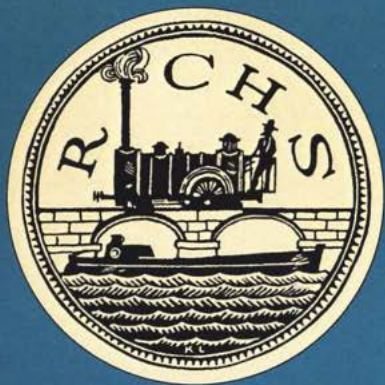
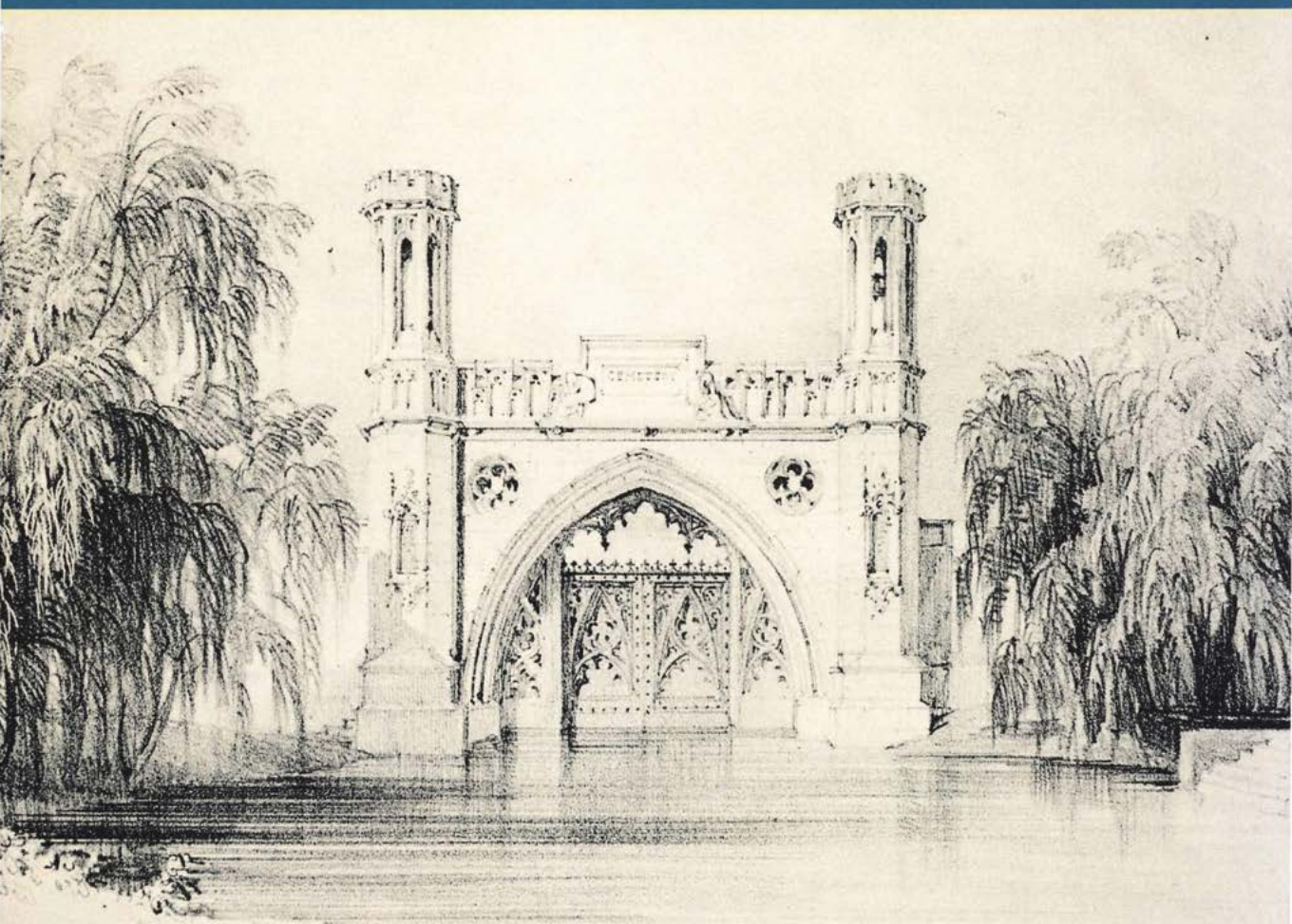




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Water Gate from the Grounds of the proposed Cemetery Kensall Green.

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The Railway Mania – Fraud, Disappointed Expectations, and the Modern Economy

Andrew Odlyzko

Introduction

The railway history literature frequently associates the Railway Mania with fraud, with companies ‘paying dividends out of capital’. A paper by Arnold and McCartney has more than three dozen references to such claims.¹ Often Arthur Smith is credited with deflating the bubble with his incendiary 1848 pamphlet, *The Bubble of the Age; or, the Fallacies of Railway Investment, Railway Accounts, and Railway Dividends*, which claimed that railways were not making any profits at all.² The standard and oft-cited example of managerial malfeasance is George Hudson, the ‘Railway King’. The most powerful figure in the railway industry, he was shown in early 1849 to have committed accounting fraud and to have stolen money from his shareholders. The phrase ‘to make things pleasant’ that was used in one of his manipulations of financial statements was often cited in the next few decades as a synonym for fraudulent financial reporting.

One purpose of this paper is to demonstrate briefly that accounting fraud was not the fundamental cause of the investment disaster of the Railway Mania. Distorted financials helped mask for a while the disappointing returns that new railways produced for investors, but were not the reason for the lack of profits. The main problem was the headlong expansion during the Mania. It tripled British railway mileage, and the new lines cost more than expected and brought revenues lower than expected. Hence even well-run and profitable railways, which all participated in the expansion by building branches and acquiring other lines, saw their profits plummet.

The bulk of this paper is devoted to exploring the reasons that fraud has played such a prominent role in the popular impressions of the Railway Mania. This was probably due largely to the universal human tendency, in almost all disasters, to look for malfeasance by people in power as opposed to doing more careful systemic investigations. This tendency can be seen in the aftermath of the 2008 financial crisis. After the Railway Mania, George Hudson, the brash, nouveau riche figure with an outsize prominence and outsize abuses, served as a

convenient scapegoat, and allowed the public to avoid reflecting on their own mistakes.³ However, there were additional reasons that may have led to the suspicions of fraud in the aftermath of the Railway Mania. The rise of the railway industry did involve extensive illegal activity, much of it widely known, and often condoned by the government and society. There was also a lack of clear standards in accounting and other areas and many rosy promises by promoters that failed to be realised. Furthermore, railway investments in general were viewed as being on the fringe of respectability, as will be shown. In this atmosphere, it was natural for suspicion about the honesty of managers to be aroused by business reversals.

A study of this episode and its similarities with modern financial crashes provides interesting perspectives on the development of modern economy and society in general.

Railways as investments

There is no dispute that the Railway Mania was a disaster for most investors in railway common shares.⁴ The best known index of railway shares prices declined from 167.9 in the summer of 1845 to 60.5 at the end of 1849, a drop of 64%.⁵ In this latter period Charlotte Brontë, who, along with her sisters, had invested most of her small inheritance in one of Hudson’s lines, and was a heavy loser as a result, wrote that ‘[m]any — very many are — by the late strange Railway System deprived almost of their daily bread’.⁶ This widespread problem was the result of relying on overoptimistic forecasts for both costs and revenues of the new lines built during the Mania.

One of the more extreme examples of Railway Mania overoptimism was the East Anglian Railway. It was created in 1847 through a merger of the Ely & Huntingdon, Lynn & Dereham and Lynn & Ely Railways (and in turn became part of the Great Eastern Railway in 1862). All three were created by the same group of promoters and all were sanctioned by Parliament in 1845. The business plans they presented to Parliament envisaged total length for the three lines of 87 miles, construction costs of



*Punch, volume 9, p.234 (December 1845)
(courtesy of University of Minnesota Libraries)*

£764,400, gross annual revenues of £93,074, and profits of £58,506.⁷ Thus the expected cost per mile to build the lines was to be £8,786, and revenues per mile were to be £1,070. By the end of 1848, the Mania was collapsing, after a few years of feverish railway buildout as well as general turmoil in the economy. At that stage, the East Anglian had 68 miles in service, and no ongoing construction. But the costs of those 68 miles came to £1,247,382, and thus to £18,342 per mile, slightly more than twice the initial estimate. As for revenues, those amounted to only £46,694, or £687 per mile as late as 1855, after quite a few years

of service, and a stable economy and stable relations with other railways.⁸

A comprehensive picture of the Railway Mania investment disaster can be seen in Table 1.⁹ Railway Mania investors were enticed with promises that the new lines would cost about £20,000 per mile to construct. (The East Anglian estimates were less than half of this average, reflecting local conditions, such as flat and inexpensive land and few engineering difficulties.) Actual costs tended to be between 50 and 100% higher (compared to 109% for the East Anglian). As one of the Rothschilds (who made much

Table 1. British railway industry in the late 1840s

Year	miles in service	construction cost per mile	annual revenues per mile
1844	2240	£35,700	£3280
1845	2536	35,000	3470
1846	3142	31,800	3300
1847	3945	31,700	2870
1848	5127	34,200	2560
1849	5996	35,200	2100
1850	6621	35,200	2080
1851	6890	35,100	2220

of their fortune financing railways around the world, although few British ones) is supposed to have said 'There are three roads to ruin: gambling, women — and engineers. The first two are more pleasant, but the last is the most certain'.¹⁰

In addition, while investors on average were promised annual revenues of £2,000 per mile, and apparently were frequently hoping for £3,000 per mile,¹¹ revenues on the new lines appear to have been largely in the £1,000 - 1,500 per mile range. (The higher figures in Table 1 reflect performance of the old established lines, whose revenues appear to have stayed high and even climbed). Thus on average, the British railway industry experienced an only slightly milder version of the East Anglian Railway disaster, with actual costs and revenues both disappointing investors.

Could the high costs of the lines built during the Railway Mania be due to corruption? There were certainly many accusations of self-dealing by railway directors, and there was probably some truth to them, even if less than during the earlier mania of the 1830s (which will be discussed below). However, it is unlikely to have been very large, since the costs of construction did not decline even after the collapse of the Railway Mania, when investors were much more vigilant, and professional accountants began to be widely employed in auditing accounts. As has been widely recognised by observers of this industry, British costs were high, much higher than in most other countries, because of numerous factors specific to Britain. These factors included the high cost of land, higher standards of construction (to provide for higher speeds, for example), and the need to avoid level crossings with roads. The entire system could have been designed more efficiently, as was argued by some contemporary observers, and more recently by Casson.¹² However, that is hindsight, and is an issue separate from accounting fraud.

Railway Mania and accounting fraud

Although the basic problems of high costs and low revenues are clear, and appear to have been understood by many railway historians, literature is full of claims about fraudulent accounting during the Mania. However, they are generally not well documented, and more in the nature of folklore. Arnold and McCartney in the paper cited earlier looked at about three dozen claims of this nature, and found all of them deficient. '[M]ore than half (15) the references were simply wrong, either because

they did not relate to the matter at hand ... or because the quotation was clearly taken out of its intended context or demonstrably failed to provide a basis for the conclusion reached'. That such inadequate claims are so frequent even in the scholarly literature does show, though, that the impression of widespread fraud has been so widespread that normally careful writers did not feel the need to check that the references they were giving were truly substantiating their claims.

While Arnold and McCartney's paper does demonstrate the inadequacy of many claims about accounting fraud, their work could be taken as implying that the only well-documented cases of such transgressions during the Railway Mania were those on the lines run by George Hudson. There were others.¹³ Furthermore, there were numerous somewhat more ambiguous cases of accounting abuse. There were no accounting standards in those days, and so the lines between solid reporting, wishful thinking, stretching the formal or informal rules, and outright fraud were fuzzy. For example, it appears that many railways were 'making things pleasant' by shifting effective dates when expenses were recognized.

A simplified sketch of what was done might be: an established and profitable line that had started out with 100 miles of track might, as a result of the Mania, be in the process of constructing another 200. Those 200 miles were financed through the issuance of new classes of shares (as well as borrowings). When a total of 250 miles of line were in service, the revenues of all 250 miles were taken into account in computing profits, but those profits were used to pay dividends on just the capital involved in constructing 150 miles, as the usual rule was that shares for a new branch were not entitled to dividends until the entire branch was open for service. A concrete example of such a manoeuvre is represented by the decision of the August 1847 shareholder meeting of the Eastern Counties Railway, mentioned later. Another example comes from the North British Railway.¹⁴ Such moves produced unrealistically rosy pictures. (Sometimes this was done openly, with the concurrence of shareholders, as in the Eastern Counties Railway case of August 1847. As will be discussed below, much of the 'massaging' of financials was done with the implicit or explicit knowledge of investors.)

Arthur Smith attained great notoriety with *The Bubble of the Age*. However, his critics were right, in that he was wrong. He claimed that all railway profits

were illusory, that dividends were paid out of capital, and that once the inflows of new capital from investors stopped, so would dividends. As was noted by Robert Lucas Nash, a far more penetrating critic of railway accounting, '[t]hat improper uses have been made of the immense amounts of capital placed under the control of Railway Boards there can be little question; but that there is no such thing existing as profit arising from the working of a railways is preposterous'.¹⁵ That Smith was wrong was shown by events, as by the early 1850s capital investment did essentially cease, while dividends of the major lines he was attacking declined, but did not vanish. Still, Smith's incendiary claims about fraud caught attention and have gained him substantial prominence in accounts of the Railway Mania.

Corruption and the railway press

The rise of the railway industry was associated with extensive corruption in what was by modern standards a very corrupt society. What we now think of as Victorian morality was just beginning to emerge. The infamous 'Old Corruption' was waning, and government jobs were becoming accountable positions with defined responsibilities, and not sinecures.¹⁶ Standards for private commercial dealings were also evolving. A paper by John Palmer¹⁷ showed (in the words of its posthumous editor, H W Paar) that 'the origins of the Victorian railway periodicals were closely bound up with the formative history of the Eastern Counties Railway and the life of its first secretary, Joseph Clinton Robertson'. Furthermore, as Palmer demonstrated, all three were disreputable, with Robertson one of the more colourful rogues of that period. It is a great pity that Palmer did not live long enough to write his planned biography of that character.

The Palmer paper took the story of the early railway press only to 1844, the beginnings of the Railway Mania. Goulven Guilcher, drawing extensively on Palmer's archives, gave a short account of the Press Mania that accompanied the Railway Mania.¹⁸ For a brief period, in the autumn of 1845, there were over two dozen specialised railway periodicals in the UK. Two of them were even published daily! This was in addition to the extensive coverage of railways in the regular press. The railway press had a very poor reputation, and deservedly so. Guilcher sketches the various ways that favourable publicity for railway promotions was propagated by the press, often stimulated by 'material inducements'. Palmer's

archives have much more material, with additional colourful stories, for example about Thomas Littleton Holt, a character of the calibre of Joseph Clinton Robertson, and about Holt's *Iron Times*.

A particularly instructive case is that of John Robertson and the *Railway Record*, which does not appear to be in Palmer's archives. Unlike most of the material collected by Palmer, or cited by Guilcher, it concerns the most respectable part of the railway press. John Robertson, apparently no relation to the Joseph Clinton Robertson cited above,¹⁹ was first a reporter and then the editor at the *Railway Times* (which had been started by the other Robertson, together with John Braithwaite, the engineer for the Eastern Counties Railway). In 1844, John Robertson left the *Railway Times* and established the *Railway Record*. His claim then was that the *Railway Times* was becoming too closely identified with a particular railway (this line was the London & Birmingham, although Robertson did not spell this out). He asserted that the key need for a railway journal was 'confidence in the honesty and impartiality of its conductors' and that his new venture would be characterized by 'INTEGRITY-IMPARTIALITY-INDEPENDENCE'.²⁰ Palmer singled out the *Railway Record* as 'the paper with the highest contemporary reputation' in the mid-forties in the paper cited above, and other scholars agreed. John Robertson was regarded as an expert, and was 'much consulted by leading railway parties' according to a contemporary source.²¹

Robertson also positioned himself as a guardian of morality in the railway press. At the end of 1845, *The Times*, the main opponent of the Railway Mania, published a letter 'How to conduct a bubble newspaper', alleging that the editor of some paper was being paid for supporting a new railway project.²² As was usual in the press of the time (and surely due to a large extent to the strict libel laws in the UK), the letter did not name any names. Still, this letter created quite a stir. Robertson wrote that '[s]ome parties, without hesitation, set down the whole story as fabulous, asserting that the letter had been manufactured in the office of *the Times*. We were not of this number'. He reported that an investigation by the *Railway Record* confirmed the accuracy of the letter, and named Thomas Holt and the *Iron Times* as the responsible parties. He thus effectively challenged Holt to sue (which apparently Holt did not do, in spite of making some threats to do so). This was a very rare step in the British press of that time.²³

The speculative excitement and the attendant gushers of advertising money that led to the Press Mania dried up at the end of 1845. Most of the railway papers folded right away, some after just a handful of issues. (Palmer's thesis²⁴ details the fast collapse of that segment of the press, with just a few papers left by mid-1846.) Those that remained usually had to struggle with a load of bad debts. In early 1846, John Robertson filed a lawsuit against Thomas Pierse Healy, who was a lawyer and the proprietor of *Medical Times*. At the height of the Mania, in 1845, Healy had, in his attorney's words, 'like many other people, ... dabbled a little in railways'.²⁵ Robertson asked the court to compel Healy to pay £12 10s for the publication in the *Railway Record* of a 'puff', a favourable story composed by Healy. It was printed as if it were coming from the staff of the *Railway Record*. It was about a new railway that Healy was promoting.²⁶ The Healy puff consisted of an extended (and acknowledged) quote from *The Times*, which had a very high reputation for honesty and also for opposition to the Railway Mania, followed by the passage:

We may add, that Mr. Braithwaite is at present actively engaged in the survey, which offers the less difficulty, inasmuch as the whole was carefully surveyed in 1839 at an immense expense, for a project then started. The whole results of the survey are in Mr. Braithwaite's hands. We observe that Monday is the last day for receiving applications for shares.

By the standards of the time, this was a very mild puff, and when it was read in court, the judge interjected: 'That is what you may call a puff? (Laughter)'. Still, the testimony by Robertson's clerk, who took Healy's order, implied that accepting such puffs was a routine procedure at the *Railway Record*. It thus provides an interesting insight into the standards of the most reputable railway paper of the time. That Robertson filed a lawsuit that was bound to put on public record these standards, and did it for what was a relatively modest sum of £12 10s,²⁷ provides another interesting insight, this one into the financial pressures on the railway press as the Railway Mania was deflating.²⁸

It appears that every time a bubble collapses, substantial financial abuses are uncovered. Whether that is because the players (whether company managers, accountants, or journalists) get more greedy as the bubble inflates, or become convinced that 'everybody does it', or there is less scrutiny from investors and regulators as 'everybody gets rich', or whether the collapse leads to losses that force the abuses into the open, is something that

need not be considered in detail here. The point of this section is to show that investors and the general public had plenty of evidence that the press, especially the railway press, could not be trusted in reporting on railways. However, there were other reasons for them to be suspicious as well.

Railways and early Victorian commercial morality

The Palmer paper cited above describes some of the extensive corruption involved in the construction of the Eastern Counties Railway. It was not known to the contemporary public (and it is still not known in its entirety, and will surely never be known, given the lack of records), but there was recognition or at least suspicion of widespread corruption on this and other lines. To a large extent railway directors were known to have engaged in questionable transactions, and were expected to do so. The birth of the railway system was smoothed by the lubricating effect of corruption, or near-corruption. While that was a period of *laissez faire*, it was not pure *laissez faire*, as the free-marketers were still storming the last bastions of feudalism. Peter Lecount was an engineer on the pioneering London & Birmingham Railway. In his history of the line, he described how it was approved by the House of Commons in 1832, but was blocked by the House of Lords in that year, because of opposition from some noble landowners. The next year, it went through without opposition, and

the means the directors were obliged to resort to, must be left to the imagination of the reader; suffice it to say, that no variation, sufficient to account for the different features of the case, took place in the numerical value of the assenting or dissenting landowners.²⁹

Not all the transactions that needed to be kept hidden involved outright bribery, or at least what was regarded as outright bribery then. Directors routinely had available to them a substantial number of shares to be used at their discretion to distribute as necessary among landowners, to lessen their opposition. Shareholders understood the need for such shares, and for discretionary control. But they did get upset when they learned the directors had used such shares for their own benefit.

There was also a perception that in the earlier, and very successful, railway mania of the 1830s, investors had been lured towards what turned out to be a very bumpy ride, through overly rosy promises. Thus a review of a book about railways by Whishaw claimed in 1841 that

no doubt there is truth in what Mr. Whishaw relates when he says, 'We have heard it frequently remarked that if real estimates had been sent forth to capitalists, not a tithe of the present extent of railway communication would have been effected'. We must therefore congratulate the country on the result, however much the mystification practised by projectors, contractors, and committees is to be blamed.³⁰

Because of the financial success of those lines, such creation of 'beautiful illusions' was forgiven, but not completely forgotten. Hence whenever doubts arose about the current or future finances of a railway, shareholders were quick to suspect not just the competency, but also the honesty, of management (meaning the directors).

The railway mania of the 1830s, mentioned above, played a key role in shaping the attitudes of investors and the public during the mania of the 1840s. It was huge, it was wildly speculative, and it took a long time to complete the lines that it gave rise to. In the end, though, it was perceived as successful for investors, in spite of all the corruption and 'mystification' that it was associated with. This mania faced extensive scepticism and opposition, including widespread allegations of accounting fraud.³¹ The most prominent advocate in the 1830s of the view that railways were complete financial failures, with share prices propped by dividends paid out of capital, was Richard Cort. He published several pamphlets in the 1830s that claimed to prove, through voluminous processing of published statements, that railway directors were cooking their accounts.³² He was silent during the mania of the 1840s. After Hudson's extensive frauds were revealed in 1849, he came out with a pamphlet claiming those events vindicated his earlier warnings.³³ Arthur Smith in his *The Bubble of the Age* pamphlet was basically repeating Cort's claims from the 1830s. There were many other people in the intervening years who were also warning, either for specific railways, or for the entire industry, that railway accounting might be leading investors astray.³⁴ Therefore it was quite natural that when railway share prices went down, and reports of Hudson's malversation started circulating, the public decided all those earlier warnings had been correct.

Many of the warnings about accounting abuses could be discounted as the work of rival railways or other opponents, or else unreasonable. But often very questionable financial manoeuvres were done with explicit shareholder approval. Thus at the August 1847 regular half-yearly meeting of the

Eastern Counties Railway, George Hudson, the chairman, recommended that 'the interest on No. 2 shares should [not] be charged on the present half-year's dividend', but should come out of capital, because the line built with money from those shares 'has not yet received the advantages that will be derived from an effective working of the through traffic over it'.³⁵ As long as such questionable manoeuvres were regarded as temporary, just smoothing the way to a steady stream of dividends and closed capital accounts, little protest was raised.

Steady dividends were highly valued and expected. The use of reserves to smooth those dividends was acceptable, but conflicted with the suspicions about the trustworthiness of managers. Thus during a GWR half-yearly meeting in 1844, the directors recommended a dividend for the preceding half-year

leaving a balance of ..., which balance the Directors did not consider would be more than sufficient to enable them next half year to divide 3 per cent, and therefore they earnestly and unanimously recommended that it should be retained, as it was most important that the dividends should be as nearly as possible equalized. (Hear)³⁶

The reason the directors had to implore shareholders to retain a reserve is that investors were afraid their funds might be misused if left in the control of management. The literature on railway accounting does discuss the question of depreciation funds, and how some lines that had them in the early 1840s abandoned them later in the decade. What this literature usually does not explain is that much of the push to eliminate depreciation reserves came from this same distrust. Thus Herapath in 1848 wrote of a depreciation fund that it 'had regarded it as one of those figments, unmercantile in fact, unjust in operation, towards the Shareholders, and a nest-egg from which a remedy for other evils might be hatched'.³⁷

The distrust of corporate managers was part of a general distrust of joint stock companies. In the early 19th century, joint stock companies were looked at with great general suspicion, and only a very limited role was envisaged for them. This attitude is seen very clearly in Adam Smith's *The Wealth of Nations* and persisted well past the middle of the 19th century. Smith claimed that joint stock companies were suitable only for businesses in 'which all the operations are capable of being reduced to what is called a routine'. Even for a canal, he seemed unsure whether its construction was not beyond the proper sphere of

operations of such bodies. But once made, the management of it becomes quite simple and easy, and it is reducible to strict rule and method', and could be entrusted to a joint stock company.

Railways also engaged in some openly illegal activities. This was not uncommon at the time, as laws were treated reverently on one hand, and frequently flouted on the other. In share dealings, much that was common was illegal. Still, when some investors tried to avoid paying up for their losses by claiming (correctly) that the transactions they had engaged in were illegal, *The Times*, the famous bastion of respectability, thundered that this was a dishonourable way to avoid responsibility for one's actions.³⁸ It also urged wide circulation of the names of those who behaved in such shameful ways so they could be shunned. Of other illegal activities, smuggling in particular was widespread. It was even engaged in by some MPs, such as James Morrison.³⁹ Morrison was one of the most prominent, and most feared (by the railway interest) opponents of the Railway Mania. A self-made man, he was regarded as the richest commoner of the 19th century. He was a pioneer in lowering prices by making 'small profits on a large trade'. At least some contribution to those low prices came from smuggling.⁴⁰

While smuggling continued to be fought, some activities were either tolerated or even legalised. For example, many of the railways that came out of the mania of the 1830s engaged in illegal borrowings to fund construction cost overruns. Parliament retroactively legalised those loans in 1844. Further, almost all railway promotions involved flagrant trespass on private property. Parliament required submission of detailed plans before it would consider sanctioning a new railway. However, it did not grant the promoters the right to enter private property to make the necessary surveys. Hence promoters had to resort to negotiations, and when those proved unavailing, to bribery, subterfuge, or even force. The celebrated Battle of Saxby Bridge was just the most famous of the resulting physical altercations between railway surveyors and landowners' servants.⁴¹

Quite a few observers looked askance even at the basic legal activity of railways. By sanctioning railways, Parliament was using the right of eminent domain to take land from private owners and give it to private entities, ones that, moreover, ended up with perceived monopolies on transport. The public policy issues this raised were taken seriously. On balance, the desirability of a much improved transportation system won the argument, but there

were numerous dissenters. The most vociferous was Colonel Sibthorp. Something of a buffoon, this MP railed unceasingly against railways. For example, in early 1845, he declared in Parliament that '[h]e had felt it his duty always to stand in opposition to every proposition of every railroad whatever ... He considered it to be the duty [of government] to take all possible precautions against the gross attacks and inroads that were made upon that which, until railways were introduced had been always held sacred — the rights of private property'.⁴² While Sibthorp was extreme, many others sympathized with his position.



'Policeman Sibthorp. "Come, it's high time you were taken to the House; you've done quite mischief enough" (Punch, June 1847) (Courtesy of University of Minnesota Libraries)

The low repute of railway enterprise can be seen in the low level of involvement in it of London bankers. Disraeli wrote in *Endymion* about railway expansion of the second quarter of the 19th century:

What is remarkable in this vast movement in which so many millions were produced, and so many more

promised, is, that the great leaders of the financial world took no part in it. The mighty loan-mongers, on whose fiat the fate of kings and empires sometimes depended, seemed like men who, witnessing some eccentricity of nature, watch it with mixed feelings of curiosity and alarm. Even Lombard Street, which never was more wanted, was inactive, and it was only by the irresistible pressure of circumstances that a banking firm which had an extensive country connection was ultimately forced to take the leading part that was required, and almost unconsciously lay the foundation of the vast fortunes which it has realised, and organise the varied connection which it now commands. All seemed to come from the provinces, and from unknown people in the provinces.

