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Logistics of small wars in British India: 1840s–1913

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ABSTRACT

Between circa 1740 and 1849, the British East India Company (EIC) conquered India after conducting several conventional campaigns against the ‘native’ powers. Thereafter, the phase of consolidation started. In this phase, the EIC, and after 1859, the Raj had to conduct innumerable small wars (pacification campaigns) especially against the tribes who inhabited the Indus Frontier, and the region east of Brahmaputra River. Rather than battles and sieges, these campaigns were characterised by ambushes and raids in difficult terrain against the stateless armed communities. This paper, basing itself mostly on the archival documents derived from the various archives of the UK and India, focuses on the logistical aspect of the small wars conducted by the British in the North-West Frontier of India and North-East India. This essay studies four themes related to logistics: non-combatant manpower (especially coolies), roads, rivers, and animals. Each of the themes is dealt with chronologically. This paper starts from 1840s, when the British came in touch with the Indus Frontier after the annexation of Punjab, and ends in 1913, just before the outbreak of the Great War.

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KEYWORDS Brahmaputra; elephants; Indus; logistics; small wars

Introduction

Between circa 1740 and 1849, the British East India Company (EIC) conquered India after conducting several conventional campaigns against the ‘native’ powers. Thereafter, the phase of consolidation started. In this phase, the EIC, and after 1859, the Raj (government of British-India) had to conduct innumerable small wars (pacification campaigns also derisively known as Butcher and Bolt or Shoot and Scoot expeditions) especially against the tribes who inhabited the Indus Frontier (North-West Frontier), and the region east of Brahmaputra River (North-East Frontier). Rather than battles and sieges, these campaigns were characterised by ambushes and raids in difficult terrain and trying climates against the stateless armed communities. There have been some studies regarding British policies along these two frontiers. The
North-West Frontier has garnered most of the attention due to its interconnection with turbulent history of Afghanistan and the phantom of Russian advance along Central Asia during the nineteenth century. In comparison, the North-East Frontier of the Raj remains an understudied arena. Bulk of the frontier studies focus on political management of the North-West Frontier tribes by British officers and the military aspects of the campaigns (strategy, tactics, and technology) launched against them. An exception is James L. Hevia’s study of the use of animals for military purpose by the Raj along the North-West Frontier. Following Michael Foucault, Hevia uses the concept ‘biopower’ to show how the imperialists systematically utilised animal resources of the colony. A scientific discourse and an establishment came into being with the avowed objective of furthering the imperial use of animal resources. Hevia focuses mostly on the camels. There is space for further work. In this essay, I intend to see the linkages between military operations, ecology, and the other animals besides the camels. Overall, supplying warfare along the frontiers remains a neglected sideshow for historians. The present article attempts to address this historiographical slip.

This paper, basing itself mostly on the archival documents derived from the various archives of India and the UK, focuses on the logistical aspects of the small wars conducted by the British in the North-West Frontier of India.

### Table 1. Distribution of Elephants at various stations of India for Military Transport, 1881.

<table>
<thead>
<tr>
<th>Place</th>
<th>Number of Elephants Deployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombay Presidency</td>
<td>50</td>
</tr>
<tr>
<td>Madras Presidency</td>
<td>50</td>
</tr>
<tr>
<td>Nowgong</td>
<td>10</td>
</tr>
<tr>
<td>Cachar</td>
<td>36</td>
</tr>
<tr>
<td>Naga Hills</td>
<td>50</td>
</tr>
<tr>
<td>Burma</td>
<td>69</td>
</tr>
<tr>
<td>Peshawar</td>
<td>25</td>
</tr>
<tr>
<td>Rawal Pindi</td>
<td>35</td>
</tr>
<tr>
<td>Ambala</td>
<td>20</td>
</tr>
<tr>
<td>Agra</td>
<td>15</td>
</tr>
<tr>
<td>Delhi</td>
<td>10</td>
</tr>
<tr>
<td>Mian Mir</td>
<td>20</td>
</tr>
<tr>
<td>Multan</td>
<td>25</td>
</tr>
<tr>
<td>Ferozepore</td>
<td>20</td>
</tr>
<tr>
<td>Lucknow</td>
<td>40</td>
</tr>
<tr>
<td>Faizabad</td>
<td>15</td>
</tr>
<tr>
<td>Bareilly</td>
<td>30</td>
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<tr>
<td>Morar</td>
<td>10</td>
</tr>
<tr>
<td>Dinapore</td>
<td>16</td>
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<tr>
<td>Fort William</td>
<td>15</td>
</tr>
<tr>
<td>Barrackpore</td>
<td>35</td>
</tr>
<tr>
<td>Doranda</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Revenue and Agricultural Department, Distribution of Elephants to be maintained for Army Transport, Major-General C.M. MacGregor, Quarter Master General in India, 21 May 1881, National Archives of India, New Delhi.
and North-East India. Most of the sources were generated by the British, and their attention to the logistical aspects is spotty at best. This is because valorous charges led by young subalterns against the frontier tribes were considered more interesting and important compared to the mundane task of supplying the armies. This essay studies four themes related to logistics: non-combatant manpower (especially coolies), roads, boats and rivers, and animals. Each of the themes is dealt chronologically.

I will not deal with the conventional campaigns launched by the EIC and the Raj along the frontiers, for instance, the Three Afghan Wars (1839–42, 1878–80, and 1919), Bhutan War (1864–65), and the Three Burma Wars (1824–26, 1852, and 1885). Such wars despite being launched against native monarchical states also fall under the rubric of small war as conceptualised by the British officer Charles Callwell.¹ I will concentrate on the campaigns launched against the stateless powers along the frontiers (tribes). A point of caution is necessary. At times (for instance, the Tirah Campaign of 1897), war against a non-state enemy reached the level of a conventional campaign (concerning the number of troops mobilised) against a hostile indigenous state. As regards the pacification operations in North-East India, I have concentrated mostly on the Chin-Lushai Hills for two reasons. Much more research needs to be done on the communities of north-east like Nagas, Mizzos, Mishmis, etc. who resisted British power. Second, to an extent, British pacification of the Chin Hills to a great extent is a microcosm of what the Raj did in Naga Hills, Imphal, and Kohima.

