COMBAT SUPPORT OPERATIONS IN THE INDIAN AIR FORCE: A HISTORICAL APPRAISAL

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Till the time human beings compete for resources, power, or territory, there would be wars.

War is as old as human civilisation. As long as man, whether in groups, societies, communities, or nations, competes for resources and power, conflict and war will always exist as necessary elements of civilisation. History shows that armed conflict or warfare continues to be a recurring feature of mankind. From official and unofficial history, it is estimated that mankind has fought around 14,500 wars so far. According to one estimate, there have been only 270 years of peace in the last 3,500 years. From the end of World War II to the Falklands War of 1982, 148 armed conflicts have been fought in various corners of the globe, all in a span of 37 years;[1] or adding the more recent conflicts, we have had more than 150 wars in about 60 years. History clearly establishes the fact that wars will continue to plague mankind long into the future.

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1. Air Chief Marshal Fali Homi Major, "Indian Air Force in the Decades Ahead," *Air Power Journal*, vol. 3, no. 2, Summer 2008 (April – June), accessed through the link http://www.aerospaceindia.org/Journals

Over the next 100 years, air power developed exponentially to become the most critical element of national power of the most powerful nations.

The advent of air power at the turn of the 20th century changed the very complexion of military power, which was to transform the conduct of war enormously. More importantly, over the next 100 years, air power developed exponentially to become the most critical element of national power of the most powerful nations. Militarily, the advent of air power produced the most important and hitherto unknown dimension of war, the third or vertical dimension. The advent of flying machines changed the nature of warfare for all time. In a period of less than a century, military use of the air has moved from tethered balloons to aircraft and, now, to cruise missiles using satellite-based navigation systems. The third dimension of warfare has encompassed space itself. A detailed analysis of the evolution of air power into aerospace power would show that the last hundred years of technological and strategic developments were necessary to complete the understanding of the third dimension of warfare. The significance of air power is not only its characteristic of bringing in the third dimension into warfare but, more importantly, its ability to bypass all obstacles that are characteristic of land and sea warfare and make its effect felt deep inside on the entire nation-state rather than just the war-front.

AVIATION HISTORY IN INDIA AND EVOLUTION OF INDIAN AIR FORCE

Aviation History[2]

Joseph Lynn made the first balloon ascent in India from Lal Bagh Gardens, Mumbai, on September 24, 1877. The balloon rose to a height of 7,500 ft and came down at Dadar. After these developments, Indian aviation experienced a brief gap before heavier than air manned flight began when the Maharaja

2. Group Captain Kapil Bhargava (Retd), "Beginning of Aviation in India: A Peep Into its Early History", accessed through http://www.bharat-rakshak.com/IAF/History/Aircraft/AviationIndia

of Patiala bought two airplanes in 1910. The first flight was carried out at Allahabad on December 10, 1910. The first military reconnaissance flight took place on January 16, 1911, at Aurangabad, where an aircraft was used to observe military manoeuvres. However, it was not a war-time mission. A distinctive event, the first aerial post in aviation history was undertaken by Henri Piquet in a De Havilland Humber bi-plane on February 18, 1911, from Allahabad to Naini. In December 1913, a Military Flying School was set up at Sitapur, UP, with five airplanes. The first Indian aviator and aircraft maker was Professor Venkata Subba Setti and the first Indians to join the Royal Flying Corps were Hardit Singh Malik, Indra Lal Roy, E.S.C. Sen, Naoroji and S.G. Welingkar. Most of these pilots credited themselves with distinction in World War I and Indra Lal Roy was awarded the Distinguished Flying Cross (DFC) for shooting down nine German aircraft. In the 1920s, aviation in India was mostly confined to the operations of the Royal Air Force.

Formation of IAF[3]

The Indian Air Force (IAF) was formed by a Gazette notification on October 8, 1932. On April 1, 1933, No. 1 Squadron was set up at Drigh Road, Karachi, with four Westland Wapiti aircraft and was designated as an "*Army Cooperation Squadron*". Subroto Mukherjee (later the first Indian Chief of the Air Staff), five other officers and 19 technicians formed the Indian complement. The squadron was initiated into military action in September 1937, in North Waziristan. Flying Officer (later Air Marshal) Engineer was the first IAF officer to be awarded a gallantry medal in these operations. The IAF saw action during World War II and the strength was increased from one to nine squadrons. For meritorious service during the Burma campaign, the British Monarch awarded the prefix "Royal" to the Indian Air Force.

