CHAPTER II

EVOLUTION OF INDIAN ARTILLERY AND ITS EFFECT ON INDIA’S COMPREHENSIVE MILITARY POWER

“How great a share of our dependence must in case of troubles be on artillery and upon the skills of the peoples appropriated to its service (in India)”

Court of Directors
East India Company, 1752

‘Comprehensive Security’ is an all embracing phrase that needs to be anchored in the security of nation states. National security is dependent on and is inseparable from individual security of all citizens of the nation. National Security is not restricted to military security. It encompasses all aspects that provide security to a nation viz., good governance, internal security, economy etc. National Security is closely linked with national morale and pride. In the times of globalization, national security is also vulnerable to regional and international security paradigm. Comprehensive Military Power (CMP) is a contemporary thought defining the overall military power of a nation. In essence, it includes all the overt and covert forces of a nation coming under the umbrella of ‘hard power’. It would include the army, navy, airforce, coast guard and intelligence agencies who provide visible security to the nation. It would also include the command and control structure to support actions by the security forces primarily against external aggression and threat to the nation’s sovereignty. Comprehensive Military Power also provides external security assurance to the nation and is an effective tool for extending the nation’s multinational influence.

In effect Comprehensive Military Power will form part of the ‘Comprehensive National Power’ which was enunciated by Chinese thinkers like Wu Chun Qui who wrote ‘The discussion of warfare in Chinese ancient literature embodies national power thinking …… China’s wise ancient strategies never advocated only relying on military power related to war in order to get an upper hand’. Later many countries developed their own interpretation on the subject. However, the issue of Comprehensive Military Power, as part of the Comprehensive National Power was not elaborated to the extent necessary. In fact, the expression ‘Comprehensive Military Power’ has not figured in their writings or elsewhere.
The modernisation of the armed forces, undertaking capacity building of the forces and making it fit to undertake substantive step to achieve the nation’s external security aim is the pillar for effective Comprehensive Military Power. In the matters of Comprehensive Military Power, ‘Firepower’ emerges as the single most important aspect. While the \textit{firepower} as a concept remains constant as the most effective tool for destruction of the enemy, the means to deliver it changes when related to land, air, sea or even space. The most effective firepower delivery means in land battles is the use of long range artillery gun systems. Artillery represents all of ground based firepower delivery means both in the realm of conventional and nuclear munitions.

An analysis of artillery’s relevance to the Comprehensive Military Power of the British Army in India exemplifies their compulsion of having an effective artillery arm to rule India. The magnitude of their compulsion became evident during late 19\textsuperscript{th} and 20\textsuperscript{th} Century when the local upsurge and political violence in India and neighbouring countries began to threaten the foundation of the British rule in the sub-continent. At that time the North West Frontier Provinces (NWFP) of India consisting of Baluchistan and nearby regions as also Afghanistan represented by far the most strategically sensitive region in the minds of the British government due to the perceived threat to India from the Imperial Russia through Afghanistan. The issue of unmanageable tribal population in these areas accentuated its concerns. Artillery was often employed to tame the tribal population in these areas and to ensure British rule in the region.

The power of artillery in defining the military power at that time was so pervasive that initially the British did not permit the natives to join the artillery arm. While they gradually permitted the natives to join artillery as ‘Golandaz’ and ‘Laskars’, primarily as support staff due to shortage of British soldiers, they stopped this system consequent to the ‘Sepoy Mutiny’ in 1857.

Warfare and firepower are synonymous. Greater the firepower, the chances of success in the battle is more. Although there exists no accurate statistical data to make a foolproof estimation of the value of various elements of warfare including artillery and other firepower delivery means to success in a battle, historic records indicate that during late eighteenth and early nineteenth centuries artillery accounted for 40-50 percent of casualties, muskets 30-40 percent and sword and bayonets 15-20 percent.\textsuperscript{3} Subsequently, with development of modern artillery guns the casualties caused by it increased many fold.
Napoleonic victories in the battles of Wagram and Borodino\(^4\) are early examples of the quantifiable value of the artillery and its co-relation with victory at that time.

Superiority of artillery firepower and its importance to enhance the Comprehensive Military Power in the battlefield was evident during the Allied breakout from Normandy in July 1944,\(^5\) the Soviet offensive towards Kharkov in August 1943\(^6\) and subsequent Soviet offensives between 1943 and 1945,\(^7\) the Egyptian attack across the Suez Canal in October 1973, and Indo-Pak Conflict in Kargil during May-July 1999.\(^8\) There are numerous such examples wherein artillery has stood out as a singular most important factor for success in the battlefield. When lethality of artillery and other weapons increased due to improvement in technology, artillery became a catalyst for the change in doctrine, strategy and tactics in the battlefield.

The modern Indian artillery dates back to around the 16\(^{th}\) century when Mughal Emperor Babur brought cannons to the Indian sub-continent.\(^9\) In some historical references it has been noted that it was possibly the Bahmini kings who were the first to use artillery in their battles against the Vijayanagar kingdom in the 14\(^{th}\) century.\(^10\) Persian historian Ferishtah, who served in the armies of the rulers of both Ahmednagar and Bijapur during the 16\(^{th}\) century, records the use of gunpowder in the Battle of Adoni in 1368.\(^11\) Mohammed Shah Bahmini-I is known to have collected a train of artillery for which he used the Portuguese word *tope*, the guns being manned by the Persians, Abyssinians and Arabs. Turks and Europeans were attached to this ‘artillery train’ as advisers. The artillery tactics of Mohammed Shah Bahmini-I was to open the battle with a cannonade, disrupting the formations of the Vijayanagar troops, followed by a *coup de grace* of a cavalry charge.\(^12\) However, this evidence of the use of artillery by the Bahmini kings has been disputed by some military historians since they feel that the equipment used by them to fire gun powder and projectile could not be categorized as cannons. There is, however, no doubt that by the end of the 15\(^{th}\) century, King Mohammed Shah of Gujarat was using artillery both as naval guns and for siege-craft in land operations.\(^13\)

Then came the Portuguese, who for the first time introduced the *man-o-war* (ships) armed with cannon and introduced the concept of command of the seas in the Indian Ocean region. By the early 16\(^{th}\) century, Zamorin, the ruler of Calicut, had begun to emulate the Portuguese and began to arm his ships with naval gun pieces.\(^14\)
It was the contact with Europeans and the Persians across the Arabian Sea that became the catalyst for the first appearance of the gun in central and south India. North India remained ignorant of the use of this arm for nearly a century and a half longer.

**Mughal Artillery**

The value attached to the artillery caused the Mughal Emperors, quite like the British after them, to avoid recruiting natives in the artillery arm. Initially, Mughal artillery was manned by the Turks and Persians who were later replaced by Europeans, half-castes and Christian converts. Later, the Portuguese, the Dutch, the French and the British were recruited both as gunners and as advisers in gun manufacture.\(^{15}\)

It was the first Battle of Panipat in 1526 that the Mughal Emperor Babur first used artillery in North India, when he decisively defeated Ibrahim Lodi, the Afghan King of Delhi.\(^{16}\) The main cause of the latter’s defeat was the effective use of artillery fire and the superior ground tactics adopted by Babur.

Babur’s army consisted of about 12,000 men and a ‘large park of artillery’ estimated to be nearly 300 guns, manned by Rumi and Persian gunners who had learned the art from Osmali gunners. Lodi’s forces were estimated by Babur to be about 100,000 – including infantry, archers, cavalry and about a thousand armour protected elephants, but contained no artillery.\(^{17}\)

At Panipat, Babur’s forces were deployed in five divisions namely, vanguard, right wing, left wing, centre and rear guard. Besides, there were two flanking parties for making ‘taulghama’, that is, going around the enemy’s flanks and attacking his rear; and two small but mobile bodies of easily dispensable reserves called ‘Iltmish’.\(^{18}\) The vanguard or ‘park of artillery’ was deployed in the front along with matchlock men in support. It was commanded by two expert gunners – the right wing under Ustad Ali Khan, an Ottoman Turk and, the left under Mustafa. To provide adequate protection to musketeers and artillerymen a laager of seven hundred baggage carts was formed up in front, the wheels of every two being tied together with twisted bull-hides in Turkish fashion. Between every two carts at about a distance of sixteen yards, five or six shields called mantlets on wooden tripods were setup, behind which matchlock men were to stand and fire. At regular intervals gaps were left for small cavalry parties to advance through and charge.\(^{19}\) Details are as per sketch in page 61.
Babur’s main plan during the battle was to roll Ibrahim Lodi’s Afghan wings (flanks) to the centre and, thus, create a worthwhile target for his artillerymen to inflict deadly blows. He, thereafter, planned to hold the enemy mass in front and then deal a mortal blow to it by artillery fire. So, while the enemy advanced towards the frontline, Babur’s enveloping troops consisting of cavalry outflanked the Afghans from the sides and attacked from the rear. Simultaneously, the left and the right wings engaged the enemy from close quarters. Surrounded from all sides and hard pressed, the Afghan wings rolled on to the front. Babur’s gunners Ustad Ali and Mustafa then engaged the lucrative targets with their guns. The Afghans fighting valiantly fell in hundreds. Frightened by the gunfire, Lodi’s elephants turned and ran through his own troops, trampling them and causing confusion. Thus, by means of his superior tactics and an effective combination of his highly trained cavalry and the new artillery arm, Babur was able to neutralize the numerical superiority of his adversary. Perhaps this was the first successful tactical application of artillery in the battlefield in the Indian sub-continent.20

The Memoirs of Babur21 contain an eloquent description of the casting of the cannons and the skill of the use of guns by his artillery officer, Ustad Ali Khan. Great care was taken to manufacture the pieces in India under the direct supervision of the Emperor and the Chief of the Artillery. In 1526 Babur’s Persian Chief of Ordnance produced an iron mortar which sent a stone shot as far as 1000 paces or 1400 yards. It was used in the Battle of Kanwaha but burst after firing only a few rounds. The rockets used in Babur’s time continued to be very popular with other armies in India, especially the Marathas. Babur used both heavy and light artillery, but the heavy artillery pieces of the Mughals during the 16th and 17th centuries were too unwieldy and hence, lacked battlefield mobility. Moreover, these artillery pieces could fire only once every half an hour. It is said that artillery pieces in that era could at best fire about sixteen ‘Shots’ a day.22

The post-Babur period witnessed expansion and improvements in the artillery arm. Humayun, who inherited the throne of India from Babur, reportedly used seven hundred artillery pieces, each firing a 41 lbs ball and 21 guns each firing a 10 lbs ball in the Battle of Kannauj. Humayun, however, was not as capable a military leader as Babur and under him the Mughals suffered some terrible defeats, mainly due to mishandling of the artillery.
CAMPAIGNS AND EXPANSION OF MUGHALS

MAJOR STATES OF NORTHERN SOUTH ASIA, 1526-1555 AND PRINCIPAL MILITARY CAMPAIGNS OF THE MUGHALS (BABUR), 1525-1538 (BABUR)

MUGHAL EXPANSION UNDER AKBAR, 1556-1605
BATTLE OF PANIPAT

Babur
24,000 cavalry
3,000 infantry
20 guns

Afghans
(Ibrahim Lodi)
40,000 cavalry
30,000 infantry
1,000 war elephants
At about the same time, Bahadur—the ruler of Gujarat, used his massed artillery to breach the defences of Chittor. In the Deccan, Ali Barid Shah (1542-1580) also became an exponent of the artillery arm. During his reign some magnificent guns were cast and mounted on the ramparts of Bidar fort. Under Emperor Akbar the artillery arm underwent radical changes, both in terms of the quality of equipment and its deployment technique. His department of artillery was headed by Khansama or Lord Steward. It consisted of the manufacturing and ordnance branches. The Daroga-e-Topkhana or Mir Atish (Lord of Fire) was in-charge of the field artillery and reserve artillery, and the artillery stocks at Delhi, Agra, Lahore, etc. Infantry and artillery soldiers were called asham and paid directly from the imperial treasury while others were conscript and paid by the Jagirdars (chieftain). Mughal artillery also consisted of mortars, cannons, camel guns, zampark and shamin or swivel guns.

Indeed the craze for heavy guns during this period was well recorded. One of them, Top-e-Ellahi or the Divine Gun, at Bidar Fort, dated 1572; is 14 feet 9 inches long and has a bore of 1 feet 7 inches. Another gun in the same fort is 29 feet long with a 6 inch bore. The craze did not die down even with the later less illustrious Mughals and the famous Zam Zama, cast in 1757 was 14 feet long.

**Maratha Artillery**

The artillery arm of the Marathas was weaker than many of their contemporaries mainly because they depended almost exclusively on purchases from external sources for their cannons. Although Shivaji had a regular department of Topkhana (artillery) and he was aware of the deficiencies of his artillery, he never established a gun foundry of his own. He managed to obtain some guns from the foundries at Surat, while others had been captured from the Muslim rulers of the South. Maratha artillery of that period can be described as a collection of ‘old and defective’ guns palmed off by European merchants who regularly traded in arms and ammunition. Besides cannons of European origin, Shivaji also possessed some light pieces of Indian make called Tijala or Zamburak or Shutarnal. The furthest he ever went towards ensuring a regular supply of artillery was to allow a French company to build a gun factory at Rajapore.

Maratha artillery of that era was largely manned by the Portuguese and Indian Christians. It was better equipped with field artillery during the reign of Balaji Baji Rao who reorganised his army on professional lines. A pioneering attempt to establish a
modern gun foundry was made by Madhavji Sindhia, who established a fairly efficient gun manufacturing foundry under the supervision of European gun makers.
The infantry battalions in Sindhia’s army had its contingent of artillery. The artillery personnel of a battalion consisted of one European sergeant major and five European gunners. Among the natives were one jemadar, one havildar, five naiks, 35 golandaz, five tindals, 35 khalasis, 20 bildars, 30 gariwans, four ironsmiths and four carpenters. Every infantry battalion had one howitzer and four field artillery pieces, five tumbrrels, 120 bullocks and two native carts. Every gun had 300 rounds of gun shot and 100 rounds of grape. Besides the battalion’s complement of guns, the brigade had three battering guns and two mortars with a compliment of gunners to serve them. The new organisation of the Maratha army which was trained under European supervision relied on superior artillery and firearms.28

74 (Gwalior) Mountain Battery was originally raised in 1738 as a bullock artillery battery forming part of the Sindhia army. It was later converted into an elephant artillery battery, and in 1926 was reorganised by the British as a mountain artillery battery and equipped with 2.75 inch howitzer. In spite of being a state force battery, it served in the North West Frontier Province during 1940-46. The battery presently forms part of 23 Field Regiment of the Indian artillery.29

Artillery of Tipu Sultan

Like all other Indian rulers of the 18th century, Tipu Sultan aimed to organise his army on the Western model, based on the predominance of infantry and artillery. Tipu Sultan’s artillery took an active part in all the battles that he fought against the Marathas and the British. As he progressed from battle to battle, he started to rely more and more on his artillery arm. He had a large army.

During his attack on Kittoor in August 1785, Tipu Sultan’s army, commanded by Buhran-ud-din, boasted strength of 8,000 cavalry, 15,000 regular infantry, 7,000 Carnatic militia and 40 cannons.30 The higher quality of Tipu Sultan’s artillery was the main cause of his victory against the Marathas. In a battle near Savanur, the Marathas had to suffer heavy losses due to Tipu Sultan’s artillery. Tipu Sultan fabricated guns, mortar and howitzers of various sizes and shape.31

A general idea of the organisation and strength of Tipu Sultan’s army can be obtained from a Hukumnama (ordinance) dated 25 March 1793, addressed to the Meer Meeran (Military Department) and some rough memoranda connected with the military establishment, written for the most part in the Sultan’s own hand.32
A general idea of the organisation and strength of Tipu Sultan’s army can be obtained from a *Hukumnama* (ordinance) dated 25 March 1793, addressed to the *Meer Meeran* (Military Department) and some rough memoranda connected with the military establishment, written for the most part in the Sultan’s own hand.\(^{33}\)

Tipu Sultan also had a large park of rockets. Some British historians give Tipu Sultan the credit for his rockets, stating thus: ‘The idea of the Congreve rocket introduced into British service in 1806 is said to have been obtained from those used by Tipu Sultan at Seringapatam in 1799, where Congreve was present as a subaltern’.\(^{34}\)

After improving his guns, Tipu Sultan chalked out their allotment carefully. He divided his *Jaish* (infantry) into 4 *cutchehiries* (brigades) and each of the latter consisted of six *cushoons* (regiments). Each *cushoon* had an establishment of rocketmen under a *Juqdar* and an establishment of gunners under a subedar and some *lascars* for drawing the guns. In addition, a number of guns were attached to each *cushoon* depending upon the strength of the corps and the nature of the service. Khan Mobibbul Hussain, Tipu Sultan’s biographer writes that the Mysore guns ‘being larger than those of the English, and having a much longer range, had a great impact. This gave both Hyder Ali and Tipu Sultan considerable advantage over the English cannonade’.\(^{35}\)

**Artillery of Nizams**

Almost a contemporary of Tipu Sultan, the Nizam of Hyderabad also manufactured his own guns. Towards the end of the Mughal rule, the Nizam had started producing guns with the help of his French officers. The English political agent, Capt John Malcolm, who was mainly instrumental in ensuring the removal of the French from the Hyderabad army, in a memorandum in 1798 recorded that the Nizam had employed Frenchmen in his gun factories and that the cannons produced by them in the local foundries were ‘as good and as well furnished as the guns then in use with the British’.\(^{36}\) The foundries subsequently formed a part of the East India Company’s army.

**Artillery of the Sikhs**

The Sikhs used artillery for the first time when Banda Bahadur fought the Subedar of Sirhind.\(^{37}\) The Sikhs had light artillery in 1715 which they had captured from Wazir Khan, the Faujdar of Sirhind. Sikh artillery got its right pride of place under Maharaja Ranjit Singh. Maharaja Ranjit Singh brought his artillery almost at par with the British
artillery by constant endeavours. By 1808, he had 30 to 40 guns, both of brass and iron types.\textsuperscript{38} They were mostly manufactured locally.

