

JOSEPH TOMLINSON was born in London on the 11th of November, 1823, and was educated at a private school. In 1836 his family removed to Darlington, his father having been appointed passenger superintendent of the Stockton and Darlington Railway. With a strong predilection for mechanics, there is no doubt that this change decided young Tomlinson's future career. Speaking more than fifty years afterwards he stated that his first knowledge of the locomotive engine was obtained in 1837, when Mr. Timothy Hackworth, then locomotive superintendent of the Stockton and Darlington Railway, consented to allow him the run of the company's shops at Shildon. The two years he spent there imbued him, as he often declared, with a love for the "live engine," to which he always remained faithful. In 1839 he went for three years to the works of the Manchester and Leeds Railway at Miles Platting.

In 1846 Mr. Tomlinson was appointed foreman engineer at the Nine Elms works of the London and South Western Railway, at first under Mr. J. V. Gooch and subsequently under the late Mr. J. H. Beattie.¹ In that post he had for six years charge of the locomotives and of the working of the whole of the London district. He would often refer with amusement in after life to his efforts to explain the mechanism of the locomotive to the young Prince of Wales and Prince Alfred, when travelling from Windsor to Waterloo to visit the great Exhibition of 1851. He frequently acted as driver of the special train which conveyed the royal party.

In 1852 Mr. Tomlinson entered the drawing office of the London and North Western Railway Company at Crewe, under the late Mr. Francis Trevithick. There he also worked under the late Mr. Alexander Allan, who, being appointed in the following year Locomotive Superintendent of the Scottish Central Railway, now part of the Caledonian system, took him as chief assistant. Mr. Tomlinson, however, did not remain long in Scotland. In September, 1854, he became assistant locomotive superintendent of the Midland Railway, under the late Mr. Kirtley. During the three years he held that post he took an active part in adapting the locomotives to the use of coal as fuel, instead of coke. He also classified them in accordance with their respective duties and districts and assisted in improving the rolling-stock generally.

Mr. Tomlinson's position in the railway world was established when in January, 1858, he obtained the appointment of Locomotive Superintendent of the Taff Vale Company. A heavy demand was

¹ Minutes of Proceedings Inst. C.E., vol. xxxiii. p. 204.

at once made upon his resources. A strike of colliers in the Rhondda Valley, whence coking coal had been obtained, stopped the supply of coke, which owing to its good quality and low price had hitherto been used almost exclusively as fuel on the Taff Vale line. Previous trials of the use of Welsh steam coal had resulted in failure, owing to the rapidity with which the fire-bars were burnt out, due, it was supposed, to the clinker formed upon them. Mr. Tomlinson at once instituted a series of experiments, the results of which he communicated in a Paper to the Institution of Mechanical Engineers.¹ The burning out of the bars he found to be preventable by covering them with a layer of small pieces of fire-brick, and so successful was this remedy that the Company was from that time rendered independent of supplies from the Rhondda collieries. In 1863 he represented the South Wales Steam Collieries Association at Devonport, where experiments were carried out with the object of proving the inefficiency of the mixture of north-country coal with Welsh anthracite in use by the Royal Navy.² Mr. Tomlinson reported against the mixture, the use of which was then discontinued by the Admiralty.

His connection with the Taff Vale Railway Company ceased in 1869, when, owing to some difference with the Board, he sent in his resignation. Mr. Tomlinson then started in business at Cardiff as a consulting engineer and for the next three years was occupied with work in connection with shipping interests and with marine and land engines.

In October, 1872, Mr. Tomlinson returned to the railway world on the invitation of the directors of the Metropolitan Company who offered him the post of Resident Engineer and Locomotive Superintendent. The affairs of this Company were at that time in an unsatisfactory condition, its locomotive stock being in a very neglected state. The works at Chapel Street, Edgware Road—now used as running-sheds—were inadequate, and Mr. Tomlinson was instructed to select a site for new works which would not only be suitable for the then requirements of the line but allow ample room for future extension. He chose Neasden, and designed and carried out the present locomotive and carriage-works, which were opened in 1883. He also constructed extensions of the line from Moorgate Street to Aldgate, and from Swiss Cottage to Harrow. As Chairman of the Research Committee on Friction, appointed by the Institution of Mechanical Engineers, he carried out in 1883 and

¹ Proceedings Inst. Mech. Engs., 1858.

² Library Inst. C.E.

subsequent years a series of valuable experiments at the old works in Chapel Street.

Mr. Tomlinson retired from the service of the Metropolitan Railway Company in April, 1885, and started in practice in London as a consulting engineer. For the National Telephone Company he designed and superintended the erection of the network of telephone wires over the metropolis. Meanwhile the affairs of his old line, the Taff Vale railway, had fallen into such a condition that in 1890 an investigation into the management and working became necessary. Mr. Tomlinson and Mr. Samuel Swarbrick were asked to conduct the inquiry. In the result great changes were effected in the management of the line, Mr. Tomlinson being requested in the following year to take a seat on the board of directors. Unfortunately, however, his health was affected by exposure during this investigation, which was mainly carried out in the severe weather of the winter of 1890-91. Two years later internal complication arose and he became seriously ill. He gradually lost strength and passed away at his residence in West Hampstead on the 22nd of April, 1894. He owed his success in life not only to his ability as an engineer, but to the energy and perseverance of his character as a man. He possessed considerable powers of organization and every work he took in hand was thoroughly and efficiently carried out.

Mr. Tomlinson was elected an Associate of the Institution on the 7th of February, 1871, and was transferred to the class of Member on the 17th of February, 1874. He was also a Member of the Institution of Mechanical Engineers, of which he served the office of President in the years 1890 and 1891. His inaugural address, delivered on the 1st of May, 1890, contained an interesting account of the development of locomotion on railways.

JOHN FORBES CLOSE, eldest son of the late Rev. J. F. Close, Rector of Morne, co. Down, was born at Morne Rectory on the 27th of February, 1857, and was educated at Cheltenham College. Having decided to follow the profession of engineering, he was articled in May, 1876, to Messrs. Easton and Anderson of Erith, for three years. From January to October, 1881, he carried out some electric lighting experiments for Mr. Edward Easton, and in the following December he was appointed Assistant Engineer to the British Electric Light Company. During the five years of his