CHAPTER V

Modernization trends in Military Technology
Early writers were critical of Tipu's many changes and innovations. Wilks described him as a 'Minute reformer', with a 'ruling passion for innovation', and both Beaton and Kirkpatrick labelled him, capricious. C.H.Rao wrote that Tipu was capricious and fanatical, with his innovations being 'carried to the verge of insanity.

Alternatively, Tipu's apparent reforming zeal has been put forward as evidence of his modernity. B. Sheikh Ali states that. "His thorough re-organisation of the armed forces, his establishment of a board of admirality, his reform of the calendar, his introduction of new scales of weights and measures, his amazing experiments in technology exhibit his unusually great creative ability and his flair for modernisation." His interest in European artefacts and technology has been cited as an example of his restless and energetic mind which was free from Eastern apathy or Eastern conservatism.

Tipu Sultan has come down to us as an enigma. On the one hand he has been portrayed as an intolerant bigot, steeped in superstition, and on the other, as a modern and enlightened ruler. These apparent contradictions have arisen out of a lack of understanding or examination of the political environment in which he was operating.

The deterioration in the central political structure of the
Mughal empire and the erosion of its military strength created some sort of a political vacuum in India which tempted ambitious subedars and powerful regional chiefs to carve out semi-independent or independent states for themselves. They were inspired by the western thoughts of science and technology. They have fully gauged the measure of the weaknesses of the medieval structure and hence attempted to introduce some modernisation specially in the field of military technology. The most notable of them was the state of Mysore under Haider Ali (1761-82) and Tipu Sultan (1782-99). The quadrangular conflict for supremacy in the Deccan dragged Mysore in the game of adventurous politics. This state of affairs necessitated an immediate modernisation and better war technology.

The period (1782-99) in which Tipu had taken command of Mysore state, was a period of transformation from medieval military craft to modern warfare. His modern outlook and scientific bent of mind has rightly perceived the emerging superior fighting qualities of the western world. He prepared himself to meet the challenges of the changing times. He made Mysore a formidable power by dint of his genius. He introduced many changes and much exactitude in every branch of administration. He organised his army administration on European pattern. The technical terms or words of command were changed into Persian or Turkish from French. He brought about a number of reforms in
military fields. He also made technological changes in the method of warfare. He set-up ordnance factories, employed European officers to train and tutor his troops and to organise his arsenal and introduce European arts and crafts and mode of production in his Kingdom.  

He introduced modern technology of war and all the improved skill of musketry and artillery into his army. His soldiers were well equipped with highly sophisticated weapons, like swords, hand guns, Carbine, bayonet, cannons, and rockets. He led his infantry himself with much firmness and in perfect order. His cavalry were well cared, well trained and well paid and combined agility with force and grandeur? His artillery also showed great regularity and quickness in the battle field. As a leader in war, Tipu Sultan stood like a giant. A ruling prince who personally led his armies into battle was not unusual. Babur and Akber had done so, the Rajput Kings considered it an honour to be the first in the firing line. Shivaji was soldier king and his example was emulated by Baji Rao first and Mahad ji Sindhia But in Tipu's generation, the rulers of Indian principalities were not distinguished war leaders. Nana Phadnavis and Baji Rao IInd at poona, the Nizam at Hyderabad, Mohd. Ali, the carnatic nawab, the Raja of Travancore and their armies fought against Tipu but they themselves remained within the safety of their palace walls. Tipu, with the blood of Hyder Ali Khan coursing through his veins,
was his own commander-in-chief. The terror of his arm and army spread far and wide and he forwarded towards a victorious goal.

Tipu Sultan, the worthy son of his worthy father, had inherited a fairly efficient system of govt. from his father but owing to his zeal for innovation and improvement, he introduced considerable changes in 1782. He named his state Sultanat-i-Khudadad (Govt given by God). He renamed the gun as Tufung, cannon as Darakash and ban or rocket as Shiḥab (falling star). He also made a bullet proof armour (Baktar). He established one madarsa or army institution for military officers. There was a laboratory (Moammal) in the capital Seringapatam. It is important to note that weapons which were manufactured in Sultan's arsenal had the name of the place and experts. This traditions introduced by Sultan to recognise the weapons of Sarkar. Assad-ullah-Ghalib (lion of God) was written on the personal weapons of sultan.