While *Endymion* is a novel, this passage is accurate.⁴³

Yet another confirmation that railways were on the fringes of respectability comes from a quantitative measure of involvement of prominent people in railway promotions. Literature is full of claims that all spheres of British society were engaged in speculation in the Railway Mania. Thus *Endymion* claimed that 'the gambling was universal, from the noble to the mechanic. It was confined to no class and to no sex'. That was true, railway speculation did penetrate all classes. But it appears to have been confined to just fractions of those classes. For example, when the list of investors who subscribed for £2,000 or more to any one project before Parliament in 1846 was published, it was discovered that it contained 157 MPs, 'nearly one-fourth of the entire House of Commons!'⁴⁴ Clearly the writer used the exclamation mark to express astonishment at such a high proportion. But it might be more appropriate to be surprised this proportion was not higher. These were people who subscribed at the height of the Railway Mania, in 1845. At that time railway promoters were searching for anyone prominent to add to their provisional committees. An interesting example was a chap whose qualifications included FRS and a few similar titles, who advertised (anonymously, with just initials and a temporary hotel address given for correspondence) that he was 'willing to allow himself to be advertised as one of a provisional committee, or a director of any railway or other public company, upon condition that he is secured a certain number of disposable shares, at a premium of not less than 5 per cent., without any risk to himself'.⁴⁵ MPs were valued more highly than Fellows of the Royal Society as members of provisional committees, and there was nothing illegal about railway promotion. In fact, as indicated above, Parliament was supporting railway expansion to the extent of condoning extensive

illegal activities. So why did only a quarter of the MPs get involved? Perhaps because they were astute enough to guess the future was not going to be as rosy as promoters promised, but most probably because railway investments were not very respectable.

It was not just railways that were on the fringes of respectability in the early Victorian times. So were share investments of any kind. Land ownership had the highest prestige. National debt, 'the Funds', came next. (It makes for an interesting perspective to note that Consols and similar government obligations were a far higher fraction of GDP than today's supposedly unsupportable national debts.) Joint stock investments were just beginning to spread, and were extremely suspect. As just one small example, consider the business column ('City article') of *The Times* on 14 November 1845, which was surely written by its famous business editor, Thomas Massa Alsager. This piece reluctantly admitted that there was some utility to the London Stock Exchange, as 'it facilitated real business'. However, it argued that even that institution 'has also promoted gambling, and so far has become a great, though not an unmixed evil'. On the other hand, that column unreservedly condemned all the provincial stock exchanges, claiming they were unnecessary and had 'degenerated into mere gambling'.

Conclusions

Paying dividends out of capital or fraudulent accounting in general were not the reasons for the investment disaster of the Railway Mania. Its rise and collapse were due to overoptimistic business plans, plans that forecast lower costs and higher revenues than were realised. The public perception that fraud was a central element of the Railway Mania was probably motivated by a desire to find a convenient scapegoat and avoid having to reflect on the real causes of the investment disappointment. This line of thinking was amplified by the general atmosphere of illegal or shady proceedings of railway companies, and the many rosy promises of promoters and engineers that were almost invariably broken.

Overall, the reaction to the collapse of the Railway Mania provides interesting perspectives on the modern economy. A key institution in essentially all countries, with the exception of a few outliers such as North Korea, is the joint stock company.⁴⁶ Until 1825 it was illegal to form such businesses without an Act of Parliament or a Royal Charter. It changed in

that year, but general limited liability did not become available until the mid-1850s. (Railways and canals almost always had it through their Parliamentary Acts, though.) This evolution was not easy, as there was extensive controversy and debate. The prejudice against joint stock companies that is so prominent in Adam Smith's writings was widely held. The most famous of the complaints about corruption in railway management is Herbert Spencer's *Railway Morals and Railway Policy*, published in 1854, a few years after the collapse of the Railway Mania. It is less about direct fraud, and more about the conflicts of interest he saw between railway shareholders, who were left with a pittance, and all the other agents who were doing well; managers foremost, but also engineers, lawyers, surveyors, and the like. Were Smith and Spencer to come alive, they would surely feel their opinions had been proved correct. The Railway Mania illustrates how British society managed to overcome its often well-founded prejudices and accept new institutions and social and economic relations in order to benefit from the revolutionary railway technology.

Notes and references

This article draws extensively on the material in the author's 'Collective hallucinations and inefficient markets ...' (<http://ssrn.com/abstract=1537338>), and 'The collapse of the Railway Mania, ...' *Accounting History Review*, vol. 21, no. 3, Nov. 2011, pp. 309-345, and (<http://ssrn.com/abstract=1625738>).

1. A J Arnold and S McCartney, '“It may be earlier than you think”: evidence, myths and informed debate in accounting history', *Critical Perspectives on Accounting*, vol.14, 2003, pp.227-253
2. One example is H Ellis, *British Railway History: an outline from the accession of William IV to the nationalisation of railways*, 2 vols., George Allen and Unwin, 1954, vol. 1, p.162
3. *The Times*, 10 April 1849, pp.4-5, a stern critic of Hudson and the Railway Mania in general, claimed shortly after his downfall, in a leader, that 'neither the other officials nor the shareholders must hope to escape censure under the cover of a personal onslaught upon Mr. Hudson. The system is to blame. It was a system without rule, without order, without even a definite morality. In 1845 respectable men did monstrous things, and were thought very clever. Thousands rejoiced in premiums which they believed to have been puffed up by mere trickery, collusion, and imposture.' Note that even though *The Times* argued against placing all the blame on Hudson, it still emphasized fraud, and not the fundamental issues of the industry
4. But not for lenders, nor for purchasers of preference shares. Leverage in railway investments was limited by Parliamentary rules, and so there were very few bankruptcies
5. A D Gayer, W W Rostow and A J Schwartz, *The Growth and Fluctuations of the British Economy, 1790-1850: an historical, statistical, and theoretical study of Britain's economic development*, 2 vols., Oxford University Press, 1953
6. M Smith, ed., *The Letters of Charlotte Brontë, with a Selection of Letters by Family and Friends: Vol. II, 1848-1851*, Oxford University Press, 2000, p.267
7. Taken from a convenient table of railway lines authorized in 1845 in the *Railway Chronicle*, 16 August, 1845, p.1015. From 1836 to 1845 all railway projects had to demonstrate to the satisfaction of Parliamentary committees, in adversarial hearings, that they did have viable business plans.
8. Construction costs from H Scrivenor, *The Railways of the United Kingdom Statistically Considered, in Relation to their Extent, Capital, Amalgamations, Debentures, Financial Position, ...*, Smith, Elder, 1849, pp. 349-357. Revenue figures from *Herapath*, 15 September 1855, pp.945-6 and 8 March 1856, p.285. In 1855, there were still no dividends for the holders of common shares, and even some of the preference shares were not getting the full promised payout
9. Table 1 is derived from the table on p.352 of vol.5 of T Tooke and W Newmarch, *A History of Prices, and of the State of Circulation, During the Nine Years 1848-1856*, 2 vols., and vols. 5-6 of Tooke's *The History of Prices from 1792 to the Present Time*, Longman, Brown, Green, Longmans, and Roberts, 1857
10. Translated and slightly paraphrased from A Detoef, *Propos de O. L. Barenton, Confiseur*, Editions du Tambourinaire, 1950, pp.124-125
11. For a discussion of investor attitudes and demand forecasting methodology used at that time, see A M Odlyzko, *Collective hallucinations and inefficient markets: The British Railway Mania of the 1840s*, 2010 manuscript available at <http://ssrn.com/abstract=1537338>
12. M Casson, *The World's First Railway System: enterprise, competition, and regulation on the railway network in Victorian Britain*, Oxford University Press, 2009
13. A M Odlyzko, 'The collapse of the Railway Mania, the development of capital markets, and the forgotten role of Robert Lucas Nash', *Accounting History Review* (formerly *Accounting, Business & Financial History*), vol. 21, no. 3, Nov. 2011, pp. 309-345. An extended preprint, with additional material (primarily two

- appendices), entitled 'The collapse of the Railway Mania, the development of capital markets, and Robert Lucas Nash, a forgotten pioneer of accounting and financial analysis', is available at <http://ssrn.com/abstract=1625738>
14. A. M. Odlyzko, 'The collapse of the Railway Mania, ...'
 15. *London Weekly Railway Share List*, 1 July 1848, p.2. For information on the practically unknown Nash and his contributions to the revolutions in railway accounting, see A M Odlyzko, 'The collapse of the Railway Mania, ...'
 16. P Harling, *The Waning of 'Old Corruption': the politics of economical reform in Britain, 1779–1846*, Oxford University Press, 1996
 17. J E C Palmer (edited by H W Paar), 'Authority, idiosyncrasy, and corruption in the early railway press, 1823–1844', *J. Railway and Canal Historical Society*, July 1995, pp.442–457
 18. G Guilcher, 'The Press Mania during the Railway Mania, 1844–45', *J. Railway and Canal Historical Society*, no. 191, March 2005, pp.26–33
 19. There is some disagreement on this point. The Palmer paper cited before states they were not related, while the *Post Office Railway Directory* for 1847, Kelly & Co., 1847, claims they were
 20. *Railway Record*, 13 April 1844, p.13. Italics and capitals as in original
 21. The source is *Post Office Railway Directory* for 1847. However, this source did note that Robertson and his paper had become strong partisans of the London & North Western Railway, a successor of the London & Birmingham, whose involvement with the *Railway Times* led to Robertson's departure from that paper in 1844
 22. *The Times*, 21 November 1845, p.5. See also the leader the next day, p.4, about this issue
 23. *Railway Record*, 29 November 1845, p.1808. See additional leaders and correspondence with Holt there on 3 December, p.1830 and 6 December, p.1858
 24. J E C Palmer, 'Railway periodicals of the nineteenth century published in the British Isles: a bibliographical guide', thesis, University College London, 1959. Online copy available at <http://www.dtc.umn.edu/~odlyzko/rresources/>
 25. Report of the Robertson v Healy trial, *Daily News*, 16 May 1846, p.7. This is the source for all the following quotes in this paragraph. The puff itself appeared in the *Railway Record*, 24 September 1845, p.1183
 26. Healy's railway project was the notorious Direct London & Exeter Railway. A person involved with *The Times* was involved in promoting this line, and *The Times* did mention it favourably in its columns, in the passage cited in the Healy puff. Therefore the railway press used this incident to argue that *The Times*, the scourge of the Railway Mania, was just as corrupt as it accused others of being
 27. In today's money, this is a trivial amount. In the 1840s, it was about two weeks of income for a lower middle class family, and about half a year's wages for an unskilled worker.
 28. As an aside, the jury ruled in favour of Robertson, but the printed record does not reveal whether he managed to collect his £12 10s. The issue at the trial was not whether Robertson was owed his money, that was admitted by Healy, but rather whether Healy could be held solely responsible for the debt, as he was just one of a group of promoters of this line. This was just one of innumerable trials centred on legal technicalities that were spawned by the Railway Mania
 29. P Lecount, *The History of the Railway Connecting London and Birmingham: Containing its Progress from the Commencement. To Which is Added, a Popular Description of the Locomotive Engine: And a Sketch of the Geological Features of the Line*, Simpkin, Marshall & Co., 1839, p.22
 30. Anonymous, 'Whishaw on railways', *Monthly Review*, February 1841, pp.215–220
 31. For a brief but general overview of this episode of investor exuberance that turned out to be rational, see the previously cited work by the author, 'Collective hallucinations ...', and 'This time is different: an example of a giant, wildly speculative, and successful investment mania', *B. E. Journal of Economic Analysis & Policy*, vol. 10, issue 1, 2010, Article 60. Preprint available at <http://ssrn.com/abstract=1573974>
 32. For example, R Cort, *Rail-road Impositions Detected: Or, Facts and Arguments to Prove that the Manchester and Liverpool Railway Has Not Paid One per cent. Nett Profit; And that the Birmingham, Bristol, Southampton, Windsor, and Other Railways, are, and must for ever be, only Bubble Speculations*, 2nd ed., W Lake, 1834
 33. R Cort, *Railway Reform: In a Letter to William Chaplin, Esq., M.P. Chairman of the London and South-Western Railway Company, Showing that the Liverpool and Manchester Railway Company Has Not Paid a Single Dividend Except Out of Borrowed Money; And that all other Railways are, and must be, in the Same Predicament. ...*, Effingham Wilson, 1849
 34. As just one example, consider the off-hand remark that '[t]he Bristol and Exeter is an instance on which even a year later half the dividend had been paid out of the capital', S Shaen, Jr., *A Review of Railways and Railway Legislation at Home and Abroad*, William Pickering, 1847, p.76. As another example, consider the long leader about the Great Western Railway, in *Herapath*,

- 14 August 1847, pp.937–39. Point #20: there has a strong insinuation that some items charged to capital account should have been classed with working expenses
35. *Railway Times*, 14 August 1847, p.1039
 36. *Railway Times*, 17 February 1844, p.195. Three and a half years later, this same line used reserves, ones that had not been cited explicitly before, to make up a dividend that profits did not justify. The *Railway Chronicle*, 21 August 1847, p.807 commented approvingly that it was ‘long aware that the Great Western Company were in possession of such a fund, derived from profits on the sale of shares, and we are glad to see it distributed among the shareholders at a time when it is most welcome.’
 37. *Herapath*, 2 September 1848, pp.929–30, in a leader entitled ‘Depreciation fund. Captain Huish’s report’
 38. *The Times*, 1 July 1846, p.3
 39. R S Sephton, ‘“Small profits on a large trade”: James Morrison MP’, *J. Railway and Canal Historical Society*, part 1: November 2003, pp.364–367, part 2: March 2004, pp.467–471
 40. R Gatty, *Portrait of a Merchant Prince: James Morrison, 1789–1857*, Pepper Arden, 1977
 41. See, for example, C E Stretton, *The History of the Midland Railway*, Methuen & Co., 1901, p.81
 42. Hansard’s Parliamentary Debates, ser. 3, vol. 72, 1844, c.255
 43. The one exceptional bank was that of George Carr Glyn, the chairman first of the London & Birmingham, and then of its successor, the London & North Western Railway
 44. *The Times*, 2 October 1846, p.6
 45. *The Times*, 18 September 1845, p.8, bottom of fourth column. This letter stimulated some further correspondence, see *The Times*, 24 October 1845, p.8
 46. See, for example, J Micklethwait and A Wooldridge, *The Company: a short history of a revolutionary idea*, The Modern Library, 2003.

The Forth & Clyde Canal – Conflict and its Motto

Jean Lindsay

In March 1818 the minutes of the Forth & Clyde Canal contain a small piece of paper affixed to the page, with a copy of the company’s seal and motto. It seems possible that this motto, which has no explanation, could have some significance in the history of the navigation. The company had used a seal on various transactions before this date, such as in April 1794 when the approval of the regulations and bye-laws to be observed by all masters of vessels who used the navigation and its towing-paths was signed by the Governor, Sir Thomas Dundas and countersigned by the Secretary, John Seton.¹

The preceding years, 1814–1816, had seen conflict develop within the company, culminating in the overthrow of the Governor, Lord Dundas, one of the most influential supporters of the canal. The dispute centred on Grangemouth, the eastern terminus of the canal, whose town and harbour were built on the Kerse estate belonging to the Dundas family. Sir

Lawrence Dundas had actively promoted the canal as a sea-to-sea navigation. On his death in 1781 his son, Sir Thomas Dundas, succeeded him, and five years later he became Governor of the company. In 1794 he was elevated to the peerage and became Baron Dundas.

In 1814 the traders of Grangemouth wrote a letter to the company, asking for better accommodation, and Hugh Baird, John Rennie and Robert Stevenson were asked to produce plans for improved facilities. A dividend of £20 per share was recommended at a General Meeting in London on 5 April 1815, and the Governor and Council were authorised to carry out the proposed improvements at Grangemouth and Holemerry, using part of the funds in the Royal Bank of Scotland. In March 1815 the company’s cash account was £20,628 and the deposit account was £3,109; the previous year the surplus revenue had been £12,194. Rennie’s plan for a ship canal from the

basin at Grangemouth to Holemerry and a wet dock and wharfs with new cuts from the Grange Burn, was the one chosen. James Hill, a Glasgow lawyer and Kirkman Finlay, a prosperous Glasgow cotton merchant, however, dissented. Their reasons were read to the General Meeting on 26 April 1815 and included the fact that the improvements proposed were new works which the company had not the power to execute out of the revenue of the Forth & Clyde navigation which was in the bank. They argued at length that the expense, estimated variously between £75,000 and £125,000, was a sum exceeding

Finlay and others served a Bill of Suspension and interdict against the company, and this was debated at the company's committee meetings on 12 and 16 May. Legal advice was obtained by the company, but it was clear that the proposed works had to be postponed. A Parliamentary Bill would be needed, and efforts to get the interdict lifted failed.

At this time a *Report*, dated 13 July 1815, was circulated to shareholders with an injunction of secrecy. No copy was sent to Lord Dundas or to members of the Council, and it was not until 16 October 1815 that they received a copy. It contained



the capital of the company, and authority from Parliament was needed to make a wet dock, at either entrance into the canal from the Forth or the Clyde. As the navigation was declared to be completed, the company could only apply the net revenue to dividends, not to new works. They asserted that if the company had power to make the harbour and dock in question it would be necessary to obtain land for wharfs, warehouses and streets, and therefore they would be dependent on Lord Dundas for the necessary accommodation.

a large number of allegations of the mismanagement and self-interest of the Dundas family, especially Lord Dundas. It was said to be written by James Hill and Robert Grahame, also a lawyer. They were both proprietors, and although little was heard of James Hill after this episode, Robert Grahame became a member of the Council and was a much respected member of the company. Kirkman Finlay, as Governor, wrote a letter to the Secretary dated 14 March 1813, in which he referred to Grahame as a 'large proprietor — well acquainted with all the Company's affairs'.

In a reply to the *Report*, entitled *Statement of Facts*, a denial was made of all of the allegations, which included the claim that Sir Lawrence Dundas had ensured that the canal ran through his estate. It was John Smeaton, however, who had planned the line, recommending the entry into the River Carron at Sealock, which became known as Grangemouth. The critics blamed Lord Dundas for the fact that the annual General Meetings were held in London, but the *Statement* asserted that many of the shareholders lived in England. It was conceded that Lord Dundas had a vested interest in Grangemouth, but it was stated that he also promoted all the interests of the company, and it was Sir Lawrence Dundas who, at his own expense, had built the wharfs and houses at the port, when the canal was unfinished. Among his works was a large dry dock with entry from the Carron, at a cost of £9000. The entire *Report* was said to be 'interspersed with groundless statements and false insinuations', and it was claimed that Lord Dundas had never had a merely selfish regard for his own wealth, but that he had been concerned for the company's prosperity. Under his control, the value of the shares had risen from £100 to £400.²

At this stage Lord Dundas had withdrawn his consent to the Bill to allow improvements at Grangemouth and Holemerry. On 20 March 1816, at a General Meeting in London, Lord Dundas, the Earl of Breadalbane, the Earl of Morton, Sir Charles Edmonstone and Sir Archibald Speirs, members of Council, resigned their offices, indicating that they did not wish to remain as part of the management of the company's affairs. Kirkman Finlay was elected Governor and seven members of the Council were elected for the ensuing year. It was announced that the resolution authorising funds to be taken from the Royal Bank of Scotland for 'new works' at Grangemouth was rescinded. A dividend of £25 per share was announced. In 1819 an attempt to get a Bill through Parliament to allow limited improvements at Grangemouth failed because Lord Dundas would not agree to make arrangements for these to go ahead on his land. In July 1820 Lord Dundas died, and Kirkman Finlay continued to be elected annually as Governor until he died in 1842. James Loch M.P. was elected in his place.³

After the departure of Lord Dundas in 1816 the company continued to be prosperous, although a wet dock was not constructed until 1838, by which time better relations existed between the Dundas family and the company. In 1818 revenue from tolls

reached £42,265, compared with £31,795 in 1816. Perhaps Kirkman Finlay and his friends wanted to display their success by the illustration of the company's seal at the end of the minutes on 18 March 1818. This seal shows a figure of Britannia, the personification of Great Britain, ruling the waves, armed with a trident and shield, wearing a centurion's helmet, and with a lion by her side. Round the seal are the words 'The Company of the Forth & Clyde Navigation'. At the base of the seal are the words 'Incorp. by Act of Parliament 1768' and, quite faintly at the top, is the motto 'Dum defluat amnis', which can be translated as 'The canal glides on and will glide on for ever'.

Like the motto of the Trent & Mersey Canal, the words are taken from Horace, not from the Odes as in the case of the Trent & Mersey, but from the Epistles, Book I, verse 2, line 4. There, Horace refers to the river, not the canal, flowing on for ever. Kirkman Finlay may, by this motto, be indicating that the company could succeed without the Dundas connection.⁴

It is difficult to conclude with any certainty which faction had been in the right. On the one hand there was, no doubt, truth in the claims of the critics of Lord Dundas that the new works would need large amounts of money, which would lessen the amount for dividends to shareholders. On the other hand, although Lord Dundas would personally gain from selling his land to the company, the investment, at this earlier stage, would perhaps have led to increased trade, higher revenue and larger dividends eventually. It seems impossible to make a judgment.

Notes and references

I should like to thank Donald Cattanash for photographing the seal and motto, and I should like to acknowledge the help given by Cora and John Lindsay and by Edinburgh Reference Library

1. National Archives of Scotland, BR/FCN/1/31, 18 March 1818
2. National Archives of Scotland, BR/FCN/4/8
3. See Jean Lindsay (1968) *The Canals of Scotland*
4. See Jean Lindsay (1979) *The Trent & Mersey Canal*, pp.41-42

Disaster in Nottingham

Adrian Gray reports on the first great British canal explosion — the huge gunpowder explosion in the canal warehouse in Nottingham in 1818.

The Nottingham Canal opened in 1796, to connect the city with the River Trent, so that goods could be unloaded at a wharf very close to the city centre and in the shadow of the castle. The Trent Navigation opened a cut to Beeston, providing a direct route to the west.

Hezekiah Riley was the captain of a boat that plied along the Trent between the break of bulk point at Gainsborough and Nottingham, where goods could be transhipped again to and from the canals of central England. In September 1818 he took his boat, belonging to Richard Barrows, down the Trent to Gainsborough with its small crew of Joseph Musson and Benjamin Wheatley. He loaded up a mixed cargo of stone, cotton, molasses, soap and 21 barrels of gunpowder. The gunpowder, from Messrs Flower at Gainsborough, was destined for the mines of Derbyshire via Cromford, and each wooden barrel contained about 100lb of it.

They sailed upriver, past Torksey Castle and the small riverside church at Laneham, and eventually moored overnight at Burton Joyce. From there, Riley headed to the Nottingham Canal Company's wharf in Nottingham. Perhaps Riley had been one of the 'incalculable number of spectators' who had gathered at the wharf in November five years earlier when James Sadler, the pioneer British balloonist and former pastry cook, had made one of his ascents in the skies — disappearing into the clouds to return the next day from somewhere near Stamford.

The boat was brought into the canal basin under the crane and moored under the arch of the warehouse for unloading into the dry of the stone building. Each of the barrels of gunpowder was rolled into the warehouse, but the plugs in one came loose and it left a trail of some three or four pounds of powder behind it.

Rather than a routine operation, what followed was a 'most dreadful calamity' that 'threw the whole town into consternation and spread the most extensive devastation throughout the neighbourhood.'¹ A man in the Meadows described how the whole warehouse appeared to lift up 'several yards into the air and

then burst asunder into innumerable fragments.' It was also reported that not one stone was left upon another, and that the stone flooring was forced down into the ground. The effect spread across the city as 'every house ... was shaken as if by an earthquake, and the inhabitants were thrown into the greatest consternation and dismay.' Then '[t]he explosion was followed by a cloud of smoke which completely darkened the atmosphere.'

It proved to be one of the blackest days in Nottingham's history, a disaster caused by a thoughtless prank. As the smoke cleared, thousands poured into the streets and down to the wharf but others rushed uphill fearing some earthquake or flood. As the crowds approached the scene of the disaster, 'agonising cries burst from their bosoms ... as in some mangled corpse before them they recognised a tender relative.'

As Riley's boat was being unloaded, the whole warehouse was suddenly blown into the air so that 'not a vestige remains.' Part of the boat sank, several nearby buildings lost their roofs and hundreds of windows were 'demolished', in the words of the press account that was distributed across the country.

But worst of all was the human destruction. Initial estimates of deaths varied. The first reports were that at least eleven 'had been precipitated into eternity' instantly and that two more were dying. The 'mangled remains' of eight men and two boys were collected almost immediately, in various gruesome states. 'Two men were found lying on the edge of the boat, with their heads completely taken off' whilst two others were found in the gateway to the warehouse, one of them a waggoner with one of his horses who was killed by the collapsing warehouse. Two bodies were found across the canal in the Meadows, one at a distance of 100 yards and the other at about 350 yards with 'the limbs and flesh scattered about in different directions.' One body was 'a complete trunk with both arms and legs blown off.' One of the fatalities was a boy who had been fishing in the canal, whilst the man hurled furthest across the meadows had been working on a boat nearby.

Others had lucky escapes. Wilkes, the canal company's agent, was away, but his wife was in their house and was thrown across the room. A stonemason named Hall was blown into a boat which started to sink, but he was rescued from drowning at the last moment. Other houses collapsed, but one man crawled out from underneath.

The bodies were taken to the *Navigation Inn*. The water was drained out of the canal basin to look for extra bodies and to recover some lost merchandise. The coroner's inquest was also held at the *Navigation Inn*.

What had caused this cataclysm? Initial reports blamed it on a youth named Cross, the supposed son of a boat owner, but the cause was actually Joseph Musson from Riley's boat and he has been reviled in descriptions of the event ever since. However, the initial cause was the poor quality storage of gunpowder, and Riley told the coroner how the barrels sometimes had an end 'out' which could be 'matted up'. As he and his two crew were carrying the 21 barrels into the warehouse, the end of one collapsed and he had to set it down on the wharf, where about 4lb spilled out. Riley tried to put most of the powder back into the barrel, then went to the counting house leaving Musson and Wheatley to finish the job. This version of events is slightly different from some of the other accounts which suggest negligence in rolling barrel from which powder was evidently leaking; Riley's account placed him personally in a somewhat better light.

Musson, seeing that gunpowder had been spilt, went to get a hot coal from another boat in order to have 'a flash'. 'You've got a fire in your boat, I want a live coke', he said, 'Lads, I'm going to have a flash.' Musson carried the hot coal back gripped by two sticks, but he dropped it; he then picked it up and juggled it between his hands, until he dropped it on the wharf where the powder had been spilled. 'In a moment the whole exploded and precipitated himself and

nine others into an eternal world.' The trail of spilt powder had set alight in an instant, and exploded all 21 barrels.

It was a spectacular end for Musson himself, who was blasted 126 yards into the Meadows. 'The unfortunate author of the mischief was thrown a great distance into the meadows, where his remains were found, rent asunder and scattered in several parts.' It was suggested that he landed on the far bank of the river known as the Tinker's Leen, with a leg being found on its bank, and then bounced another dozen yards further on where other parts were found.

Damage from the explosion was estimated at £30,000, which included 4000 quarters of corn, some paper and cheese in the warehouse. The warehouse was insured, but the insurance company refused to pay up and the canal company sued Musson's employers, the Nottingham Boat Company. They won £1000 but the boat company could not pay, and they had to settle for £500. The people of Nottingham set up a fund to help the relatives of the victims.

Note:

1. This account is based entirely on contemporary press versions, principally in *The Observer* and *The Times*, also the *Gentleman's Magazine* and the *Northern Star*.



*The canal in Nottingham in the 19th century
(B Beilby and www.picturethepast.org.uk)*

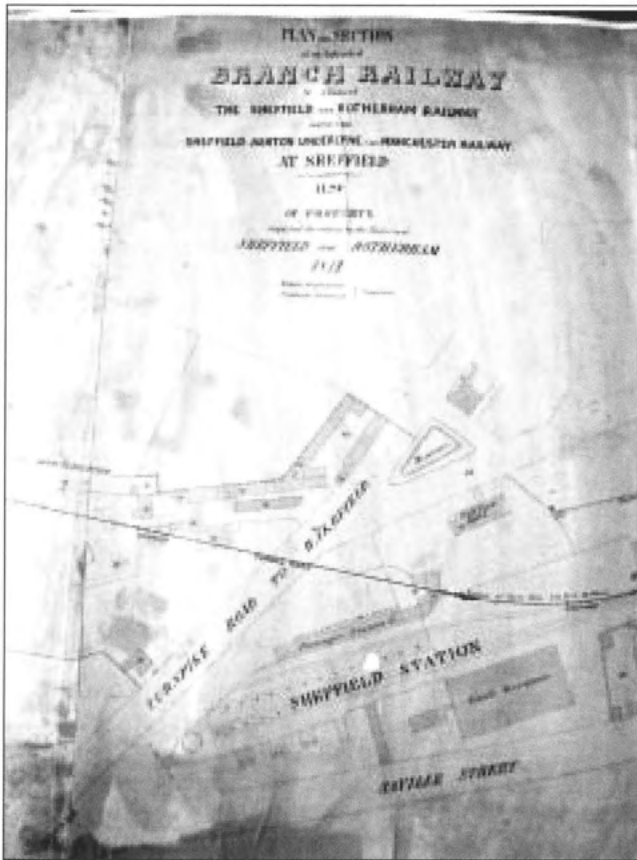
The Fiery Jack, part 2

Carl Shillito

Further notes to 'A Short History of the Spital Hill Tunnel, Sheffield'

The Fiery Jack, a short history of the Spital Hill Tunnel, Sheffield¹ was published in the special 200th edition of this Journal (December 2007) in response to a request from the Editor for more unusual articles that either challenged conventional wisdom or used unconventional sources. The narrative satisfied this remit on both counts. Firstly the notion that the

steeply graded tunnel had never been open to passenger traffic was quashed, an often repeated error relating to the gradient was corrected, and it was demonstrated that freight traffic was actually quite intensive for almost a century and not the almost insignificant flow that previously published references had alluded to. Secondly the account included anecdotal evidence culled from local internet forums to supplement information drawn from traditional documentary records. However the article left certain important historical aspects untouched as the relevant sources had not been traced at that time, particularly in relation to the original plans, inspection on opening, and the exact operating arrangements for the passenger traffic. Material has since come to light covering these aspects, while recently some very significant land-use changes have impacted on the tunnel site. Some addition to and minor revision of the 2007 article together with an up to date survey on the condition of this interesting structure is therefore timely.



