

THE IAF IN THE WESTIntroduction

Tension was mounting along the borders during the monsoon and autumn of 1971. The Pak aircraft continued to violate Indian air space in increasing numbers, even in the west. During November 1971 alone, there were as many as 10 major air violations by Pak F-104s and Mirages in the areas around Srinagar, Amritsar, Jammu, Jamnagar and Ganganagar. In the east, on the afternoon of 22 November 1971, three F-86 Sabres were intercepted by the IAF Gnats over Boyra to the north-east of Calcutta and in the ensuing air battle, all three were shot down(1). Escalation of tension continued until on the evening of 3 December 1971 the Pak Air Force (PAF) carried out its surprise attacks against the IAF airfields in the west.

It was suspected for weeks and months that the Pakistani attack on India would start with pre-emptive air strikes on a number of forward airfields. It appears that some information became available on 1 Dec that Pakistan was likely to strike in the next day or two(2). Under these circumstances, a pre-emptive strike by the IAF would have been prudent and rational. But the Government of India chose to let Pakistan strike first.

At last light, between 1740 and 1745 hrs, on the evening of 3 Dec, the PAF launched attacks simultaneously on the IAF airfields at Amritsar, Srinagar, Avantipur and Pathankot, the Advance Landing Ground at Faridkot, and also the radar unit (SU) at Amritsar. A total of six F-104s and ten F-86s were used. Two minutes before the raid on Pathankot at 1745 hrs two Mirages flew over the airfield. All these airfields being close to the border, there were insufficient warning for air defence aircraft to be scrambled to intercept the raiders. The attacks were with bombs, and only one pass was made over each target. Except for minor damage to the communication equipment at the SU, i.e., the radar unit, at Amritsar and to a light Air OP aircraft at Faridkot, there was no damage of any consequence to other vital installations. One F-104 Star-fighter was shot down by air defences at Amritsar(3).

In response, bomber units of Central Air Command (CAC) were ordered to prepare for strikes on the PAF bases. No fighter bomber attacks could be mounted because of the late hour. But the civil defence

organisation was alerted by the air defence network, steps were taken to control movement of civil craft in Indian air space.

Pakistan's attempted 'Pearl Harbour' having failed dismally, the PAF mounted second blow, of 17 raids with B-57 bombers during the night of 3/4 Dec against the forward airfields in the west and the major air base at Agra. A B-57 was brought down, probably by Ack Ack guns defending the Amritsar radar station. No aircraft was hit on the ground, but some of the airfields were damaged. The runways at Jodhpur, Uttarlai, Agra and Sirsa sustained minor damage, but remained operational throughout that night. The craters at Halwara were more extensive and were repaired only by the next morning.

The PAF having launched its pre-emptive strike without any warning or declaration of war, the Indian armed forces were free to hit back with full vigour. The IAF, which was honed for war but hoped for peace, was ready to give a befitting reply to the aggressor.

### The Opposing Air Forces

The IAF with expansion and modernisation had grown both in size and in offensive potential by 1971. It had in fact become the fifth largest air force of the world, after those of the United States, USSR, China and France. The total IAF inventory was estimated at approximately six hundred twenty-five combat aircraft. It was organised into thirty-four fighter squadrons, and five bomber squadrons, twenty eight of which were deployed against West Pakistan and eleven around East Pakistan. These included aircraft from units like Tactical and Combat Development Establishment (TACDE), Operational Conversion Unit (OCU) and Jet Bomber Conversion Unit (JBCU) being formed into Squadrons. Fifteen of the squadrons were equipped with supersonic planes. Air defence had also received considerable attention. A string of modern airfields with concrete covered 'pens' for aircraft had been built along the Western border. Radar controlled guns and SAM-2 Soviet surface to air missiles had been acquired. They were integrated with a good radar network, and atleast the high and medium level radar coverage was fairly extensive. As a result, an effective and formidable defence zone, with only a few gaps, had been created along the West Pakistan border.

Transport aircraft included one maritime recce Squadron with L-1049 Super Constellation aircraft, about fifty-five C-47, sixty C-119, twenty Il-14, thirty An-12, twenty-five Otter, twelve HS-748 and

fifteen Caribou aircraft. Helicopters included about eighty Mi-4, 150 Alouette III, ten Bell-47 and a few Mi-8(4).

The PAF, it was estimated, mustered about two hundred seventy-three combat aircraft consisting of one hundred thirty Sabres, twelve F-104s, ninety Chinese built MiG-19s, twenty-six French Mirage-IIIs, and fifteen B-57 bombers. They were organised into some thirteen squadrons, out of which twelve were in West Pakistan and one in East Pakistan. Their trainer aircraft included 30 T-37 and 17 T-33 aircraft. Transport aircraft included nine C-130 Hercules and one F-27 aircraft. Helicopters included forty Sioux, Huskie, Alouette III and Mi-8s(5).

The IAF

As mentioned, on the Western Front the IAF had twenty-four fighter/bomber squadrons plus four bomber squadrons, deployed at rear as well as forward airfields. The detailed deployment just prior to the onset of hostilities was as follows(6):-

Fighter Aircraft

<u>MiG-21 or Type 77</u>	<u>Sqn Commander</u>	<u>Base</u>
(a) i. 1 Sqn AF	Wg Cdr Upkar Singh	Adampur
ii. 8 Sqn AF	Wg Cdr AK Sen	Pune/Bombay
iii. 29 Sqn AF	Wg Cdr AB Swardekar, KC	Hindon/ Jodhpur/ Uttarlai from 14 Dec 1971.
iv. 45 Sqn AF	Wg Cdr SK Anand	Chandigarh/ <sup>Amritsar</sup> Bikaner/ <sup>Pathankot</sup> Sirsa
v. 47 Sqn AF	Wg Cdr HS Gill, VM	Jamnagar/ Halwara
vi. TACDE (one flight)	Wg Cdr AK Mukerjee	Amritsar/ Ambala

Hunter

(b) i. 7 Sqn AF	Wg Cdr BA Coelho	Nal, from Dec 71, when it came over from the East.
	Wg Cdr NC Suri, VM	

ii. 20 Sqn AF	Wg Cdr CV Parker, VM	Pathankot
iii. 27 Sqn AF	Wg Cdr YP Mehta	Pathankot
iv. OCU AF	Wg Cdr DM Conquest	Jamnagar/ Jaisalmer

### Gnat

(c) i. 2 Sqn AF	Wg Cdr JW Greene, Vr.C.	Amritsar/ Ambala
ii. 9 Sqn AF	Wg Cdr K Yadav, VM	Halwara
iii. 18 Sqn AF	Wg Cdr P Raina	Srinagar
iv. 21 Sqn AF	Wg Cdr SS Malik, Vr.C., VM	Uttarlai/ Ahmedabad
v. 23 Sqn AF	Wg Cdr SD Mohan	Pathankot

### Su-7 or S-22

(d) i. 26 Sqn AF	Wg Cdr RK Batra	Adampur
ii. 32 Sqn AF	Wg Cdr HS Manget	Ambala
iii. 101 Sqn AF	Wg Cdr KC Khanna, VM	Adampur
iv. 108 Sqn AF	Wg Cdr DS Deshmukh	Halwara
v. 222 Sqn AF	Wg Cdr AA D' Costa, VM	Halwara
vi. TACDE (one flight)	Wg Cdr AK Mukerjee	Ambala/ Amritsar

### HF-24

(e) i. 10 Sqn AF	Wg Cdr KC Aggarwal	Uttarlai/ Jodhpur
ii. 220 Sqn AF	Wg Cdr R Dhawan, VM	-do-

### Mystere

(f) i. 3 Sqn AF	Wg Cdr RN Dogra	Sirsa/ Hindon
ii. 31 Sqn AF	Wg Cdr ML Trehan	Nal/Jamnagar

(g) Vampires

Srinagar

(h) Harvards

Rajouri

Bomber Aircraft

(a) 5 Sqn AF

Wg Cdr MS Talwar Agra

(b) 35 Sqn AF

Wg Cdr KK Badhwar Pune

(c) 106 Sqn AF

Wg cdr RS Benegal Agra

(d) JBCU

Sqn Ldr S Thakar Agra

The PAF

16 Sqn F-16

Wg Cdr P Gauram Cozakhpur

Prior to December 1971 conflict, the PAF was composed of 14 Squadron (13 Combat + 1 Tpt a/c) including one F-114 Sqn from Jordan, with an aircraft strength of approx. 273 combat aircraft. During the conflict itself, it received 35 F-86s from Saudi Arabia and Iran. The assessed disposition of the Pakistani Air Force on the eve of hostilities was as given below:-

Deployment (Combat Aircraft)

Peshawar	1 x F 86 Sqn
Chaklala	1 x C-130 Sqn
Murid	1 x F 86 Sqn
Mianwali	1/2 x F 86 Sqn
	1/2 x B-57 Sqn
Sargodha	1 x Mirage III Sqn
	2 x MiG-19 Sqns
Bhagtanwala	1/2 x F-104 Sqn
Risalwala	1 x MiG-19 Sqn
Raficy	1 x F-86 Sqn
Jacobabad	1 x F-86 Sqn
Masrur	1/2x F-104 Sqn
	1/2 x B-57 Sqn
	1 x F-86 Sqn

The PAF had a good network of Radar Units integrated with large numbers of well-trained Mobile Observation Posts in a double layer system. The airfields had anti-aircraft guns, and Combat Air Patrols (CAPs) were mounted to protect the airfields.

Consequent on the imposition of the embargo in 1965 on the supply of arms by the US, Pakistan attempted to diversify her inventory by the acquisition of aircraft and weapons systems from other countries. This implied an element of improvisation, which inhibited to a degree the planned development of Pakistan Air Force.

### IAF PLANNING

It was appreciated that Pakistan might attack India in order to sidetrack internal and external pressures and to divert attention from the crisis in East Pakistan. It was also appreciated that China was likely to maintain pressure against India from the north, thus tying up a considerable quantum of Indian forces. Plans were updated from time to time in the light of the changing political and military situation, and forces were redeployed to meet the threats. The plans, inter alia, took into account the contingency of a pre-emptive offensive by Pakistan.

On account of shortages of fuel and transport, China had serious logistic problems in Tibet. Though she had built airfields which were capable of handling jet fighters and bombers with radii of action as far as the industrial complexes of Bengal - Bihar and Kanpur, except for Radar, she had not permanently deployed any elements of her Air Force in Tibet.

Based on these factors, the Chief of Staff appreciated that in all probability the Chinese collusion with Pakistan would amount to only a token show of force to prevent Indian troops along the Chinese border from being pulled out to reinforce those already deployed against Pakistan.

In view of this appreciation, the IAF was instructed not to undertake air action against the Chinese in any form without prior clearance from Delhi, but to retain the option to retaliate in case the Chinese initiated offensive action.

In the light of the directives issued by the Cabinet to the Chiefs of Staff, the following aims were stipulated for the Indian Air Force in the two theatres of operations (7):-

- (a) To defend the home base against enemy air attacks.
- (b) To support the Army in the field, and to be able to do it, gain and maintain a favourable air situation over the tactical area, and mount reconnaissance, interdiction and other operations having direct bearing on the outcome of the land battle.
- (c) To conduct counter air operations, i.e. reduce the effectiveness of the PAF by destroying its aircraft and bases.
- (d) To provide air transport support to own forces.
- (e) To provide maritime air support to the Navy.

