the Pakistan military forces of intercepting and destroying the aerial targets flying at high and medium altitudes. It will be Pakistan’s first long-range anti-air-warfare system having a range of over 100 km which will provide an air defense layer against high altitude threats.

5.2. Procure/Develop Fifth Generation Aircraft

The rapid acquisition of military hardware by India is compelling Pakistan to explore the latest fighter jets and missiles to deter the Indian aggression. The acquisition of the modern Rafale aircrafts by India will pose serious threat to Pakistan aircrafts, for which Pakistan need to acquire the fifth generation fighter aircrafts to counter it.

Under the project Azm which was started in 2017 Pakistan has announced to develop and produce its own fifth generation fighter jets. The project also includes the development of advanced weapon system, including Medium Altitude Long-Endurance (MALE) Unmanned Armed Vehicles (UAVs), new munitions and multiple other projects. According to the Pakistan’s Ministry of Defense Production yearbook 2017-18, “First cycle of conceptual design phase has been completed”. PAF Chief of Air Staff (CAS), Air Marshal Sohail Aman said in 2017 “The design phase of Unmanned Aerial Vehicles has reached its final stages” (Report, 2019).

The acquisition of J-31 fifth generation fighter jets from China will be a viable option for Pakistan to maintain balance of power in South Asia. The J-31 fighter jet which is known to be the latest stealth capable fighter jet will start flying in 2021 (Rehman, 2020). It’s said that the J-31 have the same capabilities as American F-22 Raptor, which is known to be the most dangerous aircraft in the world. As a response to the Indian Rafale fighter jets, Pakistan need such a fifth generation fighter aircraft.

Pakistan also has the option of Chinese Chengdu J-20 fighter jet which will balance the equation with the latest Indian fighter jets. Chengdu J-20 is the fifth generation single-seat, multirole stealth fighter aircraft manufactured by China. It will enter the service in 2020. It is known to be equipped with the internal cannon, anti-radiation missiles, air-to-surface missiles, and laser-guided bombs. It has the capability to reach high altitudes and supersonic speeds. The maximum speed of the aircraft is 2100km/h while its range is 3400 km (Garthwaite, 2019) China will become the third country to develop and manufacture indigenously fifth generation aircrafts after US and Russia, once it powers the J-20 aircrafts with Chinese made engines. The defense experts competes the Chinese J-20 with the US made F-35 fighter jets.

Such a combination of fighter jets will boost the air power of the Pakistan Air Force (PAF). It will give very tough time to the Indian Rafale fighter jets as these are mainly stealth fighter which cannot be detected by radars easily.

5.3. Develop or Induct Nuclear Submarine with Long Range SLBMs

After the Pulwama-Balakot crisis of 2019, a new kind of nuclear threat emerged for South Asia. The growing danger was underscored during the military crisis between the nuclear-armed India and Pakistan when India has deployed its nuclear submarine on operationally deployed mood. The Pakistan Navy has categorically claimed the interception of an Indian nuclear submarine. The deployment of such a nuclear submarine clearly indicates the Indian plans of its full preparedness of launching nuclear attack/war against Pakistan. That means the Indian Ocean has been nuclearized which will further destabilize the already fragile security situations of the South Asian region. Such a nuclear accident at sea should be given full attention on time to avoid nuclear war at sea.

The development of the Naval capabilities by India is a part of its long-time desire of demonstrating nuclear arsenal capacity associated with great powers like China, the US, France, Russia, and the UK. India has successfully deployed its first indigenously made nuclear submarine Arihant to its nuclear fleet. A second nuclear submarine has also been reported to have completed its sea trials. These submarines along with other underdeveloped submarines have been designed to carry nuclear-armed ballistic missiles at longer range. India has also leased three nuclear-powered submarines from Russia. These submarines will give an upper hand to the Indian military forces against their enemies in any hostile situations.

The induction of nuclear submarines by India will have devastating consequences for Pakistan as more than 95% of Pakistan's trade by volume and 85 % by value is transported by sea. Having dominance on sea against Pakistan and the threat of Karachi seaport blockade by India will seriously imperil the country's economy and the war-fighting potential in few days (Khan, 2010). The introduction of the nuclear submarine will increase the chances of escalation of a limited conventional war into a full-blown nuclear war. This will compel Pakistan for counter-measures triggering the nuclear arms race in the region.