\textbf{Sikh Artillery}

\emph{Cannon captured during the First Anglo-Sikh war on display at The Royal Hospital, Chelsea, UK}
In 1807, he had established a factory at Lahore for the repair and manufacture of guns. The guns initially produced were not of very high quality but with experience their quality improved. It was during the second decade of Maharaja Ranjit Singh’s rule that the workshops at Lahore, Amritsar and Kotli Loharan were greatly expanded under his personal supervision. Technicians were brought from Delhi since his Sikh and Afghan workmen could not make good guns as the British. By 1804, Maharaja Ranjit Singh’s artillery was organised into two sections viz., *Topkhana Kalan* (siege guns) and *Topkhana Khurd* (field guns) and was placed under a separate *Daroga* or Inspector. Ranjit Singh’s artillery grew to 200 pieces by 1820. After 1821, a number of far reaching changes were affected in Ranjit Singh’s artillery. Starting from 1823-24, it expanded to five *derahs* of topkhana and five *derahs* of *zamburkhana* having strength of 1,688 men. It further rose to 13 *derahs* of topkhana and five *derahs* of *zamburkhana* having 3,778 men. Each *derah* was equivalent to present day artillery battery. *Zamburkhana* was in fact a battery with swivel guns.

A remarkable feature of 1805-1810 period of Ranjit Singh’s army was the development of horse-artillery on the same lines as that of the East India Company. In 1811, it was made into an independent section under a separate *daroga* and its strength was greatly enhanced within a short time.

**British Presidency Artillery in India (1748-1858)**

The earliest accounts of colonial enterprise in India provide some details of artillery. The ships used for voyages eastwards were heavily armed and carried guns on board for defence against pirates. The earliest Portuguese settlers knew ‘*the great arte of artillrie*’ and ‘the shooting of the great ordnance’. The British also understood the advantages of the cannon for it created awe in the hearts of the natives. Around 1628, the British had placed 12 guns near village Armegaon along the coast of Coromandal. The gun detachment consisted of 28 men trained both as infantrymen and gunners. The gunners were called *Topasses* from the Portuguese word *Tope*. In 1668, when two companies of East India Company’s artillery were formed at Bombay, *Topasses* were provided to man the guns: 28 on the establishment of the first company and 26 on that of the second company. There were 21 pieces of cannon and two European gunners to assist in operating the guns. The Bengal Presidency too, after gaining a firm footing in Calcutta towards the end of the 17th century, had on its establishment a ‘gun room crew’ for a small garrison.
which consisted of 120 men. In Madras, when the Marathas attacked Fort St George in 1741 the artillery deployed in the fort was primarily responsible for repulsing the attack, forcing the Marathas to withdraw due to heavy casualties.\footnote{42}

A new period of warfare, however, began in 1744 by the declaration of war between England and France. When the news reached India, the British East India Company and the French East India Company also went to war. Maj Stringer Lawrence, a retired captain of the British Army was sent to India as the Commander-in-Chief to organise the war effort. Topasses took part in many actions including the crucial actions at Cuddalore and the siege of Pondicherry.\footnote{43} With the ‘Peace of Aix la Chapelle’ in 1748, the war with France temporarily ceased. This gave the British East India Company a pause to improve its artillery. The Court of Directors of the British East India Company, therefore, decided to form regular companies of artillery and to do away with the old system of the ‘gun room crew’.\footnote{44}

In 1748, the Court of Directors of the East India Company ordered companies of artillery to be formed, one at each for the Presidencies of Bengal, Madras, and Bombay.\footnote{45} Accordingly, the first company of regular artillery was raised in Calcutta in 1849. The greater part of it, about forty five men, perished on 20 June 1756, after the capture of Calcutta by Siraj-ud-Daulah. What was left later joined reinforcements and reformed another artillery company with about one hundred men with mostly 6-pounder guns under Lt Col Robert Clive. A Captain was appointed to command all the three Presidency artillery companies with his residence at Calcutta. Each company was to be composed of one second-captain, one captain-lieutenant, three lieutenant fireworks, four sergeants, four corporals, three drummers, and 100 gunners.\footnote{46} A military storekeeper was appointed to take charge of the stores. A Director of Laboratory was appointed and given strict instructions regarding the security of the laboratory so that only the most trusted persons could gain access to it. The Court of Directors ordered that :-

\begin{quote}
No foreigner whether in our service or not, except such as has been admitted into it by the Court of Directors nor no Indian black or person of mixed breed, nor any Roman Catholic of what nation so ever, shall on any pretence be admitted to set foot in the laboratory or any of the Military Magazines, either out of curiosity, or to be employed in them, or to come near them, nor shall any such person have a copy or sight of any accounts or papers relating to any military stores whatsoever.\footnote{47}
\end{quote}
From the foregoing account it is evident that the artillery of the East Indian Company as an effective arm dates back to 1749. With the battles in Madras Presidency a new chapter of artillery in India commenced. A separate Corps of Artillery replaced the primitive ‘gun room crew’ concept which saw induction of natives as ‘laskars’ had to be employed to help Europeans in operating the guns. The raising of artillery companies in Bengal and Madras were completed by 1749, but the Bombay Company took longer to be raised fully.

The Court of Directors paid particular attention to the artillery, for by 1752 they were ‘fully satisfied how great a share of our dependence must in case of troubles be on artillery and upon the skill of the people appropriated to its service’. This was, perhaps, the first written expression of the British in India underlining the value it put to the efficacy of artillery towards success of its rule in India. The next few years saw the artillery in India making great progress. In 1755, Madras Presidency had organised its artillery into ‘a field train’ and had appointed an officer of the rank of lieutenant as adjutant. At Bombay Presidency, the strength that year was three artillery companies and three more companies of the Royal Artillery that were sent from England. The progress of artillery at Madras Presidency during the first decade of its formation was organic, for it had been constantly employed in warfare. Bengal Artillery was not too well managed. On the unexpected investment of Calcutta by Siraj-ud-Daulah during 1756, the strength of the company of artillery was found to be only 45. The defences of earlier Fort William (present Kolkata GPO location) were in bad shape, the ammunition and stores insufficient and of inferior quality; gun ordnance that had been sent from England was dismounted outside the fort and the other guns were mounted at places from where they could not be fired. To ease the situation, Lt Col (later Lord) Robert Clive was sent from the Madras Presidency with some reinforcements, which included artillery. Some detachments of artillery were also formed from artillery companies of the Bombay Presidency, which numbered three in 1756. In spite of his best endeavours to muster maximum resources, Clive found his artillery inadequate and his ordnance and equipment in bad shape. He fought the Battle of Plassey with only ten field artillery pieces. After Plassey, Clive’s first care was to reorganise the Bengal Army and thus he raised a company of artillery at Fort William out of the men who had served at Plassey. He raised two more artillery companies, one in September 1759 and the other in May 1760. During the campaigns of 1764-65, the East India Company’s artillery bore its full share of service and established a
good reputation, especially in the actions at Patna and Buxar in 1764, as also at the sieges of Chunar and Allahabad and at the action at Kalpi in 1765. Shortly after the Battle of Buxar, Clive became the Governor and Commander-in-Chief of Bengal. He undertook to reform his army and thus reorganised it into three brigades of equal strength. To each of these brigades, Clive allotted a company of artillery. At almost the same time Madras Presidency also resolved to put its artillery on a sound basis increasing it to three companies. The equipment of each company at Bengal Presidency consisted of six 6-pounder guns and two howitzers, beside an indefinite number of siege guns. The artillery park thus formed was termed a ‘field train’. The ‘field train’ at Madras consisted of two 12-pounder guns, ten 6-pounders and three 5¾ inch howitzers.

The elephant has been a familiar feature in Indian wars from very early days. It was used for carriage of heavy loads weighing up to 1000 lbs. Elephants were used during the wars for the expulsion of the French from India, wars against the Marathas and reported on very favourably in Nepal in 1816. In the Bhutan Expedition of 1864-65, all the artillery and ammunition were carried on elephants. Elephants were mobilised in 1897 as pack animals for guns towing, but were not used in the field; they were only used for draught of heavy guns in 1901. Bullocks were tried for carrying dismantled artillery equipment during the Bhutan Expedition of 1864-65, but proved a complete failure.

In 1845, 3-pounder guns on camels accompanied Sir Charles Napier’s Camel Corps in operations against the Bhugtis, after the conquest of Sind. Sir Charles reported that, in the desert, the camel carried a load of about 250 lbs most satisfactorily, provided it was given a ration above the standard. He also remarked, ‘an animal more unfit for military purposes cannot be imagined’. The Zambooruk, a very small gun carried in a swivel on a pack-saddle and fired off the camel’s back, can hardly rank as an artillery weapon. Camels were not used for artillery purposes thereafter.

Ponies have been in use for light artillery carriage in some countries and had many merits; they were hardy, but were inclined to be fastidious about their rations. The solution of the problem came from Spain, famous for mules. Their efficiency and endurance, combined with intelligence and often endearing nature, provided mountain artillery with a very faithful servant. The mule being sure-footed and capable of carrying a greater load in the rough and precipitous country of the North West Frontier Province hills became a great asset.
BATTLE OF PLASSEY

ORDER OF BATTLE, THE BENGAL ARMY

COMMANDER-IN-CHIEF: SIRAJ-UD-DAULA

STRENGTH

| Bengali Infantry | - about 33-40,000 |
| Pathan Cavalry   | - about 18,000    |
| Artillery        | - 50 guns (mainly 24 Pounders and 32 pounders and 32 pounders with detachment of 4 guns under St. Frays) (50 Frenchmen) |

ADVANCED CAVALRY

Mir Madan and Mohan Lal

Left Wing: Mir Jafar
Centre: Yar Lutuf Khan
Right Wing: Rai Durlabh

ORDER OF BATTLE, THE ANGLO-INDIAN (EAST INDIA COMPANY) AT PLASSEY

COMMANDER-IN-CHIEF: ROBERT CLIVE

STRENGTH

| Infantry                  | - 3,000 men |
| Advanced Detachment      | - Two 6-pounders, two howitzers |

Left Wing
Native Troops
1st Division (Madras Regiment)
2nd Division (Madras & Bombay Regiment)

Centre
European Troops
Major Grant

Right Wing
Native Troops
3rd Division HM 39th Regiment
4th Division Bombay Europeans
Major Guah (or Gaupp)
BATTLE OF PLASSEY

Yet another drawback from which the artillery suffered was the difficulty of expansion during emergencies, for whenever the need arose, sufficient European recruits could not be mustered as getting them from England in those early days of long sea voyages round the Cape of Good Hope, was not a practicable proposition. Bengal took the first step in 1773 in resolving the difficulty by employing natives for service in the artillery. The Bengal government formed the first company in arrangement with the Nawab of Oudh and called them Golandauze (Golandaz) or the ball throwers. Golandaz companies were borne nominally on the strength of the regular brigades of the Bengal army; their strength was fixed so that each company consisted of one captain-lieutenant, two subalterns, three sergeants, one subedar, three jemadars, 16 non-commissioned staff and 80 golandaz. The golandaz companies appear to have worked well for, almost simultaneously, Madras and Bombay Presidencies also adopted the system. On commencement of hostilities with the Marathas and wars with Hyder Ali and Tipu Sultan, fresh golandaz companies were raised. Col Pearse, the Commandant of Artillery in Bengal in 1778 considered the golandaz ‘really economical’, and on his recommendation three battalions of golandaz were organised, each consisting of eight companies. Each company consisted of two jemadars, eight havildars, eight naiks, two drummers, and 100 golandaz. Each battalion was commanded by a captain with one subedar as native commandant, one subedar as adjutant and one havildar major. The whole of the artillery in Bengal, thus augmented, was transformed into an independent brigade. Large induction of natives in the service of British artillery can be recorded as an event of historical importance as this was the first instance of such large induction of natives into artillery arm.

Madras too had organised its golandaz companies into two battalions, each consisted of 10 companies, unlike eight in Bengal. Each company was composed of two jemadars, five havildars, five naiks, two drummers and 65 golandaz compared to two, eight, six, two and a 100 respectively at Bengal.

The re-organisation of the Presidency armies in 1786 was, among other things, an attempt at organising the artillery of the three Presidencies on similar lines. The newly organised artillery was deployed on recommencement of hostilities with Tipu Sultan towards the end of 1789. The artillery during the next two years was employed in the campaigns in Mysore under Gen Meadows and Lord Cornwallis. Aided by contingents of the Royal Artillery, the Bengal Artillery formed the ‘siege train’, which consisted of 56 guns and also furnished the field artillery of the right wing, the Madras Artillery supplying
the left wing and reserve for the artillery deployment in the battlefield. The artillery companies maintained their reputation throughout the campaign and won the admiration of Lord Cornwallis.

Plan of the Siege of Seringapatam

Order of the Grand Army Under Command of Major General Medows
Against Tipu Sultan 20 Nov 1790
Shortly after the re-organisation of 1796, hostilities recommenced against Tipu Sultan and consequently a need was felt to expand the artillery. Since Europeans were not available in sufficient numbers and raising of the golandaz was found to be inevitable, a new plan was drawn up by which no separate companies were formed, but golandaz were incorporated as ‘component parts’ of European Companies. This arrangement of ‘component parts’, however, did not work out well and separate companies of artillery under the old denomination of golandaz recreated after the Battle of Seringapatam.62

Gen Harris was given the command of the army which was deployed for the siege of Seringapatam, the capital of Tipu Sultan’s State. It included detachments of artillery from all the three Presidencies. The overall command of artillery during the operation was given to Col Smith of the Madras Artillery. The artillery gave an excellent account of itself during the siege and assault of Seringapatam.63 Five years later the Presidency Artillery was again employed under Lords Lake and Wellesley during the Maratha campaigns of 1803-06 and it shared the glories of the battles in Aligarh, Delhi, Laswaree, Agra, Deeg, and Bharatpur among many others.64

Experience gained by the artillery as an arm of decision during these years gradually led to a number of innovations. It was found, for instance, that bullocks as a means of draught were no longer suitable. During Col Manson’s withdrawal, the animals were unable to keep up with the infantry and early during the retreat the guns had to be abandoned to the enemy. By 1800, horses had been introduced for draught and an experimental brigade of two horse artillery guns had been organised at Dum Dum near Calcutta. At the same time a brigade of two 6-pounder guns, generally termed ‘gallopers’, was authorised to each regiment of cavalry. Soon after their formation, the experimental Horse Artillery was sent for service to Egypt. On its return in 1803 it was formed into a troop called the ‘Experimental Troop’65 and it joined the army under Lord Lake where it did remarkably well.

During April 1805, orders were issued for the formation of a small body of horse artillery in the Madras Presidency. Around 1809, the Governor General of India, impressed by the successes of the horse artillery on various occasions in the field, issued orders for the formation of a Corps of Horse Artillery.66 In Bengal Presidency, it was formed into three troops. The equipment provided to each troops consisted of two 12-pounders guns, two 6-pounder guns and two 5½ inch howitzers. During the same year Madras Presidency witnessed reorganization of its horse artillery under the denomination
‘The Corps of Horse Artillery’, consisting of three troops, two of Europeans and one of natives. In 1811, Bombay Presidency followed suit and formed its first troop of horse artillery.67

In 1816, a rocket troop was organised both in Bengal and in Madras. Four light rocket cars drawn by camels were attached to each troop of rockets and each car carried 60 rockets. The rockets did not prove very successful and in 1822 the rocket troops were disbanded, for it was considered that the rockets were more dangerous to own troops than to those of the enemy.

The artillery of the three Presidencies continued to exist unchanged till 1824, when under instructions from the Court of Directors East India Company, the armies of the three Presidencies were reorganised. Under the new arrangement the horse artilleries of Bengal and Madras were formed into brigades, consisting of European and Native troops. The companies of European artillery were formed into battalions of four companies each.68 In addition, artillery got an increase in the complement of officers. In all the three Presidencies artillery officers benefited in promotion.

The Burmese War commenced in 1826. Under Sir Archibald Campbell, the artillery bore its full share of privation and honours of that campaign. Artillery was also extensively employed in the operations during the winter campaign of 1825-26, under the personal command of Lord Comberemere, the Commander-in-Chief, for the siege of Bharatpur.69 For the support of the whole force, consisting of 23,000 men, 112 guns were employed. 5 (Bombay) Mountain Battery, the first unit of the Indian Regiment of Artillery was raised on 28 September 1827 as the 8th Company of the Golandaz battalion, Bombay Foot Artillery. This also marked the raising of the first native artillery unit and is celebrated as the day of raising of the Indian Regiment of Artillery.70 This initial native artillery unit underwent change in its nomenclature to 1st Company 4th Battalion Bombay Foot Artillery during 1846. As re-organisation of Indian artillery took place from time to time, its name changed to 1st Company Bombay Golandaz Battalion in 1862, Number 1 Bombay Mountain Native Artillery in 1863, Number 1 Bombay Mountain Battery in 1876, Number 5 (Bombay) Mountain Battery in 1889, the Quetta Mountain Battery in 1901, 25 Mountain Battery in 1903, 105 (Bombay) Pack Battery in 1921 and back to 5 (Bombay) Mountain Battery in 1927. At present, 5 (Bombay) Mountain Battery forms part of 57 Field Regiment of the Indian Artillery. It fought along with the columns attacking Multan in the 2nd Sikh War in 1836, where it became the only battery to be
bestowed upon Battle Honours ‘Mooltan’ and ‘Punjab’\textsuperscript{71}. In 1868 it was sent to support the Bombay Indian Brigade in Abyssinia for which they won Theatre Honour ‘Abyssinia’\textsuperscript{72}. They were thus the first of the native artillery units in India to serve overseas. Except for this battery, none of the mountain batteries carry Battle or Theatre Honours prior to the campaigns in Afghanistan that commenced during 1878-80, in which all of the other five existing mountain artillery batteries played prominent role. The Burma War (1885-87) requisitioned the 4 (Hazara) and the 5 (Bombay) Mountain Batteries. In 1828, consequent to measures of economy, the equipment of field batteries was reduced from eight to six guns. In 1838, detachments of artillery from the three Presidencies assembled at Ferozepore to form the Army of the Indus for the march to Afghanistan. Artillery was deployed throughout the campaign with admirable effect. It took part in the actions of Kelat and Gonine and in the various actions fought in the neighbourhood of Kandahar.\textsuperscript{73} A native troop of the Bengal artillery made an unprecedented march over the most difficult terrain—crossing the Hindu Kush from Ghazni to Bamean, above 12,000 feet, which was considered totally impenetrable in those days. The troops then advanced into Turkistan and contributed to the victory at Syngam over the troops of the Wali of Khulam and the Amir Dost Mohammad.\textsuperscript{74}

A notable feature of the Afghan War was the formation of a ‘Mountain train’, an artillery unit of new description.\textsuperscript{75} In 1840, Capt Backhouse of the Bengal Artillery was ordered to form a native ‘Mountain Train’ of six 3-pounder guns for service in Afghanistan with mule transport, pack and draught. Earlier, while on furlough from India, Capt Backhouse had the opportunity to serve as a volunteer in the Royal Mountain Artillery battery which had been raised to fight the Carlists in North Spain. The new Mountain Train was in action throughout the Afghan War but was disbanded after the war.