After drawing upon the resources of Maintenance and Training Commands, forces were suitably reallocated separately for air force tasks as well as for joint operations involving the Army and the Navy.

The Western Theatre was the area of decision. Against Western Air Command's twenty-eight fighter, fighter/bomber and bomber squadrons, the PAF had a force of fighters and bombers worth twelve squadrons. Neutralising the PAF in West Pakistan would still be a long drawn out affair. It was decided to use the air force in a manner which would ensure that the PAF was not in a position to interfere with the overall plans of the armed forces. In pursuance of this policy, the IAF was to accomplish tasks in the following order of priority:-

- Priority One - Defence of the home base(s).
- Priority Two - Support to the Army and Navy, including gaining and maintaining a favourable air situation over the tactical areas.
- Priority Three - Counter air operations, against enemy air bases and radar stations, and attacks on strategic targets which had a vital role in sustaining the economy and the war potential of the enemy.

Commander No.1 Air Defence Control Centre (ADCC) at Ambala would be responsible for the air defence of the Punjab and Delhi Sectors. Air Officer Commanding (AOC) Western India would be responsible for the Air Defence of Bombay, Pune, Jamnagar and Rajasthan Sector. Air Defence would be carried out by five MiG-21 squadrons and four Gnat squadrons. In addition, there were the SAGW Wings at Chandigarh, Delhi, Agra and Bombay for the protection of these cities and major IAF's complexes.

Western Air Command area had also a fairly wide and effective network of radar and Observer Posts. The personnel and facilities of such organisations as the BSF, Home Guards and the Railways were integrated into the Air Defence network.

It was planned to take the offensive from the very beginning of the war. Western Air Command was to attack PAF bases at Sargodha, Mianwali, Shorkot Road, Murid, Peshawar, Chanderwalla, Risalwala, Chak Jhumra, Karachi, Drigh Road and the radar stations at Lahore, Sakesar and Badin. In addition, the IAF was to carry out interdiction, so as to prevent concentration of troops in the forward areas. The aircraft to be used for these attacks were the HF-24, S-22, Hunter 56-A, Mystere and Canberra. The Canberra aircraft would operate at dusk and at night only.

A few strategic targets like oil installations, gas and power plants and harbour facilities had also been identified for attacks as per a tentative time schedule.

The prime need was to obtain accurate intelligence about PAF bases and radar stations. The plan was to photograph the main PAF airfields on the first day or two of hostilities. In addition, photographs would have to be taken for the army of enemy concentrations and troops movements. Plans also required keeping an eye on the movement of 1 Armd Div of Pakistan, then deployed in Multan under 2 Corps. The movement of this formation was of vital importance to the Army because their own strategy would depend to a considerable extent on where Pakistan chose to employ this potent weapon. For this purpose, it was necessary to take photographs of installations and areas deep inside Pakistan(8). The Canberra Photo Reconnaissance (PR) aircraft was too slow for such missions to penetrate far into enemy territory. Notwithstanding the vulnerability of this aircraft, it had to be used. In an innovative effort some fighter bombers were also fitted with cameras. They brought back very useful photographs. However, the additional



load of the camera equipment correspondingly reduced the fuel carrying capacity, and so targets deeper inside Pakistan could not be reached.

A certain number of squadrons were allotted for direct support to the Army and to provide air defence to troops in the battle areas.

For maritime operations, the Super Constellation aircraft from Pune would be deployed at Hakimpet near Hyderabad. This would not only put these large and vulnerable aircraft out of range of Pakistan aircraft but would also enable them to look after both the Western and Eastern Seaboards. Their operations would be directed by AOC Western India in consultation with the Indian Navy from Bombay.

It was planned that transport squadrons would be moved out of the combat area of Punjab and Agra and be deployed at bases further back. They would move forward as and when required for the support of the Army. Contingency plans to airlift certain Army units to forward areas, use of para forces in selected areas and commando type heliborne operations would be jointly prepared for execution during hostilities. The An-12 cargo or transport planes were also adapted to drop 500 and 1000 lb bombs.

Before the hostilities commenced, the radars were redeployed with a view to obtaining better coverage. This was further improved when it became possible to move additional radar units from the east to the west. For example, deploying a radar unit from the east at Ahmedabad closed the gap between Jamnagar and Jodhpur which had earlier been exploited by the PAF while attacking Agra from Karachi. A P30 radar from Adampur was moved to Amritsar to cater for any damages that might occur to the Signal Units. Similarly P-30 radar was moved from Jodhpur to Uttarlai to update the Ground Control Interception (GCI) facility there. Prior to this, this airfield had only an early warning capability. A single tier Low Level Reporting System (LIRS) was introduced just before the hostilities to provide point defence to vulnerable Areas (VA) and Vulnerable Points (VP). The Observation Posts (OP) were, however, manned by inexperienced and untrained crew. They were only able to provide some early warning of the approaching enemy aircraft.

Surface to Air Guided Weapons (SAGW) were moved from their permanent bases and deployed in most important cities, airfields and economic targets. The Air Defence (AD) Guns, mainly L-60, L-70 and a few 20 mm guns, were deployed around IAF's VAs and VPs

(airfields, SUs and SAGW sites).

The general concept for gaining air superiority was to mount relentless attacks on the Pak airfields and radar installations, so as to force the PAF to deploy major portion of its resources for their defence. Such a reaction would then enable the IAF to concentrate on special/strategic strikes and on close support to ground forces with relative impunity. In the light of subsequent pattern of PAF reactions, the preferred concept stood vindicated.

The efficacy of this strategy was confirmed by F.M. Khan in his book entitled "Pakistan's Crisis in Leadership"(9).

### AIR DEFENCE AND CONTROL AIR OPERATIONS

Air defence missions were admittedly different from counter air missions in the tactics used, weapon systems employed and duration of sorties. But both these types of operations represented basically the struggle for air superiority. The overall objective in either was to inflict maximum attrition on the enemy air force and to protect one's own capability in the air. So, it would be logical and convenient to describe air defence and counter air operations together from day to day.

#### 3 Dec

After the pre-emptive strike by the PAF, while the Canberra force was able to mount twenty-three missions against the PAF airfields at Murid, Mianwali, Sargodha, Chander, Risalwala, Shorkot and Masrur (Karachi) scoring direct hits on run-ways and installations, the fighters could not go into action that night because of the late hour. The fighters, however, were fully serviced and armed to go into action at first light the next day, as brought out earlier.

#### 4 Dec

The dawn of 4 Dec found S-22s, MiGs, HF 24s and Hunters going out in force against Pak airfields and radar stations. Aircraft strength at forward airfields at Pathankot, Amritsar and Halwara was augmented by twenty-six fighter bombers which had been kept back at rear bases.

These operations in the West during day light hours cost the IAF seven aircraft in one hundred eighteen counter-air sorties. Three Hunters and one S-22 were shot down by the Pak aircraft, two S-22s

fell to ground fire while the seventh aircraft, a Hunter, was hit by ground fire and severely damaged. The pilot managed to fly it back to base, but it was wrecked on landing. A S-22 was also involved in a take off accident at Adampur. The aircraft was destroyed and the pilot killed. However, thirteen Pak aircraft comprising seven F-86, 2 MiG-19s, one Mirage, 2 B-57s and one C-130 were destroyed on the ground by IAF Hunters and S-22s, apart from the B-57 and the F-104 shot down over Amritsar in the evening and night of 3 Dec(10).

PAF fighters/bombers were active mostly against the ground forces and installations in Chhamb and Jammu Sectors. The PAF also mounted counter air sorties on radar stations at Barnala and airfields at Amritsar, Pathankot and Srinagar. The radar at Barnala was off the air for nearly 12 hours. Three more raids were mounted by the PAF in the afternoon against Pathankot and Srinagar.

#### Night 4 and 5 Dec

During the night 4/5 Dec, the PAF mounted seven raids against Pathankot, Amritsar, Sirsa and Agra. In the two raids on Agra airfield, the run-way was put out of commission temporarily, and some of the Canberra missions had to be cancelled.

During the night 4/5 Dec, IAF Canberras again struck the Pak airfields. In thirty-five missions 202 bombs of 1000 lb each, were dropped. Eight Canberras attacked Masrur airfield from 2030 hrs onwards. Karachi was easy to find because of the flames in the harbour area, caused by the naval attack. The IAF's attack on Masrur by Hunters in the afternoon and the Canberras at night made a significant contribution towards the success of the naval attack on Karachi harbour the same night. These raids, spread through the night, kept the PAF grounded at this important air base, which controlled the air defence of the Karachi complex. A specially trained force of S-22s and MiGs was also employed for night attacks on Pak airfields in the West. The IAF suffered its first Canberra casualties on this night, when two of them failed to return after raids over Mianwali and Masrur. The Mianwali aircraft was intercepted and shot down by a Mirage while the Masrur aircraft was believed to have been brought down by anti aircraft guns(11).

#### 5 Dec

Pak air activity against the IAF was restricted to six raids during the day. In an attack on Srinagar airfields the runway was slightly damaged, but was

soon repaired. One Alouette helicopter flying near the airfield was shot down and both pilots were seriously injured. A F-104 of the PAF was shot down by ground fire over Amritsar and the pilot captured. Pathankot was raided by three Mirages at 1445 hrs. The PAF had been employing mainly only this type of aircraft against Pathankot. To counter this threat, four MiG-21s were moved up from Chandigarh to join the Gnats already based at Pathankot.

There were nine enemy raids on AF installations, mostly by B-57s and C-130s operating singly. The forward airfields at Pathankot, Amritsar, Adampur, Nal and Bhuj suffered hardly any damage. But the main oil depot at Okha was hit and set on fire. A B-57 was claimed to have been hit by ground fire at Amritsar but the aircraft limped back to its own territory.

Counter air operations on 5 Dec were limited to attacks on the PAF airfields which could be used to mount raids against Indian Army positions in the north. These had the effect of making the PAF withdraw many of its combat aircraft from the forward airfields at Murid, Chander and Risalwala to more secure bases in the rear. As a result, there was an appreciable decline in the number of enemy air attacks on Indian ground forces from 6 Dec onwards. The Pak high-power radar at Sakesar was also attacked by Hunters and S-22s. One of the antennas was hit and the radar was put off the air. It came on again after two days, but at a much lower power. The IAF lost three Hunters and one S-22 over Sakesar - the three Hunters were probably shot down by enemy interceptors. At 1445 hrs in the afternoon, three Hunters attacked Drigh Road airfield near Karachi and scored direct hits on storage hangars. The tally of enemy aircraft destroyed on the ground was two F-86s, one C-130 and one light aircraft; a B-57 was probably destroyed at Shorkot(12).