Pakistan acquired its first submarine, PNS Ghazi, from the United States in 1964. In 1970, Pakistan Navy purchased three Daphne-class submarines from France. Again in 1994, Pakistan procured three Agosta 90-B boats from France. Currently, the Pakistan Navy fleet consists of two Agosta-70 boats (Hashmat class) and three Agosta 90-B (Khalid class) submarines all French-designed. Pakistan also commissioned its indigenously constructed third Agosta 90-B (Hamza) submarine in September 2008. Fitted with French MEMSA air-independent propulsion (AIP) system, it's the first conventional submarine built in South Asia with an AIP system (NTI, 2019). In 2016, Pakistan Navy signed an agreement with Turkey for the modernization and up-gradation of Khalid-class submarines (Report, 2020).

Pakistan has started the construction of MILGEM Ada-class ships in coordination with Turkey, the agreement for which was signed in 2018. According to the plan, two corvettes will be built in Turkey while 3rd and 4th will be constructed in Karachi. Under an agreement signed in 2016

between China and Pakistan, China will provide eight Yuan-class diesel-electric attack submarines to Pakistan Navy by 2028. It is expected that the first four submarines will be delivered in 2023 while the remaining four will be assembled in Pakistan by 2028 at an estimated cost of \$5 billion (Nayyar, 2019).

The introduction of nuclear weapons in the waters by India is compelling Pakistan to counter moving in order to balance the power in the sea. Pakistan on its part has also started working on the development of the sea-based nuclear capability. Pakistan has set-up its Naval Strategic Force Command Headquarters in 2012, intending the development of its sea-based deterrence. According to the official statement, the naval strategic force is the custodian of the nation's 2nd strike capability and will strengthen Pakistan's policy of Credible Minimum Deterrence and ensure regional stability (Naval Chief Inaugurates Naval Strategic Force Headquarters, 2012).

In 2018, Pakistan has successfully test-fired nuclear-capable Submarine Launched Cruise-missile (SLCM), Babur-III with a range of 450 km and claimed the attainment of second-strike capability. The attainment of the credible second-strike capability is Pakistan's response to the provocative nuclear strategies and postures being pursued in the neighborhood. It's the landmark achievement of Pakistan towards reinforcing Credible Minimum Deterrence (CMD) policy, ISPR stated. (8 staff report dawn). It is believed that such a second-strike deterrent will be deployed on Agosta 90-B diesel-electric submarine since Pakistan doesn't have any nuclear submarine.

Pakistan also needs to develop or procure nuclear submarines having the capability to carry ballistic missiles to counter any future Indian aggression at sea. According to Pervaiz Akhtar, a retired Rear Admiral of the Pakistan Navy, to have a credible second-strike capability, Pakistan's submarines need to be nuclear powered and being capable to carry a sufficient ballistic missile load (Mishra, 2018) Pakistan Navy should lease nuclear submarines or may develop its own, or both. Pakistan should lease the nuclear-powered submarine from China. The PLAN's Xia submarine could be an appropriate start for which a pool of Pak Navy officers could be trained to operate nuclear-powered submarines (SSBN). The submarine is said to be capable of carrying twelve JL-2 SLBMs with a range of thousand miles. This will enable the Pakistan Navy to target the Indian nuclear-weapons ships if these ships threaten their land targets.

5.4. Improve Intelligence, Surveillance and Reconnaissance Capabilities

In the South Asian regional context, which is home to belligerent nuclear-armed neighbors, the security situation becomes more volatile and fragile with the amalgamation and evolution of new technologies into warfare. Information warfare including ISR technologies and cyber warfare is making its way to South Asia. Both India and Pakistan have the drones and satellite technology that they are using for Intelligence, Surveillance, and Reconnaissance (ISR) purposes against each other.