India became a Republic on January 26, 1950, and on that day, the IAF shed the prefix "Royal". On April 1, 1954, exactly twenty-one years after the raising of its flight, one of its founder members, Subroto Mukherjee, took over as a Commander-in-Chief and the Chief of the Air Staff of the IAF.

3. References from http://www.bharatrakshak.com and http://indianairforce.nic.in

Along with increase in fighter squadrons, it was also vital to develop the IAF transport capability at the earliest. A transport squadron of C-47 Dakotas was added in 1951, followed by the acquisition of the Fairchild C-119 Packet aircraft from the United States in 1954. Two more batches of Packets augmented the transport fleet in 1960 and 1963, respectively. The Packet functioned as the workhorse of the IAF for three decades. Modified in India with a "Jet Pack" for high altitude operations, the IAF Packets created history by landing on the airstrip in Ladakh and the Karakorams in a place called Daulet Beg Oldi at an altitude of 17,000 ft on July 22, 1962.

The modernisation of the IAF continued through the decades and today it has evolved as a trans-oceanic force. The inventory boasts of state-of-the-art fighters like the Su-30, Mirage-2000, MiG-29, Jaguars, etc. The transport fleet consists of IL-78 and IL-76 heavy lift aircraft, Boeing Business Jets, Embraers, An-32, Avro and Dorniers, while Mi-25s/35s, Mi-17s, Mi-8s, Chetak / Cheetah and ALH constitute the helicopter fleet. The IAF has been involved in joint exercises with the air forces of France, the US, Republic of Singapore and South Africa. The fighters flew non-stop thousands of miles, for the first time, with in-flight refuelling. The IAF has performed commendably in the international arena wherein the contingents have earned considerable praise for their exemplary contribution in United Nations Peace-Keeping Operations in Congo and Sudan. The IAF has also aided our civil authorities whenever called for during national calamities like floods, earthquakes, the tsunami, white tsunami in Srinagar or the earthquake in Bhuj. It is this capability of the IAF that enabled it to extend help to the United States during the disaster caused by Hurricane Katrina. The calls on the IAF transport fleet for operational logistic support or in aid of civil agencies during calamities and disasters are increasing. Towards this, the transport and helicopter fleets are being upgraded and modernised. Induction of 'force multipliers' like the Unmanned Aerial Vehicles (UAVs), Flight Refuelling Aircraft (FRA), Airborne Warning and Control System (AWACS) and Early Warning System would provide additional strategic reach and versatility for the offensive and defensive roles to the IAF.

In its 75 years of existence, the IAF has been called upon to employ its assets for national defence a number of times. Before attempting to describe the manner in which this aerospace power can be utilised in the future, it would be pertinent to highlight the aim and roles of the IAF.

> *The raison de`etre of the Air Force is to neutralise the enemy's war potential and protect one's own.*
>
> — Air Chief Marshal P.C. Lal

AIM AND ROLES OF IAF

The aim of the IAF is to organise, equip, train, sustain, deploy and employ the force to achieve national objectives. The IAF would continue to evolve itself into a potent force to meet the current and future challenges. Based on the threat perception, the IAF would equip itself to build the required capabilities and carry out requisite training to ensure potency of the force at all times. As dictated by national interests/objectives, the IAF would deploy and employ its forces either alone or in concert with the other Services so as to achieve the political objective in the most efficient manner.

Roles

The exact role that the IAF plays would depend on the nature of the threat and the unique nature of the campaign. Usually, the roles envisaged for the Air Force are as follows:

- Defence of national territory and of island territories, against attacks from air and space during both peace and war.
- Possess all round balanced capability to deter an aggressor from carrying out hostile acts and, if deterrence fails, to provide an effective response.
- Prepare in peace-time to achieve a potent offensive and defensive air capability.
- During operations, achieve control of the air to the required degree to provide full freedom of action to the air and surface forces.
- Apply direct pressure on the enemy's power of resistance by attacking his crucial centres of gravity.