Plan... of an intended branch railway to connect the Sheffield & Rotherham Railway with the Sheffield, Ashton-under-Lyne & Manchester Railway at Sheffield. Detail, showing proposed arrangement at Wicker Station and lower portal approach

*Engineers Robert Stephenson, Frederick Swanwick
James Alexander; Surveyor: 1844
(West Yorkshire Archive Service, Wakefield)*

Original plan and section

The 1844 plans prepared by the engineer Frederick Swanwick² clearly show that a tunnel as opposed to a cutting was always intended due to the many houses and workshops that were located on the hillside very near to or actually along the line of route (the book of reference confirms that the Duke of Norfolk owned the freehold of most of the property and land). The tunnel was originally planned to be 363 yards in length and the incline 1 in 36, which is where the confusion over the gradient probably originates. This was significantly less severe than the eventual 1 in 25 and was only made theoretically possible by making the incline a continuous one from the point at which the line formed a junction with the Sheffield & Rotherham Railway's Wicker terminus layout at the station throat to the summit point just beyond the upper portal of the tunnel.

Tunnel length

The plan was not adhered to either in respect of the gradient, or the length of the tunnel. What seems to have occurred is that the Wicker station area became rapidly built up with sidings and facilities laid out on one level such that it was impractical to commence the graded section of line until it actually entered the tunnel, while at the SA&MR end the development of the Bridgehouses terminus site had brought the tracks somewhat closer to the MR than was assumed when the route was surveyed, requiring a junction to be made nearer to the Wicker than the originally intended location at Osborne Street. It is most probably for these reasons that the railway was only ever inclined through the tunnelled section, which was itself considerably shorter than originally planned. The tunnel was in fact only 315 yards long on completion according to the Railway Inspector's report at opening and not about 370 yards as stated in the 2007 article. The 1848 collapse affected approximately 65 feet of the arch at the summit end of which around 42 feet was opened out and 23 feet rebuilt. Thereafter the length was 301 yards and is shown on all subsequent plans and diagrams as such.

Opening and passenger traffic arrangements

The line and associated engineering works was examined on 22 September 1846 and approved for opening one week thence³ by Major General Charles William Pasley, one of the most distinguished and knowledgeable Railway Inspectors of the era. As might have been expected from the author of *Practical Architecture: Brickwork, Mortars and Limes*, he took a close interest in the construction of the tunnel arch and was aware that a partial collapse had occurred at the upper end during construction. Here the unequal pressure exerted by the hillside sloping across the line of route was to cause the later and potentially more serious incident after the line was opened to traffic, but prior to opening the structure had been strengthened by the addition of a masonry buttress on the lower side of the slope, an arrangement that Pasley declared to be 'strong and safe'. In this aspect he was proved to be over-optimistic, although the consequences were not so tragic as those which occurred following the collapse of the Dee bridge,⁴ which he had passed for traffic in the same month.

Pasley's observations on the working of trains are of particular interest. He was met by Swanwick

together with Midland Railway officials at Masborough where a special engine and carriage conveyed the party to Sheffield. The arrangements for transfer of carriages between the Wicker and Bridgehouses termini are described in detail and the movements were 'put in practice repeatedly' in Pasley's presence. Since the new line made a trailing connection with the departure lines from each of the respective stations it was necessary in either direction of travel first to draw the carriages out of the passenger platforms and then propel them to the tunnel portal. Descending carriages (i.e. from SA&MR to MR) were allowed to pass through the tunnel by force of gravity using the brakes to regulate speed. Ascending carriages (i.e. from MR to SA&MR) were connected to a rope that passed around a large horizontal wheel at the summit. The engine that had propelled the carriages to the foot of the incline would then decouple from the train and proceed 'wrong road' to the summit where it was attached to the other end of the rope. The engine would then descend the incline and using its tractive effort assisted by gravity thereby haul the coaches up the gradient, passing them at the half way point.

When the S&RR directors had first viewed the 1844 plans for the junction line they had determined to enquire whether it was to be worked as an inclined plane or by conventional means⁵ but the engineer's answer was unrecorded and it had been assumed, based on evidence of later practice, that it was always conventionally worked. This impression, repeated in the 2007 article, is therefore inaccurate. However, Pasley was quite prescient when he observed that the original method of transfer while being perfectly safe would cause a degree of 'delay and trouble' particularly if there was an increase in traffic, and suggested that a strong banking engine on permanent standby to work the trains would be a more practical solution. The passenger service was in fact short lived but something like the system he referred to was utilised for freight transfers in the tunnel's operating heyday.

The passenger workings were advertised in the 1847 Bradshaw which gave times to and from Derby via Masborough to the SA&MR (five trains on weekdays and one on Sunday in each direction with through carriages). The 1847 Mackenzie also included through times for Derby. The tunnel was inspected in January 1849 after the reconstruction and shortening that followed the 1848 collapse and permission was given for the recommencement of passenger traffic. The 2007 article surmised that this

FOR COACHES IN CONNECTION WITH THESE TRAINS, SEE PAGE 72.

MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE.

The Great Northern, Chester & Lancashire, & the Lancashire & Yorkshire.

1. Manchester, 2. Oxford, 3. London, 4. East, 5. Manchester, 6. Huddersfield, 7. Leeds, 8. York, 9. Hull, 10. Lincoln.

1. 1st, 2. 2nd, 3. 3rd, 4. 4th, 5. 5th, 6. 6th, 7. 7th, 8. 8th, 9. 9th, 10. 10th, 11. 11th, 12. 12th.

		DOWN TRAINS.												UP TRAINS.												FARES.	
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Bradshaw 1847: Sheffield, Ashton-under-Lyne & Manchester timetable, showing Midland connections (Brunel University, Transport History Collection)

would only have lasted until August 1849 at the latest when the MS&LR eastern extension was fully opened to Grimsby. However, the MS&LR junction at Eckington that provided a more convenient connection to the MR was opened by February 1849 so it is unlikely that the tunnel would have been used for passenger traffic after that date. Gough assumes that the passenger traffic was never actually resumed after the 1848 collapse.⁶

Recent developments

The tunnel's upper portal is listed Grade II (and in 2012 remains in parlous state) but the lower entrance does not enjoy statutory protection and it has been significantly affected by the Tesco development and associated car parks and service roads that were at the planning stage when the 2007 article was written. At that time there was a suggestion that the tunnel arch and the massive retaining walls that flanked it

could have been made into a feature of the new complex. Regrettably this has not proved possible and in 2011 the historic structures were almost entirely obscured, though not destroyed, by the new building works.

The lower portal was actually a substantial segmental arch bridge of brick faced with masonry that formed the first 12 yards of the tunnel. It was of wider profile than the tunnel proper and was constructed as a conventional bridge in order to support the weight of traffic on Spital Hill, the ancient name for that section of the Sheffield to Wakefield turnpike road which it carried over the railway. Spital Hill forms the northern boundary of the old Wicker terminus site and rises from its junction with The Wicker and Savile Street, where the main entrance to the station was located, on a continuous gradient towards the Burngreave district. When the station area was originally laid out the turnpike road was supported by a massive retaining wall of masonry

construction. This edifice was pierced by the tunnel portal beyond which, on the uphill side at the junction of Spital Hill and Carlisle Street, there was a high level entrance to the station from where a descending access road led down to the yard, the whole arrangement being supported by further extensive and heavily buttressed retaining walls. It was at this point where the developers planned to create the principal entrance to the retail store with access for pedestrians and cars from Spital Hill, so catering for and helping to regenerate the old district of Burngreave.

The problem for the planners was that very little was known about the composition of the soil and rock behind the retaining walls and around the former tunnel portal.⁷ The consulting engineers contacted the author through the Society and obtained a copy of the 2007 article as being one of the few sources of information that may have given clues about the conditions to be expected. However there was still a great deal of uncertainty although it was known that

the tunnel bore at the lower end had been backfilled before it was sealed off with a concrete bulkhead. Ultimately it was decided that it would be unwise to risk putting any additional loads on to the retaining walls or to the tunnel portal due to the possibility of hidden voids and so it was determined to build a facing wall in front of the old structures in order to carry the load of the new buildings and service road ramps. Had this been of solid concrete construction then the historic fabric may have been permanently damaged. However, such a solution would have dramatically increased the carbon impact of the project and a reinforced soil alternative was implemented instead, faced with textured concrete blocks that blend with the small section of the original structure that is still visible. Thus a significant relic of the district's industrial heritage remains in situ but permanently encased or at least hidden away for as many decades as the great new retail emporium is destined to last.



Spital Hill Tunnel lower portal from Wicker Goods Yard, looking north west. Photograph by Sheffield City Highways Department, Bridges Section, July 1929 (Sheffield City Council Archives and Local Studies Service) Examination of the original image shows that the original ascending line (to the left) was almost certainly out of use by this time. At the top end there is a wagon on the track, almost certainly a cattle truck, as this section was by then used by the GC/LNE as a siding serving cattle pens. Bridgehouses goods depot can be seen beyond that.

Notes and references

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3. The National Archives (TNA), MT 6/3/61, *Midland Railway: junction line with Sheffield and Manchester Railway*. Top File No: 1168, 1846
4. failure of Robert Stephenson's cast iron structure on Chester & Holyhead Railway at Chester, 24 May 1847, with five fatalities
5. TNA, RAIL 530/10 *Sheffield Station Committee Minutes*, 1840-44
6. John Gough, *The Midland Railway: A Chronology*, Railway & Canal Historical Society, 1989
7. 'Strengthened Soil Solution for Sheffield Supermarket', *New Civil Engineer*, May 2011

The Macclesfield Canal Company – Interactions and Relationships:

part 2, 1840-50 Graham Cousins

Part 1 of this article discussed the interactions that the Macclesfield Canal Company had with other canal companies during the period 1826–39.¹ It highlighted the close working relationship that the company had with the Peak Forest Canal Company, particularly with regard to freight rates and water supply. The Macclesfield's relationship with the Trent & Mersey Canal Company was also mentioned — this was less positive, the Trent & Mersey fearing loss of revenue due to Manchester traffic using the Macclesfield – Peak Forest – Ashton line of canals.

The activities of Edward Hall, agent to the Macclesfield company, were also considered in Part 1. He served as the Macclesfield's agent from 16 May 1826 to 19 September 1844. He resigned from his position with the Macclesfield Canal company and was appointed Secretary to the proposed Churnet Valley Railway in summer 1844. The Churnet Valley Railway company later joined with the Staffordshire Potteries Railway company in April 1845, to form the North Staffordshire Railway company. At this point he joined the South Midland Railway Company as a director. He then became involved with a number of railway companies during the Railway Mania period.

The events of 1840 to 1850, relating to both the Macclesfield Canal company and Edward Hall, are covered here.

Trade on the Canal

1840: further concerns over freight rates

On 8 June 1840 Edward Hall travelled to Manchester to attend a meeting of the committees of the Ashton, Peak Forest and Macclesfield companies, to be held at the Ashton Canal office in Manchester.²

The meeting considered a letter that had been received from Mr Warner, the clerk to the Coventry Canal company, requesting other canal companies

to reduce the tonnage on packs of cotton, linen, woollen and silk goods (hereafter 'cloth goods') to ½d per ton per mile — the Grand Junction Railway Company having latterly announced that it intended to carry at reduced rates between Manchester and London. The attendees at the meeting felt that it would, indeed, be worthwhile to have a reduction in the rate of tonnage on merchandise generally on the line of canals between Manchester and London. However, in the absence of information on what course of action other canal companies were intending to take, it was agreed that the matter be left to the sub-committees of the respective canals to take such measures as they thought fit. It was also thought appropriate to have an early meeting of the canal companies between Manchester and London, and if such a meeting was convened then the three companies would send delegations with full powers to act as required. It was agreed subsequently that Hall would accompany the two committee members appointed to attend the meeting.

At the Macclesfield committee's next meeting (and annual survey of the canal) on 22 June 1840 another letter from Mr Warner, of the Coventry Canal, was read, confirming that a meeting of delegates from the canals between London and Manchester would be held at the King's Head Inn, Coventry, on Tuesday 23 June.³ Mr Beck, of the Coventry company, who acted as chairman at this latter meeting, explained that its object was to consider the reductions made by the Grand Junction Railway company in the freight carriage rates from Liverpool or Manchester to London, and the consequent effect on canal interests. He said that under the present circumstances carriers would not be able to exist on the canal network; some reduction in the rates of tonnage must take place or the trade would leave the canals.

After much discussion Captain Hyde John Clarke RN, representing the Peak Forest Canal Company, proposed a resolution that a further reduction of 50% should be made on the tonnages of goods navigated from Manchester or Liverpool to London, and vice

versa, as early as possible. He suggested that the delegates should recommend to their respective committees that this action be put into effect in such manner as may be most convenient to them. Captain Clarke's resolution was seconded by his colleague, Thomas Fleming. After further discussion, and because of the restrictions imposed on several of the companies by their Acts of Parliament, P P Bouverie (Grand Junction Canal) moved a second resolution, proposing that the delegates recommend to their respective committees that, as early as possible after 1 July following, a tonnage not exceeding ½d per ton per mile be charged on packs of cloth goods carried by canal from Manchester or Liverpool to London and vice versa, and that the Oxford Canal Company, which was not represented at the meeting, be invited by letter to make a corresponding reduction on their portion of the line. The second resolution was carried unanimously, Captain Clarke having withdrawn his original resolution. Sir Francis Head, also from the Grand Junction Canal, suggested that if meetings of delegates from the various canals were held in Birmingham from time to time then greater unanimity would be produced and the canal interest strengthened.

At the meeting of the Macclesfield's committee, held in the morning before the annual general meeting on 16 July 1840, the report from the delegates who had attended the meeting in Coventry was read and accepted. It was agreed that the reduction of tonnage rates highlighted in the report be recommended for acceptance at the annual general meeting later that day, as it appeared that the Coventry and the Grand Junction Canals had reduced the tonnage on packs of cloth goods to ½d in accordance with the resolution made in Coventry, though the Oxford's committee had declined to make any further reduction at the present time.

At the next meeting of the Macclesfield's committee on 27 August 1840 Edward Hall reported that the Trent & Mersey's agent had indicated that his committee were also in agreement, in principle, with the charge of a ½d per ton per mile on packs of cloth goods carried by canal between Manchester or Liverpool and London, but that the matter was to be considered further at their next general meeting. An application from the carriers Kenworthy & Company to reduce the rate of tonnage on wool passing on the Macclesfield Canal from London to Manchester or on to the Huddersfield Canal was also considered. It was agreed that if such a reduction were to be made

on the other canals then wool would be charged at only a ¼d per ton per mile from such time as the sub-committee decided.

At the committee meeting on 29 October it was decided unilaterally that, from 13 November, the tonnage rate on packs of cloth goods carried for the whole length of the Macclesfield Canal would indeed be ½d per ton per mile, and that the Ashton and Peak Forest companies be requested to make the same reduction.

1841: trading conditions worsen

At the first meeting of the Macclesfield's committee in 1841 (7 January), the topic of cloth goods came up again, and Edward Hall reported that James Meadows had informed him that they would be charged 1d per ton per mile on the Ashton Canal from Monday 9 November last, and ½d per ton per mile on the Peak Forest Canal, when passing to Wolverhampton and Birmingham and thence to Bristol. The question of the reduction of the tonnage rate on wool was mentioned, but it was considered that the reduction was not yet so general as to warrant the Macclesfield making this alteration yet.

During 1841 the trading situation on the canal network was becoming increasingly serious. On 18 May, having received letters on 14 May from the Grand Junction Canal calling a meeting to discuss the depressed state of the carrying trade, Hall and Thomas Watts travelled to London for a meeting at the Grand Junction's office. At the subsequent Macclesfield committee meeting and annual survey of the canal (24 June) their (unrecorded) proceedings were approved.

On 15 July the committee turned its attention inwards and appointed five members as a sub-committee to investigate the various expense streams and operating costs within the company, with a view to effecting some savings in expenditure.

The annual general meeting of proprietors of the Macclesfield Canal Company for 1841 was held at the Macclesfield Arms Hotel on Thursday 15 July. The *Manchester Guardian*, dated 31 July, carried a report of the proceedings.⁴ Stephen Heelis, Law Clerk to the company, read the following report:

The Committee regret that the continued state of depression in the general trade of the Kingdom, added to the low rates of pay charged per railway does not leave it in their power to make a favourable report of the trade per canal. There has again been a diminution in the amount of the annual receipts, though not so considerable as that reported last year.

The reduction in the rate of tonnage from 1d to a ½d per ton per mile upon packs of cotton, linen, woollen and silk goods carried between Manchester and London, as ordered last July, has been extended, in conformity with a similar measure on several other canals, to all such goods passing through the whole length of this canal.

On the 18th May last a meeting of deputations from various canals on the line of the route between London and Manchester, was held at the Grand Junction Canal Office, for the purpose of considering the necessity of giving immediate attention to the depressed state of the carrying trade: but nothing has, at present, resulted there-from.

The balance of the tonnage account on the 25th March, the day on which the accounts are brought, pursuant to the Act of Parliament, being £6,472 0s 10½d in favour of the Company, the Committee recommend a dividend of £1 10s per share be paid amongst the Proprietors.

The Committee recently inspected the canal and works when, at the recommendation of their Engineer, they ordered some piling to be done at the Dane Aqueduct, and also a footing of earthworks at the Middlewood Embankment: with these exceptions, they found the works in good order.

Charles Cholmondeley, Chairman

Two of the shareholders attending the meeting, R Gaunt and Thomas Wardle, then instigated very critical questioning regarding Edward Hall's remuneration from the company. This provoked intense debate. In answer to questioning Hall gave the following figures for his salary:

1826 - 1831	£200
1831 - 1836	£300
1836 - 1839	£400
1839 -	£500

Wardle asked if the committee would explain the reason for the last two advances in Edward Hall's salary, to which Gilbert Winter, on behalf of the committee, replied that by 1835 there was a great demand for capable managers from the many railway companies and other public undertakings, and he had no doubt that Hall might have got a more lucrative situation elsewhere. The committee, taking into consideration his good work for the company, then agreed to advance his salary to £400 per annum. In 1838 Hall was a candidate for the situation of manager to the London & Birmingham Railway Company, the salary for which was more than £1,000 per annum. Winter added that he knew that Hall was second on the list of candidates, and had not Joseph Baxendale, of the firm of Pickford & Company, offered his

services then Hall would have been offered the position. The Committee considered the situation again in 1839 and decided to advance his salary to £500. Winter then went on to say that much higher salaries, varying from £600 to £1,500 per annum, were paid by the London & Birmingham, Grand Junction and Manchester & Liverpool railway companies, and also by the Ashton and other canal companies. Under the circumstances he did not think that the £500 paid to Edward Hall was too much.

Mr Gaunt said that the salary of the agent to the Trent & Mersey Canal, which was more than three times the length and with forty times the traffic of the Macclesfield, was £400 per annum. Thomas Watts, for the committee, replied that he understood that Mr Moore's salary was considerably more.

Wardle then raised the example of the Huddersfield Canal for comparison. Its income for 1840 was £20,000. It was 20 miles in length, had 74 locks, six aqueducts, and eight reservoirs and the whole length was one of engineering difficulty. One person, Mr Raistrick, acted as both agent and engineer with a salary of £350. He continued that he was a strong advocate for having a responsible and respectable agent, together with paying a reasonable salary, but the circumstances of the Macclesfield Canal had to be considered. It was 26 miles long, had 11 locks and two reservoirs; the shares were now worth £25, being a depreciation of 75% and the income was only £11,000, without much prospect of improvement. The company also had a resident engineer, with a salary of £200 and a house to live in. In addition there were two clerks to help with the accounts. He felt that the company was not justified in paying the last two advances in the salary of the agent, and he thought that £300 would have been a very fair salary. He hoped that the committee would try to reduce expenses, as he considered the company could not afford to pay £700 per annum for an agent and an engineer. He then proposed that the meeting recommend to the committee a reduction in the salary of the agent. Mr Gaunt seconded the motion. Charles Cholmondeley, however, added his support to the satisfactory manner in which Edward Hall had represented the company and attended to its interests, and Wardle's motion was defeated by 13 votes to four — eight of which were from the committee.

The sub-committee investigating the operating costs within the company met on 10 August. Edward Hall began by reporting that Pickford & Company had withdrawn most of their trade from the Peak Forest-Macclesfield line of canals. He also read a

letter from Kenworthy & Company concerning the rates of tonnage charged on the canals between London, Lancashire and Yorkshire, giving notice that unless a reduced rate was introduced before 7 September they would commence measures for winding up their company. A list of Macclesfield Canal employees, giving their duties and respective remuneration, was produced, and the current requirements of the company were considered. Given the present state and future prospects for the canal, it was resolved that the services of the resident engineer should be dispensed with at Christmas, and a number of other cost saving measures should also be adopted:

Hall was instructed to adopt measures to reduce the cost of the wharfage business at High Lane. It was felt that the business had contracted and needed to be conducted in a more economical way so that it cost about 5 to 6 shillings per week to operate

Samuel Morgan, one of the toll collectors at Hall Green, the assistant wharfinger at Macclesfield and the toll collector at Macclesfield were to be discharged from the company's service, giving each person one month's notice of termination

five bank labourers, one reservoir tender and two lock tenders were also to be discharged at the next monthly pay day (4 September)

It was agreed that the reasons for these measures were to be found simply in the present unfortunate state of trade on the canal, and that the dismissals did not reflect, in the slightest degree, on the character or conduct of any of the individuals concerned.

At the request of Stephen Heelis, the company's solicitor, Hall was ordered to summon the members of the committee to meet at Heelis' office in Princess Street, Manchester, at noon on Tuesday 17 August; Hall recorded in his journal that he travelled to Manchester on 16 August for the purpose of attending this meeting. Heelis began by saying that he had asked for the meeting to be called because of the action adopted by Thomas Wardle at the annual general meeting, which he considered was likely to operate prejudicially and cause dissatisfaction in the minds of creditors. A letter from Charles Nicholls, the resident engineer, was read to the meeting in which he offered to superintend repairs to the canal, holding himself responsible as usual, at a salary of £100 per annum, with the company's house to live in, if he was allowed the privilege of doing any extra work that may fall his way in the locality of the canal. The

members of the sub-committee present at the meeting stated that if this offer had been made to them previously they would have recommended acceptance, so Nicholls' proposal was accepted, with the understanding he must not be absent from the line of the canal unless Edward Hall had been previously informed of his intention. The latter offered in turn, if he was still employed by the company after Christmas, to accept a reduced salary of £400 per annum. It was also agreed that 'in order to meet the difficulty which may arise in the minds of some of the creditors the Committee will recommend to the next Annual Meeting the adoption of a sinking fund'. That evening Hall dined at the home of Thomas Fleming, one of the committee members, returning to Macclesfield the following day.

The committee returned to the subject a couple of years later, on 20 July 1843, deciding to reduce Edward Hall's salary further to £350 per annum and that of Charles Nicholls to £52 10s 0d per annum, to take place from 29 September following. At the next meeting of the committee on 19 September Hall signified his acceptance of the reduced salary. Charles Nicholls also accepted the decision; it was to be subject to the same conditions as agreed previously on 17 August 1841, except that if he wished to be absent from canal work for a period exceeding 48 hours he had to previously agree the matter with the sub-committee.

Hall was again in Manchester on 13 September 1841 to meet with delegates from various canal companies at the offices of Messrs Kenworthy's, the canal carriers, to discuss the state of trade on the canals. At the next meeting of the committee of the Macclesfield company on 23 September having stated that the reduction in the number of company employees, as ordered by the subcommittee on 10 August, had been carried into effect and the people discharged accordingly, he reported on the meeting, held at Messrs Kenworthy's office in Manchester on 13 September, with a deputation from the Coventry Canal and others, to consider the present state of the carrying trade on the line of canals between Manchester and London. The general impression of the meeting seemed to be one in favour of a further reduction in the rates of tonnage on wool and other articles carried between London and Manchester or Yorkshire. The Cromford & High Peak Railway and the canals on that line of route had reduced their tonnage, and Hall produced a comparison of the rates as then charged — showing a difference of at least 7 shillings per ton against the

line of the Macclesfield Canal. Copies of letters from the Grand Junction, the Oxford and the Huddersfield Canal companies to Messrs Kenworthy & Company were read to the meeting, together with correspondence between Edward Hall and Sir Francis Head (Grand Junction Canal) and also between Hall and Mr Moore (Trent & Mersey Canal). Hall stated that the Oxford Canal had finally agreed to reduce the tonnage on packs of cloth goods to $\frac{1}{2}$ d per ton per mile, that the Coventry company had also reduced on wool to $\frac{1}{2}$ d, and that the Grand Junction, the Coventry and others were disposed to make such further reductions as might induce the carriers to continue upon the canals.

After careful consideration the committee ordered that the rate of tonnage on wool, carried the whole length of the Macclesfield Canal, and on general merchandise carried between London and Manchester and Yorkshire, be reduced to $\frac{1}{2}$ d per ton per mile, provided that the other canals on these routes reduced the tonnage on these articles to the same extent. Hall was asked to try to arrange with the other companies that they all implemented the reduction at the same time. He further reported that the Trent & Mersey had reduced the rate of tonnage on flour to $\frac{3}{4}$ d per ton per mile but, by a comparative statement which he produced, it appeared that the charges from Nottingham by the Cromford Canal and Cromford & High Peak Railway were still at least 2 shillings lower than those by the Macclesfield route, and that the trade in flour passing along the whole length of the Macclesfield Canal had, in fact, ceased because of the reduction in rates on the Cromford route. The committee ordered that the rate of tonnage on flour passing along the whole length of the Macclesfield Canal be forthwith reduced from 1d to $\frac{1}{2}$ d per ton per mile, and that Hall communicate with Moore on the subject to try, if possible, to induce the Trent & Mersey to make a further reduction on the tonnage on flour.

However, in December 1841, in what seems to be a strange development, the general committee of the Peak Forest company decided, even after representations from the Anderton Canal Carrying Company, that they would only reduce the tonnage on packs of cloth goods, and earthenware in crates, navigated the whole length of the Ashton Canal, the Peak Forest Canal and the Macclesfield Canal to 1d per ton per mile, and that the tonnage on other merchandise navigated a similar or shorter distance would remain unaltered.

Edward Hall thus had to report back to the Macclesfield Canal committee two days later, on 10 December 1841, that the Peak Forest, Ashton and Trent & Mersey companies had declined to make the hoped-for reductions of tonnage as regards packs of cloth goods and general merchandise. He also had to report that Messrs Kenworthy & Company had given up trading on that line of canals, and that there had been only a few boat loads of flour since the reduction of the tonnage on that article, but that the Trent & Mersey had declined to make any further reduction on it. The subject of a reduction of tonnage on crates of pottery ware which had been proposed by the Peak Forest and Ashton companies was considered, but any decision was postponed until further information had been received.

On 20 January 1842 Pickford & Company applied to the Peak Forest Canal for a reduction in the carriage rates on merchandise carried from Liverpool to Macclesfield. However, the general committee resolved that the tonnage of all goods navigated along the Ashton and Peak Forest canals from Liverpool to Macclesfield and vice versa would remain at 1d per ton per mile.

