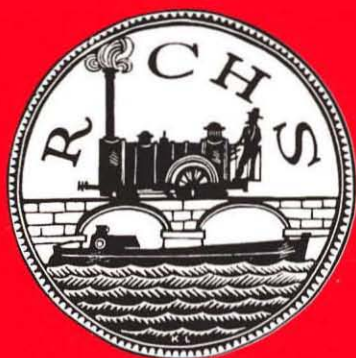




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The Railway Mania of 1824/5: a re-examination

Paul Reynolds

The Railway Mania of 1824/5 has sometimes been characterised as the promotion of bubble companies by unscrupulous financiers, their main interest being a short-term profit to be achieved by the purchase and rapid re-sale of shares to gullible investors. This is a view which needs to be re-examined. It is almost certainly true that the motives of some of those who promoted railway companies during this short-lived period are questionable; it is also true that there was frantic speculation in the shares of these companies. However, if the Railway Mania is placed within its historical context it becomes rather more clear that it represented no more than a stage in an ongoing process, albeit in a highly excited state. By the early 1820s the advantages of railways over canals and roads and the potential of the steam locomotive were coming to be recognised. The railway was seen not simply as an adjunct to industrial activities, or as a short-distance feeder to a canal, but rather as an alternative to the canal for the long-distance transport of goods of every description and even of passengers. The commercial and industrial interests of the country were already interested in railway promotion as a means of improving the country's transport infrastructure before the Mania.

The Railway Mania erupted in December 1824; it was a short-lived phenomenon which lasted for only a few months. It occurred within an over-heated economy when new enterprises of every description were being energetically promoted. Because of that, the railway proposals were overly ambitious, the plans of some of the companies were ill prepared, and the capital required to realise them in their totality was unrealistically high. Nevertheless they were nearly all sensible proposals and followed lines of communication which still form part of today's core network. As such they were simply the continuation of an existing trend and the forerunner of later achievements and not an isolated phenomenon. The judgment of John Francis can be accepted, that 'there cannot be a doubt that to the great mania of 1825 England is indebted for her railway system'.¹

This article, therefore, will seek to examine the formation of railways during the boom years of 1824 and 1825; it will identify and categorise all the

companies that were promoted during this period and attempt to place them within their historical context, both in terms of trends in the national economy and of railway development. It will attempt to assess how far it was a genuine attempt to improve the transport infrastructure of the country and to what extent it was vitiated by the activities of unprincipled individuals. It is also hoped that it will help to place the Liverpool & Manchester Railway more firmly within its historic context as just one – albeit, as it turned out, the most successful – of a number of other railway proposals which were being developed at the same time and not as a unique or isolated forerunner.

The years following the ending of the French wars in 1815 were years of economic depression accompanied by social unrest. By 1821 this depression had started to lift and from then until its sudden check in the middle of 1825 the country enjoyed a period of prosperity which has been attributed to the government's newly adopted policy of free trade. Agriculture was recovering from a long depression and industry was 'flourishing beyond any example'. Full employment extended this prosperity to the working classes. In Scotland the banks were 'loaded with money'. In his budget for 1824 the Chancellor of the Exchequer, William Huskisson, anticipated a surplus for that year and predicted further surpluses for the years 1825 to 1827. In 1825 he was able to report on continuing prosperity in both agriculture and industry and to confirm the surplus that he had predicted the previous year, despite the previous year's reduction in various forms of duty and direct taxation.²

Increased national prosperity and the accompanying reduction in taxation led to an increase of capital in private hands for which its owners sought profitable investments. Government stocks had become unattractive following a reduction in the rates of interest on these in 1822 and again in 1824 and consequently investors were prepared to place their funds in any schemes that might offer better returns.

This resulted in the appearance during 1824 of new and speculative forms of investment in the shape of joint stock companies. The promotion of mining companies to exploit the mineral resources of the newly independent republics of South America was the first such field for company formation. These were followed by mining companies to work in Ireland and other parts of the British Isles, by loan banks, life assurance companies, fire and other insurance companies, gas companies, companies to build docks, ship canals, tunnels, bridges and roads. There were coal companies and companies to provide milk, water, flour and fish to the urban population. As might be expected, many of these companies originated in London, but all parts of the country were affected. Other significant centres included Edinburgh, Manchester, Bristol, Birmingham and Liverpool. Among all these companies there was a cluster of ambitious schemes for long-distance railways which formed just one component, although quite a significant component, of the general activity of the period.

The creation of these companies was often accompanied by a scramble for their shares. No doubt this was in some cases the principal intention of their promoters. The speculative investor put his name down for shares in a new company at face value and paid the necessary deposit. This was never more than a nominal sum, perhaps only £2 on a £100 share. Once all the shares in a concern that claimed to offer prospects of a high return had been spoken for, the speculator hoped that the demand from other investors would then enable him to offload his part-paid-up shares at a significant profit, regardless of whether or not the claims were realistic. A financial climate developed that has been characterised by the term 'euphoria': it has been described by a modern newspaper columnist in connection with more recent events as 'the mania that overcomes excited minds at the peak of a bubble. As the market soars, everyone except wise investors believes the insane valuations of assets and thinks any debt is worth taking on if it enables them to buy into an unlosable game'.³ Such was the climate of 1824 and the earlier part of 1825.

