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Editorial

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The marking of anniversaries of notable civil engineering achievements seems to occur with increasing frequency as we have more leisure time to reflect on the activities of our forebears. Such anniversaries are often marked by published papers detailing the career of the engineer and/or the works for which he (and, increasingly, she) was responsible in an effort to capture the moment in the greater scheme of things. The problem with a successful journal, and *Engineering History and Heritage* is thankfully no exception, is that, by the time the commemorative paper sees the light of day in print, the occasion has tended to fade from our memory banks.

However, the anniversary of the opening of what was then the world's longest sub-aqueous road tunnel, the Queensway Tunnel under the River Mersey connecting Liverpool with Birkenhead, is rooted firmly in the memory banks of this writer as I was born on the very day that it was opened by King George V on the 18 July 1934. In addition, I lived for many years in Brodie Avenue in Liverpool, named for the City Engineer John Brodie, who, with Basil Mott of Mott, Hay & Anderson, supervised the construction of the tunnel by the main contractor, Edmund Nuttall. Neil Scales, in his briefing, reminds us of what was described at the time as 'an engineering feat without parallel' (Scales, 2010). One wonders how many in the crowd of Liverpudlians invited recently to walk through the tunnel appreciated the enormous contribution of civil engineers and construction workers to the transport infrastructure of the city, or if for most it was simply an unusual day out. As the main tunnel is around 3.2 km in length, it was certainly good exercise. Mention is also made of the later twin-bore Kingsway Tunnel that was driven using the Mangla Mole, then the largest tunnel-boring machine in the world.

In the north-eastern USA, the development of earlier river navigations into stillwater canals generally coincided with the completion of the extensive system of inland navigations in Britain and Ireland. In his paper, Dr Kapsch has elected to write about the canals of Maryland and Virginia as 'capturing the essence of the American canal experience' (Kapsch, 2010). His paper is both refreshing and instructive, conveying as it does a vivid picture of the golden age of American canals, which represented the beginning of civil engineering in that country. A useful table shows the extent of the canals in the USA in 1835 that, by 1860, had begun to be overtaken by the railroads. The earliest navigations were navigable waterways with short canalised sections bypassing major river obstructions, many of these navigations being later developed into broad stillwater canals.

The Severn estuary, separating south Wales from south-west England, presents a formidable natural barrier to road and rail travel. A rail bridge (now demolished) was opened in 1879 and a rail tunnel opened in 1886. The Severn road bridge was completed in 1966 and a second bridge in 1996. In his paper, Edmund Bradley considers the past engineering experiences of crossing the estuary, identifies the challenges that were encountered and, most importantly, what lessons were learnt (Bradley, 2010). He identifies the issues that may be relevant to future projects in the area, such as a projected Severn barrage. Bradley quite rightly advocates the provision of visitor centres to help ensure that future generations can benefit from the knowledge and experience gained through the delivery of major engineering projects.

The reproduction of illustrations in the journal in black and white does not do justice to the work of Constable, Turner, and others as portrayed in David Stacey's analysis of the influence of the industrial revolution and engineering infrastructure on the landscape as seen through the eyes of the artist (Stacey, 2010). However, the good news for all those customers of the ICE Virtual Library is that the figures are in colour in the online version of the journal. Stacey's paper comments on a selection of the works of artists who were inspired by industrial infrastructure. Such artists have left us a permanent record of a number of engineering structures, some of which are no longer extant.

Many readers will, no doubt, have heard of Monash University, its main campus in Victoria, Australia being founded in 1958 and named after John (later General Sir John) Monash, who in the 1920s was broadly accepted at the time as the greatest living Australian (Serle, 1986). As Monash's fame stems largely from his distinguished military career, his contribution to civil engineering has been less appreciated. Alan Holgate, in his excellent and comprehensive paper, traces Monash's involvement in the introduction and promotion of reinforced concrete (specifically using the patented Monier system of reinforcement) in Victoria and eastern South Australia in the early years of the twentieth century (Holgate, 2010).

Of Thomas Brassey, the contributor to the *Oxford Dictionary of National Biography* wrote 'His greatest achievement was to raise the status of the civil engineering contractor to the eminence already attained in the mid-nineteenth century by the engineer' (Brooke, 2004). By 1847, Brassey had built about one-third of the railways in Britain and by time of his death in 1870 had built one in every twenty miles of railway in the world. The problem

faced by Brassey's biographers has been the dearth of surviving original papers due to their systematic disposal in the nineteenth century. A study of the letters and papers of one of his agents, Charles Jones, acquired for the ICE archive, has enabled David Brooke to shed some light on Brassey's railway building contracts in Italy in the 1860s (Brooke, 2010).

Anyone who has read *Pompeii*, the superb novel of the experiences of a Roman aqueduct engineer set in the city immediately before and during its destruction by the eruption of nearby *Vesuvius* in AD 79, cannot have failed to relate its many intertwining themes to the art and practice of civil engineering. Priyan Dias undertakes an engineering reading of the novel by the renowned thriller writer, Robert Harris, examining, by judicious extracts from his book, references to the education and training of engineers, and leadership, management and other skills required by members of the civil engineering profession (Dias, 2010). Little has changed in the intervening centuries.

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