At the meeting of the Macclesfield's committee on 25 February 1842 Edward Hall reported that the Birmingham & Liverpool Junction Canal had a bill before Parliament empowering them to build an extension of their canal and also one to enable them to act as carriers, and that the Ellesmere & Chester Canal had a bill before Parliament for amending their Acts and enabling them also to act as carriers. It was agreed that the Macclesfield company had no cause or grounds to object to any of these bills. Correspondence between Hall and James Meadows on a proposal by the latter for a reduction of the tonnage on iron to $\frac{3}{4}$ d per ton per mile was read, but after discussion it was resolved that, given the present state of their information, the committee could not agree to the proposition.

1844: railway influences increase

It was back to Manchester again for Edward Hall on 15 January 1844, from where he travelled to Wolverhampton with James Meadows. The next day they had 'canal business' and then travelled in Shipton's fly boat to Birmingham. They returned by rail to Wolverhampton and on to Stafford. The following day (17 January) they travelled to Norbury Junction on the Birmingham & Liverpool Canal in a steam tug, returning to Stafford and then home.

The purpose of their visit is revealed in the minutes of a committee meeting of the Peak Forest company for 22 January, in which James Meadows states that a reduction in the tonnage on iron 'was proposed on several of the canals on the southern line of Navigation'. Deputations from the Ashton, Peak Forest and Macclesfield Canal companies subsequently met at the Ashton Canal office in Manchester. The state of the iron trade was considered, given that it had been recognised that much of the iron originating from south Staffordshire was being carried on the Birmingham & Liverpool Canal. In order to compete it was agreed that a reduction of the tonnage on iron by 25% would be recommended by the Ashton, Peak Forest and Macclesfield companies, provided that the Staffordshire & Worcestershire and the Trent & Mersey companies would do likewise, it having been intimated that such would be the case.

At a February meeting of the Peak Forest general committee James Meadows brought forward various letters from a Mr Sparrow (possibly William Sparrow, the Wolverhampton iron master, whom James Meadows had met in March 1832) urging the companies whose canals formed the line into Staffordshire to reduce their tonnage on iron. It was agreed at the meeting that the Peak Forest company would indeed make the reduction of 25% on the present rate of tonnage, provided that the Ashton and Macclesfield companies made a similar one. The Macclesfield Canal committee, meeting on 20 March, agreed to comply — ordering that the rate be reduced to $\frac{3}{4}$ d per ton per mile from 25 March.

At the committee meeting of the Macclesfield company held at the time of the annual survey on 3 July 1844, Edward Hall reported on correspondence and proceedings of a committee of deputations from various canal companies sitting in London to consider improvements in canal navigations, and on two bills which had been brought before Parliament — one to enable canal companies to vary their rates, tolls and charges on different parts of their navigations and the other to enable canal companies to become carriers. As it appeared that the latter had been withdrawn from the present session of Parliament no resolution was reached, and with respect to the former it appeared that attempts had already been made to modify its clauses. It was agreed to subscribe £5 to a fund for defraying the expenses of the deputations, and also £25 towards a fund for encouraging improvements in canal navigations. It was at this meeting that Stephen Heelis confirmed

that Edward Hall 'had placed in his hands a letter tendering his resignation at such time as the Committee should think proper to accept it.' The committee agreed that consideration of this matter should be deferred to the next meeting.

The committee met again on 18 July 1844. Hall reported that he had attended a meeting of deputations from the various canal companies in London the previous day, and that it had come to a resolution that the bill enabling canal companies to vary their tonnages should be withdrawn from the present session of Parliament. The committee then considered his resignation, and agreed that to accept it as from 1 October.

A special meeting of the Macclesfield Canal committee was held on 14 August at the offices of Slater & Heelis in Manchester, to consider the appointment of a new agent to replace Edward Hall. Stephen Heelis listed 66 applications that he had received from parties offering themselves for the position. After an interview with Samuel Clement Trapp, one of the candidates, it was resolved to appoint him the new agent, at a salary of £250 per annum, to commence from 29 September, subject to confirmation at the next committee meeting, and to his procuring security from his father in the sum of £2,000. It was also agreed that Trapp would superintend the engineering aspects of the canal if required to do so by the committee. At the committee meeting held on 19 September the minutes of the special meeting held on 14 August were read, and the appointment of Trapp as the new agent was confirmed. Edward Hall recorded in his journal that 'he gave up the principal agency of the canal' on that day.

Continuing discussions on rates

The Macclesfield Canal committee met on 4 December 1844, when Samuel Trapp reported that he had received a letter and several statements from Mr Woodcock, of the Coventry Canal Company, on the subject of converting the line of canals between Manchester and London into a railway. As it appeared that the scheme was not feasible, it was ordered that Trapp would write back to Mr Woodcock informing him that, at that time, the committee could not see that it was in the interests of the Macclesfield company to entertain the project. It was also ordered that the Macclesfield Canal should cooperate with the other canal companies in reference to any proceedings in the next session of Parliament with respect to the Canal Carrying Bill.

The committee met again on 2 July 1845. It appeared that the Peak Forest company had increased the tonnage on limestone, which was liable to act prejudicially against the Macclesfield company. It was agreed that Francis A Philips and Richard Simpson be requested to try to resolve the situation.

At their next meeting on 17 July 1845 Philips reported that he, Simpson and Trapp had met with James Meadows on the subject of the tonnage on limestone, where it appeared there was indeed some differential tonnage on the Peak Forest Canal, which operated prejudicially against the Macclesfield. Trapp was instructed to confer with Meadows on this subject and report back at the next meeting. A positive outcome was reported to the meeting on 5 September, James Meadows having informed them that the problem had been corrected. The meeting also ordered that the Macclesfield company would charge only ¼d per ton per mile on packs of cloth goods, if the other canal companies on the line between Manchester and London would do the same.

Other issues during the period 1840 - 1850

The discussions that the Macclesfield Canal Company began in 1845 with the North Staffordshire Railway Company and then with the Sheffield, Aston-under-Lyne & Manchester Railway Company, leading to the takeover by that company in 1846, are considered in a previous article.⁵

Water supply

The years 1834-37 had seen water shortages on the Peak Forest Canal, which the Macclesfield company had helped to alleviate by supplying the former from their reservoirs at Bosley and the newly constructed Sutton.⁶

Water supply was briefly considered again at a meeting of the Macclesfield committee on 24 April 1840, when an application from the Peak Forest committee for the supply of a quantity of water was granted, so long as the sub-committee thought it prudent. However, it would appear that the opening of the Todd Brook (Peak Forest Canal) and Sutton reservoirs had successfully addressed the water supply problems for the two companies because no further issues were reported during the period under consideration. The general reduction in trade on the

canals during this period would also have had an impact on the requirements for water supply.

Interestingly, at the committee meeting of the Macclesfield company held at the time of the annual survey in 1844 (3 July), an application from the Trent & Mersey company for a supply of water in case of need was discussed. It was ordered that Edward Hall be authorised to contract for the supply on the best terms he could get — at between three and five shillings per lock full!

Law enforcement

In 1840 an Act was passed in Parliament 'to provide for keeping the peace on canals and navigable rivers'.⁷ When the Macclesfield committee met on 29 October it directed that Charles Nicholls, the resident engineer, together with seven other company employees, be recommended to the local borough authorities by Edward Hall to serve as 'canal constables'. Under this arrangement Edward Hall was also given the power to dismiss any such constable from office if found guilty of misconduct. Hall recorded in his journal that during November 1840 he travelled to Stockport (2 November) and Congleton (21 November) to swear in such canal constables, and so at the first meeting of the Macclesfield's committee in 1841 (7 January) he was able to report that the persons recommended at the last meeting had duly been sworn in.

1842: problems with the Dane Aqueduct

At the committee meeting on 25 February 1842 Edward Hall and Charles Nicholls reported that a crack previously seen in the aqueduct over the river Dane at Bosley had latterly increased in size. On 16 April Hall met with the engineer George Watson Buck to inspect the Dane Aqueduct,⁸ and that evening Buck and his wife dined at Hall's home. At the April committee meeting (27 April) Hall discussed the report and plans drawn up by Buck. Though it was apparent that the remedial works would be expensive, it was agreed that the repairs should be proceeded with, consulting with Thomas Brown and George Buck as required.

At the committee meeting and annual survey held on 14 July 1842, Hall reported that a contract had been agreed with Thomas Redman, for the sum of £290, to execute the stone work of the two buttresses recommended by Buck to be erected at the Dane Aqueduct. A report drawn up by Charles Nicholls

covering the progress being made in preparing the foundations for the buttresses was also discussed — as also was another report by him relating to the poor state of repair of the side ponds at Bosley Locks. It appeared from his estimate that it would cost at least £234 to repair the side ponds comprehensively. Given the current state of trade on the canal, and the fact that the company was well supplied with water, it did not seem worthwhile to incur such expense at the time, so it was resolved to defer these repairs.

At the next committee meeting, held on 21 September 1842, Edward Hall reported on the progress of the work at the Dane Aqueduct, and provided plans and sections showing the state of the bearing piles and the depths that they had been driven into the ground. George Buck had accompanied him to the aqueduct on Monday 19 September, and had 'expressed himself fully satisfied with the proceedings'. At the committee meeting of 8 December Hall was able to report that work on the Dane Aqueduct had been completed.

Edward Hall: activities after leaving the Macclesfield Canal Company

Edward Hall had already been looking to the railway companies for his future employment, applying for a position with the Grand Junction Railway in 1838 and the London & Birmingham in 1839.⁹ On 11 August 1841 he travelled to Manchester, from where he sent his testimonials to the directors of the Manchester & Birmingham Railway company seeking employment. That night he slept at the home of Stephen Heelis, the solicitor to the Macclesfield company. He returned to Manchester on 2 September for an 'audience' with the directors of the Manchester & Birmingham Railway. He was obviously unsuccessful with this application — nothing further is heard of it.

During May–June 1844 Hall recorded in his journal that he had been travelling extensively in the Cheshire–Staffordshire area 'developing his interests in railways'. On 15 May he travelled to Leek where he met George W Buck again, and the next day walked down the Churnet Valley to Uttoxeter. On 17 May he travelled with Buck to Derby and then back through Ashbourne and Leek to Macclesfield. On 1 June 1844 Hall recorded in his journal that he 'issued the first prospectus of (the) Churnet Valley Railway in which my name appeared as Secretary'.

The Staffordshire Potteries area was still without a railway at this time, although the surrounding towns of Stafford, Crewe, Derby and Macclesfield were all connected to the fledgling railway system. The Churnet Valley Railway Company was promoting a line from Macclesfield to Derby with a branch to Stoke-on-Trent, with Buck as one of the consulting engineers.¹⁰ At the same time the Staffordshire Potteries Railway Company was promoting a route from Macclesfield to the Grand Junction Railway at Norton Bridge, plus a spur to Crewe.

Hall continued with his busy schedule of railway promotion during the summer of 1844 and, as discussed above, finally gave up 'the principal Agency of the canal' on 19 September. Later that month he was issuing railway 'scrip' in Manchester and Macclesfield, and meeting with the Churnet Valley Railway committee at the Queens Hotel in Birmingham on 9 October. On 12 October he 'received [a] present as a testimonial from the servants of Macclesfield Canal Company'.

After the Churnet Valley Railway and the Staffordshire Potteries Railway had applied for the necessary powers to build their lines, Parliament suggested a pause for a year 'to afford time for consideration and for maturing some more complete scheme for the accommodation of that important district'. The two companies then decided to join forces and make a new Parliamentary application. Within this scheme they also incorporated a further proposed line — the Trent Valley Railway. The new company was to be called the North Staffordshire or Churnet Valley & Trent Junction Railway. The company issued its prospectus on 30 April 1845 from its offices at 1 Old Palace Yard in Westminster, London.

Edward Hall's journal for the beginning of 1845 reveals the build up to this situation, with the Churnet Valley Railway bill being thrown out of Parliament on 22 April of that year. He resigned from the position of Secretary to the North Staffordshire Railway on 6 May, and joined the board of the South Midland Railway as a director on 23 May 1845, for reasons that are not made clear. He came to be involved with a number of railway proposals during what became known as the Railway Mania period. Searches of newspaper archives have revealed his name in association with the following:

Post	Railway
Deputy Chairman	Chepstow, Forest of Dean & Gloucester Junction Railway ¹¹
Director	South Midland Railway ¹²
Provisional committee	Cambrian & Grand Junction Railway ¹²
Provisional committee	Macclesfield, Liverpool & Birkenhead Railway ¹²
Director	Northampton, Banbury & Cheltenham Railway ¹³
Provisional committee	South Union & Birmingham Junction Railway ¹⁴
Provisional committee	York, Hull & East and West Yorkshire Junction Railway ¹⁴
Provisional committee	Direct Western Railway ¹⁵
Provisional committee	Direct London & Holyhead and Port Dynllaen Railway ¹⁶
Provisional committee	Goole, Doncaster, Sheffield, Ashton-under-Lyne & Manchester and Great Grimsby Junction Railway ¹⁷

Hall recorded in his journal that on 28 January 1846 money in the Chepstow railway company was frozen, the company being dissolved two days later. Litigation regarding the Chepstow railway company began in February 1847 — he later recorded in his journal (January 1850) that the litigation was still continuing. He also recorded that on 12 October 1846 the Cambrian railway company was dissolved. Litigation regarding it began on 18 August 1848, the associated debts being paid off by January 1850.

Final years

Edward Hall ‘dined with Macclesfield Canal Committee’ on 16 July 1846, and recorded that, in August 1847, it was decided that the house at West Bank, Macclesfield, had to be sold. The family left Macclesfield on 5 May 1848 and then rented a house in Westbourne Close, London before moving to St Malo, France. They moved via Paris, Heidelberg and Wiesbaden to Belgium. In November 1855 they moved to back England, finally settling in Clifton, Bristol. Sarah Hall died on 31 December 1867, aged 64 years; Edward outlived her by nearly seven years, dying on 14 December 1874, aged 81.

Postscript: a personal comment on Edward Hall’s role as Agent to the Macclesfield Canal Company

When the Macclesfield Canal Company was looking to appoint an agent in the early summer of 1826 Edward Hall’s credentials would, no doubt, have appeared very impressive. He was from a well established Cheshire family — his father having been a former Mayor of Macclesfield. He had attained the rank of Lieutenant in the Royal Navy and had been Aide de Camp to the Duke of Clarence (later King William IV), and also to Grand Duke of Wurtemberg during the Russian campaigns. He had travelled widely in Europe.

In the summer of 1824 Edward Hall had written in his journal that he was ‘spending his time in endeavouring to forward his interests either in the Navy or in some civil situation under Government’. He was an ideal candidate for the job, being able to bring a range of skills — organisational, managerial and diplomatic — to the role.

When the canal was opened the managing committee would have been looking to establish the company as a significant undertaking - and a person of Hall’s background would have been very useful, given his many influential contacts.

His strengths lay in being a very effective manager and communicator, as illustrated by his strong personal and working relationships with James Meadows, the agent to the Peak Forest company, with Stephen Heelis, solicitor to the Macclesfield company, and with Edward Stanley, the first Chairman of the Macclesfield company.

His various increases in salary suggest that he was fulfilling a very worthwhile role for the company, and the support given to him during the Annual General Meeting of 1841 shows the high regard in which he was held by members of the managing committee.

Notes & references

A unique source of information used in the writing of this article was Edward Hall’s personal journal: John Gardner, ‘Edward Hall — Personal Journal’, *personal communication*. Hall regularly recorded his activities in a notebook, often on a daily basis. This gave a further insight into the happenings of the time, in addition to the accepted use of canal company minutes and newspaper reports. The other main sources for the information presented here include the material collected for my two articles on the Macclesfield Canal, previously published by the Society: Graham Cousins, ‘The Building of the Macclesfield Canal’,

J Railway and Canal Historical Society, Vol. 33 Pt. 2 No 173, July 1999, pp. 63-76, and Graham Cousins, 'The Macclesfield Canal – the early working years', *J Railway and Canal Historical Society*, Vol. 33 Pt. 8 No 179, July 2001, pp. 553-573. Extracts from the minutes of Peak Forest Canal Company meetings were kindly provided to me by the late Brian Lamb. He was a well known member of the R&CHS and had researched the history of the Peak Forest Canal Company for many years. Over a period of time we exchanged information and copies of company minutes for our 'respective canals'. I acknowledge the use of information provided by Brian in the writing of this article — however, I have not independently verified the information supplied against original documents.

This current article expands on some topics previously discussed in my article of 2001.

1. Graham Cousins, 'The Macclesfield Canal Company - Interactions & Relationships, Part 1: 1826-1839', *Journal of the Railway and Canal Historical Society*, No 214, July 2012, pp. 36-48
2. The meeting, held at the Ashton Canal office in Manchester, was attended by the following representatives from the Ashton and Peak Forest companies — Captain Hyde John Clarke RN (Chairman), Mr Drinkwater, Mr Thomas Fleming, Mr Markland and Mr Thomas Brown. The Macclesfield Canal Company was represented by Mr Edmund Buckley, Mr Shakespeare Phillips, Mr Dickinson, Mr Thomas I Watts, Mr Clayton, Mr John R Ryle and Mr John R Daintry
3. The meeting, held at The King's Head Inn, Coventry, on Tuesday 23 June 1840, was attended by the following delegates - Sir Francis Head & Hon P P Bouverie (Grand Junction); Mr Twemlow & Mr Simpson of Litchfield (Trent & Mersey); Captain Hyde John Clarke RN & Mr Thomas Fleming (Peak Forest); Mr John Bowker & Mr James Meadows (Ashton Canal); Mr Thomas (Birmingham); Mr Beck, Mr Twist, Mr Bache & Mr Woodcock (Coventry) and Mr Richard Simpson, Mr Thomas I Watts & Mr Edward Hall (Macclesfield). Francis Philips could not attend the meeting so it had been agreed that Richard Simpson should attend instead
4. *Manchester Guardian*, 31 July 1841. The meeting was attended by the following shareholders — Charles Cholmondeley, Edmund Buckley MP, Randle Wilbraham, Randle Wilbraham junior, Egerton Leigh, John R Daintry, Gilbert Winter, Thomas Fleming, Shakespeare Phillips, Thomas I Watts, J Stansfield, R Gaunt, Thomas Wardle, W S Newbold, T Bullock, J H Beswick, William Clayton, and the Revs John Darcey and Francis Brandt. Thomas Swanwick MD acted as chairman
5. Cousins (2001)
6. Cousins (2012), pp.44-47
7. 'An Act to provide for keeping the Peace on Canals and Navigable Rivers', 4 August 1840. The Statutes of the United Kingdom of Great Britain and Ireland, 3 & 4 Victoria, 1840
8. M M Chrimes, 'George Watson Buck (1789-1854)', in Sir A W Skempton (ed), *Biographical Dictionary of Civil Engineers of Great Britain and Ireland, Volume 1: 1500-1830*, Thomas Telford Publishing, 2002. Buck had been Resident Engineer to the Montgomeryshire Canal and subsequently Engineer of the Manchester & Birmingham Railway
9. Cousins (2012), p.42
10. Parliamentary Archives, HL/PO/PB/R/plan1845/C11, Plan of the proposed Churnet Valley Railway
11. *Observer*, 9 November 1845
12. *Manchester Guardian*, 13 September 1845
13. *Morning Post*, 10 July, 1845 (London)
14. *Manchester Guardian*, 20 September 1845
15. *Manchester Guardian*, 24 September 1845
16. *Manchester Guardian*, 4 October 1845
17. *Manchester Guardian*, 1 November 1845

Front cover: Kensal Green Cemetery

Water Gate from the Grounds of the proposed Cemetery Kensal [sic] Green, by Henry Edward Kendall, lithographed by Thomas Allom, printed by Charles Joseph Hullmandel. Reproduced from *Sketches of the approved designs of a chapel and gateway entrances intended to be erected at Kensal Green for the General Cemetery Company* (1832). Courtesy RIBA British Architectural Library.

Apparently inspired by the water-borne funerals in Venice, Kendall included this water gate in his winning designs for the new Kensal Green cemetery, so that funeral processions could be carried from Paddington by the Grand Junction Canal. The idea for such an entrance was not adopted, but nevertheless it is understood that coffins have occasionally been brought to the cemetery by boat.

Early Locomotives on American Banknotes: what the engravers got wrong and what they got right

Alan Levitt

It might be presumed that the images of locomotives and trains that appear on carefully-crafted banknotes and share certificates are fair representations of the contemporary technology, and can be relied upon as a valid record of what the railway looked like in the 1830s and 1840s. Regrettably, this is rarely the case. The engravers' ingenuity did not always result in credible depictions.

This article looks at early American banknote images that include 'improbable' locomotives and trains.¹ These images illustrate how banknote engravers often 'got it wrong' by relying on inaccurate artwork, by improperly replicating the image, or as a result of never having seen a locomotive or train.² Examples of 'getting it wrong' can be found in engravings meant to represent William Brunton's 'Mechanical Traveller', George Stephenson's *Locomotion*, and Peter Cooper's 'Tom Thumb'. John Braithwaite and John Ericsson's *Novelty* was recorded with surprising accuracy.

There is no question that William Brunton's (1777-1851) 'Mechanical Traveller' (also known as the 'Steam Horse') of 1813 embodies an unmistakable, distinctive design.

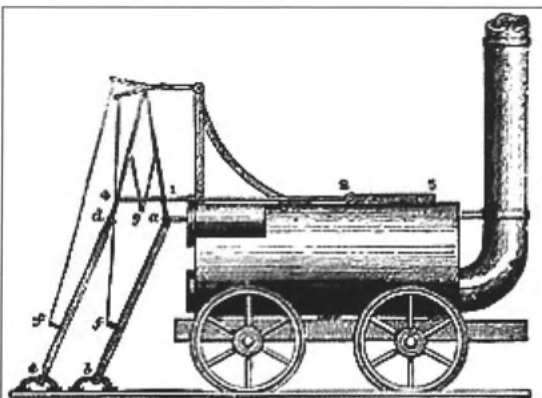


Fig. 1. Brunton's 'Mechanical Traveller'. Most prominent are the two 'legs' that served to push it along the track.³

Was it pictured on currency issued by the Champlain & St. Lawrence Rail Road of Lower Canada (C&StL) in 1837?⁴

Railways in the United States and in British North America ('Canada') began issuing their currency in the early 1830s. Nearly all of these notes (as well as those issued by some banks and businesses) incorporated a locomotive, or a locomotive and train, in the vignette. The C&StL was the only railway in Canada that did, issuing finely-engraved notes, dated 1 August 1837, printed by Rawdon, Wright & Hatch of New York (RW&H). Printed sheets were comprised of six notes: two in each of three denominations.⁵ The printers' train vignettes used on these notes were also used on notes printed by RW&H (and later by Rawdon, Wright, Hatch & Edson)⁶ for other customers.



Fig. 2. An untrimmed, uncut sheet of pairs of notes of three different denominations.⁷ The edge of the intaglio plate can be seen in the left, right, and bottom margins. The individual, trimmed, notes measure approximately 150mm x 64mm. Enlargements of the vignettes appear as Figs. 3, 4 and 7

It is not known who the engraver or engravers who created these three designs were, or who may have created the art on which the intaglio work was based. However, it can be demonstrated, with confidence, that two of the engravings were based

on, or derived from, Brunton's engine.⁸ Examination of the contemporary use of railway vignettes and their origins makes it possible to frame an explanation that Brunton's 'Mechanical Traveller' was the basis of the images, and to recognise that it was possible — perhaps, probable — for the engravers to get it wrong.

Even if the engravers did not get it exactly right, they must be forgiven. Although RW&H were among the most well-known, highly-respected, and prolific banknote engravers at the time, it is often difficult (if not impossible) to determine the sources upon which their engravings were based.

The distinguishing 'legs' appear fitted to the locomotive shown in vignettes on the multi-denomination 1 ecu / 3 francs / 2 shillings 6 pence / half a dollar notes, and on the 30 sous / 15 pence / quarter dollar notes.⁹

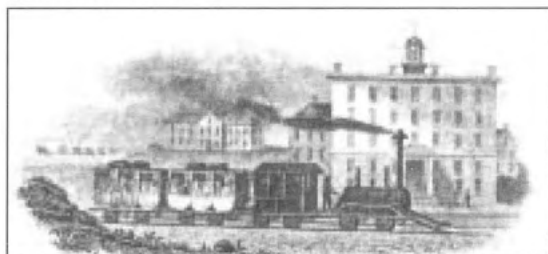


Fig. 3. The locomotive, tender, and two passenger carriages on the half a dollar note. A second train is in the left background

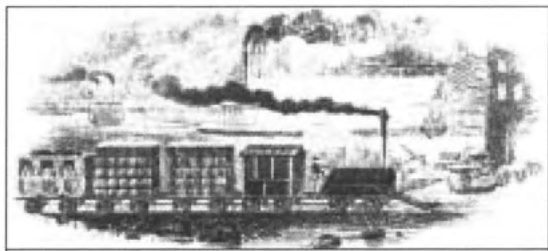


Fig. 4. The locomotive and train as it appears on the quarter dollar denomination. The tender (and that on the half a dollar note) resembles a shed, complete with a pitched roof. The tender is separated from the passenger carriage by two trucks laden with bales of cotton, a practice characteristic of railways in the US south. In the background are a steamship (with four smoke stacks), a ferry (left), and a ship (right) flying an American flag.¹⁰

The same vignette appears on the ten dollars note for the Erie & Kalamazoo Rail-Road Bank of Adrian, Michigan. A portion of the building on the right has not been used. Imprint of RAWDON, WRIGHT & HATCH NEW-YORK.

This vignette also appears on notes (*inter alia*) of the Prairie Du Chien Ferry Company (Wisconsin), and the State Bank of Illinois, engraved and printed by RW&H.

The 'Mechanical Traveller' — now with a different tender — appears in a small vignette on an Erie & Kalamazoo Rail-Road Bank fifty cents note, and on their \$1.75 note (along with a portrait of Benjamin Franklin). Both notes by RAWDON, WRIGHT & HATCH NEW-YORK. The two 'legs' also appear on a locomotive in the vignette on the \$100 note issued in 1838 by the Mississippi & Alabama Rail-Road.

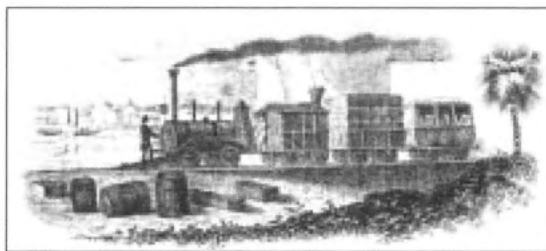


Fig. 5. The legs-fitted locomotive with a shed-like tender. The firebox is odd-shaped, and there is a strange fitting atop the tender. Although the issuing company, the palm tree and waggon laden with cotton are associated with the South, the buildings in the left background are the Massachusetts State House, and the Old North Church, both in Boston. Imprint of DRAPER, TOPPAN, LONGACRE & CO., PHILA. & N.Y.

Was Brunton's 'Mechanical Traveller' the 'sitter' for these engravings or for the artwork from which the engraver worked? The images are a fair representation of it, although travelling in the wrong direction. The engraver, in his attempt to show (for reasons unknown) the 'Mechanical Traveller', can be forgiven for some mistakenness in the three representations. The 'why' surrounding the use of Brunton's locomotive remains elusive.¹¹

The other pair of notes on the Champlain & St Lawrence sheet — 15 sous / 7½ pence — presents a more realistic image of a locomotive — probably Stephenson's *Locomotion* — although the driver or stoker appears out-of-scale, and the tender wants for a supply of coals.

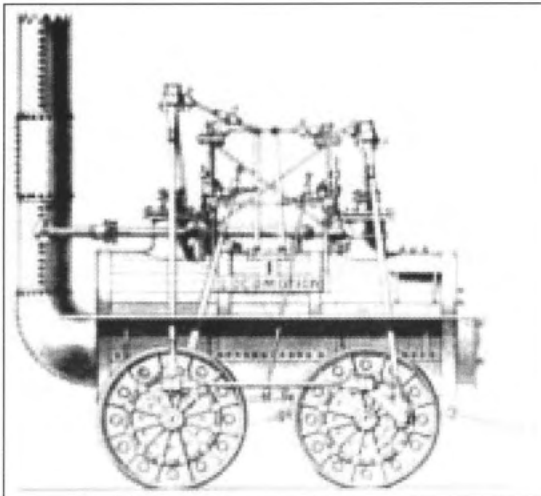


Fig. 6. Locomotion, in a drawing considered to be a fair representation

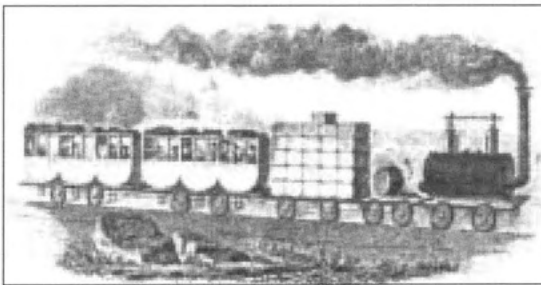


Fig. 7. The engraver's attempted representation of Locomotion is evident. The carriages are quite filled, and the passengers' luggage is stowed atop the carriages.