Contemporary observers who were not directly involved in this promotional fever reacted in two ways – bewilderment and disapproval. The term 'bubble company' was widely used. The press regularly carried lists of the companies that were being promoted and of the value of the capital that they represented. There are wide variations in the figures that are given, but in every case the amount that was

to be raised ran into nine figures. This must have created the same impression on contemporary readers as the casual mention of trillions of pounds or dollars has in more recent times. In any case the exact figures are of comparatively little importance: what was important was that they were incredibly large. The highest figures are those given by Henry English in a pamphlet that was published in 1826 after the mania had collapsed. He identified 624 companies with a total capital of £372,173,100. Of these 624 companies, 143 never got to the point of stating exactly how much capital was required; 236 made that statement and issued prospectuses but never issued shares; 188 saw a market develop in their shares but were subsequently abandoned, and only 127 were still in existence in 1827.⁴

If one reaction of contemporaries was that of horrified fascination at the unprecedented amounts of capital that were supposedly to be raised by these companies, the other was a kind of moral panic. The concept of the joint stock company provoked widespread hostility both on ethical grounds and because of the social effects of its operations. Joint stock companies had been illegal since the passing of the Bubble Act in 1720. This prevented unincorporated companies from acting as though they enjoyed the privileges of companies that had been incorporated by royal charter or by statute – hence the necessity for canal and other companies to obtain a private Act of Parliament. The Act made it illegal for an unincorporated company to raise stock or to transfer it. It had been a dead letter for many years, but an earlier boom in 1806 had seen its reactivation. In a test case of 1808 joint stock companies had been found to be 'mischievous' and this view was still widely held. Transferable shares were seen as pernicious in that they enabled the promoters of a scheme to evade personal financial responsibility for the actions of a company that they promoted. Limited liability offered a false lure to gullible subscribers and payment of subscriptions in instalments drew in persons of modest means who might not be in a position to meet the additional payments as they were called up and so be placed in a position of financial embarrassment. Further fears were raised that joint stock companies would lead to monopoly on the grounds that the small individual tradesman would be unable to compete with a large company and so be forced out of business. Cobbett, as might be expected, had no hesitation in condemning 'those mischievous and disgraceful combinations called Joint Stock Companies'. A similarly uncompromising view

was taken by an author in the *Farmers Journal*:

One might almost as well attempt to stop the tide in its course as to arrest the ruinous thirst for speculation which now possesses the minds of so many of our countrymen ... This mischievous and insane propensity is not confined, it would seem, to the town-bred dealers in bubbles, but has extended itself to the country; and every post is reported to bring orders to a large amount for the investment of money in some or other of the new Mining concerns, or other foreign speculations.⁵

But it was not only the practical effects of the joint stock companies that aroused hostility. There was a widespread feeling that they were simply immoral, that they threatened the very nature of being British; the moral character of the country was being undermined, patriotism was being replaced with speculation. To some extent this was not unfounded. Traditionally business dealings depended largely on notions of the character, credit and trustworthiness of the individual, whether acting on his own or as a member of a partnership (which was not the same thing as a company). In the eyes of the law a partnership had no legal existence; the actions of any one partner were binding on all the partners individually. If joint stock companies with limited liability were to be permitted, this arrangement would no longer apply. The company would be regarded as a legal person and the individual shareholder would have no responsibility for its actions. Business probity would be undermined.

During 1824 and 1825 proponents of the joint stock companies lobbied for the repeal of the Bubble Act. They attempted to show that the companies were beneficial in that they made it possible to undertake large projects for the public good that would have been beyond the capacity of individuals or groups of individuals. They thus increased national prosperity and provided employment for the poor. Speculation and stock-jobbing were not inherent in them and were not the result of the promoters' machinations, rather they reflected the greed and gullibility of the public. Control of the joint stock companies and repeal of the Bubble Act were issues that aroused much debate both in and out of parliament during the session of 1825. A private bill to repeal the Act was introduced by Peter Moore, an MP who was much involved in the promotion of speculative companies including a number of dubious railway companies. It failed but was then replaced by a government bill which received the Royal Assent on 5 July 1825. Joint stock companies were made legal and would henceforth be subject to common law.⁶

If the general financial climate was partly responsible for the appearance of the Railway Mania of 1824/5, so too were developments in the field of railway technology combined with an increasing awareness of these among the population at large. By 1824 the advantages of railways as a form of transport were widely appreciated. They were correctly claimed to be faster, less subject to the weather, and more secure than canals or roads and in many cases cheaper to construct. Since 1800 (with two exceptions only, 1807 and 1813) at least one Act of Parliament had been passed every year to incorporate a new railway company or to modify the provisions of a previous Act. These were public railways which were open to any user subject to payment of tolls and observance of the company's regulations. In practice some of them may have seen little use by traders other than the promoters but in principle they were intended as general carriers. Much of their traffic was probably coal and lime, but in a few cases the first evidence of passenger traffic can be seen. The range of the railways also was increasing. With the opening of the Kington Railway in 1820 a continuous line of 36 miles existed between Brecon, Hay-on-Wye and Kington, the longest in the world at the time and, as the late Harry Paar has pointed out, a continuous length of metals not to be eclipsed until the Grand Junction Railway opened in 1837.⁷

One particular advantage of the railway was perceived to be its potential for opening up inaccessible parts of the country where the terrain was unsuitable for canal construction. In Scotland the Highland Society offered a prize in 1818 for an essay on 'the construction of Rail-roads for the conveyance of ordinary commodities' with a view to their use for improving communications in that part of the country. A number of submissions were received which were written up at length by Robert Stevenson in the Society's *Transactions* for 1820-23.⁸ Slightly later the railway was seen as a means of achieving the same purpose in Ireland: an anonymous writer in the *Belfast Magazine* in 1825 urged the construction of a branch to Enniskillen off the railway then being promoted between Belfast and Dublin: 'By this means, a large portion of fine country would be opened up; the value of land would be increased; and the establishment of manufactures ... would be rendered practicable and easy'.⁹

