

## **Brunel In Print: his biographical and bibliographical legacy**

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### **Abstract**

**In the 163 years since the death of Isambard Kingdom Brunel, hundreds of books, journal, magazine and newspaper articles have been written highlighting his life and work. Even before his passing in 1859, thousands of words were written about Brunel and his work in local, regional and national newspapers and other sources such as books and pamphlets. The presentation will include a survey of the various biographical and historical works featuring Brunel from 1859 to the present and will also examine how the legacy of I.K. Brunel has been perpetuated in print and how his reputation and image has changed since the nineteenth century. What has been written, and is there anything further to say about his life and career?**

Writing in 2006, on the bicentenary of Isambard Kingdom Brunel's birth, Christine Macleod noted that to some the death of the 'railway triumvirate' of Brunel, Robert Stephenson and Joseph Locke within a year of each other in 1859 and 1860 was seen as an era-defining event and the end of what some contemporary observers at least called the 'age of the engineer'. While the preceding years had certainly seen the rise of civil and mechanical engineers as celebrities in the eyes of the public, the passing of these three giants of their profession was perhaps not quite the end and as Macleod concludes, the age of the heroic engineer probably still had another half century to run<sup>1</sup>.

The death of these three engineers was commemorated widely, cementing the celebrity they had begun to enjoy in the 1830's and 1840's,; this remembrance took the form of statues and other memorials, the production of paintings and prints, and the production of biographies for each man. While the press reported widely on the exploits

of Brunel, Stephenson and Locke and other civil, mechanical and railway engineers during their lifetimes, in the 162 years since the death of those three engineers in particular, thousands of books, journal, magazine and newspaper articles have been written highlighting their work, many related to the life and work of Brunel; this paper will discuss how his legacy has been perpetuated in print and how his reputation and image has changed since the nineteenth century.

Before reviewing how biographers and historians have represented Isambard Kingdom Brunel in the years following his death in 1859, it is useful to look briefly at how his work was reported on during his career. The well-documented nature of Brunel's sometimes flamboyant temperament and character made him a natural performer in public meetings and parliamentary committees, providing ample ammunition for newspaper reporters and editors of the day. As many historians and biographers have recorded, Brunel's projects were seldom modest or workaday, but instead were often bold innovative projects incorporating grand designs. His propensity for new, potentially costly and often untried technology thus made him the target of sometimes vitriolic criticism, especially when it cost shareholders money and as a result his work was often represented in contemporary sources either with gushing praise or savage condemnation.

As a young man, Isambard experienced a little of this press attention when he took his first steps in the engineering profession working with his father on the Thames Tunnel; there was much scepticism and criticism of the project by the press, especially following the two inundations by the river and the almost continual financial difficulties encountered by the Thames Tunnel Company which finally led to excavations being

stopped in 1829<sup>2</sup>. By the time work restarted on what the Times newspaper had begun to call 'The Great Bore' in 1835, Brunel was now completely absorbed in his work as engineer to the Great Western Railway, described by him as 'the finest work in England' and although he would continue to assist his father where he could, his other engineering commitments would reduce his direct involvement in the project.

The scale and impact of Brunel's designs for the 115-mile Great Western line from Bristol to London, and his later railway projects often provoked significantly different opinions depending on either their success or the level of profit or loss they generated for those who had invested in them. His early decision to employ the 7ft broad gauge rather than the 4ft 8 ½" track gauge already widely used on other railways designed and built largely by the Stephensons was a controversial and ultimately expensive innovation that was both debated heavily before and after the railway opened in 1841, and again in 1845 when the whole question of a nationally standard gauge was contested in a Parliamentary commission.

In 1839 Brunel had come close to losing his job as engineer to the GWR as the Liverpool Party, a group of shareholders largely from the North West of England, who were opposed to the Broad Gauge, and also highly critical of the poor performance of the railway when it first opened, mounted a vociferous campaign against him. The group were dubbed 'the Liverpool Leviathans, who were determined opponents of Mr Brunel's costly crotchets'<sup>3</sup> by the Railway Times, a Victorian journal that reported on new lines, parliamentary bills and railway stocks and bonds. The Railway Times was often highly critical of the engineer throughout his life, noting in 1839 that it was 'not highly enamoured of Mr Brunel's costly plans'<sup>4</sup>. It also printed letters from discontented

shareholders such as the one who wrote that ‘the engineer in all his magnificent schemes has had an eye on his own reputation rather than to the pecuniary interests of the Proprietors’<sup>5</sup>.