This paper starts from 1840s, when the British came in touch with the Indus Frontier after the annexation of Punjab, and ends in 1913, just before the outbreak of the Great War. This period witnessed a transition in the construction of logistical mechanism by the Army in India (British units stationed in the Indian subcontinent plus Indian military formations officered by the British). By 1840s, the British had destroyed the traditional Indian logistical system based on the banjaras (itinerant merchants who carried foodstuff on pack bullocks). From the time of the Great War, the Raj tried to mechanise the logistical apparatus by introducing elements of industrial war-like aircraft and trucks. The time period which this paper studies shows the tortuous attempts by the British to create a hybrid logistical system by attempting to integrate traditional elements with their new imported system of management and tools.

**Physical and human terrain of North-West and North-East frontiers**

The Indus Frontier extended from Hindu Kush and Pamirs in the north till Baluchistan and Sind in the south. The eastern border of the Indus Frontier was the Indus River itself and the western extremity of the frontier extended up to the Durand Line which separated the sphere of British influence from Afghanistan proper. The whole region was populated mostly by the Pathans
(now known as Pashtuns/Pakhtuns) who spoke Pashto and were Sunni Muslims. The Pathans also inhabited Eastern and Southern Afghanistan. So, the Pathans considered the British-drawn Durand line an artificial border established against their wishes. The 2,640 km long Durand Line was imposed arbitrarily by the Raj on the Afghans and the Indus tribesmen in 1893. Today, it constitutes the border between Pakistan and Afghanistan. Further, the border between Afghanistan and British India was porous. The Pathans were divided into various tribes (like Waziris, Gilzais, Khataks, Afridis, Kakars, etc.), and each tribe was further subdivided into many clans. Each clan was further subdivided into various septs. Blood feuds were common amongst the tribes and various tribes occasionally fought against each other. The land was not fertile for practicing large-scale agriculture. Some 2.5 million Pathans inhabited the 26,000 square miles of territory.\(^5\) The Pathans partly supported themselves by practicing transhumance. They supplemented their meagre income by taxing the caravans which passed between Punjab and Central Asia and by pillaging and plundering the agriculturists and commercial communities who inhabited Punjab.

At least some British officials and scholars understood the structural linkages between Pathan raids on the plains of Punjab and the deficit economy in the land of the tribes. C. Collin Davies in 1932 noted: ‘We can never hope to solve the frontier problem until the tribesmen are able to gain a livelihood without being forced to raid the settled districts’.\(^6\) Angry due to British intrusion in their traditional territories which resulted in the construction of roads, military cantonments, railways, and egged on by the mullahs (rural religious teachers), they frequently rebelled and conducted raids which in turn resulted in frequent imperial pacification campaigns.

Collin Davies’ statement applies for the tribes of North-East India (at present, this region has seven states: Assam, Manipur, Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, and Tripura). The British called the tribes inhabiting this area by various names: Abors, Lushais, Kukis, Nagas, Miris, Mishmis, etc. All of them were considered as ‘bloodthirsty savages’. These tribes were divided into several clans (khels) and they often fought against each other. They practiced jhum (shifting) cultivation. Blood feud and raids were part and parcel of their lives. Raiding evolved as a sort of blood sport among these tribes. Many young men raided neighbouring tribes for winning women and also to display their heroism. They also needed salt, rice, and iron from the plainsmen. Pillaging seemed to be the only option open to them. Alexander Mackenzie was a civilian bureaucrat of the Raj. He was in the Bengal Civil Service and in 1869, he was asked by Lieutenant-Governor of Bengal to prepare a report on the marauding tribes of North-East India. Mackenzie who was in charge of Political Correspondence of the Bengal Government jumped at this request and wrote a tome of more than 550 pages which was published in 1884. He started his fat volume with the
following observation: ‘Before attempting to record the dealings of the Government with the numerous savage races of this portion of its dominions, it may be well very briefly to refer to the events which led to the occupation of Assam by the British, and to give some general idea of the state of that Province when we first entered it’.  

Mackenzie was no exception. The Victorian assumption about savage races was very much present in Charles Callwell, who is dubbed by many modern scholars as the father of small war.  

Callwell theorised on the savage, disloyal, fanatic, and bloodthirsty natives in his volume titled Small War which came out in 1896.

History seems to have turned a full circle with the publication of Pum Khan Pau’s monograph in 2020. Pau has empathy for the subjects of his research. He writes that the tribes who inhabit the region between North-East India and Western Burma are actually of the same ethnic stock: Chin/Zo people. They are actually peace loving. It was imperial intrusion in the nineteenth century which led to faulty categorisation and division resulting in disturbances among them. Pau continues that even today, the division of the people of India-Burma highlands between two sovereign states: India and Burma, has resulted in the nation states’ sponsoring perpetual rivalries among these people. The Chin/Zo or Zomi people are actually victims of British imperial and now Indian and Burman national politics.  

One can say that the construction of the image about the frontier tribesmen as ‘wild and noble savages’ is partly a product of mini Orientalism by colonial British officials. Marcus Franke is on the right track when he asserts that the prospect of economic gains and strategic value of North-East India encouraged the forward march of British imperialism. In addition, the construction of the image of ‘inferior hillmen’ legitimised the British empire building in that region. However, the constructed image is not totally fictious.