Railways had been considered as a form of inter-urban transport well before the trunk line proposals of 1824/5. The work of such pioneers as William James or Thomas Gray is well known. James had already started to give thought to a national railway system in 1808, but even before that the idea had been floated by William Thomas (1800), James Anderson (1801) and Richard Lovell Edgeworth (1802).¹⁰ In 1814 Sir Richard Phillips reflected on the desirability of 'extending double lines of iron railways from London to Edinburgh, Glasgow, Holyhead, Milford, Falmouth, Yarmouth, Dover and Portsmouth'.¹¹ In 1816 James was travelling the country planning routes for arterial railways and by 1820 he had completed the first survey of part of his proposed Central Junction Railway which was to link Stratford-upon-Avon to London with branches to Coventry, Cheltenham and elsewhere.¹² In 1820 the first edition of Gray's *Observations on a General Iron Railway* appeared, the third edition of which in 1822 included diagrams showing suggested lines between the principal towns of England and of Ireland. In 1821 the Stockton & Darlington Act was passed and the progress of this concern was watched with interest. In Scotland Telford had surveyed a wagonway from Berwick to Glasgow, about 125 miles in length, in 1810. This led to the suggestion in 1812 that a railway between Edinburgh and Glasgow would be beneficial.¹³ In the years 1817-20 Robert Stevenson carried out surveys for a number of long-distance lines including lines between Edinburgh and Glasgow (about 45 miles), Edinburgh and Galashiels (44 miles) and, most ambitious of all, a line of 104 miles from Crieff to Aberdeen.¹⁴

The 1820s also saw an increasing awareness of the railway among the public at large. A simple, if rather crude, indicator is the number of times the words 'rail', 'railway' or 'railroad' appear in contemporary newspapers, either in advertisements or in editorial matter.¹⁵ The existence of a wide range of digitised papers now makes this very simple:

	1820	1823	1824	1825
<i>The Times</i>	54	111	108	220
<i>Morning Chronicle</i>	45	99	157	278
bundle of provincial papers	393	285	545	969

Items also started to appear in the polite journals. These had long carried reports of railway activity, but generally only brief items of news of provincial events or on the state of the market for those few companies whose shares were traded publicly. Now full-length articles and reviews started to appear with increasing frequency in titles such as the *Monthly Magazine*. Aimed at a more popular market, the *Mechanics' Magazine* and *The Kaleidoscope* also carried railway items on a fairly regular basis. 'We know of no subject, which is so likely to engross the immediate attention of the public, as the experiments now in progress for bringing to perfection steam-coaches or wagons, for the conveyance of passengers or goods on rail-roads, or upon our ordinary turnpikes', wrote the editor of the latter in March 1822.

A figure of particular importance in this regard was Charles Maclaren, the editor of *The Scotsman*. In a series of influential articles published in his paper in December 1824 he described the construction of railways and scientifically examined the resistance to be met respectively on roads, canals and railways with a view to establishing the speed and cost of carriage by each mode of transport. He also envisaged a 'steam-coach to carry passengers at the rate of 20 miles an hour'. The articles were widely noted in contemporary newspapers and periodicals and their contents reproduced at greater or lesser length. They even appeared in a French translation. He subsequently revised the articles and published them in book form (Ottley 258) as *Railways compared with canals & common roads, and their uses and advantages explained: being the substance of a series of papers published in The Scotsman and now republished with additions and corrections* (Edinburgh: 1825).

How far the public at large assimilated this information is open to question. John Stevenson could write in 1822 that '[t]he principal subject of debate here [i.e. Edinburgh], both in private families and in public assemblies, is the projected rail-ways and steam-carriages'.¹⁶ However, in August 1824 the *Morning Chronicle* stated that '[t]he Public generally are but very little aware of the uses to which Rail Roads are about to be applied'¹⁷ and in January 1825 *The Examiner* could state that 'six weeks ago, the very nature of rail-roads was unknown to the public at large'.¹⁸ It probably all depended on which section of the general public one had in mind.

The growing awareness of railways, at least in

commercial and financial circles, combined with favourable economic conditions resulted in an increased rate of railway promotion in the 1820s, both of what might be termed 'traditional' industrial railways and of inter-city trunk lines. The first steps towards the formation of the Liverpool & Manchester were taken by William James and Joseph Sandars in 1821 although it was to be another three years before a prospectus was issued and the company made its first application to Parliament. The origins of the Birmingham & Liverpool Railway date from 1823 and the Birmingham & London from 1824. Also in 1824 the first firm suggestion appeared of a railway from London to Edinburgh: Robert Stevenson was of the opinion that 'an iron railway would not only be much more practicable, but more commodious and useful for general intercourse than a canal'.¹⁹ However, the idea seems to have been met with a measure of disbelief on the part of the general public: it was reckoned that it would require 99,000 tons of tramplates (double track), the implication being that it was totally unrealistic.²⁰

Despite all this the parliamentary session of 1824 saw the introduction of only four railway bills. Of these three received the Royal Assent (Redruth, Stockton & Darlington amending Act, Monkland & Kirkintilloch) and one failed standing orders (Tees & Weardale). But at the same time plans were actively in hand for about 20 new railways. Many of these were for comparatively short industrial lines but at the same time the promoters of several long-distance lines were firming up their proposals, including the Liverpool & Manchester, the Birmingham & Liverpool, the Birmingham & London and the rather shadowy Belfast & Dublin. Also under active consideration was a link between Newcastle and Carlisle, although at this stage the promoters were still undecided whether to build a railway or a canal.