The sides-less tender, here and in the other vignettes, is carrying a water-carrying barrel placed (with one exception) on its side. No coals or other fuel is visible. A water barrel is a conspicuous feature on the tender attached to Stephenson's Rocket where it is carried on a low-sided truck.¹²

The imprecise image of the tender is a surprise, especially in contrast to those shown coupled to 'Mechanical Traveller'. J Bousefield's 1825

'View of the Opening of the Stockton and Darlington Railway' shows Locomotion with a 'proper' tender.¹³

The landscape details are totally unlike those in the other two denominations, and the vignette may have been created by a different engraver.

Three separate images of *Locomotion* also appear pulling trains on the 1826 Liverpool & Manchester Railway share certificate. In these — and on a contemporary painting — the locomotive is footplate-less, with the driver in a hammock suspended between the locomotive and the tender (which carries a water barrel only). *Locomotion* also appears on the \$100 Merchants & Planters Bank (Chicago, Illinois) note of 1838.

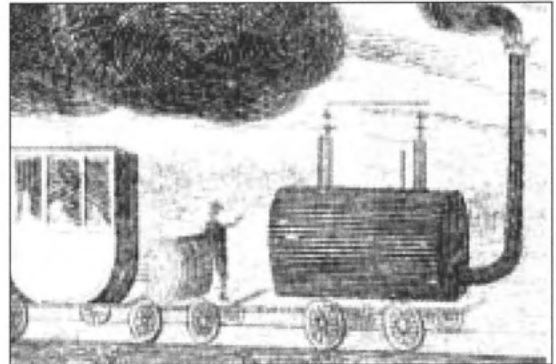


Fig. 8. Detail of the vignette on the \$100 Merchants & Planters Bank note of 1838. Although not rendered in detail, it apparently represents Locomotion. The inaccurately-shown design of the tender is carrying water for the boiler, but no fuel! There is no printers' imprint on the note.

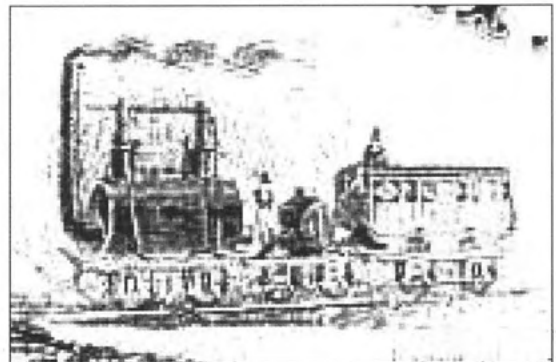


Fig. 9. Detail of three vignettes on 1838 New-York, Providence & Boston Rail Road [sic] share certificate showing Locomotion, tender, and carriage. The locomotive is reasonably detailed; the driver (in high hat) appears to be looking after a water canister on an 'incorrect' tender. Portion of the imprint of Rawdon, Wright & Hatch and Co., New-York (fl. 1832-1847) is visible below the passenger carriage.

The carriage (shown with a guard) was typical of the designs of Richard Imlay (1830), James Goold (1831), M P and M E Green (1831) and John Stephenson (1832), but it is unlikely that any of these composite or tandem-body carriages were built after the early 1830s. The engraving was probably made in the same period as those for the C&StL.

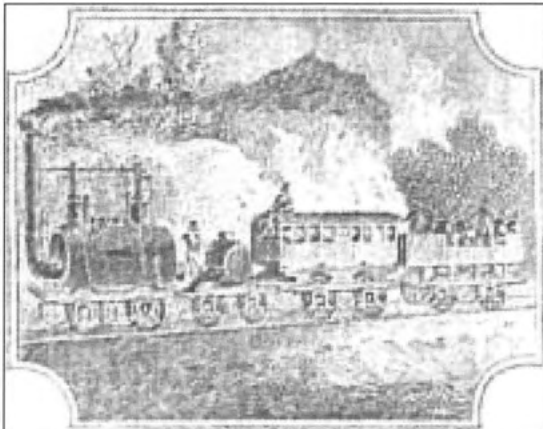


Fig. 10. Locomotion, again rendered with accuracy and detail, appears on the Bank of Utica (Michigan) fifty cents and one dollar notes of 1838. Imprint of S. STILES, SHERMAN & SMITH, NEW YORK, a major intaglio printer.

Here, again, the tender is 'incorrect'. Open (fourth class?) carriages were not used in the United States. The 'sitter' for this train is unknown, but it is probably a scene in England. The same vignette (enclosed within the same frame) also appears on some designs of the Erie and Kalamazoo Rail Road twenty-five cents notes, as well as on the \$1.25 note (but without the frame). Both notes carry the imprint of RAWDON, WRIGHT & HATCH NEW-YORK.¹⁴

A similar vignette appears on the Merchants & Planters Bank (Chicago) \$100 note of 1838, except there is no passenger luggage on the roofs of the carriages. The printer's name does not appear in the plate.

Locomotion also appears on an undated two dollars note issued by The Lumbermen's Bank at Warren, Pennsylvania. A similar note, with text in German, has the imprint of UNDERWOOD, BALD, SPENCER & HUFTY.

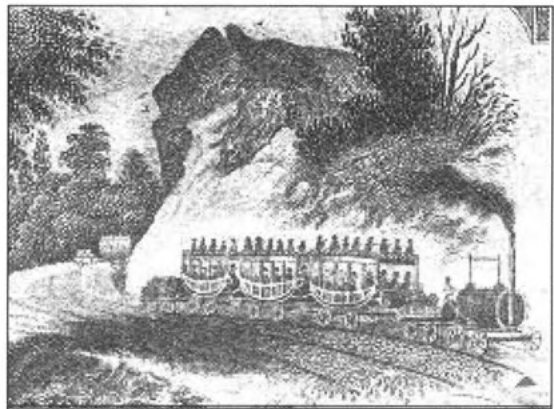


Fig. 11. Locomotion and carriages of similar design appear on the \$100 Fund Commissioner of the State of Illinois Bond of 1839. The tender is 'incorrect'. Imprint of WOODRUFF & HAMMOND, CINCINNATI, O.

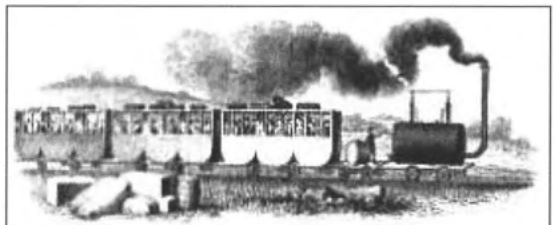


Fig. 12. Another 'interpretation' of Locomotion appears on the \$20 and \$100 notes issued in the early 1840s by the Northern Bank of Kentucky. Imprint of CASILEAR, DURAND, BURTON & EDWARDS, NEW-YORK.

A small *Locomotion* vignette (along with a portrait of George Washington) appears on the Erie & Kalamazoo Rail-Road twenty-five cents and \$1.50 notes, also by RAWDON, WRIGHT & HATCH NEW-YORK, and it also appears in two identical vignettes on the Philadelphia, Germantown & Norristown Rail-Road share certificate of 1850.¹⁵ Imprint of DRAPER, UNDERWOOD, BOLD & SPENCER.

The first steam-hauled train of the C&StL was hauled by the locomotive *Dorchester*.¹⁶ Contemporary images of *Dorchester* existed, and could have been used for the C&StL currency. Other printed images provide little evidence to suggest that the C&StL cared much about their image in the public's eye, or exercised any influence over the picturing of their trains.



Fig. 22. Heading on a 6 August 1836 Montreal newspaper advertisement announcing trains run in conjunction with steamboat services. The metal types are probably American in origin, and were used by several newspapers in New York City

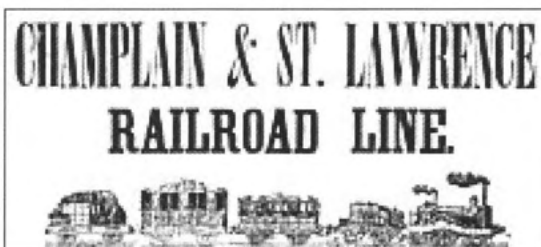


Fig. 13. Heading on a ca. 1846 New York City handbill advertising connecting steamboat services for goods shipped to Quebec. The metal types were cast by Thorowgood and Co., London, in 1842

Other contemporary printers' train engravings also failed to convey engineering realism.

One image might have had its origins in Charles Calvert's (1785-1852) 1825 impression of what the Liverpool & Manchester Railway would look like.

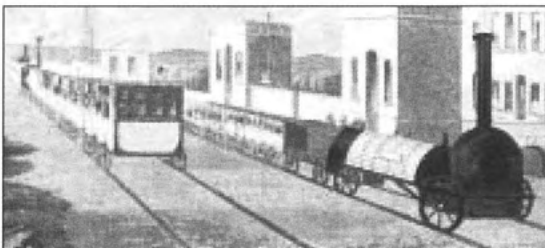


Fig. 14. Detail from the 'View of the Liverpool & Manchester Railway, Taken at Newton'. Print is labeled DRAWN BY CALVERT and AQUATINT BY FAVIELL.

A similar vignette appears on the Bank of Chippeway, Michigan two dollars note dated 1838, intaglio-printed by the New England Bank Note Company.

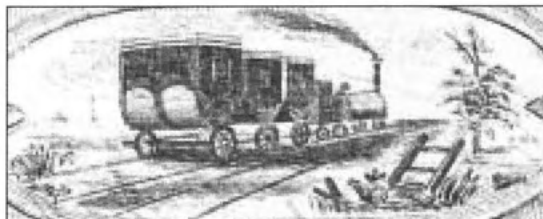


Fig. 15. A far-from-authentic intaglio vignette used on a 'stock-form' promissory note by an unnamed printer, probably in the Boston area. Each of the three passenger compartments is a separate carriage body, riding on two wheels; the locomotive — with its flat bottom boiler — lacks any details; the tender (or perhaps a barrier waggon) has four wheels.

Quite apparently, the artist/engraver (whose initials 'F.W.B.' are discernable beneath the tree branches at the right) had never seen a real train!¹⁷

This 'outcropping' is somewhat similar to that on the 15 sous / 7½d C&StL note (Fig. 7). The State House dome and the Old North Church steeple loom in the background. This note may have been printed by the New England Bank Note Company (fl. 1833-1847 when it became a part of Rawdon, Wright, Hatch & Edson).

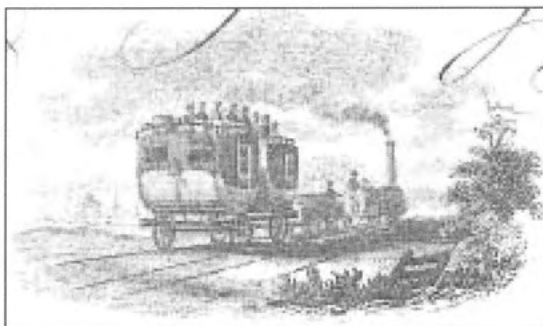


Fig. 16. Vignette on the Bank of Chippeway note. In comparison with the promissory note (Fig. 24) the locomotive here is more realistic. A stoker is seated on the tender. There are two (rather than three) carriage bodies, but here mounted on a single frame. Passengers and luggage are on the roof. The initials are absent.

The Massachusetts State House dome and Old North Church steeple are visible in the background. Imprint of NEW ENGLAND BANK NOTE COMPANY, BOSTON

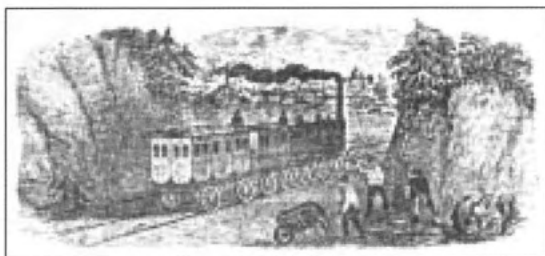


Fig. 27. Vignette on a banknote issued by a Dedham, Mass. bank prior to 1848. The carriage is of an interesting design! The dome in the background (to the right of the locomotive's chimney) is that of the State House in Boston, and to the right of that, the steeple of the Old North Church. The image resembles I. Shaw's 1832 'Mount Olive, Liverpool and Manchester Railway' upon which it may have been based.¹⁸ It is likely that this note was engraved and printed by the New England Bank Note Company.

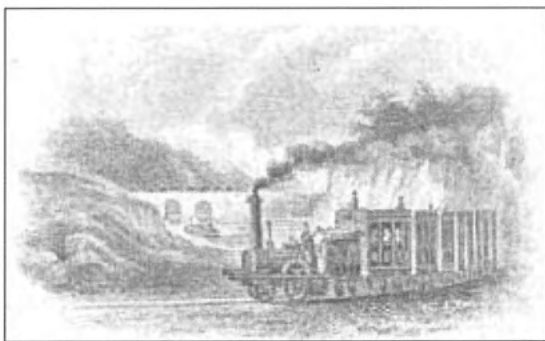


Fig. 28. A somewhat more realistic vignette on the Bank of Chippeway 1838 three dollars note, also intaglio-printed by the New England Bank Note Company, evidencing that the company could better-engrave locomotives and trains. This might be a scene on the Providence & Worcester Rail Road, with the Boston & Providence Rail Road's Canton viaduct in the background.

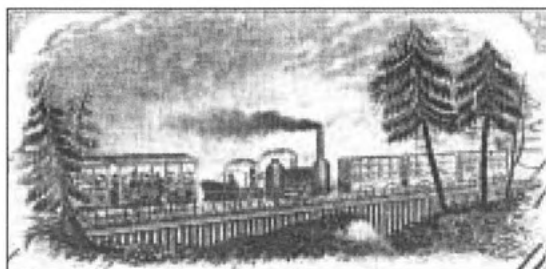


Fig. 29 Less realism is shown in the detail of the vignette on the State Bank (of South Carolina) ten dollars note printed between 1833 and 1835. The locomotive — placed between the goods waggons and the crowded passenger carriages — has an unusual, imaginative firebox and smokebox.

Someone appears to be riding on the exterior of the first carriage. The goods waggons (the right-most of which has someone — perhaps a guard — riding on the roof) seem to be laden with bales of cotton. The strangely-shaped locomotive is coupled to the three waggons in front of it, but not to the passenger cars behind it. The locomotive wheels are coupled, an unexpected (correct) detail amid other technological oversights.

Imprint of DRAPER, UNDERWOOD, BOLD & SPENCER.



Fig. 30. The same vignette appears on a Buffalo, N.Y. promissory note written in 1836, signed by B[enjamin] Rathburn.¹⁹

Imprint of UNDERWOOD, BOLD & SPENCER, N. YORK & PHILAD.

The 'imaginative' engravings notwithstanding, the engravers at RW&H (and its successors) or those at Draper, Underwood, Bold & Spencer did not have to go far to find acceptably-accurate images of contemporary trains. Illustrations on the covers of the 'American Railroad Journal' could have served as 'original art' for engravers to follow, or as the basis of 'original art' created for the engravers to follow.²⁰

Engravers could also have used the later mastheads of the *American Railroad Journal* as a source of railway images.

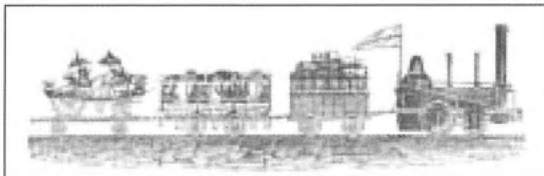


Fig. 31. A fairly-accurate depiction of a train appears in the engraved-wood masthead used on the American Railroad Journal from Vol. II, No. 1, January 5, 1833.

The pendant is lettered PHILADELPHIA, and the closed passenger carriage compartment doors are lettered BOSTON NEW YORK PHILADELPHIA. The initials DKM are on the upper-most package. A G appears on the lower of the two sacks at the front of the wagon. The engraver's name — G Lansing — appears immediately below the right end of the track

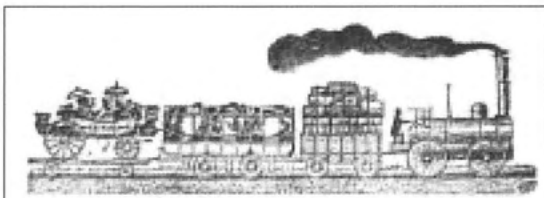


Fig. 32. American Railroad Journal masthead from 7 January 1837. This 1837 train resembles the 1833 image, but is more crudely rendered.

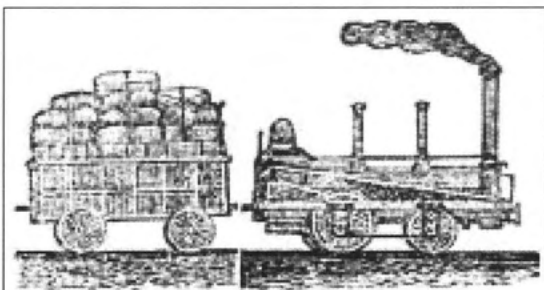


Fig. 33. Engraved-wood printers' train types adopted by the (re-named) American Railroad Journal and General Advertiser for its masthead from 2 January 1845. These types were widely-used on a variety of documents

An extreme example of an engraver presenting an image inferring that it represented the railway's own train appeared on the Baltimore & Ohio Rail Road Company [*sic*] (B&O) share certificates beginning in 1835. The locomotive shown hauling contemporary train is usually assumed to be, and described as, the B&O's 'Tom Thumb', (it was not given that appellation from the outset) designed by Peter Cooper (1791-1883) in 1830.

An image of 'Tom Thumb' appeared in advertisements of Mayger & Washington, Baltimore, 'Steam Engine & Machine Manufactory' published in a Baltimore directory as early as 1832. The engraver of the 1835 B&O vignette would have had access to this image.

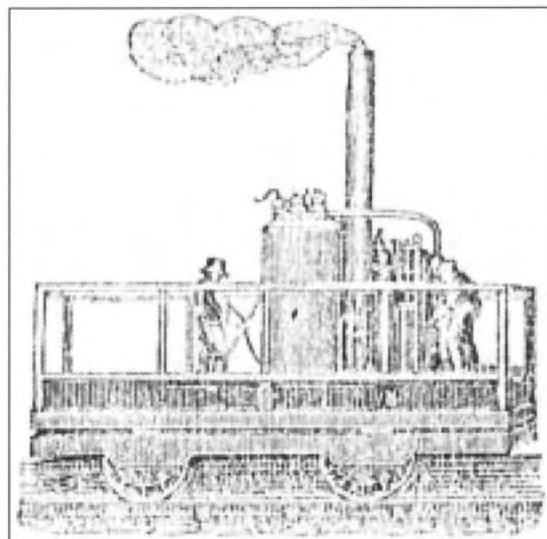


Fig. 34. Engraved-wood block appearing in Mayger & Washington ca. 1832 advertisement. The locomotive is surely 'Tom Thumb'. It is not known if the firm actually completed any locomotives other than one delivered to the B&O.²¹ Mayger & Washington probably built Tom Thumb to Peter Cooper's specifications



Fig. 35. (upper) Baltimore & Ohio Rail Road Company [sic] 1835 shares certificate. The printer's name does not appear. (lower) Enlargement of the 1835 vignette. Clearly it is not 'Tom Thumb'

Why the B&O (or the banknote company) chose this image to 'represent them' is unknown. 'Tom Thumb' was preceded on the B&O by Davis and Gartner's *The York, Atlantic*, and possibly *Franklin*. None of them was fit for their intended purpose.

The image of the locomotive on the 1835 certificate may have been derived from Robert Martin's 1829 lithograph and Richard Imlay's 1828 B&O passengers carriage.

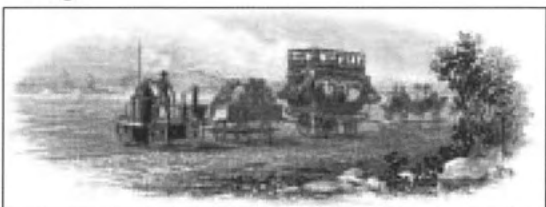


Fig. 37. Several 'modifications' were made to the vignette over the years into the 1960s. The pendant is now unlettered, the viaduct in the background is at a greater distance, and the foreground is neatened. Three sailboats appear in the water. Engraving by American Bank Note Company



Fig. 38. Enlargement of the 1960s locomotive vignette. There is no question that the locomotive pictured is Braithwaite (1797-1870) and Ericsson's (1803-1889) Novelty.²²

Messrs. Braithwaite and Ericsson's locomotive, *Novelty*, hauling a passenger carriage, appeared in an engraved-wood block used in 1832 as the masthead of *American Rail-Road Journal*.

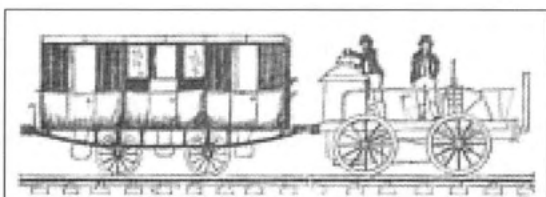


Fig. 39. Braithwaite and Ericsson's Novelty 'American Rail-Road Journal' masthead, Vol. I, No. 1, 2 January 1832.²³ The wood-engraved locomotive and the passenger carriage are on separate — but abutted — blocks. Novelty operated boiler-first; the type-setter should have reversed their positions.²⁴

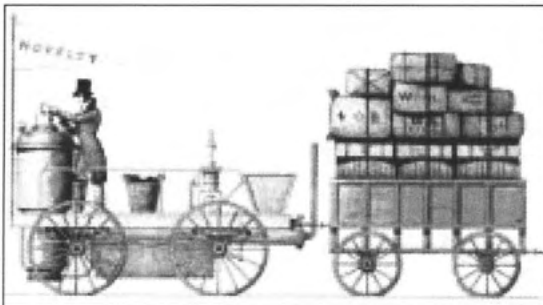


Fig. 40. Accuracy of the Journal and the American Bank Note Company engravings are evidenced by this detail from an 1829 drawing by Charles Blacker Vignoles (1793-1875), and engraved and published in a coloured lithograph by Robert Martin. Novelty is shown hauling a train consisting of a truck carrying barrels, neat packages, and bales of wool; a 'Railway Omnibus'; and two flat trucks each laden with a road carriage and its passengers. Novelty is shown heading properly. The bales are clearly marked, with 'WOOL' in the centre of the second tier



Fig. 41. A more appropriate locomotive appears on the Baltimore & Susquehanna Rail Road Company \$100 bank note of 1838. The image is reasonable, and the locomotive is American. It is only possible to speculate why the change was made.

Although currency engravers produced few credible images of locomotives and trains in the 1830s and 1840s, they would soon demonstrate their talents and resources to render accurately often-miniscule depictions of locomotives. More credible images began to appear in ca. 1850

By ca.1850 the image on intaglio-printed checks produced by the American Bank Note Company showed remarkable detail. A locomotive and tender, including a boiler-mounted nameplate, is only 5/8 inch wide by 5/16 inch high.



The engraver's art is further exemplified by the vignette on the one dollar note issued by the Rail-Road Bank of Decatur, Illinois printed between 1852-1855 by WELLSTOOD, HANKS, HAY & WHITING, NEW-YORK.



Fig. 44. A detailed railway (and canal with two people standing atop the boat) scene encompassing urban and rural settings, and a bridge, viaduct, and prominent tree! The driver or stoker is on the footplate; three water bags are hung on the tender. Someone is standing in the doorway of the mail or express car, and a gentleman is riding on the platform of the first passenger car. The background townscape is apparent.

In conclusion ...

There have been a variety of locomotive and train images engraved by prominent engravers and printed by leading intaglio firms. But the 1830s and 1840s was not an era distinguished by accurate representations of locomotives, their tenders, and their trains. It is evident that engravers relied more on their imaginations or impressions than on copying accurate images, if such were available. Their renderings evidence a lack of 'sitters' as well as knowledge of what the contemporary railway looked like. Coupled with this was the apparent lack of concern, on the part of the railways themselves, as to what images were presented to the public on their behalf. Some railways — notably the Baltimore & Ohio — pictured the wrong locomotive for nearly fourteen decades — *Novelty* rather than 'Tom Thumb'!

Stephenson's *Locomotion* found its way — with various degrees of accuracy — on to currency and share certificates issued by railways, including the C&StL, as well as by other organisations that also lacked any link with the locomotive. Other images of trains are even less representational.

Exactly how and where RW&H chanced upon images of Brunton's 'Mechanical Traveller' and of *Locomotion* has been lost with the passing of time. Yet, as it is apparent that *Locomotion* was the basis of numerous engravings, it can be recognized that what RW&H included in the C&StL vignettes was based on or derived from the 'Mechanical Traveller.' Nothing else had 'legs.'

Accuracy was lacking in the images, but the railways seemed not to care. Such was typical of the 1830s and 1840s.

Notes

1. Banknotes were issued in America in the 19th century by railways, banks, states, cities and by private enterprises. Nearly all of those issued by railways incorporated a locomotive or train in their vignettes. Many of the notes issued by banks also incorporated a locomotive or a train. Several of those issued by states, cities, and by private enterprises also incorporated a railway-themed vignette.

Share certificates and bonds issued by American railways, unlike those in Great Britain, incorporated — but with rare exception — an image of a locomotive or of a train. Intaglio-printed ('engraved') documents were issued by some railways as early as the 1830s. From 1874 the New York Stock Exchange required an intaglio image on all shares and bonds they traded.

Among the few early British certificates that incorporated a railway image, those issued by the Stockton & Darlington Railway (1823) and the Durham Junction Railway (1835) incorporated discernable trains.

Most of the American banknotes were printed by the intaglio process using copper or steel plates upon which the railway images (and the balance of the design and the text) were engraved. Some notes were letterpress-printed with metal types, wood types, or engraved-wood blocks to print the railway image. Lithography was used to a small extent, with the images hand-drawn or delineated.

Many metal- and wood types incorporate very accurately-detailed images of locomotives and rolling stock

2. Why the banknote engravers rendered (or attempted to render) images of English-built locomotives remains a mystery. In 1835, there were 35 American-built

locomotives in service in the US; in 1840, 85 of the in-service locomotives were American-built. The last English-built locomotives arrived in the US in 1841. The American banknote firms would have been able to find 'native sitters'.

In contrast, American wood-engravers (a totally different craft) were producing accurate images of American-made locomotives and trains by 1833

3. The literature lacks any illustrations or descriptions of other legs-fitted locomotives comparable to Brunton's technology and engineering
4. The C&StL obtained its charter on 25 February 1832 (the first railway charter granted in British North America) and opened between La Prairie and St-Jean-sur-Richelieu (then named Dorchester) (16 miles) on 21 July 1836. It was built along the water route between Montreal and Chambly to the 5ft-6in gauge. Until 1837 the railway carriages were horse-drawn, and at first the line was used only in the summer months
5. The multi-denominational notes — 15 sous / 7 pence half-penny; 30 sous / 15 pence / quarter dollar; and 1 ecu / 2 shillings 6 pence / half dollar — reflect currencies in use in both the Francophile and English-speaking areas. The 'dollar' undoubtedly refers to the United States coins as Canada did not adopt decimal currency until 1858
6. RW&H (a successor firm to Ralph Rawdon founded in 1816) were established in 1832. Edson joined the firm in 1847. The companies were the most prominent engraving and printing firms in nineteenth-century America.

The engravers and/or artists represented by many of the RW&H images (and those of other banknote firms) are unknown
7. The 'second' note of each pair was not a separate engraving, but was created using a transfer roll process ('siderography') to replicate the original. Siderography was also used to 'assemble' 'original plates' by taking elements — such as vignettes, other images, text and designs — from existing plates and using them to create a 'new' plate.

The ease of the siderographic reproduction explains why the same vignette, or a part of it, appears on many, diverse notes
8. Rarely did early engravers create images of locomotive or trains that reasonably represented actual locomotives or trains, or those of the company that ordered the document
9. That 'Mechanical Traveller' is shown *pulling* rather than *pushing* a train can be likened to the sequence of Braithwaite and Ericsson's *Novelty* and carriage shown on the masthead of *American Rail-Road Journal* masthead, Vol. I, No. 1, 2 January 1832 (Fig. 39)

10. The American flag suggests that RW&H had originally prepared the vignette for customers in the United States. It is not inappropriate on the C&StL note, as the railway was established to promote trade between the United States and Canada
11. The 'legs' are not a form of 'cowcatcher' or pilot. The shape that the cowcatcher took after its adoption, ca. 1838, was that of a wedge or a plough
12. Coals may be present on the *Rocket*'s tender, but hidden behind the sides
13. Bousefield's image — a lithograph — could have been used as a 'sitter' for the American engravings
14. There was no apparent link between Rawdon, Wright & Hatch and S Stiles, Sherman & Smith.
15. The opening of the Philadelphia, Germantown & Norristown Rail-Road on 6 June 1832 was marked by the publishing of a commemorative lithograph by William L Breton, 'Railroad Depot at Philadelphia'.