In 1845, at the close of the Afghan War, the British army along with its artillery had just finished their review at Ferozepore, when it was again alerted for operations against the Sikhs. Sir Henry Hardinge, the Governor General, had foreseen and taken measures just before the commencement of the First Sikh War, to increase his force, disposed between Meerut and Ferozepore, from 24,000 men and 66 field artillery pieces to 45,500 men and 98 field-guns. Four battles were fought during the First Sikh War, namely, Moodkee, Ferozeshahar, Aliwal, and Sobroon and in all of them the artillery rendered excellent service and became one of the primary factors for the British victory.\textsuperscript{76}
RAISING OF 5 (BOMBAY) BATTERY ADDENDA TO INDIAN ARMY LIST 1939

No. E/55977/1(A.G.9).
ARMY HEADQUARTERS, INDIA.
ADJUTANT GENERAL’S BRANCH.
Simla. the 19th July, 1939.

From:— THE ADJUTANT GENERAL IN INDIA.

To:— Headquarters,
Northern Command.

MEMORANDUM

Reference your No. 28359/A-2 dated the 16th June, 1939.

It is agreed that the year 1827 should be regarded as the date of raising of the 5th (Bombay) Mountain Battery, Royal Artillery.

The necessary corrections will be made in the October 1939 issue of the Indian Army List.

Sd/ H.C. COLLINGWAT, Lt-Col.,
for ADJUTANT GENERAL IN INDIA.
RAISING OF 5 (BOMBAY) BATTERY EXTRACT FROM THE INDIAN ARMY LIST 1939

<table>
<thead>
<tr>
<th>Rank and Rank</th>
<th>Date of Rank</th>
<th>Present</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th (BOMBAY) MOUNTAIN BATTERY, R.A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;MOOLTAN&quot; &quot;PUNJAB&quot; &quot;ASSAM&quot; &quot;DHARMA, 1895-1897&quot; &quot;TIRAH&quot; &quot;PUNJAB FRONTIER&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Great War - &quot;SARAJE&quot; &quot;MESOPOTAMIA, 1918&quot; &quot;A.W FRONTIER, INDIA, 1914.&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raised in 1887 as the 6th Company of the Golandaz Battery, Bombay Foot Artillery. Became the 1st Co., 4th Battery, Bombay Foot Artillery, 1845; No 1 Co, Bombay Golandaz Battery, 1853; No 1 Co, Bombay 1st Artillery, 1863; No 1 Bombay Mtn Battery, 1876; No 5 (Bombay) Mtn Battery, 1888; the Quetta Mtn Battery, 1891; 10th Mountain Battery, 1903; 105th (Bombay) Park Battery 1907; 5th (Bombay) Mountain Battery 1827; present designation 1939.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commandant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second-in-Command</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-2-38 Rasam, Capt J.F. MacC. (y) 36-5-38 1-10-38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subaltern</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-2-33 Wilberforce, Lt W.H. 2-2-36 1-6-39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28-1-37 Campbell, 2nd Lt, W.H. 28-1-37 1-2-39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subedar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-9-24 Shab Sabai 23-5-31 26-2-38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-5-17 Feroz Khan 15-5-35 23-1-37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jemadar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-1-26 Shamsudin Singh 1-11-26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-1-26 Muhammad Beg 20-11-26</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The First Sikh War was followed by a short spell of peace wherein Capt James Abbott of the Bengal Artillery was sent as Commissioner to Hazara district in the North West Frontier Province (NWFP), to quell disturbances both within the district and outside. By now, the role of the artillery towards success in the battlefield had become so important that he mustered some gunners of the disbanded Sikh army along with men borrowed from the Maharaja of Kashmir to form a detachment of artillery. The equipment consisted of one 6-pounder gun and one 9-pounder gun captured from the fort of Haripur (NWFP). With this as the nucleus, the Hazara battery was formed, but its official acceptance was delayed due to the commencement of the Second Sikh War. During this war, the artillery of the Presidency armies took part in all the four battles, namely, Multan, Ramnagar, Chillianwala, and Gujarat (NWFP). Governor General Lord Hardinge paid tribute to the artillery, both European and Native, by recording; ‘it would appear, by most of the accounts received, that so effectually had this arm (artillery) of the service been employed, that the Sikh artillery, though managed as usual with great bravery, was, notwithstanding all their efforts, perfectly silenced… and it had been mainly instrumental in obtaining for Lord Gough one of his best and most splendid triumphs’.

Crown Service 1858 - 1935

The First War of Independence or the Mutiny (as it was officially termed by the British) was sparked at Meerut on 10 May 1857 by the native regiments stationed there. Almost the entire native artillery of the Bengal Army rose in arms against the British, with the exception of the newly raised mountain trains and the horse field batteries employed on the North East Frontier Province. The British fought hard for one year to regain their control. When the British were finally able to quell the Mutiny, the task of rebuilding an army over the ruins of the East India Company had to be undertaken. It was the artillery units more than any other regiment that attracted the attention of the authorities both in India and abroad. Opinions were sought from top authorities and almost all averred that there should be no native artillery. The sentiments expressed by the Governor General, recorded in the House of Commons paper No. 216 of 1859 reflect the popular viewpoint:

In no way in future should the natives of the country be entrusted with British Artillery, nor should any native in India be instructed in the use of such dangerous weapons. The native drivers are good horsemen and the gunners
most excellent; and in proportion as they are most valuable to the government they serve, so are they more formidable when they choose to be rebellious.

The three Presidency Commanders-in-Chief expressed similar views and one of them, Lt Gen Sir P Grant, Commander-in-Chief of the Madras Army observed that ‘there was in the heart of every black man, an inherent dislike of the white man’. \[80\] When the administration of India was transferred to the Crown, the whole European part of the artillery was transferred to the Royal Artillery. There was, in future, to be no native field artillery units and they were to be gradually disbanded with a few exceptions, according to clear instructions laid down in Governor General Order No. 1277 of 1861. \[81\] The exceptions were the two mountain artillery trains and three Horse Light Field batteries in the Punjab Irregular Force, which were renamed the Punjab Frontier Force in 1865, two companies of Bombay Native Artillery, which afterwards became the 1st and 2nd Bombay Mountain Batteries, and four field batteries of the Hyderabad Contingent in Madras Presidency. In the British Army in India it was a matter of pride to be an officer in a mountain battery and one among them Lt FS Roberts, who was commissioned into the Peshawar Battery, rose to become the Commander-in-Chief of India during 1885-93.

Initially, the native officers or the Junior Commissioned Officers as we know now, for the mountain batteries were mostly those who had served in the artillery of Maharaja Ranjit Singh’s army. The men comprising these batteries almost throughout, consisted of Punjabi Sikhs and Muslims. The gunners were specially selected for their height and physical prowess to undertake the rapid assembling and dismantling of guns. Right from their infancy, the two mountain trains, as the batteries were called then, gained experience of active service. These mountain trains operated in the rugged mountains of NWFP. Thus the Bombay and the light horse field batteries, developed characteristics of mountain batteries, consequent to their employment in mountainous terrain. For example, in 1867, both the Bombay batteries were equipped with 7-pounder muzzle-loading guns for which equipment for carriage by mules was provided. After the Mutiny, the Indian Artillery units retained in Royal Artillery were primarily the mountain artillery units since they were neither reorganised nor disbanded. \[82\]

The Indian mountain artillery was reorganised in 1876. The light horse field batteries were converted to mountain batteries and, along with the previously existing mountain trains and the Bombay batteries, they were given new regimental
nomenclatures. The first on the list was 1 (Kohat) Mountain Battery, Frontier Force (FF), which had been raised at Bannu in NWFP. It was the second of the three light horse field batteries, the first having been disbanded in 1870. Next was 2 (Derajat) Mountain Battery (FF) and was the third of the three light horse field batteries; Peshawar Mountain Battery (FF) was placed third. This battery was for some time employed during the Lushai Expedition in the North East India, in 1871. The next place was given to Hazara Battery which became the 4 (Hazara) Mountain Battery (FF). All the Frontier Force (FF) batteries were on the same organisation. At this time, the newly formed Kohat and Derajat Mountain batteries shed their equipment and were given mountain battery equipment.

In 1896, 5 (Bombay) Mountain Battery proceeded to Suakin to take part in the Egyptian Dongola Expedition. The battery played a prominent part in the capture of the Dargai heights, losing its Commandant, Capt de Butts, Royal Artillery. The battery subaltern Lt Edimann received the Distinguished Service Order (DSO) in this battle.

The end of the Second Sikh War brought the British in closer contact with the North West Frontier Province. The security of a border of about 700 miles of mountainous country from Hazara to Sind, skirting the six districts of Hazara, Kohat, Peshawar, Bannu, Dera Ismail Khan, and Dera Ghazi Khan, became the responsibility of the British. New measures were adopted for frontier security and mountain artillery in particular was to play a predominant part.

With the outbreak of World War I, the first to proceed overseas was the 7 Mountain Artillery Brigade under Lt Col Parker. It comprised 1 (Kohat) and the 6 (Jacob’s) Mountain Batteries that were despatched to Egypt for the defence of the Suez Canal. They played a prominent part in repelling the Turks. The 6 (Jacob’s) Mountain Battery captured two guns from the Turks in this operation. Both these batteries took part in the original landing at Anzac Cove (Gallipoli) on 25 April 1915, in support of the Australian and New Zealand Corps, with whom they served and supported all along. These two Indian Artillery units were to serve in many overseas theatres and both bore Battle Honours Anzac, Landing at Anzac, Defence of Anzac, Suvla, Sari Bair, Gallipoli-1915, Suez Canal and Egypt-1915-16. After Gallipoli, the 1 and 6 Mountain Batteries refitted in Egypt and joined the forces of Maude to earn Theatre Honour Mesopotamia (1916-18) and Persia (1918). Notably, these operations also saw the forerunners of mechanised artillery with a section of the pack being transported on Ford trucks as cavalry
mobile artillery. Battle Honour Persia is also shared by the 11 Mountain Battery which proceeded to the Euphrates in 1918.

**BATTLE OF CHILIANWALA**

![Plan of the Battle of Chilianwala, February 21st, 1849](image)

**PLAN OF THE BATTLE OF GUJRAT, FEBRUARY 21ST 1849**

![Plan of the Battle of Gujrat, February 21st, 1849](image)
In view of their operational commitments, Abbottabad, Ambala, Bannu, Dehra Dun, Fort Drosh (Chitral), Kohat, Landi Kotal, Maymyo (Burma), Mirali, Nowshera, Peshawar, Quetta, Rawalpindi, Razmak, Thal (NWFP), Wana (NWFP) were declared mountain artillery stations.\textsuperscript{87}

Notwithstanding the fact that the Indian Army was thought to have only limited capacity as an overseas expeditionary force, Indian troops were called upon to serve in France, Gallipoli, East Africa, Mesopotamia, and Persia. Indian mountain batteries were extensively employed during those campaigns. They went to war with their 10-pounder breech loading and the 2.75 inch guns. The 2.7 inch gun, however, did not prove very satisfactory and was replaced by the 3.7 inch howitzer which later had a glorious innings in the Indian Army.

**Indianisation of Artillery**

Consequent upon the decision to Indianise the artillery arm in India, it was decided to raise three field artillery brigades and one horse artillery battery for the infantry divisions and the cavalry brigade then on the Order of Battle of the British Indian Army. A start was made on 15 January 1935, when ‘A’ Field Brigade was formed to take the place of an outgoing British Field Brigade. In the following year, an Indian Artillery Training Battery was added to the establishment of the Field Artillery Training Centre at Mathura. Initially, three Indian officers were trained and commissioned into the Indian Artillery from the Royal Military Academy, Woolwich, United Kingdom. Prem Singh Gyani was the first Indian officer to be commissioned out of the Royal Military Academy, Woolwich, in 1932. He became the first Indian officer to command an Indian field regiment, the 2 Indian Field Regiment.\textsuperscript{88} He rose to the rank of Lt Gen before retiring from the service in 1965. He was followed by PP Kumaramangalam (who rose to become Chief of Indian Army) and AS Kalha. Thereafter, between 1935 and 1938, six Cadets from the Indian Military Academy were inducted as officers in the Indian Artillery. The rate of commissioning in the Indian Artillery was increased thereafter to four in a year. The rate at which officers were commissioned into the Indian Artillery suggested that the Indianisation of the entire officer establishment of the Indian Artillery was not contemplated for decades to come, since the officer establishment of the ‘A’ Field Brigade alone was twenty four.
The next step taken towards the Indianisation of the artillery was to set up a ‘Reserve’ for the Indian Artillery as per Army Instruction (India) 125 of 1936. In 1938, seven Indian Cadets were commissioned into the All India Reserve of Officers and allotted to the Indian Artillery.

Under the authority of the Government of India War Department letter Number B 30226/AG-4 dated 5 January 1935, ‘A’ Field Brigade, Indian Artillery, began forming at Bangalore on 15 January 1935 as a mounted artillery unit, in the accommodation vacated by 14 Field Brigade, Royal Artillery on reversion to the United Kingdom. ‘A’ Field Brigade followed the organisation, equipment and establishment pattern of a Field Brigade of the Royal Artillery. It consisted of a regimental headquarters and four field batteries, each with a different class composition which included 1st (Madras) Field Battery having Madrasi troops, 2nd Field Battery having Punjabi Mussalmans, 3rd Field Battery having Rajputana Rajputs and 4th Field Battery with Ranghars.

In March 1938, a decision to enhance the number of Indian Artillery units was taken by the Commander-in-Chief, India. Army Headquarters vide their U.O. 42229/SD-1 dated 21 March 1938 laid down that further Indianisation of the artillery would commence with the induction of Indian officers in the No. 1 Indian Mountain Artillery Brigade, followed by the replacement of a second British Field Brigade by an Indian Field Brigade. Thereafter, replacement of a British Heavy Battery (Coast Artillery) and one British Anti-aircraft Battery by an Indian Heavy Anti-aircraft Battery were to be undertaken followed by the replacement of a second British Heavy Anti-aircraft Battery by an Indian Heavy Anti-aircraft Battery.

The implementation of these decisions, however, did not begin till well after the commencement of World War II in September 1939. Indian Artillery was expanded substantially a month prior to the beginning of the War by the transfer of the Indian Mountain Artillery units from the Royal Artillery. The Mountain artillery units so transferred to the Indian Artillery consisted of six mountain regiments, one independent mountain battery located in Burma, and a survey section.

The first new raising of an Indian Artillery unit took place three months after the outbreak of World War II, but it was for a special role for which 27 Mountain Battery began raising at Dehra Dun on 1 December 1939.
The next to be raised was ‘B’ Field Brigade on 15 May 1940. The nucleus was formed at Bangalore, partly from ‘A’ Field Brigade. At this stage, the designation ‘Field Brigade’ was changed to ‘Field Regiment’.

A decision was taken by the Army Headquarters that field regiments with the Indian Army would either be wholly British or wholly Indian. Accordingly, Indian other ranks serving with British field regiments were withdrawn as on 1 January 1941 and were held surplus in the Regiment of Indian Artillery till absorbed.

Survey for Field Artillery was introduced during World War I, but some years lapsed before it was established in India; the delay was partly due to the fact that the coordinates on which the Survey of India was based were circular, whereas Royal Artillery Survey made use of rectangular coordinates. The genesis of modern Indian ‘artillery surveyors and gun locators’ can be traced back to August 1924 when a survey section of the Royal Artillery was grouped under Capt EB Culverwell, MC, at the School of Artillery, Kakul, now in Pakistan.

Medium artillery did not become a part of the Regiment of Indian Artillery till 1944. On 15 August that year, an Indian independent medium battery was raised at Peshawar to relieve a British Medium Battery in its frontier defence role. This battery was designated 201 (Independent) Medium Battery on 26 August 1944. The first of the Indian medium regiments was formed by converting the 8 Indian Field Regiment on 1 October 1944. This Regiment is in service and is known as 40 Medium Regiment.

‘Indian’ was added to the designation of Mountain Artillery units on 13 October 1942, by Army Order 2403.

**Air Observation Post (Air OP)**

Air Observation Post was a special artillery unit under Royal Indian Air Force (RIAF) control, raised during the World War II. Artillery officers trained as pilots flew light unarmed Auster aircrafts to correct artillery gun fire and provide battle related information. Capt FSB Mehta became the first Indian army officer to qualify as an air OP pilot and to get flying wings in 1944. He, thereafter, proceeded to Burma to join ‘A’ Flight/656 Air OP Squadron (RIAF) which had moved in support of 33 Corps for the Burma Campaign.

1 Air OP Flight (RIAF), the first in the Indian Army was raised on the Independence Day, the 15 August 1947. It happened that headquarters 659 Air OP
Squadron (RIAF) was located in Lahore and Pakistani army planned to take over all the aircrafts and ground support equipment on the day of partition. However, Capts HS Butalia, Govind Singh, Sridhar Mansingh and RN Sen managed to fly out a flight worth of aircraft to Amritsar. At the time of partition the RIAF had a total of 78 Tigermoths and 28 Austers V and VI light unarmed aircrafts in India. In the final distribution, India got 62 Tigermoths and 18 Austers—the balance of 16 Tigermoths and 10 Austers went to Pakistan. Both sides continued operating independent flights for quite some time. 1 (Independent) Air OP Flight (RIAF) actually started functioning on 6 October 1947. The flight later moved to Jalandhar. The Air OP got French Alloutte III (Chetak) helicopters in January 1970 and Lama (Cheetah) helicopters thereafter.

**WORLD WAR II : ARTILLERY CAMPAIGNS**

The campaigns in Malaya, Burma, East and North Africa, the Middle East and Italy bloodied the Indian Artillery during the World War II. Its role in World War II, which was a limited one during the initial stages, grew substantially once its immense capability to influence battles was recognised within a short period of time. The battle exposure, raising of units and re-organisation during and after the World War II, and subsequent to the partition of India, became the foundation on which the modern Regiment of Artillery developed into a magnificent outfit and constantly became a force multiplier for victories in the battlefield.

The Indian Artillery’s participation in World War II began in East Africa. As a precautionary measure against the possibility of Italy joining the war on the side of Germany, 22 Mountain Battery was despatched to Kenya on 1 September 1939, just two days before Britain declared War on Germany. This unit thus became the first Indian Artillery unit to see action in the Second World War. Subsequently, when Italy joined the War, this mountain battery was allotted to the East African Brigade which drove back the Italians from the southeast Africa.

