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Indian Air Force Evolving Counterforce Capabilities and Emerging Challenges for Pakistan's Security

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Abstract

India is procuring qualitatively advanced weapons. Indian Air Force (IAF) is raising mini-air-force and retrofitting fighter jets Sukhoi or SU-30MKIs, Modernizirovannyi Kommercheskiy (I) stands for India, Rafale, Tejas, MiG-29s (K) with Standoff Weapon (SOW) capabilities and procuring Airborne Early Warning and Control System (AWACS) to ensure total spectrum escalation dominance. Modernized IAF will pose serious threats to China-Pakistan Economic Corridor (CPEC) power projects, Special Economic Zones (SEZs), counterforce assets. This paper attempts to bring into limelight IAF modernization, the rationale behind Balakot surgical strike, threats to CPEC, and challenges posed to regional strategic stability. Major finding of the paper is Balakot strike exposed IAF's weaknesses. India will complete procurement of sophisticated military hardware by 2025. It will create sense of security and full-spectrum escalation dominance in New Delhi-based strategic planners. India will inevitably execute/operationalize preemptive strikes. It creates fear of all-out war resulting in deterrence breakdown and endangering regional strategic stability.

Key Words: CPEC, defence, economics, India, Pakistan, security, air force

INTRODUCTION

Indian Air Force (IAF) was established on October 8, 1932 as British Empire's air force. Modern day IAF has 1700 aircrafts including 900 combat aircrafts. It has 10 C-17 Globe-master aircrafts (Singh, 2019). IAF is ranked world's 4thlargest air force. It has approximately 170,000 personnel and over sixty airbases ("Indian Air Force," 2020). Core responsibility of the IAF is to protect national frontiers and interests in collaboration with other branches of the armed forces.

Global community is fighting Covid-19 while Indian politico-military leadership is obsessed with war hysteria. India announced $ 66. 9 billion US as defence budget for the fiscal year 2020-21. It is an estimated 9.4 percent increase from the last year's defence budget (Behera, 2021). New Delhi will allocate this huge amount for procuring, developing, and modernizing military hardware. Indian armed forces continuously demand from the government to equip it with sophisticated

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military hardware. India claims that it is modernizing and procuring advance military weapon system to deter China. India makes this rhetoric at systemic level. However, India is competing with Pakistan at the tactical level and bulks of the Indian military assets are deployed on India-Pakistan border.

Indian Air Chief Marshal BS Dhanoa in September, 2018 said IAF "is losing air dominance against Pakistan" (Chopra, 2019). China and Pakistan are strategic partners both "have dangerous air assets," (Chopra, 2019). India can face a two-front war with its nuclear rivals in the future. IAF's ability to maintain its current pace to induct new aircrafts to upgrade in-service fighter jets will enable it to barely hold twenty-two squadrons by 2035. It will have to de-induct nine squadrons in 2035 yet 4th generation 14 squadrons of SU-30MKIs and two squadrons of 4.5th generation of Rafale will enjoy a strategic edge over present-day JF-17 Thunder combat jets. On May 7, 2019 an article brought into limelight weaknesses of the IAF that it has a ratio of 1.5 pilots per aircraft. It prevents IAF pilots from carrying out additional sorties due to human limitations. IAF squadron vis-à-vis Pakistan are depleting consequentially depending upon simulation instead of actual bombing practice. Contrarily Pakistan Air Force (PAF) has a 2.5 ratio per aircraft. PAF can carry-out day and night operations and additional sorties (Philip, 2019). IAF requires 42 squadrons while presently it has thirty squadrons. Each consists of 18-20 fighter jets. IAF lacks approximately 200 fighter pilots and 250 fighter aircrafts to overcome this deficiency. SU-30MKIs twin seater fighter aircraft (Philip, 2019) requires additional pilots. Depleting force structure haunts Indian decision making circles as it cannot be considered sufficient for defensive warfare.

IAF encompasses twelve squadrons of frontline SU-30 MKIs, six squadrons of Jaguars, four of the MiG-21 Bison squadrons, three each of Mirage-2000 and MiG-29 UPG, and one of the Tejas light combat aircraft (Thapar, 2020). The next de-induction is due for the four MiG-21 Bison squadrons in 2024-25 (Joshi, 2020). IAF lacks the required strength yet an Indian fighter aircraft entered into Pakistan's airspace on February 26, 2019 to destroy an alleged terrorist hideout deep in Khyber Pakhtunkhwa province. On February 27, 2019 PAF's counterattack known as operation swift retort was resisted by the IAF. It led to shooting down of Wing Commander Abhinandan's MiG-21 Bison. PAF was backed by SAAB Airborne Warning and Control System (AWCS), and beyond visual air-to-air missile. Balakot attack/Operation Swift Retort was the first time after 1971 war that India-Pakistan air forces were engaged.

Indian strategists claim that Abhinandan's plane was shot down because he could not hear orders from the command center to retreat (Philip, 2020-c). Indian Prime Minister Modi proclaimed that India was feeling the absence of French multirole fighter aircraft Rafale. Results would have been different if IAF had Rafale fighter jets ("If India had," 2019). Likewise, former IAF Chief BS Dhanoa asserted that the situation would have been different on February 27, 2019 if Abhinandan would have Rafale ("Had Abhinandan Varthaman," 2020). Pulwama-Balakot strike emboldened Indian strategic community to claim that new-normal has been established- India was successful in exploiting the space below the nuclear threshold at a tactical level and punishing Pakistan. Proclamation of "Qatal-ki-Raat" by Modi, the detection of Indian submarine by Pakistan navy and Pakistan's countermeasures cannot be forgotten. During the crisis, Prime Minister Imran Khan warned India of Pakistan's punitive retaliation. The dangerous course of the crisis established that non-state actors may lead New Delhi-Islamabad to fight a full-scale war in the future. It is safe to

assert that India can use terrorism as a pretext to wage war against Pakistan in the future after consolidating its conventional superiority. India will determine time, date and targets in Pakistan as per its convenience to secure first-strike advantages. Worrisome aspect of Indian adventurism is neither conventional nor nuclear deterrence works at tactical levels. Fragile deterrence will consequentially breakdown in future crisis. India is planning for a limited war. Military planners are enhancing Indian armed forces offensive capabilities through war games and induction of offensive military capabilities. Primary aim of IAF's strategy is to carryout swift offensive operations at tactical levels against Pakistan.