- Synergise the combat potential of air power with that of the surface forces to achieve joint military aims and objectives. Further, to support the surface forces in their campaigns by neutralising the effectiveness of the enemy's surface combat power.
- Deploy and employ forces to protect and project national interests in any out of country contingency.
- Assist the government in disaster management or humanitarian relief tasks.
- Discharge international commitments requiring air power assets, consistent with our national policies and interests.
- Provide a viable second strike capability in case of a nuclear attack.

It would be worthwhile to extract some lessons from our participation in earlier conflicts. In the 1947-48 and 1962 Wars, the IAF was used mainly for airlift and in combat support roles. Combat support operations are as important as direct operations and this paper is an attempt to highlight the IAF's role in combat support operations.

Combat Support Operations

First, let us see what constitutes combat support operations. The IAF Doctrine defines combat support operations as "**those operations which are undertaken in support of air or surface combat forces to enhance their combat power and to sustain them**". The operations carried out to enhance the effectiveness of combat power are termed as combat support air operations and combat support air related operations. The effectiveness of combat power could be enhanced by increasing the mobility, surprise, lethality, accuracy, survivability, availability or flexibility of air and surface forces. Combat support air operations comprise air transported operations, Air-to-Air Refuelling (AAR), Surveillance and Reconnaissance, Airborne Early Warning (AEW), Electronic Warfare (EW) and Search and Rescue (SAR). Combat support air related operations include maintenance and integrated logistics, testing and evaluation, and Research and Development (R&D).

If air operations are to be successful, they need to be sustained and supported by dedicated ground activities. These are termed as combat support ground operations which include runway rehabilitation, Nuclear Biological Chemical (NBC) defence, ground defence, passive air defence, training and administration.

The detailed aspects of all facets of combat support operations would be covered in a later paper. This paper would be limited to combat support air operations, particularly to air transport operations and surveillance and reconnaissance operations.

Air Transported Operations

Air transported operations are defined as those operations that involve the movement by air of personnel and cargo through fixed wing or rotary aircraft within and between theatres of operations. Air transported operations for the IAF can be categorised into four major roles: airborne operations (which include airborne assault, air landed operations and special heliborne operations), air maintenance operations, scheduled services and casualty evacuation. There are essentially two categories of airlift:

- **Strategic Airlift:** Strategic airlift is the carriage of passengers or cargo between theatres (inter-theatre) or to any place within the area of interest. The traditional projection of power by land and sea was by definition a laborious and protracted process, often involving a degree of vulnerability en route that threatened the attrition or destruction of a force before it could even reach its objective. Although technological advances during this century have made surface deployment a speedier and more efficient process, the movement of the force by rail, road, and sea is still in many circumstances too slow, too restricted by geographical constraints or too susceptible to hostile interception. It was the growing perception of such limitations, coupled with an increasing awareness of what airlift could offer in terms of speed, reach and capacity that led to greater priority than hitherto being given to the build-up of a transport force to achieve strategic goals. The move of Indian troops by air from the Eastern to

the Western theatre in 1971, and the Maldives operation in 1988 are examples of strategic airlift.

- **Tactical Airlift:** Tactical airlift is the carriage of passengers and cargo within a theatre (intra-theatre). Tactical airlift is resorted to for rapid and responsive movement within an area of operations to meet specific tactical goals.

The airlift task is undertaken by the transport and helicopter fleets of the IAF. The transport fleet maintains a capability for both strategic and tactical airlift. The fixed-wing aircraft enjoy higher transit speeds, carry heavier loads, are more reliable and are far cheaper to operate. However, helicopters have the capability to land anywhere, and troops and equipment can be delivered direct into action, thereby saving the need for ground lines of communication from airfields. Because of their greater ability to utilise terrain masking, they are also more survivable in the combat zone. Thus, both fixed wing and rotary wing aircraft are invariably needed in the overall air transport force mix.

Surveillance and Reconnaissance Operations.

