



Morse code: The unsung hero of Indian communication

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Abstract

Morse code, a series of dots and dashes that once dominated global telecommunications, has found a permanent home in India's subcontinent. This humble yet revolutionary communication system has been the backbone of India's communication network, enabling the rapid exchange of information and community connections across vast distances. As the world moves towards the digital age, Morse code serves as a testament to the ingenuity and resilience of the Indian people, reminding them of the power of simplicity and innovation to shape a nation's course. During the colonial era, Morse code played a pivotal role in India's communication, enabling the rapid transmission of information across vast distances and facilitating the coordination and organization of the Indian independence movement. Despite being often overshadowed by more modern communication methods, Morse code's vital contributions to India's struggle for freedom cannot be overstated, serving as a conduit for the exchange of intelligence, mobilization of resources, and rallying of a unified national spirit that ultimately led to the country's independence.

Keywords: Morse code, communication, India, telecommunications, independence

Introduction

A method of transmitting data or messages between sites is called telegraphy. With a telegraph code, various word combinations are represented by different letter or character combinations. After the word characters are transformed into signal elements based on the code at the transmitting end, the current elements are delivered to the lines. To obtain the original signal parts of the code that represent the various characters in the message, these current elements are utilized at the receiving end. Transmitters are used in manual telegraphy to create signal currents that correspond to various letters. Perforation of paper tape is used to create signal currents in high-speed telegraphy, where messages are sent. The characters can be printed on paper, tape, or a page or they can be represented by sound using the received currents.

The Introduction of Morse Code in India

The introduction of Morse code in India in the 1850s marked a significant milestone in the country's telecommunication history ^[1]. The Indian Telegraph Department adopted Morse code as its primary means of communication, revolutionizing long-distance communication. Morse code's simplicity and efficiency made it an ideal choice for the department, which established standardized Morse code systems across India ^[2]. Morse code training schools were established to equip operators with the necessary skills ^[3]. It significantly improved communication speed, enabling rapid transmission of messages. The Indian Railways also benefited from improved communication, timely train scheduling, and enhanced safety. Morse code's impact on communication speed was particularly significant in emergency situations ^[4]. The growth of the telegraph network had economic benefits, enabling businesses to

communicate efficiently, facilitate trade and commerce, and the government to collect revenue and administer the country more effectively. Morse code's legacy in India is significant, as it pioneered telecommunication, connected distant regions, and facilitated national integration ^[5].

The advantages of Morse code over other communication methods

The straightforward dot-dash structure of Morse code made it simple to learn and retain, which cut down on operators' training time. It also used less bandwidth, which made it appropriate for low-bandwidth communication channels, and it allowed high transmission speeds, which are essential for emergency communications. The Indian Telegraph Department connected remote areas and promoted national cohesion by extending telegraph networks to large cities. It has also had to deal with issues including slow gearbox speed, operator tiredness, and technological problems that need ongoing upkeep and repair.

The impact of Morse code on the growth of the telegraph network in India

To provide operators with the skills they need to increase communication efficiency and enable quick message delivery, Morse code training institutes were developed. A major user of Morse code is the Indian Railways ^[6]. When communication was needed quickly, Morse code proved very helpful. Efficiency in trade, business, and government tax collection were made possible by the expansion of the telegraph network, which was made possible by Morse code. This had notable economic advantages ^[7]. The use of Morse code to connect remote areas, promote national integration, and promote cross-cultural contact had a significant influence on Indian society ^[8].

The Uses of Morse Code in Daily Life

Over a century has passed since Samuel Morse and Alfred Vail created the Morse Code, which is still an essential tool for communication today ^[9]. In order to facilitate transmission and reception, Morse Code was first created for telegraph communication. It is made up of dots and dashes that represent alphabet letters and digits, with gaps in between phrases. Professional operators may achieve transmission speeds of up to 40 words per minute (wpm), which is the unit of measurement for speed ^[10]. A popular method of communication, Morse Code is dependable, easy to use, and requires little equipment. Communication across linguistic barriers is ensured by its universal understanding. Morse Code is used extensively in the aviation and maritime industries, especially when there is an emergency. Especially in times of disaster. Morse Code is also used by amateur radio operators to communicate with other enthusiasts across the world. With the well-recognized SOS distress signal (•••••) warning responders to life-threatening circumstances, Morse Code plays a crucial role in emergency services ^[11]. Although learning Morse code takes commitment and repetition, novices may access resources through online lessons, applications, and tools. Because of its security features, Morse Code is difficult to intercept, guaranteeing private communication ^[12].