The central objective of this paper is to bring into limelight the IAF modernization program and connect it with security challenges posed to Pakistan's sovereignty. The first section of the paper briefly discusses IAF quest for transfer of advanced military technology and force modernization. Second section discusses IAF fighter crafts and their potential. This article highlights IAF modernization and compounding challenges for Pakistan's security.

2018 INDIAN AIRFORCE EXERCISES: PERFECTING WAR FIGHTING SKILLS

IAF lately was performing a secondary role to support army. IAF modernization programme aimed at projecting India a global power. Indian decision makers focused their energies to evolve the IAF as an indigenous force able to perform broad spectrum operations. Indian strategic planners want to solidify IAF's defenses against Pakistan. It demonstrated combat readiness and synergy among its armed forces through various exercises. Most notable exercise in this regard was Gagan Shakti exercises conducted from April 8-22, 2018. It involved 1,400 officers and 14,000 men wherein 11,000 sorties including 9,000 conducted by fighter planes (Philip, 2019). Exercises were carried out to test the efficacy of IAF's combat plans. The central objective of these exercises, was to test its operational plans for fighting two-front war. Critical evaluation and closer look at these exercises help the readership to understand that the prime objective of IAF was to strike terror into the hearts of the enemies. It wanted to convince the enemy that IAF is capable of destroying enemy fuel depot, radars, AWACS aircrafts, munition depot, advancing mechanized infantry, enemy bunkers near border, runways, ships, and nuclear weapons depots. Weak point of this exercise had been simulations. Pilots did not have actual exercise to drop bombs against designated targets. Secondly, IAF had single high altitude ranges. It had one Tosa Maidan range in illicitly Indian occupied Jammu & Kashmir (IHK) in violations of United Nations Security Council (UNSC) resolutions prior to exercise Gagan Shakti. It was taken under control by the state government. IAF therefore requested Indian government for two high altitudes ranges one each in Ladakh area and in Arunachal Pradesh. Western Command uses SK range near Halwara in Indian Punjab (Philip, 2019).

India conveyed a clear message to Islamabad that IAF had strengthened its defense against PAF. Presumably, Indian armed forces will mount the scale of such attacks in future if it succeeds in ensuring escalation dominance against Pakistan. New Delhi in this background evolved defence ties with technologically advanced Western states to purchase, and manufacture under license modern weapon system and convince the seller to transfer robust technology to India. Transfer of technology is part of Indian government's "Make in India," drive. Militarily advanced countries view India as a major market. Consequentially, these advanced countries compete to dominate this lucrative market to develop military hardware in partnership with India. Moscow is one of the most

trusted allies of New Delhi. It is offering transfer of military hardware or advance technology to India without any strings attached.

IAF modernization programme encourages Indian strategic planners to issue bellicose statements. General Rawat proclamation endorses abovementioned claim. On July 26, 2019 during his visit to Dras sector, General Rawat while referring to 1999 Kargil limited war, warned Pakistan, "Don't do it. Misadventures are normally not repeated. You'll get a bloodier nose next time," ("You will get," 2019).

Inferences Drawn from IAF's Balakot Attack

IAF leadership firmly believes modernization program is gradually shifting balance in Indian favour. Balakot strike was carried out to send a stern message to Pakistan's strategic planners and change Pakistan's behaviour through compellence. stand-off weapon (SOWs), capabilities, and blindfold enemy pilots are all at the initial stages, yet IAF leaders are threatening Pakistan. On August 20, 2019 the then Air Chief Marshal BS Dhanoa in a bellicose statement alleged Pakistan of misadventure and warned that IAF was on alert ("Air Force Chief," 2019). Dhanoa believes PAF pilots lack abilities to destroy Indian targets with precision strike. He also believes in gap between the air forces of the two countries. A year after Pulwama-Balakot crisis, Dhanoa proclaimed PAF uses 1st generation ammunition while India uses 3rd generation ammunitions. Retired Air Marshall revealed Indian aggressive designs by stating that Indian armed forces were deployed at forward positions against Pakistan for an "all-out escalation" (Gupta, 2020). The conclusion can be drawn from Balakot attack i.e. India is breaking established norms of Cold War era.

1. Indian decision-makers were ready for horizontal escalation of the conflict. It is against the norms of the rational decision-making approach and the logic of nuclear deterrence theory. Statesmen are considered rational decision makers, they represent states and avoid wars. Nuclear deterrence theory emphasizes that nuclear rivals do not confront because nuclear weapons result in mutual destruction; hence war should be avoided.
2. Dhanoa's statement affirms that Indian decision-makers challenged the foundations of credible nuclear deterrence based on capability, credibility, and communication. Pakistan demonstrated its ability by testing its nuclear devices in on May 28 and 30, 1998 (Medalia, 2011) in response to Indian nuclear tests conducted on May 11 and 13, 1998 ("National technology day," 2020). Pakistan has developed air, land, and submerged platforms to deliver nuclear warheads against their Indian targets. The sole purpose of Pakistan's nuclear weapon programme is to deter and, if required, carryout punitive nuclear retaliation against India. Yet, Indian strategic planners were ready to wage an all-out war against Pakistan.
3. Dhanoa's proclamation negates ironclad law established by nuclear deterrence theory. For this reason, Bernard Brodie, in 1946, rightly stated that "thus far the chief purpose of our military establishment has been to win wars. From now on, its chief purpose must be to avert them. It can have no other useful purpose," (Brodie, 1946).
4. India pursues the policy of power maximization to ensure full spectrum escalation dominance- capable of escalating and dominating the conflict at every level- in South Asia. New Delhi rejects cooperation instead, it had adopted a coercive policy towards Islamabad. Intimidation that Indian armed forces were ready for an all-out escalation rejects Brodie's concept of basic deterrence (Brodie, 1959). Brodie believes possession of nuclear weapons deters external

threats posed to state security. Contrarily, Balakot attack was launched in violation of the concept of basic deterrence.