In the counter-air role the Canberras operated against Shorkot, Murid, Mianwali, and Masrur airfields. They dropped a total of 144 big 1000 lb bombs. Three Canberras which attacked Masrur scored hits on a Bulk Petrol Installation (BPI) and buildings in the technical area. It was a very successful mission. Of the seven Canberras which visited Sargodha, one failed to return. Reports indicated that it was shot down by ground fire.

#### 6 Dec

Throughout the day the PAF refrained from attacking IAF air bases. But as dusk fell, Mirages and F-86s attacked Amritsar and Srinagar. The raids were

in strength, with six aircraft attacking each air base. The Fighters made single passes at low level and high speed. The runways at both airfields were slightly damaged but were quickly repaired.

During the night, the PAF made many attempts to put the airfields at Pathankot and Amritsar and the radar at Amritsar out of action. As many as 10 raids by single aircraft were mounted from mid-night. Mirages attacked the radar station but did no damage. The PAF B-57s concentrated on the airfields. There was no damage at Amritsar. At Pathankot a missile preparation shed was hit but the fire was put out before any damage occurred to the main storage area. Also, an aircraft servicing hangar was hit and a Vampire aircraft parked inside was partially destroyed. But the airfield continued to remain fully operational. Four Mirages attacked Chandigarh at 1827 hrs but no damage was done. In the south, a Pak aircraft bombed Bhuj airfield, the bombs falling clear of the runways.

On 6 Dec twenty two counter air missions were mounted by the IAF in the West, making it difficult for the PAF to bring its offensive support aircraft into the battle zone. The attacks were mainly against Chander and Risalwala during day light hours, while Sargodha and Chaklala (Rawalpindi) were visited by S-22s in the early hours of the night. It was appreciated that the PAF would have strengthened the air defence of the Karachi complex and any more raids by Hunters would be very costly. Moreover, the Canberra night attacks were going through regularly. Therefore, it was decided to move six Hunters from Jamnagar to Jaisalmer to take on the Pak armoured forces in the Longewala area(13).

On the night of 6/7 Dec, most of the Canberras were taken off counter air tasks in the Punjab and employed in the army support role. However, eight of them attacked Drigh Road (near Karachi) which was a major maintenace base of the PAF. It also held reserve aircraft. The hangars were reportedly hit and thick smoke was seen rising from the technical area.

7 Dec

Counter air missions of the IAF on 7 Dec were further reduced in order to step up close air support to the Army. However, the airfields at Risalwala and Chander were attacked. Three Hunters from Pathankot also struck Murid in the afternoon; but their 'kills' appeared to be dummy aircraft on the ground. The Kohat airfield was attacked by Hunters which set fire to a hangar. Camera modified S-22s were sent out to

obtain photo coverage of Chander, Risalwala and Chaklala. All the missions were successful.

At Uttarlai, a Gnat on a CAP mission had a tyre burst on landing. The aircraft was extensively damaged. In another accident, a Gnat being ferried from Halwara was lost near Amritsar airfield. The pilot tried to take evasive action when warned of the Pak aircraft in the vicinity. He lost control and crashed.

A B-57 which came over Amritsar at 0517 hrs was chased away by ground fire without dropping its bombs. Further south at Uttarlai, slight damage was caused to the airfield in three raids. However, the oil tanks at Barmer railway station were hit and set on fire(14).

On the night of 7/8 Dec Canberras continued their raids on the Karachi complex with attacks on both Masrur and Drigh Road. In the north, S-22s and MiGs mounted seven night raids against Sargodha, Chaklala and Chander, bombing the runways. The PAF also paid special attention to Pathankot airfield and mounted eight single-aircraft raids against it during the night. There was no damage worth the mention.

#### 8 Dec - IAF Changes Tactics

From 8 Dec onwards the Western Air Command changed its tactics for counter air and close air support operations. Deliberate attempts were made to attract the PAF's attention and invite aerial engagement. Strike missions were escorted by fighters which flew high enough to be seen on Pak radar screens. But the PAF refused to cooperate. Instead there was a marked decline in the PAF's attacks on Indian troops. In two counter air missions by the IAF, five aircraft were destroyed on the ground at Murid(15) and Chaklala. After the Chaklala attacks the three Hunters went on to strike the oil tanks at Attock for the second time. Some of them were set on fire. Photographs were also taken of Lahore airfield to locate a Pak radar unit which was suspected to be deployed there. One S-22 was lost on a raid over Risalwala airfield while the PAF lost three MiG-19s (two confirmed), one C-130 and a light aircraft(16).

The PAF made two raids in the afternoon against Avantipur and Amritsar radar units. There was no damage to either installation. A detachment of four Hunters from Hindon, belonging to the squadron which had moved from Bagdogra the previous day, was sent to Nal to augment the air effort in support of the army in the Ganganagar sector.

Counter air operations by Canberras were restricted to the Karachi area on the night of 8/9 Dec. Between 0300 and 0400 hrs on 9 Dec, seven Canberras bombed the storage area on Drigh Road airfield while one bombed oil storage tanks in Karachi harbour and obtained direct hits. Four tanks were seen going up in flames. Later reports confirmed the conflagration that was caused by this attack. It was estimated that Pakistan lost over 60% of her oil resources in the Karachi area to air attacks.

### 9 Dec

On 9 Dec Western Air Command at Delhi was called upon to mount maximum number of sorties in support of army operations, especially in the Chhamb area. To ensure success of these missions, it became necessary to keep the PAF away from the front. Attacks were, therefore, mounted against Chander and Risalwala. In the south, the Pak airfields at Hyderabad, Nawabshah and Jacobabad were also attacked. Nawabshah was attacked because it was suspected of being used to fly in stores from abroad by civil aircraft. A light aircraft was destroyed on the ground. Altogether twenty-two sorties were flown against enemy airfields. One SU 7 was lost after raid on Chander; the aircraft appears to have been hit by a missile. A HF-24 also fell to ground fire over Hyderabad.

There were only four PAF raids during 9 Dec. Four F-86s bombed Srinagar airfield at 0950 hrs causing six small craters on the runway; they were repaired by night-fall. Six Mirages struck Pathankot at 1515 hrs but the damage caused was again negligible. At Okha, one F-104 was shot down by naval air defence fire. The appearance of a F-104 in this area indicated a strengthening of defences of the Karachi complex and more opposition to Indian air operations in southern Rajasthan(17).

On the night of 9/10 Dec, seven Canberras bombed Nawabshah and dropped 53 x 1000 lb bombs. After this attack there were no more radar sightings of aircraft movements at this airfield, either by day or night. During the course of the night there were six raids by Pak aircraft on Pathankot and Amritsar. There was no damage. A B-57 also tried to attack Agra, but was chased away by ground fire.

### 10 Dec

On 10 Dec, no counter air missions were flown except for obtaining photo cover of Murid airfield. The IAF was busy supporting the land battle. Ground attack aircraft operating in the Chhamb area were

often escorted by fighters to prevent the PAF from interfering with them. On this day one F-86 was shot down by an escorting Hunter. The success of counter air operations was highlighted by the fact that PAF fighter bombers flew only ten to fifteen sorties per day against Indian troops from 6 Dec onwards, and no IAF aircraft was lost to enemy air action while on close support role.

The PAF continued to concentrate its efforts against Pathankot, with a raid at 1110 hrs by six Mirages. The Mirages made three craters on the runway at Pathankot but miraculously, two Hunters about to take-off were not hit. Two Gnats were on CAP at the time. One of them managed to get behind one of the raiders and fired at it, but the quarry pulled away 'with reheat on'. The jettisoned drop tanks showed bullet holes, but the aircraft escaped. There were five more raids on Pathankot during night 10/11 Dec. Amritsar and Uttarlai airfields were also attacked during the night, but again with no significant damage(18).

#### 11 Dec

On 11 Dec, IAF counter air missions were restricted to search for an enemy radar station which, it was believed, was operating somewhere near Zafarwal. Also, a photo reconnaissance sortie was flown over Walton airfield (near Lahore) to locate a low level radar which the PAF had been using to track and intercept IAF aircraft operating through Amritsar. Nawabshah was also photographed for damage assessment. The two Hunter squadrons at Pathankot had been in the thick of battle from first light of 4 Dec, and they had to be rested. The Western Air Command pulled back both of them (29 aircraft) to Hindon, and sent up 9 Hunters from Hindon with fresh pilots to replace them.

The PAF commenced its raids on Indian airfields with an attack by two F-104s on Uttarlai at 0910 hrs. Two HF-24s were about to take-off, and the leader was already lined up on the runway. His aircraft was hit by gunfire and destroyed, but he managed to jump out before it caught fire. An airman inside a blast pen was hit by a bullet ricochet and killed. This was the first occasion when the PAF was able to destroy an IAF aircraft on the ground. There were more raids during the day against Amritsar, Srinagar, Uttarlai and Jammu, where a small hangar was damaged. One F-86 was claimed to have been shot down by air defence guns at Amritsar. During the night, a MiG from Adampur was lost while on an air defence mission near Pathankot.



12 Dec

The increased enemy air activity over Pathankot, especially by Mirages during day light hours, had to be countered. Gnats on CAP over the airfield had not been successful in intercepting the supersonic Mirages. Therefore, seven MiGs were sent from Chandigarh to Pathankot to strengthen the interception capability. There were no Pak raids over Pathankot on this day. But there was one raid by five F-86s on Srinagar at 1128 hrs. Their bombing resulted in five craters on the runway. These were repaired by 1400 hrs.

In Rajasthan, the appearance of F-104s over Uttarlai was countered by moving four MiGs from Hindon to replace four Gnats which so far had been providing air defence for this air base. It was also planned to use the MiGs to escort the HF-24s on their strike missions over Naya Chor and further west.

The IAF suspected that enemy aircraft were making use of a beacon at Chor for making runs to Uttarlai, especially on their night raids. HF-24s had been given the task of destroying this beacon. On 12 Dec, they found the aerial masts and attacked them and the building closeby, after which there were no further night attacks on Uttarlai. The airfield at Jacobabad was photographed to see if the PAF was operating from it. It was not.

The radar station at Badin was important to the PAF for operations in southern Rajasthan. Therefore, on the morning of 12 Dec, two MiGs were sent from Jamnagar to obtain photo cover of the radar complex. At 1242 hrs, four MiGs attacked the complex with bombs which burst close to the aeriels. As if in retaliation, two F-104s tried to attack Jamnagar late in the afternoon. The MiGs were scrambled and one of them shot down a F-104 which fell into the sea. The same day, a MiG was lost in a flying accident at Palam(19).

13 Dec

Seventeen daylight counter air missions were mounted by the IAF on 13 Dec, mainly against the Badin radar complex and the airfield at Telhar, north of Badin. At 1040 hrs there was a coordinated attack by three Hunters on Telhar and four MiGs on Badin. The Hunters were intercepted over the airfield by F-86s of whom two were shot down. The MiGs struck the aeriels and the power generating building of the radar complex. The area was heavily defended by guns and the MiG leader was shot down. Four Gnats were sent from Jodhpur to Ahmedabad on 13 Dec to work with the

P30 radar which had moved there on 10 Dec to provide air defence to the Koyali refinery.