Morse Code's Role in Emergency and Military Communications

Over a century has passed since the invention of a text encoding method that uses clicks, light flashes, or on-off tones. In urgent situations where confidentiality, simplicity, and dependability are crucial, Morse code is still indispensable despite current technology. In emergency circumstances, it facilitates communication between rescue teams, planes, and vessels, acting as a lifeline for desperate persons and rescue personnel ^[13]. In situations where, contemporary infrastructure is damaged or unavailable, Morse code allows communication during natural catastrophes. Ships in trouble may still communicate important information using Morse code during maritime emergencies ^[14]. For safe and dependable transmission, military communication also uses Morse code. Special operations, emergency messages, and tactical communication are all made easier by it. It makes emergency messages, special operations, and tactical communication easier. Because of its universality, simplicity, security, and dependability, Morse code may be used in resource-constrained environments ^[15]. Even though Morse code has been completely replaced by newer technology, there are still some specialized uses for it in amateur radio, aviation, and marine ^[16].

The Use of Morse Code in the Indian Railway System

One of the biggest and busiest railway networks in the world, the Indian Railway System, depends on effective communication to run trains safely and on schedule ^[17]. This system still relies heavily on Morse code, which was initially used in the late 19th century and is still crucial in isolated locations without access to contemporary communication methods. Morse code is used for emergency communication, remote area communication, train operations, railway signaling, simplicity, security, and universality ^[18]. Given the developments in contemporary communication technology, the Indian Railways must

upgrade its communication systems, train its workforce, and maintain its Morse code equipment, among other issues. In response to these obstacles, the railways have started modernization projects that involve updating Morse code equipment, introducing digital communication technologies such as GSM-R, and regularly educating staff ^[19].

Case studies demonstrate that Northeast Frontier Railway employs Morse code for emergency communication during natural catastrophes, and Konkan Railway Corporation has effectively adopted Morse code-based communication systems for distant region communication. The railways have launched modernization initiatives to tackle these issues, including the installation of digital communication systems, training initiatives, and the modernization of Morse code equipment.

The Legacy of Morse Code in India

The Decline of Morse code with the Advent of New Technologies

Morse code which transformed long-distance communication demises when radio communication was developed in the early 20th century. Faster transmission speeds, greater dependability, and enhanced security were made possible by the emergence of digital communication technologies like satellite communication, fiber optics, and cellular networks ^[20]. The downfall of Morse code can be attributed mostly to four factors: cost, speed, reliability, and security. Digital technology made Morse code training and equipment less affordable by providing faster transmission rates, less errors and transmission losses, and lower communication costs ^[21]. In 1999, the International Civil Aviation Organisation (ICAO) replaced Morse code with digital communication systems ^[22], and the International Maritime Organisation (IMO) phased out Morse code regulations ^[23]. A decrease in telegraphy services caused numerous businesses to close. Even with its decline, emergency services, historical preservation, and amateur radio still use Morse code. In addition to being utilized in emergencies like natural disasters, enthusiasts still communicate using Morse code ^[24]. Many collections and museums display the historical significance of Morse code, which has been maintained ^[25].

The Preservation of Morse Code Skills and Its Continued Use in Niche Applications

A change in the development of new communication technology, knowledge of Morse code is still useful in certain specialized fields. A number of groups and people, including the Amateur Radio Community, Morse Code Academies, internet forums, museums, and collectors, have taken the initiative to preserve their knowledge of Morse code. Amateur radio, emergency services, maritime communication, aviation, and assistive technology devices for people with impairments are among the industries that employ Morse code ^[26]. Maintaining one's ability to read and write in Morse code has several advantages, such as enhanced mental capacity, special communication abilities, historical relevance, community development, and friendship-building. However, the long-term viability of Morse code abilities may be threatened by dwindling interest among younger generations, technological improvements, and legal changes ^[27]. In order to overcome these obstacles, it is critical to advance community involvement, modernise Morse code, and support education

and training. Morse code certification and training are promoted by groups such as the American Radio Relay League (ARRL) and other amateur radio organisations. While online forums and museums display Morse code history and equipment, Morse Code Academies provide courses and tools for learning Morse code ^[28].