5. Indian aggressive behaviour, weapons procurement, and the weapons modernization programme can be understood in the light of offensive realism. India aspires to remain unchallenged and expand its geography by invading its neighbours. The suspension of Article 370 on August 5, 2019, on September 30, 2019 ("Article 370: What," 2019) IAF new Air Marshall R. K. Bhaduria commented on Prime Minister Imran Khan's statement of not using nuclear weapons. Bhaduria asserted "that is their understanding of nuclear aspect. We have our own understanding, our own analysis," ("New Indian Air," 2019). On December 15, 2019 former India Air Chief B.S. Dhanoa setting aside inherited dangers of crisis escalation and conventional war intimidated that IAF would have attacked Pakistan army's forward posts and brigades if PAF would have attacked Indian military targets ("India was ready," 2019). On December 18, 2019 the then Indian Army Chief Bipin Rawat in an aggressive tone, threatened that "situation along Line of Control (LOC) can escalate." Rawat stated that "The army is maintaining a high level of operational readiness, with detailed plans chalked out to cater for different contingencies," (Gul, 2019). On December 29, 2019 General Rawat proclaimed that Indian military is preparing for two-front war ("Prepared for," 2019). On January 11, 2020 Indian incumbent Army Chief General Naravane in his first press briefing threatened, "to take control of Azad Kashmir" if Indian parliament orders ("Indian forces can," 2020).

   Bellicose statements from Indian top military leadership and adventurism increase suspicions, security dilemma and demands war preparedness. It dents fragile strategic stability, increases the probability of crisis, and mishandles crisis and war, leading to nuclear exchange.

IAF Procurement of Modern Aircrafts

Early Warning/ AWACS

PAF utilized AWACS in operation swift retort to ensure strategic edge over IAF. PAF also placed an order to buy three additional Saab-2000 early warning aircrafts (Pabby, 2019). New Delhi lodged a diplomatic protest to Swedish government for the sale of early warning plane. Eyes and ears in the air are critical for a nation's security. Early warning and control systems fulfill this requirement. Currently, India lacks required numbers of airborne warning and control systems. In post-operation swift retort period, IAF realized Indian decision making circles to speed up the process of procuring AWACS. Presently, India operates three Israeli Phalcon AWACS that can cover Sino-Pak borders for twelve hours each day. Israeli radars are mounted on Russian A-50 Platform. It operates three units of Netra Airborne Early Warning and Control System (AEW&CS) mounted on Embraer aircrafts.

Defence Acquisition Council (DAC) approved the acquisition of two airbus 330s. Defence Research Development Organization (DRDO) and the IAF will work jointly to convert them into airborne control system ("IAF to purchase," 2020). The process to overcome the bureaucratic hurdles and procure two Phalcon AWACS is underway. DAC took steps in the right direction to boost IAF capabilities vis-à-vis the enemy. IAF during crisis, will jam PAF jets radio signals and blindfold pilots to easily become prey to IAF's Beyond Visual Range (BVR) air-to-air missiles.

Induction of AWACS will pose serious challenges to and dent Pakistan's security. However, procurement and induction of the Phalcon AWACS will require three years. Presently IAF requires

eight AWACS aircrafts to ensure round the clock surveillance in the sky (Sagar, 2020). In January, 2019 DRDO decided to deliver Embraer-mounted AWACS to IAF. Induction of Embraer-mounted early warning aircraft in IAF will help guide Indian pilots operating fighter planes and helicopters amid conflict (Gupta, 2020). An early warning system will provide situational awareness to Indian pilots regarding threats around them e.g. incoming enemy missiles, fighter planes, unmanned aerial vehicles (UAVs), and helicopters. It will be used for reconnaissance, photos, and spying against Pakistan. IAF will have knowledge of PAF's surface-to-air missile (SAMs) installations, intermediate range ballistic missile deployments (IRBM), nuclear installations, radar deployments and military maneuvers. It is safe to claim that enemy's ability to gather ground and aerial information will provide strategic edge to IAF. The ability to detect Pakistan's communication and situational awareness will enable Command, Control and Communication Center (C3) to guide Indian fighter planes and combat helicopters pilots in evading dangers at the theater and tactical levels. C3 ability to penetrate enemy's defense and communication lines will result in serious loss of secrecy and confidentiality. Being aware of the number of enemy's fighters, speed, direction, and distance, early warning system will communicate this information to Indian pilots. C3 will prepare and provide guidance to Indian pilots for appropriate counter-responses. IAF's ability to monitor Pakistan's tactical and operational levels on a daily basis will make Pakistani defence vulnerable. It will encourage Indian adventurism and provocative actions under Land Warfare Doctrine (LWD) against Pakistan. The substance of the matter will promote preemptive strikes by Indian land, air, and missile forces against Pakistan's key counterforce installations with pinpoint accuracy.

SU-30MKIs

In 2015, Russian SU-30MKI manufacturer expressed its willingness to transfer 332 critical and non-critical aircraft components to India. It includes Electrical & Electronics System, Mechanical System, Instrument System, Radio and Radar to Indian Line Replacement Units (LRU). Hindustan Aeronautical Limited (HAL) manufactures the aircraft under the license held talks with Sukhoi manufacturer to transfer LRUs under transfer of technology agreement ("Russia offers Su-30MKI," 2015). Newly 222 SU-30MKIs developed by HAL and inducted by the IAF are assembled in India as HAL imported knocked-down kits from Russia (Pandit, 2018). HAL imports nut, bolt and even screws from Russia to locally build 4thgeneration fighter plane worth Rs 450 crore. HAL produced jet is Rs100 crore costlier than Russian manufactured jet.

Indian Minister of State for Defence Subhash Bhamre explained that the cost increases due to license fee, additional modifications required in the jet to fulfill Indian needs, low volume of production of SU-30MKIs, and import of raw material from Russia ("IAF's Su-30MKI costlier," 2010). These additions have been made in India specific SU-30MKIs to fulfill IAF requirements of operational capability. Manufacturing of SU-30MKI consists of four phases. In Phase-I, the aircraft had to be built from knocked-down kits by HAL. In Phase-II, buyer builds the aircraft from semi-knocked down kits (SKDs). In Phase-III and IV, the indigenization process takes place (Pandey, 2019). This project, once matures, will reduce manufacturing and maintenance cost of the fighter aircraft. HAL will enable IAF to overcome and sustain fighter jets deficiencies. Crux of the matter is that IAF will meet the requirement of sanctioned 42 squadrons and increase the strength of a squadron from 18-20 to 25 or more aircrafts. Consequentially, IAF will outnumber archrival PAF by manufacturing SU-30MKIs domestically under ambitious "Make-in-India" ("Make in India," n.d.)

programme. Firstly, Indian decision makers clearly regard Pakistan as a threat. Secondly, it wants to widen the gulf at strategic and conventional levels by procuring and developing domestically produced advanced weapons system. Thirdly, New Delhi aims at tilting strategic autonomy –term primarily used for tilting the airpower balance in Indian IAF favour- in IAF's favour. This necessity stems from PAF punitive retaliation to Balakot strike on February 27, 2019 ("PAF celebrates 2nd," 2021) wherein India new normal was checkmate. Instead questions were raised how IAF will counter two front war in future?