Reconnaissance was the first military role assigned to air power. As wars progressed, this role was refined from visual reconnaissance to photo -reconnaissance. This further developed in the Cold War period to a day/night and all weather capability with the advent of IRLS and radar mapping. It was only when the sensors started producing digital data that the concept of dissemination of reconnaissance information in real-time to the user was born. Surveillance and reconnaissance operations involve the collection of information from space-based, airborne, and ground sensors on the activities, forces and resources of an enemy or potential enemy. Since surveillance is the systematic, repetitive gathering of information, the information gained from surveillance is normally used for strategic planning. Reconnaissance is observation of specific targets, interests and areas by visual/photo means or other detection methods at a particular time to gain information about the activities, resources and intentions of an enemy.

ROLE OF INDIAN AIR FORCE IN COMBAT SUPPORT OPERATIONS

The first role adopted by the IAF was of Tactical Reconnaissance (Tac-R), with instructions to take on targets of opportunity. During one such mission on August 7, 1940, Sqn Ldr Subroto Mukherjee (later the first Indian Air Chief) noticed a besieged friendly force in Daur Valley of Miranshah. The Army picquet had little or no ammunition, which they conveyed through gestures. Sqn Ldr Mukherjee instructed his gunner in the Wapiti to offload ammunition from the aircraft gun, stuff it in his socks, and then he dropped this precious load in a low pass over the Indian Army picquet. Other aircraft also did the same and the post held out effectively.[4] This is one of the early instances of combat support operations, or rather an instance of combat air support being extended to supply drop by the Wapitis.

Burma Campaign

Japan entered World War on December 7, 1941, and by the end of December, the Japanese were in the jungles of Burma, seriously threatening the Indian subcontinent. The combat support role of the Air Force was primarily in the form of reconnaissance missions. No. 6 Squadron created a record for the monthly average of sorties flown per pilot for the Allied operation in the 3rd Tactical Air Force. It had completed 1,000 reconnaissance sorties. During the war years, the steady expansion of the IAF had placed all emphasis on Army cooperation and tactical reconnaissance; it had continued to fly ageing aircraft such as the Hurricane when such aircraft as the Thunderbolt and Mosquito were being inducted in large numbers by other Allied forces in the theatre and it had, in consequence, suffered a sense of equipment inferiority. Nevertheless, assigned the least glamorous of tasks and flying obsolescent equipment, the Service established traditions of courage and efficiency second to none; its personnel had been awarded 22 DFCs and a host of other decorations, and in recognition of its achievements, it had been honoured by bestowal of the prefix "Royal" on its title in March 1945.

4. Air Marshal T.M. Asthana, "Evolution of Tactics in the IAF: A Historical Perspective", paper presented at the capsule on National Security and Aerospace Power at Centre for Air Power Studies, New Delhi, July 13, 2009.

Lord Louis Mountbatten later said that in all his experience of the Southeast Asia Command and over the hump flights to China, he had never known of such an airlift being effected at such short notice.

Kashmir War of 1947-48

The partition had depleted the IAF in terms of both resources and manpower. Grappling to establish itself as an independent force and dealing with the brutal realities of partition, a mere two months later, the Air Force found itself in action against hostile invaders in Jammu and Kashmir (J&K). On October 22, 1947, Pakistan launched an attack on the Kashmir Valley to wrest the state of J&K. Four to five thousand tribals came rampaging through the Valley followed by regular troops in civilian apparel. The state of J&K became a part of the Indian territory on October 26, 1947, after Maharaja Hari Singh signed the Instrument of Accession with the Government of India and it was now incumbent on the government to respond to the Maharaja's plea for help against the plundering hordes. The situation was so grave that a very unusual rider to the operational instructions issued to the task force had to be included, viz, "To reconnoitre from the air and return to Jammu if the raiders had occupied the airstrip."[5] The Air Force flew the first contingent of the Indian Army into Srinagar on October 27. The first aircraft touched down at 0830 hrs, just in time to save Srinagar airstrip and the city. By the end of October, a brigade strength of men and material had been flown in and the Valley was saved. In this war, the size of the IAF transport fleet was small, hence, civil Dakotas, flown mostly by former IAF pilots, were requisitioned for this crucial air-bridge.