Thus by the autumn of 1824 a good number of railway companies were already being promoted. Then at the end of the year came a surge in the pace of railway promotion with the sudden appearance of a great many new companies, nearly all of which had ambitious and expensive plans for long-distance lines. It is these two months, December 1824 and January 1825, that can correctly be described as the Railway Mania. The companies that were formed during this period had a number of characteristics in common: the proposals were generally highly ambitious but equally sensible in terms of a national transport infrastructure, they required large amounts of capital, in some cases there is evidence of hurried

promotion,²¹ and in some cases the motives of the promoters can be – and were – called into question. As John Francis says, 'persons known in the city to possess darkened reputations were connected with them'.²²

The first of the Mania companies to appear was the Kentish Railway. An advertisement appeared in *The Times* on 9 December 1824 and on several subsequent days inviting subscriptions to a company that had been formed to build a railway from London to Dover via Rochester and Canterbury, with a branch to Ramsgate and Margate. In its general content and approach the notice was similar to those that were soon to be issued by other companies. The railway would provide a means of transport that was 'at once safe, expeditious, and economical' and would benefit the growing trade between Britain and France. The capital was to be £1m, made up of 10,000 shares of £100 each, the deposit required on each share being a mere £1. Would-be investors were required to submit their applications immediately to the banking house of Kay, Price & Co., to the company solicitors, Wilks & Verbeke, or to Messrs Elmes & Hollingsworth of Regent Street, who were probably the surveyors of the railway. There were to be 18 directors, 'consisting of gentlemen of the first eminence and importance in the county of Kent'. No mention was made of the means of traction, but when the prospectus was published in full a few days later on 21 December it was stated that the company intended to use both horses and locomotives. The prospectus also promised a passenger service between London and Woolwich which it was claimed would give an immediate profit of 20 per cent, and by this time the size of the Board had been increased from 18 to 30 – 18 in London and 12 in Kent.

The shares in the company were immediately snapped up, and no wonder when the deposit was a mere £1. No further applications were accepted after 11 December. This was typical of the pattern of many other of the mania companies: shares were offered for a small deposit, they were fully subscribed almost immediately and the initial investors were then in a position, if they chose, to make a quick profit by selling on their shares to other investors. After all, if the shares had sold so quickly it must be a promising concern, well worth paying a bit over the odds to get in more or less at the start. The size and composition of the board (a large number of directors, some from London, some from the country) is a feature of several other companies that were promoted at this time: perhaps the largest was the Grand Junction which

had a Board of 48 (12 each from London, Birmingham, Nottingham and Derby).

The Kentish scheme was quickly followed by two companies based in Bristol, the Bristol & Bath and the Bristol, Northern & Western which proposed to build a railway from Bristol to Birmingham with a view to channelling trade from 'the Northern and Western and Eastern parts of this Kingdom and Ireland' through Bristol. Further companies rapidly appeared during December including lines from London to Manchester, Bristol, Birmingham, Norwich and Brighton, all with various branches. London was at the centre of this network not simply by virtue of its existing financial, political and administrative importance but also to ensure that it retained that position. Thomas Gray, in a letter to the *Monthly Magazine* in October 1824, made clear the importance to London of improving its communications with the rest of the country:

London, most particularly, requires a new system of communication with the commercial and manufacturing districts. The commerce of the capital must decline, in consequence of the delay and expense which attend the exportation or importation of merchandize there, compared to the north; in order to enable the metropolis to hold its wonted rank, as the chief commercial city, it must carefully watch and patronize in the south, every improvement of the northern parts.²³

Other major centres of railway promotion were Birmingham and Manchester. In Birmingham plans were already in existence for railways to Liverpool (1823) and London (1824 if not earlier). In January the Grand Junction Railway was formed in London: unlike its later namesake this line was to run from Birmingham to Derby, Sheffield and Leeds, with branches from Sheffield to Manchester and Goole and from Derby to Nottingham. Thus, with the Bristol, Northern & Western, in which the Birmingham interests played an important part, Birmingham was to be at the centre of a wide-ranging chi-shaped network which would serve the commercial interests of a town and a region that had hitherto been heavily dependent on canal transport, with all the drawbacks that were already fully apparent.

Manchester was another important provincial centre of railway promotion, despite the comparative lack of interest shown earlier by investors in the town in taking shares in the Liverpool & Manchester. In December 1824 and January 1825 schemes were promoted to link Manchester with Bolton (two

competing companies), Oldham and Leeds. Two further proposals were for lines to connect Manchester to the Peak Forest Canal and to the Liverpool & Birmingham Railway. From Leeds the Leeds & Hull Railway (promoted in Leeds late in December) would complete an unbroken line of railway across England from Liverpool to Hull, a development that had been urged by Thomas Gray in a letter to the *Leeds Mercury* of 23 October 1824.

The Mania continued throughout January 1825. *The Times* and the *Morning Chronicle* generally carried several lengthy advertisements each day announcing new schemes or reporting on the progress of existing schemes. Major new companies included the London & South Wales, the Grand Junction (described above) and the London, Portsmouth & Southampton. Rather surprisingly proposals never appeared for a railway to Holyhead as part of a link between London and Dublin. Proposals showed an increasing measure of elephantiasis, surely induced by the prevailing climate of euphoria rather than by any rational considerations of what might actually be achievable. An example is the Grand Western Railroad Company which proposed a line from London to Falmouth via Taunton and Exeter with branches to Barnstaple, Plymouth, Lyme Regis and Bridgewater, a total mileage of about 400 requiring a capital of £3m. 'It is not doubted that the railroad may be completed in two years, in all its branches', read the report of a meeting of the management committee.²⁴ A similar case is that of the Surrey, Sussex & Hampshire Railroad. This concern started reasonably enough in December 1824 with proposals for a line from London to Brighton and Shoreham. By mid-January it had been extended to include an extension along to coast to Portsmouth (where it would have met opposition from the London, Portsmouth & Southampton then also in the process of formation) and its name had been changed to the Surrey, Sussex & Hants Railroad to reflect its enlarged scope. Within a couple of weeks the scheme had been enlarged once again and it became the Surrey, Sussex, Hants, Wilts & Somerset Railroad and its capital had been increased from £750,000 to £1.4m. It was to be extended from Portsmouth through Southampton and Salisbury to tap the Somerset coalfield around Radstock. Finally at the beginning of February it merged with the London, Portsmouth & Southampton and nothing further was heard of either.