In addition to comment in both national and local newspapers who regularly reported on his work, Brunel and his projects became the subject of pamphleteers who produced numerous publications, most largely critical of his work, particularly the Broad Gauge. Ottley<sup>6</sup> lists a number of these polemics including ‘*Railway Eccentrics: inconsistencies of men of genius exemplified in the practice and precepts of Isambard Kingdom Brunel Esq*’. and ‘*The Broad Gauge: the bane of the Great Western Railway*’. The latter was a 57-page pamphlet published in 1846 that ran to no less than seven editions.<sup>7</sup>

More substantial monographs on the development of railways began to appear as the fledgling industry grew; accounts of Brunel’s railway work began appearing in books such as Francis Whishaw’s *The Railways of Great Britain and Ireland*, published in 1842 and John Francis’s *A History of the English Railway*, first published in 1851. At the same time Railway Guides, encompassing both descriptions of new railway lines and the towns, cities and countryside they crossed, and accounts of their history began appearing. E.T. Clark’s *Great Western Railway Guide Book*, published in 1838, well before the final completion of the Bristol to London route was appropriately dedicated to ‘I. K. Brunel, F.R.S engineer to the Great Western Railway’<sup>8</sup> and described the development of the railway as well as its route.

Brunel’s death in September 1859 provided writers with a further opportunity to highlight both positive and negative perspectives on his life and work. Describing his

career as 'unfortunate' the obituary in *The Engineer* argued that 'notwithstanding the number and imposing character of his works, many of them, often indeed through no fault of his own, have proved unsuccessful'<sup>9</sup> while the *Athenaeum* described him as 'A great engineer, but of a genius showy in conception rather than sedate and cautious in execution' arguing that with his last great work the *SS Great Eastern* 'the engineer won renown and the shareholders lost their money'<sup>10</sup>. The Times obituary was more respectful concentrating on his engineering achievements, playing down his misjudgements and mourning the loss of someone at a relatively young age.<sup>11</sup>

Following the death of Brunel, Robert Stephenson and Joseph Locke, all were then the subject of biographers, with varying success. The Victorian writer and reformer Samuel Smiles, better known for his 'Self Help' books, buoyed by the success of his biography *The Life of George Stephenson* published in 1857 was anxious to expand his portfolio to include the younger Stephenson but despite the positive reaction to the book, he was rebuffed by the executors of his estate and they instead commissioned the popular novelist J.C Jeaffreson to write a biography that eventually appeared in 1864.

Undaunted, Smiles subsequently included both Stephenson's in the '*Lives of the Engineers*', a three-volume work published between 1861 and 1862<sup>12</sup>. Locke was commemorated with a biography by Joseph Devey that also appeared in 1862<sup>13</sup>.

Isambard Kingdom Brunel was a notable absentee from the list of iconic figures that graced the pages of '*Lives of the Engineers*'; Smiles later wrote that he would have liked to have added Brunel to 'his collection' but following his death in 1859, the family were anxious to maintain control and protect his legacy. The Brunel Institute collection contains a letter from Smiles to Brunel's brother-in-law Sir Benjamin Hawes written in

February 1862 in which he hints at his interest in writing about Brunel<sup>14</sup>. Disappointingly, the reply by Hawes has not survived, but it seems likely that it was a negative one; the family were clearly unwilling to provide access to Brunel's personal papers as it was likely that they were already contemplating their own biography and they were also becoming concerned that others such as Brereton, one of Brunel's former assistants, were claiming more credit for responsibilities than they deserved<sup>15</sup>. It is also possible that Smiles might have found Brunel's flamboyant style and relatively privileged upbringing hard to reconcile with the 'sober uprightness and staunch self-improvement' that characterised much of his work<sup>16</sup>. Smiles had to be content with a shorter biographical sketch of both Isambard and his father Marc published in the Quarterly Review, accompanying a review of Beamish's biography of the elder Brunel<sup>17</sup>.