India is indigenously developing its drone technology. The development of RISAT, EMISAT, and GSAT-7, GSAT 7A, and CCI-SAT satellites will give India an upper hand in the information gathering and surveillance purposes against Pakistan. Once deployed on the Pakistani border, these drones will collect real-time information about Pakistan's military

deployment, their strategic installations, and other sensitive installations. India is focusing on Phalcon AWACS surveillance and weapons locating radars, UAVs, satellites, and maritime surveillance aircraft to improve its ISR capabilities. Similarly, India's battlefield surveillance radars (BFSRs), Weapons Locating Radars and the acquisition of AEW&CS will enable India in detecting targets like troop deployment, low flying helicopters, and heavy combat vehicles.

Pakistan has also taken concrete steps in the development of its drone technology for intelligence and reconnaissance purposes. Pakistan has employed the Falco UAV in PAF for surveillance and reconnaissance applications. The work on the production of Falco UAV started in August 2009. It is equipped with laser-guided missiles for future offensive operations and has the ability to carry a payload of 75 kg. It can fly at a speed of 60 m/s at an altitude of 6,500m (Falco Tactical Unmanned Aerial Vehicle, 2009). This was followed by the development of the Uqaab drone, which has a range of about 150 km. It has the abilities of intelligence gathering, target acquisition, and Reconnaissance (ISTAR) with an endurance of 5-6 hours. It can carry a payload of 1,000 kg (Online, 2018).

In 2015, Pakistan has also tested its indigenously developed drone, named Burraq. Burraq is capable of firing laser-guided missiles in all weather conditions. It can fly at an altitude of 16,000 feet with an endurance of 10 hours. Along with indigenously developed drones, Pakistan is acquiring armed UAVs from Turkey and Wing Loong II drones from China. In January 2020, Pakistan commissioned two LUNA NG reconnaissance, surveillance, and target acquisition UAVs in the Pak Navy. These drones will augment the service's ISR capabilities in the maritime domain, according to Admiral Abbasi (Dominguez, 2020). Pakistan also has the indigenously build AEWCS system for surveillance purposes.

The Indian advancement in information warfare and ISR capabilities is compelling Pakistan for counter-measures to balance the equation in this domain. Pakistan needs to increase the range and endurance of its drones for gathering real-time information. Pakistan should develop sophisticated ISR technology infrastructure to counter India's ISR capabilities. Pakistan should also work on the enhancement of its situational awareness capabilities to avert any Indian threat. The development of these capabilities will enable Pakistan in enhancing its offensive strike capability.

5.5. Enhance Endurance and Range of Armed UAVs

In modern battle-space, the importance of UAVs cannot be ignored. As compared to fighter jets, these are much economical to procure and operate with lethal precision. Furthermore, these can be deployed on those areas where the troops cannot be deployed for surveillance and reconnaissance purposes, thus saving the lives of the personnel as there is no pilot or crew on-board while staying over the target for a long time.

The induction of UAVs by India on the Pak-India border for intelligence, surveillance, and reconnaissance purposes will make it costly for Pakistan forces to operate even in the homeland because of the fear of detection and targeting. Along with the indigenously made, the Indian acquisition of highly sophisticated long-endurance armed UAVs from Israel and the United States will have serious consequences for Pakistan's armed forces. To preserve its sovereignty

and to deter India in this sphere, Pakistan should also develop its drones and can also acquire them from the other defense partner states.

Pakistan has successfully tested NESCOM Buraaq, its first indigenously build an armed drone in 2015 which can fly in all weather conditions and can hit the target accurately (Khan B. , 2015) Buraaq can carry two laser-guided air-to-surface missiles known as Barq. Having a maximum speed of 1,000km and a service ceiling of 7,500 km, it can fly with a maximum speed of 215 km/h. It has the capability of intelligence gathering, surveillance, target acquisition, and reconnaissance. In 2018, Pakistan prepared the second indigenous drone Uqab. Having a flight limit of 250 km for 15 hours, it has the ability to carry missiles weighing up to 1,000 kg (Online, Pak army prepares indigenous drone Uqab, 2018).