Indian government is rigorously following the agenda to raise robust airpower in South Asia. Firstly, it fulfills New Delhi's agenda to dominate South Asia's airspace. Secondly, advance IAF endows New Delhi to project its power beyond South Asian region. Thirdly, apparently modernization programme is part of the agenda to fill the gaps highlighted by February 27, 2019 dogfight. Careful introspection of IAF by Indian defence planners resulted in making vow to raise the IAF as one of the advanced air forces in the world. Worrisome aspect of Indian pursuit is that IAF will enjoy escalation dominance vis-à-vis PAF. Certainly, balance of power (BoP) will tilt in India's favour. Conversely, IAF can operationalize offensive operations against Pakistan to destroy counterforce conventional assets using the pretext of alleged terrorist training camps. In worst case scenario, IAF can emulate Israeli air force operation "Outside the Box" wherein Israeli pilots destroyed Syrian nuclear reactor. IAF can target nuclear reactors, laboratories, weapon depots, and nuclear delivery vehicles in Pakistan. IAF pilots participated in Exercise Vayu Shakti in February, 2019 conducted in Pokhran Range, Rajhastan where Indian pilots demonstrated their abilities to hit ground targets in enemy territories (Shukla, 2019). IAF targets include convoys, airports, air force bases, runways, nuclear facilities, major bridges, tanks, radar stations, railway yards, oil storages, refineries, Command Control and Communication Centers (C4) and armed forces headquarters. BrahMos-A equipped 36, SU-30 MKIs can inflict heavy damage to Pakistan in surprise or preemptive strikes in the future. SU-30MKIs can withstand the electromagnetic pulse of a nuclear blast. Rakesh Krishan Indian analyst anticipates SU-30MKI can drop nuclear capable BrahMos-A against targets in Pakistan in preemptive strikes (Krishnan, 2019). Indian tri-Services Strategic Forces Command sought approval from Cabinet Committee on Security to raise a mini air force comprising 42 aircrafts for delivering nuclear warheads.

In April, 2020 IAF completed the induction of 272 SU-30MKIs produced by HAL ("Indian Su-30MKI," 2020). It will produce another 72 under license at Ozar plant in Nashik facility in Indian state of Mahrashtra. In 2016, the Indian government approved forty-two SU-30MKIs to be equipped with BrahMos-A (Gady, 2019) 2.5 tons supersonic cruise missiles (Pandit, 2020) but to date, only two aircrafts are retrofitted. This air-to-air missile has a range of four hundred kilometers. SU-30MKIs will be equipped with SOW capabilities. IAF can hit counterforce (military) targets and counter-value targets (cities/urban centers) in enemy territories with pinpoint accuracy from Indian airspace. Consequently, chances of an aerial fight with enemy pilots and enemy's surface-to-air missiles threats posed to Indian aircrafts will be reduced. Contrarily, PAF jets will have to enter Indian airspace to destroy targets with increased threats of being shot down by surface-to-air missile. IAF's possess the capability to engage and destroy PAF fighter jets with beyond visual range missiles and in case PAF jet is hit, pilot will have to eject and land in the enemy territory. Certainly, pilot's capture will result in international humiliation. Raad-II air-to-air missile with 600 KMs range (2020) successful induction will reduce threats posed to PAF.

SU-30MKI firing BrahMos-A missile from Halwara with a speed of Mach 2.8 can destroy targets in Bhawalpur within less than 60 seconds. SU-30MKIs and the mini-air force equipped with SOW capabilities will pose paramount threats to Pakistan's counterforce targets. IAF can inflict heavy damage to a variety of targets, including Pakistan's nuclear, military, and air force facilities through its Western Command.

IAF Potential Counterforce Targets

a. Nuclear Facilities

India violated Shimla Accord and the Indus Water Treaty. New Delhi may violate the agreement on the prohibition of attack against nuclear facilities. In this case Atomic Energy Minerals Center Lahore, Uranium Extraction and Plutonium Production Facility Dera Ghazi Khan, Plutonium Production Facility Kushab, Plutonium Reprocessing Facility Chashma, Uranium Enrichment Facility Kahuta, Nilore Plutonium Reprocessing Plant, and Gadwal Uranium Enrichment plant can come under Indian attacks.

Source- http://www.indiandefencereview.com/wp-content/uploads/2012/02/Pakistan_defence_Map.jpg

b. Road-Mobile Missile Launcher Garrisons

Gujranwala Garrison, Pano Aqil Garrison, Sargodha Garrison, and Bhawalpur Garrison can be used.

c. Missile Complexes

Missile Complexes include Tarnwal Missile & TEL Production Facility, Shakardara Missile development & production facility, National Development Complex for TEL production & assembly Fateh Jhang and Warhead production facility Wah.

d. Air Bases

i. Major Air Bases

Major Air bases include, Rafiqui- Shourkot, Mushaf airbase Sargodha, Mianwali, Peshawar, Chaklala, Kamra and Risalpur.

ii. Forward Air Bases

Murid, Lahore, Faisalabad, Vihari, Multan and Shahbaz.

iii. Advanced Attack Bases

Rajanpur, Rahim Yar Khan and Kohat.

Sukhoi carrying BrahMos-A missile at least 150 KM away from Karachi in international airspace can destroy important counterforce targets near coastal areas of Pakistan (Krishnan, 2019). Presumably, in the future, for India-Pakistan crisis, IAF will be authorized to horizontally escalate conflict by launching surprise attacks from international airspace in the South of Pakistan. Plans to retrofit SU-30MKIs with Irbis-E radar and EL-41 engine are under consideration. Irbis-E radar will increase situational awareness and electronic warfare capabilities enabling Sukhoi to neutralize enemy stealth aircrafts from 58 KMs to as far as 90 KMs.