In 1870 Longmans, Green and Company published *'The Life of Isambard Kingdom Brunel Engineer'*, written by his eldest son Isambard. The younger Isambard was not an engineer, but his brother Henry who was a civil engineer made a significant contribution, and L.T.C Rolt noted in his introduction to the 1971 reprint of the volume<sup>18</sup> that in the course of his research he had discovered many notes written by Henry to assist Isambard Junior. Written only eleven years after Brunel's death, it seems likely that the family were able to assemble important material and information from professional colleagues and friends such as Christopher Claxton, although the fact that many of the key figures were still alive may also have inhibited the family from making any critical commentary on aspects of their father's life and career or that of his contemporaries.

There is little doubt that the younger Isambard was not a natural writer, and the reserved style, while typical of the period, makes the book a laboured read; the fact that the subject of the book is referred to as 'Mr Brunel' throughout also exemplifies the lack of personal insight the book could have included. As might also be expected, the family also downplayed the less successful aspects of Brunel's career in the book such as the construction and launch of the SS *Great Eastern* and the Atmospheric Railway debacle, recording that the abandonment of the latter was recommended by Brunel with a 'simple and self-sacrificing disregard of every consideration except that which was always paramount with him, the interests of those by whom he was employed'.<sup>19</sup> As a number of Brunel historians have however mentioned, the book remains an extremely useful factual source, containing as it does some material now not available in public sources.

The final abolition of Brunel's Broad Gauge in May 1892 was reported widely in the national and regional press, providing further opportunity for comment and it also inspired some wry and satirical poetry. One such work titled '*In Loving and Regretful Memory of the Broad Gauge*'<sup>20</sup> accused the GWR board of directors as 'brutal and bungling' for contemplating the end of the 7ft gauge and pictured Brunel standing sadly with his old friend and locomotive superintendent Daniel Gooch scanning his 'iron way'. The satirical magazine *Punch* also marked the event with a cartoon titled '*The Burial of the Broad Gauge*' showing railway navvies standing in front of a grave representing Brunel's great experiment.<sup>21</sup>

In the same year the diaries of Sir Daniel Gooch were published<sup>22</sup>, three years after his death in 1889. Many historians had already assumed that the diaries were a heavily

abridged and edited selection and that the original material from which it had been compiled had not survived but in 1969 eight volumes of original Gooch diaries were offered for sale at Sotheby's. This discovery revealed that the 1892 book included only about a third of the original material Gooch had assembled, and the combination of unsympathetic editing and the removal of more personal material by the family had blunted the impact of the original book.

In 1972 an expanded and annotated new edition of the diaries was published<sup>23</sup>; the editor Roger Burdett-Wilson revealed that Sir Daniel Gooch had begun assembling material in 1867, only 30 years after his first association with Brunel, and also that the engineer had kept a personal journal since he was a young man. From this we might assume that his account was likely to have been largely accurate even allowing for lapses in memory. Despite his obvious affection and loyalty for Brunel, Gooch is nevertheless honest about his shortcomings too, arguing 'one feature of Mr Brunel's character...was, he fancied no one could do anything but himself'.<sup>24</sup> Diary entries also reveal the differences between the cultured metropolitan Brunel and the down to earth Northumbrian engineer, particularly in the early years of their association. Recalling an invitation to a party at the Horsley's London home in January 1838, Gooch recorded that 'I believe I did succeed in getting as far as the staircase, and left it disgusted with London parties, making a note in my memorandum book never to go to another'<sup>25</sup>.

