



Furthering Technology-Mysorean Rockets V/S Congreve Rockets

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Abstract

This paper examines the technology of rockets as followed by Hyder Ali & Tipusultan which was taken to Europe as the invention of Congreve rockets. The rocket was developed by the Royal Arsenal following the experiences of the Second, Third and Fourth Mysore Wars. The wars fought between the British East India Company and the Kingdom of Mysore in India made use of rockets as a weapon. After the wars, several Mysore rockets were sent to England, and from 1801, William Congreve set on a research and development programme at the Arsenal's laboratory. The Royal Arsenal's first demonstration of solid fuel rockets was in 1805. The rockets were used effectively during the Napoleonic Wars and the War of 1812.

Key Words: Armory, Congreve rockets, East India company, Hyder ali, Tipu sultan

Introduction

Tipu Sultan wrote a military manual called *Fathul Mujahidin* in which 200 rocket men were assigned to each Mysorean "cushoon" (brigade). Mysore had 16 to 24 cushoons of infantry. Mysorean Rockets were the first iron-cased rockets that were successfully deployed for military use. Hyder Ali, the 18th century ruler of Mysore, and his son and successor, Tipu Sultan used them effectively against the British East India Company. Their conflicts with the company exposed the British to this technology, which was then used to advance European rocketry with the development of the Congreve Rocket (Narasimha Roddam 1985) The Congreve Rocket was a British military weapon designed and developed

by Sir William Congreve in 1804. Sir William Congreve, 2nd Baronet (20 May 1772 – 16 May 1828) was an inventor and pioneer of rocket artillery distinguished for his development and deployment of rockets popularly called as Congreve rockets.

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Initial Attempts

Work to produce a British weapon was unsuccessful at first until the project was taken up by Colonel Congreve at the Royal Laboratory Woolwich. By 1805 the British had introduced the first reasonably effective military rocket to European warfare. These early weapons were designed as incendiaries made up of layers of paper at first but later of sheet iron. In 1806, 200 rockets were fired from 18 boats in 30 minutes at Boulogne. In 1807 a massive 40,000 rocket attack did tremendous damage to Copenhagen mainly from fire (some sources suggest that far fewer rockets were used at Copenhagen - only slightly more than at Boulogne). The rockets soon developed in sophistication with the fire rockets being used for sieges. A hollow iron head was developed which could be loaded with shell or rounds and the larger types with canister (musket balls with a charge behind them) Those used by the field artillery came in 4 sizes 6, 9, 12 and 18lbs. Although other nations did develop rockets after the British model only the British used them in action, with 2 rocket troops being shown as part of the Royal Horse Artillery (due to their speed) in 1813. The military use of rockets was in its infancy but the Congreve rockets, although of somewhat limited effectiveness in a field battle, paved the way for future developments which were to have a tremendous impact on modern warfare.

The Impact of Indian Expertise

There was an increasing attempt by Europeans to imitate eastern pyrotechnics while applying economic and scientific principles to reform pyrotechnic production.

Congreve viewed his rockets as 'rational', operated via an experimental system that dispensed with the need for any skilled labour, save Congreve's own inventive capacities. But when rockets were put to the test, naval officers, artisans and other inventors all disputed this claim, and this article shows how their various skills proved indispensable in making the rocket work. The refined innovation of Congreve rockets highlighted the Indian skills behind European invention. As the concept of Imperial expansion ushered, exploring new technologies was necessary & it was a contingency of imperial enterprise. New places became colonies & conquests superseded colonial pursuits. The rocket innovation was just handy as it was necessary to prove political eminence. British imperialism was more contingent and collaborative during this phase. It was facing recurrent obstacles over its expansionist policy, The reliance on existing local military skills and traditions to build new institutions of fiscal, governmental, technical and scientific control in colonial settings was a farce dream as this was not possible without new weaponry.

Geographical divisions between Europe and the East were challenged. As Indian subcontinent played host to British and French enmities, the Indian knowledge of warfare was taken a guide to Europeans' efforts in holding the subcontinent



powerfully. Thus Congreve's innovations were identified with an elongated tradition of British efforts to restructure fireworks as useful and profitable commodities & assist colonial warfare. The timing of Congreve's imitation of Indian rocket technology emerged in parallel with European attitudes to eastern pyrotechnics. The European imperial war concepts sought justification for commercial and imperial campaigns into India and China through superior war technology.

A series of reforms were undertaken at Woolwich Arsenal in London in the second half of the eighteenth century, led by Congreve's father. Reformers sought to reduce labour costs and bring gunpowder and artillery production and management under the exclusive control of the Royal Artillery. The imitation of Indian rocket technology closely was taken away by Congreve & he was hailed for his invention. The European mind never accepted to the excellence of Indian warfare technology. Congreve's rocket programme followed exactly this logic, designed as a 'system' under the inventor's control, which would discipline or remove the need for local trained labour and supposedly owed nothing to Indians' skills. His rockets developed during an important era in the history of pyrotechnics, which saw diverse attempts to make traditional fireworks more 'philosophical'.

From the Renaissance to the mid eighteenth century, courts across Europe staged grand displays of 'artificial fireworks' as potent demonstrations of

princely power. Typically set off around elaborate allegorical decorations, court displays included spinning wheels, fiery candles, star-filled bombs, and rockets, the latter used originally in warfare but primarily in festive fireworks from about 1600. Performed to music, fireworks typically ended in a great 'girandola' or burst of several thousand rockets at once. In the eighteenth century, critics, particularly in Britain, increasingly attacked court fireworks as expensive and wasteful, while others offered alternative uses for fireworks. Simultaneously, Europeans entangled imperial projects. Imperial ventures returned novel forms of pyrotechnics to Europe. An important precedent for Congreve rockets was the 'Bengal Fire' or 'Blue Light' made with sulphur and antimony by Indian troops and used to illuminate enemies at night. French and British troops dismissed these flares on first encountering them in India, but by the late 1750s 'Bengal lights' were advertised in Europe, first as festive pyrotechnics, then as military.

Europeans often considered Chinese and Indian fireworks superior to their own, but attitudes had changed by the early nineteenth century. Opinions fitted broader oriental attitudes, claiming that eastern culture was stagnant in comparison with European progress. The change reflected transformations in European empires and economies. Efforts by the British and French to control territory and trade in the East coincided with metropolitan attempts to imitate and substitute imports of eastern luxury goods, until Europeans identified their