In order to facilitate evacuation of foreign nationals from Islamabad, a bombing pause was ordered between 0900 and 1200 hrs at Chaklala. Seven aircraft belonging to other countries were still on the airfield at mid-day. Therefore, it was agreed to extend immunity till 1000 hrs the following day. A bombing pause was ordered in the Karachi area also from 0800 to 1000 hrs to enable air evacuation of foreign nationals.

Information was received through Army HQ Ops Room that four F-86s had come over Koyali at 0950 hrs. The refinery was not attacked, but air defence guns opened fire. There was only one day raid on Jammu by two Mirages. During night 13/14 Dec, Pathankot was visited twice and Amritsar once. There was little damage and all IAF airfields remained operational.

#### 14 Dec

On 14 Dec, the Western Air Command tried to locate the Pak radar station believed to be operating in the Zafarwal area, but without success. The airfield at Pasrur was attacked by S-22s and the runway cratered.

There were six PAF raids against Indian airfields, two by day against Srinagar and Jammu, and four during the night of 14/15 Dec against Pathankot and Amritsar by one aircraft. Air defence gunners claimed to have hit a Mirage that attacked Jammu, but the claim remained unconfirmed.

#### Sekhon wins the first PVC for IAF

Srinagar was one of the airfields very frequently attacked by the PAF. No. 18 (Gnat) Squadron was assigned for its air defence. On 14 Dec the airfield was attacked by six Sabres. Young Flying Officer Nirmaljit Singh Sekhon was still on the runway when the Sabres attacked. Notwithstanding the grave danger of attempting a take-off under such circumstances, Sekhon got airborne and engaged the Sabre formation. Then began an unequal contest between the solitary Gnat and half a dozen Sabres over the airfield. Sekhon shot down one Sabre and managed to set another on fire before sheer numbers gained ascendancy and he was shot down (20). Flying Officer NJS Sekhon was awarded the Param Vir Chakra posthumously, the first individual from the IAF to be awarded India's highest gallantry award for valour above and beyond the call of duty.

15 Dec

The PAF had not been active against Indian troops during the preceding few days, and its raids on airfields had been few and mostly at night. Therefore, counter air operations on 15 Dec were restricted to an attack by four S-22s on Pasrur airfield using the 200 kg. S-24 rockets. Gujarat was another airfield from where Pak aircraft could operate against Indian troops, especially in the Shakargarh bulge. Photographs were taken on this airfield.

The PAF raids fell off sharply, there being only three during the day - one against Srinagar airfield at 1300 hrs and the other two against Mukerian and Dasuya railway stations on the Jullundur-Pathankot rail link at 1620 and 1920 hrs. Minor damage to the track occurred which was repaired quickly. This was the first attempt by the Pakistanis to bomb the railway system. At Srinagar one Vampire was hit on the ground inside a blast pen. The damage was repairable.

16 Dec

The HF-24s from Uttarlai were being escorted by MiG-21s on their attack missions in Pithora area when a MiG-19 tried to intercept them. The enemy aircraft was shot down by the MiG-21 in the ensuing air battle(21).

The PAF made two raids in the afternoon against Srinagar and Avantipur airfields. Five IAF civilians were killed at Srinagar, and the runway again slightly damaged. On an evening raid over Bhatinda, 40 civilians in a mill were killed and the railway yard and control cabin damaged slightly. There was another raid at 0150 hrs on 17 Dec when a PAF B-57 dropped eight bombs some 200 metres from the radar station at Amritsar without causing any damage.

17 Dec

It was known that Pakistan had developed the airfield at Skardu in Pakistan Occupied Kashmir (POK). On 17 Dec, three Canberras and an An-12 attacked the target at 1545 hrs. The Canberras raid followed the An-12 raid within five minutes. The An-12 attack was fairly accurate.

In the south, MiGs escorting HF-24s intercepted two F-104s over Umarkot and shot down both of them. A third F-104 on a raiding mission to Uttarlai was also shot down by a MiG. There were no other attempts by the PAF against Indian air bases and facilities. One MiG on an air defence mission was shot down by a Pak aircraft in the Pasrur region(22).

Plans for offensive action during the night of 17-18 Dec were cancelled and Indian forces were ordered to stand-down but remain prepared to support any defensive action by troops if Pakistan did not accept the unilateral ceasefire offered by the Indian Prime Minister. With the acceptance of the ceasefire offer by Pakistan, the Indo-Pak War of 1971 came to an end at 2000 hrs on 17 Dec.

### SPECIAL STRATEGIC OPERATIONS

Before describing the major operations of the IAF in support of the land battles, it might be convenient to mention the special operations mounted against some strategic targets. These represented the old concept of Strategic Bombing in miniature, although the IAF was not wedded to this doctrine, nor had the size and equipment to indulge in it.

As early as 4 Dec, Hunters from Jamnagar visited Karachi at 0850 hrs in the morning, their target being the major oil installation at Kiamari. The tactical routing followed by the aircraft, operating at their maximum radius of action, caught the defences unawares. The attacks were pressed home and many fires were started.

The Chiefs of Staff (CsOS) had laid down that the Attock Oil Refinery near Rawalpindi was a target of military importance. Four Hunters from Pathankot were detailed to strike the refinery. Eventually only three aircraft took off and they struck the oil tanks at 0741 hrs on 6 Dec. The strike was successful and huge fires were started.

A special target the next day was the power house at the Mangla Dam. Four Hunters from Pathankot attacked the power house at the eastern end of the dam at 0742 hrs. Two more aircraft followed up with another attack at 1655 hrs. The power house was claimed hit by all aircraft(23).

One week later, a special mission was mounted against the SUI gas plant in northern Sind. Four Hunters from the Jaisalmer carried out a rocket attack at 1258 hrs on 14 Dec and set fire to a part of the plant.

In the event of 15 Dec three An-12s attacked the SUI gas plant - a follow up on the previous day's raid by Hunters. Though 80 x 500 lb bombs were dropped, they failed to hit the target in the failing light. But aerial photos taken later showed substantial damage to the cooling plant, and the complex was reported to be generating only 50% power even in

mid-April 1972. At night five Canberras attacked the Karachi harbour area, including the naval establishment at Manora, within a span of eleven minutes beginning at 2100 hrs. The target was located with the help of flares and Target Indicator bombs. The bombing was accurate and successful(24).

Such special mission, even though brilliantly executed, could not show decisive results in a short war. But they were worthwhile, perhaps, in compelling the enemy to disperse his limited air defence resources.

### CLOSE AIR SUPPORT, INTERDICTION AND RECONNAISSANCE

The ground operations in the Western Theatre ranged from the heights of Ladakh to the deserts of Rajasthan. The land battle on the entire front was planned to be an offensive/defensive holding operation. Accordingly, joint planning at higher levels was carried out and the required quantum of air support earmarked for each sector. Though the IAF would be pre-occupied during the initial stages of war in getting the upper hand or "establishing a favourable air situation" in modern military jargon, a definite quantum of air effort was to be always available for the support of the army. This effort played a major role in the ground operations and retrieved some critical situations for the army.

3 Dec

The first air strike of the IAF in support of the army was in the Changa Manga area, south-west of Raiwind. Two An-12s attacked targets in a forest near the town just after mid-night of 3/4 Dec and started some fires. A total of 48 x 500 lb bombs were dropped on what was suspected to be a major supply dump(25).

4 Dec

The army received air support all along the front, even though the major task for the day (4 Dec) was counter air operations against the PAF. A total of 109 sorties were flown for close support and interdiction all along 15 Corps, 1 Corps and 11 Corps fronts, and in the Rajasthan sector. The Pak tanks in the Dera Baba Nanak area were attacked by S-22s from Adampur. Two IAF aircraft were hit by ground fire, but the pilots managed to eject in their own territory. In 11 Corps Sector, a battalion was stranded on the western side of the Hussainiwala bridge which had been destroyed by the Pak troops. The Pak forces put in determined attacks supported by artillery and armour. These were countered by air

strikes throughout the day, and a number of tanks and vehicles were destroyed or damaged. This air action slowed down the enemy build up and helped extricate major elements of the battalion. Four of these sorties against two squadrons of Pak tanks were mounted on an SOS call from the COS 11 Corps.

In Rajasthan, Jaisalmer based Hunters attacked Pak positions at Islamgarh to the north. Along the Barmer railway line, HF-24s from Uttarlai attacked Pak fortifications on the border at Gazi Camp. This was the only defensive position of the Pak troops, who withdrew from it after the air attacks. One HF-24 was shot down by ground fire about 32 km inside Pak territory(26).

The Pak supply dumps at Changa Manga were again attacked by An-12s during night 4/5 Dec. Six of them dropped 66 x 500 lb bombs and 55 x 1000 lb Napalm containers and started some big fires.

#### 5 Dec

From the early hours of 5 Dec, a large part of the air effort of Western Air Command was directed to support operations of the army. At Longewala that day the IAF added to its history a glorious new chapter. Out on the Thar desert of Rajasthan, one Company of 23 Punjab held the lonely post of Longewala which lay on the Pakistani thrust line towards Ramgarh and Jaisalmer. One Pak Infantry brigade, supported by one armoured regiment, launched an attack on the Indian position at Longewala on the night of 4/5 Dec. The objective, it seems was no less than the capture of Jaisalmer. Their way to Ramgarh and Jaisalmer appeared clear, as the Indian troops were very thin on the ground in that area.

Jaisalmer had a total of only four Hunters available from the temporary and hastily raised No. 122 Squadron(27). But on the SOS being received, the Hunters were over the target area as dawn was breaking. By mid-day, about 15 Pak tanks had been destroyed. The pressure was kept up the next day. This was a straight battle between Pak armour and the IAF Hunters. In spite of the intense small arms fire and the frantic evasive actions of the tanks, the Hunters pressed home their attacks, picking off one tank after another. The Pakistanis abandoned their offensive and started pulling out on 6 December's evening, leaving behind 27 tanks destroyed and another ten damaged on the sands of Longewala, along with scores of trucks. The Pakistani armoured offensive at Longewala was effectively stemmed and ultimately routed by a handful of Hunters. The bulk of Pak

armoured regiment was destroyed by air action alone. On 7 Dec, further sorties were launched which damaged or destroyed more of the retreating tanks and vehicles(28).

Opposite the 11 Corps area of operations, fifty two strike sorties were flown, mainly against trains, gun positions and tanks. On the outskirts of Chistian Mandi a train carrying fourteen tanks was repeatedly attacked and set on fire. The IAF aircraft also attacked targets at Mcleodgunj, Haveli, Siddiqgunj and Fort Abbas. Altogether one hundred thirty-two sorties were flown in the west in support of the army. Three aircraft were lost to ground fire and one to air action in these operations(29).

At the Chiefs of Staff Committee meeting on 5 Dec, it was decided that Pak troops concentrations at Kahuta, opposite Punch, should be engaged by the Air Force. Six An-12s were detailed for this task with Time Over Target (TOT) planned for one hour after moonrise. The attacks went through as planned and 140 x 500 lb bombs were dropped on target. The Pak guns, which had been firing at Indian army positions fell silent and general disorganisation in their ranks could be seen by the Indian troops. This attack contributed to the neutralising of the Pak army threat to the Punch valley. The same night, Canberras were also employed in support of the Army operations. Six interdiction missions were flown to attack targets near Pakpattan and the railway lines in Raiwind and Lodhran areas.