Brunel's legacy featured heavily in George Sekon's '*History of the Great Western Railway*', published in 1895; Sekon, the first editor of the *Railway Magazine*<sup>26</sup> was an apologist for the broad gauge, arguing that if Brunel had lived for twenty years longer it would 'still be flourishing and increasing in our midst, and all deep-thinking people



would have long since come to the conclusion that it was unmistakably a better gauge for a railway than the 4ft 8 ½ inches one'<sup>27</sup>. He also noted that 'like many other clever people, he (Brunel) lived before the public were prepared for his great works'<sup>28</sup>. In the post broad gauge period however, many may have taken a less charitable view of the great engineer's work. The Great Western Railway had been forced to begin a process of reconstruction and modernisation costing millions of pounds that was required to enable it to compete with other railways; while Brunel's innovative new railway had put it in the forefront of railway development in the 1840's and 1850's, by the 1880's, it seemed antiquated, and slow to adapt to increased traffic and new technology. Its broad gauge trains while comfortable were relatively slow with some notable exceptions, and it was labelled as the 'Great Way Round' and 'A Slumbering Giant' by critics<sup>29</sup>.

In the maritime world, by the 1890's Brunel's achievements were also largely seen as a footnote in shipping history, as significant advances in steamship technology made his pioneering ships seem antiquated. The press had reported extensively on the success of the *SS Great Eastern* as a cable layer in the 1860's but naturally there was more emphasis on the technological advances on the telegraph itself than Brunel's original vision of the ship. One unexpected and less well-known literary connection to Brunel came in 1871 when the novelist Jules Verne wrote '*The Floating City*' a short romance set on the *SS Great Eastern*, inspired by a voyage he had taken on the ship in 1867<sup>30</sup>. Verne described her as 'a masterpiece of naval architecture' and 'a section detached from English soil, which having crossed the sea united itself with the American continent'<sup>31</sup>. Brunel is not mentioned by name, but the book provides an atmospheric portrait of an Atlantic voyage on the great ship. By the time Brunel's other great ship the

*SS Great Britain* had been wrecked off the Falkland Islands in 1886, the *SS Great Eastern* was languishing in Liverpool as an amusement attraction; five years later she had been cut up and both vessels and Brunel's first ship the *SS Great Western*, scrapped over thirty years earlier, were a world away from the new Cunard ships being built for transoceanic travel.

Perhaps as a reflection of the rapid progress being made in civil, mechanical and railway engineering in the late Victorian period, there appears to have been little attention paid to the work of Isambard or Marc Brunel in literature of the period; a chapter of J.F Laysom's '*Great Engineers*' published in 1898 does however compare father and son with their rivals the Stephenson's, describing the latter as 'skilful and ingenious, practical and shrewd' and the Brunels, as 'original and daring, idealistic and ambitious'<sup>32</sup>. Laysom also reflected that Marc and Isambard were men for whom 'an engineering triumph had a fascination that tended to obscure any ruinous results that might be thought to be coincident with a splendid victory over nature and her forces'.

Despite the considerable long term financial burden Brunel had left the Great Western Railway with in recovering from the broad gauge, the company continued to honour his legacy, even though by the outbreak of the Great War, the railway had changed greatly. It did however become something of a guardian and repository for what it then described as Brunel 'relics' assembling a collection of material at Paddington. This was boosted in October 1909 when the Brunel family presented a large collection of letter books and other material to the GWR; the company magazine reported that 'appreciating the gift at its true historic worth, Mr Inglis (the GWR General Manager) at once decided that it should form the nucleus of a Brunel Collection'<sup>33</sup>. The archive

material was subsequently bound into 63 volumes and is now part of the collection housed at the National Archives at Kew. This material and the University of Bristol collection purchased from the family and now in the care of the Brunel Institute at the SS Great Britain constitute the bulk of the surviving Brunel archive. The Great Western Railway, particularly under its publicity conscious General Manager Sir Felix Pole made copious use of this Brunel material, featuring it in many of its own publications in the years between the two world wars, most notably in *Brunel & After*<sup>34</sup>, one of its series aimed at 'Boys of All Ages'.

In 1935 the Great Western celebrated its centenary; the choice of that year, 100 years since the passing of its original Act of Parliament is perhaps a strange one, considering that similar centenary events for both the Stockton & Darlington Railway (1925) and the Liverpool & Manchester Railway (1930) had instead marked the opening of those respective lines. It may well have been that the company did not wish to lose ground, in public relations at least, to the London & North Eastern and London, Midland & Scottish Railways who had made great strides during this period. In any event, Isambard Kingdom Brunel featured heavily in a special supplement issued with the Times newspaper in August 1935 which was part-history, part self-promotion. The financial pressures that remained on the railway company as a result of the Great Depression meant that the GWR Centenary celebrations were more muted than those of their rivals and there was no great cavalcade or exhibition to mark the event as had been the case in 1925 and 1930.