Victim playing of the marginal ethnic groups is now the trend among ‘hyper liberal’ scholars. Imperialism and nationalism like capitalism are bad labels. We have evidence from the pre-British era that these so-called North-East Indian highlanders were actually raiding the agriculturists and merchants of the Bengal plain. In fact, the Mughals undertook several expeditions against them. British rule was more systematic than the Mughals. The growth of settled agriculture in East Bengal and expansion of the Burmese Kingdom in the first two decades of the nineteenth century towards Assam and Manipur further activated tribal raids. Pau himself accepts that Chin/Zo or Zomi nomenclature is a recent artificial one. Historical records show that the tribes themselves had no concept of belonging to one homogeneous family. Currently, these tribes identify themselves as Nagas, Mizos, etc. and fight against themselves as well as against the Indian and Myanmar governments. Further, the chronicles of the Mughals and the Safavids highlight the turbulent character of the Pathans and the related Afghans.
In general, the Pathans were well armed compared to the North-East India’s frontier tribes. The villages around the Khyber Pass boasted of a thriving small arms industry. In addition, the Pathans also acquired firearms from Afghanistan and through the smugglers who frequented the Baluchi and Makran coasts. In contrast, the North-East Indian frontier tribes were equipped mainly with dahs (curved broadswords), spears, bows, and arrows. Besides practicing hit and run attacks, the tribesmen of both the frontiers sniped both during the day and night against the lumbering imperial military columns trying to cross the difficult terrain. Occasionally, the British tried to use light field guns for blasting the sangars (fortifications made of stones on mountain tops) and earthen towers of the Pathans and bamboo stockades of the North-East Frontier tribesmen. The frontier tribesmen had no artillery. To give an example, during the second half of the nineteenth century, the Assam Rifles (a paramilitary unit deployed mostly along the North-East Frontier) had 6-pounder mountain guns. Lord Roberts Commander-in-Chief of the Madras Army, asserted that for campaigns along the frontiers, mountain guns were vital. In 1883, he wanted to replace the 7-pounders with 9-pounder guns each weighing 450 pounds. However, hauling the guns across the roadless terrain was a serious problem. Swamps, marshes, and jungles of North-East Indian borderlands and rocky mountainous rugged and barren terrain of North-West Frontier besides the dispersed style of fighting as practiced by the tribesmen negated most of the technological advantages of the British and Indian units.

Nevertheless, the tribes of North-East India and the Pathan lashkars (tribal warbands) due to absence of any logistical infrastructure could not stay in the field for long. The tribal warbands dissolved after a few days of campaigning and the men had to return to their villages for tending their livestock. For instance, the Abors of North-East India could not remain in the field for more than 7 days due to lack of supplies. Here, the logistical mechanism of the British-Indian armies gave them an edge. The Army in India could remain operational for a longer period. The use of boats, animals, and coolies besides construction of roads enabled the military authorities to carry supply for a minimum of 15 to 20 days. The sections below show how the logistical structure actually operated at the ground level.

**Non-combat manpower**

The strength of the Army in India during the second half of the nineteenth century was roughly 220,000 men (60,000 British and the rest Indian soldiers). In pacification campaigns, the EIC and then the Raj depended mostly on Indian rather than British soldiery for several reasons. Indian soldiers were cheaper than their British counterparts and more acclimatised
to the climate of the subcontinent. For small wars along both the frontiers, infantry was more important than cavalry. Some cavalry units were deployed along the North-West Frontier because the British believed in the psychological effect of cavalry charges on the ‘savage tribesmen’. The climate and terrain of North-East Frontier precluded the deployment of a substantial number of cavalry units.\(^{18}\) In addition to the troops, the British to a great extent depended on local units and auxiliaries which can be categorised as paramilitary formations. The objective was to coopt some of the potential rebellious elements in the Raj’s coercive instrument to prevent future troubles by them. This policy was akin to using a thief to capture a thief.

Both the North-West Frontier and the North-East Frontier being sparsely populated and infertile regions, a military force traversing these regions had to carry its supplies (food besides arms and ammunition). A small force was liable to be ambushed by the tribesmen, and it was almost impossible to sustain a large force far away from its bases. The operational reach of a military detachment along the frontiers was dependent on the carrying capacity of the animals, boats, and coolies. We will start with the amount of food required by a soldier.

In 1859, the military authorities calculated that a North Indian sepoy consumed 30 seer of atta (wheat), 60 chattack (16 chattak is 1 seer or 1.25 kg) of dhal (pulses), 30 chattak of ghee (clarified butter), and 10 chattak of salt per month. Wheat provided carbohydrates, and pulses were the source of vegetable protein. The North Indian sepoys being of high caste were vegetarians and wheat eaters. But the Punjabi and Gurkha soldiers consumed meat. The Gurkha and Madrassi sepoys ate rice in lieu of wheat. A non-combatant was supposed to eat less as it was assumed that such a person required less energy. Nevertheless, the work of the non-combatants was onerous. The consumption scale of a non-combatant was 22.5 seer of atta, 60 chattak of dhal, 15 chattak of ghee, and 10 chattak of salt per month.\(^{19}\) There was no mess system in the Indian Army where the government cooks provided cooked food to the sepoys and sowars. The British soldiers in India got everything from the Commissariat Department. The Indian soldiers had to buy foodgrains, vegetables, and occasionally meat from the market. However, the government supplied the foodgrains when the regiments marched to the frontiers where markets were not available and the soldiers had to cook themselves. The senior British officers made repeated attempts to cut down the amount of cooking utensils carried by an Indian infantry regiment in order to ease the carrying load on the coolies and mules.\(^{20}\)

Generally, an Indian cavalry regiment comprised 300 sowars and about 70 non-commissioned officers (NCOs) and viceroy’s commissioned officers (VCOs). In addition, the regiment had several permanently employed non-
combatants. They were as follows: 13 farriers, 4 hospital assistants (2 for the men and 2 for the mounts), 6 syces (grasscutter, for cutting grass for the horses), 2 tattiwalla (for preparing and cleaning latrines), 6 puckallies, 2 peons, 1 chowdhury (peons and chowdhury were clerks and responsible for paperwork of the unit), 6 lascars (carried stores and tents), 1 trumpeter, and 1 tindal.\(^{21}\) A typical Indian infantry regiment in the second half of the nineteenth century comprised 611 sepoys, 109 Indian NCOs and VCOs, 20 buglers, two Indian doctors, one cook (for the patients), one tindal, 10 lascars, 21 bhisties (water carriers), 12 sweepers, two beldars, 1 mullah, and one granthie (the last two were religious teachers who provided religious/spiritual service to the soldiers).\(^{22}\) During a campaign, the regiments hired temporarily various types of non-combatants like carpenters, dhobis (washermen), coolies, additional syces, etc.