Lord Louis Mountbatten later said that in all his experience of the Southeast Asia Command and over the hump flights to China, he had never known of such an airlift being effected at such short notice. From then on, till the ceasefire on January 1-2, 1949, the Air Force continued giving intimate and regular support to the Army in one of the most difficult and hazardous terrains of the world.

Similarly, the attempt to capture Leh by the Pakistan Army was thwarted by timely, and what has become a "legendary airlift", by Air Cmde "Baba"

5. "Striking Yaks", *Squadrons of the IAF*, Vol. 6 (College of Air Warfare, 2007), p. 7.

Meher Singh, during which, essential military supplies were delivered. Air Cmde Mehar Singh, landed a Dakota at Leh on May 24, 1948, on a sandy strip next to the Indus River at a height of 10,700 ft above mean sea level. Never before had a Dakota transport aircraft landed at such heights. An uncharted route over the Himalayas, where the hill peaks ranged anywhere between 15,000 and 24,000 ft, was opened. The Indian Army's faith in the Air Force was demonstrated by the fact that Maj Gen Thimayya (later Chief of the Army Staff) accompanied the AOC in the aircraft. This was followed by an airlift of troops to Leh which saved Ladakh.

Besides the defence of Srinagar and Leh, the Indian Air Force played a significant role in the battles for Kotli, Jhangar, Naushera, Tithwal, Rajori and Kargil. The Indian Army successfully executed one of the most glorious military operations in the most difficult circumstances and in a unique terrain. Had it not been for the timely airlift of troops on that fateful day of October 27, 1947, the history and map of India might not have been the same.[6] In the 15-month-long Kashmir campaign, air power displayed its unique characteristic of mobility and reach.

1962 War with China

This is the only war where we had to suffer many casualties and loss of territory. Significantly, this also happens to be the only war in which combat air power was not utilised. In 1962, during the India-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 (a feeling based on utter lack of information) and the perception that the Chinese Air Force could interfere with the IAF transport operations on which the Indian Army was critically dependent[7].

6. Air Marshal Bharat Kumar, *An Incredible War: IAF in Kashmir War 1947-1948* (New Delhi: K W Publishers, 2007), Introduction by Air Commodore Jasjit Singh, p. xv
7. Group Captain Sanjeev Bedi "Strategic Role of Air Power", *Air Power Journal*, vol. 3, no. 2, Summer 2008 (April – June).

The main source of supply for the troops was air maintenance by the Air Force. Both Dakotas and Packets were pressed into service to provide the required supplies, for the task of transporting troops and stores, evacuating casualties and to maintain air supply in the hazardous mountainous region of both Ladakh and the Northeast Frontier Agency (NEFA). The helicopters had to constantly run the gauntlet of Chinese small arms and anti-aircraft fire, while operating from tricky helipads in the mountains. Among the notable feats performed by the IAF during the conflict were the operation of C-119 Packets from airstrips 17,000 ft above sea level in the Karakorams and the airlifting of AMX-13 light tanks by An-12s to Chushul in Ladakh.[8] The IAF flew countless number of missions for airlift, airdrop and casualty evacuation. It was a remarkable achievement that not a single aircraft was lost during the whole operation.

1965 War with Pakistan

This war in August-September 1965 was the first full scale war which the IAF was involved in since independence. In this war, the first aircraft got airborne 29 minutes after the Army Chief asked for air support, and includes the time used in transmitting the Air Chief's orders to Western Air Command and the stations. Not many air forces have been able to match the less than 30 minutes from political decision to armed strike aircraft take-off that was managed by the IAF.[9] The IAF, along with the combat role, was employed in support roles like airlift, casualty evacuation, etc., which are listed below:

- No. 12 Squadron flew 730 hours and airlifted more than 1,000 tons of equipment and supplies.[10]
- No. 106 Special Reconnaissance (SR) Squadron flew photo reconnaissance