Three years after the GWR centenary, the first major book on the Brunel's since the 1870 biography appeared. '*The Brunels: Father and Sons*' by Lady Celia Noble, great

granddaughter and granddaughter of Marc and Isambard was, she wrote in her foreword, a book that in contrast to the earlier biography one that showed 'human contours' and an attempt to set the two Brunels 'on their feet as living characters'. She also noted, in language and tone typical of the time, that some readers might be 'disappointed that the creations of the Brunels should only be seen through the medium of a woman's non-technical mind'<sup>35</sup>. The book nevertheless adds much to the Brunel written legacy containing as it does, much family reminiscence and background missing from many biographies of both Marc and Isambard.

Further charming insights can be gained from a modest 14-page printed extract of a lecture given by Noble's daughter Cynthia Gladwyn in 1970 to a joint meeting of the Institute of Civil Engineers and the Société de Ingenieurs Civil de France. Amongst various observations about the Brunel family Gladwyn muses on some of what she thought were myths about Isambard's appearance particularly reports of his diminutive height, which she dismissed as 'amusing journalism but not history'<sup>36</sup>.

Concluding her lecture, Cynthia Gladwyn mused that 'the young dreamer of 1827' might have been surprised that his name still aroused enough admiration to inspire a major biography by L.T.C Rolt, which had been written just over a decade earlier, but was still fresh in the memory. In the years immediately after the Second World War, it could be probably argued that Britain was too busy rebuilding its shattered infrastructure and creating new very different public institutions such as the National Health Service to ponder too deeply on the works of Victorian engineers. It might also be argued that in an age of atomic energy, the motor car and other new technological breakthroughs, the smoky nineteenth century held less attraction for adult readers,

although in the 1950's a number of books on Brunel aimed squarely at children (and presumably at that time boys) were published. Laurence Meynell's *Builder & Dreamer*, and *'The Master Engineers'* by Emmeline Garnett are good examples of the genre and all are well-researched but naturally limited in scope.

The road to the publication of Rolt's Brunel book was not entirely straightforward. Writing in his autobiography, *'Landscape with Figures'* L.T.C Rolt highlights both his wonder at gaining access to the Brunel archive still held by the family, and also the fact that he had wrongly assumed that Brunel's name was a household word<sup>37</sup>. When asked by someone what book he was working on, he replied, Brunel. 'Brunel? Who's he?' was the response; the 120,000-word biography took Rolt around 18 months to complete, and finally appeared in 1957<sup>38</sup>. Reviewing the book for the Daily Telegraph in February of that year, John Betjeman praised Rolt for 'making the technical problems of engineering interesting and comprehensible to the layman', his only criticism being that there were too few illustrations<sup>39</sup>.

The prolific Rolt went on to write biographical studies of most of the other major figures of the industrial and railway revolutions including Trevithick, Telford, the Stephensons and Watt, but his Brunel biography remains his most well-known book. The book is not without its shortcomings. Adrian Vaughan in his 1991 biography set out to dismantle what he described as 'uncritical hero-worship' and outlined a number of key areas where Rolt presented what he thought was a distorted or false view of the engineer<sup>40</sup>. In particular Vaughan highlights Brunel's relationship with John Scott Russell during the construction of the SS Great Eastern (supported by the research by George Emmerson<sup>41</sup>), and the failure of the Atmospheric Railway scheme on the South Devon

Railway. Vaughan also presents a more realistic and arguably rounded portrait of the negative as well as positive sides of Brunel's personality.

Clearly some of these shortcomings can certainly be attributed to historical changes in style and approach to the subject by authors and biographers over the last 50 or so years; it is worth noting that the 'heroic' biographical approach was not confined merely to engineers but also to politicians, military figures and others, and in more recent times all but the most superficial accounts of Brunel's life and work have attempted to provide a more balanced view. In addition, research has and will always provide new insights into historical narratives. In his own authoritative biography of Brunel<sup>42</sup>, Angus Buchanan reiterated his view that Rolt's book was 'the outstanding work of engineering biography of the twentieth century' and the fact that the book has rarely if ever been out of print since its publication is a testament to its quality and longevity.