The monthly wages of the different types of combatant and non-combatant labourers will put things in proper perspective. In the 1860s, an Indian doctor was paid Rs 10 per month and the pay of a sepoy was Rs 7 per month (which rose to Rs 9 in the 1890s and then to Rs 11 by 1914) and a sawar in the cavalry derived Rs 24 per month.\(^{23}\) The trumpeter was paid Rs 30 per month.\(^{24}\) In the 1870s, a bugler got Rs 12 Anna 6 (16 Anna is 1 Re) per month. Indian VCOs like the subedar of the infantry and resiadar of the cavalry, respectively, got Rs 70 and Rs 150 per month.\(^{25}\) The pay of a maulvi was Rs 12 Anna 8. The pay of a lascar, bhistie, and a sweeper was the same: Rs 6 Anna 8 per month.\(^{26}\)

The daily requirement of a horse in the Indian cavalry regiment was 14 seer (1 seer is equivalent to 2.7 pounds) of grass. The monthly pay of a permanently employed syce was Rs 3 Anna 8. The wage was lower than what a daily labourer got. Each temporary syce was paid 4 Anna for 20 seers of grass. Due to low pay, the army faced a shortage in recruiting and even in hiring syces. The army also faced problems in buying grass from the open market. At Ambala in Punjab, the price of grass in 1860s was Rs 2 per maund (1 maund is 37.3 kg). Besides grass, the horses were also fed hay. Generally, it was found out that 5–10 tons (1 ton = 907 kg) of hay was produced from each acre of land.\(^{27}\)

The coolies who were hired carried the load (food, ammunition, and soldiers’ kit). The average speed of rate of march of a coolie carrying load was 2 miles per hour, and that of a pack mule or a pony was 5 miles per hour. The average speed of a bullock cart was 1.5 miles per hour, and it was the same for a donkey. The speed of a camel or pack bullock was the same: 2 miles per hour.\(^{28}\)

At times, coolie casualties were heavy due to the extreme nature of the climate and terrain in which they had to operate. In 1871, during the Lushai Expedition, one column under Brigadier-General George Bourchier started from Cachar and another column under Brigadier-General C. Brownlow
started from Chittagong. ‘Bob’ Roberts (later Field-Marshal) was with the Cachar Column. He had written: ‘the vapour-bath-like atmosphere of the valleys and the difficult nature of the country, which was a succession of hill-ranges covered with jungle ... Cutting one’s way day after day through these dense, gloomy forests, through which hardly a ray of light penetrates, was most stifling and depressing’. For the Cachar Column, 840 Nepali coolies were hired. But, cholera broke out and 251 died and many others deserted. In the end, the British-Indian detachment was left with only 387 coolies.

During 1889–90, the Raj launched the Chin-Lushai Expedition. The objective was to punish the Chin-Lushai tribes inhabiting the borderland between North-East India and Western Burma. A military detachment started from Chittagong and it was known as the Chittagong Column. It comprised 202 personnel of the Chittagong Frontier Police (a paramilitary formation) and 3,178 personnel of the 2/2nd Gurkha Regiment, 3rd Bengal Infantry Regiment and 9th Bengal Infantry Regiment alongside men from the Bombay Pioneers and Bengal Sappers and Miners. This detachment was supported by 2,511 Punjabi coolies and 1,500 local coolies. It is to be noted that the number of non-combatants exceeded the number of combatants in the Chittagong Column.

The Punjabi coolies were divided into three categories: jemadar, mate, and ordinary coolie. The jemadar received Rs 15 per month, and the mate’s monthly salary was 12 and that of ordinary coolie was Rs 9. The local coolies recruited from East Bengal (now Bangladesh) were divided into three categories: sirdar, mate, and ordinary coolie. The sirdar was paid Rs 50 per month, mate Rs 30 per month and the ordinary coolie Rs 12 per month. The local coolies were paid more than the Punjabi coolies because the former were acclimatised with the climate and terrain and were skilled workers. Besides carrying loads, they were used for constructing bridges, houses, stockades, and rafts. Besides wages, the coolies were provided with free rations and kits. Each coolie company received cooking pots for free. Roughly 30 pounds weight of cooking pots per company was allowed. Each coolie in addition received free of cost blanket, cardigan jacket, woollen puttees, hobnailed shoes, haversack, water bottle, khaki blouse, and a pugri (headgear). The maximum load for a coolie was fixed at 20 seer.

In March 1911, in order to teach the unruly Abors a lesson, and also to prevent any probable Chinese incursions along Tibet, the Raj decided to launch a campaign. Between 1848 and 1893, the British had launched five expeditions against the Abors. Physical geography of the lands of Abors had defeated these campaigns. A brief description of the lands inhabited by the Abors is required. The Abors inhabited the region between eastern watershed of the Dibong River and the western drainage of the Subansiri River. From the
course of the Brahmaputra River in the south, the Aborland extended to the plateau of Tibet in the north. Aborland had snow clad mountains (7,000–10,000 feet) in the north and jungle covered banks of mighty rivers in the south. Dense jungle (ferns, bamboos, plantains interspersed with entangling thorns and poisonous creepers) and deep barren valleys characterised the landscape. The pathways were worse than the animal tracks. To go to the Aborland, one had to wade waist deep through the chasms through which the rivers flowed and then crawl along the narrow ledges cut on the face of high precipices.\textsuperscript{31}

The sixth invasion against the Abors had to wait till the rainy season came to an end in October. From Kobo (45 miles above Dibrugarh), Major-General Bowers with 3,000 combatants (Gurkha soldiers and Assam Military Police personnel plus pioneers) supported by 3,000 Naga coolies started his advance during late October 1911. The British decided to use local coolies on the assumption that they knew the tracks and were more suited for functioning in the terrain and climate of the Aborland. The expeditionary force supplemented its ration by looting rice, pigs, and fowls from the captured Abor villages. The expedition lasted from 22 October till 3 December 1911. By early December, the food supply was exhausted and all the Naga coolies due to hard marching through the trackless dense jungle with continuous rainfall and mist had fallen sick. Among the combatants, 21 British officers and 850 soldiers suffered from sickness and wounds. The Abors had survived by retreating into the jungle clad mountains further eastwards towards the Burma border. But, they had enough. All their villages were burnt and about 200 Abors had been killed. They could not remain in the mountains for eternity. They needed to come down to their villages to start \textit{jhum} cultivation and raise pigs and fowls. So, they submitted to the imperial authorities at least temporarily in early 1912.\textsuperscript{32}

**Animals**

The Mughals used camels, pack bullocks, and especially elephants for carrying the baggage of their armies. Since India was not a horse breeding country, horses were costly and they were not used as baggage animals. The EIC and the Raj gradually reduced the number of elephants and increasingly relied on camels for operations west of Indus and especially mules. In fact, the Army in India’s obsession with mules as the best baggage animals continued till the Second World War. Horses till the end of the First World War remained important for the Army in India’s military establishment as war animals.

