STRATEGIC ROLE OF AIR POWER

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The most decisive victory is of no value if a nation is bled while gaining it. More potent and economical form of warfare is disarmament through paralysis rather than destruction through annihilation.

—Liddel Hart

There is a need to understand the meaning of the oft used word "strategic". But we must keep in mind the context in which it is used. Initially, during the 1920s - 1940s, "strategic" in air doctrine meant the pure offensive of the bomber against the enemy's heartland to achieve quick, swift victory which avoided the carnage of defensive trench warfare. Post-World War II, as the world got divided in the two blocs led by two superpowers, "strategic" mostly meant bombers with intercontinental range, carrying nuclear weapons. Ballistic missiles with nuclear warheads also came in this category from the 1950s onwards. So "strategic" referred to ranges of 5,000 km plus and nuclear weapons in large kilo ton (KT) or mega ton (MT) capacities.

The Vietnam War saw B-52 strategic bombers unleashing up to 30 ton bombs in each sortie for supporting troops in close air support, that is, in a tactical role. In 1982, eight Israeli F-16 aircraft attacked the Osirak nuclear reactor near Baghdad with 1,000 kg bombs each and totally destroyed the facility. It set back Iraq's quest for nuclear weapons at least by a decade. So while Cold War bombers were being used for tactical air support, the tactical aircraft ,using tactical weapons, achieved

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results that were totally strategic in nature. During World War II, it took 1,000 bombers, with 9,000 aircrew , dropping nearly 2,000 ton of bombs to destroy a target. During the Gulf War of 1991, one F-117 carrying 2 ton bombs could destroy a target with greater assurance in one sortie.[1] Thus, a tactical aircraft with tactical weapons was achieving a far greater effect than the 1,000 bomber raid of World War II.

This has blurred the earlier distinction between "strategic" and "tactical". What is the future like? Today, one B-2 bomber of the US Air Force (USAF) carries 80 bombs of 500 lb each. It can attack 80 separate targets, each with extreme precision, achieving the desired effect. In a few years, its capacity will be 200 small diameter bombs (SDB) able to attack 200 targets in one sortie. This 135 kg SDB, filled with much better explosives, will give the same effect as an earlier 500 kg bomb. An SU-30 aircraft could easily carry 32 precision bombs in each sortie and attack 32 separate targets with great precision. So, in today's warfare, the strategic connotation is no longer related either to the very long range of bombers or nukes as weapons, but to the effects that are produced at the target end. The aircraft type and the size of bomb are no longer primary considerations.[2]

EVOLUTION OF STRATEGIC AIR POWER

The use of the expression "air power" was first recorded in H.G. Wells' novel *The War in the Air,* in 1908. However, according to Professor Tony Mason, the official birthday of air power has arbitrarily been selected as **1893**, when a Major Fullerton of the British Army had presented a paper to a meeting of army engineers in Chicago in which he prophesised that the impact of aeronautics foreshadowed "as great a revolution in the art of war as the discovery of gun power," that "future wars may well start with a great air battle," that "the arrival over the enemy capital will probably conclude the campaign" and that, "command of the air would be an essential prerequisite for all land and air

1. Richard T. Reynolds,"Heart of The Storm–The Genesis of The Air Campaign Against Iraq," p. 107.
2. A.K. Tiwary, "IAF-The Strategic Force of Choice," *Indian Defence Review*, September 2007.

warfare." This date has been selected in preference to 1803 when the first airship company was formed in France; or 1883, when Albert Robida envisaged a sudden crushing air strike in his *War of the Twentieth Century*; or 1903, that marked the first heavier than air machine flight by the Wright Brothers.