Railway promotion was also active in Scotland and Ireland. The schemes that were put forward in

THE GRAND JUNCTION RAIL ROAD COMPANY.

PROSPECTUS.

It cannot be necessary in the present age of improvement, and when the interests of society are so thoroughly understood, to make any comments on the importance of a safe, certain, and cheap mode of transit for Agricultural, Mineral, and Manufacturing products, from one part of the Kingdom to another: nor to point out the more economical as well as the more expeditious and certain mode of conveyance by Rail Roads, than by Canals. After premising, therefore, that the object of the present undertaking, is to open a Rail Road communication between the Eastern and Western Coasts, at their most important Ports, and connecting itself by different branches, (where necessary,) with the great Manufacturing and Mineral districts of the Country, the outline of the Plan is submitted to the public.

From the spirit of enterprise lately manifested at Birmingham, communications are about to be opened between that place and the parts of Liverpool and Bristol, as well as with London, Manchester, and the Manufacturing districts of Lancashire: the main line of the present undertaking, therefore, will commence at or in the neighbourhood of Birmingham, in such a way as to connect itself with the Manufacturing and Mineral districts of Warwickshire, Staffordshire, Worcestershire, and Shropshire: thus combining at its very commencement, not only a communication with Bristol and Liverpool, the two great parts of the Western Coast, but also with the Metropolis and the South of England, and thus extending the great and important benefits to be derived by the Town of Birmingham, from its favourable spirit of enterprise, to the present undertaking: it will then proceed, by way of Derby, passing over the Mineral parts of that County to Sheffield, with a branch from that place to the Eastern Coast, and from Sheffield through the populous and flourishing parts of the West Riding of Yorkshire to Leeds: the town of Leeds having, within the last few days, come forward with great spirit, to establish a Rail Road with Hull, thus completing a second communication with the Eastern Coast by way of Leeds. There will also be separate branches to bring the main line into more immediate connexion with the important Towns of Manchester and Nottingham, and their extensive Manufacturing districts, particularly connecting the former place with Sheffield.

In laying down this great line of communication between the two opposite Coasts, the convenience and wishes of the Localholders will be consulted as far as possible, and the greatest attention will be paid to the desirable object of bringing it into immediate connexion with all other modes of transit, already or about to be established, so as to extend to every part of the Kingdom, through which it passes, the utmost advantage that can possibly be derived, from the immense undertakings that are about to be established, for the conveyance of Agricultural produce, Merchandise, and Minerals, between the Northern and Southern parts of the Kingdom, and it will consequently become necessary to vest in the Board of Management the discretionary power of altering the line, and of extending and diminishing the number of Branches, as they may from time to time find necessary. The Agricultural, Mineral, and Manufacturing products of the Counties of Stafford, Warwick, Worcester, Salop, Lancashire, Derby, Nottingham, and York, will not only thus be enabled to find a cheap, certain, and expeditious vent at all the great Ports on the Eastern and Western

Coasts, but at the Metropolis and the Northern parts of the Empire, bringing moreover those important and highly flourishing districts into more immediate contact with each other, and thereby not only increasing their products, (but highly valuable as it now may be,) giving an additional value to the soil, to an extent which can hardly be calculated. The Country will thus be intersected by two great lines passing from London to Liverpool, and from Bristol to Hull, crossing each other at Birmingham, and the National importance of thus bringing the four great Rivers of England, the Mersey, the Humber, the Tyne, and the Severn, into immediate contact with each other, will be visible to every one. A reference to the annexed Sketch will, at once, shew this, and render any further comment unnecessary.

Although no actual survey has been made of the intended line, it has been ascertained from the information of experienced persons, acquainted with the different districts, that the undertaking is clearly practicable; the necessary surveys, however, will be forthwith made, and every other effort for an application to Parliament at the earliest possible period.

The Undertaking deserves the serious attention and patronage of the Legislature, as well as the Manufacture and Capitalist; and, in forming the basis upon which it is to be established, the interests of all three are kept in view. It will be placed, therefore, under a Board of Management, to sit in London, consisting of a Chairman, Deputy Chairman, Directors, and Auditors, to be elected with full powers to appoint and dismiss the Officers of the Establishment, and to do all other acts which in their discretion may appear necessary for accomplishing the object of the Undertaking, with power for any live to act. The Local Legislature of the different Counties through which the Line passes, will be selected to be Patrons. The Noblemen and Gentlemen of Property connected with the Country over which the line extends, the Members of the Councils, and of the different Towns interested in the Undertaking, will be solicited to be Presidents, and Shares reserved for such as will for them. The Board of Management will be appointed from the Burgesses of the Undertaking, to consist of a limited number of Capitalists in London, to whom will be added the Names of a certain number of Noblemen and Gentlemen, to be selected from the Local Boards, not exceeding two from each Board, which will be established at Birmingham, Manchester, Derby, Nottingham, Sheffield, and Leeds, the principal stations on the line, or at such other places as the Board of Management may find necessary: these Local Boards to have the Management of certain Districts placed under their care, and to consist of a Chairman and a certain number of Directors, to be selected from the persons resident in the neighbourhoods supporting the Undertaking.

The Officers of the Undertaking already appointed are
IN LONDON.

BOARD OF MANAGEMENT.

Joshua Walker, Esq. M.P.—CHAIRMAN.

Timothy A. Curtis, Esq.—DEPUTY CHAIRMAN.