The Superintendent of Horse Breeding Operations controlled the stud breeding centres and was responsible for acquiring mounts from the horse fairs and importing horses from abroad. This officer was also responsible for mule breeding.\textsuperscript{33} The British cavalry regiments proved extremely costly for
the exchequer. Oats, barn, and hay for such mounts had to be imported, and even the horses were brought from Australia. In contrast, Indian cavalry regiments used mounts which were available in India. Each Indian horse cost Rs 350 in 1859.\textsuperscript{34} An imported Waler in contrast cost Rs 450. Indian horses for sale were available in Multan, Awadh, and Agra among other places. The Raj for some of the Indian cavalry regiments imported mounts from Arabia and Persia. In an effort to reduce dependence on external source, the British tried to breed war horses in India.

The British set up several stud farms for breeding good quality horses inside India. A stud farm was set up at Kathiwad at Gujarat in 1851 with the aim of improving the Kathiwad breed of horses. The establishment comprised one agent (salary Rs 181 per month), one caroon (wage Rs 22 per month), two inspectors at Rs 25 each per month, one peon at Rs 6 per month, and 11 syces at Rs 9 per month.\textsuperscript{35} Between 1851 and 1859, 5,115 mares were served by government stallions of the Kathiwad Agency. A government stallion named Lakhiya had the dubious distinction of mating the largest number of mares: his score card was 798.\textsuperscript{36} Between 1866 and 1867, the demand for horses in the British cavalry regiments of the Bombay Army rose from 250 to 300 annually. Lieutenant-General Robert Napier, Commander-in-Chief of Bombay Army (1865–69) declared that good horses were not available in the Bombay Presidency. Further, the cost of Australian horses was very high. So, he wanted to improve the genetic stock of the stud breeding centres by mating English and Arab breeds imported from Aden.\textsuperscript{37} He noted on 1 October 1866: ‘The secretary of state should be requested to recommend the annual importation of English stallions. A very great improvement has taken place in the stallions sent to Bengal. Excellent Norfolk trotters have been received. Norfolk trotters and Arabs will give better results than breeding from the Arabs alone’.\textsuperscript{38} During 1892–93, it was found out that the horses supplied from the stud farms in Bombay and Ahmedabad were smaller in size compared to the standard requirements.\textsuperscript{39}

The Transport Department of the Army in India maintained a small number of animals for supplying the troops during peacetime. However, when a campaign was launched, then the Transport Department bought as well as hired animals and their drivers from the private owners through Indian contractors. For campaigning in North-East India, elephants were useful. However, gun fire seriously unsettled these beasts. Since each elephant required large amount of green fodder and water, they could not be used in large numbers along the dry and barren North-West Frontier. But, elephants were required for hauling the artillery. The best beasts of burden for campaigning along the North-West Frontier were camels and mules and to a lesser extent donkeys and bullocks. Cooperation between the civil administrators and the Army Headquarters was an important characteristic of the British logistical mechanism. The
civilians. District administrators in charge of the districts collected information about the types and number of animals available for sale and for hire. The prices of animals that were bought and rates for their hire were fixed by the district administrators. In 1877, the Punjab Government, on orders issued by the Military Department, calculated that the following number of animal resources was available for use by the army for operations west of the Indus: 158,049 donkeys, 40,101 ponies, 10,434 mules, 594,263 pack bullocks, and 79,984 camels.

The Transport and Commissariat Department officials learnt lessons after analysing past campaigns. The officials found out that camels hired from the plains of Punjab could function effectively as far as Thull, Kurram, Landi Kotal, and Dhaka. For military operations west of these places, Waziri and Powindah hill camels ought to be hired or purchased. Again, camels required proper and careful feeding otherwise they became unfit for hard work. In order to keep the sarwans (camel drivers) and the muleteers in good humour, it was decided to provide them free ration and warm clothing in addition to their pay. Each mule was to carry 2.5 maunds of load and they were hired at the rate of Rs 15 per month per animal. The pay of a mule driver was Rs 8 per month in 1880. It was found out that asses were better than pack bullocks for work along the North-West Frontier because the former animals could stand cold and hardship better. The British offered the following rates for buying different types of animals: one mule for Rs 250, per pony at Rs 150, and a donkey at Rs 70. Some Hindu contractors were engaged for acquiring camels, mules, ponies, and pack bullocks at Rawal Pindi which then were hired by the Commissariat Department. The British offered the following rates for hiring the camels: Rs 15 to Rs 25 per month. The tribesmen (Jowakis, Afridis, and the Waziris) understood that the British desperately wanted their camels. So, they raised the price for hiring to Rs 30 per animal per month. Each such camel carried a load of 5 maunds. Each mule or pony carried 2.5 maunds and each donkey 1.5 maunds of load.

During the Black Mountain Expedition (1888) in the North-West Frontier, the army had to spend Rs 29,000 for providing waterproof sheets to the men and another Rs 60,900 for clothing of the soldiers. The greatest expenditure was on the animals. For Rs 225,000, 1,500 mules were purchased. Roberts claimed that purchasing was always better than temporarily hiring animals. British-India’s logistical system was quite effective in mobilising the animal resources. For example, during the 1897–98 Tirah Campaign, 103,597 camels, mules, donkeys, ponies, and bullocks were impressed.