While the 19th century may well be credited with the conceptual visualisation of air power, it was the epic heavier than air machine flight by the Wright Brothers in 1903, which was the first concrete step in the fulfilment of the vision. By 1909, aircraft had been inducted into military service. **The first official record of the use of aircraft in actual combat was made in 1911 by the Italians in the Libyan campaign when Captain Moizo and De Rada, flying in a military bi-plane Forman, spotted an Arab encampment and proceeded to drop hand carried bombs on them.**

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Britain was amongst the pioneers in developing its air power. The Royal Flying Corps (RFC) with its military and naval wings was established in 1912. Inter-Service rivalry soon surfaced, and by 1914, despite opposition by Churchill, the Royal Navy unilaterally broke away from RFC and established its own Royal Naval Air Service (RNAS), under the direct control of the British Admiralty. At the outbreak of World War I, RFC and RNAS, thus, formed two separate bodies under the aegis of the British Army and Navy respectively. In the meanwhile, Germany, France and the USA had also developed their air corps as a part of their land forces.[3]

At the outbreak of World War I in 1914, military aviation consisted of light wooden bi/tri planes with maximum speeds of under 100 mph and very limited load carrying capacity. Their roles were initially restricted to reconnaissance and artillery observations.

July 1917 marked a watershed in air power's history when German Gotha bombers raided London. The damage again was more psychological than real as

3. Tony Mason, *Air Power, A Centennial Appraisal*, Chapter. 1.

the images of H.G. Wells' destruction from the skies appeared to become a reality. As a direct result of these attacks, Britain established what amounted to a strategic bombing unit in France, known as the Independent Force, to conduct reprisal raids against the German homeland. The concept of strategic bombing, whose mission was made independent of support to surface forces, was born. This action sowed the seeds of a new Service. The Royal Air Force (RAF), independent of the Royal Army and Royal Navy, was established in 1918.[4]

World War I ended in 1918. During the war, all subsequent roles of air power had either been established or attempted,[5] and the doctrines of command of air and support to surface forces had been firmly established. For the surface forces, roles such as close air support, transport support, reconnaissance, interdiction, artillery spotting, anti-submarine warfare, convoy escort, search and rescue and maritime strikes become vital contributors to the existing land and maritime strategies. Historian Lee Kennett aptly summed the progress made by air power during World War I when he wrote, "While the role of air weapon in the Great War was a modest one, the role of the Great War in the rise of air power was anything but modest."

Giulio Douhet, an Italian military officer was one of the earliest advocates of air power. He had taken part in the air action in the Libyan campaign in Tripoli in 1911-12. An ardent supporter of the strategic bombing concept and the military superiority of air power over other forms of warfare, he served in World War I, organising Italy's bombing campaign. For publicly criticising the Italian high command as being responsible for Italy's aerial weaknesses, he was court-martialled and jailed. He was released when his theories were proven correct by the defeat of the Italians by the Austrian Air Force at Caporetto. He was later recalled and promoted to brigadier general's rank in 1921. In 1922, he was appointed head of Italy's aviation programme by Benito Mussolini.[6] His book, *Command of the Air* was first published in 1921 and a revised version came out in 1927. It was regarded as a classic by early air power theorists and had a major impact on the shaping and development of air power, especially in the USA and

4. Mason, Ibid.
5. Ibid.
6. Giulio Douhet (article from the internet).

Britain. He argued that command of the air should be the first objective during war, and having achieved it, subsequent bombing of industrialised and population centres would be so disruptive and destructive that the enemy would be forced to sue for peace. He maintained that control of the air, followed by strategic bombing, could win a war independent of land and sea power. Douhet is regarded as the father of air power.

The next air power advocate to emerge during and after World War I was Gen Trenchard, the first commander of the RAF. Trenchard believed in the offensive role of air power and was convinced that the primary mission of air power was to decimate the enemy through aerial bombardment. He strongly advocated the need to devote maximum resources to air power development, for the main danger in future would come from the air. He argued that by denying the enemy the capability to conduct a strategic bombing campaign against oneself and by conducting one against him, air power would lead to the enemy's capitulation. He was convinced that unless control of the air was established, armies and navies would become powerless, and that the days of big ships were past—they could no longer operate in the face of air power. As the chief of staff of the world's first independent air force, Gen Trenchard's thinking was to have a major impact on the RAF's force composition and performance during World War II.