On January 20, 2020 IAF raised a special squadron of SU-30MKIs in Thanjavur, Southern India's Tamil Nadu state (Pandit, 2020). Presently, only four Sukhois are deployed while the full strength of eighteen Sukhois will be deployed at the end of 2020 or in early 2021. Eight out of eighteen fighter crafts will be armed with BrahMos-A missiles. Deployment of Sukhoi at Squadron 222 or Tiger sharks will enhance IAF capability to deter external threats emanating from aircraft careers in the Indian Ocean region. Tiger sharks is raised and deployed to keep an eye on growing Chinese naval presence in the Indian Ocean. It inscribes New Delhi's consciousness of Chinese naval presence in Indian proximity and attempts to deter threats posed to Indian sovereignty. Sukhoi is suitable for carrying out day-night operations and enjoys prestigious status in the IAF. It can destroy enemy targets with precision strike, and capable of carrying out strikes in enemy territory, maritime missions and it is regarded as AWACS killer. This fighter jet can be equipped with Spice-2000, K-100 missile, BrahMos-A supersonic cruise missiles, R-77 and Astra guided air-to-air missiles ("Indian Su-30MKI," 2020).

First 11 squadrons of SU-30MKIs were deployed on the western and eastern fronts, from Halwara, Pune Maharashtra, Jodhpur, Hindon Ghaziabad Utter Pardesh and Sirsa to Bareilly, Tezpur Assam and Chabua, to cater for Pakistan and China (Pandit, 2020). IAF replaced MiG-29s stationed at Srinagar base with SU-30MKIs. The 51st Squadron of MiG-21 Bison is also deployed at Srinagar Air Force Station. IAF deployment of Sukhoi in Srinagar is aimed at confronting Sino-Pakistan air forces. Srinagar is an important station due to its proximity to Azad Kashmir across Line of Control, Islamabad, and Chinese border.

MiG-29s

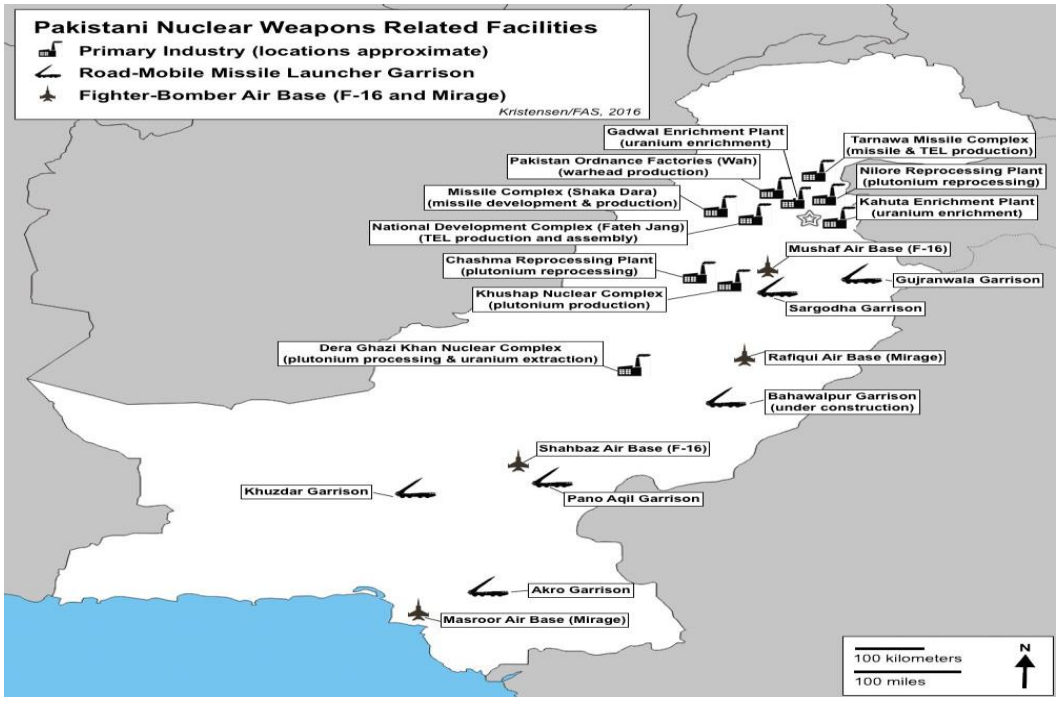
India is using three squadrons of MiG-29s. It was inducted in the IAF in 1985 ("Air Defence Aircraft," 2014) and presently, India is modernizing MiG-29s with Russian assistance. Upgradation process will equip the aircraft with modern radar to track the enemy at a wide range, increase its speed and service life up to forty years (Sibbal, 2020). Consequentially, it will be comparable to fourth generation fighter crafts.

IAF has deployed several jets 100 KMs away from Pakistani border at Adampur airbase near Jalandhar. Jet can take off within five minutes. The proximity of the Adampur and readiness of MiG-29s poses threats to Pakistan's important counter-value and counterforce targets situated at the Eastern border near India.

Counter-value Targets

a. It includes important cities including Lahore, Phoolnagar, Shakargarh and Sheikhupura. IAF can also easily target military garrisons including Gujranwala, Lahore and Sialkot.

b. 1320 MW Muzafargarh Coal Power Project, Sahiwal 2x660 MW Coal Fired Power Plant, 1000 MW Bhawalpur Solar Park, 1320 MW Coal Based Project at Rahim Yar Khanand Multan-Sukhar section of Peshawar-Karachi Motorway (it can be used as runway by PAF).



