



# The Engineer's new coat

**S**uppose your boss announced to you that black is white. Would you agree if that was the price of keeping your job? Or suppose it was your employee who made this bold statement. Would you humour him if you knew he was vital to the company's success? There is a 150-year-old mysterious case of 'yellow is green' that still divides opinion around the world as to how it came about and how the engineer concerned got away with it.

The man at the centre of the controversy is William Stroudley (1833-1889), one of Britain's foremost steam locomotive engineers. He designed some of the most famous and longest-lived locomotives, some of which are still running on heritage railways. His beginnings were relatively humble, as one of three sons of William senior, a machinist in a paper mill at Sandford-on-Thames, near Oxford. His first employment was with his father at the mill but, in 1853, he was given the opportunity to train as a locomotive engineer with the Great Western Railway and later with the Great Northern Railway.

**David Baker** ponders whether the eminent locomotive engineer William Stroudley was colour deficient

Stroudley was clearly talented and, in 1861, landed his first big appointment as manager of the Edinburgh and Glasgow Railway's Cowlairs Works. In 1865 he moved to Inverness as locomotive superintendent of the Highland Railway, becoming their chief mechanical engineer the following year, a post he held for four years in all. One of the changes to the locomotive stock that he introduced in his time at Inverness was the one that was to cause all the controversy. It was a new livery, one of his own devising, to be called 'Improved Engine Green'.

The problem was that Improved Engine Green (IEG) wasn't green. It has been compared with gamboge (a dark mustard yellow pigment), or a golden yellow ochre. As much argument continues as to the precise nature and description of the colour and whether modern reproductions exactly match the original, as surrounds the question of why Stroudley so named his new colour in

the first place. The obvious answer to the latter conundrum is that Stroudley was colour deficient. This may be so, but there appears to be no other anecdotal evidence of him being involved in colour-related disputes; neither have any of his medical records been unearthed that might shed some light on the matter. Did Stroudley, one wonders, ever try the Holmgren Wool colour test, when it came into use in 1876 after a Swedish railway crash?

Other theories have been advanced for Stroudley's naming of IEG, with the assumption that his colour vision was normal. One is that, to get the board's approval for the change of livery, he described it as 'an improvement on (the existing) Engine Green'. Proof of this might be found in board meeting minutes. However, the National Archives of Scotland (NAS) hold Highland Railway minutes of meetings of shareholders, directors and committees for the period 1865-1870, but no references to IEG can be found therein. The

NAS also has minutes of meetings of the board of directors and committees of the Edinburgh and Glasgow Railway encompassing the time Stroudley was at their Cowlairs Works, ie for 1860-1865; again there is no inkling of Stroudley's possible nascent thoughts on livery colours.

In an article entitled, Could Stroudley tell Yellow from Green (Evans, *Model Engineer*, July 15 1964, pp521-3), the author muses (assuming Stroudley to be colour-deficient): 'But it is reasonable to suppose that one of his assistants would have pointed out the true colour; from what we know of him, Stroudley was not an unapproachable man by any means.' His biographers, though, tend to contradict this reading of Stroudley's character, being generally of the opinion that he was somewhat of the typical Victorian autocrat. More probable was that no one dared to contradict the boss out of fear for his job.

Stroudley's influence was to become more widely felt when he moved to the other end of Britain to become locomotive supervisor of the London, Brighton and South Coast Railway (LBSCR). He soon introduced his IEG livery here too. According to his biographer H J Campbell Cornwall, in *William Stroudley, Craftsman of Steam* (1968), the Highland connection led to an alternative name for the colour, of 'Scotch Green'. But there is yet another theory for IEG which is that because, on Stroudley's arrival at LBSCR, passenger locomotives were a dark Brunswick green, and before that had been a dark bottle green, the name IEG was

intentionally sardonic: Stroudley was just fed up with endless shades of green. He did persevere with green, however, for his goods locomotives. The dark olive green, or 'Goods Green', was apparently produced by adding black to IEG. It was reputedly based on the colour of an ivy leaf given to Stroudley by his gardener.

To see why Stroudley's influence and the argument over IEG has become so widespread, one needs to look at what he achieved in his time with LBSCR. Being a great advocate of standardisation, he first introduced a new class of locomotives, eventually comprising 36 engines, which successfully managed LBSCR's express traffic for many years.

A prototype of this B1 class, No 214 Gladstone (pictured), was completed in 1882 and, by 1927, when it was withdrawn for preservation, had covered 1,346,918 miles. It is now on display at the National Railway Museum in York. In 1872 he introduced the 'Terrier' class tank engines which were largely used for London suburban services, some being still in active use into the 1960s. Stroudley's engine designs dramatically improved the performance of locomotive stock, and he was awarded the George Stephenson medal of the Institution of Civil and Mechanical Engineers for his 1884 paper *The Construction of Locomotive Engines (Min Proc Instn Civ Engrs, 1884/5, 81, 76, Paper No 2027)*.

Stroudley's fame and the reliability of his engines led to several examples being preserved, one Terrier class engine even finding its way to

the Canadian Railway Museum. It has also resulted in his engines being popular with model railway enthusiasts; and as these aficionados can be very particular about the accuracy of every detail of their models, one will find heated debates about the exact shade of proper IEG raging worldwide across the internet.

It is said that the best match for IEG can be seen on a model of the locomotive Como in Brighton Museum, which was reportedly painted at the LBSCR's Brighton works when the colour was still in use. Gladstone, and the A1 Class Boxhill (also on display at York) are in a version of IEG. On the Bluebell Railway, there are other notable Terriers still running: Fenchurch, the oldest; and Stepney, who featured in one of Rev W Awdry's original *Railway Series* stories, *Stepney the 'Bluebell' Engine*, sharing an adventure with Thomas the Tank Engine and friends.

Stroudley died in 1889, after contracting a severe chill that progressed to pneumonia while conducting a test run of one of his locomotives at that year's Paris Exhibition. A further testament to his fame is the newspaper reports of a crowd numbering several thousand that attended his burial in the Woodvale cemetery in Brighton. Unless new information comes to light from as yet undiscovered archive sources, it would appear that Stroudley took the secret of IEG with him to his grave. ●

● David Baker is an independent optometrist



Medmont E300 - Corneal Topographer

## Focused on innovative technologies



**BiB**  
OPHTHALMIC INSTRUMENTS

E-mail: [sales@bibonline.co.uk](mailto:sales@bibonline.co.uk) Tel: 01438 740823 web: [www.bibonline.co.uk](http://www.bibonline.co.uk)



UK wide technical support



Free consultancy service



Comprehensive online directory