The third key air power advocate to emerge during the post-World War I era was an American, Billy Mitchell. He is the most famous and controversial figure in American air power history. The son of a wealthy Wisconsin senator, he enlisted as a private during the Spanish American War and quickly gained a commission due to the intervention of his father. He had an outstanding war record and after challenging tours of Philippines and Alaska, Mitchell was assigned to the Army General Staff, at the time its youngest member. He became interested in aviation and its possibilities. In 1916, at the age of 38, he took private flying lessons. Arriving at France in 1917 as part of the American contingent, he quickly took charge and began preparations for the American air units that were to follow. By the end of World War I, Billy Mitchell was the top US airman. He returned to the USA in 1919 and immediately became a very strong advocate of air power. Mitchell was greatly influenced by Douhet's theories. He was

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appointed the deputy chief of the Air Service. In this capacity, his relations with his superiors continued to sour as he began to attack both the War and Navy Departments for being insufficiently far-sighted regarding air power. When Mitchell suggested that US air power could better defend the nation's coasts from attacks by warships than US sea power, a controversy developed as to whether an airplane could sink a battleship. Live tests were conducted in June/July 1921 and September 1921. Mitchell's bombers sank three captured German vessels and an obsolete USS *Alabama* in the first trial and sent two more obsolete US vessels to the bottom of the sea in the next one.

The success of the bombing trials encouraged the advocates of air power to press for a separate air arm but the Army General Staff remained convinced that air power on its own could not win a war and, at best, it had an important but supporting role. Mitchell became increasingly critical of his superiors and began to go public in his criticism of the high command. His actions could no longer be tolerated and in December 1925, he was found guilty before a court martial of violating the 96th Articles of War and was suspended from duty for five years. Mitchell resigned in 1926.

In conformity with Douhet's and Trenchard's theories, Mitchell postulated the potency of air power in any future conflict and that air power would be the most decisive element in any future conflict. He also advocated that strategic bombing could on its own defeat the enemy.

Douhet, Trenchard and Mitchell were passionate advocates of air power, perhaps too passionate, and all three seem to have overstated their case. While a majority of their theories and prophecies have come true, their claim that air power alone could win a war has yet to be proved. They seriously failed to visualise the defensive warfare against air threat in the form of fighter aircraft and ground defences, which could and did reduce the impact of air power, especially in the strategic bombing role. They also grossly underestimated the

continued requirement of naval and land forces and the people's will to resist aerial bombardment.

The role of air power during World War II can be summed up in two quotes, one by Winston Churchill and the other by Professor Tony Mason. While speaking at the Massachusetts Institute of Technology in 1949, Churchill had commented: "For good or ill, air mastery is today the supreme expression of military power. And fleets and armies, however necessary and important, must accept subordinate rank. This is a memorable milestone in the march of man."[7] Professor Tony Mason in his book *Air Power - A Centennial Appraisal*, states: "Air power had been peripheral between 1914 and 1918. In the Second World War it dominated most theatres, and in at least two, was decisive."[8]

If the Korean and Vietnam Wars had brought out the inadequacies of air power, the Arab/Israeli Wars of 1967 and 1973 again demonstrated its dominance in a conventional war. In both these conflicts, air power played a major role. In 1967, having won the command of the air on the very first day through preemptive offensive counter-air operations, the Israeli Air Force (IsAF) brought to bear such effective bombardment on the Arab land forces that it became relatively simple for the Israeli Army to defeat them. Even in 1973, air power was dominant. The IsAF's inability to win the command of the air initially cost them dearly but in the later stages, through the substantial technical and logistical support of the USA, the IsAF succeeded in neutralising the Arab air defence network. From then onward, support to their land forces helped turn a likely defeat into victory. By the time a ceasefire was declared, Israel had gained the upper hand in the conflict.