As a reliable defense partner, Pakistan also has the option to procure armed UAVs from China. In 2018 Pakistan signed an agreement with China for the purchase of 50 Wing Loong II drones. In 2020 China has decided to sell these drones to Pakistan (Ikram, 2020). These drones are equipped with 12 laser-guided bombs and missiles for land and aerial-based targets. The drone has the ability to fly for up to 20 hours with a top speed of 370 km/h. With an operational radius of 1,500 km, the drone can carry a maximum payload of 480 kg. Recently on 15th January 2021, Pakistan received five CH-4 (Cai Hong 4 or Rainbow 4) multirole medium-altitude long-endurance (MALE) drones from China. These drones have a flight endurance of 30 hours and can carry a payload of 345 kg. These drones have a multitude of sensor options and are the strike capable drones primarily build for reconnaissance missions (Dominguez G. , 2021).

Pakistan is also negotiating a deal with Turkey for the purchase of small drones to bolster its UAVs fleet. These mini UAVs will remain in the air for several hours with a range of 150 km for monitoring the Indian border. Pakistan has already tested S-250 and S-350 Turkish drones ranging 25 km and 280 km respectively. Pakistan should also work to increase the endurance and range of the indigenously made Shahpur drone which has the flying capability at the altitude of 17,000 feet for up to seven hours in a 250 km radius.

Pakistan is in dire need of advanced armed drones for intelligence, surveillance, and reconnaissance purposes which can also be used for dropping weapons and surveilling the target areas. These drones will keep an eye on the human movement and weapons on the other side of the border without exposing themselves.

Conclusion

The landscape of South Asian security is dangerous and intricate. The way India is modernizing and acquiring the modern sophisticated weaponry, it will be difficult for Pakistan to balance the conventional disparities with India. The conventional parity between Pakistan and India is the cornerstone of the instability of the South Asian region. It will embolden India to launch a limited war against Pakistan in the shape of surgical strikes while remaining below the nuclear threshold.

The significant advancement in conventional capabilities may escalate even a limited war that can breach the nuclear threshold. The Indian technological advancement in the conventional

sphere is undermining the Pakistan's conventional deterrence. Pakistan has to maintain adequate conventional deterrence in order to counter the Indian conventional capabilities because the nuclear weapons are not an answer to a limited artillery fire from an enemy side. Pakistan needs to be much strong at the conventional level backed by nuclear weapons so that it will make any military misadventure costly for India.

Pakistan's full spectrum deterrence doctrine has so far deterred any Indian military attack in the past. The efficacy of Pakistan's FSD was seen in the Pulwama-Balakot crisis, where India carried out surgical strikes against Pakistan challenging its sovereignty. Pakistan responded in very effective manner by conducting retaliatory strikes against India and shot downing of its two airplanes not allowing it for implementing its Cold Start Doctrine (CSD). India's threat for missile strikes and Pakistan's assurance of thrice severe response made India to back-off from its threats thus preventing the eruption of even a limited war.

But the growing conventional imbalance and the evolution of aggressive Indian military doctrine has pushed Pakistan for the upgrading and modernization of its conventional capabilities. Pakistan also seems to be in arms race with India for establishing conventional deterrence to make any military aggression costly for its enemies. But Pakistan's ultimately reliance will be on its nuclear weapons, if the conventional deterrence fails and if the very survival of its statehood is in danger. Pakistan's response will be in quid pro quo plus, in case of any limited or total aggression from India.

Pakistan has so far successfully balanced the Indian conventional superiority in certain areas like Attack helicopters, anti-tank guided missiles, Unmanned Armed Vehicles (UAVs), aircraft carriers, and second strike capability, long-range ballistic and cruise missiles but Pakistan need investment in many areas like Long-range defense systems, nuclear submarines, fifth generation aircrafts, Spy satellites, Network Centric and Electronic Warfare capabilities, long-endurance and long range UAVs to maintain conventional balance with India.

The modernization of its cruise and ballistic missiles, Unmanned Armed Vehicles, aircraft carriers, surface and sub-surface fleet will help Pakistan to implement a limited or large scale conventional military operation against India in case of need. Pakistan's improvement in air defense will enable it to conduct ground defensive and counter-offensive against Indian strike groups or IBGs. The acquisition of modern weaponry from its strategic partners like China, Turkey and Russia along with the indigenously developed weapons will help Pakistan to maintain a credible minimum deterrence against India and to counter the growing conventional asymmetry.