1 Jammu and Kashmir (J&K) Battery, an Indian State Force unit, also fought against the Italians. 1 J&K and 22 Indian Mountain Batteries were the Indian elements of the artillery in support of the operations which brought about the surrender of the Italians at Amba Allagi. After its exploits at Keren and in Abyssinia, 1 J&K Battery fought with the Free French Brigade and the Allied Forces which liberated Syria from Vichy France. Two other Indian Mountain Artillery units, namely, 27 and 18 Indian Mountain Batteries,
went overseas to Aden and were earmarked for a special role. Subsequently, the Indian Mountain Batteries in the Middle East were put together and placed under 26 Indian Mountain Regiment in the latter part of 1941. This Regiment returned to India in April, 1942 and thereafter served in NWFP. Of the Indian Artillery units raised during the War, the first to go overseas was a battery of 1 Indian Anti-tank Regiment. It was rushed to Iraq in early 1941 in support of the force detailed for the quelling of the Rashid Ali rebellion. The remainder of the regiment moved to Iraq by the end of 1941. In March 1942, 1 Indian Anti-tank Regiment formed part of 10 Indian Division.

2 Indian Field Regiment accompanied 6 Indian Division to Persia and Iraq Command in November 1941. Initially it formed part of 10th Army but was ordered to move to Northern Syria during February 1942. It joined 3 Indian Motor Brigade and formed part of Gazala – Bir Hacheim defence. The regiment and 1 Indian Anti-tank Regiment, thus, found themselves in the Libyan deserts taking part in the battles against Rommel, and winning distinction at Bir Hacheim.

On 26 May 1942, 3 Indian Motor Brigade Group which included 2 Indian Field Regiment, 2 Royal Lancers, 11 PAVO Cavalry (FF), 18 King Edward VII Own Cavalry, and 1 Indian Anti-tank Regiment moved to Point 171 south of Bir Hacheim in Libya which was held by the 1st Free French Brigade. At six o’clock that evening, 2 Indian Field Regiment was warned to expect an attack by Rommel’s Panzer Divisions, in strength, early next morning.

The morning of 27 May confirmed the previous evening’s information. Rommel’s 15 Panzer Division, 21 Panzer Division, Italian Ariete Division, and 90 Light Division could be seen in harbour about 3000 yards from the Indian Motor Brigade’s forward defended localities. Confronting the entire might of the German Africa Corps and an Italian Division was 3 Indian Motor Brigade with not a single tank, and less than two score anti-tank guns supported by 2 Indian Field Regiment equipped with 25-pounder guns which, in fact, were about to see its first action. The defences of Point 171 were without mines or wire obstacles, incomplete and uncoordinated. It was also hopelessly outnumbered.

The battle at Point 171 was so swift that by about 0815 hours the two Panzer Divisions had overrun the defences of the Brigade. Capt RC Frisby, Royal Artillery who was then with 2 Indian Field Regiment wrote many years later to the scholar, ‘the grand total of tanks that were knocked out by the 2 Indian Field Regiment, and I, personally
counted them was fifty six in the Brigade Box Area. I did not bother for wheeled vehicles as they appeared to be so many scattered around'. Maj PP Kumaramangalam of 2 Indian Field Regiment and Lt PB Clarken of 18 Cavalry returned to the battlefield a few days later to salvage the 2 Indian Field Regiment guns. Among Indian artillery units, 2 Indian Field Regiment and 1 Indian Anti-tank Regiment were awarded Honour Title ‘Point 171’ for its magnificent battle performance.

The Statesman on 29 August 1942, published a press note under the heading ‘Awards for Indian Artillerymen’, informing of three Distinguished Service Medals won in the Bir Hacheim (Point 171) battle. Two of them were won by anti-tank detachment commanders and the other by a non-commissioned officer in the field regiment. In the first case, the detachment commander was moving his gun when the German tanks made a determined attack. ‘He at once brought his gun into action and hit two tanks, forced it to withdraw to a new position while he hit another tank’, showing great courage and dedication during the action. The second award was won during a fierce engagement with German tanks. The detachment commander set a fine example before his men, who fought magnificently and knocked out two tanks. The great courage displayed in directing fire against a number of advancing tanks earned the detachment commander an Indian Distinguished Service Medal. His gun crew accounted for three tanks.

The Statesman on 30 August 1942 reported the award of the prestigious Distinguished Service Order to Maj PP Kumaramangalam who was in command of 7 Field Battery of 2 Indian Field Regiment at the Point 171 defences. On 2 September 1942, it carried the story of another 2 Indian Field Regiment’s soldier, Havildar Major Lakshmi Narasu’s great courage and devotion to duty which was an inspiration to his men. During the action, he had ignored bursting shells in order to go from gun to gun, encouraging the crews and maintaining morale at a high pitch. At the end of the battle it was found that both the troop officers were missing. Havildar Major Narasu collected the survivors and led them to safety.
GAZALA AND VICINITY: 1942

BATTLE OF PT 171 (BIR HACHEM)  
27 MAY 1942
Gen Claude Auchinleck, the Commander-in-Chief, sent the following message to the 3 Indian Motor Brigade Commander, ‘I, Gen Claude Auchinleck, the Commander-in-Chief wish to tell you how proud I am of 3 Indian Motor Brigade. Your courage and sacrifice on that day (27 May) did much, I feel, to break the force of the enemy’. The British Prime Minister, Sir Winston Churchill, announced in the House of Commons, ‘The full brunt of the enemy’s actual advance to the east of Bir Hacheim was taken by 3 Indian Motor Brigade Group, but not until after it had inflicted heavy casualties on the enemy and seriously impeded the advance’. In another statement Sir Winston Churchill rose from his seat in the House of Commons to pay tribute to the Indian artillery in Bir Hacheim under 3 Indian Motor Brigade Group (2 Indian Field Regiment and 1 Anti-tank Regiment) for their decisive role in the Battle of Bir Hacheim.

The losses suffered by 2 Indian Field Regiment included six officers killed, one officer missing, twenty four officers including Capt AS Narvane and 2nd/Lt Tikka Khan taken prisoners, 400 viceroy commissioned officers and soldiers of the unit were either killed or taken prisoner of war, eight 25-pounder guns were lost. 1 Indian Anti-tank Regiment suffered so heavily that it had to be broken up temporarily and reformed later in India. 1 Indian Anti-tank Regiment later went to Pakistan during partition. Maj PP Kumaramangalam and 2nd/Lt Tikka Khan of 2 Indian Field Regiment rose to become Chief of India and Pakistan Army, respectively.

The battle at Point 171 surprised Rommel no end. He had lost time and resources. His attempt to drive past Acroma to the coast was checked. Rommel states in Rommel Papers, ‘our plan to overrun the British forces behind Gazala line had misfired’.

The first Indian Artillery unit to see action in the war against the Japanese was 22 Mountain Regiment, which had sailed from India for Malaya in August 1939 and was provided with vehicles to tow guns on arrival. 21 Mountain Battery of this regiment was deployed in support of 8 Infantry Brigade on 6 December 1941 in the Kota Bahru area. On 9 December 1941, the day of invasion it shelled the Japanese ships within range. 1 Indian Field Regiment and others were active in Burma. They provided much needed fire support to the Allied Forces for withdrawal against heavy Japanese attacks. They were among the last to leave Burma in 1942.

The Japanese were a spent force by July, 1944. They were given no respite by the Allied forces, despite the heavy monsoon. By the end of 1944, each of the Indian Divisions taking part in the Burma campaign included an Indian artillery element. Indian
XV Corps carried out a series of amphibious operations from the Bay of Bengal using 25 and 26 Indian Infantry Divisions, which had been trained for this role. The amphibious operations secured Burmese ports in Akyab, Letpan, Ramree Island, Cheduba Island and Taungop for which 33 Mountain Regiment, 5 Indian Field Regiment, and 7 Indian Anti-tank Regiment assisted 25 Indian Infantry Division. 30 Indian Mountain Regiment, 7 Indian Field Regiment, and 1 Indian Anti-tank Regiment were part of the artillery group in support of 26 Indian Infantry Division. 1 Indian Anti-tank Regiment operated primarily in a mortar role and provided close support in the jungle country in which it was not always possible to find field artillery positions.\footnote{As part of rapid Allied advance in Burma, 81 East African Division advanced across high hills and through dense jungle in Kaladan Valley, clearing the tracks in several places to make movement possible. Mostly, supplies were dropped by air. In these operations Indian Artillery won its first and only Victoria Cross (VC). In fact Havildar Umrao Singh became the only non-commissioned officer in the Royal Artillery (later the Indian Artillery) to be awarded Victoria Cross during the World War II. Umrao Singh won his award for valour in what all gunners regard as their near-sacred duty—defence of the guns. The eventful action occurred on the night of 15/16 December 1944 in the Kaladan Valley. Umrao Singh was functioning as a field gun detachment commander of 33 Mountain Battery of 30 Mountain Regiment (now 22 Field Regiment), in Field Marshal WJ Slim’s 14th Army. Umrao Singh’s gun was in an advance position, continuously firing on the withdrawing Japanese forces. His gun position was soon attacked by at least two companies of Japanese infantry. Despite being wounded twice by earlier shelling, he fired a Bren light machine gun over the gun shield and directed the rifle fire of his fellow gunners, holding off the assault. A second wave of attackers killed all but Umrao Singh and two other gunners. This attack was also beaten off. The few bullets of small arms ammunition remaining were rapidly exhausted in the initial stages of yet another assault. Undaunted, Umrao Singh picked up a ‘gun bearer’ (a heavy iron rod, similar to a crow bar, used for turning the guns trails) and used that as a weapon in hand to hand combat. He was seen to strike down several Japanese infantrymen before falling to a rain of blows on his head. Six hours later, after the situation was restored, he was found unconscious near his gun, almost unrecognisable from a head injury but still clutching his gun bearer. Ten Japanese soldiers lay dead nearby. His gun was back in action later that day. Havildar Umrao Singh was}
presented the Victoria Cross by King George VI at Buckingham Palace on 15 October 1945.\textsuperscript{114}

Much later, he attended the service of dedication of the Victoria Cross and George Cross Memorial in Westminster Abbey on 14 May 2003. After attending the public meeting at the Hyde Park, he was trying to cross the road when he discovered he had caused a traffic jam. British defence secretary Michael Heseltine, recognising the Victoria Cross pinned on his chest, jumped out of his car, saluted Umrao Singh and giving him the passage said: ‘VC first, sir’.\textsuperscript{115}

In 1944, the components of Indian artillery that supported the 14\textsuperscript{th} Army’s advance in Burma consisted of 21 Indian Mountain Regiment and 1 Indian Field Regiment with 17 Indian Infantry Division, 20 Indian Mountain Regiment and 4 and 5 Indian Field Regiments were grouped with 19 Indian Infantry Division. 25 Indian Mountain Regiment remained with 7 Indian Infantry Division, the 24 Mountain Regiment with 5 Indian Infantry Division and 23 Mountain Regiment with 20 Indian Infantry Division. 2 Indian Field Regiment, 5 (Maratha) and 8 (Maratha) Anti-tank Regiments, 1 Indian Survey Regiment, 1 and 2 Light Anti-aircraft Regiments and 5 Indian Heavy Anti-aircraft Regiment took part in the campaign as Fourteenth Army Troops.\textsuperscript{116}

When Lt Col JHH Willians, Commanding Officer 2 Indian Field Regiment took seriously ill in the jungles of Burma and had to be evacuated, Maj PS Gyani, then the Second-in-Command of 3 Indian Field Regiment, which was operating in the general area south of Kohima, was flown in a glider, on promotion, to take over the command of 2 Indian Field Regiment during first week of November 1944. He brought some reinforcements with him in the glider. He took over command just before the regiment was to support divisional attack. Lt Col PS Gyani became the first Indian Officer to take over the command of an Indian Artillery Regiment.\textsuperscript{117}

To the north of Kalemyo, where the Japanese artillery shelled Honang, 1 Indian Survey Regiment did excellent work in locating the Japanese guns and bringing down effective counter-bombardment and neutralizing them. Such was the importance of this unit that the batteries of 1 Indian Survey Regiment moved with the leading divisions on the two axis of advance as a permanent feature.
THIRD BURMA CAMPAIGN

CHINA-BURMA, 1941
THIRD BURMA CAMPAIGN
Slim's Offensive, June 1944—March 1945
Approach to the Irrawaddy and seizure of Meiktila:
December 1944 – March 1945

Battle of Meiktila 28 February – 3 March 1945: Command Post
1 Indian Field Regiment
1 Indian Field Regiment supported 48 Indian Infantry Brigade for the Battle for Meiktila. It so happened that although surprised by the sudden arrival of 17 Indian Infantry Division, the Japanese forces fought hard. They turned out to be much stronger than anticipated and attacks supported by a divisional artillery failed. On 3 March 1945, after several effective concentrated firings by 1 Indian Field Regiment, the Japanese fled leaving behind 42 guns and over 2000 dead.\textsuperscript{118} Capture of Meiktila can be considered to be a turning point in the re-conquest of Burma since Meiktila with Thanzi twelve miles to the east were the main administrative centres of the Japanese 15\textsuperscript{th} and 33\textsuperscript{rd} Armies. Roads and rail routes from the southeast and west converged on Meiktila and Thanzi, to spread out again to the north like extended fingers of a hand, whose wrist was Meiktila. Field Marshal Sir William Slim wrote, ‘Crush that wrist, no blood will flow through the fingers, the whole hand would be paralysed, and the Japanese armies on the arc from the Salween to Irrawaddy would begin to wither’.\textsuperscript{119}

In the advance to Rangoon, 1 Indian Field Regiment had the occasion to mount the guns on open railway wagons, patrolling along the railway tracks by the 25-pounder guns so mounted enabled artillery support to be given to the stretched out infantry dispositions. Maj AW Litchfield and Lt Avtar Singh both won the Military Cross for conspicuous service. 1 Indian Field Regiment was awarded Honour Title ‘Meiktila’. 20 Indian Mountain Regiment and 4 Indian Field Regiment supported the 19 Indian Infantry Division in annihilating most of the Japanese in the Mandalay area. Many of the villages became scenes of bitter fighting. At Tomosko, 4 Indian Field Regiment fired over a thousand shells resulting in mass casualty of the Japanese. The bitterest fighting was witnessed on the 600-yards wide bridgehead at Kyaukmyaung, 46 miles north of Mandalay. The battle raged for over 20 days and nights. The Japanese were, eventually, thrown back consequent to the biggest concentration of artillery that was fired in the Burma campaign.\textsuperscript{120}

In Letse, 2 Indian Field Regiment deployed as part of 28 East African Brigade faced the onslaught of a Japanese division. The battle that took place on 20 March 1945, resulted in death of 251 Japanese officers and soldiers. 2 Indian Field Regiment had to fire their artillery guns almost at hand to hand fighting distances. In this action 2 Indian Field Regiment captured a Japanese flag and a 2.75 inch gun.\textsuperscript{121}
For the gallant and distinguished action at Letse, 2 Indian Field Regiment was awarded the Honour Title ‘Letse’. The regiment thus became the first and only Indian Artillery Regiment to be awarded two Honour Titles in World War II, having earned Point 171 earlier. Lt Col PS Gyani was awarded the ‘Order of British Empire’ (OBE), for his outstanding leadership.

Field Marshal Sir WJ Slim sent a message to the Fourteenth Army gunners, “We regained Burma because we were a team, a team of many races, services and arms, in which each worked not only for his own show but for the whole side. In this team, the Gunners: British, Indian and African, played an outstanding part. They were in on everything. For artillery it was the most difficult theatre of all. The immense effort of moving guns through jungle, the problems of clearance, of an often meager ammunition supply, the lack of visibility and the constant threat of Japanese infiltration might have reduced the guns to comparative impotence. Yet all of these and a dozen other handicaps were overcome by brains, brawn and determination. Gunners developed new techniques of cooperation with infantry, tanks and air. They became adepts at close defence. They took on any job: road making, lorry columns, air supply. They acted as infantry and more than once artillery officers took command of infantry units which had lost all their own officers. They packed themselves and their equipment into aircraft as readily as they undertook a move by road. They mounted their guns in ships and manned them, nor did three years in the jungle make them slow-moving or static-minded. When we broke out in the plains of Central Burma they, without hesitation, adapted themselves to almost desert tactics and mobility. They earned the admiration and gratitude of our own troops and of our allies for gallantry, efficiency and unselfish devotion in their support. I saw them come out of Burma in 1942, grimly covering the rear-guard; I saw them go back with the foremost troops in 1944 and 1945. For me, their spirit is typified by the gunner on the Toungoo Road, stripped to the waist, glistening with sweat, slapping shells into the breech of his gun, who, when I said to him, I am sorry you’ve got to do all this on half rations, he replied, ‘Never you mind about that, sir. Put us on quarter rations; give us ammo, and we’ll get you into Rangoon. No wonder we got there.”

Acknowledgement of Indian artillery’s role towards victory in Burma came not only from military commanders but also from the Imperial leadership in UK. This was perhaps the first official acknowledgement of poweress of Indian artillery to enhance the Comprehensive Military Power of Allied Forces, leading to reconquest of Burma.
TRIBUTE TO GUNNERS

I would like to pay a compliment to the gunners and I would like this to be passed on to every gunner. The gunners have risen to great heights in this war. They have been well commanded and well handled. In my experience the artillery has never been so efficient as it is today; it is at the top of its form. For all this I offer you my warmest congratulations.

The contribution of the artillery to final victory in the German war has been immense. This will always be so; the harder the fighting and the longer the war, the more the infantry, and in fact all the arms, lean on the gunners. The proper use of the artillery is a great battle-winning factor.

I think all the other arms have done very well too. But the artillery has been terrific and I want to give due weight to its contribution to the victory in the campaign.

P. L. Montgomery
Field Marshal
C. vii - C
21 Army Group

Germany
27-6-45
The Title “Royal”

The exceptional performance of the Indian Artillery during World War II was recognised by the conferment of the title ‘Royal’ by the King Emperor. The Indian Artillery was rechristened as the Royal Indian Artillery (RIA). Another testimony of the Indian Artillery’s role towards enhancement of the Indian Army’s Comprehensive Military Power was, thus, recorded in the pages of history by His Majesty the King Emperor of Britain.

The title ‘Royal’ was dropped when India became a Republic on 26 January 1950. Subsequently, the prefixing of the adjective ‘Indian’ was considered redundant and the Regiment became simply ‘The Regiment of Artillery’. Thus, units were required to suffix the single word ‘Artillery’ instead of Royal Indian Artillery or the older ‘Indian Artillery’ at the end of their designations.