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Essentially, a one-day campaign, the Bekaa Valley operation was planned by Israel to take out all the air defence units in the valley in a single coordinated air

7. Mason, n.3.
8. Mason, Ibid.

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assault. The presence of Syrian SA-6 units in the east of Bekaa Valley was constraining the IsAF's contribution when the Israeli Defence Forces (IDF) had launched Operation Peace in Galilee in 1982. These units had to be taken out. The IsAF painstakingly plotted the position of every SA-6 unit in the valley. On October 9, 1982, Israeli long-range artillery and surface-to-surface missiles engaged the Syrian missile batteries. The IsAF aircraft followed up with aerial attacks, using free fall bombs and anti-radiation missiles. When the Syrian Air Force rose to defend the air defence complex, the IsAF's F-15 and F16 fighters, equipped with the most modern air-to-air missiles, airborne radars and electronic warfare package, massacred them. This was the most one-sided air victory in the history of air power. In terms of the evolution of air power, the Bekaa Valley campaign was a generation ahead.[9] This campaign is relevant because it was a harbinger of how the next air battle would be fought. The Gulf War of 1990-91 was to demonstrate the same philosophy on a much larger scale. Dr James A. Mowbray has correctly concluded, "Technology helped to win the fastest, lowest casualty, almost devastatingly destructive one-sided war in recorded history. Air Force capabilities had come of age." Col Warden, the architect of the Desert Storm air campaign, has elaborated the technological advancement made by air power further by saying, "To have a 90 percent probability of putting one bomb on a target of the size of a normal room, in World War II, it needed 9,000 bombs or over 1,000 B-17 sorties—which meant putting 10,000 men at risk over the target. An F-117 class aircraft will achieve the same probability in a single sortie." Between World War II and the Gulf War, bombing accuracy had registered a 1,000 per cent increase.

In the Gulf War, air power demonstrated its ability to strike at the strategic heart of a country with maximum precision and minimum collateral damage and casualties. It proved beyond any shadow of doubt that air power has become an integral component of modern warfare. Professor R.A. Mason has very rightly observed, "The Gulf War marked the apotheosis of twentieth century air power."

9. Ibid.

STRATEGIC DEVELOPMENT OF IAF

The Indian Air Force (IAF) came formally into existence on October 8, 1932, the day the Air Force Act became operative. In the last three quarters of the century, the IAF has grown from the "army cooperation" role into a strategic force. The British never envisaged a strategic role for the IAF. However, the IAF was instrumental in creating a strategic effect by blocking the advance of the Japanese Army in Burma. In recognition of the crucial role played by the IAF, King George VI conferred it the prefix "Royal" in 1945. This prefix was dropped in 1950 after India became a republic.

During the Indo-Pak War of 1947, the IAF conducted airlift operations from Safdarjang, then known as Willingdon airfield, to Srinagar airfield starting at 09:30 hours IST on October 27. This was the most instrumental action of the war as it provided crucial support to the Indian Army in pushing the invaders out. In 1962, during the Indo-China conflict, the IAF provided the much needed logistics support to the Indian Army fighting in some of the most trying environment. Without essential air support, the Indian Army faced overwhelming odds in their fight against well trained Chinese troops. The Indian leadership grounded the IAF for the majority of the war, fearing that if the IAF attacked the Chinese forces, the PLA Air Force (PLAAF) would retaliate on Indian cities[10] (a feeling based on utter lack of information). This was the only time post-independence when the full potential of the IAF was not utilised, resulting in national humiliation in a conflict. Soon after, the Indian government, learning from its mistakes, began a vigorous campaign to expand the IAF. An emergency flying scheme was started in Delhi, Madras, Kanpur, Nagpur, Patiala and Adampur and more than 1,000 cadets received primary flying training by 1964. The IAF's strength was increased from 28,000 officers and men in 1961 to

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10. Information obtained from www.answers .com/topic/Indian-air-force/topic/Indian-air-force, accessed on Naovember 11, 2007