The locomotive in the lithograph is unmistakably Stephenson's *Rocket*. The company received its first locomotive, from Mathias Baldwin, in November 1832
16. The first C&StL locomotive, *Dorchester*, was a 0-4-0 built by Robert Stephenson & Company (no. 127 of 1836) of Newcastle-upon-Tyne. It was the first steam locomotive to operate in British North America
17. The *Boston City Directory* for 1845 and for 1855 does not list a F.W.B
18. The engraving appeared in Shaw's 1832 *Views of the Most Interesting Scenery on the Line of the Liverpool and Manchester Railway*
19. Benjamin Rathburn was a master builder responsible for the construction of a large portion of Buffalo's buildings between 1830 and 1840. He operated stone quarries, brick factories and machine shops to support his building empire. He built the City Jail, the Unitarian Church, the Darrow Block, the Webster Block, The United States Hotel, the American Hotel and countless other commercial and residential buildings. Rathburn built as many as 100 buildings in a single year, a remarkable achievement for the time. He was not only a builder, but a businessman too, owning many establishments including the famous Eagle Tavern, several grocery stores and dry-goods emporiums, carriage, and stagecoach and omnibus services. He also owned a private bank. In order to fund his growing empire Rathburn had vastly over-extended himself financially. He was found to have used approximately \$1.5 million in forged notes, most of which bore the bogus signatures of the most prominent Buffalonians. In 1836 his collapse was a precursor to the national Panic of 1837. He was sentenced to prison in Auburn where he served five years time.
20. Both firms had a New York office a few minute's walk from the *American Railroad Journal* office
21. *American Rail-Road Journal* reported 'A locomotive steam engine which has been for some past constructing under the direction of Mr. Minus Ward, at the shops of Messrs. Mayger and Washington, was conveyed to the [Baltimore & Ohio] rail-road yesterday evening'. (Vol. I, No. 11, 10 March 1832, p.165)
22. Built by John Braithwaite and John Ericsson (1803-1889), *Novelty* was entered in the Rainhill (England) Trials of 1829, which aimed to establish the most efficient locomotive for haulage on the Liverpool & Manchester Railway. The contest was won by George and Robert Stephenson's *Rocket*. Crestfallen Ericsson came to the United States where several of his inventions significantly contributed to the Union's victory in the Civil War, including the screw propeller and the ironclad USS *Monitor*. *Novelty* never left England.
23. The *Journal* noted 'The cut at the head of the Journal represents the Locomotive Engine, the Novelty, of Messrs. Braithwait [*sic*] and Ericsson, (which competed for the prize of £500, offered by Directors of the Liverpool and Manchester Rail-way Co. ...)'
24. For reasons unexplained, this was replaced on issue No. 2 (7 January 1832) with a detailed engraving of Stephenson and Losh's Killingworth locomotive of 1815

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The Railway Interests of a Shropshire Landed Gentleman

Neil Clarke

A previous article described how, during the late 18th and early 19th centuries, three successive generations of the Eyton family of Eyton Hall and Wellington in Shropshire were involved in the promotion, construction and management of the Shrewsbury Canal.¹ This canal, built from Donnington Wood to the county town, passed through the Eyton estates and served Wellington from wharves at Trench, Wappenshall (from 1835), Eyton upon the Weald Moors and Long Lane. At the same time members of the family also joined turnpike trusts engaged in the improvement of local roads. And from the late 1840s, the family's interest in transport was taken further by Thomas Campbell Eyton, who became involved in the development of railways in the Wellington area ... and beyond.

The Landed Gentleman²

Thomas Campbell Eyton was born in Wellington on 10 September 1809, the son of Thomas Eyton and Elizabeth, née Campbell. His father succeeded to the extensive Eyton estates in 1816, and during a long life Thomas Campbell enjoyed the privileges and undertook the responsibilities typical of members of the landowning class — university, the means to

pursue personal interests, public service and the sporting activities of a country squire.

Admitted pensioner to St John's College, Cambridge in 1827, he matriculated the following year, but left without taking a degree. He continued the friendship he had formed with Charles Darwin, and during the following years had the means to pursue his own interest in natural history, publishing several works on ornithology and later (at Eyton Hall) setting up what was widely regarded as one of the finest private natural history museums in the country.

Following his marriage in 1835 to Elizabeth Frances Slaney, Thomas Campbell set up home in Wellington, first at Donnerville House and later at The Vineyard. Over the next 20 years he was instrumental in the provision of public utilities in the town, such as a supply of drinking water and a gas works, and supported John Barber, land surveyor, auctioneer and valuer, in setting up Wellington's first railside 'Smithfield' livestock market.

When he succeeded to the Eyton estates in 1855, Thomas Campbell continued the agricultural improvements begun by his father. He did much to improve the Hereford cattle breed, having already instituted *The Herd Book of Hereford Cattle*, which

he continued to publish until 1860. A keen sportsman, he was for some years Master of the Shropshire Hounds, an interest he shared with his father-in-law, the Shrewsbury Liberal MP, Robert Aglionby Slaney. Slaney was an advocate in Parliament of agricultural improvement.³

Throughout his adult life Thomas Campbell was an active magistrate. In 1838 he was appointed lieutenant in the Wellington Corps of the South Salopian Yeomanry Cavalry and, with the rise of the voluntary movement, he was the first commissioned officer to be enrolled in the Shropshire Rifles in 1859. In addition to these typical attributes and activities of a country gentleman, he exhibited the business acumen learnt from his father and grandfather. He was a partner in the Shrewsbury Old Bank and he had shares in local canal companies. It was a development of the latter that occupied more of his time in the second half of his life.

The Shropshire Union Railways & Canal Company

Thomas Campbell Eyton had joined the committee of the Shrewsbury Canal in 1836 and, like his father and grandfather, played an active part in the management of the canal. In its last decade as an independent company, he occasionally chaired meetings; and in July 1845, he was one of three committee members deputed to attend meetings with the Ellesmere & Chester Canal Company to discuss amalgamation and railway conversion.⁴ Two months earlier, the Ellesmere & Chester Co. had absorbed the



Photograph of Thomas Campbell Eyton

Birmingham & Liverpool Junction Canal, which included the branch from Norbury Junction, via Newport to Wappenshall, where it joined the Shrewsbury Canal. The Shrewsbury Canal became a constituent member of the new combined company formed on 3 August 1846—the Shropshire Union Railways & Canal Company.

The word order in its title and the use of the plural were indicative of the intentions of the new company. There were plans to build 155 miles of railways, including conversion of most of the company's canal routes. However, in spite of his involvement in the initial discussions on amalgamation and conversion, Thomas Campbell Eyton did not at first become a member of the board of directors of the newly-formed Shropshire Union company, chaired by the Earl of Powis. It was not until 19 March 1852 that

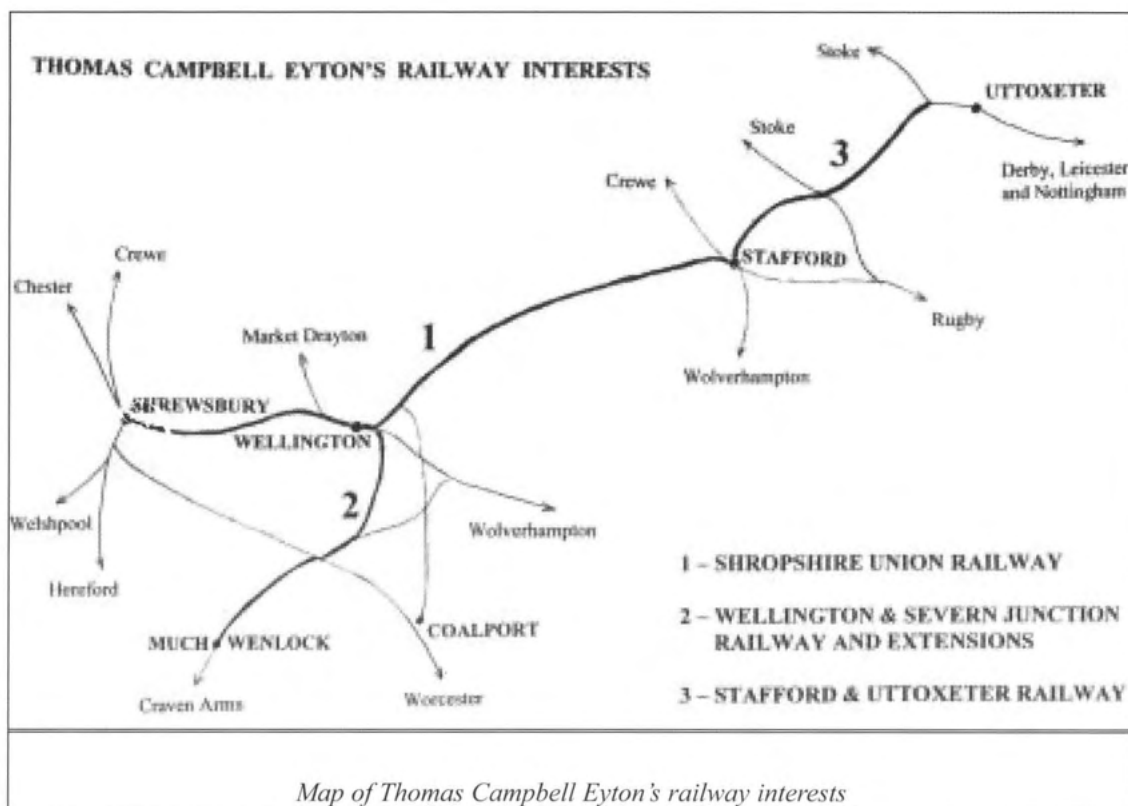
he became a director.⁵

The SUR&CC was leased to the London & North Western Railway in 1847 and, of its grandiose plans, only the railway from Shrewsbury to Stafford (constructed jointly with the Shrewsbury & Birmingham Railway (S&BR) as far as Wellington and opened in June 1849) and the line from Hadley to Coalport (fully opened by 1861) were built. The latter necessitated the closure of most of the Shropshire Canal, but the Shrewsbury Canal and the Newport Branch were kept open by the LNWR.⁶

Eyton was a member of the SUR&CC board for the next 20 years, though he does not appear to have attended meetings regularly. He is listed as a director in *Bradshaw's*



*Seal of the Shropshire Union Railways & Canal Company
(mistakenly showing 'Railway'!)*



Map of Thomas Campbell Eyton's railway interests

Railway Shareholders' Guide & Directory of 1869, but resigned three years later. His short letter of resignation to Lord Powis, on 29 November 1872, suggests he had become out of touch with the Company's affairs.⁷

The Wellington & Severn Junction Railway

Together with five other local businessmen, Thomas Campbell Eyton was a director of the railway authorised by Parliament in 1853 that planned to tap the mineral wealth of the Coalbrookdale Coalfield. This was the Wellington & Severn Junction Railway, which ran from a junction on the Shrewsbury & Birmingham Railway at Ketley to Horsehay (opened 1857) and Lightmoor (opened 1858), where it joined the S&BR branch from Madeley Junction (opened 1854). The aim was to link up with the proposed Severn Valley Railway, being promoted at much the same time by separate interests. In the following years, Eyton was also amongst the promoters of the lines that linked the W&SJR to Coalbrookdale, Buildwas, and Much Wenlock (1862-64) and to Craven Arms (1867).⁸

The resulting success of these developments can be gauged from the enthusiastic words of William Gregory Norris, manager of the Coalbrookdale Company, in his comments on the transport of goods from Horsehay ironworks:

The system of delivering by canal both for home and foreign consignments continued until the opening of the Birmingham & Shrewsbury line, when Wellington became the trans-shipping station; and continued so until the opening of the Wellington & Severn Junction Branch, when the conveying accommodation was such that iron could be rolled, loaded and into Birkenhead before it was cold!⁹

It was not only the Coalbrookdale Company that benefitted. Limestone from Wenlock Edge was conveyed over the metals of these lines, worked from 1864 by the Great Western Railway, to the Lodge and Priorslee Furnaces of the Lilleshall Company on the northern edge of the coalfield.¹⁰ In addition, a regular passenger service operated between Shifnal, Lightmoor and Wellington (from 1859) and between Wellington and Much Wenlock (from 1864)/Craven Arms (from 1867).¹¹

Having seen the line and its extensions through the formative stage, Eyton stepped down and by

1869 was no longer a director of the Wellington & Severn Junction Railway.¹²

The Stafford & Uttoxeter Railway

At first sight, it seems odd that Thomas Campbell Eyton was associated with a railway in an area over 20 miles from his home base and where he had no apparent landed or business interests. However, the promoters of the Stafford & Uttoxeter Railway saw their railway as a link in the carriage of livestock from Central Wales to the East Midlands. As their 1862 prospectus stated:

The cattle traffic from Shrewsbury, Welshpool, Oswestry and Newtown and other places in Shropshire, Montgomeryshire and North Wales into Leicestershire is very considerable. The proposed line will effect a saving of 13 miles between Shrewsbury and Leicester, as compared with the present imperfect route via Rugby.¹³

So is it possible that Eyton's interest in agriculture, particularly livestock, is a clue to his involvement with this railway? The prospectus also mentioned that the traffic in limestone between the Staffordshire Moorlands and the Shropshire iron industry would benefit from the shorter route; and this again would have appealed to a businessman like Eyton, well aware of the importance of the local iron trade to the commercial prosperity of East Shropshire and his own interests.

The railway between Stafford and Uttoxeter was authorised by Act of Parliament in July 1862. Its registered office was in Wellington; Eyton was chairman of the company and Robert Daniel Newill of Wellington was the company's solicitor. The Wellington connection was extended further when John Barber, a friend of Eyton, was commissioned in 1863 to survey a branch from the Stafford-Uttoxeter line to Abbot's Bromley (which was in fact never built).¹⁴

In the event, the Stafford & Uttoxeter Railway proved to be a very impecunious affair. The livestock traffic never fully materialised; the junction arrangement at Stafford was not conducive to transfer traffic flows via the Shropshire Union line; and the London & North Western Railway and North Staffordshire Railway were not cooperative. Thomas Campbell Eyton remained chairman until 1875 and Newill solicitor until 1878. The Stafford & Uttoxeter Railway was sold to the Great Northern Railway in 1881.¹⁵

Eyton's Death

Thomas Campbell Eyton died at Eyton Hall on 25 October 1880. He had relinquished the last of his railway interests five years before. With his son and heir, John Slaney Eyton, there was to be no fourth-generation involvement in transport development, whether in the Wellington area ... or beyond.

Notes and References

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Correspondence

Canal Boats, Canal Children and Social Reform

(*RCHS Journal*, July 2012, 2-6)

I was fascinated to read in Adrian Gray's article that the canal boat children's class at Brentford had at one time moved to Brentford Senior School and also to the 'former St Lawrence school'. I have spent a great deal of time over the past 24 years researching, writing and speaking about canal boat children and could not resist adding to the information given by Mr Gray as well as making a few minor corrections and suggestions.

Precise details about exactly how many boat schools actually operated at Brentford, when and where, have always been hard to come by. During my research for my PhD thesis, for *Women and Children of the Cut* and in the research undertaken by myself and Gill Foster for *Canal Boatmen's Missions*, I have examined a wide range of primary sources on this subject, many of them original documents, internal memos and reports written by the Ministry of Health, the Board of Education and its HMIs and this is what I have gleaned about that school:

The London City Mission started a school for boat children in a small room at 7 Brent End, Brentford in about 1895 or 96.¹ This moved to the Boatmen's Institute, Brentford when it opened in 1904 and for a time there was also maternity provision in this building. When the second missionary, Mr Knight, took over (date not known), he closed the maternity rooms and the school and sent the children to local schools. The school was reopened in 1920 by Middlesex local education authority in a room in the Boatmen's Institute for which the LEA paid £25 per annum.² A teacher was supplied from the Rothschild Elementary School (the former British School in High Street, Brentford which later became Brentford School for Girls, Boston Manor Road) but the class was never moved to the main school.

When HMI Chambers reported on the school in October 1930, it was still operating in one room in the Boatmen's Institute³ but when it was visited by a Ministry of Health official, N B Battenbury, at the end of 1943, he described it as having two large rooms, one used as a classroom and one as a playroom. He does not give the location but this

sounds more like the former National School in The Ham which I think is the same school referred to by Mr Gray as 'the former St Lawrence School'. This building still exists and is now a nursery school. According to a further note written by Battenbury in February 1945, the canal boat school closed for a short time during the war and became a furniture store for bombed out houses⁴ but reopened in March 1946.⁵ When Mr Chapman became the London City missionary at Brentford in 1945, his description of the Boatman's Institute and its activities made no mention of a school, so it would seem that the canal boat children's school did continue to operate from the building in The Ham. Gray's supposition that the school closed in about 1957 is almost certainly correct. I have a photograph of the class with their teacher, said to have been taken in 1955, and I had read that it closed some time in the 1950s. The Boatmen's Institute still exists in The Butts but is now a private house.

At Paddington, the problem of how many schools existed, when and where, is even more complicated. Provision there started much earlier than 1896 as Mr Gray suggests. A mission there, with a week-day class for boat children, was opened in 1827 by the Soldiers' and Seamen's Bethel Union. Gill Foster's research established that a mission had existed more or less continuously in Paddington from the 1820s to the mid-1930s, although not always in the same premises.⁶ For most of this period the mission ran a school for canal boat children although there does seem to have been a break in continuity in the early twentieth century. By the 1920s, a school for boat children was housed in a room belonging to the Boatman's Institute on South Wharf Road, Paddington and was under the control of the London County Council Education Authority. It was attached to St Michael's Elementary School, Star Street, but again always kept in separate premises. The school was forced to move in 1930 when St Mary's Hospital bought up land on the wharf to build a Nurses' Home. It is not known exactly when it closed but by the end of the decade it was certainly gone.⁷

A few other schools or classes (not just Sunday Schools) existed in the nineteenth century. For

example, schools existed near the Aston and Crescent locks in Birmingham from the 1820s and in Oxford from 1839.⁸ A mission on Worcester Wharf (Gas Street Basin), which had been opened by 1857 by the Incorporated Seamen and Boatmen's Friend Society, ran a class for boat children. By 1885, it had moved to Bridge Street, but although the mission lasted until the 1950s, the school had closed by 1893.⁹ As far as I am aware, this was that Society's only attempt to provide schooling for boat children, other than Sunday School, although they did provide various social and welfare facilities such as coffee rooms, recreation rooms and, in one case, a bakery and laundry.

The floating school *Elsdale*, launched in 1930, was, as Gray correctly says, initially staffed by a Church Army missionary who did not make a good impression on HMI Chambers. The school was, however, almost immediately taken over by the local education authority who supplied it with competent qualified staff. When the boat school sank in 1939, it was salvaged and reinstated on dry land in a depot yard. By 1956, it must have become very dilapidated, as the children were moved to Norwood Green Infants School, but still taught separately from the mainstream. The class did not close until 1962.¹⁰

It is true, however, that neither the boat schools nor the ordinary elementary schools were able to do much for children who were constantly moving around the country and who could attend only infrequently and for short periods. Board of Education papers show civil servants in the department wringing their hands in despair from the late nineteenth century onwards, whilst many local authorities openly admitted in their annual returns to the Board that they could do nothing and had more or less given up trying. Many pointed out that it was not their responsibility to provide schooling for children not deemed to be resident in their area, and did not even include them in the numbers of children found on boats which formed part of their annual returns to the Board.

The Canal Boat Acts of 1877 and 1884 were no help where education was concerned. From 1877, inland boats used as dwellings had to be registered for the purpose of the Education Acts in a school district abutting the canal but I can find no mention in the regulations that there was a requirement for children to register at a specific

school. Boats often had little or no contact with the district in which they were registered (a fact often referred to by the Board and the LEAs) and although parents could ask a local authority for a certificate stating that it was satisfied a child was being educated effectively elsewhere, in how many cases could a local authority really be so satisfied? The Children's Acts of 1908 and the Education Act of 1918 did nothing better for these children, which left the Board's Director, Sir Edmund Phipps, wondering why, when it was too late.¹¹

There was no any legal requirement for local authorities to issue attendance books, although some did (Birmingham and Coventry for example) as did at least one carrying company.¹² In 1926, Al Dakin, Inspector of Schools in Cheshire, made a number of suggestions to the Board for improving the situation.¹³ One of these was that regulations should be made by the Board of Education under the 1918 Education Act to require the issuing of attendance books. The Board, whilst accepting that the power to do such a thing did exist, felt that it should not be done on the grounds that it had never been done before!¹⁴ This is fairly typical of the attitude of the Board of Education at the time. When the conference of 1931, referred to in Mr Gray's article, was first mooted by the London County Council in 1930, one Board of Education official wrote privately to a colleague:

*The LCC idea of a conference ... does contain the germ of a partial solution of the difficulty. If such a conference is called it would probably break up in failure, but it would have the advantage of showing that the Board had considered the possibility of administrative action to ameliorate the situation of these children and would definitely disprove the possibility of such an amelioration.*¹⁵

The Coventry headmistress referred to by Gray is, in fact, the famous Selina Dix, Head of Wheatley Street Council Street School for Girls. She did take a particular interest in boat children and became well known for her efforts to secure what education she could for them as well as for taking an interest in their general welfare. To judge from a report written in 1914, the Coventry Education Authority had been pursuing a sympathetic and proactive policy towards boat children for a number of years.¹⁶ It is rather unfair, therefore, to suggest that her attitude discouraged children from attending, although the attitude of teachers in some other schools must often have been less

than welcoming. I have a copy of all the evidence given to the 'Committee on Living-in on Canal Boats' in 1920/21 and I can assure Mr Gray that what Selina Six actually said was 'We always watch them [the boat children] right away' not 'We always wash them right away'. She does comment on the lack of cleanliness, and refers to one child where it was necessary to wash it and shave its head, but schools did not generally provide washing facilities for the children. In fact, the Paddington school would have liked to do so but was prevented by the local education authority on the grounds that the facility would not be on council property.

The 1920/21 Committee was not initiated by the Ministry of Health, as Mr Gray believed, although it was held on their premises. Nor was it set up in response to scarlet fever cases on boats to look primarily at health issues. It was appointed by the Ministry of Health (which had assumed responsibility for the Canal Boat Acts when it replaced the Local Government Board in 1919) as a result of a deputation from the Transport Workers' Federation who had earlier passed a resolution calling for the abolition of 'living-in' on canal boats.¹⁷ The deputation was received by a joint committee of the Ministry of Health, the Board of Education and the Ministry of Transport, who seemed to look favourably upon it, but when the Committee was appointed, the Federation was incensed that they were not allowed to be represented. Consequently, they refused to give evidence.

It is fair to say that the Committee's report had no effect but I do not think all the blame can be put on Neville Chamberlain. Its report did recommend that children between the ages of five and fourteen years should be prohibited from residing on board during term time. Two members of the Committee disagreed so strongly with this that they produced their own addendum in which they condemned the whole practice of 'living-in' in the strongest terms. The work of the Committee had been conducted against a background of hostility and uncertainty in government and Chamberlain felt that anything less than a united front would weaken the effect of the report. The dissenters were forced to modify their addendum, although their true feelings remained fairly clear. The Committee did not have any powers to do anything other than make recommendations and when Chamberlain asked the Minister of Health in the House of Commons in

February 1922, why no action had been taken, the Minister replied that 'the time [was] not opportune for the introduction of legislation to give effect to their recommendations'. What might seem to 21st century minds like rather weak conclusions, were seen as 'rather drastic recommendations' by the Board of Education in 1921, who felt that 'public opinion [did] not seem yet ripe, or likely to be, for such a drastic measure'.¹⁸ The Board worried about where the children would live, given the housing shortage, and feared that they would end up in common lodging houses.¹⁹ They also worried about the effect on the industry given the parlous state of the canal companies and carriers as a result of the effects of government wartime policy towards them. Incidentally, Neville Chamberlain had had a long standing interest in and involvement with canals, and had chaired committees on the industry before this. I do not think he would have been fooled by the canal community and to say it is no wonder he was no match for Hitler does seem a little harsh.

Gray gives various figures for the number of children living on canal boats which have come from different sources. I do not think much reliance can be placed on any of them and this was sometimes admitted by officials, especially the school attendance inspectors who sent in annual returns to the Board of Education. In 1921, Board of Education Inspector Murray told Education Director Phipps 'There are no complete figures in existence as to the number of children of school age living on canal boats. The figures which we give in our annual reports certainly contain duplicates'.²⁰ He felt that the best they could obtain were those given by Mr Parr of the NSPCC in 1920, viz. 1,343 children, 726 of school age but the true figure probably 1,000 of school age, 85% almost uneducated. (These are the same figures referred to by Gray in column six of his article) The difficulty of counting children who were here one day and gone the next, together with that of avoiding counting some more than once and others not at all can easily be imagined.

I felt that Mr Gray's inclusion of children in reform schools, albeit on boats, was rather beside the point when talking about the education of canal boat children. I was also rather puzzled by his final comments about boats today which are registered as children's homes. I was not sure if he was talking about children's homes in the sense of residential homes for children in the care of Social

Services or simply children who happened to live on boats rather than in houses, I suspect the former. However, in seeking to find a parallel in the educational experience of children today, it would, I believe, be better to point to the children of travellers, as P Bowen does apparently, given that the full title of his article is *English canal-boat children and the education issue 1900-1940: towards a concept of traveller education?*

There is such a wealth and range of primary source material available on the subject of educating canal boat children, mainly in the National Archives, that it is impossible to do justice to it in one short article. It could easily be the subject of a whole book! **Wendy Freer**

Notes and References

1. The National Archives (TNA), ED 11/40 *Morning Leader*, 3 October 1900, and 6th *Annual Report of the Canal Boatmen's Mission and Day Schools, 7 Brentford End*, 1902, written by R Bamber, London City Missionary
2. TNA, ED 11/88, Report of CH Settington, HMI on Brentford School, 4 February 1920
3. TNA, ED 11/92, Report of HMI Chambers to the Board of Education, 23 October 1930
4. TNA, HLG 52/1094, Internal minute written by NB Battenbury of the Ministry of Health on 16 February 1945 after interviewing Mr Micklewright, Canal Boat Inspector, Brentford
5. TNA, HLG 52/1094, Report by Dr Haddison of the Ministry of Health, 7 May 1946
6. Wendy Freer and Gill Foster, *Canal Boatmen's Missions*, RCHS, 2004, pp.42-45
7. More details about the Paddington schools can be found in Wendy Freer, 'A Tale of Two Classes', *Narrow Boat*, Spring 2008
8. *ibid*, Freer and Foster, pp.15, 18, 19
9. Birmingham Central Library, *The Waterman*, (magazine of the Incorporated Seaman and Boatman's Friend Society), March 1910 and March 1948 and PRO ED 11/1, Returns to the Education Department, 6 June 1893 from Birmingham
10. More details about this school, including photographs of the interior and exterior, can be seen in Wendy Freer, 'A Tale of Two Classes' *Narrow Boat*, Spring 2008
11. TNA, ED 11/88, internal minute from Sir Edmund Phipps and Mr Richards, 16 June 1919, quoted in Wendy Freer, *Women and Children of the Cut*, RCHS, 1994, p.41
12. A photograph of an attendance card issued by Brentford and Chiswick Education Committee can be seen in *A Tale of Two Classes*, Freer, Wendy in *Narrow Boat*, Spring 2008.
13. TNA, ED 11/90, Report of HMI Dakin to the Board of Education, September 1926
14. TNA, ED 11/90, internal minute written by D Davidson of the Board of Education to Richards and Pelham, of the same department, 25 February 1927
15. TNA, ED 11/92 internal minute from Davidson to Pelham, Board of Education, 3 November 1930
16. TNA, ED 11/87 Association of Education Committees Reports to the Coventry Education Committee 26/6/1914, states inter alia 'two schools conveniently near the canal have been selected for the reception of Canal Boat Children and instructions given that such children are always to be admitted at whatever time they put in an appearance. The staffs of these schools have been interested in the matter and deal with the children sympathetically.'
17. TNA, ED 11/88, Minutes of the deputation of the Federation of Transport Workers to an interdepartmental government committee on 16 November 1919
18. TNA, ED 11/90, internal departmental minutes, Board of Education
19. TNA, ED 11/88, internal departmental minutes, Board of Education
20. *ibid*, Letter from Murray to Phipps, 15 June 1921

Great Western Railway Excursions in the 1930s (RCHS Journal, July 2012, 7-15)

I enjoyed reading Bill Crosbie-Hill's article on this subject, but he is incorrect in what he says about British railway company dividends in 1939 in his last paragraph. He is right to say that the GWR paid only 0.5% (on ordinary stock) in 1938, but GWR figures are available for 1939 — and for subsequent years. Furthermore, his statement that 'it would seem that the other major railway companies paid no dividend at all in 1939' is wrong.