DIRECTORS.

Sir Edward Banks, Bart.
John Best, Esq. M.P.
Mr. Alderman Bridges, M.P.
L. L. Goldsmith, Esq.
James Forsyth, Esq. M.P.
William Howard, Esq.
Messrs. Everett, Walker, Malby, Rids, and Co. Mandan
Homesworth—Bankers.

James Wignam, Esq.—Counsel.

Messrs. Allopp, Parker, and French, Lincoln's Inn-Fields—Solicitors.

IN THE COUNTRY.—DERBY.

DIRECTORS.

Reche Heathcote, Esq.
James McHenry, Esq.
Robert Newton, Esq.
William Norman, Esq.
John Pares, Esq.
W. J. Lockart, Esq.
William Scurr, Esq.

Messrs. Clapton, Newton, and Co.—Bankers.
Messrs. Bulger, Porter, and Barber—Solicitors.

BIRMINGHAM.

Messrs. Atwoods, Spence, and Co.—Bankers.
Thomas Myle, Esq.—Solicitor.

MANCHESTER.

Messrs. Heywood, Brothers, and Co.—Bankers.

Messrs. Duckworth and Deacon—Solicitors.

NOTTINGHAM.

Messrs. J. and I. Wright and Co.—Bankers.

Messrs. Allopp and French—Solicitors.

SHEFFIELD.

Messrs. Wallcut, Esq. and Son—Bankers.

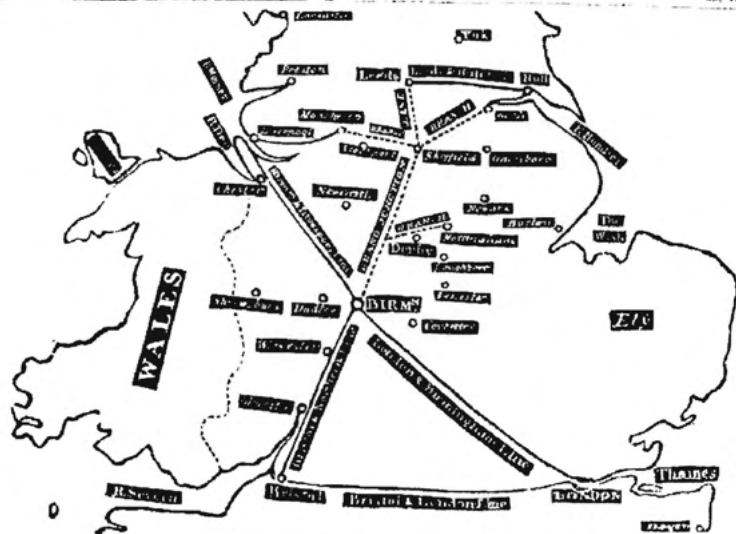
Charles Brackbill, Esq.—Solicitor.

James Walker, Esq. London, and William Bruntan, Esq. Birmingham—Engineers.

The Capital will not exceed £2,000,000, and it is proposed to divide it into Shares of £50 each, to be issued at the discretion of the Board of Management, a great proportion of which will be reserved for the parties connected with the intended line, wishing to become Subscribers, and for the Companies of the different Rail-ways, with which the present may connect itself.

Applications for Shares may be immediately made to the different Bankers and Solicitors, and the same will be appointed, with all possible dispatch; and as soon as approved by the Board, the parties will be applied, and a deposit of £1 per Share will be required to be immediately paid into the hands of the Bankers, to the account of the Board of Management, and the remainder called for at the discretion of the Board; but no further instalment will be required until the survey has been made, and the necessary arrangements prepared for the application to Parliament.

ALLSOPP, PARKER, and FREETH,
63, Lincoln's Inn Fields.



Scotland at this period were mostly for modest industrial railways such as the Midlothian (Edinburgh to Dalkeith), Edinburgh & Leith, Stirlingshire & Monteith or Dundee & Newtyle, but firm proposals also appeared for Edinburgh-Glasgow with extensions to Leith, Paisley, Ardrossan and Troon. Steps were taken to put into effect the powers conveyed by an Act of 1811 but never exercised for a railway from Berwick to Kelso and to connect it by means of a new company to the Midlothian Railway at Dalkeith, thus giving access to Edinburgh.

In Ireland firm proposals appeared for railways from Belfast to Dublin, with the possibility of a lengthy branch to Enniskillen, and also from Dublin to Kingstown. Both schemes got as far as petitioning the House of Commons in 1825 for leave to bring in a bill but proceeded no further. A third company, the Limerick & Waterford, also introduced a bill but failed to pass standing orders. These companies were all promoted from within Ireland and must have been forming in 1824 before the eruption of the Mania in order to have been in a position to commence the parliamentary process in 1825. A further two companies appeared in London in January 1825 with the purpose of building railways in Ireland. One of these was the Hibernian General Railway Company. Its actual proposals were rather shadowy but it claimed to have reached some sort of an agreement with promoters of the Waterford & Limerick to take on the construction of that line; it was also hinted that it might be interested in building the Enniskillen branch. At almost exactly the same time another company with equally vague aspirations appeared, the Royal Hibernian General Railroad Company. The exact relationship between the two companies – and surely there must have been one – is not clear, but both faded away within a few months. The Waterford & Limerick disentangled itself and proceeded to obtain its Act at a second attempt in 1826.

The period of frantic promotion came to an end during January 1825. The last of the major trunk lines to appear were the Grand Western and Hibernian General which both announced their existence on 19 January, although new and largely ineffectual companies still continued to appear in the provinces for a while, especially in East Anglia. The purpose of these was to open up farming districts by linking them to suitable market towns or harbours. In Exeter proposals were put forward for a railway to Exmouth to give the city better port facilities and similar proposals were made to link Ludlow to the river Severn by means of a railway.