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100,000 officers and men by 1964. By 1965, the IAF had also added newly bought An-12B and C-119G transport aircraft to its fleet.[11]

In 1965, India and Pakistan went to war over Kashmir for the second time. The Indo-Pakistan War of 1965 tested the strength of the Indian Air Force to its full limit. The Indian Air Force was successful in bombarding several Pakistani airfields, military installations and ammunition depots deep inside Pakistani territory and provided crucial air cover to the Indian Army. During the war, the IAF carried out more than 4,073 combat sorties, compared to the Pakistan Air Force's (PAF's) total of 2,279 sorties. The IAF helicopters proved to be highly useful in logistics and rescue efforts (Med Evac).

During the Indo-Pak War of 1971, Pakistani armour, accompanied by infantry, moved towards Longewala, the Indian border outpost. The post was defended by only one company of infantry soldiers. Commencing at daybreak, the IAF provided critical close air support from AF Station, Jaisalmer, and knocked out 37 out of the 45 tanks. This prevented loss of significant territory in the desert, a significant strategic effect. In East Pakistan too, the IAF flew more than 4,000 sorties, causing extensive damage to airfields, infrastructure, aircraft and the war waging potential. The vital air cover provided to the Indian Army assisted in rapid advances. Entire brigade strengths were heli-lifted over the river Meghna, allowing the Indian Army to continue their advance in spite of stiff resistance at Ashuganj, where the retreating Pakistan Army blew up the bridge (also known as the heli-bridge over the Meghna). The IAF airdropped Para Bn Gp 130 in the now famous Tangail airdrop. The operation involved An-12, C-119s, 2 Caribous and Dakotas from 11 and 48 Sqns. In total, about 1,000 troops were airdropped.

On the morning of December 14, a message was intercepted by Indian intelligence about a high-level meeting of the civilian administration in East Pakistan, and a decision was made to mount an attack. Within 15 minutes of interception of the message, a strike was launched against Dhaka. Armed with

11. Ibid.

tourist guide maps of the city, four MiG 21s of No. 28 Sqn hit the Governor's House with 57mm rockets, ripping the massive roof of the main hall and turning the building into a smouldering wreck. The Governor of East Pakistan, Mr. A .H. Malik, resigned then and there, renouncing all ties with the West Pakistani administration, to take refuge at the Red Cross Centre in Dhaka. The entire Cabinet resigned even though more than 90,000 Pakistani troops were available to defend Dhaka. This was a clear indication that tactical actions by air power have significant strategic influence.

During the Kargil War with Pakistan, the Indian Air Force is said to have proved the decisive force in accelerating the end of the conflict. It successfully provided considerable air cover for Indian troops fighting against Pakistani soldiers. In spite of losing two fighter aircraft and one helicopter, the IAF, by using innovative tactics and precision weapons, was instrumental in evicting the invaders.

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STRATEGIC ROLE OF AIR POWER

The ability of air power to reach, disrupt or possibly destroy an opponent's strategic or operational centre of gravity suggests that air power is inherently capable of military action with strategic effect. That effect may be created through independent distinct action or through joint or multinational activity operating in conjunction with other forces. Throughout the history of air power, air platforms and their associated weapon systems have been able to carry the fight to the enemy.

Two air power theorists from the USAF, Cols Warden and Boyd have propounded path breaking theories of paralysing the enemy by strategic application of air power.[12] While Boyd talks of paralysing the enemy

12. John Boyd and John Warden, "Air Power's Quest for Strategic Paralysis; Fadok," a thesis presented to the School for Advanced Air Power Studies, Maxwell AF Base, February 1995.