India's modernization of its conventional along with strategic weapons like strong Ballistic Missile Defense (BMD) system, Nuclear Submarines, ICBMs, SLBMs, Anti-satellite (ASAT) weapons hypersonic and supersonic cruise missiles like Brahmos and Brahmos NG will provide India a platform for preemptive counter-force first-strike against Pakistan while relying on its BMD and second strike capability to wipe out a Pakistani response undermining the very basis of deterrence between Indian and Pakistan. Pakistan and India should recognize that war is not a solution for a problem. Peace in South Asia will remain an illusion, until and unless both the states settle their outstanding disputes by peaceful means.

References

- Afzal, A. (2020, May 19). *Based Deterrence in South Asia*. Retrieved from South Asian Voices: <https://southasianvoices.org/second-strike-sea-based-deterrence-in-south-asia/>
- Ahmad, N. (2016, April 29). *Analysis: Will India's S-400 missiles checkmate Pakistan?* Retrieved from The Express Tribune: <https://tribune.com.pk/story/1094168/analysis-will-indias-s-400-missiles-checkmate-pakistan>
- Ahronheim, A. (2019, January 28). *India to buy 15 Harop suicide drones from Israel*. Retrieved from The Jerusalem Post: <https://www.jpost.com/israel-news/india-to-buy-15-harop-suicide-dronesfrom-israel-578947>
- Akhtar, D. R. (2021, March 12). Emailed Interview.
- Balaji, R. (2010, February 0). *India's spy in the sky by 2014* . Retrieved from DNA India: <https://www.dnaindia.com/india/report-india-s-spy-in-the-sky-by-2014-1345753>
- Chandize. (2013, August 30). *GSAT-7. ISRO*. Retrieved from ISRO: Retrieved from: <https://www.isro.gov.in/Spacecraft/gsat-7>
- Dalton, T. (2021, March 02). Emailed Interview.
- Desk, W. (2020, July 14). *Why Indian Army is eyeing a mini 'suicide drone' from Israel*. Retrieved from The Week: <https://www.theweek.in/news/india/2020/07/14/why-indian-army-is-eyeing-amini>
- Dominguez, G. (2020, January 06). *Pakistan Navy inducts LUNA NG UAVs and second ATR-72 MPA*. Retrieved from Janes: <https://www.janes.com/defence-news/news-detail/pakistan-navy-inducts-luna-ng-uavs-and-second-atr-72-mpa>
- Dominguez, G. (2021, January 27). *Pakistan receives five CH-4 UAVs from China*. Retrieved from Janes: <https://www.janes.com/defence-news/news-detail/pakistan-receives-five-ch-4-uavs-from-china>
- DS, M. (2019, April 01). *India gets surveillance satellite*. Retrieved from The Hindu: <https://www.thehindu.com/sci-tech/technology/pslv-isro-emisat-launch-from-sriharikota-on-april1/article26699077.ece>

DS, M. (2019, April 01). *India gets surveillance satellite*. Retrieved from The Hindu: <https://www.thehindu.com/sci-tech/technology/pslv-isro-emisat-launch-from-sriharikota-on-april1/article26699077.ece>

ETD. (2020, July 0). *Israel vs China: How Are Israeli Drones Battling Chinese UAVs On India-China Border?* . Retrieved from The Eurasian Times: <https://eurasianimes.com/india-china-battle-of-drones-how-israel-built-indian-drones-stack-up-against-chinese-uavs/>

Falco Tactical Unmanned Aerial Vehicle. (2009, September 29). Retrieved from Airforce Technology: <https://www.airforce-technology.com/projects/falco-uav/>

Fareed, R. (2019, February 14). *Kashmir suicide attack kills dozens of Indian security forces*. Retrieved from ALJAZEERA: <https://www.aljazeera.com/news/2019/2/14/kashmir-suicide-attack-kills-dozens-of-indian-security-forces>

FD-2000. Long-range air defense missile system - China. (2022, November 08). Retrieved from Army Recognition: [https://www.armyrecognition.com/china_chinese_army_missile_systems_vehicles/fd-2000_long_range_air_defense_missile_system_technical_data_sheet_specifications_pictures_video.html#:~:text=The%20FD%2D2000%20\(exports%20version,raids%20under%20intense%20electro](https://www.armyrecognition.com/china_chinese_army_missile_systems_vehicles/fd-2000_long_range_air_defense_missile_system_technical_data_sheet_specifications_pictures_video.html#:~:text=The%20FD%2D2000%20(exports%20version,raids%20under%20intense%20electro)