The facts are as follows: the GWR paid 3.5% on ordinary stock in 1939, and, together with the other members of the 'big four', was able to provide higher dividends through the war years — 4% in 1940 and 1941, 4.5% in 1942-44, and 5% in 1945 and 1946. I do not have figures for the LNER to hand, but feel confident that it too was able to

make improved dividend payments after 1938, which was a bad year. The LMS paid no dividend on ordinary stock in 1938, but 1.5% in 1939, rising to 4% in 1945. In 1947 the LMS, determined to pass as little money as possible to the British Transport Commission, squeezed out almost £4 17s 11d% as its final ordinary stock dividend and so passed on the princely sum of £49 to the BTC! The most financially successful of the British railways, the Southern, paid 5% on its preferred ordinary stock in every year between 1938 and 1947, and although it paid nothing on its deferred ordinary stock in 1938 it did better year on year after that, finishing with over 4% in 1947. **Ross Woollard**

The very interesting article by Bill Crosbie-Hill mentions trips that took advantage of the link between the GWR and the Great Central Railway, between Banbury and Woodford Halse. This link was opened in 1899 and introduced a cross country connection between the East Midlands, North and North East and the South, which had not previously existed. Cunningly it allowed the Great Central to 'step over' the main lines of both the Midland Railway, at Loughborough and the London & North Western Railway at Rugby and opening a connection, via Reading and Basingstoke to the South Coast.

This particular link seems to have proved popular with excursion trains, especially to summer resorts and with freight traffic, for example coal trains assembled at Annesley, but how well was it used by regular, timetabled trains? I thought it might be interesting to investigate this, although I had limited information immediately available to

me. This consisted primarily of the Bradshaw's Guide for 1957 and the *crosscountrytrains* timetable 'Scotland and the North East to the South West and South Coast' for 2012.

The first thing that is immediately noticeable is the astonishingly slow journeys of the GCR/GWR trains, compared with the modern Cross Country Trains. I wondered whether I had been misreading the Bradshaws timetable, but the numbers in the table seem to be correct.

With closures looming in 1957, were these slow journeys an excuse by British Rail to show the cross-country routes in a poor light and therefore ripe for closure? The modern diesel locomotives of 2012 appear to be much more powerful than the old steam types of 1957 and the mainline track much more able to use faster trains in 2012.

Having noticed the above differences, I turned for verification to another source, to see if the Great Central trains of an earlier era were any faster. This was the facsimile timetable of 1903. There were apparently six scheduled trains a day on this route in 1903. A direct comparison is available in the afternoon where the 1340 hours departure from Sheffield Victoria reached Southampton at 2044 hours (cf 2034 in 1957 in the table above).

The 1903 timetable reveals long waits of up to an hour in total at Woodford and Banbury. This must have seemed an excruciatingly long journey!

The main point in this is that the modern service has no delays, due to shorter stops, faster trains and not having to bother about crossing what were previously different railway company's systems. **Kenneth Goddard**

Sheffield to Southampton, midweek
GCR-GWR, via Woodford-Banbury, 1957

Sheffield, Vic.	0726	1023	1339
	-	-	-
Chesterfield,	0838	-	1433
Nottingham, Vic.	0843	1259	1444
	-	-	-
	-	-	-
Rugby, Central	0946	1407	1550
Banbury	1248	1445	1626
Basingstoke	1525	1638	1930
Southampton	1621	1737	2034

Cross Country Trains, via Birmingham, 2012

Sheffield, Mid.	0718	0923	1123	1323
	-	-	-	-
	-	-	-	-
Derby	0750	0953	1153	1353
Birmingham	0833	1033	1233	1433
	-	-	-	-
Banbury	0919	1119	1321	1519
Basingstoke	1040	1240	1440	1640
Southampton	1116	1317	1517	1717

Note: The image of the Great Western Railway excursion handbill on page 15 of the July 2012 issue appeared by courtesy of the Great Western Trust

Reviews

The Furness Railway: a history — Michael Andrews

248+viii pp, A4, 192 monochrome & 24 colour illustrations, maps and diagrams, hardback, Barrai Books, 17 Railway Terrace, Lindal-in-Furness, Ulverston LA12 0LQ, 2012, ISBN 978 0 9569709 0 9, £25

A former Chief Medical Officer on British Railways, the late Dr Michael Andrews was an early member of the RCHS. A native of Barrow-in-Furness, he made a life-long study of the history of the Furness Railway, undertaking extensive research into original records, including the diaries of William Cavendish, 7th Duke of Devonshire, who was the railway's chairman for 40 years. In addition to his extensive land and mineral interests in Furness, the Duke was closely concerned with the establishment of Barrow's iron and steel industry with which the Furness Railway was intimately associated. Indeed, it can be said that through the interlocking interests of Cavendish and fellow directors, Barrow and the Furness Railway were almost synonymous.

The railway opened in 1846, taking slate and iron ore from Furness quarries and mines for shipment at the tiny coastal village of Barrow. Progressively the line was extended up the Cumbrian coast, reaching the iron and coal mining area around Whitehaven, although it was eleven years before a southerly link was made with the London & North Western Railway at Carnforth. Meanwhile Barrow was developing at enormous speed, from a population of 100 in 1846 to over 47,000 by 1881, when iron and steel production was approaching its peak. By the end of the century it was undergoing a gradual decline and the last steelworks closed in 1963. Meanwhile shipbuilding had become the principal industry and Barrow was a major port.

Four of the book's 27 chapters are devoted to

Barrow, its industries and docks. Others cover efforts to promote connecting railways to north-east England, culminating in the Furness & Midland joint line from Carnforth into Yorkshire; competition and railway politics in west Cumberland; shipping interests; the railway's role during World War I; and post-grouping developments up to the present day. We learn of the influence of Sir James Ramsden, the railway's general manager, local company director, the town's first mayor, and much else. What F W Webb was to the LNWR and Crewe, Ramsden was to the Furness Railway and Barrow. His able successor, Alfred Aslett, developed Lake District tourist traffic to offset the effects of the iron industry's decline.

Excellent photographs, many of historic value, and specially-drawn maps, some in colour, enhance this sumptuously-produced book. Yet despite the subtitle, it is mainly a business history, containing little about locomotives, rolling stock and train services, and nothing about constructing the line, its infrastructure, signalling and scenic routes. The dense text contains numerous lengthy verbatim extracts from minutes and reports, taking space which could have been used for other material, while a more comprehensive index would have aided reference. Michael Andrews died during the book's preparation, and one is left with the impression that the text is a first draft awaiting editing. Sadly, therefore, this account of an interesting, compact, regional railway is a disappointment.

GORDON BIDDLE

London's Railway Heritage: Architecture, Engineering and Industrial Archaeology, Vol. 1: East — Peter Kay

86pp, 295x210mm, 272 photographs, 36 drawings, 17 maps & plans, paperback, author, 6c Park Road, Wivenhoe CO7 9NB, 2012, ISBN 978 1 899890 45 3, £12.95. Available from various on-line sources such as railbooks.co.uk.

Those familiar with the author's excellent previous volumes on *Essex Railway Heritage* will know what to expect here: a very well-illustrated gazetteer of historic railway infrastructure, meticulously referenced to original resources. The present volume covers the southern part of what was historically known as metropolitan Essex, between the boundaries of the City and the Greater London area.

A number of the lines featured would lend themselves to the sort of exploration on foot that many Society members enjoy. Your reviewer, despite wandering the area over many years, now learns that he has missed much of interest and misinterpreted more, and looks forward to revisiting it with the book in hand, which is surely the best recommendation for this type of work.

MATTHEW SEARLE

***Railways, Urban Development and Town Planning in Britain, 1948–2008* — Russell Haywood**

xix+401pp, 233x155mm, 15 figures, 62 tables, Ashgate Publishing, Wey Court East, Union Road, Farnham GU9 7PT, 2009, ISBN 978 0 7546 7392 7, £70

As transport history has been declining as a discrete academic study in recent years (with the notable exception of the Institute of Railway Studies & Transport History at York), the subject seems to be attracting increasing attention from academics working in other disciplines. Their work can easily slip past us unnoticed, which partly explains why this interesting book by the Professor of Transport Planning at Sheffield Hallam University is only now being reviewed three years after publication.

Land use and transport provision are inextricably linked. The author has combined his professional expertise with what is clearly a sound knowledge of railway history to set out the parallel histories of railway development and town planning and their inter-relationships. In spite of the successful involvement of the Southern Railway and London Transport in the development of the London suburbs, the gap between the railway and planning professionals was already apparent in the inter-war years, the latter perceiving railways as ‘old fashioned and not essential to the brave new world of post-war planning’.

The Transport Act, which created a national railway system, and the Town & Country Planning Act, which established a national system of land-use planning, were both passed in 1947. One might have expected that this would lead to co-ordination of the post-war reconstruction and development of our railways and of our cities and towns — most particularly in the planning of the New Towns. However, the railways were national, with a centralised, introverted culture; town planning was local and its practitioners mainly architects, surveyors and highway engineers. For the first twenty years from 1948 there was virtually no contact between the two. In

consequence, the New Towns were designed to be served by road transport. Harlow New Town was typical: ‘the area closest to the station site was zoned for a park and playing fields, with the commercial area being the most distant’. This is in contrast to what was happening on the Continent.

The creation of the Passenger Transport Authorities in 1968 was a significant turning point, after which the two sets of professionals slowly discovered common ground, particularly after the introduction of BR’s business sectors. A high point was reached in the 1980s and early 1990s, when there were many successful developments and re-opening schemes driven by urban regeneration and environmental policies. Railway privatisation, followed by changing structures and responsibilities in local government, have been a setback: ‘The interface between railway interests and local authorities for integrating rail planning with local land-use and transport planning is complex, ill-defined and has been subject to a great deal of churn.’ However, the creation of the London Mayor and devolution in Wales and Scotland have been helpful.

The author’s style is commendably lucid and easy to read, and the structure of his analysis extremely clear. The latter is further illuminated by a chapter devoted to a case study of the successes, failures and missed opportunities in one particular region: the city of Manchester.

More might have been said about the location of new freight-generating manufacturing plants and distribution depots remote from rail access in the post-war years. Nevertheless this is an impressive, thought-provoking (if expensive) study, which opens up a stimulating new perspective on the development of rail transport in Britain over the past eighty years.

GRAHAME BOYES

***Railway* — George Revill**

288pp, A5, 114 colour and b&w illustrations, paperback, Reaktion Books, 33 Great Sutton Street, London EC1V 0DX, 2012, ISBN 978 1 86189 874 6, £16.95

This is a book about image and culture, so the press release promising that it will ‘delight ... trainspotters’ is perhaps misplaced. It is not without interest, but it is a book in which an American locomotive of the 1860s is ‘more than mechanical energy naturalized in the familiarized form of equine power; rather it was

co-opted to a theological vision as part of a divinely ordained means given to humans and enabling them to build civilisation out of wilderness ... a teleology of second creation in the United States’. It offers a challenge that can engage the reader in grasping sentences such as ‘System resilience and discretion

as much as path dependency and seamless mechanical connection define the cultural characteristics of the railway as a machine.'

Revill, who is an academic geographer with an interest in landscape, is at his most convincing when able to write in detail about a particular issue, less convincing when using a few paintings to support broad assertion. The acceptance of the railway as part of the landscape in art is described as a 'conception' which 'emphasised the relationship between railway and landscape as an interpenetration of mutual dependencies rather than the juxtaposition or irreconcilable fragments'. But the railway, like the motorway, only really has such a relationship at its nodal points and few landscapes, such as suburbia, have a dependency on the railway, as large areas of rural England that have lost their railway to little effect demonstrate.

This is a book in which nothing is as it seems, but is actually a symbol for something else. This is unconvincing at times, such as when we are told the railway helps 'shape how we think about ourselves as distinctive individuals, able to build unique biographies from the circumstances and choices which present themselves'. Revill says that 'it is not without significance that the major characters enter the city by train' in a novel of 1900 — but one suspects this might just have been the normal way to travel, rather than a philosophical statement.

Revill is at his strongest when writing in more detail about the wonderful photographs of O Winston Link and the streamlining craze associated with Raymond

Loewy. Some of the pictures are very interesting.

Railway historians might quibble with some assertions, for example that 'for much of the nineteenth century and into the twentieth' railways were a more reliable investment than agriculture; it might have been better to say that neither was reliable. The role of high art prints in shaping perceptions of railways is discussed, but the cheaper popular press from the *Illustrated London News* downwards surely had a greater impact.

However what lets the book down is its limited range of reference points. Most of the evidence is drawn from Britain or America. It barely scratches the surface of railways in popular song (probably betraying the range of the author's tastes) beyond American blues, and the same with film — *Titfield Thunderbolt* deserves its mention, but *The Railway Children* and *Thomas the Tank Engine* are actually equally fascinating insights into English culture. References to literature are also limited, missing such seminal scenes as Dickens' death of Carker.

All this may sound rather griping, but this is a brave and unusual book which manages to be both intriguing and infuriating at the same time. It contains some real gems too, such as the philosopher Wittgenstein's claim that 'the only place where real philosophical problems could be tackled and resolved is the railway station'. Which is perhaps therefore the best place to read this book, but be careful because 'stations are inherently contested and many-layered cultural phenomena'.

ADRIAN GRAY

***The Rise and Fall of British Railways: Goods and Freight* — John Vaughan**

208pp, 277x214mm, 367 photographs, 99 in colour, hardback, Haynes Publishing, Sparkford, Yeovil BA22 7JJ, 2012, ISBN 978 0 85733 023 9, £30

It would take a stern critic to find fault with the 45th and last book, after 47 years in railway publishing, from the pen of this noted author. Indeed this last, in a series of three, is lavishly illustrated with rare and interesting photographs by the author and other celebrated railway cameramen, the three colour sections especially so. Interspersed are five substantial 'essays' which précis the rise and fall of the series' title: Introduction; 1940s and Nationalisation; Modernisation and Beeching; British Railways to British Rail; and BR sectors in the 1990s. There may be little that is new here but then there seems little that any author can add on this topic, and this author tells the story succinctly and well. There is a location index but no bibliography.

The criticisms are minor (as are the number of errors that escaped the proof reader, though there are a few) but there does seem to be a distinct lack of illustrations of the infrastructure of freight handling, for instance there are few shots of marshalling yards. Possibly there are few decent photographs of these to include but, additionally, the flow of the illustrated story seems unnecessarily constricted by laying them out engine class by class. The geographical spread is good although there is some thinning out the further north one travels. Lastly it would have been interesting to have the difference between 'goods' and 'freight' explained — they are surely synonymous but it makes for a good title.

WILLIAM FEATHERSTONE

***Underground Overground* — Andrew Martin**

xvi+304pp, 215x135mm, 19 b&w illustrations, hardback, Profile Books, 34 Exmouth House, Pine Street, London EC1R 0JH, 2012, ISBN 978 1 84668 477 7, £14.99

Andrew Martin is perhaps best known for his series of historical railway-based thrillers, but here he turns his attention to the real thing. Clearly aimed at the layman, this is an entertaining and very personal interpretation of its subject. The steam-powered origins of the Underground are well described, as are the difficult relations between the Metropolitan and the District. The benefits of electrification, and the historical reasons for the two different sizes of rolling stock, are clearly explained. The contributions of the usual suspects — Watkin, Yerkes, Pick, Ashfield et al — are well described, as are the aims (and somewhat stunted achievements) of the 1930s New Works Programme, and the postwar decline and subsequent renaissance. Little of importance is completely overlooked, although since the book's emphasis is on the social rather than the technical — its subtitle is 'A Passenger's History of the Tube' — topics such as signalling, civil engineering and rolling stock design do not feature strongly.

Ten of the twelve chapters are broadly historical, but the author has developed to a fine art the knack of leading the reader's attention seamlessly towards peripheral matters before he realises it. '1933 and All That', despite its opening remarks on the creation of London Transport, is largely devoted to the lost property office and the tube map, and 'Everywhere in Trains' devotes considerable space to poster art and to John Betjeman. The final chapter, 'Londoners and the Tube', is a pot-pourri which deals with amusing but hardly crucial topics such as pigeons, drunks, panel games, models (the small-scale variety) and tube fans (the human variety).

Some of Martin's assertions seem unrealistic: the

nature of London Overground's orbital route is much more akin to the North and South Circular Roads than to the M25, and it is difficult to see why the success of the High Barnet electrification should have undermined that of the Alexandra Palace branch; this was surely due to changed postwar circumstances. And factual errors are not uncommon: the Great Northern & City did not reach Bank, Clapham Common is confused with Clapham Junction, the Great (not Grand) Central Hotel was south (not north) of Marylebone Station, the GWR's broad gauge was not 7ft 2in, and so on. But inaccuracies of this sort are perhaps unlikely to trouble the intended reader-ship.

Authorities such as Alan Jackson and Christian Barman are quoted in the text but their works are not always listed in the bibliography, meaning that they cannot be readily looked up afterwards. It is also a pity that titles such as Andrew Emmerson's *London's Secret Tubes*, which would provide useful further reading for the layman, are not mentioned. There is a reasonable index but the few illustrations have reproduced only moderately well, and since the author is targeting those who know little of the subject, a map would have been handy. These are all matters which could be addressed in a second edition. But a basic difficulty with writing about London Underground is that so many others have done it already. This is a very readable book and the reader's sense of humour is often appealed to by entertaining asides, but since the author does not appear to have consulted any primary sources we learn relatively little of substance which could not have been discovered elsewhere.

GRAHAM BIRD

***Cape Breton railways: an illustrated history* — Herb Macdonald**

264pp, 236x192mm, 182 illustrations & maps, paperback, Cape Breton University Press, Sydney, Nova Scotia, 2012, ISBN 978 1 897009 67 3, £19.99. The book may be ordered via the Amazon website.

We rarely review books on the history of overseas railways, but it is entirely appropriate that we extend our vision to the railways of the former British empire and other countries with whom Britain had at some time close links. This scholarly study is based on the author's researches in England as well as in Canada. Although it is primarily a significant contribution to the history of Canadian railways, its

references to the transfer of technology from Britain give it a wider interest.

Cape Breton is a large island forming the northern part of Nova Scotia on the east coast of Canada. From 1829 the north-eastern region of the island around the large natural Sydney harbour grew into a major centre of coal mining and, later, iron and steel manufacturing. Its first horse-drawn railways, for

carrying coal to harbour wharves, were opened as early as 1830. The General Mining Association, which was responsible for the first period of development, was British-owned. The technical expertise was drawn from England (Telford and Buddle were consultants, although they never visited Canada) and much of the equipment, including rails and (from 1853) locomotives, was imported from Britain.

After the colonies of the Province of Canada, New Brunswick and Nova Scotia combined to form the Dominion of Canada in 1867, the British role in meeting railway requirements slowly diminished in the face of both American competition and the rise of Canadian manufacturers. However, British locomotives did continue to cross the Atlantic to Canada until after 1900. An interesting post-1867 example was the supply of three 3ft-gauge double-Fairlie locomotives sent in 1872 to the Glasgow & Cape Breton Railway.

The industrial railway network around Sydney carried passengers locally from 1879, but remained isolated until public railways were opened on the island between 1890 and 1903. They were linked by

train ferry to the national network, and subsequently became part of the Canadian National Railway system.

The development of the island's railways is described in the first chapters of the book, followed by chapters on passenger, freight, and other traffics and services. The last-mentioned section includes movements of military and supplies during both World Wars, when Sydney harbour became the departure point for slow Atlantic convoys. There is then a chapter dealing with the human aspects of the story: the railways as employers, and the working lives of those employed in their construction and operation. The last two chapters record the steady decline of commercial operations following a peak in the 1950s, with a gloomy prediction of the future of the surviving operations, and the unsuccessful attempts to maintain an operating heritage railway. But the final pages end on a more positive note with an account of the thriving Sydney & Louisburg Railway Museum, which keeps alive the memory of the Cape Breton railways' important contribution to the economy of Nova Scotia.

GRAHAME BOYES

***Signalman's Morning* — Adrian Vaughan**

160pp, 248x172mm, 57 b&w photos, 5 illustrations, paperback, Amberley Publishing, The Hill, Stroud GL5 4EP, 2011, ISBN 978 1 4456 0256 1, £16.99

***Signalman's Twilight* — Adrian Vaughan**

192pp, 248x172mm, 75 b&w photos, 5 illustrations, 2011, ISBN 978 1 4456 0257 8, £16.99

***Signalman's Nightmare* — Adrian Vaughan**

192pp, 248x172mm, 102 b&w photos, 5 illustrations, 2012, ISBN 978 1 4456 0258 5, £16.99

This trilogy is a storehouse of signalling stories, but is so well written and varied in its interest as never to tire. The author, who has carved a useful niche for himself, has a special ability to get in and out of quoted speech, and it is the interjections of conversations with other signalmen and engine drivers stopped at a signal or outside the signalbox — and also with Control — that prove especially fresh and interesting.

The author is also good at relating specific incidents to the wider background. The years concerned are when diesels had mainly taken over traffic in the Western Region's main line from Didcot to Swindon, but their frequent failures meant that steam still frequently came to the rescue. We hear how crews worked hard to achieve speedy runs in the last days of the old motive power. There is much about morale,

generally low (having further to fall on former Great Western routes than others) but high when steam triumphed.

The period described is also just before the spread of multiple aspect signalling, the next box up the line at Reading being a new panel, and the author implying he never wished to sink to the level of a panelman.

Many readers will recall the period and have memories of their own late or failed diesel-hauled trains. They were also the days of near-universal restaurant cars and when the only means of communication engine drivers had was to write a note around something thrown for the signalman to retrieve.

In short, excellent reads and a memorable record of a disturbing era.

DAVID ST JOHN THOMAS

***Railway Posters* — Lorna Frost**

64pp, A5, 79 illustrations (mainly colour), paperback, Shire Publications, Midland House, West Way, Botley, Oxford OX2 0PH, 2012, ISBN 978 0 74781, £6.99

This is yet another excellent production from Shire giving us an attractive, inexpensive and concise introduction to the subject, published in association with the National Railway Museum, and indeed written by its Assistant Curator, Image Collections. There is a bibliography and a list of places to visit.

Railway posters are as old as railways themselves. Early ones were informative, rather than eye-catching, most useful for notifications of excursions and possibilities of foreign travel. Not until the approach of the 20th century did pictorial posters appear and start promoting particular companies' images. In this the GWR led the way, establishing an advertising department in 1886. After 1900 there is a traceable link between memorable posters and the railways' promotion for leisure. The jolly Skegness fisherman (GNR) appears here, though in his later LNER guise. Not all posters were as avant-garde as those of the London Underground under Frank Pick, though distinguished names like Norman Wilkinson dominate the text. More sophisticated publicity came with the

Grouping. The LNER, partly because it was a 'newer' railway than some of the big four, took an early lead, commissioning images from major artists like Brangwyn and Laura Knight, and from lesser but still excellent figures, five of whom were given three year contracts in 1927. The GWR was not to be left behind, nor, eventually were the LMSR, with a series by Royal Academicians, or the Southern, promoting its 'sunshine line'. Either side of the Second World War bathing beauties were sure-fire poster successes though company facilities — engines (Terence Cuneo was notable from the 1930s), ships, even aircraft — all figured. These themes were sustained post-war under nationalisation, though by the 1970s emphasis was on railways' perceived modernity in the battle to win, or win back, traffic from other forms of transport; TV and posters sometimes vied to put across similar messages. But, as since the 1830s, posters continue to parallel railway development in ever greater sophistication. To cover this in 60 pages and scarcely 80 colour illustrations is little short of miraculous.

PHILIP L SCOWCOFT

***Merry-Go-Round on the Rails* — David Monk-Steel**

194pp, 305x215mm, 199 photographs, 30 maps, 30 diagrams, hardback, Historical Model Railway Society, Butterley Station, Ripley DE5 3QZ, 2011, ISBN 978 0 902835 30 6, £32.50 (plus £6 postage & packing)

This is a remarkable book in many ways, superbly produced with excellent maps and diagrams and beautifully reproduced photographs. But it is more than just a record of the Merry-Go-Round initial concept in the 1960s and its development to the present day.

The first chapter is an account of the development of the electric supply in the 19th century and its early use on railways for lighting and traction. There then follows a fascinating account of the development of the National Grid itself from the mid 1920s to 1933 with some remarkable maps showing the various stages of the growth of the Grid. The Beeching era is often portrayed as one of decline but in fact it was in

the mid 1960s and 1970s when the Merry-Go-Round concept blossomed initially for coal to power stations, then to other coal-fired industrial complexes and subsequently to other traffic such as limestone. Sections follow on all the major power stations and their sources of supply with good maps, and on all the industrial locations that produced or received traffic by Merry-Go-Round. There is a list of all collieries and other installations grouped geographically with closure date; the disastrous effect of the Miners' Strike of 1984 is graphically illustrated by colour charts showing coal production and source of electricity generated.

WARWICK BURTON

***Ferries of the Upper Thames* — Joan Tucker**

224pp, 245x170mm, 86 photographs, 54 paintings & drawings, 29 maps, paperback, Amberley Publishing, The Hill, Merrywalks, Stroud GL5 4EP, 2012, ISBN 978 1 84868 967 1, £19.99

This book fills a significant gap in the literature on the Upper Thames. Firstly, it sets out the history of

the various options for crossing the river and the evolution of the horse punt. Secondly, it explains

the various routes across the river above Lechlade. Thirdly, it examines the regulation of the river, initially through the Thames Navigation Commission and subsequently through the Thames Conservancy and its successors, and the role these bodies played in coordinating the ferries, where the towing path crossed the river. Nine horse ferries remained in operation in 1937, even though horse towing effectively had ceased. The Conservators eventually closed these on cost grounds, even though plans were being made then for the Thames Path, a National Heritage Trail.

The main body of the book consists of ten chapters, which follow the towpath downstream from Lechlade to Staines. These review the variety of

ferry points in each reach. There was once, on average, one ferry per mile between Lechlade and Staines. The last of these, at Bablockhythe, closed after the floods of 2007. As there were no Acts of Parliament, the background information for each site is taken from the journals of local history, river maps, a few web sites, and some books which mention ferries in the text. However, the key facts for each site have been drawn together by the author by looking at the evidence on the ground.

A good bibliography, detailed chapter notes, and a good index, combine to make this a key text for those wishing to understand the history of ferries across the Upper Thames. ROGER SQUIRES

Aberfeldy's Railways — C J Stewart

64pp, 240x164mm, 38 photographs (4 in colour), 8 maps, 15 plans, diagrams & facsimile documents, paperback, Highland Railway Society, 2012, ISBN 978 0 95454856 8, £8.90 (plus £1.50 p&p). Obtainable from the HRS's Treasurer: John Roake, Ringmarsh Cottage, Horsington, Templecombe BA8 0EL.

This attractive booklet tells the story of the branch railway that linked Ballinluig, on the Highland main line, with Aberfeldy. Opened in 1865, it was a casualty of the Beeching Plan and closed in 1965, two months short of its centenary. Although only 8¾ miles long, the line was notable in including major river bridges over the Tummel and the Tay in its first mile.

The first four chapters cover the origins of the line, but over half the text comprises transcriptions from contemporary documents where an interpretative summary might have been more readable. Then follow interesting chapters on the building of the line and the impact this had on the local community.

There are details of engineering works and a breakdown of land acquisition and construction costs, plus a discussion of the effects on the local economy. Remaining chapters cover aspects of operation and closure and a description of the remains — including the remarkable story of the purchase of the Tay bridge for £1 by the local community in 1994. There is a bibliography but no index.

In its short length this book covers a wide range of subject matter in an interesting way at a reasonable price. TIM EDMONDS

LNER Wagons, Volume 4A: LNER Standard Designs — Peter Tatlow

158pp, 273x210mm, fully illustrated, hardback, Wild Swan, 1-3 Hagbourne Road, Didcot OX11 8DP, 2012, ISBN 978 1 905184 95 8, £33.95 (plus £3.75 p&p from the publisher)

We have become accustomed to seeing locomotive classes, especially the more popular, described in exhausting detail but rolling stock has not been covered so well. The author has set out to remedy that deficiency in respect of LNER wagons. The first three volumes covered pre-grouping stock. Volume 4 covers wagons built by the LNER itself. This first part, volume 4A covers open and mineral hopper wagons, and ordinary and special purpose vans. Volume 4B will cover the remainder.