Air power is the premier instrument of strategic coercion today.

psychologically and weakening his will to fight, Warden emphasises the need to physically paralyse the adversary by attacking leadership, infrastructure, communication links and fielded forces as part of his now famous "Five Ring Theory" based on Clausewitz's centres of gravity, which formed the heart of the air campaign in Operation Desert Storm. While the strategic air campaign that aims at paralysis is based on the overwhelming asymmetry the US forces are likely to enjoy in any conflict scenario, it is important for policy and strategy planners in India too to understand the tremendous advantages of creating asymmetry[13] vis-à-vis potential adversaries by building up a potent strategic air capability that is built around technology, force multipliers and multi-theatre capability. The strategic roles in which air power could possibly be employed are discussed hereafter.

Political Signalling

Air power has the ability to consistently provide the dominance of the battlespace with the utilisation of manned as well as unmanned airborne platforms that can stay on station for long durations of time. This ability can transmit clear signals to any enemy, thereby dissuading him from any misadventure. These signals may be transmitted in terms of raised alert status, extensive surveillance activities and deployment of combat forces at critical operational locations.

Strategic Coercion

Coercion is the ability to deter another party from performing a hostile action or compelling an enemy performing such an action to cease doing so. Three examples are the rice bombing of Jaffna in 1987 which demonstrated India's ability to intervene in a crisis situation in its neighbourhood and forced Sri Lanka to sign the Indo-Sri Lankan agreement; Operation Deliberate Force in 1995 by the North

13. Jasjit Singh, "Strategic Framework for Defence Planners: Air Power in The 21st Century," paper presented at the Aero India 1998 Seminar.

Atlantic Treaty Organisation (NATO) air power to force Bosnian Serbs to remove heavy weapons from designated exclusion zones; and Operation Allied Force, to change the thinking of President Milosovic of Yugoslavia. At display in these cases were air power's inherent characteristics of reach, speed, responsiveness and lethality (in the Yugoslavian example), to achieve strategic objectives of a nation/group of nations, when employed in a coercive role. Without doubt, air power is the premier instrument of strategic coercion today.

Conflict Prevention

The existence of credible deterrence can truly prevent war or any conflict. In case deterrence fails, there should be sufficient offensive capability to thwart any misadventure. Conflict prevention is the critical strategic role of an air force, essentially by possessing strategic deterrence capability. The existence of threat available in deterrence must be obvious to the enemy. Deterrence has a psychological element and in addition to the availability of credible forces, can be strengthened by resolute policy, demonstrated military capability, the will to use force and a readiness to escalate, should deterrence fail.

The primary task of the air force is to gain and maintain "command of the air"

Strategic Bombing

The notion that the strategic employment of air power is inextricably linked to bombing and bombardment is derived from historical experience. The purpose of the strategic employment of air power is to create strategic effect on the identified target set. This effect will be in support of the defined strategic aim but may not be part of a theatre campaign. In April 1986, exasperated by terrorist actions supposedly backed by the Libyan President, Col Qaddafi, the Reagan Administration authorised a retaliatory night air attack. For Operation El Dorado Canyon, a joint US Navy (USN) and US Air Force (USAF) force was mounted against terrorist and airfield targets in Libya. The Libyans boasted of an air force of 500 aircraft and a formidable ground environment bristling with

integrated surface-to-air missile (SAM) sites, armed mainly with Soviet missiles and radar guided anti-aircraft guns. The system was operated under the direction of 3,000 Soviet technicians. At 2.00 am local time on April 15, the coordinated raids of the USN and USAF swept into Libya to hit their targets The attack lasted for thirteen minutes, and cost the Americans the loss of one F-111 crew, but caused considerable damage to the Libyans.

Battlespace Domination

The primary task of the air force is to gain and maintain "command of the air". If this is achieved, the resultant air supremacy will allow the land, sea and air operations to continue without enemy air interference. This was amply demonstrated in 1971, when the IAF gained command of the air over East Pakistan within the first 48 hours. Thereafter, the ground forces were able to move at a faster pace towards Dhaka. It was also possible to mount heliborne operations and launch airborne operations of a brigade group by using transport aircraft. All this would not have been possible without first achieving air supremacy.