THE PARTITION AND AFTER

On 20 February 1947, the British Prime Minister announced that British rule in India would come to an end in June 1948. Hardly had plans got underway for the nationalisation of the Royal Indian Artillery when the British Government declared in May 1947, that two self-governing dominions, India and Pakistan, would come into existence on 15 August 1947. Now, less than three months the partition of assets of Indian Army was to be completed.

Partition was a sentimental issue of dividing the Royal Indian Artillery into two entities which, till then, had functioned in the most seamless manner. There were twenty eight Royal India Artillery Regiments at the time of the Partition, not counting the independent batteries, the Indian element of the 659 Air Observation Post Squadron (RAF) and the static establishments. India was allotted eighteen and a half regiments and Pakistan the remaining nine and half units. The allocation of units was arithmetically proportionate but by no means balanced. For instance, the units allotted to India included far too many anti-tank regiments, only one medium regiment and no heavy anti-aircraft artillery. The units earmarked for Pakistan did not include a parachute field regiment. However, it was decided to leave the task of redressing the imbalances to the Dominions themselves after they came into being and took stock of their priorities.

While re-organisations were going on at Army Headquarters, the country was passing through a very turbulent phase. A few days before independence, widespread
communal riots had broken out in northern India, which led to the massacre of hundreds of thousands of people. The result was a mass exodus of Hindus and Sikhs from Pakistan and Muslims from India. Hardly had the communal cross-migration problems been brought under control, the situation in Jammu and Kashmir began to cause grave concern. It soon became obvious that the animosities arising from the communal disturbances and from the Kashmir situation might lead to armed clashes between the two countries. Fighting broke out in Kashmir shortly afterwards and there was a great need of artillery support. An artillery field battery on its way to Punjab for internal security duties was diverted to Kashmir. That unit was carrying fifty per cent armour piercing ammunition for use against the mud huts of the rioting mobs but carried on to proceed to Kashmir.

At the very outset of the hostilities when the Pakistani raiders led by their regular army officers reached the gates of Srinagar and the Maharaja of J&K signed a Treaty of Accession to India, it was decided to immediately send 1 Sikh Battalion by air to retrieve the situation. Since only Sikh soldiers could make up the shortfall, personnel from 2 Field Regiment (SP) (RIA) and 13 Field Regiment (RIA) of the armoured divisional artillery located in the Red Fort or around for internal security duties were organised as an infantry company at hardly any notice to form the fourth infantry company of 1 Sikh and flown to secure the air field at Srinagar from 27 October 1947 onwards. They functioned as infantrymen and fought shoulder to shoulder with 1 Sikh in the battles of Baramulla and Pattan in North Kashmir, which helped to stop the Pakistani raiders at the very gates of Srinagar.125

At this time four 3.7 inch howitzers belonging to the Patiala State Force, without sighting system, were flown and deployed near Pattan along Srinagar – Baramulla road. The guns were taken over by the artillery men attached with 1 Sikh battalion and fired, causing the Pakistani raiders to flee.

In the meantime ‘F’ Troop of 32 Field Battery of 11 Field Regiment (three guns) reached the area and started to inflict heavy casualties, creating further panic and disorganization in the enemy ranks. The joint effort of the RIAF, infantry and artillery caused unacceptable losses to the enemy, who fled back in panic, leaving behind over 300 dead. Now ‘F’ Troop concentrated in Baramulla and ‘E’ Troop of 32 Field Battery remained in Srinagar in support of Srinagar defences. Later Uri could be recaptured with the help of another troop of 32 Field Battery.126 As the time passed the courageous actions
25 Pounder Gun in action at Zoji La Pass (Ladakh) : 11 Field Regiment

Guns of 30 J&K Mountain Battery moving across Zoji La Pass in Ladakh
by the Indian troops resulted in one after another success in battle and thus the Pakistani
raiders were pushed out and Baramulla and areas close to Uri were recaptured. Kashmir
valley was thus saved from falling to Pakistani raiders. The role of Indian Artillery was
substantial. ‘F’ Troop now moved back to Jammu and then moved to the Rajauri sector
and was deployed near Naushera in support of 50 Parachute Brigade. Operations in this
sector were intense and these guns supported the infantry in every action. The brigade was
led by Brig Usman. After battles of Nausahera, Jhangar and Kotli were recaptured. Indian
artillery fire in these battles caused Pakistani Mirpur town to burn down.127

Jhangar near the Indian town of Naushera was tactically important for the Pakistani
army since it was placed between Mirpur and Kotli. No artillery support was provided to
the Jhangar defences. Jhangar was lost to the enemy around 24 December 1947. The
enemy now turned towards Naushera. However artillery support provided by the guns of
11 and 16 Field Regiments and 5 (Bombay) and 7 Mountain Batteries and timely
assistance by the RIAF on 6 January 1948 saved the day for the Indian army. On 18 March
48, Jhangar was recaptured with the help of artillery.128

In the Poonch sector the battle situation became grim for Indian troops by
December 1947. However the tide began to change from the time a section of two guns
of 4 (Hazara) Mountain Battery was air-landed on 13 December 1947. The situation
actually stabilized due to the artillery support.129 Another attack by the enemy on 18
December failed due to artillery support. The enemy continued with its effort to capture
Poonch but was unsuccessful.

Poonch continued to be isolated by the enemy till May 1947, the town and the
adjoining areas being held by Indian troops. It was then decided to launch ‘Operation
Easy’ to link Rajauri with Poonch. Artillery played an important part in this operation. A
troop of 45 Field Battery and 7 Mountain Battery provided the fire support. Around 15
October 1948, the most dominating feature in the Naushera sector, Pir Badesar hills,
which had fallen in the hands of the enemy was attacked by the Indian army. The attack
was a success. The enemy casualties were estimated to be 70 killed and 38, wounded
mostly due to own artillery fire and large numbers of enemy soldiers were also taken
prisoner of war.130 Gradually Poonch link up took place and a highly disadvantageous
position in the battlefield was turned around with very courageous and active help of the
Indian Artillery.
In the northern regions of Kashmir valley Tithwal township was captured on 23 May 1948 with the help of J&K Mountain Battery and 31 Field Battery of 11 Field Regiment, who supported 163 Infantry Brigade for this operation.\textsuperscript{131}

One of the most daring operations by tanks in the glorious pages of Indian military history was fought in the snow-bound high altitude area of Zoji La Pass at an altitude of over 11000 feet. Tanks of 7 Cavalry Regiment did the unthinkable by reaching near the Zoji La Pass. It was closely followed by the guns of 11 Field Regiment. In this battle artillery guns fired almost continuously over three days only then could Point 7315 (Zoji La Pass) could be recaptured from the Pakistani raider. In this battle Capt LS Lehl of 11 Field Regiment was injured while attacking the Pakistani raiders.\textsuperscript{132}

The first flying unit of the Indian Artillery, the 1 (Independent) Air OP Flight, was inducted into the Indo-Pak Operations 1947-48 right from the onset.\textsuperscript{133} Its operational employment commenced with the acceptance of the Maharaja of Jammu and Kashmir to sign the Instrument of Accession. Immediately thereafter, Pandit Jawaharlal Nehru decided to depute Shri Baldev Singh, the Defence Minister and Maj Gen KS Thimayya to personally meet the Maharaja and tie up the modalities of Accession. Accordingly, on 27 October 1947, an Auster aircraft of 1 Air OP Flight (RIAF) piloted by Capt Sridhar Mansingh landed at Srinagar with Maj Gen KS Thimmaya and Shri Baldev Singh to herald the signing of the historic ‘Instrument of Accession’ by Maharaja Hari Singh. Air OP pilots thus became a part of the historical event that led to the Accession of J&K to India. These pilots also ferried important persons to and from Jammu to Srinagar, in connection with the signing of the ‘Instrument of Accession’. Their mission was crowned with success. Jammu and Kashmir acceded and became an integral part of India.\textsuperscript{134} 1 Air OP Flight moved to Jammu airfield during January 1948 to provide support to the forces fighting the Pakistani raiders. The primary role of the flight during those trying times was direction of artillery fire and casualty evacuation. The flight operated from the most challenging advance landing grounds (ALGs) at Naushera, Jhangar, Rajauri, Mendhar, Surankot, and Chhamb, all part of the present day Poonch and Rajauri districts of Jammu and Kashmir. Quite a few of these ALGs were within Pakistani artillery range. However, undeterred by the shelling on these ALGs, the Air OP pilots operated from them and undertook many missions. One of the most remarkable missions was the casualty evacuation sortie was flown by Capt Sridhar Mansingh to evacuate Brig Mohammed Usman, Commander 50 (Independent) Parachute Brigade who had been
grievously wounded on 3 July 1948 due to enemy shelling near Naushera and needed to be evacuated immediately. Brig Usman had fought a brilliant campaign to stop enemy from capturing Naushera and Jhangar. The daring evacuation was undertaken right under the nose of the enemy and in the face of intense firing. Sadly Brig Usman could not be saved even after successful aerial evacuation.\(^{135}\)

**INDIA-CHINA WAR 1962**

The Regiment of Artillery’s involvement in Indo-China War 1962 commenced with air dropping of a troop of three 75mm Yugo guns during the first week of October 1962, in the most inaccessible region of Tsang Dhar in Tawang sector NEFA (Arunachal Pradesh). Only two guns could be retrieved.\(^{136}\) At this time 166 Mortar Battery with 4.2 inch mortars without ammunition too moved up in the Tawang sector from Shillong.\(^{137}\) The Chinese attacks commenced around 10 October 1962. Inspite of substantial resistance by the Indian troops, inadequacy of artillery prevented them from undertaking substantive actions to evict the Chinese. As the situation started to go out of control, 4 Artillery Brigade was given infantry role for the defence of Tawang. It deployed 1 Sikh and 4 Garhwal Rifles to cover the Bum La approach. 97 Field Battery of 5 Field Regiment positioned its eight 25 pounder guns in the Tawang area, where the road ended but Bum La Pass was not within the reach of their guns. Two mountain batteries and 7 (Bengal) Mountain Battery of 22 Field Regiment was deployed at Milaktong La (10 km South of Bum La). 2 (Derajat) Mountain Battery was deployed at Lao Basti along Jung axis and two guns of this battery without ammunition were located at Mukdang La and were placed in support of the infantry blocking the approach through Bum La.\(^{138}\) The 3.7 inch howitzers of this battery could not reach the Bum La Pass either. Even the Heavy Mortars of 116 Heavy Mortar Battery which deployed one troop along the track Sulu La-Samasto and another troop at Tongpeng La in support of 1 Sikh could not reach the Pass.\(^{139}\) These deficiencies in artillery guns range and overall gun range were to have disastrous effect in the days to come.

The Assam Rifles post at Bum La was overrun by the Chinese at about 0430 hours on 23 October.\(^{140}\) The Chinese came through and attacked the 1 Sikh forward company positions next. The enemy was now within gun range. The fire of 7 (Bengal) Mountain Battery directed by Capt GS Gosal disorganized Chinese move that put in a second assault, soon thereafter. Nevertheless, the artillery observer brought down heavy and
accurate fire to bear on the attackers. The Chinese attack was once again beaten back. The Chinese third assault, this time from the direction of their first attack could not make much headway either. In this engagement the artillery battery fired around 600 shells which also assisted 1 Sikh to undertake an organised withdrawal. Due to numerical superiority of the Chinese army and heavy losses suffered by Indian troops resulted in withdrawal of the forward company of 1 Sikh. The mountain and field guns engaged the advancing Chinese and gave magnificent fire support. 97 Field Battery engaged a Chinese concentration at Gyamyang, firing over 300 shells from each gun. By now, the ammunition with the guns started getting low due to no supply from the rear.

Soon orders were issued for Tawang to be vacated. 22 Mountain Regiment less two batteries, 97 Field Battery, 116 Heavy Mortar Battery of 35 Heavy Mortar Regiment and ‘C’ Troop of 34 Heavy Mortar Battery of 36 Heavy Mortar Regiment took part in the withdrawal operations from Tawang. Unfortunately, the road to Tawang had become a quagmire due to rain and snow. The guns and towing vehicles of 97 Field Battery got bogged down in deep mud and had to be abandoned. Two guns of 2 (Derajat) Mountain Battery also had to be left behind, there being insufficient mules to carry all the equipment back.

The men of 116 Heavy Mortar Battery carried their mortars back to Pankengtang Tso on their back, but could not take them all the way to Jung due to the effects of high altitude on the troops and heavy rains. The mortars of this battery less those of ‘C’ Troop were abandoned north of Tawang. The mortars of ‘C’ Troop were withdrawn to Jung in vehicles.

**The Walong Sector**

The Lohit, Siang and Subansiri Frontier Divisions of NEFA were the responsibility of 5 Infantry Brigade under 4 Infantry Division of IV Corps. 44 Heavy Mortar Regiment was deployed in this area, with their regiment headquarters at Tezpur in support of 5 Infantry Brigade. It had its 69 Heavy Mortar Battery deployed at Daporijo in support of 2 JAK Rifles, 70 Heavy Mortar Battery at Tuting and Menchuka placed in support of 2 Madras and 71 Heavy Mortar Battery at Walong in support of 6 Kumaon. Thus the 44 Heavy Mortar covered a vast, almost inaccessible area. On 4 April 1962, Maj RN Roy of 44 Heavy Mortar Regiment with 9th Platoon of 2 Assam Rifles left Walong to establish a post at Du Dhakru near the watershed. Although the 4.2 inch mortars could be brought
ahead with great difficulty on mules, the carriage of ammunition posed a serious problem. The gunners of the regiment took on the uphill task and could build up adequate quantity of ammunition by relentless manual effort. It was to have a substantial effect when the battle commenced.  

The Chinese intrusion into the Walong sector of Lohit Division began on 18 October 1962 when a patrol from 6 Kumaon at Kibithoo reported that approximately fifty Chinese guided by a Lama had occupied a hill feature close to the border. They were soon reinforced by additional Chinese troops. Accordingly, the Assam Rifles posts at the border were withdrawn to successive positions to the rear. On 21/22 October, a company of the Chinese attacked the McMahon Line ridge and overran it. Indian troops withdrew to defensive positions in the Kibithoo area. Headquarters IV Corps considered that it was not possible to maintain Kibithoo and ordered 6 Kumaon to withdraw to Walong, approximately 15 miles to the south. The Chinese followed the withdrawing troops and contacted the screen position ahead of Walong on 25 October. The screen had to be withdrawn during the night under cover of the fire of 71 Heavy Mortar Battery. A Chinese army concentration was seen on the morning of 25 October at Walong. The mortars of 71 Mortar Battery fired fiercely and repulsed two Chinese attacks on 25 October and the third attack on 5 November. More then 700-800 bombs were fired during the battle until Walong was finally lost due to inadequate artillery guns and ammunition to support the infantry actions to take on the Chinese attacks.  

**Ladakh Sector**  

On 20 and 21 October, the Chinese simultaneously attacked as many as 18 Indian posts in the Ladakh sector. Only two-Daulat Beg Olde and Talwari posts remained intact. The rest having fallen fighting, the security of Chushul sector was a matter of concern because of its all-weather airfield. Accordingly, 13 Kumaon was ordered to move to Chushul immediately. 1/8 Gorkha Rifles in Chushul area was directed to reinforce and hold ground to the proverbial ‘last man and last round’. Since there was no artillery in Chushul, three guns of 13 Field Regiment were flown-in on 21 October to support the infantry. Artillery ammunition was also sent by Dakota aircraft. Soon another artillery unit, a troop from 32 Heavy Mortar Regiment, was air-landed at Chushul. This troop moved to Lukung in support of 5 Jat, two of whose posts had fallen to the Chinese on 24 October. A troop of AMX tanks was flown in on the same day as the heavy mortars, for
the defence of the Chushul airfield. On 27 October, battery headquarters and remainder of 38 Field Battery were of 13 Field Regiment flown into Chushul. Soon the battle began with the Chinese army. Artillery support was key to sustained defensive battles.

The contribution of the artillery in the Battle of Chushul has been acknowledged in official records of 114 Infantry Brigade in these words: ‘Apart from the casualties inflicted by our infantry and medium machine guns, the battle honours for the first day go undoubtably to the gunners for the extreme devotion to duty and specifically gallantry of the artillery observation post party commanded by 2nd/Lt SD Goswami and to the consistent and sharp shooting of ‘E’ Troop of 38 Field Battery of 13 Field Regiment. Registration by shooting of the Defensive Fire tasks including the SOS tasks carried out a few days prior to the actual battle, was essentially responsible for the accuracy of our artillery fire’. The official records of 114 Infantry Brigade goes on to describe the part played by 2nd/Lt SD Goswami and his observation party, ‘This gunner officer kept the enemy engaged until the Chinese in the first wave were within a hundred yards of his own position and the leading Chinese had arrived to within fifty yards of this officer. By this time, his observation post bunkers had been damaged and the infantry around him mostly overrun. He was himself wounded by a grenade. The control of artillery fire was then taken on by his Technical Assistant Gurdip Singh, who kept firing the guns till the very end. The signal communications between the observation post and the guns were maintained by the devotion to duty of Operator Wireless Artillery Naik Pritam Singh and Lance Naik Sarwan Singh who rushed into the open amidst enemy shelling on three occasions to put right the observation post wireless remote control equipment. The entire observation post party except the officer gave their lives to the service of their country and the glory of their Regiment. 2nd/Lt SD Goswami, having been knocked unconscious by a grenade burst, it was learned later, regained consciousness after last light and commenced walking towards the base in great agony’. For his gallantry, 2nd/Lt SD Goswami was awarded the Mahavir Chakra and his technical assistant Gurdip Singh was awarded posthumous Vir Chakra. Naik Pritam Singh and Lance Naik Sarwan Singh were awarded posthumous Sena Medal.

The Chinese sought to press on towards the airfield. This attempt was nullified ‘entirely by the effectiveness of own tank and artillery fire. Field Artillery troops deployed in the area engaged the Chinese forces rolling down from Point 18300 with open sights, inflicting considerable casualties’, records the official history of 114 Infantry Brigade.
BATTLE OF TAWANG (NEFA) : 1962
BATTLE OF CHUSHUL (LADAKH) : 1962
Post 1962 debacle a high level study was ordered by the Army Headquarters and the Ministry of Defence. It emerged that besides other reasons, one of the most crucial reasons was lack of artillery resources that resulted in early capitulation of the Indian Army.

**INDO-PAK WAR 1965**

There was a prolonged period of re-organisation, re-equipment and re-training following the debacle of 1962. A trickle of American aid for the mountain divisions, including heavy mortars, was received and more was underway, but before the process was complete, conflict with Pakistan broke out in 1965.