There is no question that Tipu was an innovating monarch; it will be recalled that the first phase of his reign was characterised by his comprehensive and vigorous reorganisation of the realm. The extent and the detail of the some of the changes which he introduced are listed in the document known as the 'Revenue Regulations', which was found by the British during their Coimbatore campaign in 1792. The mid to late 1780s was a period of intense activity in this area with new roads being
built, administrative buildings erected and forts repaired and well maintained. In all these respects, Tipu was not dissimilar to other India rulers. With regard to the renaming of towns, Francis Buchanan wrote that 'like all the Mussalmans of India, (Tipu) was mighty changer of old Pagan names'. The name of his birthplace, Devanhalli, for example was changed to Yusufabad and that of Chitaldurg to Farkhyab Hisar.

It is interesting to note that Tipu does not appear to have given new names to the two most important cities in his realm, Seringapatam and Bangalore. During the year of 1787, Tipu also destroyed the old Mysore fort, 'broke down (the) ancient treasury gate of Seringapatam; divided his realm into eighteen divisions,' and was much engaged in this work of improvement. Persian- "The language of diplomats and the polite", was adopted as the language of the court and govt, in a move reminiscent of Akber, and the titles of various military officials were also changed. If Tipu wished to be acknowledged as the legitimate ruler of Mysore then, it was necessary that he should conform to the expectations of his people, and his own view of himself, by adopting the role of 'creator, definer, moderniser and protector of culture becoming, in effect, the maker of time'. In fact, he clearly enunciated this in his memoirs, in a passage relating to the year 1785;
I framed various- 'hukm-namehs, (ordinances) and numerous other things, all in the very best manner, and comprehending institutes civil and fiscal, general as well as particular rules for war and peace, and regulations for the govt. of the people at large. They moreover treated of the (Proper) mode of dealing with the noble and and the ignoble (or the high and low), of taking (or levying) tribute from the subject and of affording protection to the people, and of duly guarding the kingdom on all sides, In fine, they comprised numerous new inventions and fresh contrivances without measure; and I ordained that the same should be preserved in our elevated family, and (be transmitted through) our eminent race, to the end that our sons of exalted degree, and our grandsons of illustrious descent, generation after generation, may be thereby enabled to administer the various affairs of state, and the important concerns of sovereignty with due order and regularity.22

The many change, improvements and his new programmes, all contributed to Tipu’s redefinition of his new world which was inspired by the western sciences.23 Looked at in this light, it is clear that his innovations and reforms were not the result of caprice or the actions of a modern thinker.

Tipu had an open and inquisitive mind and, according to the late professor H.H. Dodwell, Professor of Indian history at the oriental college of oriental and African studies, London
University, "He was the first Indian ruler to apply western methods to his administration."²⁴

Munro, writing to his father on 17 Jan 1790, observed: "The Mysore Government Possesses the regularity, and system communicated to it by the genius of Haider, and in which all pretensions derived from high birth discouraged, justice severely and impartially administered, a numerous and well disciplined army kept up, and almost every department of trust and consequence conferred on men raised from obscurity, gives the Govt. a vigour hitherto unexampled in India,"²⁵ similarly, Moor, on the basis of personal experience, wrote: "when a person travelling through a strange country finds it well cultivated, populous with industrious inhabitants, cities newly founded, commerce extending, town increasing and everything flourishing so as to indicate happiness, he will naturally conclude it to be under a form of Govt. Congenial to the minds of the people. This is the picture of Tippoo's country and this is our conclusion respecting its Govt."²⁶

Tipu Sultan established various types of factories for military purposes at Seringapatam, Chitaldurg, Bengalore, Bednure and Mysore and gave them a code name as Taramandal.²⁷ Which employed European and Indian work men to manufacture weapons of war with other things. Seringapatam, the capital city was a famous centre for the large scale production of fire arms where iron was melted. The place was equally famous for the
ornamentation of swords, hilts and gun barrels. It had a work shop where the machines were operated with the help of wind-mills to bore holes in the barrels of hand guns and cannons, similarly the fort at Chitaldurg and Nagar had work shops where cannons muskets, daggers and knives were manufactured. Muddur fortress had two workshops for making and finishing muskets and cannons. It had 17 arsenals for housing fire-arms to serve the royal army. A French technician had prepared a water power machine for boring cannons.28

The ammunition factory at Bednure produced 20,000 muskets and guns every year. The gun powder manufactured in Mysore was of a better quality than that manufactured by the British.29 Tipu's field guns, which were mostly cast in Mysore with the help of French artisans were larger than those of the English and had much longer range.30

Tipu enforced strict military discipline in the army. He maintained law and order in the camp. The orders were issued that anyone who attempted to desert or to runaway during war was to be shot and if sipahdar did not follow the rule and ran away for his life and did not bother about guns and cannons in his charge then after proof he was hanged before the rich and poor. If he acted according to rules, he was to be awarded with jagirs camels and horses. If a soldier did not perform his duty, he was punished with a hundred strokes of sticks (chob)and
somewhere 500 strokes of sticks (chob). Monneran writing to Cossigny, also spoke of strict discipline in Tipu's army.