Elephant was the best cross-country beast available for carrying supplies and field artillery before the coming of the tracked carrier with an internal combustion engine. The Indian elephants were able to swim through rivers and move through vegetation covered swampy, muddy
ground, and also rocky roadless landscapes with ease. In fact, the humid and tropical climate of North-East India suited the elephants. In 1880, the Army in India had 847 elephants. Of them, 115 were in Dacca (capital of Bangladesh) *kheddah* (elephant establishment). The army for conducting pacification operations in the North-East Frontier required 431 elephants. The Commissary General calculated that the army ought to maintain 50 extra elephants or at least 10% of the authorised strength to meet the probable annual casualties.46

**Table 1** below shows the distribution of elephants at various stations throughout the subcontinent in 1881. The elephants of Bombay Presidency were used for operations in Baluchistan. The elephants kept at Peshawar, Rawal Pindi, Ambala, Ferozepore, Mian Mir, and Multan were used for operations along the west of the River Indus. Though the ecology of Baluchistan and North-West Frontier did not suit the elephants, still they were used because these animals were the only option available for pulling the heavy guns across the trackless terrain. The elephants kept at Madras Presidency functioned as a general reserve to be used in accordance with the needs of the different frontiers. The elephants kept in the rest of the stations (including Burma) were used for supporting the army in operations along the North-East Frontier.47

An elephant was a costly beast to maintain. In fact, the monthly cost of maintaining an elephant came to about Rs 34, Anna 5, 9 Paise (100 Paise = Rs 1). In comparison, monthly maintenance of 6 bullocks cost Rs 23, Anna 11 and 3 Paise. Each bullock consumed 2 seer of rice and 3 *chattak* of salt daily. In contrast, an elephant consumed 9 seer of *dhan* (rice husk/paddy) and 1 *chattak* of salt per day. In addition, the elephant also required fresh green fodder and a large quantity of water. The cost of fresh grass required by an elephant per month came to about Rs 8. A *mahout*’s (elephant driver) pay was Rs 9 per month, and in addition, an elephant required a coolie for maintenance (washing and feeding the animal) whose monthly wage was Rs 7. Furthermore, a pack bullock was cheap. In Eastern India, during the 1880s, a pack bullock in the market cost Rs 40. An elephant cost Rs 600 to Rs 900. But while a bullock carried 2 *maunds*, an elephant could carry 12 *maunds* of load. Further, an elephant unlike a bullock could easily cross streams and *nullahs* (dry shallow streams) which were abundant in North-East India.47

The army brought elephants from the contractors who were issued with leases for capturing these beasts and also acquired elephants from the *kheddah* establishment (the biggest was at Dacca). The indigenous contractors with government leases captured elephants from the jungle *mahals* in Eastern Bengal and Assam where large herds of wild elephants roamed about. The wild elephants were then tamed till they were ready for military service. The *kheddah* establishment was a continuation of the Mughal
pilkhana institution. In the khedda establishment elephants were born and brought up. Here young elephants were captured and then they were mated and the newborns were raised to a height of 6 to 7.5 feet. Then they were transferred to the army establishment.48

Roads

After crushing the 1857 Uprising, British security policy shifted especially towards the North-West Frontier. The number of Indian troops was cut down in 1860 due to British anxiety about the possibility of another rebellion by the native troops, and a significant increase in the number of British troops was not possible due to economic reasons. So, the imperial policy was geared to construct a network of telegraph, roads, and railways along the frontiers which would enable the imperial security managers to shift the limited number of troops available to the danger zone as quickly as possible.49 This section will focus on road building.

The army with the sappers and miners, and when they were not available, with pioneers (special infantry with some engineering experience) constructed new roads and repaired, widened and expanded the old roads as it marched during campaigns. Road building was indeed dangerous along the frontiers. To give an example, on 2 February 1850, the Adam Khel Afridis of the Kohat Pass attacked a party of sappers who were constructing a road. In retaliation, on 7 February of the same year, Brigadier-General Colin Campbell marched with two cavalry regiments, six British infantry companies, and three Indian infantry battalions along with four guns to teach the ‘unruly’ Afridis a lesson.50

Here, we will make a case study of the road building undertaken along the North-West Frontier during the operations of the Adam Khel Field Force in 1877–78. This expeditionary force comprised 107 British officers, 62 VCOs, and 3,790 Indian NCOs and rank and file. In addition, the Indian regiments were accompanied by 143 permanent followers. The force was supported by 828 mules, and of them 733 carried the food and kit of the soldiers. Only 95 mules were used for transporting ammunition. So, bulk of the weight carried by the beasts of burden during campaigns along the frontier comprised food. The campaign started on 3 December 1877 and ended on August 1878. By 15 January 1878, the expeditionary force had 1,139 mules. Of them, only 383 belonged to the Commissariat Department and the rest were hired from the open market. Total casualties in terms of manpower were slight: four killed and 22 wounded.51

During the expedition against the Afridis, the army constructed a network of roads not only to assist the movement of the troops but also to ring the recalcitrant tribe in case of future troubles by quickly sending the military assets along these routes. When the campaign started, the initial objective
was to seize the ridge north of Bori Valley which was to function as a base for further operations against the Adam Khel Afridi tribe. The Adam Khel tribe was divided into four clans: Gali Khel, Ashu Khel, Hasan Khel, and Jowakis. The last clan rebelled against the Raj. The field force was divided into two detachments: the Right Brigade under Colonel Doran and the Left Brigade under Colonel Buchanan. The Right Brigade was ordered to advance to the plain before Kandao after the sappers and miners had constructed a mule track. This brigade had two sapper and miner companies for constructing roads. Construction of a road was considered necessary for the mules which were loaded with food, ammunition, and soldiers’ kits and also for transporting the two horse artillery guns which were pulled by two elephants. The sappers and miners with some infantry escorting them extended the mule track from Kandao to Sarghasi Pass. On 6 December 1877, the Right Brigade attacked the Toto Khel village and the sappers and miners blew up the towers inside this hamlet. Next the sappers and miners constructed a road from Bori Valley to Pastaoni. An old Afridi track was present, but the British expanded it to a 8-feet wide road. Completion of this road resulted in the big base camp in Peshawar, being connected by road with the Bori Valley. Another road was constructed to Taruni via the Bori Chena Pass. This road which bridged several nullahs would allow British-Indian military detachments to penetrate deeper into Afridi territory in near future if required. Then another road was built which linked Pastaoni with Kotal and the Spargai village. Construction of these roads was also helped by the detailed trigonometric surveys conducted by the surveyors of the expeditionary force.52