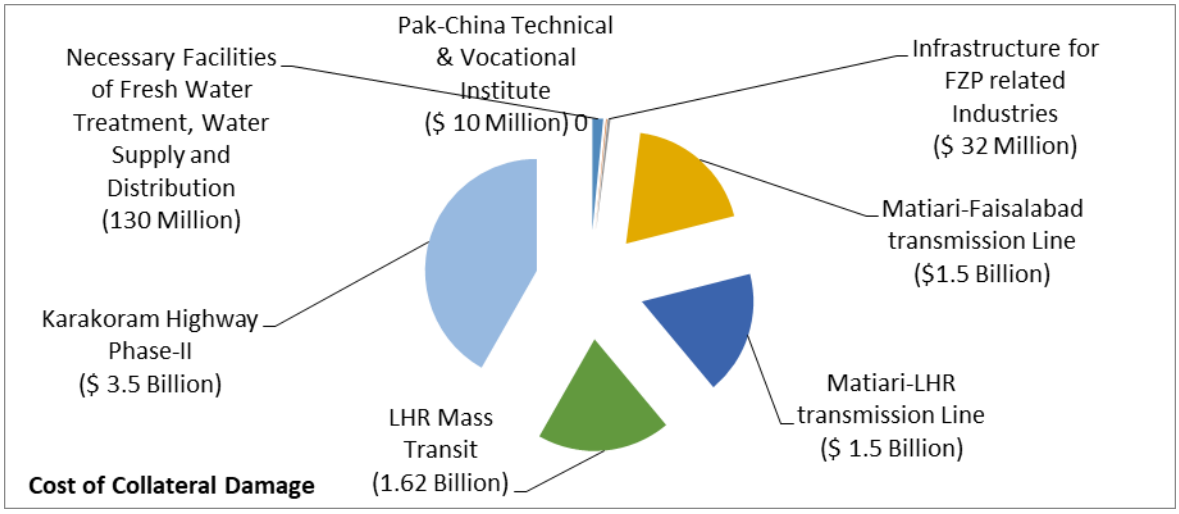
Source:.https://fas.org/blogs/security/2016/11/pakistan-nuclear-infrastructure/

Indian economy enables it to pour huge financial resources into its defence sector. Enormous defence budget helps New Delhi to procure a modern weapon system, carryout research and develop sophisticated weapons in pursuit to tilt the strategic balance in its favor and maintain upper hand in the region.

In August, 2019 there were speculations that Indian government desires to procure 21 MiG-29s from Russia. This proposal was under consideration owing to IAF depleting strength ("IAF plans to," 2019). Purchase of 21, MiG-29s and up-gradation of another 59 MiG-29s was approved on July 2, 2020 owing to Sino-Indian standoff in Ladakh (2020). Defence Acquisition Council issued clearance for the purchase of 248 MK1 Astra all-weather BVR air-to-air missiles including 100 for MiG-29UPG (2020). Indian analysts and IAF Air Chief Marshall RKS Bhaduria aspires to regain strategic edge over PAF by inducting BVR air-to-air missiles. IAF officials intend to increase the current range of 100 KMs (Philip, 2020).

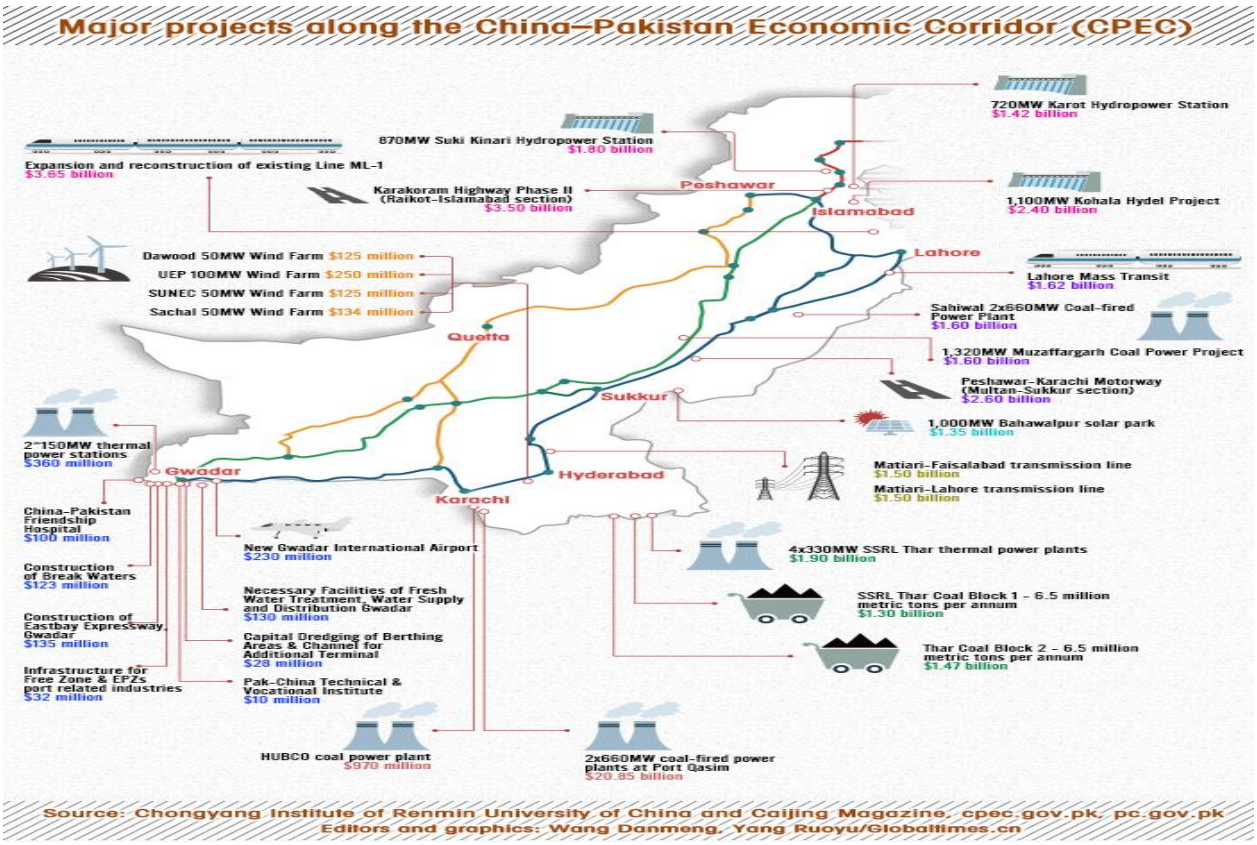
IAF modernization programme focuses on the acquisition of state-of-the-art combat fighter planes. It aspires to achieve air dominance and knockout enemy in future conflicts. MiG-29s are considered to be superior to PAF's F-16Cs and JF-17s. Indian navy is operating MiG-29Ks while New Delhi is purchasing three dozens of MiG-29 Ks for its navy (2020) which are equipped with modern radar sensors. It is believed to be capable of firing R-77 short and beyond visual missiles. IAF can destroy targets inside Pakistani territory without being engaged by Pakistani Air Defence System. Despite being larger air force, asymmetric strategy of hit and run favours IAF. IAF executed asymmetric strategy in Balakot strike. MiG-29 aircraft is lighter than SU-30MkIs. It has seven hard points to

carry weapons with midair refilling, and larger fuel tanks with a range of 2,100 KMs. Presumably, IAF will prefer to use its aircrafts in operations against Pakistan because missile attacks will inevitably result in an escalation of conflict.