The cultural and historical significance of Morse code in India

The history of India has been greatly influenced by the use of Morse code, an on-off tone or dots and dash text encoding technique, especially in the colonial and post-independence periods ^[29]. Morse code was first employed for telegraph communication in the middle of the 19th century, during the British colonial era, which made business and administrative transactions easier. For official correspondence, the Indian Telegraph Department—which was founded in 1854—used Morse code extensively ^[30]. Throughout India's independence movement, rebels used Morse code to coordinate their actions and send covert signals. Following India's 1947 declaration of independence, Morse code remained essential for a number of industries, including aviation, maritime, and railway communication ^[31]. Morse code has been deeply ingrained in culture, serving as a symbol of modernity, inspiration for literature and art, and pride in the country. India's Morse code legacy has been preserved, as evidenced by the National Museum and the Indian Railway Museum, which display Morse code apparatus and artifacts. Amateur radio operators and Morse code enthusiasts continue to promote and preserve Morse code abilities, and the National Archives of India preserves documents and information connected to Morse code ^[32]. The impact of Morse code in India is complex; it helped spur the country's communication revolution, opened the door for further technological developments, and continues to stand as a testament to India's technological and cultural achievements ^[33].

Conclusion

Morse code, a simple yet ingenious system of dots and dashes, has played a pivotal role in shaping India's communication infrastructure. It enabled efficient and reliable transmission of information across vast distances, connecting people and ideas in ways never before imagined. Morse code also contributed to the growth of commerce and trade, allowing businesses to communicate across vast distances in a timely manner. It also helped connect remote communities to the rest of the country, integrating them into the national fabric. Though often overlooked, this unsung communication revolution played a vital role in shaping modern India, laying the foundations for its social, economic, and political development. The legacy of Morse code remains an integral part of India's heritage, serving specialized applications and emergency situations where its resilience and reliability are unparalleled.

Reference

- O'Shaughnessy WB, The Electric Telegraph in British India. Order of the Court of Directors, 1853, 12.
- Ghosh SC, Munshiram. Dalhousie in India 1848–56. Maanoharalal Publishers, 1975, 156–201.
- Saint John NB, The Telegraph Journal. Canada, 1923:12(3):23.
- Ghosh SC, Munshiram. Dalhousie in India 1848–56. Maanoharalal Publishers, 1975, 78.
- The Cambridge History of India. 1932:6:367.
- Saint John NB, The Telegraph Journal. Canada, 1923:12(3):23.
- Ghosh SC, Munshiram. Dalhousie in India 1848–56. Maanoharalal Publishers, 1975:210:1848–56.
- Bhandari, 2005, 210.
- A Brief History of Morse Code. American Radio Relay League (Arrl), 2022.
- Morse Code Chart. International Morse Code Committee, 2022.
- Sos Distress Signal. International Telecommunication Union (Itu), 2022.
- Emergency Response and Morse Code. National Emergency Number Association (Nena), 2022.
- Morse Code in Emergency Communication. Emergency Response Magazine, 2019.
- Maritime Emergencies and Morse Code. Maritime Law Association, 2022.
- Security Features of Morse Code. Crypto Museum, 2022.
- The Enduring Legacy of Morse Code. The Telegraph, 2022.
- Indian Railways: A History. Indian Railways, 2022.
- Telegraph Communication in Indian Railways. Indian Railways, 2022.
- Equipment Upgrades for Morse Code. Indian Railways, 2022.
- Digital Communication Systems Replace Morse Code. Ieee Communications Magazine, 2020.
- Cost Comparison: Morse Code Vs. Digital Communication. Telecommunications Journal, 2020.
- Icao Replaces Morse Code with Digital Communication Systems. International Civil Aviation Organization, 1999.
- Imo Phases Out Morse Code Requirements. International Maritime Organization, 1999.
- Emergency Services and Morse Code. National Disaster Management Authority, 2020.
- Historical Preservation of Morse Code. Morse Code Museum, 2020.
- The Enduring Legacy of Morse Code. Telegraphy Journal, 2020.
- Historical Significance of Morse Code. History of Communication Journal, 2018.
- Declining Interest in Morse Code. Telegraphy Journal, 2020.
- History of Morse Code in India. Indian Telegraph Department, 2022.
- Indian Telegraph Department and Morse Code. National Archives of India, 2020.
- Indian National Congress and Morse Code. Congress Sandesh, 2020.
- National Archives of India And Morse Code. National Archives of India, 2020.
- Cultural Icon: Morse Code in India. India Today, 2022.