## 6 Dec

In the army support role, some one hundred fifty sorties were flown all along the border from Kargil in the north to Chor in the south on 6 Dec. Attacks against the Pak tanks, troops and vehicles in the Longewala area continued throughout the day. One of the features of air operations in Sind was the volume of interdiction missions that were flown against the main rail links between Sind and Punjab and between Hyderabad and Gadra Road. The latter was in support of the Indian Army's advance into Sind along the Gadra Road-Chor axis. One HF-24 shot down a F-86 at Chor, this being the first air kill for the Indian manufactured Marut.

Opposite the Fazilka - Ganganagar Sector, search and strike missions were continued around Pakpattan, Haveli, Bahawalnagar, Fort Abbas, Chistian Mandi and Sulaimanke. Offensive strikes were also mounted in the Kasur, Jassar and Shakargarh areas, and in the Jammu-Chhamb Sector. At the request of the Army,

forty-four Combat Air Patrol (CAP) sorties were flown by Hunters from Pathankot around Samba and Akhnoor. No Pak aircraft were sighted and as such area CAPs were not mounted again. On this day (6 Dec) three S-22s were lost whilst on close support missions with 11 and 1 Corps. A Mystere had an engine failure (flame-out) over its own territory when on a mission to Haveli; the pilot ejected and later returned to his base. The Pakistanis lost three F-86s to ground fire in 26 Div Sector(30).

The Chhamb area was visited by Canberras for the first time on the night of 6/7 Dec. Four of them were employed against a troop concentration and gun areas, the aircraft being directed to their target by lighted arrows displayed on the ground by forward troops. Other bomber attacks that night were against Pakpattan and Haveli by two Canberras, and Fort Abbas by four An-12s which dropped 95 x 500 lb bombs.

### 7 Dec

A Pakistani position at a height of about 4,150 metres overlooking the Kargil - Leh Road had to be neutralised. Rocket attacks not proving effective, it was bombed very accurately by the old Vampires on 7 Dec, and the position then taken by the Indian Army. In the Chhamb area, twenty sorties were flown by Hunters and S-22s on close support tasks; these helped to stabilise the positions, with troops holding the east bank of the Munawwar Tawi. At night, four Canberras attacked the Pak concentrations on the west bank of the river and at Karianwala.

The daily allotment of missions in support of 1 Corps could not be fully utilised, as no worthwhile targets were available for air attack. A similar case existed opposite 11 Corps, where twenty-four sorties were flown. However, some tanks were sighted and hits were claimed by pilots. Two Canberras attacked Raiwind railway yard during the night. One S-22 was lost due to air action. The PAF lost three aircraft during the day, all to air defence guns.

With the Pak 1 Armd Div deployed somewhere opposite 11 Corps, twenty-six sorties were flown on search and strike missions in the probable area of its deployment. Four fighter reconnaissance (FR) missions were also flown in the area Haveli-Pakpattan-Sulaimanke to locate the Pak armour. It was suspected that some Pak tanks had concentrated on western approaches to Sulaimanke Bridge and in wooded areas nearby. Two An-12s, therefore, attacked this area on night 7/8 Dec with bombs and napalm.



In the south, support to the army on its advance towards Naya Chor was provided by HF-24s from Uttarlai, and Hunters from Jaisalmer were out hunting for enemy tanks and vehicles and striking the Pak lines of communication between Rati and Khanpur.

8 Dec

On 8 Dec in 15 Corps Sector, the Chhamb area was still active, and a total of twenty-eight S-22 and Hunter sorties were mounted to disrupt Pak forces regrouping across the Munawwar Tawi. Air strikes accounted for a number of tanks and guns, but at the cost of a MiG aircraft shot down by ground fire. In addition, a large number of interdiction and search and strike missions were flown in other areas. The Pak movements into the Shakargarh bulge came under constant air attack, and so did troop concentrations and train movements along the stretch from Dera Baba Nanak to Fort Abbas. Two FR missions were again flown in search of Pak armour near Haveli and Pakpattan. One F-86 was shot down by ground fire at Bari in 1 Corps Sector. Altogether, one hundred eighteen close support and six reconnaissance (PR/FR) sorties were flown; many escorted by MiGs. A Mystere and a Hunter were lost to ground fire near Arruka and Hasilpur.

During night 8/9 Dec, the Canberras were out in force striking at army targets and rail junctions. Six of them were deployed against Pak positions in Zafarwal, Jassar and Chhamb. The rail junctions at Sheikhpura (Lahore), Okara and Raiwind were attacked by nine Canberras, and rail sections between Jhelum-Wazirabad and Montgomery-Pattoki were also attacked. Four An-12s attempted, but failed, to hit the bridge at Sulaimanke.

9 Dec

Opposite 1 Corps Sector, S-22s flew twenty search and strike missions against tanks and gun positions. In the 11 Corps Sector strikes were mainly against Pak armour and guns in Bahawalnagar, Chistian Mandi, Amroka and Jalwala areas. In Rajasthan, twenty-four sorties were flown on close support, interdiction and tactical recce missions. Hunter strikes in the general areas of Longewala, Border Post 638 and Gabbar accounted for eight to ten Pak tanks and nearly 20 vehicles. An ammunition dump at Gabbar was also destroyed. Between 5 and 9 Dec, IAF Hunters accounted for twenty-seven tanks destroyed plus ten damaged, ten guns, one hundred twenty vehicles and one major ammunition dump in this area. Western Air Command flew two hundred and six sorties on 9 Dec in support of the army without losing a single

aircraft(31).

During the night of 9/10 Dec, the bomber force was mostly occupied in supporting army operations in the west. Pakistani positions in Bahawalnagar, Sulaimanke, Chhamb and Jassar were attacked by six Canberras and two An-12s. Interdiction targets were the marshalling yard at Lodhran and the railway lines at Kasur and Raiwind. Six aircraft took part in these raids. One of the Canberras returning from Lodhran crashed in its own territory.

### 10 Dec

The high tempo of air support in the Chhamb area was maintained on 10 Dec. In all forty-two close support sorties were mounted under control of the Tactical Air Centre, against tanks, gun positions, vehicles, fuel dumps and bunkers. Some thirty air defence sorties were also flown in the area, keeping it relatively clear of Pak aircraft. The deployment of such large numbers of aircraft opposite a divisional front of about 24 km was probably the deciding factor in the retreat of the invaders across the Munawwar Tawi. The intensity of the air effort, in time and space, was indeed a record.

In the 1 Corps Sector, Pak defences were strong and a Hunter and a S-22 were lost in ten sorties mounted against concentrations well behind the battle front. The air effort originally earmarked for 11 Corps was diverted to the Chhamb Sector. However, sixteen sorties were still mounted in search and strike and interdiction missions opposite the advanced elements of the Corps. One S-22 was lost to ground fire over Mcleodgunj. In Rajasthan, fifteen sorties were flown around Naya Chor and on interdiction missions in the Rohri-Bahawalpur area.

During night 10/11 Dec bomber operations were on a restricted scale due to poor visibility in Punjab. Only seven Canberra sorties were mounted in support of the Indian Army in the areas of Sulaimanke Headworks, Chhamb and Zafarwal.

### 11 Dec

The enemy, thrown back across the Munawwar Tawi, was believed to be reforming for another attack on 11 Dec. To prevent this, thirty Su-7 and Hunter sorties, with appropriate air cover, were mounted during the day. Since the Pak forces made no further attempts to advance, it can be presumed that the air action

at least contributed to thwarting their offensive. During the four days of the Chhamb battle, the Indian Air Force flew over two hundred sorties in support of the land forces. Close coordination with the army and purposeful execution of their tasks by the aircrew contributed greatly to the success achieved. After the opening round, complete air superiority was maintained in the tactical area.

In the area of Zafarwal, Nurkot and Dhantal, twenty-seven fighter recce and strike sorties were flown in support of No.1 Corps. One S-22 was shot down by Pak aircraft near Nurkot. Further south, a number of strike missions were mounted against guns and troops along the Ichhogil Canal as well as in the Sulaimanke, Fort Abbas, Jalwala and Asilpur Areas. In Rajasthan, twelve sorties were mounted in support of the army advancing in the Chor area, as also for deep interdiction(32).

An Alouette was lost between Kargil and Srinagar while it was on a casualty evacuation mission. One of the two pilots was killed.

During night 11/12 Dec, bomber support for ground operations was again on a reduced scale. Seven Canberras attacked Pak concentrations at Chhamb and the rail junctions at Lodhran and Larkana. Target indicator bombs were used at Lodhran to pin-point the target.

#### 12 Dec

There was a stalemate in the Chhamb Sector on 12 Dec and only two close support sorties were mounted. Pressure was, however, maintained in Shakargarh bulge as well as in the area opposite 11 Corps. A total of thirty eight search and strike missions were mounted during the day in the areas of Shakargarh, Dhantal, Qila Sobha Singh, Nurkot, Haveli, Chistian Mandi, Jalwala, Fort Abbas and the west bank of the Sutlej. One S-22 shot down a MiG-19 in an air engagement near Hussainiwala. At night, Canberras were again out in force striking at Pak concentrations and the railway system. The targets were Zafarwal, Narowal, Jassar, the boat bridge on the Sutlej opposite Bahawalnagar and the railway lines in Reti, Bahawalpur and Vihari areas.

In Rajasthan, sixteen sorties were mounted in support of the army and interdiction. Recce missions were also undertaken to locate Pak build-up opposite Ganganagar and along the Reti Gabbar axis.

13 Dec

In the Western Theatre, eighty close support sorties were mounted on 13 Dec. In the 15 Corps Sector, 120 Inf Bde was to put in a battalion attack against Pak positions west of Mendhar on the night of 13/14 Dec. As the battalion attack failed, air strikes were called to help extricate the battalion. In the 1 Corps area, twelve Su-7 sorties were mounted against enemy tanks and guns at Shakargarh, Narowal, Zafarwal and Nurkot. Opposite 11 Corps Sector, sorties were flown against enemy positions in Pejowali, Haveli, Fort Abbas and Dipalpur canal areas. One Mystere was brought down by ground fire over Haveli. In Rajasthan, air effort was mostly in support of the Chor battle. Some interdiction missions were also flown against the Reti-Khanpur rail link. A large number of fighter recce sorties were flown in Chhamb sector west of Munawwar Tawi, Shakargarh bulge, Ichhogil canal near Kasur and further south between Narang and Siddhanwal.

At night, Canberra bombers flew fifteen sorties. Six Canberras bombed troops concentrations and vehicles in the Pasrur area. Rail communications around Bahawalpur, Ghotki, Larkana and Khairpur were bombed by nine Canberras.