Garthwaite, A. S. (2019, September 4). *J-20 Chengdu: Mighty Dragon in the heart of China's military modernisation*. Retrieved from Air Force Technology: <https://www.airforce-technology.com/features/j-20-and-chinas-military-modernisation/>

Ghafoor, A. (2019, February 27). *Pakistan had no choice but to respond*. Retrieved from The News International: <https://nation.com.pk/27-Feb-2019/pakistan-has-capability-but-wants-peace-dg-ispr>

Hafeez Ullah Khan, I. K. (2018). *Indian Cold Start Doctrine: Pakistan's Policy Response*. *Journal of the Research Society of Pakistan* , 325-341.

Hussain, A. C. (2020, February 13). *India's Acquisition of S-400 Air Defence System: Implications For the PAF*. Retrieved from Strafasia: <https://strafasia.com/indias-acquisition-of-s-400-air-defence-system-implications-for-the-paf/>

Hussain, A. M. (2016). *Kashmir: A conflict between Indian and Pakistan*. *Research Gate* .

IANs. (2019, April 21). *Indian Nuclear weapons are not for Diwali*. Retrieved from Gulf News: <https://gulfnews.com/world/asia/india/indias-nuclear-weapons-not-for-diwali--modi-1.63471306>

Ikram, T. (2020, December 30). *China to supply 50 drones to Pakistan for defence purposes*. Retrieved from Techjuice: <https://www.techjuice.pk/china-to-supply-50-drones-to-pakistan-for-defence-purposes/>

Jaffery, S. A. (2018, January 20). *Calling the Nuclear Bluff: A Case for Pakistan's Warfighting Nuclear Doctrine*. Retrieved from South Asian Voices: <https://southasianvoices.org/calling-the-nuclear-bluff-case-for-pakistans-warfighting-nuclear-doctrine/>

Jain, S. (2019, March 11). *More firepower for IAF against China, Pakistan! Sukhoi-30 MKIs to get 5 next generation:BrahMos:NG:missiles*. Retrieved from Financial Express: <https://www.financialexpress.com/defence/more-firepower-for-iaf-against-china-pakistan-sukhoi30-mkis-to-get-5-next-generation-brahmos-ng-missiles/1512331/>

Khan, B. (2015, September 08). *BACKGROUND ON THE BURRAQ ARMED UAV*. Retrieved from Quwa: <https://quwa.org/2015/09/08/background-on-the-burraq-armed-uav/>

Khan, B. (2018, December 05). *Pakistan Reportedly Seeking FD-2000 Long Range Anti-Air Missiles*. Retrieved from Quwa: Defense Analysis grou: <https://quwa.org/2018/12/05/pakistan-reportedly-seeking-fd-2000-long-range-anti-air-missiles/>

Khan, B. R. (2021, February). *Zoom Interview*.

Khan, F. (2019, July 04). *Chinese consulate attack: BLA key suspect brought to Karachi from Gulf state*. Retrieved from The News International: <https://www.thenews.com.pk/print/493668-chinese-consulate-attack-bla-key-suspect-brought-to-karachi-from-gulf-state>

Khan, M. A. (2010). *S-2: Options for the Pakistan Navy*. *Naval War College Review* , 1-21.

Khan, M. (2018). Understanding-Pakistans-full-spectrum-deterrence. *Journal of Strategic Affairs* , 109-153.

Khattak, M. U. (2018). Evolution of New Indian Military Strategy: Implications for Pakistan. *ResearchGate* , 30.

Khattak, M. U. (2011). Indian Military's Cold Start Doctrine: Capabilities, Limitations and Possible Response from Pakistan. *Research Gate* , 01-45.

Khattak, M. U. (2011, December 25). *Indian Naval Modernisation: Implications For Pakistan – Analysis*. Retrieved from Eurasia Review: <https://www.eurasiareview.com/25122011-indian-navalmodernisation-implications-for-pakistan-analysis/>

Ladwig, W. (2007-8). A Cold Start for Hot Waters. *International Security* , 165.