Constructing the roads was one thing, and policing them to allow their use by friendly force was another thing. The Rawal Pindi Road from Kohat to Khushalgarh, it was noted, required policing. This road ran along the Jowaki Hills for 30 miles and in this region was susceptible to attacks by the Afridis. The road connecting Rawal Pindi with Attock and Lukha Talao was raided regularly during the nights. The tribal levies proved inadequate for protecting this road. Commissariat mules moving through this road was regularly plundered by the rebellious Afridis. Regular troops were required for effective policing. Foot marching infantry was slow to respond hence it was decided to use cavalry patrols. In the interwar period, armoured cars would take over the duty of cavalry patrol along the roads. A road with cavalry posts was built from Banda Daud Shah connecting Lachi with Gadda Khel.53

In North-East India, the British constructed a network of roads which supplemented the navigable rivers. In 1891, the murder of four British officers and a palace revolution in Manipur resulted in a pacification expedition. Next year, it was decided that a good road should be constructed for linking Manipur. The objective was to speed up troop movement in case Manipur registers another surprise for the Raj. Further, Manipur was strategically important for the Raj’s security along the eastern border. Manipur is located
north of the Lushai Hills and west of Burma. Most of the region was covered with dense jungle and mountains and received heavy rainfall. The Public Works Department was given the job of constructing the road and it enlisted the aid of the 28th Bombay Pioneers. On 21 September 1892, the Bombay Pioneers arrived at Calcutta and then proceeded by steamers along the Brahmaputra River to Niguing and from there marched to Nichuguard. The road was to start from this place. The 28th Pioneers took 18 months to construct the road and finished the task by April 1894.  

**Boats and rivers**

Along the North-West Frontier, Jhelum was navigable. The depth of this river varied from 18 inches to 22 feet. The average depth was between 5 to 7 feet. The breadth of this river on average was between 750 and 900 feet. In some places, the river was 2,100 feet wide and in some areas it was as narrow as 150 feet. The banks were 8–10 feet high. A few miles below Khushab, the banks rose to a height of 20 to 25 feet. The current varied from 2 miles to 1.5 miles per hour. The Indus and its tributaries: Jhelum, Chenab, Ravi, Beas, and Sutlej, generally flow from north to south. There were no navigable rivers running along the east to west axis. So for operations west of Indus, rivers were not that useful along the North-West Frontier. Hence, the British-Indian umbilical cords had to use roads. But rivers which were more numerous and navigable and criss-crossed the eastern part of the subcontinent played an important role in supplying military operations along the North-East Frontier.

In July 1871, the Governor-General Lord Mayo decided to launch an expedition against the Lushais. It was planned to send against them two columns: one from Chittagong and another from Cachar. The Cachar Column also called the Left Column comprised about 2,000 combatants. Though the Left Column had elephants and coolies, still the British officers decided to use the waterways. It was cheaper and quicker to move goods and men along the rivers. Not only did the coolies fall ill, but they also had to consume some of the food which they carried for the soldiers. In addition, the coolies needed protection by the soldiers in order to prevent the hostile tribesmen from attacking them and looting their loads. Half of the Peshawar Mountain Battery and one company of sappers and miners (for making roads) were sent in a government steamer from Calcutta to Chattuck on the Soorma River. The steamer also conveyed 500 personnel of the Punjab Native Infantry from Dhaka to Chattuck. The steamer disembarked all the men, the stores, and the guns to Kala Rokka, a few miles above Chattuck. Above that place, the river was not navigable for the steamer. From Kala Rokka, country boats were used to convey the men and the stores to Cachar. Soon, the steamer was
grounded due to the presence of a shoal and broke the hawsers. Physical geography limited the effectiveness of Western technology in this case.

By 1893, the military authorities had systematically incorporated the geographical knowledge about the interconnected river and land routes for future operations along the Chin-Lushai Hills. The Chin-Lushai Hills can be entered on the north from Silchar by two routes. One was sailing along the Dhalleswar River or marching along the Rengti Range Road through which bullock carriages can travel till Fort Aijal. Fort Aijal was supplied with provisions carried on boats and bullock carriages from the Cachar district. From Fort Aijal, the hill road was suitable for only coolies. Another route was to sail along the Barak River up to Tipai Mukh. The Lushai Expedition of 1871–72 actually followed this route. From Tipai Mukh, the tracks were suitable for only the coolies. A force can also enter the Chin-Lushai Hills from the north through the Manipur Valley. By boat one can sail along the Manipur River to Bankwa and then through a mule track to Fort White. In Manipur, a lot of country boats were available for hire and a large coolie force was available after the crops were harvested in November.

The British used various types of country boats to transport men and supplies for projecting power across the North-East Frontier. Major John Butler who was the Principal Assistant Agent to the Governor-General for Assam gives some details of the native boats in his memoirs. He writes about canoes and khel nao. The latter was 50-feet long and 3.5-feet wide and had a grass roof under which people could sleep. The khel nao could travel quite fast and had a range of 200 miles. The country boats compared to the steamers were more suited, commented Butler, due to the numerous eddies and whirlpools of Brahmaputra. The army hired country boats of various sizes at different monthly rates: Rs 1 Anna 4 for a small light boat, Rs 15 Anna 7 for a medium size boat and Rs 23 Anna 2 for a large boat.