14 Dec

With the ground situation stabilised in the Chhamb Sector, from 14 Dec Western Air Command concentrated on denying the Pak Army all forms of movement in the rear of their troops facing 1 and 11 Corps. Offensive sweeps took on anything that moved on road or rail. A section of the railway line near Khudian was completely destroyed by S-22s. At the same time, close support to Indian troops continued in all sectors. One Air OP Krishak aircraft was shot down by an F-86 near Nainakot. An IAF Mi-4 helicopter, already airborne from Samba, was diverted to the crash site, and the two casualties were flown to Udampur within an hour. The boat bridge on the Sutlej near Bahawalnagar was repeatedly attacked by Mysteres with bombs and rockets, and put out of use. The important railway junction at Sukkur was attacked late in the evening by an An-12 which dropped its full load of 38 x 500 lb bombs in the centre of the marshalling yard. In the early hours of 15 Dec, five Canberras attacked rail communications near Lodhran, Bahawalpur, Okara and Raiwind. In the Chor Sector, HF-24s flew 14 sorties to strike fuel dumps, troops and the rail links behind the Pak forces holding out at Naya Chor(33).

Western Air Command mounted a number of photo reconnaissance missions in the Sialkot-Tanda area to spot movement of Pak tanks and troops who, it was suspected, might be moving eastward to counter the ground offensive in the Shakargarh bulge. During the night, three Canberras attacked Zafarwal and Dhantal.

### 15 Dec

On 15 Dec, Western Air Command continued interdiction of the whole transportation system from Sialkot to Sukkur. Sixty-seven sorties were flown without loss of an aircraft, and traffic on Pak roads and railways was reduced to a trickle. The aim of mounting the 'search and strike' interdiction missions appeared to have been achieved, in that pilots on later sorties were hard put to find worthwhile targets. The Sulaimanke headworks was attacked by S-22s employing the 250 kg heavy rockets. Direct hits were scored on the road above the weir. Reports indicated that traffic across the weir was suspended till end of December. Simultaneously, close support missions were mounted on all fronts, and especially in the Shakargarh bulge and Chor-Dhoro-Noro area. Two F-86s were intercepted by hunters in the Pithora area at low level. Both Sabres flew into the ground and were destroyed while attempting to shake off the pursuing Hunters. Pak positions near Lahore and the main marshalling yards received particular attention. Three Hunters, while attacking the Marshalling yard at Sialkot at 0930 hrs, hit a large ammunition dump close-by. Explosions could be heard by forward troops till the afternoon(34).

During the evening hours, three Canberras attacked the boat bridge at Bahawalnagar and a Siphon bridge near Mailasi. Both were claimed hit. Later in the night three Canberras again attacked Narowal and Jassar.

### 16 Dec

On 16 Dec efforts at intensive interdiction of the Pak hinterland opposite the western border continued unabated. The fighter attack on trains was very effective. In support of land forces, fighter-bombers struck at the Pak troops, guns and tanks in the Shakargarh bulge, opposite 11 Corps and in the Chor Sector. A S-22 was lost to ground fire over Narowal.

During the night, bomber sorties were mounted against the railyard at Sukkur, a key point for the distribution of supplies coming from farther west (Zahidan). Canberras could not be used to strike the

Zahidan-Quetta rail link in daylight hours as they would have had to operate at extreme range and, being comparatively slow, would have been very vulnerable.

17 Dec

The war in the east had come to an end on 17 Dec, but the Pak forces in the west were still offering stiff resistance. In the 1 Corps area, S-22s mounted ten sorties against the Pak positions in Zafarwal, Nurkot and Dhantal. A Pak MiG-19 was shot down by a S-22 over Shakargarh. Another MiG-19 was brought down by ground fire in the same area. Mysteres from Sirsa and Nal continued their attacks in the area opposite 11 Corps. To the south, HF-24s and Hunters escorted by MiGs kept up pressure in the Chor area. One Mystere had a flame out and the pilot ejected safely in Indian territory.

Su-7s continued their interdiction sorties. The railyard at Wazirabad was attacked and a tank train hit. The main railway station at Lahore came in for special attention. In the afternoon, twelve S-22s in pairs and fours, attacked the railyard within a span of 40 minutes. These and other attacks to disrupt the communication system in West Punjab were without air opposition and became almost routine. With acceptance by Pakistan of the ceasefire offer, all air operations in the West also came to an end, at 2000 hrs on 17 Dec. However, fighter bombers continued to remain in readiness to support the Indian Army if the need arose(35).

#### MARITIME AIR SUPPORT

The Air Force was fully committed to providing maritime reconnaissance (MR) to the Navy even prior to outbreak of hostilities. When the war came, this continued to be its main role in support of naval operations. Also, the IAF mounted a series of operations which contributed towards the success of special naval operations.

Three maritime operation centres were specially provided to support the Navy:-

(a) No.1 Maritime Air Centre at Bombay (AFEJHQ) - for Western Naval Command. The area of responsibility was the Western Sea-Board, excluding Goa.

(b) No.3 Maritime Air Centre at Cochin - for Southern Naval Area. The area of responsibility was the remainder of the Sea-Board from Goa, including Laccadive, Minicoy and Amindivi

Islands(36).

For air support in area of Western Naval Command, Super Constellation aircraft of No. 6 (MR) Squadron based at Pune, two modified B-56 Interdictors of No.6 Squadron and two Il-14 aircraft of No.42 Squadron Detachment based at Santa Cruz were available.

For air support in Southern Naval Area, three Dakotas were based at Cochin. To increase the range and endurance of these Dakotas, preliminary arrangements had been made to use Trivandrum in the south, and Goa, as staging bases. Similarly, certain arrangements had been made to use Bangalore by Super Constellation aircraft in the southern part of the peninsula. This precautionary arrangement came in useful when MR sorties had to be mounted under control of No.3 Maritime Air Centre from Bangalore.

It had been appreciated earlier by the Indian Navy that Pakistan might launch simultaneous attacks on its warships with submarines, midgets and chariots, and also land beach parties in sensitive areas at the outbreak of hostilities. For operations by small under-water craft and the commandos, the Pakistan Navy would require to position a mother-ship within 100 nautical miles of the Indian coast by last light. Plans had, therefore, been made to search likely areas before dusk. It was also necessary to see that Pak surface units did not operate close to the Saurashtra coast. The necessity of safeguarding Okha, Porbandar and Diu against naval attacks was felt throughout the war and frequent MR sorties were mounted in this area(37).

As soon as AOC Maritime Air Operations (MAO) was informed of the outbreak of hostilities, the two Maritime Air Centres (MACs) on the Western Seaboard (Bombay and Cochin) and one on the Eastern Seaboard (Vishakhapatnam) were instructed to put into operation the plans for maritime reconnaissance. A Super Constellation aircraft was airborne at 2345 hrs to search the area to the west/south-west off Bombay for Pakistani warships and merchant ships that might be proceeding from Karachi towards East Bengal. No MR missions were flown towards Saurashtra, since increased Indian air activity in that area might have drawn unwanted enemy attention and compromised naval plans for offensive action off Karachi on night 4/5 Dec. The task for the aircraft based at Cochin continued to be to search for Pakistani merchant vessels and warships plying between the East and the West Wings, presumably through the 8° and 9° Channels. Several contacts were made, especially off Bombay, but

none of them proved of any significance.

On 4 Dec, MR missions were mounted off Bombay and Cochin. The Pakistani merchant ship Maqbool Baksh was sighted in the afternoon about 375 nautical miles from Bombay by a Super Constellation. The Navy sent out INS Krishna to intercept this ship.

The next day, an air search for Maqbool Baksh was again mounted, as INS Krishna had not made contact with her. She was not spotted. In the south, Dakotas from Cochin were out looking for Pak merchant ship Panjnad, last reported in Colombo. Based on a report from the War Watching Station at Kadmatt (Laccadive) a search was also mounted for a submarine proceeding southward. Aircraft of MAC Bombay reported eight contacts.

On 6 and 7 Dec, search for enemy warships and merchant ships continued. A large number of contacts were reported by the aircraft. But Panjnad could not be sighted, in spite of shifting the search to an area further south. On 7 Dec, a Canberra, specially fitted with missiles for strikes against ships at sea was moved to Jamnagar to take on any target that might present itself.

From 9 to 13 Dec, MAC Bombay was fully occupied in controlling Super Constellations detailed to search for the Pak submarine which had sunk INS Khukri. Reconnaissance of sea areas on the approaches to Bombay was undertaken by Il-14s. A vigorous search was maintained for Pakmer Sipsah which was reported to have sailed from Singapore for Karachi with Chinese arms on board. In spite of 12 sorties flown by Dakotas and Super Constellations in search of this ship, she could not be located. A number of contacts were made, but all of them turned out to be friendly ships.

In the early hours of 13 Dec one of our warships reported a radar contact of two fast moving surface vessels off Cochin. It was appreciated that they could be Pak destroyers, and HQ Southern Naval Area initially planned to attack them with Sea-Hawks based at Trivandrum. Later it was agreed that the Canberra strike force of four aircraft, which had now been moved to Bangalore, would be employed before the Seahawk strike. Air searches for the ships were mounted early in the morning. The Super Constellation which followed also spotted an aircraft carrier at 1209 hrs. This contact on reference to NHQ was identified at HMS Albion(38).

From 14 Dec to 17 Dec, MR activity was on a



reduced scale as Pak warships, after having been engaged off Karachi by IN missile boats, were not likely to venture near the Indian coast for any offensive action. But patrols off Saurashtra were continued.

The first attack by the IAF on Masrur airfield at Karachi was on the night of 3/4 Dec. Between 0456 and 0510 hrs four Canberras bombed the airfield, scoring hits on the runway and installations. Again in the evening of 4 Dec at 1730 hrs, three Hunters from Jamnagar attacked the airfield and destroyed six aircraft on the ground. Three hours later, four Canberras followed up with bombing attacks on the airfield and they were followed by four more between 0450 and 0456 hrs on 5 Dec. There was also the Hunter attack on oil storage tanks on the morning of 4 Dec. These raids paralysed the air defence system at Karachi and Indian naval attacks on Karachi harbour on this night went through without any interference from the PAF, nor were the ships attacked by Pak aircraft at first light on 5 Dec, when they were still within range of enemy aircraft at Masrur. As a precautionary measure, a Hunter CAP was provided to Indian ships that morning. The IAF's efforts in the afternoon of 4 Dec and during the course of night 4/5 Dec made a significant contribution towards the success of the naval operations.

The pressure on the group of military airfields around Karachi was maintained till 9 Dec by Canberra raids at night. It is now known that these air attacks caused considerable damage to the installations at Masrur and Drigh Road. The PAF was again nowhere to be seen during and after the second attack by the Indian Navy on Karachi harbour on night 8/9 Dec.

At 2055 hrs on 9 Dec, MAC Bombay learnt that INS Khukri had been torpedoed and sunk 40 nautical miles south-west of Diu. A Super Constellation, on MR duty off the Saurashtra Coast, was ordered to search the area. Relays of aircraft continued the search that night and through the next four days. They flew one hundred fifty five hours in fifteen sorties on this task. The presence of the aircraft forced the submarine to remain submerged most of the time. It would have been forced to reduce speed to conserve battery life, and hopefully, would not be able to get away from the naval ships which were ordered into the area to detect and destroy it(39).