Altogether 43 companies were formed between December 1824 and February 1825. A full list (including all companies promoted during 1824 and 1825) is included as an appendix to this article.

Some of the new companies had hopes of getting their Bills through in the new session of Parliament, a remote possibility given the amount of parliamentary business that was already expected and the unpreparedness of their plans. In the new session which commenced on 3 February 1825 as total of 438 petitions were presented for leave to bring in private Bills; of these 26 were for railways. Nearly all of these petitions were for railways that had been formed before the Mania such as the Liverpool & Manchester or Birmingham & Liverpool. Of the Mania companies only the Kentish and the Hibernian General got as far as presenting their petitions – and that was as far as they got. At the end of the Session only nine railway bills received the Royal Assent and they were all for non-controversial local lines such as Parliament had been approving regularly for over twenty years. The Liverpool & Manchester and Birmingham & Liverpool both failed, largely as a result of intense opposition from the canal interests and the landed estates. The conduct of MPs with regard to private bills promoted by railway and other companies was widely questioned:

The conduct of the committees, to whom some of these private bills was [*sic*] referred, was the subject of loud and well merited complaint. Many members of the House of Commons seemed, in the exercise of this part of their functions, frequently to forget that they had any public trust or duty to discharge, and gave their votes for or against a scheme, entirely as it coincided, or was inconsistent with, any private interest of their own, or of their friends.²⁵

Railway promotion on such a wide scale was of course good news for engineers and surveyors, and all the leading figures of the day picked up useful contracts, even if in many cases their work was not to bear fruit. George Stephenson, acting through his company of George Stephenson & Son, was engineer to nine companies (London Northern, London & Birmingham, London & South Wales, Liverpool & Manchester, Birmingham & Liverpool, Canterbury & Whitstable, Leeds & Hull, Bolton & Leigh, Manchester & Bolton). He delegated the surveying work to employees of the company.²⁶ The Birmingham & Liverpool was re-surveyed by Josias Jessop and George Rennie before that company's second application to Parliament in the 1826 session. Jessop was also involved with the Cromford & High Peak, the Grand Junction and the Newcastle &

Carlisle. John Rennie worked for the Grand Junction, London & Birmingham and Surrey, Sussex & Hants. Other well known engineers with fewer contracts were Thomas Telford (Kentish), William Cubitt (Ipswich & Suffolk), H R Palmer (Norfolk, Suffolk & Essex) and William Brunton (Grand Junction). In Scotland James Jardine was engineer or surveyor to five companies, Thomas Grainger to three and Robert Stevenson to two. Lesser figures also obtained work: James Elmes, engineer of the Hibernian General, was known principally as an architect and writer and later was Surveyor to the Port of London; virtually nothing is known of R M Hollingworth, his assistant on the Hibernian General; they were also connected with the Kentish, probably in a similar capacity. For smaller regional schemes local surveyors generally carried out the necessary survey work such as Philip Ilett, better known as a designer of bridges (Taunton Grand Western), or the Bristol land agent and surveyor, John Millard Tucker (Bristol & Bath).

Varying figures were given for the capital that would have been needed to finance the construction of all these companies. This is hardly surprising since the figures that the companies provided themselves were often changing. Perhaps the figure that appeared in the *Annual Register* for 1825 is as good as any: the capital proposed for 48 railway companies was £22,454,000, or an average of £467,792 each. This represented 12.9 per cent of the total capital that it was proposed to raise for 276 joint-stock companies. Among individual railway companies seven proposed to raise £1m each, four proposed £1.5m each, the Grand Junction required £2m, the London Northern £2.5m, and the Grand Western as much as £3m. Conversely there were companies with much more modest requirements, such as the Canterbury & Whitstable's £31,000 (unduly modest, as it transpired).

The payments that were actually made on the shares represented only a tiny fraction of the total capital. The Kentish Railway created 10,000 shares; of these 8,000 were actually issued but a mere £7,488 was received by way of deposit.²⁷ The Norfolk, Suffolk & Essex, with a notional capital of £1m received just £3,346 in deposits of £1 per share.²⁸ Francis states that a capital of £21,942,500 was required for all the Mania schemes (slightly lower than that in the *Annual Register*), and of this only £219,425 was actually paid.²⁹

The sudden eruption of railway promotion on a far more intensive and ambitious scale than had

previously been seen was naturally reflected in the press. Comment in the *Quarterly Review* is typical:

Nothing now is heard of but rail-roads; the daily papers teem with notices of new lines of them in every direction, and pamphlets and paragraphs are thrown before the public eye, recommending nothing short of making them general throughout the kingdom.³⁰

The *London Magazine* was similar: 'The rage of the last month has been a mania for rail roads'.³¹ A correspondent in London wrote to John Buddle in Newcastle on 7 February 1825 that 'we are all rail road mad in this metropolis'.³² But by February *The Literary Chronicle* could write 'We have, during the last month, heard enough of iron railways, which, at the best, can be rather heavy, clumsy concerns'.³³

There were those who disapproved of railways as they did of all joint stock companies: the writer of a letter in the *Evening Mail* who saw no particular merit in the speedier delivery of goods wrote:

The eagerness with which a certain portion of the public is giving its support to the new project of rail-roads is another instance, to the many on record, of the gullibility of the public on all occasions in which a marvellous enterprise unites itself with the dreams of extraordinary profits ...³⁴

However, if comment in the press can be taken an accurate reflection of the feeling in the country at large, the general response was one of guarded support. Speculation was deplored and there were misgivings as to the viability of many of the projects, but the advantages of railways over canals and roads were recognised, especially in conjunction with steam power. Opposition to the railways was seen as an attempt to undermine a wider good that would benefit the public at large. In a generally favourable article, the author of the piece in the *London Magazine* cited above noted that new companies were 'daily forming' but that secret opposition was also forming 'with any object in view but the public good'. As a speculation railways were seen to be morally superior to the foreign mining companies that had been so widely promoted. In its issue of 2 January 1825 *The Examiner* wrote:

RAIL-ROADS. — The rage for speculation seems rather to increase than to diminish, and will perhaps go on in an accelerated ratio, until it receives some severe check by one or two grand schemes failing. Not but that many of the new undertakings are decidedly useful and reasonable, but it is difficult to imagine how so many at once can succeed. There is a marked difference as to security and advantage, between the foreign and the home speculations.