Mansoor Ahmad, M. A. (2019). The Pulwama-Balakot Crisis: A Strategic Assessment. *ResearchGate* .

Marwat, Z. K. (2019, October 24). *India's \$130 billion military modernisation*. Retrieved from The News: <https://www.thenews.com.pk/print/545349-india-s-130-billion-military-modernisation>

Mearsheimer, J. (2018, July 15). Conventional Deterrence.

Milgani, S. (2019, March 17). *India, Pakistan threatened to unleash missiles at each other: sources*. Retrieved from The Reuters: <https://www.reuters.com/article/us-india-kashmir-crisis-insightidUSKCN1QY03T>

Mirza, E. (2019). *A fine Retort*. Retrieved from CASS.

Mishra, S. (2018, April 09). *Pakistan's Naval Nuclear Ambitions: Concerns and Challenges*. Retrieved from South Asian Voices: <https://southasianvoices.org/pakistans-naval-nuclear-ambitions-concerns-and-challenges/>

Nagi, M. (2019, March 8). *Navy was ready to tackle any situation in wake of Pulwama attack*. *India Today*. Retrieved from India Today: <https://www.indiatoday.in/india/story/navy-was-ready-to-tackle-any-situation-inwake-of-pulwama-attack-1480538-2019-03-18>

Naval Chief Inaugurates Naval Strategic Force Headquarters. (2012, May 19). Retrieved from ISPR: <https://www.ispr.gov.pk/press-release-detail.php?id=2067>

Nayyar. (2019, October 28). *Nuclear dangers of the naval kind*. Retrieved from Himalmag : <https://www.himalmag.com/nuclear-dangers-of-the-naval-kind/#:~:text=Submarine%20accidents-,Almost%20all%20the%20countries%20operating%20nuclear%2Dpowered%20or%20nuclear%2Darmed,total%20of%20over%20650%20lives.>

NTI. (2019, November 19). *Missiles Technology*. Retrieved from Nuclear Technology Initiative : <https://www.nti.org/learn/countries/india/delivery-systems>

Online. (2018, January 22). *Pak army prepares indigenous drone Uqab*. Retrieved from The News: <https://www.thenews.com.pk/print/271389-pak-army-prepares-indigenous-drone-uqab>

Online. (2018, January 22). *Pak army prepares indigenous drone Uqab*. Retrieved from The News: <https://www.thenews.com.pk/print/271389-pak-army-prepares-indigenous-drone-uqab>

Operation Swift Retort. (2019, February). Retrieved from <https://www.youtube.com/watch?v=RyLcZ4WIM>

P-8I Multimission Maritime Patrol Aircraft, India. (2021, November 03). Retrieved from Naval Technology: <https://www.naval-technology.com/projects/p-8i-maritime-patrol-aircraft-india/>

Pandit, R. (2020). *Ladakh face-off: India to order 2 more Israeli 'eyes in sky' for \$1 billion*. Retrieved from The Times of India: [https://timesofindia.indiatimes.com/india/india-to-order-2-more-israeli-eyes-in-sky/articleshow/77774435.cms#:~:text=Ladakh%20face%2Doff%3A%20India%20to,in%20sky%20for%20%241%20billion&text=An%20Indian%20Air%20Force%20\(IAF,Station%20at%20Hindon%20in%20Gh](https://timesofindia.indiatimes.com/india/india-to-order-2-more-israeli-eyes-in-sky/articleshow/77774435.cms#:~:text=Ladakh%20face%2Doff%3A%20India%20to,in%20sky%20for%20%241%20billion&text=An%20Indian%20Air%20Force%20(IAF,Station%20at%20Hindon%20in%20Gh)

Popham, P. (2000, March 18). *The world's most dangerous place' is already at war*. Retrieved from The Independent: <https://www.independent.co.uk/news/world/asia/the-world-s-mostdangerous-place-is-already-at-war-282458.html>

PTI. (2017, December 01). Retrieved from NDTV.