The first disappearing radar contact was picked up by the aircraft at 0430 hrs on 10 Dec. A second contact close-by was at 0825 hrs in position 2000N

6926E. The next aircraft on task located six dinghies with survivors from Khukri and friendly ships were guided towards them. At 1923 and 2056 hrs three more contacts were made by the aircraft in the same area. Based on this information several attacks were carried out by INS Katchall, Kirpan and Kuthar on underwater contacts.

It was appreciated that the presence of Indian frigates in the area might bring out Pak surface units to engage them. Therefore, three Canberras of the naval strike force were moved to Jamnagar on 11 Dec in anticipation of tasks against Pak warships. But the Pak ships did not put in an appearance.

The air search for the Pak submarine continued till the afternoon of 13 Dec but there were no further contacts. Eventually, the search was called off.

In support of the Indian Navy, the IAF mounted in all ninety-six sorties in the west.

#### AIR TRANSPORT OPERATIONS

As the war in the east was drawing to a close, approximately two brigades of troops were air lifted from the Eastern to the Western Theatre on 12 and 13 Dec. Air India and Indian Airlines aircraft were utilised to augment the air lift. Transport aircraft were also utilised for speedy transfer of Fighter Squadrons from east to the west on 6 and 7 Dec.

In the Rajasthan Sector, packet aircraft were utilised to air drop supplies to 10 Para Commando Bn. Immediately after the ceasefire, packet aircraft again undertook air drop of stores to troops in J&K and Ladakh. Also the air lift of air defence guns from the east helped to strengthen the IAF low level defence capabilities in the west.

One airborne assault was planned for the Western Theatre, but it was not executed. Casualty evacuation was carried out by both transport aircraft and helicopters. Over 800 casualties were flown out to hospitals in rear areas by An-12s, Packets, Il-14s and Dakotas.

#### CONCLUSION AND ANALYSIS

##### A Review of the Air War

Pakistan's pre-emptive strike against the IAF bases was a dismal failure. Anticipating such a move the IAF had dispersed its aircraft and moved them to the rear air-fields. Moreover, as a foreign observer

noted: "The PAF does not seem to have committed more than 30 per cent of its 300 combat aircraft to its initial attacks between 1740 and 1815 hrs on 3 Dec. This may have been the result of a low serviceability rate on the part of the PAF, but there were demands after the war for an inquiry as to why PAF strength was persistently withheld from the battle. It may be that, with the Yahya regime trying to provoke international intervention in order to restrain India, the Pakistanis tried to ensure that as much of their forces as possible remained intact at the end of the war for political and diplomatic purpose. Such seemingly contradictory concepts of politics and strategy may explain the PAF's indifferent performance".

It is also likely that the PAF was conserving its strength for supporting the planned offensive by Pakistan Army's Strike Force of two armoured and a couple of infantry divisions. Although this Pak offensive never materialised, the PAF must have tried to keep its strength unimpaired to support the decisive offensive when it took place.

As a result, the tempo of the offensive efforts by PAF was decidedly less than what was expected. The information available from material published in Pakistan after the war indicated that a total of 2914 sorties were mounted by the PAF in west during the 14 day war. Of this total, 291 sorties (157 sorties by day and 134 sorties by night) were flown against IAF bases, or on counter air missions. Transport support was provided by 125 sorties, and 27 sorties were mounted in support of the Pak Navy. In contrast 1549 sorties were flown for the air defence of the PAF's own bases and other vital areas. Indian estimates, however, found that instead of 53% of the total effort, as claimed by Pakistan, no less than 70% of the PAF sorties were flown in defence of their own bases(40). The PAF asserted that it mounted 922 sorties in support of the Pak Army. This must be considered a gross exaggeration, as close support by the PAF to the Pak Army was minimal as in Chhamb or totally absent as at Longewala. The Indian estimate was only about 500 close support sorties flown by the PAF, and less than 300 sorties on counter air and interdiction missions. The daily average for PAF offensive sorties was about 60, while it averaged about 100 sorties per day for air defence(41). These figures bring out convincingly the essentially defensive character of the PAF performance in the war.

The same conclusion emerged from the lack of boldness and determination shown by the Pak pilots in their attacks on IAF bases. Almost invariably they

made a single low level high speed pass over the target, dropping their bombs and letting off their guns almost simultaneously before dashing back into their own air space. These hasty hit and run raids did small damage. On the other hand, many hundreds of sorties were flown in mounting Combat Air Patrol over the PAF bases, by day as well as night. As a Pakistani General complained, the PAF "was committed to defending its bases only and waiting for the enemy to come and attack them"(42).

However, it was no mean achievement for the PAF that, in a war against an enemy double its size, it managed to survive with its strength largely intact. By its refusal to close in with its stronger adversary, it at least remained on its feet, and in the ring, when the bell sounded the end of the round.

The IAF performance was certainly much better. By clever anticipation and judicious planning, it avoided any significant damage from the Pak pre-emptive strike on 3 December. The attempted Pearl Harbour by Pakistan was a fiasco, and the PAF raids punched empty air. The IAF also delivered an immediate riposte. Canberra raids were mounted within hours, and were followed by numerous and determined strikes on PAF targets at the crack of dawn on 4 December. The IAF counter air sorties continued the whole day. The intensity of these attacks wrested the initiative from the PAF and threw it on the defensive.

However, the hostile air defence environment over the enemy bases resulted in heavy attrition during the counter air mission of the IAF. Seven fighters were lost in these missions the first day, two Canberras were shot-down during the night of 4/5 December and four more fighters the next day. Changing its strategy in the face of these heavy losses, the IAF gave up its all out attack on the PAF bases, and the tempo of counter air operations was reduced from 6 December. There was a further reduction in the counter air operations from 8 December in order to devote more sorties to close air support and interdiction to defeat the Pakistan army's offensive in Chhamb. The IAF chose not to continue its all out attacks on the PAF bases, perhaps again because it had to avoid heavy losses and remain prepared to assist the Indian army if and when the Pak Army's formidable Strike Force launched its major offensive.

But the net result of the air war after the first few days was to leave much of the Pakistan air space open to the IAF. The PAF concentrated its strength to defend its own air fields and radar units

leaving the IAF largely free to attack strategic targets, railway yards, roads bridges, gun positions and forward troops.

The IAF fully exploited the favourable air situation thus created. Its long range interdiction cut down Pakistan's ability to reinforce the battle areas. Close support missions made a significant contribution to the land battles. In the Punch Sector, the night bombing of Kahuta destroyed Pak dumps and silenced her guns. The Pak offensive in Chhamb was blunted by a constant stream of IAF fighters attacking the troop concentrations, guns and forming up areas. In a remarkable duel between tanks and aircraft, the IAF decimated a Pak armoured regiment at Longewala and threw back a brigade thrust by air action alone.

The Army's requirements of transport support was also fully met. Troops worth two brigades were air lifted from east to west. Helicopters were extensively used for casualty evacuation and communications.

Similarly the maritime air operations gave crucial assistance to the Indian Navy. After the daring raid by the Navy on Karachi harbour, the long range Hunters provided air defence cover till the raiding ships were outside the range of Karachi based fighter-bombers.

The bombing of strategic targets conveyed the fury of the war to the people of Pakistan. The attacks on the Attock oil refinery on 6 Dec, oil installations of Karachi at Kiamari on 8/9 Dec, and the damage inflicted on the Sui gas plant brought home to Pakistan the painful fact that her key installations were wide open to attack by the IAF.

Air defence devolved mainly on the Gnats and the MiGs. Deployed at the forward airfields, they mounted Combat Air Patrols during first light and last light, and also when other aircraft took off or landed. As the Gnat could not cope with the high speeds of the attacking enemy aircraft (F-104 and Mirage) MiGs were later inducted to the forward air bases, and the Gnats were withdrawn to provide air defence to the rear areas. The MiG CAPs and escorts cut down losses in close support missions, and three F-104 and one MiG-19 were shot down on the last two days of the war in the Uttarlai sector. By and large, the Control and Reporting (C&R) performed satisfactorily within their design limitations. The ideal weather conditions of winter did enhance their performance.

The MiG-21 proved to be highly efficient air defence weapons system. Since the PAF concentrated mainly on attacking the runways, air defence guns had to be resisted at some airfields to cover the approaches to the runways.

The tactical and technological innovations introduced by the IAF, particularly in perfecting a sophisticated radar environment, not only paid handsome dividends, but left defence analysts bewildered(43). The fine tuning of Surface to Air Guided Weapons (SAGW) to the air defence system, relocation of aircraft in relation to their performance, judicious use of CAP on airfields, teaming up air defence and ground attack aircraft, effective use of An-12 transport aircraft on night bombing missions and grouping the high flying MiGs with low flying Hunters and Sukhois were some notable examples.

However, no great effort was made in the field of electronic warfare though during the later stages, the IAF attempted jamming the PAFs UHF channels, with limited success.

The Photo Reconnaissance capability boosted by fitting the fighters with cameras proved eminently satisfactory. But there was an unacceptable delay in the dissemination of the intelligence to user units.

The reorganisation of commands carried out in 1970, and the use of the second tier airfields in the west were major factors in the effective coordination of land/air operations. The reduction in both the scope and area of responsibility of Western Air Command undoubtedly helped in the success of the air operations. The five forward airfields, Forward Base Supporting Units (FBSUs) in the west, namely, Amritsar, Sirsa, Nal, Jaisalmer and Uttarlai, were the main bases for launching deep strikes into Pakistan, and between them they mounted some 1480 sorties. They also received nearly 30% of the total enemy air raids. Yet they remained operational almost all the time.

Though only a very small percentage of the IAF's offensive effort was directed against strategic/economic targets, the results far outweighed the effort. Pakistan lost a large chunk of her fuel resources during the conflict, and there was a considerable reduction in the hydro-electric power generation also. A longer war would have meant, in all probability, a disaster for Pakistan.

Statistics of the IAF sorties are interesting. During the fourteen day conflict the IAF flew a total

of eleven thousand five hundred forty-nine sorties (on both the fronts) on fighters, bombers, transport aircraft and helicopters. IAF offensive forces in the West flew a total of four thousand five hundred nine sorties (44), 41.3% of these were devoted to offensive support, 45.9% to air defence, 8.9% to counter air operations, 0.8% to special/strategic missions and 3.1% to recce.

### Effectiveness of Weapons

While attacking IAF airfields and Signal Units, the PAF invariably used bombs. The bombs used were their indigenously manufactured 500 lb, British 1000 lb MK 2, and American 500 lb/750 lb/1000 lb bombs. The C-130 was employed at night against Jamnagar, Jaisalmer and Nal and it appeared to carry only 500 lb bombs. Attacks were generally inaccurate and in spite of the fact that delay fuses were used, there was no hold up of IAF operations for any length of time because of cratering/damage to runways. Craters on runways varied between 1.5 to 6 metres in diameter and could be repaired within two to four hours. There were hardly any cases of slab shifting. Bombs, however, threw up large quantities of mud and debris on the runway.

The only other weapon used by the PAF was the gun. There is little evidence of the PAF having used rockets in any of their attacks. The F-104 with the Gatling Gun proved a very effective weapon system. In a short burst at one of the aeriels of an IAF SU at Barnala, sufficient damage was caused to keep the radar off the air for nearly 12 hours. Mirages carried out gun attacks in the same bombing pass, which proved ineffective and wasteful. The Sabres do not appear to have used any incendiary or armour piercing ammunition.