Source: Cost of the above projects is mentioned in the map below.

Presently, IAF has fourth generation fighter planes. Covid-19 has delayed the delivery of Rafale 4.5th generation fighter planes to India.



Rafale Multirole Combat Aircraft

India signed Euro 7.87 billion deal in September, 2016 to procure 36 Rafale 4.5 generation multirole fighter jets from France. Indian specific Rafales will enhance features conversely. It will be ready by September, 2021 ("Three Rafale jets," 2019). IAF procured the first batch encompassing four Rafale multirole fighter crafts on October 8, 2019 in France. It includes three twin seater trainer aircraft and one seat fighter craft. First batch of seven Indian fighter pilots have completed their training in France. Training for the second batch is delayed owing to lockdown in France.

First batch of four Rafales was received in July and inducted in September 2020 in IAF. First batch was commissioned into 17 Squadron "Golden Arrows" in Ambala (Philip, 2020-a). This aircraft has fourteen spots to carry armament. More ammunition means providing more chances to IAF pilots to destroy enemy fighter jets. Rafale can be equipped with Meteor air-to-air missile. It has a range of 180 KMs. Once Meteor is fired at the enemy within the range of 150 KMs, it will have no escape. Present fleet of Indian aircrafts can carry-out three sorties a day. However, Rafael can carry-out five sorties a day. It requires approximately forty minutes for destroying ground targets and requires 25 minutes for air defence missions (Patni, 2018).

India spent billions on procurement of India specific Rafales. However, this investment is sunk before it could have been put to test against PAF. China plans to equip Pakistan's JF-17s underdevelopment blocks with new large holographic wide-angle head-up display and integrated cockpit display primarily used in Chinese J-20 fighter jets (Ticku, 2020). Additional features will provide situational awareness to pilots. Chinese media reported that the first flight of JF-17 Block-3 equipped with off-the-shelf technologies was flight tested in mid-December, 2019. Enhanced features include missile approach warning system used in J-16, J-20 and J-10C. Besides, new JF-17s will be equipped with Chinese PL-15 Missiles with a range of 400 KMs. It can neutralize enemy refueling aircrafts and AWACS aircraft (Makichuk, 2020). PL-15 Missile is an air-to-air missile system once retrofitted will provide SOW capabilities to PAF. It is considered a serious challenge yet to be procured French manufactured India specific Rafales multirole fighter jets. Enhanced features will increase efficiency of fighter jet and pilot's morale amidst encountering the enemy. Inevitably, Pakistani pilots will concentrate more on combat instead of becoming an easy prey. Once JF-17 Block-3 is inducted in PAF it will restore the BOP in South Asian skies.

Mirage 2000

Presently three squadrons or 49 aircrafts of Mirage 2000 are in service in IAF (Saxena, 2019). IAF signed $ 2.1 billion deal with Dassault Aviation and Thales for the up-gradation of 51 Mirage 2000 aircrafts to Mirage 2000-5 MK. Upgraded versions will have night vision, EW suit, glass cockpit and multi-mode multi-layered radar (Saxena, 2019).

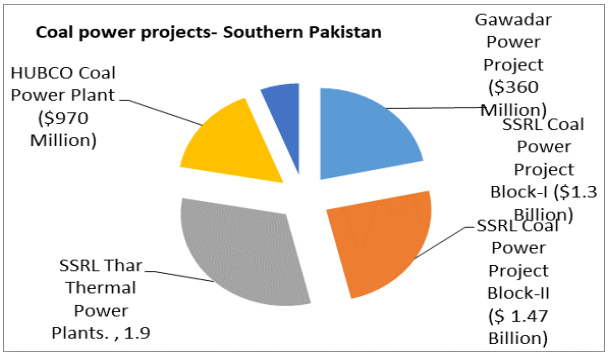
Tejas Light Combat Aircraft

Tejaslight combat aircrafts (LCA) will be retrofitted with supersonic cruise missile BrahMoas Next Generation (NG). NG weighs 1.5 tons, has operational range of 300 KMs, and travels with Mach 2.9 towards its targets. NG will have a maximum speed of Mach 3.5. It is called lighter version. Teja LCA will carry two NG missiles while SU-30MKIs will carry five NG missiles (Jain, 2019). Lighter weight means that more IAF fighter jets will acquire SOW capabilities vis-à-vis Pakistan. NG can be fired from multiple platforms. Stealth features will make it difficult for the enemy defense systems to

track and shoot it in the midcourse. IAF jets including Tejas carrying NG missiles will pose considerable threats to Pakistan's AWACS, General Headquarters (GHQs), Naval Headquarters (NHQ), Strategic Plans Division (SPD) andkahuta research laboratories (KRL). Long range air-to-air missiles or SOW capabilities will pose serious challenges to under development power projects and Exclusive/Special Economic Zones (SEZ) operating under China-Pakistan Economic Corridor (CPEC) in the future.