Rafale Multirole Combat Fighter. (n.d.). Retrieved from Airforce Technology: <https://www.airforce-technology.com/projects/rafale-multirole-combat-fighter/>

Ramesh, S. (2018, December 18). *ISRO to launch advanced GSAT-7A satellite for IAF and Army today*. Retrieved from The Print: <https://theprint.in/science/isro-to-launch-advanced-gsat-7a-satellite-foriaf-and-army-today/165548/>

Rehman, S. (2020, July 07). *Pakistan Sets Eyes on China's New J-35 Fighter Jet That Takes on America's Best F-35*. Retrieved from ProPakistani: <https://propakistani.pk/2020/07/07/pakistan-sets-eyes-on-chinas-new-j-35-fighter-jet-that-takes-on-americas-best-f-35/>

Report. (2018, March 30). *India's Rustom-2 Drone Makes Successful Flight a Year after Crash*. Retrieved from Defense World: https://www.defenseworld.net/news/28045/India___s_Rustom_2_Drone_Makes_Successful_Flight_a_Year_after_Crash#.YKzFaqqzblU

Report. (2019, October 14). *Pak's Indigenous Fifth Gen Fighter Completes Initial Conceptual Design Phase*. Retrieved from Air Recognition: https://www.defenseworld.net/news/25657/Pak___s_Indigenous_Fifth_Gen_Fighter_Completes_Initial_Conceptual_Design_Phase#.YKzMdaqzblU

Report. (2020, June 09). *Pakistan Navy begins constructing modern warships in coordination with Turkey*. Retrieved from Dawn: <https://www.dawn.com/news/1562426>

Report, M. (2020, September 23). *India's \$600M MQ-9B Drone Purchase Gathers Pace*. Retrieved from Defense World: https://www.defenseworld.net/news/27907/India_s__600M_MQ_9B_Drone_Purchase_Gathers_Pace__Media_Report

RISAT-2 (Radar Imaging Satellite-2). (2012, June 13). Retrieved from eoPortal: <https://www.eoportal.org/satellite-missions/risat-2>

Saberin, Z. (2018, October 05). *India signs S-400 deal with Russia sidestepping US opposition*. Retrieved from ALJazeera: <https://www.aljazeera.com/features/2018/10/5/india-signs-s-400-deal-with-russia-sidestepping-us-opposition>

Sattar, D. N. (2021, March 25). Emailed Interview.

Singh, R. (2017, February 16). *From 290 km to 450 km: India to soon test extended range BrahMos missile*. Retrieved from Hindustan Times: <https://www.hindustantimes.com/india-news/brahmos-cruise-missile-range-to-increase-to-450km-drdo-chief/story-iji2AKJBIEblDEyoxnLyKO.html>

Som, V. (2018, November 06). *INS Arihant Completes India's Nuclear Triad: 10 Things To Know*. Retrieved from NDTV: <https://www.ndtv.com/india-news/ten-facts-about-ins-arihant-indias-first-nuclear-ballistic-missile-submarine-1943121>

Su-30MKI Multirole Fighter Aircraft. (2020, May 22). Retrieved from Airforce Technology: <https://www.airforce-technology.com/projects/su-30mki-multirole-fighter-aircraft-india/>

Sudakov, D. (2010, December 02). *Russia and India successfully test world's fastest missile*. Retrieved from Pravda.ru: https://english.pravda.ru/business/116033-russia_india_brahmos/

Sultan, A. (2020, February 26). *Operation Swift Retort' and deterrence stability in South Asia*. Retrieved from Daily Times: <https://dailytimes.com.pk/564945/operation-swift-retort-and-deterrence-stability-in-south-asia/>

Unnithan, S. (2017, December 10). *A peek into India's top secret and costliest defence project, nuclear submarines*. Retrieved from India Today: <https://www.indiatoday.in/magazine/the-big-story/story/20171218-india-ballistic-missile-submarine-k-6-submarine-launched-drdo-1102085-2017-12-10>

Vikrant, I. (2020, December 20). *Ballistic missile submarine Arighat in final stages of trials, to be commissioned early 2021*. Retrieved from Pakistan Defence: <https://defence.pk/pdf/threads/ballistic-missile-submarine-arighat-in-final-stages-of-trials-to-be-commissioned-early-2021.695305/>

Yamin, D. T. (2021, February 16). Emailed Interview.