IAF Canberras generally used 1000 lb MK 6 and MK 7 bombs of indigenous manufacture, which were quite effective. As far as the fighter bombers were concerned the MiGs used the Russian M-62 500 kg bombs and the indigenous 1000 lb MK 9 bombs with great effect on the runways in the east. The size of the craters and the slab shifting that occurred showed that these bombs were very effective in keeping runways out of action. Hunters and HF-24s also used the indigenous 1000 lb MK 9 bombs with lethal effect. Su-7s used Russian 500 kg bombs in counter air and close support roles in the west. Only 24 of the newly acquired S-24 rockets were used. It proved a powerful and accurate weapon, with a longer range than the smaller T-10 rockets. Other rockets very extensively used were the 68 mm and 57 mm rockets. Both were very

effective weapons against soft skinned targets, fuel tankers and oil refineries. Post war studies found that pilots preferred attacking with these rockets in salvos from pods or belly launchers instead of using heavier rockets in pairs.

The main gun armament of the IAF was the 30 mm NR on the Su-7 and the 30 mm Aden on the Hunter, HF-24 and Gnat. In the Longewala sector a large number of Pak tanks were destroyed by front gun attacks by Hunter aircraft because the tanks carried extra fuel drums at the rear. The T-10 rockets were also very effective against tanks.

Surface to Air Guided Weapons (SAGW) Sqns of the IAF were deployed at seven bases on the Western Front. With a range of 31 km, the unmodified SAGW was ineffective below an altitude of 500 metres, but the modified missile could be used even at 300 metres altitude(45).

In all seven missiles were fired from three different bases. At one base an aircraft was apparently hit, but not destroyed, as after the missile was fired the aircraft was seen losing height for a second and then disappeared from the radar tube. Later some villagers reported that an aircraft on fire had flown towards Pakistan. This was also confirmed by VOPs. The remaining missiles appeared to have been fired on enemy Electronic Counter Measures (ECM)/Spurious radar pickups. During the war many such false alarm/spurious tracks were picked up. But the presence of the SAGW Sqns did have the desired effect of compelling most enemy intruders to fly below the radar pick-up height of the SAGW system.

### Casualties and Losses

The IAF lost a total of seventy one aircraft in the war, of which fifty six were lost due to enemy action and 15 were destroyed or damaged in flying accidents. On the Western Front the IAF lost fifty two aircraft. Particulars of the losses are tabulated below:-



Sl. No.	Type of Aircraft	Air Action in Air	Air action on ground	Ground fire	Destroyed/damaged by flying accident	Total
1	2	3	4	5	6	7
1	S-22	7	--	10	1	18
2	MiG-21	1	--	3	1	5
3	Hunter	<u>6</u>	--	3	2	11
4	Gnat	1	--	--	2	3
5	Mystere	--	--	3	2	5
6	HF-24	--	1	3	--	4
7	Vampire	--	1	--	--	1
8	Canberra	1	--	2	--	3
9	Alouette	--	1	--	1	2
Grand Total		16	3	24	9	52

The total Indian Air Force casualties during the conflict were 109 officers, airmen and civilians(46).

The breakdown of the casualties are:

	<u>Officers</u>	<u>Airmen</u>	<u>Civilian</u>	<u>Total</u>
Killed	26	2	5	33
Missing	19	--	--	19
POW	11	--	--	11
Injured	27	19	--	46
Total	83	21	5	109

During the conflict the IAF claimed a total of seventy five Pakistani aircraft. Of these, fifty were claimed on the Western front.

PAF losses in the west according to Indian estimates are given below:-

Sl. No.	Type of Aircraft	Air Action in air	Air action on ground	Ground fire	Destroyed/Damaged by Flying Accident	Total
1	F-104	4	--	4	--	8
2	Mirage	--	1	1*	--	1+1*
3	MiG-19	2+1*	4+1*	3	--	9+2*
4	F-86	4+1*	8	4+1*	--	16+2*
5	B-57	--	2+1*	2	--	4+1*
6	C-130	--	2	--	--	2
7	Light A/c	--	4	--	--	4
Grand Total		10+2*	21+2*	13+2*	--	44+6*

\* Indicate probable claims based on Air Force information only.

### Analysis of Performance

For assessing the comparative effectiveness and performance of the IAF and the PAF, an analysis of their different types of sorties should be instructive. Air power is essentially an offensive weapon, and is decisive only when it carries the war to the enemy and is able to survive in the hostile air space over enemy territory and over the battle field. Offensive sorties, therefore, on counter air, interdiction and close support missions are the true indices of an air forces' effectiveness and war winning potential. An analysis of the offensive missions, therefore, carries real significance.

The IAF deployed 28 fighter/bomber sqns (448 aircraft) in the west against 12 PAF fighter/bomber sqns (254 aircraft). The IAF flew app 2435 offensive missions, consisting of counter air, interdiction, close air support, special missions and recce - 54% of the total air effort by fighter/bomber. As shown in the table above, the IAF lost 52 aircraft on the Western Front, of which 40 were lost on offensive missions (action in the air plus a/c lost due to ground fire). This gave the IAF an attrition rate for offensive mission of 1.64 -

$$\left( \frac{\text{No. of a/c lost}}{\text{Sorties flown}} \right) \times 100 ;$$

and a utilisation rate of 5.43 sorties per aircraft -

$$\left( \frac{\text{Sorties flown}}{\text{total sorties of a/c}} \right),$$

during the war. Compared to this the PAF flew some 840 offensive missions in the west and lost approximately 27 aircraft in action in the air and by ground fire, giving it an attrition rate of 3.21 and a utilisation rate of 3.3 sorties per aircraft in offensive missions in the west during the war. It is, therefore, obvious that the IAF's utilisation rate for its offensive sorties was nearly double that of the PAF, whilst at the same time its attrition rate was kept down to nearly half that of the PAF. The IAF was able to utilise its offensive force in terms of support to its ground forces, counter air and interdiction four times as well as the PAF, and was definitely on its way to victory when the Cease Fire came.

### Conclusion

On an overall view, the performance of the IAF in the west was not as decisive as in the east. If the war had continued for a longer period, the IAF would certainly have inflicted a more decisive defeat on the PAF. But as it was, the IAF was not able to achieve a decisive victory over the PAF in the short 14 day war. There were many reasons for this, e.g., the reluctance of the PAF to engage in dog-fights, conservation of its power by striking mainly at night, and limited support to its army in the field to avoid heavy losses. On the other hand, the IAF supported the Indian Army doggedly, in spite of the inevitable high losses. It carried the day in the crucial Chhamb and Longewala battles. Whilst the PAF was reluctant to use its aircraft over hostile air defence areas and over the tactical battle areas, IAF aircraft were freely used over these areas, attacking vital targets and supporting the land battle. It goes to its credit that with the added risks involved it was still able to keep its attrition rate to nearly half that of the PAF, as brought out earlier.

Another major factor in the success of the air war was undoubtedly the warning period that was available. This time was fully utilised to formulate well conceived plans, issue clear-cut instructions and delegate responsibility. The generous scale of offensive support served to strengthen inter-service confidence and cooperation at various levels.

The disappointing performance of the PAF is

admitted by F.M. Khan: "There was no joint planning. The PAF plan was based on the war lasting six months, as the air C-in-C is reported to have told a number of his officers. His main idea was to conserve the air force. The Supreme Commander or the COS, Army never demanded to see the plan and seemed to have accepted whatever the C-in-C, PAF told them vaguely. In 1965, the PAF had been on the defensive strategically but tactically it was most actively offensive. In 1971, however, it seems that the PAF chose to be on the defensive both strategically and tactically"(47).

During the 14-day Indo-Pak war of 1971, the IAF was put to the test, and was not found wanting. Its Commanders had both the courage to accept risks and the skill to minimise them. Its pilots and technicians pitted their individual qualities of courage, judgement, keenness of vision and technical ability against a formidable enemy, and came out with flying colours on the Western Front.

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NOTES AND REFERENCES

1. It is likely that one Sabre, badly shot up managed to reach its base.
2. Subrahmanyam, K., 'Motherland', 11 February 1972.
3. From Official Records.
4. The Military Balance, 1971-72.
5. From Official Records.
6. Ibid.
7. Ibid.
8. Pakistan was equally interested in the movements of our 1 Armd Div. Pakistan had to be denied this information, to the extent possible.
9. "The IAF had failed to overwhelm the PAF defences and having suffered substantial losses switched its pattern of attack on undefended targets. They turned their attention towards communication centres, selected industrial targets and towns which lay mostly in close proximity of the international borders and affording little reaction time to the PAF. The defensive strategy of the PAF in fact, gave the IAF a free hand to interdict Pakistan communications and other strategic targets and to keep pressure on the Pakistan troops in the forward areas. The situation as it emerged, seemed that, while the PAF had complete superiority in the air on their bases, the IAF could operate without hindrance in the forward areas and over Pakistani vital communications along her borders.

In this sphere, the circumstances for the IAF were favourable and they achieved considerable success....." Khan, p.241.

10. From Official Records.
11. Ibid.
12. Ibid.
13. Ibid.
14. Ibid.
15. This has been acknowledged by Maj Gen Shaukat Riza in the book entitled "History of Pakistan Artillery", p.454. Under the caption 'Murid Air Base', he writes, "On 8 Dec five of our own aircraft were lined up for take off when caught by a low level enemy attack. There had been no early warning and the hostile aircraft got away with a score of five".
16. Ibid.
17. Ibid.
18. Ibid.
19. Ibid.
20. Ibid.
21. Ibid.
22. Ibid.
23. Ibid.

24. Ibid.
25. Ibid.
26. Ibid.
27. The leading Pak tank established contact with the Longewala Company (23 Punjab) about first light on 5 Dec.
28. From Official Records.
29. Ibid.
30. Ibid.
31. Ibid.
32. Ibid.
33. Ibid.
34. Ibid.
35. Ibid.
36. Ibid.
37. Ibid.
38. Ibid.
39. Ibid.
40. Ibid.
41. Ibid.
42. Khan, p.238.
43. Analysing the reasons for the failure of PAF, H.P. Willimott writes (War in Peace - An Analysis of Warfare since 1945), "The IAF was assisted by Soviet Moss aircraft. These were AWACS (Airborne Warning and Control Systems) aircraft and this war seems to have been first conventional war when such aircraft were used to fulfil their detection, control and communications functions. Every move that the PAF made was immediately known to the IAF and the AWACS aircraft in conjunction with active electronic counter-measures, threw a blanket over Pakistani radar and communications. The IAF was able to operate between 320 and 480 km (200 and 300 miles) behind the front line with impunity". This analysis is totally incorrect, as no Russian aircraft operated from Indian soil or over the Indian skies. It is in fact a signal tribute and acknowledgement of the skill and effectiveness of the IAF men and material.
44. From Official Records.
45. Ibid.
46. Casualty figures for Western and Eastern Theatres separately are not available.
47. Khan, p.238.

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