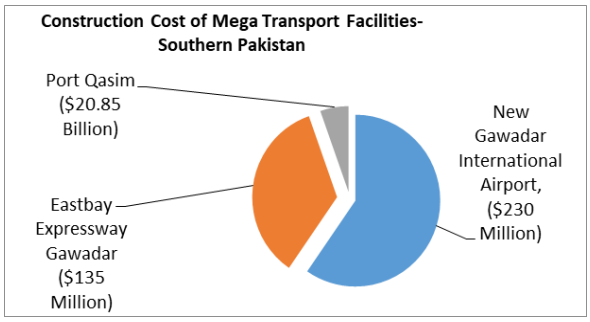
IAF attack from international airspace in South of Pakistan can be targeted against,

Counter-value targets



a. Power Projects, SSRL Coal Power Project Block-I, SSRL Coal Power Project Block-II SSRL Thar Thermal Power Plants. Port Qasim and Gawadar power project. SUNEC 50 MW Wind Farm, Sachal 50 MW Wind Farm, Dawood 50 MW Wind Farm and UEP 100 MW Wind Farm.

b. Special Economic Zone, SEZ in Khairpur, SEZ Dhabeji, and Free Zone & Port Related Industries.



c. New Gawadar International Airport and Eastbay Expressway Gawadar (PAF can use it as runway).

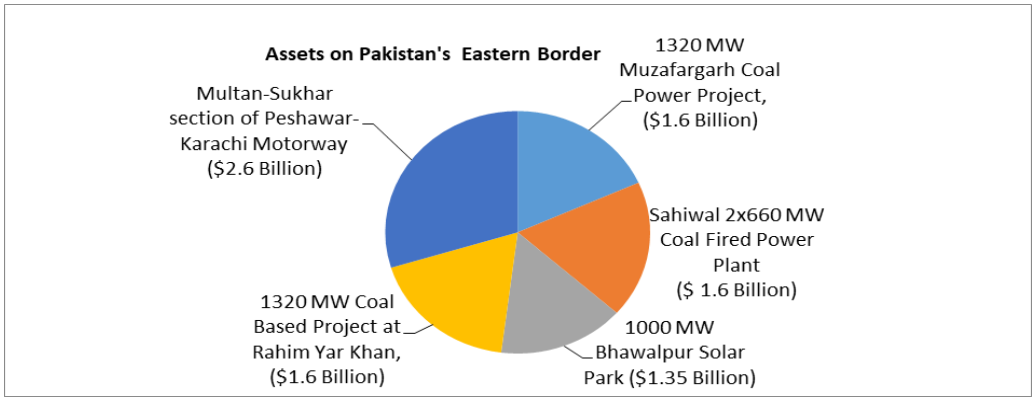
Counterforce Targets: IAF will have a wide range of options to attack Pakistan's counterforce targets. It includes major air bases, forward airbases, advanced attack bases, major naval bases, nuclear reactors, road-mobile launchers, and army Corps headquarters (HQs).

a. Air Bases

i. **Major Airbases,** Masroor and Karachi.

ii. **Forward Airbases,** Talhar, Mirpurkhas, Nawab Shah, Sukhar, Jacobabad and Pasni.

iii. **Advanced Attack Bases,** Sindri, Ormara and Gawadar



a. Naval Bases

Pakistan navy's Karachi Naval Base, ChoharJamali, Ormara, Pasni, Gawadar and Jiwani base can be attacked with air-to-air missile. IAF as stated above can execute strategy of hit and run or asymmetric strategy.

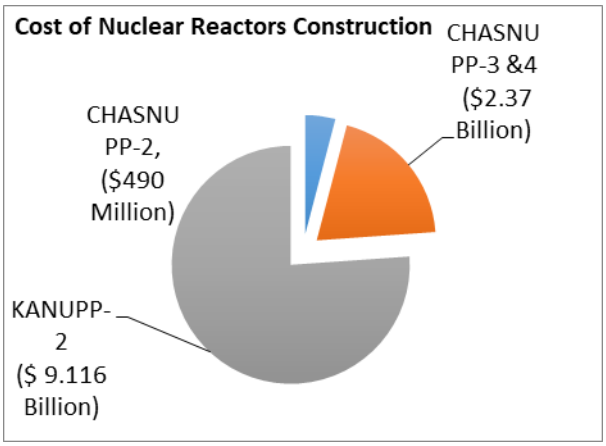
b. Army

i. Army Corps HQ Karachi.

ii. Road-Mobile Missile Launcher Garrison, Akro and Khuzdar Garrison and nuclear reactors in Karachi will also lucrative target for the IAF.

Economics of Defence

a. Karachi Nuclear Power Plant (KANPP) and Chashma Nuclear Power Plants produced 1430 MW and supplied 7,143 million units to the national grid from July 1, 2019 to March 31, 2020 (Mustafa, 2020). KANPP-2 and 3 are expected to produce 2,200 MWs to the national grid by the end of 2021. Pakistan Atomic Energy Commission (PAEC) officials plan to add 8,800 MW to the national grid by the end of 2021 (Yousafzai, 2020).



b. Pakistan is energy starving. It is in dire need to generate electricity to run industries without disruption and to fulfil domestic consumption. IAF's preemptive strike to destroy or at least damage Pakistan's nuclear power plants will wreak havoc to country's

i. Nuclear programme
ii. Economy/ industry
iii. Power generation capacity and
iv. Lead to spread of radiation in the environment causing widespread harm.

Chart in this paper reflects the estimated construction cost of counter-value assets alone. The accumulated cost of these assets is approximately $ 45 Billion to $ 50 Billion. If IAF is able to inflict damage, the cost to reconstruct these projects would increase depending on dollar exchange rate.

CONCLUSION

The first objective of this academic research was to highlight IAF modernization process. Agreements to procure SU-30MKIs, Rafale fighter jets, development of Tejas fighter planes, and different versions of BrahMos missile authenticate modernization process. Modern weapon system tilts conventional balance in IAF's favor. It creates sense of security, increases morale, and encourages New Delhi-based strategic planners to launch preemptive strikes similar to Balakot attack. However, a recent aerial fight exposed IAF's weaknesses and prevented India from launching preemptive/ surprise attacks. Procurement and deployment of major weapon systems will be completed by 2025 in the Indian armed forces and create a sense of full-spectrum escalation dominance. Conversely, India will execute a preemptive strike after 2025.

The second objective of this paper was to highlight the cost of an all-out war for Pakistan alone. It is speculated that IAF successful attacks against Pakistani counter-value targets in an all-out war will result in $ 45-50-billion-dollar loss. India, contrary to Pakistan, is overstretched. It has a huge industrial base, ports, and large urban centers. Pakistan's successful strikes against Indian counter-value assets alone will result in the loss of billions of dollars.

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