The initial skirmish occurred in the Rann of Kutch during the months of January to June 1965 wherein Pakistan launched a well-planned attack on the Indian post at Biar Bet with overwhelming numbers, supported by armour and artillery. 17 (Parachute) Field Regiment and 1 Air OP Flight aircrafts led by Maj SK Mathur caused substantial losses on the enemy. The Pakistani attack failed, Maj SK Mathur was awarded Maha Vir Chakra.

Soon the Pakistani army realized that their efforts in the Rann of Kutch were not going to progress as desired. It therefore started sending infiltrators to J&K. Gradually, reports of infiltration started coming in from other areas of 19 Infantry Division (North Kashmir), 25 Infantry Division (Rajouri/Poonch) and 191 Infantry Brigade (Akhnoor). It suggested that covert infiltration was being attempted on a large scale as part of a Pakistani army’s ‘Grand Design’ to recapture parts of Jammu and Kashmir and cause political upheaval in India. In fact, by 9 August, Pakistani groups had started infiltrating all along the ceasefire line. In trying to block ingress everywhere, the troops of 19 and 25 Infantry Divisions and of 191 Infantry Brigade were perforce dispersed into small detachments. As the situation turned serious and needed firm counter measures, an infantry brigade was moved from the Ladakh region to Srinagar and a mountain brigade from the Jammu sector to Rajauri. At this time 14 Field Regiment was grouped with 191 Infantry Brigade in the Akhnoor sector. Quickly Pakistani covert infiltration changed into overt intrusion. To counter such blatant intrusion, it was decided to hit at the intruders bases. One such base was located in the Haji Pir Pass.

Chamb sector was sensitive due to terrain configuration favouring Pakistan. 14 Field Regiment was placed under 191 Infantry Brigade in this sector. The brigade commander of this infantry brigade was killed in enemy artillery fire. So persistent and
accurate was the shelling, that some of the posts had to be abandoned, albeit temporarily. As an immediate relief, the Commander Corps Artillery XV Corps came up with a battery from 39 Medium Regiment. A new Brigade Commander took over 191 Infantry Brigade, whereupon a series of operations were mounted, effectively supported by 14 Field Regiment, 38 and 39 Medium Regiments. All picquets were re-occupied by infantry by 27 August 1965 primarily due to intense artillery fire support.\textsuperscript{150}

**Punjab**

Once Pakistan declared war with India on 5 September 1965, XI Corps located at Jalandhar crossed the Indo-Pak border in Punjab during the early hours of 6 September 1965. Public statements made by the Prime Minister in the days that followed, made it clear that the Indian advance into West Pakistan territory was not designed to capture Lahore or any part of Pakistan territory; the implication being that the main aim was the destruction of the Pakistan armed forces.\textsuperscript{151}

On 21 September, 50 Parachute Brigade was engaged in capturing and clearing Jhaggian area in Punjab, supported by 15 Artillery Brigade. 50 Parachute Brigade was thereafter ordered to support the attack on Dograi by 54 Infantry Brigade, during the night of 21 September. The part played by the artillery in the capture of Dograi was most conspicuous.\textsuperscript{152}

**Battle of Asal Uttar and Khem Karan**

The Pakistani 1 Armoured Division commanded by Maj Gen Nasir Ahmed Khan was located in Kasur near Lahore. It aimed to hit Indian 4 Mountain Division under the command of Maj Gen Gurbaksh Singh in general area Asal Uttar behind Khem Karan, a town in the Tarn Taran district in Punjab and then threaten the holy city of Amritsar. Initial Pakistani thrust was blunted by the anti-tank weapons of the Division, reinforced in time by 2 (Independent) Armoured Brigade. As a tactical move, 4 Mountain Division withdrew and took up a defensive position in depth making use of artificial and natural obstacles, with a view to canalise the enemy into the selected killing ground. At the same time, 4 Mountain Artillery Brigade guns were redeployed in a compact area, waiting for the enemy. The army engineers also made cuts in the canal distributary, designed to flood the area to the west and to the south of the Divisional sector. Flooding was a tactical move which slowed down the advance of Pakistani tanks and successfully brought them inside a
horse-shoe formation—a trap where the advancing Pakistani troops were ambushed by Indian tanks and artillery and repelled. Before withdrawing from the original gun area to the northwest of Khem Karan, the artillery guns fired their ammunition pre-dumped in the gun positions with telling effect on the enemy. 40 Medium Regiment fired over 3,000 rounds directed at Pakistan defences on Kasur town, creating salutary effect on the morale of Pakistani leadership.153

The final attack by Pakistan’s 1 Armoured Division came on the morning of 10 September. A Pakistani armoured regiment advanced from the direction of Theh Panun and Lakhna, threatening Dibbipura near the gun area of 40 Medium Regiment. A concentration of Pakistan tanks showed up north of Bhura Karimpur at 0645 hours. At 0830 hours, a Pakistani infantry battalion battle group supported by armour attacked the Grenadier battalion near Asal Uttar. The attack was foiled before enemy infantry could step on to Indian minefields due to effective artillery concentrations. Indian tanks then moved in from a flank. A melee ensued in which Indian infantry anti-tank weapons destroyed three Patton tanks. At this time a Pakistani armoured concentration was reported at Dholan and near Lakhna village. Pakistani armoured division had commenced multipronged attacks. Immediately artillery fire was called which was highly effective. It made the enemy withdraw. The Pakistan armoured division was now trapped.154

The Battle of Asal Uttar or Khem Karan as it is commonly known was one of the largest and most intense tank battles fought after World War II. Close to a thousand tanks, on both sides, took part in the pitched battles. Six Pakistani armoured regiments of its elite 1 Armoured Division: 4 Cavalry (Patton), 5 Horse (Patton), 6 Lancers (Patton), 12 Cavalry (Chaffee), 19 Lancers (Patton) and 24 Cavalry (Patton) along with Pakistani 11 Infantry Division took part in the operations. M-48 Patton tank was, at that time, amongst the most modern US tanks. The Indian tank forces in the field on that day consisted of 2 (Independent) Armoured Brigade having three Armoured regiments with inferior tanks of World War II vintage; the Deccan Horse (Sherman), 3 Cavalry (Centurions) and the 8 Cavalry (AMX-13). The battle was so fierce and intense that at the end of the battle, 4 Infantry Division and 2 (Independent) Armoured Brigade had captured or destroyed 97 Pakistani tanks. This included 72 Patton tanks and 25 Chafee and Sherman. 32 of the 97 tanks including M-48 Patton tanks were in running condition. In fact, a strip of land near Bhikiwind village in the Khem Karan area was called Patton Nagar. It was here that more
than 60 tanks of the Pakistani army were displayed after the end of the War. India lost 32 tanks.\textsuperscript{155}

According to military historian Steve Zaloga, Pakistan admitted that it had lost 165 tanks during the 1965 War, more than half of which were knocked out during the debacle of Asal Uttar.\textsuperscript{156} Pervez Musharraf, later Pakistani Army Chief and President of Pakistan, participated in this battle as a lieutenant of artillery in the 16 (SP) Field Regiment. The role of Indian 4 Artillery Brigade in this battle was spectacular. The intensity of the battle required that the artillery commanding officers, battery commanders and the forward observation post officers were in the front at all times; on tank or on foot. Innovation, technical excellence and raw courage were the hallmark of the ‘gunners’ in this battle. Between 8 and 10 September artillery and the tanks took over the battles between them, duly supported by the infantry tank hunting parties, RCL, MMGs and mortars. It was a par excellence synergy between all Indian elements in the battlefield. 40 Medium Regiment and 91 Composite Mountain Regiment were awarded Honour Title Asal Uttar.\textsuperscript{157}

War historians, including Dr Philip Towle regard Indian resistance and tactical victory near Khem Karan (Asal Uttar) as one of the key turning points of Indo-Pak War 1965, which tilted the scale in favour of India.\textsuperscript{158}

At this time India decided to take the battle into the Pakistani heartland in the Sialkot sector. Accordingly the newly raised 1 Corps under Lt Gen PO Dunn was tasked to undertake offensive into Pakistan through the Jammu-Samba sector. It had under it 1 Armoured Division under Maj Gen Rajinder Singh, 6 Mountain Division under Maj Gen SK Korla, 14 Infantry Division under Maj Gen RK Ranjeet Singh, which was still under raising and the 26 Infantry Division under Maj Gen ML Thapan, which was already in Jammu.

1 Armoured Division was organised with 1 Armoured Brigade consisting of 16 Light Cavalry, the 17 (Poona) Horse and 4 (Hudson’s) Horse, all equipped with Centurion Mark VII tanks. The fourth Centurion regiment, 3 Cavalry, had been taken away for allotment to 2 Armoured Brigade and it was replaced by the 2 Lancers which had been recently equipped with upgunned Sherman tanks. All these tanks were of the World War II vintage. It also had a lorry infantry battalion. 2 Field Regiment (SP) of 1 Artillery Brigade was allotted to the brigade. In addition, 62 Cavalry having Sherman tanks forming part of 26 Infantry Division was available for this operation. 43 Lorried Infantry Brigade was the
other brigade of 1 Armoured Division. 1 Artillery Brigade of the division consisted of 2 Field Regiment (SP), 101 Field Regiment (SP), both 25-pounder Sexton (SP) gun regiments, 71 Medium Regiment having 5.5 inch medium guns and a light anti-aircraft regiment. It was commanded by Brig OP Malhotra, who later rose to become the Chief of the Army Staff. 6 Mountain Division had 69 and 99 Mountain Brigades. 14 Infantry Division was still under raising and not fully fit for operations, as it was allotted with only 35 Infantry Brigade. 26 Infantry Division had its primary task as defence of Jammu Sector. 159

Headquarters 1 Corps of Pakistan, which was their Strike Corps, was moved to this sector to take command of 6 Armoured Division and 15 Infantry Division on outbreak of hostilities. 6 Armoured Division had three Patton tank regiments, 10 (Guides) Cavalry, 11 Cavalry and 13 Lancers. 160

The performance of the gunners was summarised by Brig KK Singh, MVC, Commander 1 Armoured Brigade in the ‘Report’ sent by him after the operations. This reads as under:-

During the operations our gunners supported us to the hilt-a truly magnificent performance. The success of the armoured units was in great measure facilitated by the promptitude, accuracy and intensity of our artillery fire through the Commanding Officer 2 Field Regiment (SP) and his battery commanders and forward observation officers. Without this support we could not have done half as well as we did. 161

In the Battle of Phillora bulk of the tanks of the Pakistani 1 Corps were destroyed. ‘C’ Squadron of Poona Horse with 5/9 Gorkha Rifles battalion duly supported by massive artillery fires captured Phillora. Such was the importance of having artillery observers in the front that artillery battery commanders were persuaded to travel in the tanks of the Second-in-Command of armoured regiments so that the armoured regimental commanders are not far from them! The intensity of artillery fire can be appreciated from the fact that just one regiment, 2 Field Regiment (SP), fired 10436 rounds during the operations! 162
Gunners in Action with 5.5 Inch Gun to Capture the Haji Pir Feature
Within no time the good work done by the artillery came to be known far and wide. This resulted in a stream of visitors to the regiments still deployed inside Pakistan. 2 Field Regiment (SP) was visited by Lt Gen PP Kumaramangalam, DSO, Vice Chief of the Army Staff on 30 September 1965, followed by the visit of Prime Minister Shri Lal Bahadur Shastri. He visited 2 Field Regiment (SP) gun area and addressed all the gunners of 1 Artillery Brigade. Shri Lal Bahadur Shastri, the Prime Minister made a special reference of the good work done by the Gunners during the operations.\textsuperscript{163}

The performance of artillery during Indo-Pak War was exceptional to state the least. It turned out to be a savior to our infantry and tanks in many occasions. Battles evenly placed were won due to artillery support. It was a force multiplier in true sense.

**INDO-PAK WAR 1971**

**Liberation Of Bangladesh**

The greatest travesty of history in the Indian subcontinent occurred when India got its Independence and a fractured Pakistan was formed with two halves divided by the entire breadth of the Indian geographical mass. The gulf between these two Wings of Pakistan was not merely the physical separation but also exhibited ethnic, linguistic and cultural divergence of the people who inhabited the divergent halves.

The final call for permanent separation came when West Pakistani leadership attempted to annul Sheikh Mujibur Rehman’s electoral success in 1969. What followed was untold misery brought upon the hapless population of East Pakistan wherein Lt Gen Tikka Khan, an ex Indian Artillery officer prior to the partition, surpassed all dimensions of human rights violation and cruelty to mankind in East Pakistan. The resultant exodus of population to India and Indian military intervention had to happen sooner than the later. The India-Pakistan War which commenced on 3 December 1971 also highlighted the invaluable contribution of Indian Artillery towards conclusive success of Indian Army in the battlefield.

The formations of the Indian Army that took part in the operations under the Eastern Command led by Lt Gen JS Aurora included the following\textsuperscript{164} :-

- 33 Corps under Lt Gen ML Thapan was responsible for commencing operations from the Siliguri corridor. It had 6 Mountain Division and 20 Mountain Division under Maj Gen PC Reddy and Maj Gen Lachhman Singh Lehl respectively, both artillery officers.
2 Corps under Lt Gen TN Raina was responsible for operations from the Indian border towns of Krishnanagar and Ranaghat, close to Calcutta. It had 9 Infantry Division, 4 Mountain Division and 50 Parachute Brigade. It also had a regiment of PT-76 with forty five tanks and a squadron of fourteen T-55 tanks.

The formidable 4 Corps under Lt Gen Sagat Singh was entrusted to undertake a pincer manoeuvre from the directions of Agartala, which is barely 70 km from Dacca. It had 8 Mountain Division with two infantry brigades, 23 Mountain Division, 57 Mountain Division, Kilo Sector, East Bengal Rifle battalions numbering seven, para-military forces and Mukti Bahini personnel.

101 Communication Zone Area under Maj Gurbaksh Singh operated from the south of Shillong towards Tangail and Dacca. In addition to its own resources it had 2 Parachute Battalion. The battalion was para-dropped in Tangail area resulting in early surrender of the Pakistani army.

To undertake operations in the southern most part of the battle zone a ‘Special Frontier Force’ was raised under Maj Gen SS Uban, an artillery officer. It operated through the jungles of Mizoram and Chittagong as a part of the outer pincer. It reached the periphery of Chittagong at the time when the Pakistani army surrendered.

**Artillery Operations : Bogra Sector**

Bogra sector of East Pakistan bordered Indian Siliguri corridor. Rivers Brahmaputra, Ganga and Meghna flow through this area. Important Indian towns of Malda and Siliguri were located adjacent to the sector. Any success to Pakistani army in the Siliguri sector meant threat to the narrow Siliguri corridor which was the lifeline for the north eastern Indian states. Bogra was the main army cantonment in the area which had the Pakistani 23 Infantry Division commanded by Maj Gen Nazar Hussain Shah. The main road network from Siliguri to Bogra passed through the small township of Hilli on the border. Pakistani army had appreciated Indian Army’s advance through this area and hence it had turned the area into a major defensive position held by Pakistani 4 and 13 Frontier Force (FF) battalions.165
The Indian attack was launched by 202 Infantry Brigade of 20 Mountain Division. Artillery support was provided by 20 Mountain Artillery brigade which had 100 Mountain Regiment, 38 Medium Regiment less one battery, 979 Mountain Battery and 118 Light Battery of 33 Light Regiment.\(^6\) The going was difficult for 8 Guards and 5 Garhwal Rifles of 202 Infantry Brigade, right from the beginning due to fierce enemy resistance and own casualties. At this time Lt Col Subba Rao, the Commanding Officer of 100 Mountain Regiment and his team consisting of Capt PSS Rajan and Capt Puran Dass took on the enemy with intense and accurate artillery fire and stabilised the situation.\(^7\) Next day enemy counter attacked 8 Guards and 22 Maratha Light Infantry battalions under the cover of heavy artillery fire. Artillery officers Maj Ajmer Singh and Capt PSS Rajan once again took on the enemy with accurate artillery barrage due to which the enemy attack failed. In four days of battle around Hilli, over 2800 Artillery shells were fired, thereby paving way for victory from the situation of defeat. Such was the intensity of Battle in Hilli that the sole Pakistani highest gallantry award, ‘Nishan-i-Haider’ awarded during the Indo-Pak War 1971 in East Pakistan was posthumously awarded to Maj Muhammad Akram and he was declared Maj Muhammad Akram Shaheed, Nishan-i-Haider’ by Government of Pakistan.\(^8\)

The Battle of Hilli which finally turned in favour of the Indian Army due to strong and timely support by artillery was the first major battle fought and won in the Indo-Pak War 1971. It paved way for the Indian Army to commence a lightening pincer strike on the Pakistani Army in East Pakistan which culminated in its liberation on 16 December 1971. Maj Gen LS Lehl, VrC in his interview on 22 November 2010 to the scholar, as part of this research, stated that ‘at the commencement of the Battle of Hilli, the odds were against the Indian forces. However timely fire support from the artillery saved the day and we captured Hilli. Artillery was, as always, amongst the most important element for winning this tough battle’.\(^9\)
Indian Attack and Pakistani Defences in Hilli

Khulna

Sylhet
Battle of Bogra

It was the dusk of 13 December when 340 Mountain Brigade of 20 Mountain Division contacted Bogra defences. The enemy had been pursued relentlessly, giving it little time to consolidate. Artillery units namely 64 Mountain Regiment, 97 Mountain Regiment, 116 Light Battery of 33 Light Regiment and 44 Medium Battery were tasked to break the back of the defences at Bogra, the headquarters of Pakistani 205 Infantry Brigade and Tactical Headquarters of 16 Infantry Division.

The attack plans were set to roll at 0900 hours on 14 December with 69 Armoured Regiment less a squadron of tanks establishing roadblocks south of Bogra on the roads Bogra-Berea and Bogra-Nator. 6 Guards and 2/5 Gorkha Rifles attacked from south and north of Bogra, simultaneous with the establishment of the roadblocks. Accurate artillery fire preceded the attacks, forcing the enemy to fall back into Bogra town. By midday, 340 Mountain Brigade had the noose tightened around Bogra town. Artillery fire by night and during day guided by the Air OP pilots further demoralised the enemy in the Bogra garrison, who were already in a distraught state. The ferocity of the artillery bombardment was further enhanced with the Air Force striking targets in Bogra once again aided by artillery Air OP pilots operating as airborne forward air controllers. By 0830 hours the next morning, troops of Pakistani 205 Infantry Brigade surrendered to 2/5 Gorkha Rifles.170

Artillery Operations : Khulna – Kushtia Sector

Khulna – Kushtia sector of East Pakistan was bounded by the Bay of Bengal, Sunderbans and Padma river. It had deltaic plains where major towns like Jessore and Khulna were located. Pakistani 9 Infantry Division under Maj Gen MH Ansari was responsible to defend the sector.