The interest in industrial archaeology, Victorian technology and railway architecture and heritage that developed in the 1960's and 1970's, sparked by urban regeneration, modernisation and the loss of structures such as the Euston Arch and threats to stations like St Pancras provided a catalyst for an increase in books on these subjects. While there were no new scholarly biographical studies of Brunel published during this period, the 1974 Institution of Civil Engineers '*The Works of Isambard Kingdom Brunel*'<sup>43</sup> provided a comprehensive summary of his work from an engineering perspective with contributions from distinguished engineers and historians of the period.

There was also no shortage of books on more specific aspects of his career, a trend that continues to the present day; steamships, bridges and stations, specific lines and railway company histories have been well documented, and in a number of cases,

covered in multiple editions. The return of the SS Great Britain to Bristol in 1970 prompted the production of a number of new and detailed histories of the ship, most notably the '*Iron Ship*' by Ewan Corlett, the man behind the original campaign to save the vessel. This book, first published in 1975 remains the standard work on Brunel's masterpiece and is still in print in a fifth edition<sup>44</sup>. Brunel's first steamship, the SS *Great Western* has been less well documented than the SS Great Eastern, although Dr Helen Doe's 'First Atlantic Liner' provided a welcome new perspective on the 1838 ship, whose history has previously been little recorded<sup>45</sup>. The complex development, construction and working life of the SS *Great Eastern* although covered in a number of academic and popular books is probably due a twenty-first century reassessment however.

Many titles have appeared not just under the of larger national publishing houses, but other local and regional publishers. More concise and illustrated biographies have also appeared; Richard Tames Shire Book on Brunel first appeared in 1972 and still remains in print in 2022. The bicentenary of I.K Brunel's birth in 2006 saw a further minor explosion of new books; most notable was the anniversary volume produced by the Brunel 200 Partnership '*Brunel: In Love with the Impossible*' a beautifully illustrated book of essays celebrating Brunel's life, work and legacy<sup>46</sup>.

In his own biography of Brunel, Professor Angus Buchanan reflects on what further insights might be delivered from the extant archival sources at Kew, Bristol and other archives and museums. As he notes, the surviving diaries, letterbooks and other correspondence have been extensively studied by historians over many years, and it seems unlikely that any new or undiscovered stories will emerge from these sources.

Both Buchanan's book and Steven Brindle's 2005 biography along with the past Brunel canon can provide more than enough evidence of the 'many sided genius who built the world'<sup>47</sup> although the attraction of the subject, and the possibility that there are still new stories and narratives to discover will ensure that the stream of books that continue to be written is unlikely to dry up any time soon.