8. "Transporting AMX tanks to the battle area posed a major hurdle as even the largest aircraft of the IAF, the An-12, with one tank would far exceed its maximum permissible take-off weight. The tanks were manhandled into the recently acquired An-12 transport aircraft, de-fuelled down to the barest minimum to make the round trip to Chushul in Ladakh, to give the Army a fighting chance against the Chinese onslaught." Air Commodore Jasjit Singh, *The Icon* (New Delhi: K W Publishers, 2009), p. 135.
9. Ibid., pp. 182-183.
10. n.5, p.22. .

missions and continued the recce missions even after the ceasefire, to assess the damage inflicted.[11]

- Dakotas of No. 43 squadron undertook casualty evacuation, transport support, news bearing to forward area bases and also special operations courier sorties.[12]
- Prior to the 1965 War, helicopters carried out reconnaissance and observation sorties. During the war, the helicopters undertook casualty evacuation and mercy missions, evacuating casualties from the battlefield in the midst of intense enemy fire and air raids.[13]

1971 Operations

The IAF's task in the east primarily involved direct support of the ground forces and air-bridging operations. Although Pakistan had initiated the war with preemptive air strikes against major forward air bases, the IAF rapidly gained the initiative and thereafter dominated the skies over both fronts.

The Tangail Paradrop[14]

In the Eastern theatre, the IAF gained total air superiority within 48 hours of going into action, a factor which directly contributed to the ultimate capitulation of the East Pakistan garrison. In order to cut off the withdrawal of Pakistani troops to Dacca from the Mymensing area, it was decided to airdrop a para battalion group with its supporting arms, north of Tangail. The aircraft used were An-12s, Packets and Dakotas. A dummy airdrop was carried out by two Caribous about 16 km away from the actual site. The main paradrop was undertaken by 48 aircraft on December 11. The entire operation was conducted with clockwise precision and was the first large-scale para-operation conducted by the IAF in war. Subsequently, on December 12, a pre-planned resupply for the Para Battalion was carried out by An-12s and Packet aircraft. In this

11. "Lynx," *Squadrons of the IAF: Vol. 11* (College of Air Warfare, 2009), p. 8.
12. "Ibexes," *Squadrons of the IAF: Vol. 10* (College of Air Warfare, 2007), p. 10
13. "Siachin Pioneers," *Units of the IAF: Vol. 3* (College of Air Warfare, 2005), p. 6.
14. *History of Indo-Pak War, 1971 Part-II* (History Division, Ministry of Defence, Government of India), accessed through the link http://www.bharatrakshak.com/Army/History/1971War

Eight Mi-4 helicopters flew 164 sorties, helilifting 1,350 armed troops and 40,070 kg of weapons and equipment.

war, Indian Airlines' Boeings were also utilised for airlifting troops and stores.

The IAF's transport aircraft and helicopters undertook extensive casualty evacuation on their return flights from forward airfields and landing zones. Combat support missions like air maintenance sorties and casualty evacuation from Agartala to Gauhati (Guwahati), air maintenance sorties for troops at Sylhet, Daudkandi and Tangail and air maintenance sorties in the NEFA region continued throughout the war period.

The Helibridges

Heliborne operations on a large scale were mounted in India, and perhaps in South Asia, for the first time during the 1971 War. They proved to be the key to rapid movement of the ground forces in the Bangladesh terrain criss-crossed with innumerable rivers and rivulets. The complete mastery of the air achieved by the IAF in the Eastern theatre enabled the helicopters to operate safely. Although there were only 14 Mi-4 helicopters in the theatre (for casualty evacuation and carrying senior commanders across different sectors), the heliborne operations were well planned and well executed. The pilots had to perform night landings on unprepared ground and on improvised helipads illuminated by torches.

The biggest helilift operation for transporting troops, arms and equipment was undertaken from Brahmanbari to Narsingdi and from Daudkhandi to Baidya Bazar between December 11 and 15. Eight Mi-4 helicopters flew 164 sorties, helilifting 1,350 armed troops and 40,070 kg of weapons and equipment. The important aspects of these special helicopter operations are:

- The helilift was undertaken from improvised helipads without any ground facilities.
- The pilots operated under the most trying conditions, both by day and night, without much prior training in this role.
- The landings on most occasions had to be done in the face of enemy small arms fire.