Battle of Khulna

Khulna lay along the west bank of river Bhairab. It was linked by road and rail to Jessore. Further south of Khulna lay Chalna, a port township. Along the Jessore-Khulna road were villages of Shyamganj, Siramani and Daulatpur. South of Jessore, a track ran to Khulna via Manirampur. By the first light of 9 December, Pakistani 107 Infantry Brigade had staged back to the area of Siramani-Khulna. It had 15 Frontier Force (FF) and 6 Punjab at Siramani, with 22 FF further to the west. 12 Punjab guarded the Manirampur
track. 21 Punjab, the fourth battalion, had shed its companies to each of the other four battalions. The Brigade Headquarters was located at Khulna. Thus a fortress kind of defences was occupied by the Pakistani army in the area.\textsuperscript{171}

Indian GOC 9 Infantry Division appreciated the requirement of launching a divisional attack on Siramani complex. Accordingly, he ordered forward concentration of 42 and 350 Infantry Brigades in the Gilatala area on 12 December. 1 JAK Rifles launched an attack under cover of heavy artillery fire. 4 Sikh had established a roadblock south of the enemy location, at Siramani. At 0700 hours on 15 December, the attack on Syamganj commenced. A fierce hand-to-hand fight ensued, with the enemy caving in after nine hours. The intensity of the enemy resistance can be gauged from the fact that 14 Field Regiment fired over 1800 rounds to subdue the enemy and make it possible for the infantry to succeed.\textsuperscript{172}

Siramani was the next goal. The attack by 13 Dogra of 32 Infantry Brigade was launched at 0945 hours supported by devastating artillery fire with 67 Field Regiment firing over 1310 rounds in barely 30 minutes.\textsuperscript{173}

On 17 December, at 1200 hours, Brig Mohammed Hayat Khan, the commander of the Khulna garrison surrendered to Maj Gen Dalbir Singh. The surrender ceremony, which took place at the Khulna Circuit House, witnessed 3,700 Pakistani troops laying down their arms. On the performance of the gunners in the Jessore Sector, GOC 9 Infantry Division has the following rendition in his ‘Report’ after the war\textsuperscript{174}:

\begin{quote}
Throughout the operations, artillery rendered closest possible effective support. It broke up major enemy attacks at Maslia and Garibpur and the heavy volume of fire that was brought down in Siramani-Syamganj complex went a long way in reducing these strongly held bastions. The harassing fire of medium guns was effective. The divisional locating battery provided accurate information regarding enemy artillery batteries which were immediately silenced. The role played by artillery in success of the operations was immense.
\end{quote}

Jhenida-Kushtia

Jhenida was the all important communication node in the sector controlling both the north-south and east-west road arteries. 57 Infantry Brigade of the Pakistani 9 Infantry Division held the sector. The Indian formation tasked to operate in this sector was the
redoubtable 4 Mountain Division. The division’s tasks were to capture Jhenida and Magura and then to secure ferry sites over the Madhumati river. The Division was to either secure Faridpur and Goalindo Ghat ferries to the east or wheel north to capture Kushtia and Hardinge Bridge. 4 Mountain Division’s Order of Battle constituted of only two brigades for these tasks, with the third brigade having been earmarked as 2 Corps reserve. 4 Mountain Artillery Brigade under Brig Baljit Singh was responsible for the conduct of the artillery battle. 7 Field Regiment, 194 Mountain Regiment, 181 Light Regiment and 783 Medium Battery constituted the artillery component.

Taking cognizance of the enemy strength at Kushtia, a decision was made to launch a divisional attack with 4 Mountain Division to clear the area. Maj Gen MS Brar’s plans involved two brigade attacks by 7 and 41 Mountain Brigades. The IAF pounded Kushtia on 10 and 11 December. Heavy artillery bombardment was also brought down to soften up the enemy. 7 and 41 Infantry Brigades were launched on 11 December. However, the punishment meted out by the gunners and the air force had apparently been enough. The enemy had vacated Kushtia before the infantry crossed its ‘Start Line’. Maj Gen MH Ansari, GOC Pakistani 9 Infantry Division surrendered with three thousand troops to Maj Gen MS Brar on 15 December 71. Maj Gen MH Ansari, an ex-officer of Indian 22 Mountain Regiment, was apprised that his own regiment was fighting him. He remarked on surrendering, ‘I am glad that I have surrendered to my own regiment’. 175

Artillery’s dominant roles in these operations were thus recorded by the GOC 4 Mountain Division176: -

**Guns were always within range and at no stage in the war infantry had to go without abundant artillery fire support. Guns were moved along difficult tracks and at times even through areas where no tracks existed, thereby keeping up with the advancing infantry over difficult terrain. This achieved considerable surprise and contributed to the success of various tasks undertaken.**

Artillery Operations : Sylhet – Chittagong Sector

The Sylhet – Chittagong sector bordered the Indian states of Meghalaya, Mizoram, Assam and Tripura. It also provided the shortest 70 km route to Dacca from Agartala. However, mighty Brahmaputra and Meghna stood as natural barriers to any Indian
offensive through this sector. The southern most region of the sector included the important ports of Chittagong and Cox Bazar.

The major towns in the sector were Sylhet, Comilla, Chittagong-the premier port; and further south, Cox’s Bazar, a port and trade centre. Chittagong port was a critical objective of military value since it provided a vital link with West Pakistan through the sea-lanes. Pakistani 14 Infantry Division under Maj Gen Quazi Abdul Majeed was deployed around Bhairab Bazar. 39 Infantry Division was a newly raised division placed under Maj Gen Rahim Khan. It was tasked to look after the southern part of East Pakistan including Chittagong. Indian 4 Corps was tasked to operate in the sector.

The withdrawal of a major portion of the Pakistani army across the Meghna river after which they had blown the bridge was a cause for concern for the Indian Army. These forces had to be engaged before they could consolidate and be in a state to offer cohesive resistance. Lt Gen Sagat Singh concluded that given the operational condition, Bhairab Bazar would not be in a state to resist a deliberate assault. He had no intention of permitting the enemy any time to coordinate its defences and decided to force the pace by helilifting his troops across the river.

At 1530 hours on 9 December, the helilift of 4 Guards Battalion with a troop of 151 Light Battery of 82 Light Regiment commenced in ten MI-4 helicopters of IAF from Brahmanbaria to Raipura. 300 bombs of mortar ammunition were also carried in the initial helilift. Capt GS Sihota of the 10 Air OP Flight led the helicopters to the area selected off the map and was the first to land in his Chetak helicopter. The helilift continued throughout the night. On 10 December, the remainder of 151 Light Battery was also lifted to Narsinghdi to support the operations. However, they could not keep pace with 4 Guard’s advance on account of dearth of transport. 65 Mountain Regiment and 150 Light Battery of 82 Light Regiment were helilifted to Narsinghdi on 11 December 71 in 41 helicopters lift. Each MI-4 helicopter carried a dismantled gun, 20 rounds of artillery ammunition, three personnel with personal weapons and seven days ration. 100 rounds of ammunition per gun and minimum essential stores were also carried in separate helicopters. Both the artillery regiments provided 4 Guards with the punch required to capture Narsinghdi by 1000 hours on 12 December.177
59 Mountain Regiment Crossing River Meghna in MI-4 Helicopters

Mujib Battery: 1st Artillery Unit of Bangladesh Raised with the Help of Indian Artillery
INSTRUMENT OF SURRENDER

MAY IT BE KNOWN TO ALL THAT I, PA-1170 MAJOR GENERAL NAZAR HUSSAIN SHAH, GENERAL OFFICER COMMANDING 16 INFANTRY DIVISION, PAKISTAN ARMY, DO HEREBY SURRENDER UNCONDITIONALLY TO MAJOR GENERAL LACHHMAN SINGH LEHL, V/C, GENERAL OFFICER COMMANDING 20 MOUNTAIN DIVISION, INDIAN ARMY, AND ORDER ALL MILITARY AND PARA-MILITARY FORCES, UNDER MY COMMAND, TO LAY DOWN THEIR ARMS.

2. HENCEFORTH ALL ORDERS ISSUED BY MAJOR GENERAL LACHHMAN SINGH LEHL, V/C, OR ANY OFFICER APPOINTED BY HIM, SHALL BE OBeyed BY ME AND ALL RANKS OF MILITARY AND PARA-MILITARY FORCES, WHO WERE UNDER MY COMMAND.

3. SIGNED ON THIS EIGHTEENTH DAY OF DECEMBER NINETEEN SEVENTY ONE AT BOGRA.

(LACHHMAN SINGH LEHL)
MAJOR GENERAL
GENERAL OFFICER COMMANDING
20 MOUNTAIN DIVISION
INDIAN ARMY
18 DEC 71

(NAZAR HUSSAIN SHAH)
MAJOR GENERAL
GENERAL OFFICER COMMANDING
16 INFANTRY DIVISION
PAKISTAN ARMY
14 DEC 71
After consolidating at Narsinghdi, 311 Mountain Brigade set its sights on the ultimate prize: Dacca. The going was smooth till Dumra ferry, less than 10 km from Dacca. 65 Mountain Regiment along with 151 Light Battery had kept up with the brigade’s advance by quickly moving the batteries over a distance of 30 km and were well within range when fire was requisitioned to dislodge the enemy at Dumra. The gunners had kept their guns moving and in range to the forward troops by manhandling the guns. The locals, enthused by the prospect of a quick victory, had aided the gunners in their task.

4 Guards Battalion established contact with the enemy near Dumra ferry on 13 December and along with 10 Bihar, firmed in on the east bank of Lakhya river, about eight km from Dacca. Over the next two days, the gunners brought forward two guns of 65 Mountain Regiment and undertook harassing fire tasks engaging Dacca’s outskirts. The artillery bombardment created a scare in Dacca and drove home the futility of any further resistance, convincing Lt Gen AAK Niazi to ultimately capitulate within a few days. 178

On 14 December, the axis of advance of 73 Mountain Brigade was changed towards Tungi to develop a threat to Dacca from the north. To support the Tungi operations, the guns had to move back to Narsinghdi from where they were loaded in railway wagons and pushed manually on rail tracks. 593 Mountain Battery with 200 rounds of ammunition was first to travel in this manner. These wagons were manually pushed over a distance of 24 km on the night of 14 December to provide support to our troops held up at Purbail due to heavy enemy resistance. Later, 150 Light Battery was also moved in a similar fashion and both these batteries were ready by 0500 hours on 15 December in their new gun areas. In this operation, 59 Mountain Regiment impounded an abandoned diesel locomotive and brought it into good use. Soon, 59 Mountain Regiment less a troop built-up on 593 Mountain Battery and was ready to engage the enemy by 0800 hours on 15 December. 19 Rajputana Rifles Battalion had earlier captured Purbail on 14 December with artillery fire provided by 59 Mountain Regiment and 150 Light Battery.

59 Field Regiment was instrumental in the raising of the Mukti Bahini’s 594 Mujib Artillery Battery equipped with 3.7 inch howitzer. This battery later became a nucleus for the raising of the first Bangladesh Artillery battalion and the Bangladesh Regiment of Artillery. Thus Indian Regiment of Artillery has been instrumental in the raising of the first Artillery unit of Bangladesh Army with the extended nomenclature of one of its own unit.
Sylhet

Sylhet is located in the north-east Bangladesh. At 1500 hours on 7 December a combined force of Indian Army, Mukti Bahini and a battery of 99 Mountain Regiment while advancing towards Sylhet captured Darbasi. By 15 December the force was about 3 km of Sylhet. The enemy resistance now grew manifold and the advance of Indian Army almost stopped. 99 Mountain Regiment now commenced heavy bombardment on Sylhet defences, resulting in capture of the town on 16 December without encountering much opposition.

After the surrender of Pakistani army in the region, Col Zia-ur-Rehman, later the President of Bangladesh, sent a congratulatory handwritten note to 99 Mountain Regiment on 17 December, which read :-


Dacca

Military history commentators often refer to Indian paratroopers dropping from aircraft near Tangail as one of the decisive factor of the operations in the East Pakistan and surrender by Lt Gen AAK Niazi. 2 Parachute Battalion Group including 49 Parachute Field Battery of 17 (Para) Field Regiment under Lt Col KS Pannu executed a para-drop around dusk on 11 December. Unfortunately for the artillery the drop got spread over 20 km area, some guns and ammunition landing into ponds. Notwithstanding the problems, four guns were made operational quickly and the enemy was engaged. By midnight, 2 Parachute Battalion captured Poongli bridge on road Tangail – Dacca but were counter-attacked by the enemy thrice during the night. Fierce enemy attacks were defeated mostly due to continuous artillery salvos fired on the enemy by 49 (Para) Field Battery.

2 Parachute Battalion with 49 Parachute Field Battery entered Dacca at 1130 hours on 16 December followed by 851 Light Battery and 852 Light Battery. They witnessed the historic surrender by Lt Gen AAK Niazi to Lt Gen JS Aurora. The dreams of a new nation had finally achieved. Indian Artillery role for this rare achievement was recognized by the grateful nation.

The role of the Indian Artillery in the battles in East Pakistan was that of battle winning element. It assisted the Indian Army to achieve its aim and strengthening its comprehensive military power.
Western Theatre

Jammu and Kashmir

Kashmir Valley

In the higher reaches of Kashmir Valley to the north lies Tithwal sector which is mostly snow bound for over seven months in a year. Tangdhar valley across Nastachun pass is dominated by higher hills in Pakistan Occupied Kashmir (POK). Since the Indo-Pak War 1947-48, Pakistan has been aiming to capture this strategic Indian sector. It was due to this reason that it was decided by the Indian Army to attack the Pakistani posts in the area and capture them, thus seal routes of infiltration and attack through the Tutmari Gali and Nastachun Pass towards the Srinagar Valley. 104 Infantry Brigade was tasked to undertake this offensive. It was supported by artillery’s 4 Field Regiment, 141 Mountain Battery, 1821 Light Battery and an adhoc 4.2 inch mortar battery and two guns from 15 (Maratha) Medium Battery. When the first attack by 8 Rajputana Rifles was underway during the midnight of 8 December 1971 enemy pinned them down with accurate small arms and artillery fire. As a response 4 Field Regiment and all other artillery in the sector engaged the enemy with heavy artillery fire which continued for the entire night. Pakistani troops suffered heavy casualty. This had a salutary effect resulting in a well fought victory by 8 Rajputana Rifles. Similar was the case during the attack on the enemy’s headquarters location at Wanjal in the same sector where Indian artillery fire paved way for a comprehensive victory. With these two victories the threat to the strategic Nastachun Pass diminished and thus the Pakistani aim to push back the Indian forces and developing a threat towards Srinagar from the north was defeated.

During these operations the gunners overcame the challenge of moving the guns and ammunition into Lipa valley through heavy snow and across an area with little or no track alignments. The guns and mortars were dragged, pushed and hauled on mules to difficult heights, in the process surprising the enemy and creating a situation for easy exploitation by the enemy.

Poonch

Pakistani army had planned to capture Poonch town and adjoining areas much in advance as it always considered Poonch town and Neza Pir will north of Poonch as a non-negotiable part of Pakistan. 93 Infantry Brigade commanded by Brig AV Natu was pitted against Pakistani 12 Infantry Division led by Maj Gen Akbar Khan. Poonch and adjoining
areas have both strategic and sentimental value for both India and Pakistan. As described earlier, India had almost lost Poonch to Pakistan in 1948. 195 Mountain Regiment, 11 Field Regiment and 55 Light Regiment both short of one battery each, 1861 Light Battery and 14 (Maratha) Medium Battery were available to Brig AV Natu to defend the Poonch valley. Around 2000 hours on 3 December 1971, Pakistan attacked various Indian posts in the Poonch valley with determination, under artillery cover. The ferocity of Pakistani forces was such that they could enter the Indian Territory almost upto the Poonch river. Thus the Poonch military garrison and the town came under the threat of encirclement. 183

Banwat defensive location along the hills to the north of Poonch town was key to the defences of Poonch sector. It was to witness ferocious fighting between Indian and Pakistani army. The most important and dominating locality, was held by 6 Sikh Battalion. It was a prime objective of capture by 2 POK Brigade. 8 Jat from 33 Infantry Brigade which had recently moved in the brigade sector occupied the heights in deep formation. 195 Field Regiment was in direct support of 93 Infantry Brigade. The regiment was also tasked to control all artillery units in Poonch sector. Around 2100 hours on 3 December the positions of 6 Sikh were heavily shelled by the Pakistani artillery. Our posts at Shahpur, Gutrian, Thanpir and adjoining areas too were heavily shelled. At this juncture, ‘A’ troop of 14 (Maratha) Medium Battery was ordered to silence the enemy guns. Accordingly, the medium gunners engaged enemy guns deployed at Pritam, Satwal, and Durandi gun areas in POK. Consequently, the guns were silenced temporarily. These guns also shelled enemy piquets providing support to the Pakistani attacks in the sector. When 2 POK Brigade launched a concerted attack on 6 Sikh defensive post from the north and east respectively, it was repulsed by the Indian heavy artillery concentration by the guns of 195 Mountain Regiment, 11 Field Regiment and 14 (Maratha) Medium Battery of 34 Medium Regiment. 184 At 2050 hours the enemy attacked another of our defensive post. The medium and field artillery guns took on the enemy with vengeance. The attack was repulsed with heavy loss to the enemy. The demand for artillery support in these battles was so great that several of the artillery command posts had to resort to newer methods of fire planning and engagement procedures to provide fire support. Gradually coordinated artillery assault on the enemy near the Poonch garrison created an untenable situation, forcing them to withdraw by the early hours of 6 December. 185 Another attempt to capture this area by Pakistani troops on 10 December night was also foiled by Indian artillery fire. 6 Sikh did not face any further major attacks by the enemy till 16 December, when an
attack on own Banwat defences at 2130 hours was beaten back by artillery. 195 Mountain Regiment earned for itself the Honour Title ‘Banwat’.

