

# CHAPTER III THE BUILDING OF THE BELL ROCK

Chapter III of "Records of a Family of Engineers" details the challenging endeavors surrounding the construction of the Bell Rock Lighthouse, positioned in the treacherous waters where the Tay and the Forth rivers meet the North Sea. The Bell Rock, notorious for its hazardous navigation conditions, lay submerged under the sea at high tide, revealing its menacing form only during low water, making it a perilous obstacle for mariners. Early efforts to mark this danger with beacons were futile until Robert Stevenson envisioned the ambitious project of erecting a stone tower on this remote reef, an idea initially met with skepticism.

This chapter emphasizes the historical significance of the Bell Rock, detailing early attempts to caution mariners through a legend of a bell installed by an abbot of Arbroath, only to be removed by pirates, leading to a tale of divine retribution. Despite these warnings, the rock continued to claim vessels, highlighting the dire need for a permanent solution.

Robert Stevenson, the chapter's central figure, is portrayed as a visionary engineer who, despite his limited experience, was undeterred by the immense challenges. His pioneering spirit was supported by influential figures of the era, such as John Clerk of Eldin, who recognized the unique nature of the endeavor that required innovative approaches rather than reliance on past experiences. Stevenson's initial proposals faced obstacles, including legislative hurdles and skepticism from the engineering community. However, through perseverance and the eventual support of John Rennie as an advising engineer (albeit with limited involvement in the design and execution phases), Stevenson managed to advance his project.

The chapter also delves into the technical and logistical preparations for the lighthouse's construction, from the selection of a suitable vessel, the PHAROS, to serve as a floating lightship, to the meticulous planning and modeling of the tower's design. Stevenson's adoption and improvement of Smeaton's architectural techniques are highlighted, showcasing his contribution to the evolution of lighthouse engineering.

As the chapter concludes, the narrative sets the stage for the commencement of construction work, with the PHAROS moored by the Bell Rock, symbolizing the onset of a daunting but historic achievement in maritime safety. The tale is not just a recounting of engineering feats but a testament to human resolve, ingenuity, and the relentless pursuit of safeguarding lives against the unforgiving force of the sea.