"Command of the air" has to be gained by fighting for it. With an opponent who has the state-of-the-art aircraft and weapons, combined with quality training and high morale, it would be a struggle for survival by each side. Therefore, in peace-time, it is imperative that the nation provides the best possible weapon systems, training and high class leadership which is truly professional, motivated and dedicated.[14]

Psychological Operations (PSYOPS)

PSY OPS played a significant role in operations such as Operation Enduring Freedom, in which air-mobility missions delivered humanitarian rations while, at the same time, air-combat sorties struck militarily significant targets in other parts of Afghanistan. Furthermore, during Operation Iraqi Freedom, Coalition forces dropped both leaflets and ordnance to prompt enemy soldiers to surrender. They also broadcast messages to them over their own radio systems. These transmissions had the complementary effect of denying the Iraqis use of their own radios. Air,

194. Air Cmde N.B. Singh, *Air Power in the New Millennium*, Chapter 9.

space, and information power are all psychological instruments that can influence an adversary's perception, behaviour, and morale. For this reason, USAF PSY OP activities serve as an integral part of air operations planning and targeting processes, rather than as mere adjuncts. US aircraft, by their dynamic presence and actions, transmit an unmistakable psychological message to most adversaries. The mere threat or presence of superior aircraft can ground an enemy's air force, demoralise his army and civilian population, or promote stability. In the Kosovo operations, Lt Gen Short intended to generate functional and psychological effects targeted directly at Slobodan Milosevic.[15] The IAF certainly needs to formulate appropriate doctrines and procure suitable equipment to conduct PSY OPS at all levels of any conflict.

Strategic Airlift

The strategic airlift capability of a nation will govern to a large extent its armed forces' ability to respond.

The strategic airlift capability of a nation will govern to a large extent its armed forces' ability to respond. The airlift of troops by the IAF from Delhi to Srinagar to combat the Pakistani intruders was instrumental in saving two-third of Kashmir, including Srinagar. The airlift operations conducted by the IAF during Oeration Meghdoot resulted in the initiative being with Indian troops. This manifested in the Indian Army taking control of two-third of the highest battlefield in the world while the Pakistan Army was still preparing to launch operations. The IAF employed transport aircraft and helicopters to transport troops and stores, as well as airdrop supplies to the high altitude locations.[16] On the night of November 3, 1988, the Indian Air Force airlifted a parachute battalion group from Agra and flew them non-stop over 2,000 km (1,240 miles) to Maldives. The Indian paratroopers landed at Hulule and secured the airfield and restored the government rule at Male within hours.[17] The performance of the IAF in numerous humanitarian

15. John A. Tirpak, "Short's View of The Air Campaign,"*Air Force Magazine*, September 1999, available at www.afa.org/magazine/watch/html
16. n.10.
17. Ibid.

The future leadership would need to develop a strategic outlook that develops unconventional responses to various threats across the spectrum, ranging from terror strikes to conflicts under the nuclear threshold.

missions at home and abroad is worth a special mention. This includes providing relief to Indonesia and Sri Lanka during the tsunami and to the US in the aftermath of Hurricane Katrina. Evacuating the Indian civilians from the Gulf countries during 1990-91 is another example. The need of the hour for the IAF today is to procure transport aircraft and helicopters to build and enhance its medium lift capability.

Out of Area Contingencies

The ability of air power to engage strategic targets with minimum collateral damage, maximum effect and "shape the battlefield" for swift operation by airborne assault or amphibious attack, has made it a preferred option in swift out of country conflict resolution, the likes of which was achieved in Kosovo. Even when it comes to humanitarian intervention, it is the strategic mobility assets of air power that can make a substantial difference, whether it is during natural calamity or evacuation of population from conflict torn areas. India's increasing "footprint" in the area means that it is only a matter of time before its influence spreads into Africa, the Central Asian Republics and Southeast Asia where it will continue to compete with China for resources and markets.[18]