General principles of LNER wagon construction are followed by details of each type in turn, including drawings (4mm to the foot) and copious illustrations,

all in black and white. Tabulated data are given for each lot number. Not only is just about every conceivable detail provided, but the author has woven this into a readable story. We learn not only how designs evolved but the reasons behind such changes and the construction techniques involved. The LNER relied heavily on wood for many wagons in the 1920s but gradually changed to steel for underframes and then bodies; this evolution is covered in detail.

The book is produced to Wild Swan's usual high standard and will surely be the last word on the topic.

KEITH FENWICK

***The Metals: from Dalkey to Dún Laoghaire* — Rob Goodbody**

vi+134pp, A5, 87 illustrations, 39 maps & plans (including colour), softback, Dún Laoghaire – Rathdown County Council, Ireland, 2010, ISBN 978 0 9557 8293 0, €10.00. Obtainable through the Abebooks website (www.abebooks.co.uk) for £16.67 including p&p.

There were several early railways in Ireland in the pre-locomotive era, but this is the first substantial study of one of them. The line was built in 1816–17, under the direction of John Rennie the elder, for carrying granite from quarries at Dalkey for building the harbour at Dunleary (Dún Laoghaire). Although described at the time as a ‘truckway or railroad’, it was what we would call a plateway, on the model established by Outram. It was 4¾ km long, plus a further 2¾ km as the two piers were built out from the shore. Haulage was by horses, except for three balanced inclined planes near the upper end, operated by continuous chains.

Its route survives as a well-used pedestrian right-of-way, known as The Metals, and the book was commissioned and published by the County Council to inform its development plan and to support the proposal to designate the route as an Architectural

Conservation Area. Pages 1–66 deal with the history of the harbour (in outline), the quarries and the construction of the railway. Pages 67–126 provide a description of the route, divided into 13 sections, detailing the changes that have taken place over time and the elements of its history that may still be seen. Each section is illustrated with 19th century OS plans and modern photographs, so serving as a guide for those who wish to explore it on the ground.

This account of the railway seems to be well researched, quoting sources that include Rennie’s papers in the National Library of Scotland and the Institution of Civil Engineers, as well as records in the National Library of Ireland and Trinity College Dublin. It is a welcome addition to the literature of early railways, attractively presented, and well worth the effort of sourcing a copy.

GRAHAME BOYES

***Industrial Railways and Locomotives of South Western England* — Roger Hateley (Compiler)**

384pp, 240x168mm, 164 pictures (about half in colour), 37 maps (plus key maps), hardback, Industrial Railway Society, 24 Dulverton Road, Melton Mowbray LE13 0SF, 2012, ISBN 978 1 901556 75 9, £29.95 (plus £6 p&p)

Somerset, Devon and Cornwall are predominantly rural counties, but for much of the 20th century each of them probably had more industrial than main line locomotives. This well-presented heavyweight (1.1kg) book lists 212 industrial systems with locomotives and a further 106 without (including two on the island of Lundy). For each it gives a brief history of the site and its owners, the gauge(s) of the tracks, and details the locomotives used, including their type, maker, maker’s number and date, source and disposal. For many sites there is also a clear map or track plan. The photographs show the wide range of locomotives on these systems, from the lightweight 2ft gauge Listers looking like motorised gazebos on the peat workings of the Somerset Levels,

to the General Motors Bo-Bo diesel at Foster Yeoman’s Merehead Stone Terminal.

And that is not all. The book also gives similar information about 149 contractors’ sites, 9 dealers and 102 preservation sites. These are not just the obvious locations — for example, we learn that from 1971 to 1997 there was a Sentinel 4-wheel vertically-boiled tank locomotive, works no 9387, on static display at the Welshmill Adventure Playground, Frome; it came from ARC’s New Frome Quarry and went on to Hanson Quarry Products Europe Ltd, Tytherington Quarry, for restoration.

This book, the result of a prodigious amount of research, is an essential addition to the library of anybody interested in the railways of the South West.

PETER BROWN

***North Eastern Locomotives: a draughtsman’s life* — George Heppell**

28pp, A4, 19 illustrations including 3 diagrams and portrait, paperback, North Eastern Railway Association, Sales Officer, Fir Tree Cottage, Ulgham, Morpeth NE61 3AW, 2012, ISBN 978 1 873513 79 8, £6.95 (£7.95 by post)

Heppell’s *My Own Memoirs* is augmented by Phil Atkins’ excellent notes placed in text boxes. Heppell was born in 1851, learnt his trade at Robert Stephen-

son & Co, joined the North Eastern Railway at Gateshead and eventually became chief draughtsman. Much of the work’s interest stems from Heppell’s

interactions with Charles Tennant, both of the Worsdells, Raven and W M Smith of compound fame. One rich nugget is that Heppell illuminates the reason for Alexander McDonnell's resignation: his locomotives were too small to match the powerful products of his predecessor, Fletcher.

The lack of a foundry at Gateshead was due to several directors owning casting facilities. Eventually Heppell was directly involved in major design decisions, such as forming the steam chests and cylinders for the three-cylinder X Class in a single

casting. He added that dynamometer car tests showed that this class was capable of hauling 1,200 tons on the level. His observations on the centenaries of Robert Stephenson & Co and of the Stockton & Darlington Railway as well as earlier anniversaries bring a sense of being there. Observations on Joy's valve gear are sharp and on the 4-2-2 type affectionate. Notes by William Bulman, a Raven Premium Apprentice between 1914–15 add to the wealth. This model booklet even has an index.

KEVIN JONES

***Waterways Journal, Volume 14* — Cath Turpin (Editor)**

72pp, 199mm x 210mm, 117 illustrations, 1 map, paperback, Boat Museum Society, South Pier Road, Ellesmere Port CH65 4FW, 2012, ISSN 1466 3732, £9 (incl. p&p) from Dr Di Ascott, National Waterways Museum, Ellesmere Port CH65 4FW

This, the latest in the series of outstanding publications from the Boat Museum Society, is a slim volume that makes admirable use of the material and thousands of photographs held in the collections of the National Waterways Museum.

Sandwiched between the Editor's notes and a brief index are four main articles which largely focus on the social history of canals: 'The Wolverhampton Corrugated Iron Company' is a comprehensive study of the company, its workers and boat fleet; 'The Chester & Liverpool Lighterage & Warehousing Company' details the boat fleet and operations taken over from the Shropshire Union Railways & Canal Company in 1921; the Manchester Grammar School

Scout Troop camping cruises on the Llangollen and Montgomery branches of the SUC in the early 1930s are recorded; and finally, the growth of the canal-side communities at Burscough and Foulridge on the Leeds & Liverpool Canal is described together with the lineage of the Drapers, a boating family based in these two places. Volume 14 is completed by a brief history of the Chew family, a Shropshire Union boating family, which follows on from an earlier piece in Volume 11.

The book is superbly produced and packed with interesting and, for the most part, crisp photographs, though some are perhaps a little too small to fully appreciate the wealth of detail contained therein.

JOHN HOWAT

***Bradshaw's History* — Vic Bradshaw-Mitchell**

96pp, 210x148mm, hardback, 2 photographs, 36 engravings/line illustrations, Middleton Press, Easebourne Lane, Midhurst GU29 9AZ, 2012, ISBN 978 1 908174 18 5, £16.95

Three series of TV programmes using what Michael Portillo calls *Bradshaw's Handbook* to link rail journeys around the UK have returned the Bradshaw name, as it relates to railways, to public consciousness. The bulk of this book (pages 5–80) is a reprint of G Royde Smith's *The History of Bradshaw* published by Blacklock & Company, publisher of the eponymous timetable, to mark its centenary in 1939. Smith was quite thorough and went to some trouble to determine the accuracy, or otherwise, of myths relating to Bradshaw and his timetables. We would expect more from him today, but not much. Some readers would find bibliographical data on the original publication of interest had it been included.

The remainder of the book, four chapters, bring the story up to date from 1961, when the last Bradshaw timetable was published. Usefully, biographical information about Bradshaw, which Smith omitted, is included and the author describes, from first-hand, the present situation, where there are two competing printed national timetables in circulation, before concluding with two pages about the TV programmes, including the routes covered by each episode.

This book costs the same as the normal Middleton publication, despite being smaller. That said, the production values are good. For those with electronic tablets, it is available in e-book format as well.

PETER JOHNSON

***Beeching: 50 Years of the Axeman* — Robin Jones**

132pp, A4, 244 photographs (148 coloured), 7 maps, paperback, Mortons Media Group, Morton Way, Horncastle LN9 6JR, 2012, ISBN 978 1 906167 68 4, £6.99

Published to mark the fiftieth anniversary of the appointment of Dr Richard Beeching as chairman of the British Railways Board, the cover carries the additional subtitles: “‘The most hated British civil servant of all time’?” and ‘Was he villain – or hero?’. To someone who believes that, in the context of the period, his diagnosis and prescription were generally right, it came as a surprise that such questions are still being asked.

There are certainly valid questions that could be asked about some of the individual closure decisions — both with and without hindsight. For example, the author makes a particular point about the rapid erasure of most of the closed rights-of-way. To what extent would subsequent events have been different if the alignments had been protected, to allow re-opening if circumstances changed in future? But the debate has rarely advanced beyond a generalised

level, allowing such questions to be answered. (A recent exception is Michael Williams’s 2010 MA dissertation at the Institute of Railway Studies, York: “‘A more spectacular example of a loss-making branch would be hard to find’: a financial history of the Whitby–Loftus line 1871–1958’.”)

The author recounts the events leading up to Beeching’s two reports, the programme of closures carried out between 1948 and 1985, and the later re-openings for passenger services or as heritage railways. He believes that someone must be blamed for closing BR’s most unremunerative lines and stations, but argues that it should politicians and civil servants, notably Ernest Marples and Harold Wilson, not Beeching. However, Beeching is still the villain responsible for the end of steam and for trains being painted blue.

GRAHAME BOYES

***Ireland’s Narrow Gauge Railways: A Reference Handbook* — Joe Begley & Steve Flanders**

160pp, 210x145mm, 47 b&w photographs, 11 maps (line diagrams), paperback, Oakwood Press, P O Box 13, Usk NP15 1YS, 2009, ISBN 978 0 85361 710 5, £12.95

Ireland’s 3ft narrow gauge railways were a fascinating and motley collection of lines which by and large struggled to survive. The book provides an excellent insight into each of the lines. The authors disclose in their introduction that the information in the book is derived from secondary sources. Nevertheless they have to be congratulated in searching through a large quantity of information that has already been written about Ireland’s narrow gauge in order to produce in a single volume a series of concise histories, facts and statistics for all of the eighteen railways.

Each railway is allocated a separate chapter that contains a brief history, map of its location, lists of locomotives and other rolling stock, chronology and route description. The final chapter title ‘Irish Narrow

Gauge Railways Today’ contains less than two pages of text. This minimal content is a sad indication of the current dearth of narrow gauge railway preservation in Ireland. Four appendices provide a plethora of information including the narrow gauge mileage records for each line in the years 1875 to 1961, a list of facts and statistics for every locomotive, and lists of printed sources that give descriptions and drawings of locomotives and rolling stock. It is generously illustrated with a selection of old photographs and there is a comprehensive bibliography appertaining to each railway.

The handbook with its simple format is most useful as a source for quick and easy reference. It will appeal to those with an interest in narrow gauge and the history of Irish railways.

GERALD LEACH

***The Mellis & Eye Railway* — Peter Paye**

116pp, A5, 49 illustrations, 6 maps & diagrams, 4 document reproductions & 12 timetables, paperback, Oakwood Press, P O Box 13, Usk NP17 1YS, 2012, ISBN 978 0 85361 720 4, £10.95 (plus £2.40 p&p)

This book is an enlarged and updated second edition of that published under the same title in 1980. The new edition is three times longer with many more photographs than the eight in the first edition.

Eye is a small but historic Suffolk town, quiet even today. Chapter 1 of the book describes how early schemes to serve Eye by main line railway came to nothing and it was left to local landowners and others

to finance the construction of a short stub branch line. The independent company's finances did not permit the local concern to purchase rolling stock, and the line was worked by the Great Eastern Railway from opening until 1898 when the GER bought out the shares at issue price. In retrospect the takeover signalled stagnation and decline (Chapter 4) in the town and its branch. After World War I bus services conveyed passengers to other towns avoiding the poorly served junction of Mellis. There are many illustrations taken at the junction in the small village of Mellis providing an account of an average country junction before the branch closed to passengers (1931) and goods (1964).

Chapters 5 to 8 follow the familiar Oakwood arrangement describing in sequence the route, stations and the one halt, also level crossings and the sidings at the ends of the almost self-contained branch. Staff and fixed infrastructure are described in Chapter 6 then passenger and goods services in Chapter 7. Locomotives and rolling stock described in Chapter 8 include drawings of the earliest classes of Eastern Union Railway locomotives used. Finally there are two appendices, a bibliography and an index.

Recommended as a study of how essential links were made to communities ignored by main lines.

RICHARD TYSON

***Joseph Firbank: the railway builder* — Eric & Margaret Colling**

108 pages, 207x147mm, 56 photographs and illustrations, paperback, Roundtuit Publishing, mail@roundtuitpublishing.co.uk, 2011, ISBN 978 1 904499 38 1, £12 including p&p obtainable from Eric Colling, 15 Cookes Wood, Broompark, Durham DH7 7RL

Joseph Firbank (1819–86) was a young Durham miner who turned railway contractor, a decision possibly influenced by his life-long friend Charles Liddell, the railway engineer. Firbank often worked close to Liddell and his many contracts covered the breadth of Britain (but he did not venture abroad as one obituary suggested). In 1853 the Monmouthshire Railway & Canal Company had converted its tramroads to a railway and Firbank was retained to complete the upgrade and maintain the whole system. He settled in Newport and this contract was renewed repeatedly until the GWR absorbed the MRCC in 1880. By the 1870s he was a wealthy man and had purchased the St Julien's estate in Newport as his home and base of the Firbank firm (comprising Joseph and his sons and nephews).

This is a self-published family history, the result of research prompted by the marriage of the authors' daughter to a descendant of the subject. In describing each railway contract (and more) the authors quote freely and honestly from Frederick McDermott's 1887 biography of Firbank, but other wide-ranging sources have been drawn upon including a wonderful 1870s photograph of Joseph and his team (that possibly includes Liddell). Being primarily for family consumption, the booklet includes the inevitable decennial census records and family trees together with potted biographies of two generations of Joseph's descendants and other Firbank family members. But descriptions of the railway contracts are given prominence in this very good publication of its type.

STEPHEN ROWSON

***Inverness & Ross-shire Railway* — Keith Fenwick**

66pp, photographs, maps, charts, diagrams and timetables, paperback, Highland Railway Society, 2012, ISBN 978 0 95454857 5, £7.90 (plus £1.10 p&p). Obtainable from the HRS's Treasurer: John Roake, Ringmarsh Cottage, Horsington, Templecombe BA8 0EL.

This book is published to 'mark the 150th anniversary of the opening of the line between Inverness and Dingwall', though it actually covers the line to Bonar Bridge, much further away. The company named the 'Inverness & Ross-shire Railway' built only the first part of the route covered.

The book covers the line's pre-history, planning and building, structures, pictures of old and new rolling stock, a bit of modern working practice, time-

tables, maps and plans, and many old station photos with historical development details.

Unfortunately, inconsistencies graced — such as saying 'Only one branch was built' (which is not dealt with, and is technically debatable anyway,) and then referring to various other different 'branches'. There are stations, and name changes, mentioned in the text which do not make it to the basic outline map of the route provided. There is no index.

DAVID PEDLEY

The Speyside Line: A history and guide to the railway from Craigellachie to Boat of Garten

— Dick Jackson & Keith Fenwick

80pp, 240x164mm, 95 photographs (21 in colour), 14 maps and plans, 21 facsimile documents, paperback, Great North of Scotland Railway Association, North Cairncake, Cuminstown, Turriff AB53 5YS, 2012, ISBN 978 0902343 24 5, £7.95 (£9.50 including p&p from publisher)

This is based on a book by Dick Jackson first published in 1996, with a second edition in 2006. Jackson died in 2009 and Keith Fenwick has built an expanded work around Jackson's original, with additional text and pictures, including a colour section. It covers the 3¾ mile branch that once connected the Great North of Scotland main line at Craigellachie to the Highland Railway at Boat of Garten. Much of the route is now used by the Speyside Way footpath.

The book falls into four parts. First is a well-related chronological history, although the omission of the 1867 renaming of Abernethy station to Nethy Bridge

may confuse. Next is a descriptive guide to the line today. Then there are thematic chapters on subjects including staff, signalling and the whisky industry. Finally three appendices tabulate chronology, traffic and financial performance. There is a bibliography, but no index.

This is an attractively produced and highly satisfying book, which combines a concise and readable branch line history with an excellent guide to the line as it now is. It will have a wide appeal to transport and local historians and to those visiting the area. Thoroughly recommended.

TIM EDMONDS

Steam Trails: Manchester to Leeds — Bob Pixon & Eric Bentley.

96pp, 184x240 mm, 120 photographs, 1 map, hardback, Ian Allan Publishing, Riverdene Business Park, Hersham KT12 4RG, 2012, ISBN 978 0 7110 3253 2, £16.99

This book is a very well produced and beautifully illustrated album of photographs taken by the late Eric Bentley with captions by Bob Pixon. The area covered is predominantly the area of the Lancashire & Yorkshire Railway in Yorkshire and East Lancashire as well as the London & North Western route via Diggle. The period is of the declining days of steam in the 1950s and 60s, and there are some very evocative and artistic shots. The title is a misnomer as it leads one to expect an album of the main L&Y and L&NW routes from Manchester to Leeds but the book covers a much wider area: 'Steam Trails in

East Lancashire and West Yorkshire' would have been more accurate. The grouping of the material is not geographic but based on 32 themes such as Special Goods, Lostock Junction, Industrial Railways, Signalboxes, Double headers etc. This makes it very difficult to find a photo of a specific location. There is not a single photograph of Leeds in the book despite the title. The map is crudely drawn and detracts from what is otherwise a fine production. This book will be of interest to those who enjoy looking at fine photographs of steam in all its aspects in the North West.

WARWICK BURTON

The Lost Works of Isambard Kingdom Brunel — John Christopher

128 pp, 235x165mm, 130 colour photographs & illustrations, paperback, Amberley Publishing, The Hill, Merrywalks, Stroud GL5 4EP, 2011, ISBN 978 1 4456 0090 1, £15.99

This booklet rapidly follows the author's previous similar titles on Brunel that include *Brunel's Kingdom: in the footsteps of Britain's greatest engineer* and *Isambard Kingdom Brunel through time*. There is much overlap in subject matter and much duplication of illustrations.

On its own it is an attractively illustrated publication with economically well-written text pitched at a level that will retain the interest even of those of us who know the Brunel stories inside out. Its scope covers the Thames Tunnel, Hungerford Bridge, the

broad gauge, railway stations, bridges and viaducts, the atmospheric railway, the ships, Chepstow Bridge, the Crimean hospital, the Crystal Palace, Clifton Bridge, his houses and recently-erected monuments to the man.

It would be a good gift to a nephew or niece who will learn, at one sitting, why Brunel holds unique position in the hearts of historians of Victorian times. However, uncles or aunts might begrudge paying the excessive cover price.

STEPHEN ROWSON

Short reviews

***Cornish Railways* — John Vaughan**

160pp, 216x292mm, 193 colour photographs, hardback, Ian Allan, Riverdene Business Park, Hersham KT12 4RG, 2012, ISBN 978 0 7110 3467 9, £24.99

This attractive album contains photographs taken between 1969 and 2012, embracing the whole length of Cornwall. Although multiple units are not neglected, the bias is towards locomotive-hauled trains including many freight workings. But this isn't a succession of three-quarters views of locomotives. Trains are shown complete in their context: in the beautiful Cornish scenery and in industrial by-ways. The composition of most of the photographs is outstanding. Not all is sunshine — there are some very effective photographs taken in rain, at dawn and at dusk. The captions are informative, providing the modern historical context.

The ABC of British Railway Locomotives, Combined Volume 1949

302pp, 150x98mm, about 250 small b&w photographs, hardback, Ian Allan, Riverdene Business Park, Hersham KT12 4RG, 2012, ISBN 978 0 7110 3734 2, £12.99

Virtually every RCHS member would have owned an Ian Allan *ABC* when they were young — and how many of us wish we had kept our old dog-eared copies? This is the first post-nationalisation edition, and is in the familiar format. The introduction reminds us of the prevailing economic conditions: the shortage of steel and the rationing of its use, and the desire to avoid using imported fuel. The forecast about the new standard designs proved wrong, the author asserting that they will be influenced by the LNER 'A1' and 'B1' classes: 'The new designs will presumably follow LNER practice in having a parallel boiler on the 4-6-0, three cylinders in the Pacific, and round-top fireboxes on both.'

***Norbury Junction: the story of a canal community* — Norbury Local History Group**

52pp, 208x210mm, 54 pictures, 2 maps, paperback, Norbury Local History Group, 2012, no ISBN, obtainable from the Canal Bookshop, The Wharf, Audlem CW3 0DX, £5 (plus £1.50 p&p)

Norbury Junction, where the Newport Branch left the Shropshire Union main line, became the maintenance centre for this section of the canal. A small community grew up round the depot and the pub, isolated from the village of Norbury. Based on

documentary evidence and extensive oral history reminiscences, and with financial help from the Staffordshire Local Community Fund, the Norbury Local History Group has created a satisfying booklet. Topics covered include the development of the depot, the history of the Junction Inn and its landlords, the working boatmen, and the rise of the leisure industry. This is an example which other local history groups could usefully follow.

***Stour Valley Railway Through Time, Part 2: Clare to Shelford and Audley End* — Andy T Wallis**

96pp, 235x165mm, 180 illustrations, paperback, Amberley Publishing, The Hill, Merrywalks, Stroud GL5 0EP, ISBN 978 1 4456 0473 2, £14.99

This volume covers some of the same ground as the Middleton Press *Branch Lines to Sudbury* album reviewed overleaf (and includes some of the same photographs), but adopts a very different approach, largely 'then and now', and has the bonus of including the Saffron Walden branch. The 'now' photographs — of lovingly-restored stations, housing estates, car parks, trees and assorted greenery — show how difficult the occasionally-suggested reopening of the line would be, due the extent of redevelopment over the past 45 years. Captions are succinct and informative, although the B1 illustrated on a goods train at Haverhill cannot have been in 1967, as implied.

***British Steam 'Patriots'* — Keith Langston**

168pp, 245x170mm, 37 colour and 166 b&w illustrations, hardback, Wharncliffe Transport, Pen & Sword Books, 47 Church Street, Barnsley S70 2AS, 2011, ISBN 978 1 84563 145 1, £19.99

The 'Patriot' class married the larger boilers fitted to some Claughton locomotives with the 'Royal Scot' class chassis. Some retained LNWR components, but the final ones incorporated Stanier improvements. Eighteen locomotives were later rebuilt with larger taper boilers and then resembled rebuilt 'Scots'. Each locomotive is illustrated, although in some cases only the rebuilt form is shown: a mistake as the final part describes the present construction of an unrebuilt 'Patriot' class locomotive to be known as *The Unknown Warrior*. (A primary aim appears to be to promote this project.) The concluding section also lists names proposed for the unnamed locomotives.

***The Narrowboats Story* — Nick Corble**

128pp, 124x184mm, 126 photographs (mainly colour), hardback, History Press, The Mill, Brimscombe Port, Stroud GL5 2QG, 2012, ISBN 978 0 7524 6482 4, £8.99

This book is mis-titled, as two thirds of it is devoted to giving a brief overview of the history of canals, both narrow and broad. Topics covered include the reasons why canals were built, engineers and navvies (but not contractors), working the canals, the coming of the railways, and rescue and renaissance. The last third discusses living aboard and boating

holidays, followed by 'Key canal terms', museums to visit, a brief (inadequate) bibliography and a list of useful websites. Inevitably, as the main text is only about 12,000 words, much is simplified and some 'facts' are debatable. But the target audience is not transport historians but people who are having canal holidays or enjoy visiting canals — and here the book succeeds admirably. It is attractively produced with lots of colour photographs, and an easy read, with many 'Did you know?' comments to stimulate interest.

The following four books: 96pp, 236x166mm, about 120 photographs plus maps, timetables, tickets etc, hardback, Middleton Press, Easebourne Lane, Midhurst GU29 9AZ, 2012, £16.95

***Pontypridd to Merthyr including Aberdare* — Vic Mitchell & Keith Smith**

ISBN 978 1 908174 14 7

Remembering this series concerns itself only with passenger-carrying lines, coverage concentrates on the main lines of the ex Taff Vale and Aberdare Railways while including the Nelson and Ynysybwll branches, the Great Western Railway & Rhymney Railway Joint line from Merthyr Tydvil to Quakers Yard and the Vale of Neath Railway's Dare & Aman branch (the last's presence being justified by the GWR's opening halts in 1906 for a public railmotor service, even though the authors have been unable to locate photographs of any of the four intermediate halts on that branch). The hand-drawn map of railways around Aberdare is most useful (although Blaengwawr has become Blaengarw — wrong valley).

***Rhyl to Bangor including Llandudno and Bethesda* — Vic Mitchell & Keith Smith**

ISBN 978 1 908174 15 4

As well as the central section of the former LNWR Chester to Holyhead route along the North Wales coast this volume also describes and illustrates the Rhyl Miniature Railway, the Kinmel Camp Railway and the Foryd Harbour and Port Penrhyn branches. The branch from Bangor to Bethesda is included and there is a further coverage of the stations at Rhyl, Deganwy, Llandudno and Bangor already featured in the publisher's other books on this area. The world's first water troughs at Mochdre also get a mention. Some of the photographs are very recent, apparently having been taken especially for the book.

***Branch Lines to Sudbury from Marks Tey, Haverhill and Bury St Edmunds* — Vic Mitchell**

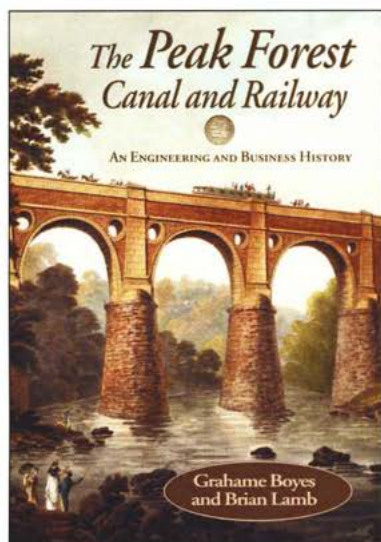
ISBN 978 1 908174 19 2

A thorough coverage of the Marks Tey – Haverhill line, together with Long Melford – Bury St Edmunds and the spur to the Colne Valley & Halstead at Haverhill South. Each station has at least two pages of photographs, plus a map: the architectural uniformity of the branches — the GER's '1865 style' — comes out very clearly, as does the similarity in track layouts of the smaller stations. The larger stations — Haverhill, Clare, Long Melford, Bury, Marks Tey and (especially) Sudbury — receive correspondingly more comprehensive coverage.

***Eastern Main Lines: Broxbourne to Cambridge including the Thaxted branch* — Vic Mitchell**

ISBN 978 1 908174 16 1

A generally well-chosen selection of photographs covers the lines of the title and all their intermediate stations, together with a brief survey of the Stansted Airport branch, although rather surprisingly not the triangular junction at Stansted Mountfitchet. A further omission is the private siding complex at Sawston. The paper quality of Middleton Press albums seems to have improved recently, with a corresponding improvement in the clarity of the photographs, although one or two of the more modern ones are markedly inferior to those of the early 20th century.



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The authors

In the early 1960s Brian Lamb was the first to make a special study of the Peak Forest Canal and Railway. He continued to research them for the rest of his life and became the acknowledged doyen of this corner of canal history. He was also much involved in recording the industrial heritage of Manchester and received an award from the Association of Industrial Archaeology for his outstanding work in this field.

As a native of Doncaster, Grahame Boyes received an early introduction to railways and railway history. Following an engineering degree at Cambridge, he then pursued a varied career with British Railways. His vision was widened to include canals – and later other modes of transport – through membership of the Railway & Canal Historical Society, which he has served successively as chairman, president and vice-president. He has written on a wide variety of themes in transport history.



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