- These missions were completed with very marginal fuel reserves.
- All the battle-damaged helicopters were repaired in the field.
- In total, between December 7 and 15, the helicopters flew 409 sorties, lifting 3,803 troops and 100,070 kg of weapons and equipment between various sectors. And the task was performed by only eight to ten helicopters which were operational at any given time. Indeed, a great achievement by the IAF.

Air Operations in Support of the Navy

Dakotas and Avro HS-748s of the Indian Air Force were extensively utilised for maritime reconnaissance. These maritime air support sorties began on December 4, and continued on a daily basis thereafter.

"Where there were enemy strongholds, the IAF pounded them, where there were big rivers, the IAF airlifted troops and equipment, and where pressure was required to bear on the enemy to ask for ceasefire, the IAF was there to apply it".[15] Combat support operations were undertaken on a large scale in the form of tactical reconnaissance, airlift of troops, resupply tasks, etc. The success of counter-air operations and combat support operations was proved during this war.

Kargil Operations (1999): Operation Safed Sagar

By mid-July, IAF fighters had flown approximately 1,200 sorties with devastating effect. Helicopters made a significant contribution in the Kargil war and flew around 2,500 sorties, transporting large numbers of troops, casualties and hundreds of tons of load, besides flying attack missions. The IAF transport fleet also worked round the clock in meeting the task of moving squadrons to their operational locations, as also transporting men and equipment of the Army. In this operation, the IAF, despite severe constraints, proved to be the decisive force in evicting the invaders.

Though the Kargil War is more remembered for the downing of the MI-17 during offensive support, much of the innovative tactics are glossed over. For example, a successful offensive in the Gurej sector was primarily

15. Ibid.

based on the move of four 130 mm artillery guns to a bowl from where direct fire on enemy positions could be undertaken. All this was done by two Mi-17s within nine hours, just before the main attack was launched.

OTHER OPERATIONS

Operation Meghdoot

It is a story of courage in the continuous, untiring and relentless support by the IAF to the forces deployed there, which is a challenge for both man and machine. Operation Meghdoot was undertaken in support of the Indian Army and paramilitary forces in northern Ladakh, to secure control of the heights dominating the Siachin Glacier, also referred to as the world's third pole and potentially a dangerous flashpoint on the disputed northern borders. Timely induction of own troops by airlift prevented the Pakistan Army from occupying the ridge at Saltoro. The IAF's Il-76s, An-12s and An-32s transported stores and troops, airdropped supplies to high altitude airfields while Mi-17, Mi-8, Chetak and Cheetah helicopters ferried men and material to heights far above the limits set by the helicopter manufacturers.[16] In fighting for this "roof-of-the world" since April 13, 1984, the IAF's incredible performance at the extremes of temperature and altitude remains a continuing saga of fortitude and skill, where transport aircraft and helicopters have been stretched to their limits in providing unhampered air-link in support of the Army and civilians.

Sri Lanka Operations; Operation Pawan

Following the Indo-Sri Lankan Accord on July 29, 1987, the Indian Peace-Keeping Force (IPKF) was inducted into Jaffna area, to assist the Sri Lankan government in their fight against the Liberation Tigers of Tamil Eelam (LTTE) guerrillas. This operation lasted almost 30 months and about 70,000 sorties were flown by the IAF's transport and helicopter force to and within Sri Lanka, without a single aircraft lost or mission aborted. The IAF utilised all its assets to provide aerial reconnaissance and mobility to fight the insurgency; An-

16. Accessed from http://indianairforce.nic.in June 8, 2009.

32s carried out airlift and casualty evacuation in one of the most inhospitable terrains against hardcore militants. The Mi-8s became the critical lifeline for the field forces as well as providing air transportation to the Sri Lankan civil administration.

Operation Falcon

After India's conversion of Arunachal Pradesh from a Union Territory to a state, tensions between China and India escalated. By early April, China had moved eight divisions to eastern Tibet, and reinforcements on the Indian side began with Operation Falcon in late 1986, and continued through early 1987. This massive air-land exercise involved ten divisions of the Indian Army and several squadrons of the IAF. The Indian Army moved three divisions to positions around Wangdung, where they were supplied solely by air. The 1987 episode was, to a large measure, logistically supported by the newly inducted Mi-17s.

