

I -The memoir of Fleeming Jenkin

In 1859, Sir William Thomson (later Lord Kelvin), a prominent figure in British engineering science, recounts his first meeting with Fleeming Jenkin, a young engineer of notable talent. Jenkin had been recommended by Lewis Gordon, then involved in the pioneering field of cable making and laying, to observe Thomson's work on submarine cable testing. This marked the beginning of a lifelong acquaintance and collaboration between Thomson and Jenkin, grounded in their mutual dedication to electrical engineering, particularly in the realm of submarine telegraphy.

Jenkin's capacity for rigorous understanding and his refusal to overlook any detail were traits that Thomson admired from the outset. Their initial discussions, while focused on the technological aspects of submarine cables, expanded into a broader dialogue on physics and engineering. These conversations laid the foundation for a correspondence that would endure throughout Jenkin's life, predominantly concerning the physical properties of submarine cables and the optimization of signal transmission.

A key achievement of Jenkin, highlighted by Thomson, was his application of absolute measurement systems to the testing of cable materials—a practice initiated by German scientists like Gauss and Weber. Jenkin's contributions were significant in standardizing measurements in telegraphy, an advancement that would greatly influence not just the field itself but also the broader scientific community's approach to electrical measurements.

Jenkin's work encompassed the meticulous investigation into the resistance and insulating properties of the cables, effectively introducing the practice of quantitative analysis in electrical engineering. His findings on the specific resistance of gutta-percha, a material then commonly used for cable insulation, were among the first to

be recognized and recorded in the 'Encyclopaedia Britannica'.

Thomson further notes Jenkin's contributions in a paper published in the 'Transactions of the Royal Society', describing experimental research on the transmission of electrical signals through submarine cables. Regrettably, a promised second part of this paper, which was to delve deeper into the electrostatic properties of cable insulation, was never published. Yet, Jenkin's preliminary findings on the specific inductive capacity of dielectric materials stand as pioneering efforts that presaged the later, widespread acceptance of absolute measurement methods in the scientific study of telegraphy and electrical engineering. Through these endeavors, Jenkin significantly shaped the early development of electrical measurement standards and practices, a legacy underscored by the eventual global consensus on these techniques at the Electrical Congress in Paris in the 1880s.