The army made a conscious effort to learn lessons after analysing its past campaigns. After the operations against the Abors in 1893–94, the Assistant Political Officer at Sadiya, Mr. F.J. Needham, came up with certain observations. In this campaign, the British used mainly large boats each of which were capable of carrying 150 maunds of load. Considering the depth and winding nature of the rivers, it was decided to use smaller and lighter boats in future campaigns. Boats, each of which was capable of carrying 30–40 maunds, were considered suitable because the rapids in Dihong River were strong. In such boats, not more than 15 maunds of ration should be placed per vessel in order to prevent these crafts from getting capsized during the tortuous journey along the river. Each boat, Needham continued, should have a tarpaulin covering in order to keep the goods dry and
50 yards long ropes to help the sepoys to drag these boats over the rapids. The Miri boatmen were considered more skilled compared to the Abor boatmen. The rebellious Abors realised that the supply convoy was the Achilles’ heel of the firepower heavy imperial troops. So, they frequently attacked the boat convoys. To escort the boats a detachment of 50 sepoys was considered essential. The boats travelled during the day and in the night all of them were collected together and guarded closely by the escorting infantry as the Abors were infamous for attacking during the night.60

Conclusion

The Army in India’s logistical mechanism during the period under review could be categorised as a hybrid organisation. It was an amalgam of indigenous and foreign elements. By utilising local human and animal resources with imported ideas and management techniques, the British were able to project and sustain power along the frontiers. Road building and utilisation of elephants, bullocks, and boats were measures followed by the Mughals during their pacification campaigns in Kabul and Chittagong. However, imported elements like steamers, trigonometric surveys, etc. also played an important role in sustaining the logistical umbilical cords. The above account shows that the Army in India made a conscious effort to learn from its past campaigns. Besides lesson learning, another feature of the hybrid logistical structure was the British attempt to make a thorough study of the physical geography, hydraulic, animal, and demographic resources in order to make optimum use of such assets in the best possible manner. Hence, instead of biopower, we can use the concept of geobiopower used by the British in constructing and sustaining their imperialism in South Asia.

The above account shows that the coolies were well cared for by the Raj’s military authorities. They received monetary incentives and goods which were more than they could have acquired by working as wage labourers in the colonial civilian economy. So, the argument that the coolies were an exploited lot does not really hold water. Historians should be careful in equating all colonial schemes as instruments of exploitation of the colonised. Only during the Great War, when the Raj’s welfare mechanism collapsed under the demands of Total War and coolies had to be forcibly recruited for overseas deployment, a rebellion occurred in North-East India. But, that was yet to happen in the future. To conclude, we can say that the British-Indian hybrid logistical system was adequate for launching ‘Butcher and Bolt’ expeditions across the ‘turbulent’ frontiers. However, it broke down when faced with supplying a mass army facing industrial warfare in France and Mesopotamia during 1915–16.
Notes

1. Nichols, *Frontier* is a longue durée study of the Pathan social structure and economic fabric from the sixteenth to the late nineteenth century. Agha in her monograph *Limits of Empire*, tries to highlight the working of British sub-imperialism in the frontiers and Pathan resistance to the British expansion west of Indus River. For tactical aspects of North-West Frontier fighting see Elliott, *The Frontier* and Moreman, *Army in India*. Cederlof’s *Founding an Empire* focuses on the complex interlinkages between ecology, economy and British empire building in Assam during the first half of the nineteenth century.


6. Quoted from Davies, *North-West Frontier*, 179.

7. Quoted from Mackenzie, *North-East Frontier of Bengal*, 1. Italics mine.


10. For the debate about construction of ‘Oriental’ images about the Asian warriors by the Western militaries in the nineteenth and twentieth centuries see Porter, *Military Orientalism*.


15. Correspondence, 1881–85, by Roberts, 90.


18. Norman, Minutes, Health of the Troops, 393.


20. Military Collections, Confidential Reports, Bengal Army, 1893–94.

21. Wilson, Fourth Prince of Wales’ Own Madras Light Cavalry, p. 86.


23. Ibid., 295.


25. Military Collections, Hyderabad Contingent, Progs. No. 113, From Col. H.K. Burne, secy. to the GOI, MD, to the Resident of Hyderabad, 10 April 1876.

26. Military Collections, Hyderabad Contingent, Progs. No. 113, From Burne to the Resident at Hyderabad, 1 January 1877.

29. Quoted from Roberts, *Forty-One Years*, 311–12.
37. Notes and Minutes by Napier, Remount Horses, 27 February 1867.
38. Quoted from Notes and Minutes by Napier, Breeding Horses, 1 October 1866.
40. Supply and Transport Department Proceedings, December 1879, Progs. Nos. 34, 37, 42, 44.
42. Supply and Transport Department Proceedings, December 1879, Progs. No. 49, From Col. S. Black, secy. to the Punjab Govt. MD, to the Controller General of Supply and Transport, MD, Simla, 13 September 1879.
43. Supply and Transport Department Proceedings, December 1879, Telegram from Deputy Commissioner Bannu to secy. to Punjab Govt., MD, 10 September 1879; Copy of a Telegram from secy. to Punjab Govt., MD, to Deputy Commissioner, Bannu, 13 September 1879; From secy. to Punjab Govt., MD to Commissioner, Rawal Pindi, 13 September 1879, Copy of a Telegram from secy. Punjab Govt., MD to all Commissioners, Punjab.
44. Correspondence with the Viceroy, 1885–88, by Roberts, 81.
46. Revenue and Agricultural Department, 1878, Progs. No. 1988, From Col. W.C.R. Mylne, Commissary General, Bengal, to Col. G. Chesney, secy. to GOI, MD, 1 June 1881.
47. Revenue and Agricultural Department, Progs. No. 1162, From Col. T.B. Harrison, Controller of Military Accounts, Bengal, to Col. H.K. Burne, secy. to the GOI, MD, Calcutta, 17 October 1878; From Brig.-Gen. J.L. Nation commanding Eastern Frontier District to the Quarter Master General Simla, 18 April 1881; From Lieut.-Col. G.J. Pasley, commanding 34th Bengal Native Infantry Regiment to the Deputy Asst. Adjutant-General, Eastern Frontier District, Shillong, 14 April 1881.
48. Revenue and Agricultural Department, Progs. No. 1153, From Col. J.I. Willes, Commissary General Bengal, to Burne, secy. to the GOI, MD, Simla, 30 May 1877; Progs. No. 1161, Major Campbell’s *Kheddah* Operations in Assam from 1876 to 1878; Progs Nos. 1163–64.
49. Norman, Minutes, Disposition of the Troops in the Frontier, p. 9.
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