Lt Col KL Rattan, CO 6 Sikh who was awarded the Mahavir Chakra in this battle later praised the gunners thus: ‘Infantry-Artillery co-operation has to be a solid, well-planned and well-mixed concrete. So was it at Poonch. Our artillery truly was the battle-winning factor’.186

Such was the intensity of the battle that a Pakistani prisoner of war reported that there were as many as 700 Pakistani soldiers lying wounded in the area where the attacks had commenced and that the most of the casualties were due to Indian artillery shelling.187

Around this time enemy’s Nangi Tekri location in nearby 10 Infantry Brigade located to the south of Poonch river, was captured by our 33 Infantry Brigade duly supported by the artillery. The capture of Nangi Tekri location provided the Indian Army deep observation right into the enemy’s depth areas opposite 10 and 93 Infantry Brigade sectors. Now Indian artillery could effectively observe Pakistani administrative and military movement and interdict them with artillery and long range weapons effectively.
Battle of Basantar
**Chhamb**

Chhamb-Jaurian has a chequered history. Many a famed conquerors like Alexander the Great, Mohammed Ghazni, Babur, Nadir Shah, and Ahmed Shah Abdali traversed through this region to shape Indian history. Post independence, this area has witnessed fierce battles in each one of the Indo-Pak conflict. Even when peace reigned along the rest of the border, reports of gunfire have echoed across the line of control in this sector. During the 1965 conflict, the battles here had been savagely fierce.

10 Infantry Division located at Akhnoor near Jammu was responsible for the defence of the sector. The sector was divided into the Hill Sector to the north which was held by 28 Infantry Brigade and the plains sector to the south held by 52 and 191 Infantry Brigades. A parachute commando group of 9 Para Commando Battalion, a company of guided missiles of 12 Guards, 9 Deccan Horse (Centurian tanks) and 2 (Independent) Armoured Squadron were also located in the sector. Before the operations started, 72 Armoured Regiment of 3 (Independent) Armoured Brigade and 68 Infantry Brigade without their affiliated artillery had moved into the sector. 10 Artillery Brigade under Brig K Srinivasan consisted of 12, 18, and 81 Field Regiments, 39 and 216 Medium Regiments, 86 Light Regiment, 127 Divisional Locating Battery, and a troop from 51 Air Defence Regiment.

The artillery was deployed closer to the international boundary to ensure maximum support to the Indian border outposts (BOP) along the ceasefire line (CFL) and the international boundary (IB) south of Chhamb, as also to support an offensive should the situation so permit.

Operational responsibility of Chhamb Sector during the 1971 operations rested with 191 Infantry Brigade. 18 Field Regiment was in direct support to the brigade. It had 5 Sikh deployed to the north, opposite Mandiala Heights. 5 Assam and 4/1 Gorkha Rifles were towards the south. The brigade was supported by 39 Medium Regiment, 216 Medium Regiment, 12, 18, and 81 Field Regiments, 9 (Deccan) Horse less two troops. A troop of anti-tank guided missiles was also deployed in the brigade sector.

Pakistan 23 Infantry Division under Maj Gen Iftikhar Khan Janjua was responsible for offensive tasks in Chhamb-Akhnoor sectors. It had on its Order of Battle 4 and 7 POK Brigades, 20, 66, and 111 Infantry Brigades, and 2 Armoured Brigade with 11, 28, and 26 Cavalry Regiments. The artillery available to 23 Infantry Division included two 25-pounder regiments, two 122mm howitzer regiments, one 105mm Italian howitzer.
regiment, two 155mm howitzer regiments, one composite regiment with a mix of 105mm and 3.7 inch howitzers, one divisional locating battery that also held some 3.7 inch howitzers and one 25-pounder battery. In addition there were two 7.2 inch heavy guns and two batteries of 17-pounder guns.\(^{190}\)

During the early hours of 5 December, 13 POK Battalion attacked the administrative area of one of the 39 Medium Regiment’s batteries. Hand-to-hand combat ensued, resulting in the enemy leaving behind two dead bodies. Driver Paramjit Singh of this battery snatched the bayonet from an enemy soldier’s rifle and killed two Pakistani soldiers. He was later awarded Mention-in-Despatches for his gallantry. The withdrawing enemy occupied a high ground about one kilometer away and directed observed artillery fire on the gun area. The adjutant of the regiment directed a gun each of the two forward batteries on to the high ground. Soon enough, limbs of enemy soldiers were seen flying in the air. In this action the commander of the attacking party, Maj Abbasi was taken prisoner by 39 Medium Regiment. The regiment fired over 16,000 rounds during the Battle of Chhamb, which neutralized its thrust of attacks.\(^{191}\)

One officer, two JCOs and twenty three other ranks of 39 Medium Regiment laid down their lives while two officers and seven other ranks were reported missing, presumed dead; besides 30 wounded. Three officers, including Lt Col BC Gouri Shankar and two other ranks, were decorated for gallantry.

Lt Gen KP Candeth, PVSM, General Officer Commanding-in-Chief Western Command under whose jurisdictions the battle was fought wrote regarding 39 Medium Regiment’s action in his book: The Western Front: The Indo-Pakistan War 1971, ‘39 Medium Regiment’s wagon lines also came under attack by the Pakistani battalion. The regiment, undaunted by the presence of the enemy in their lines, continued to give supporting fire with two batteries while the third battery took on the enemy and repulsed the attack’.

68 Infantry Brigade operations on the eastern bank of Munawar Tawi between 7 and 10 December called for repeated artillery support to beat back a determined enemy attack from two sides. Own 81 Field Regiment fired over 6400 rounds and caused havoc in the enemy defensive positions. Capt DS Jamwal and eight other ranks of this regiment made supreme sacrifice.\(^{192}\)

In the Battle of Chhamb, the gunners of 1512 AD Battery of 151 Air Defence Regiment distinguished themselves, defending field artillery gun areas and administrative
areas, Akhnoor ferry on Chenab river, the Mandiala bridge, and the divisional headquarters from Pakistani Air Force attacks. 151 Air Defence Regiment was awarded the Honour Title ‘Chhamb’ for its outstanding performance in the sector.

The casualties suffered by 10 Infantry Division during the operations were high, but Pakistani losses were no less. Although, Pakistani casualties are not known, Maj Gen Fazal Muqueem Khan acknowledged in his book, *Pakistan’s Crisis of Leadership*, that they suffered heavy losses.

**Jammu**

In the Jammu sector, the strategic Chicken’s Neck was attacked by 26 Infantry Division and captured with the help of 193 Field Regiment, 176 Field Regiment, 2202 Medium Battery, 43 Light Battery and two batteries of 173 Field Regiment. The General Officer Commanding of 26 Infantry Division Maj Gen ZC Bakshi wrote in the War Book of 26 Infantry Division:

…….. and vividly recall the night when the attack went in on the right flank—in Chhamb-Jaurian sector—flashes emanating from the muzzles of Indian and Pakistani Artillery, the sound of gunfire as shells left the barrels on their destructive journey and seconds later, as they burst on ground. Next door, the gunners of my brigade firing into Chicken’s Neck, as I held my breath and prayed for good shooting…….. It was a deadly display of fireworks and rolling thunder of gunfire and shell burst, on that dark night of 5 December.193

The battle of Chicken’s Neck had been an important victory for the Indian Army. At operational level Pakistani defenders were unable to withstand the impact of the large volume of artillery fire, particularly of our 130mm medium and 100mm field guns, which fired over 2,000 rounds during this short battle.

**Punjab**

Punjab has special significance to the strategic planners of both the countries. India is highly sensitive regarding any loss of territory in Punjab. In-so-far Pakistan is concerned, Punjab state with its capital Lahore being so close to the Indian border and the ruling class of Pakistan being mostly from this region, resulted in its being overtly cautious for Punjab’s security. Pakistan had also not forgotten the fact that Lahore had almost fallen into Indian hands during Indo-Pak War 1965.
As part of overall strategic aim, Indian army decided to capture the strategic Pakistani Shakargarh Bulge, jutting into India. Indian Army employed its 1 Corps for this task. Pakistani Army had appreciated an Indian offensive in the area and they were well prepared. They had laid multi layered minefields and ditch cum bund to stop the Indian offensive. Artillery as always, had a pivotal role to play in this offensive. Such was the dominant role that own artillery played in this battle that 75 Medium Regiment, 161 Field Regiment and 47 Air Defence Regiment were awarded the Honour Title *Basantar River*. 47 Air Defence Regiment had played a pivotal role in protection of our operational bridgeheads from air attacks. As the battle progressed, the dry featureless fields across Basantar river turned out to be scene of many a heroic deed and dogged fighting in a short span of 48 hours. GOC 1 Corps later wrote in his battle report :-

“54 and 41 (Indep) Artillery Brigades shot eminently well and were primarily instrumental in breaking up the enemy infantry assaults... The excellent tank gunnery and manoeuvre on the part of our armoured squadrons and accurate and prompt response from the divisional and corps artillery brigades wore down repeated Pakistani assaults”.

For the gunners the recognition came from the other side of the fence as well. Brig NA Khan, the Commander of Changez Force that performed the role of covering troops in the Shakargarh Bulge was to write later: ‘The enemy used its armour well, in integrated armour-infantry teams. It made the best possible use of his artillery to demoralise and neutralise our defences’.

Pakistani Shehjra Enclave on the east bank of Sutlej was approximately 55 sq km having eleven hamlets. It provided Pakistani army an excellent launch-pad to progress attacks into Punjab and threaten the operationally important Harike bridge. It was therefore decided to capture this enclave. The Indian attack commenced on the night of 5 December by 48 Infantry Brigade of 15 Infantry Division. The Pakistani army confronted vigorously to the attack due to which the attack could not progress. A critical situation thus developed since failure of this attack would have provided the enemy with a ready base to launch offensive into Punjab. At this critical moment 174 Field Regiment and 35 Light Regiment and some other artillery in the area were tasked to destroy the enemy. \(^{194}\) Soon artillery pounded the Pakistani defences relentlessly causing unimaginable death and destruction on the enemy. Shehjra Enclave was finally captured on 6 December 1971. 174 Field Regiment furthered its reach by shelling Pakistani Kasur town. The shells landed in
Kasur jail location. At around mid-day enemy radio transmission was intercepted which stated, “Kasur jail being shelled, prisoners running away. No vehicle is available to move prisoners from the jail.” This had a huge psychological impact on the Pakistanis in the area which resulted in major gains by the Indian Army in subsequent operations in the sector.

**Rajasthan**

One of the fiercest battles in 1971 Indo-Pak War was fought in the Thar deserts of Rajasthan near the historical town of Jaisalmer wherein Pakistani 18 Infantry Division launched a surprise attack with over 45 tanks and infantry on the company locality of 23 Punjab in Launegewala. They aimed further their success to soon capture Jaisalmer and then proceed towards Jodhpur thereby create a crisis situation for India. The Pakistani attack commenced on 5 December 1971 around mid night and by the morning of 6 December they had almost encircled the Indian company at Launegewala. Since there was no artillery support available to this company, its survival became difficult. On 6 December 1971 the Indian Army and the Indian Air Force reacted swiftly. Artillery units were moved immediately to support the infantry which was somehow holding on. 170 Field Regiment and 1852 Light Regiment soon started pounding the attacking enemy. Maj Atma Singh the artillery air observation post pilot flying Krishak aircraft directed the IAF Hunter aircrafts flying from Jaisalmer on to the enemy tanks. One after other the enemy tanks were destroyed and personnel killed by the air attacks and artillery fire. Maj Gen Mustaffa the GOC 18 (Pakistan) Infantry Division’s loud boast to Pakistani troops of having “breakfast at Ramgarh and dinner at Jaisalmer” ended in utter fiasco. He was sacked on 7 December 71 by the Pakistani government.

A lesson was also learnt by the Indian Army that any defensive position on the border is untenable and any offensive action on the enemy is bound to fail unless it is supported by adequate artillery firepower.

**Analysis**

In the overall context artillery has been closely associated with the evolution of the modern Indian history, specially since 19th Century. It represented awe and brute force for the British administration in India to assist them to subjugate the natives and expand their territories. Battles after battle were won by the British Army due to artillery superiority.
They also acknowledged the natives as good artillerymen, ‘Golandaz’. However much changed after, the India’s First War of Independence 1857. During the World War I and World War II, Indian artillery was fully acknowledged as an element that changed the course of battles. Units of Indian artillery also won many Theatre and Battle Honours for its exceptional performance. Honour Titles to artillery units followed thereafter.

The threat to the sovereignty of the newly formed independent India from the Pakistani raiders supported by their regular army was neutralized and territories recaptured with the help of infantry attacks and artillery fire. Wherever artillery fired, it had a salutary effect and made the raiders flee. Lack of artillery during India-China Conflict 1962 was a defeat. Lessons learnt from our debacle saw large number of artillery units being raised rapidly. The effect of the same was felt during Indo-Pak Conflict 1965 and Indo-Pak War 1971, wherein Indian army had resounding success. Role of artillery in these battles have been that of power and domination. Since then, it has been standing by as a ‘threat in being’ for the forces inimical to India. Thus it may be appropriate to comment that during the period under review the Indian artillery stood out as an important flag bearer of the hard power projection of the Indian nation.

---

10. Ibid, pp. 2.
11. Ibid.
12. Ibid.
132

13 YB Gulati, Brigadier (Retd), Edited by Major General DK Palit, VrC (Retd), History of the Regiment of Artillery – Indian Army, Palit & Dutt Publishers, Dehradun, 1971, pp. 2.
14 Ibid.
16 Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (Battle of Panipat-Arty), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 9.
18 Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (Battle of Panipat-Arty), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 9.
19 Ibid.
20 A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 5.
21 YB Gulati, Brigadier (Retd), Edited by Major General DK Palit, VrC (Retd), History of the Regiment of Artillery – Indian Army, Palit & Dutt Publishers, Dehradun, 1971, pp. 5.
23 Ibid, pp. 4.
25 A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 8.
26 Ibid, pp. 9.
27 Artillery Research Project, Regiment of Artillery Association, Nasik, pp. 11.
28 A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 9.
29 Ibid, pp. 10.
31 A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 10 & 11.
32 Ibid.
33 Ibid.
34 Ibid, pp. 11.
36 A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 12.
38 Ibid.
42 YB Gulati, Brigadier (Retd), Edited by Major General DK Palit, VrC (Retd), History of the Regiment of Artillery – Indian Army, Palit & Dutt Publishers, Dehradun, 1971, pp. 18.
43 Ibid, pp. 19.
44 Ibid.
45 A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 16.
46 Ibid.
48 Ibid.
49 A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 18.
51 Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (Battle of Plassey – June 1757), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 13.
53 Ibid.
54 A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 20.
58 A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 23.
who took part in the operations.

Cavalry Regiment of Artillery

Additional Company 1 SIKH)

134

2 Field Regiment)

Ibid.

Ibid, pp. 117 & 118.

Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (Battle of Point 171 – 2 Field Regiment), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 45.

A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 118 & 119.


A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 119.

Ibid, pp. 122.


A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 123.

Ibid.

YB Gulati, Brigadier (Retd), Edited by Major General DK Palit, VrC (Retd), History of the Regiment of Artillery – Indian Army, Palit & Dutt Publishers, Dehradun, 1971, pp. 72 & 73.

A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 136 & 137.


Regiment History folder No RHF/55/2 FD/RAA of 2 Field Regiment held with the Regiment of Artillery Association, Nasik.

Ibid.

Regiment History folder No RHF/54/1 FD/RAA of 1 Field Regiment held with the Regiment of Artillery Association, Nasik.


Regiment History folder No RHF/54/1 FD/RAA of 1 Field Regiment held with the Regiment of Artillery Association, Nasik.

Regiment History folder No RHF/55/2 FD/RAA of 2 Field Regiment held with the Regiment of Artillery Association, Nasik.

Regiment of Artillery Association, Nasik, Hanging on the Wall of Artillery Museum.

A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 157.

Ibid, pp. 176.

Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (13 Field Regiment – Additional Company 1 SIKH) and (Patiala Mountain Battery with 13 Field Regiment 1948), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 66 & 72 and Amarinder Singh, Lest We Forget (13 Field Regiment/I SIKH), Pauls Press, New Delhi, Second Edition 2000, pp. 24.

Personal diary of Major General LS Lehl who took part in these operations as a Captain, pp. 20. (Confirmed with YB Gulati, Brigadier (Retd), Edited by Major General DK Palit, VrC (Retd), History of the Regiment of Artillery – Indian Army, Palit & Dutt Publishers, Dehradun, 1971, pp. 124, 127 & 128).

Ibid.

Ibid.

YB Gulati, Brigadier (Retd), Edited by Major General DK Palit, VrC (Retd), History of the Regiment of Artillery – Indian Army, Palit & Dutt Publishers, Dehradun, 1971, pp. 119.

Personal diary of Major General LS Lehl who took part in these operations as a Captain, pp. 20.

Ibid, pp. 31.


A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 255.

Ibid.

Ibid, pp. 256.

Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (1962 Conflict – Kameng), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 99, 100 & 102.

Regiment History folder No RHF/74/22FD/RAH of 22 Field Regiment held with Regiment of Artillery Association.

Ibid.


Ibid.

Ibid.


Ibid.

Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (1962 Conflict – Kameng), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 99, 100 & 102.

Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (1962 Conflict – Walong), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 103.

Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (1962 Conflict – Ladakh), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 105-106.

Ibid.


Ibid, pp. 195.

Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (1962 Conflict – Walong), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 111-113.

Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (1965 – Punjab Operations), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 114-117.


Ibid.

Ibid.

A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 325.

Ibid, pp. 326.

Ibid.

Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (1965 – Kashmir Operations), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 111-113.

A Mukherjee, Major General, Cannonade, Akshay Media, New Delhi, 2010, pp. 330.

Ibid, pp. 341.


Ibid.

Editor, Ian Cardozo, Major General (Retd), The Indian Army – A Brief History (East Pakistan – 2 Corps, Khulna – Jessore - Kushita)and (East Pakistan – Kilo Force), Centre for Armed Forces Historical Research, United Service Institution of India, 2005, pp. 138, 139 & 145.

Interview with Major General LS Lehl on 22 November 2010. He took part as General Officer Commanding of the attacking 20 Mountain Division.

A Mukherjee, Major General, God of War (2nd Edition), Akshay Media, New Delhi, 2010, pp. 67.

Ibid.


A Mukherjee, Major General, God of War (2nd Edition), Akshay Media, New Delhi, 2010, pp. 76 and interview of the scholar with Major General LS Lehl on 22 November 2010.

A Mukherjee, Colonel, God of War (1st Edition), Lancer Publishers and Distributors, New Delhi, 2002, pp. 44.

LS Lehl, Major General (Retd), Indian Sword Strikes in East Pakistan, Vikas Publishers, New Delhi, 1979, pp. 65.

A Mukherjee, Major General, God of War (2nd Edition), Akshay Media, New Delhi, 2010, pp. 90.

Ibid.


Regiment History folder No RHF/57/39 MED/RAH of 4 Field Regiment held with Regiment of Artillery Association.


Ibid.

Ibid, pp. 132.

Ibid, pp. 133.

Ibid, pp. 196.

Ibid, pp. 199.

Ibid, pp. 175 & 176.

Ibid.

Ibid, pp. 183.