In his court, the splendour of the kingly magnificence and majesty were well sustained by Tipu. He had profited to a considerable extent in all the sciences and was fond of introducing novelty and inventions in all matters (in all departments). In courage and hardihood, the Sultan took precedence to all his contemporaries and in the management of a horse and the use of spear and sword in the world, he had no equal as will appear after an attentive persual of his work.

Everyone of the Sultan's Amirs, and his brave officers received his favours with increase of rank and pay. Verses, "He increased their rank and dignity". "His soldiers were delighted with his liberty"- they were all well pleased and satisfied:- and from the weight of his favours and benefits, they were all bent down to the earth." It was also in expedition that the most distinguished of his officers were honoured with the title of Mir Miran and the Kutchehries (Brigades, or Divisions) were named or numbered after the Ismail Hussena, the names of the most high, which were 99 in number: as for instance, the Ilahi Kutchehry was named the Rehman Kutchehri, having made this new regulations and improvements, he showed great ability, returned to his capital and appointed three to four thousand sipahees to each Katchehri and abolished the name of jysh (contained several Kushoons or Brigades) calling them all uskar.
Inspite of the fact that Tipu did not introduce any radical change in the existing pattern of administration, there is enough evidence to show that he was always aware of the need to harness improved methods of technology to existing institutions. A French artist had prepared an engine driven by water for boring cannons, but so little sensible was the Sultan of its value that he ordered the water wheels to be removed, and employed bullocks to work the machinery.\textsuperscript{34} There is no reason to accept Buchanan's sneer that Tipu was 'little sensible' of the value of the use of water power, probably the waterwheel installed did not work efficiently enough. The use of bullocks should have needed an additional gearing mechanism if the original apparatus had vertical waterwheels (as usual in Europe) and not horizontal (as in Asia: but these would not have given sufficient power). To construct such gearing, which would have to be of iron to transmit so much power, must surely have required a creditable level of craftsmanship.

Prof. Dodwell, similarly criticizes Mohd. Ali of Egypt for having operated his machines through oxen instead of having used the waters of the Nile for this purpose. Rodinson believes that emulation of the European model was a common characteristic of all muslim societies on the path to capitalist development.\textsuperscript{35}

Care should also be taken to bear in mind the
measures that Tipu took for the introduction of advanced technology in his kingdom. On one occasion 80 smiths were drawn from their fields at the work of cultivations to serve in the musket manufactory in the royal foundries.

It would be more proper if instead of searching for unique attributes in the Mysore state system of the late 18th century, we were to regard it as a successful instance of the personalised monarchy that had prevailed for long in India. This, at least, was how contemporary British officials like C live and Munro, viewed the Mysore state, representatives from the Nizam's courts to Seringapatam, in 1788, when the Tipu was at the Zenith of his power, also did not leave the impression of a traditional state. The country was fertile and treasury full of jewels, regularity was maintained both in the collection of revenue and the payment of the officials. The number of infantry was greater than that of cavalry, thus contemporary accounts both Indian and Europeans, suggest that if Mysore under Haider Ali and Tipu Sultan could be regarded as exceptional, it was more for the efficiency with which it was run than for any administrative innovation.

By looking closely at the expression of both his power and his sovereignty. It has been seen that Tipu was drawing upon cultural forms which had deep roots in the south and on the sub-continent. Generally as an enlightened and tolerant
ruler with an unusually modern approach and he was conforming to a concept of modernity in the context of which his actions are 'rational' and understandable and therefore not enigmatic. Tipu was, without doubt, one of the more able and energetic rulers of the 18th century, but it must be remembered that he was so within the constraints of what it meant to be south Indian ruler of the time.
References

1. Wilks, M. Historical sketches of the south of India in an attempt to trace the history of Mysore, vol. 4, Mysore, 1930, PP. 762-63.


9. Ibid., P. 350.


11. Op cit. P. 331, See Kirkpatrick, Kirmani and Beatson but it is strange that this title is nowhere found stamped except on the bindings of books in Sultan's library Tariq-i-Khudadadi calls Tipu's government Ahmadi Sarkar, while Sultan-i-Tawarikh refers to it as Sarkar-i-Asad Ilahi, Kirkpatrick has also sometimes employed this last title.


30. Ibid., P. 350.


34. Buchanan, Francis. Journey from Madras through the Countries of Mysore, Canara,


37. Ibid, P. 54.