## Notes

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- <sup>1</sup> McLeod, C. 'The Nineteenth Century Engineer as Cultural Hero' in: Kelly, A & Kelly M (Ed) *'Brunel: In Love with the Impossible'* Bristol: BCDP, 2006 pp 61-79
- <sup>2</sup> See: Kentley, E. (Ed) *The Brunel's Tunnel* London: Brunel Museum, 2006
- <sup>3</sup> *The Railway Times* 13 February 1839
- <sup>4</sup> *The Railway Times* 16 December 1839
- <sup>5</sup> Ibid
- <sup>6</sup> Ottley, G (Compiler) *A Bibliography of British Railway History* London: Science Museum (2<sup>nd</sup> Edition) 1983
- <sup>7</sup> Ibid: Ottley refs: 6045 and 6062
- <sup>8</sup> Clark, E.T. *Great Western Railway Guide Book* London: Smith & Ebbs, 1838
- <sup>9</sup> *The Engineer*, September 1859
- <sup>10</sup> *The Athenaeum* September 24 1859 p299
- <sup>11</sup> Reproduced in Sanders, A. (Ed) *Great Victorian Lives: An Era in Obituaries*. London: The Times, 2007. pp31-33
- <sup>12</sup> A revised 5-volume edition of *Lives of the Engineers* was published in 1874
- <sup>13</sup> Devey, J. *The Life of Joseph Locke, engineer* London: R. Bentley, 1862
- <sup>14</sup> Brunel Institute BRSGB 2021.0002
- <sup>15</sup> See: Chrimes, M & Thomas, R 'Railway Building' in: Bailey, M.R. (Ed) *Robert Stephenson: The Eminent Engineer* Aldershot: Ashgate, 2003 p299
- <sup>16</sup> Shepherd, C.J (Ed) Smiles, S. *Lives of the Engineers* London: Folio Society 2006 xv
- <sup>17</sup> *The Quarterly Review* Volume 112 July 1862 pp 1-39
- <sup>18</sup> Brunel, I. *The Life of Isambard Kingdom Brunel Engineer* Newton Abbot: David & Charles 1971
- <sup>19</sup> Ibid p165
- <sup>20</sup> Courtesy of the collection at STEAM: Museum of the Great Western Railway, Swindon
- <sup>21</sup> *Punch* 4 June 1892
- <sup>22</sup> *The Diaries of Sir Daniel Gooch Baronet* London: Kegan Paul, 1892
- <sup>23</sup> Burdett-Wilson, R (Ed) *Sir Daniel Gooch: Memoirs & Diary* Newton Abbot: David & Charles, 1972
- <sup>24</sup> Ibid p31
- <sup>25</sup> Ibid p32
- <sup>26</sup> George Sekon was the pseudonym of George August Nokes (1867-1848) See also: [https://www.gracesguide.co.uk/George\\_Augustus\\_Nokes](https://www.gracesguide.co.uk/George_Augustus_Nokes)
- <sup>27</sup> Sekon, G *A History of the Great Western Railway* London: Digby Long & Co, 1895 p93
- <sup>28</sup> Ibid p92
- <sup>29</sup> See; Bryan, T. *The Golden Age of the Great Western Railway 1892-1914* London: PSL Books, 1991
- <sup>30</sup> Verne, J. *A Floating City and The Blockade Runners* London: Routledge, (1894 Edition)

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<sup>31</sup> Ibid p3

<sup>32</sup> Laysom, J.F *Great Engineers* London: Walter Scott Ltd, 1898 pp296-297

<sup>33</sup> *Great Western Railway Magazine* April 1910 p 1

<sup>34</sup> Williams, A *Brunel & After* London: Great Western Railway 1925

<sup>35</sup> Noble, C *The Brunels: Father and Son* London: Cobden-Sanderson, 1938

<sup>36</sup> Gladwyn, C *The Isambard Brunels* A paper read at the 182<sup>nd</sup> Ordinary Meeting of the Société des Ingenieurs Civils de France (British Section) 28 October 1970

<sup>37</sup> Rolt, L.T.C *Landscape with Figures* Stroud: Sutton Publishing, 1994 p142

<sup>38</sup> Rolt, L.T.C *Isambard Kingdom Brunel* London: Longman, 1957

<sup>39</sup> Betjeman, J Leonardo of Victorian Era *Daily Telegraph* 8 February 1957

<sup>40</sup> Vaughan, A *Isambard Kingdom Brunel: Knight-Errant* London: John Murray, 1991

<sup>41</sup> See: Emmerson, G. *The Great Eastern* Newton Abbot: David & Charles, 1987

<sup>42</sup> Buchanan, A *Brunel* London: Hambledon Press, 1992

<sup>43</sup> Pugsley, A. (Ed) *The Works of Isambard Kingdom Brunel* London: Institute of Civil Engineers, 1974

<sup>44</sup> Corlett, E *The Iron Ship* Bristol: SS Great Britain Trust, 2012

<sup>45</sup> Doe, H *The First Atlantic Liner: Brunel's Great Western Steamship* Stroud: Amberley Publishing, 2017

<sup>46</sup> Kelly, A & Kelly, M *Brunel: In Love with the Impossible* Bristol: BCDP, 2006

<sup>47</sup> Brindle, S *Brunel: The Man Who Built the World* London: Weldenfield & Nicholson, 2005