Operation Cactus—Maldives

In response to a request from the Government of Maldives, the Indian Air Force mounted special air-landed operations on the night of November 3, 1988, to airlift a parachute battalion group from Agra, non-stop over 2,000 km to the Maldives. The IL-76s carrying elite commando forces landed at Male under the cover of darkness and the coup bid was foiled. The operation was carried out with flawless coordination and precision, leading to complete success of the mission. The most immediate reality that emerged from this brief and bloodless action was the swift and effective Indian military response, made possible by the IAF's strategic airlift capability.

Strategic Airlift

The IAF has been utilised for protection of aircraft and ships evacuating the Indian population during the Gulf War of 1991: 1,13,000 of the 3,00,000 Indian citizens resident in the Gulf region were flown back home on aircraft of the Indian Air Force, Indian Airlines and Air India in what remains till

There is a need to plan ahead in order to ensure that a credible airlift capability is maintained.

today the second largest airlift in world history after Berlin 1991.[17]

CONCLUSION

The "Third or Aerospace Dimension" would become a very critical factor affecting the military, economic, and technological capabilities of a nation-state. The transformation of air power into aerospace power over the last hundred years has resulted in the third dimension emerging as the dominant factor in modern wars. From the Bekka Valley operations to the Gulf and Afghan Wars, it has rapidly developed into an overwhelmingly dominant dimension. In order to be a dominant regional player and a prominent global player, we should be capable of looking far ahead, identifying troubled spots, planning early, reaching out with the required load, and delivering the load with precision. Thereafter, we should have the ability to sustain in the hostile area, achieve goals within time-frames and de-induct efficiently.

There is a need to plan ahead in order to ensure that a credible airlift capability is maintained. The capacity gap that exists between the An-32 and the IL-76 payloads also needs to be bridged in order to optimise operations. Today, the IAF is expected to maintain the capability to deliver up to battalion strength (about 800 paratroopers) into a conflict area. In order to accomplish this objective, the air effort required by Il-76 and An-32 aircraft is quite large, with an appropriate number of standby aircraft of each type, as also a big element of offensive combat aircraft to protect the mission. Any such operation would be at the cost of other roles that the aircraft are expected to perform at the critical stages of a conflict. Such a drop was possible during the para-drop in 1971 mentioned above, because the IAF had total air dominance wherein there was not even a single aircraft airborne from the opposing side. Air dominance might not be a possibility in future wars and, hence, an alternative for the

17. Air Vice Marshal Kapil Kak, "Joint Capability Requirements of India's Armed Forces: 2008-2033", *Air Power Journal*, vol. 3, no. 1, Spring 2008 (January-March), pp. 26-27.

Army would be to choose a company size force dropped by smaller fixed wing aircraft or an even a smaller size force dropped by a rotary wing platform. On the part of the IAF, a 20-ton class of aircraft, when inducted, can lead to substantial reduction in the number of aircraft that would be required for the drop, thus, improving the chances of survivability and success of the whole operation. Several new operational technologies are now available in modern military transport aircraft. These are essential to give the required operational punch to the Indian armed forces to take the complexities of the future battlefields in their stride.

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The wars of 1962, 1965 and 1971, and the quarter century of peace thereafter, will always serve as reminders of the famous dictum: "If you want peace, be prepared for war". With this backdrop, the IAF has no option but to keep pace with the regional air powers and upgrade its capabilities to meet any threat that may arise in the future. India has a very long border against two implacable foes. A million-strong Army is strewn all along the entire length of this border. Where and when a pressure point might erupt cannot be forecast. Therefore, we must have the means to concentrate our land forces, wherever and whenever necessary in the shortest possible time. In its sizeable transport fleet, the IAF has both tactical as well as strategic airlift capabilities. Coupled with the other national air transport resources, the Indian Air Force is capable of bringing to bear the combat power of the land forces quickly both within a theatre as well as outside.