Credible Deterrence

Modern air power has become an instant instrument of projecting power in the great depth with surprise and concentration of firepower which is highly discriminating and precise and, therefore, avoids collateral damage. It can target the nerve centre of the enemy very effectively and thereby paralyse his command, control and communication system, bringing enemy military

18. Kapil Kak, "India-China Relations: An Overview," *Air Power*, vol. 3, Monsoon, 2006.

operations to a halt. The credibility of deterrence provided by modern air power, supported by high technology systems like airborne warning and control system (AWACS), joint surveillance target attack radar system (J-STARS), electronic warfare (EW) systems and precision guided weapons is extremely high. A modern air power in being could provide a credible deterrence without resorting to the weapons of mass destruction.

Low Intensity Conflict

We need to develop strategies to exploit the inherent capabilities of air power—speed and reach—in low intensity conflicts, by swift induction of troops in the affected areas by air, and air surveillance of large tracts of land in mountainous regions.

TRAINING REQUIREMENTS

The IAF today is a strategic force with reach, precision, capability for air dominance and is transforming itself into a networked aerospace force. There is an urgent need for us to start thinking strategic and thereafter to train for the same. Perhaps the weakest area that afflicts the IAF today is the inadequacy of training infrastructure, specially for the non-officer cadres. A fighting force equipped with the most sophisticated aircraft, smart weapon systems, complex sensors, space-based surveillance and reconnaissance systems, and a network-centric environment needs to be supported by an equally advanced and sophisticated training environment with computer-based training systems, elaborate simulation devices for all disciplines, automated distance learning and evaluation systems, all designed to train for the next war and not the last one. The future leadership would need to develop a strategic outlook that develops unconventional responses to various threats across the spectrum ranging from terror strikes to conflicts under the nuclear threshold. The present training pattern in the IAF for various branches is heavily tilted towards tactical orientation, and is defensive in nature owing to our reactive doctrines. The path ahead is not to drastically change our training methodology but to train continuously in strategic roles.

We must start our thinking by assuming we can do everything with air power, not by assuming that it can only do what it did in the past.

We need to continue training with a few foreign air forces with simulation of contingencies, be it bilateral or multilateral. Simulated target systems need to be realistic in nature rather than "pin and circles," as existent today. We need to create strategic task forces which are kept current and have centralised decision-making, independent component commanders and decentralised execution. The leaders need to be visionaries, analysts, theorists and strategic practitioners. Hence, there is a need to shift the focus during the growth of the officer in service. The levels of intellectual capability and education need to be enhanced rather than remaining busy with fire-fighting and crisis management most of the time. The need to posess better awareness of the global situation in general and of South Asia in particular cannot be overemphasised.

CONCLUSION

Air power is inherently strategic in nature but for the optimum exploitation of its attributes, the practitioners need to be absolutely clear as to what effect the application of air power will have in different scenarios. Air power needs to be dovetailed into a nation's international policy-making process as an effective instrument of diplomacy. For this, national leaders and civil servants in the decision-making chain need to be educated by air power exponents about the potential that it possesses as a national instrument of peace and power. The short period of history since the advent of air power provides us with enough examples as proof of this. While looking into acquiring the capabilities that would maximise the true potential of air power, we should not lose sight of the vital aspects of support systems and human resources, without which air power only becomes mere hardware and not an effective national instrument of power. Col John Warden of the USAF, who was instrumental in designing the four-phase campaign of the Allied forces in the 1991 Gulf War says *"Real exploitation of air power's potential can only come through making assumptions that it can do*

something we thought it couldn't do...We must start our thinking by assuming we can do everything with air power, not by assuming that it can only do what it did in the past." Therefore, planners and executioners of air power need to think and look ahead and plan for the changing nature of warfare. They need to continuously think about what role air power will play in any future conflict, and plan and train for the optimum exploitation of this vital instrument of war.

The views expressed here are solely those of the author and do not represent the opinion or policies of any organisation