The author of the celebrated review article in the

*Quarterly Review*³⁵ took a similar line of guarded support. He recognised that railways could bring an 'improvement in the internal communications of the country, by which a more speedy, certain, safe, and economical conveyance of persons and property is expected to be accomplished' and had little sympathy with the opposition to be expected from the canal companies: 'the "vested rights" of the canal proprietors cannot stand for a moment against the rights of the million'. On the other hand he was suspicious of many of the current proposals and especially of the claims that were being made for the locomotive:

Every particular project must stand or fall by its own merits; and we are greatly mistaken if many of those which are already announced, will not, when weighed in the balance, 'be found wanting'. The gross exaggerations of the powers of the locomotive steam-engine, or, to speak in plain English, the steam-carriage, may delude for a time, but must end in the mortification of those concerned.

He cites with disapproval the vagueness of the estimated cost of the London to Woolwich section of the Kentish Railway, put at £5,000 a mile or perhaps £10,000 ('a pretty sort of estimate for an experienced engineer') and its projected annual profits of 20 per cent on a capital of £100,000, based on steam locomotives running at about 18 mph. 'We are not surprized that Mr. Peter Moore and some of his co-directors, who probably never saw a steam-engine or a railway, should put their names to such pure nonsense as this but we hardly expected that Mr. Telford, the engineer, should have lent it the sanction of his'.

The effect of the promotion of so many railway companies which called forth most comment from contemporary observers and from subsequent writers was the over-heated speculation in shares that it generated. There can be no doubt that this did indeed occur although it was only a short-lived phenomenon. What is not so easy to establish is how far it was as a result of cynical manipulation by the promoters (as the decriers of joint stock companies would have had it) or how far it could be attributed to the gullibility of the public and to herd instinct at a time of fiscal euphoria (as their proponents claimed). Typically the value of a share in a new company might be £50 or £100 but only a small initial payment would be required, perhaps £2 or £5 per share, or even as low as £1 on a £100 share (London Northern Rail-Road) and in any case it appears that the original subscriber often simply put his name down and failed to make

even the initial payment. The entire issue would be rapidly subscribed, often within a day or two; then, whether designedly or simply as a result of market forces acting within an overheated economy on an excited investing public, the price of the shares would rise. The initial investor could sell on his shares at a premium and so turn a quick and substantial profit. The final owner of a share would be left with the responsibility of meeting the remaining calls on that share or – more likely – with a valueless share in a company that was unable to proceed.

The excitement that occurred when a new company was announced can be illustrated from a description of the speculation fever in Birmingham that followed the formation of the Birmingham & London Railway and the Bristol, Northern & Western Railway in December 1824:

During the past week, the rage to obtain rail-road shares has risen in this town [Birmingham] to a most extraordinary height, and the newly formed companies have afforded extensive opportunities to those eager for speculation. At a meeting ... in this town .. it was resolved that a rail-road from this town to the city of London ... [would be] ... of the highest national advantage; and that a company be forthwith formed, with a capital of one million sterling, divided into 20,000 shares at £50 each ... Names were immediately subscribed for a great number of shares, and the book being removed to the treasurers' those allotted to this town were all engaged in the course of that and the following day.

Intimation of the establishment of the [Bristol, Northern & Western] Company at Bristol reached this town on Tuesday morning, and becoming soon spread abroad, the bank of Messrs. Attwoods and Co. was thronged by persons desirous of subscribing their names, and such was the eagerness displayed that the number of shares appropriated to this place (2500) was engaged in less than two hours afterwards. Many who were disappointed in obtaining shares did not hesitate immediately to offer premiums, and shares rapidly advanced until they reached £7 premium ...

The intelligence respecting the Bristol meeting was received at Worcester on the same morning, and, in a few hours after the subscription books were opened at the Old Bank, 1200 or 1300 shares were subscribed for, and the next day the whole number assigned to Worcester was engaged. The number served for Gloucester was also promptly subscribed for.³⁶

It is not surprising that there should have been such a demand for shares. Ambitious claims made by the promoters were readily believed in the prevailing climate, and the more disreputable the company, the

more ambitious were the claims. The Kentish Railway, of which the writer in the *Quarterly Review* was so rightly suspicious, is a case in point. Other companies, whilst not so explicit in their forecasts, emphasised in their prospectuses and advertisements the richness of the districts to be served, the amount of traffic that would be carried and inferentially the profits that could be expected. The London & South Wales would carry 'the staples of south Wales' and would benefit 'the clothing districts of Gloucester and Oxford'; the London & Bristol Railroad would connect Ireland and Wales to the metropolis and serve 'the Port of Bristol, which is surrounded by rich manufacturing districts ... [and] ... pass through many collieries and a fertile country'.³⁷

Speculation was by no means universally condemned. The *London Mechanics' Register* noted the Kentish Railway and commented:

These shares are also at a premium, and very properly so, we think, for in this plan there is a double triumph of science, which must redound to the honour of the mechanics of Great Britain. We cannot perform a more pleasing duty than in recommending this scheme to the notice of our readers, and we think many of them might safely invest any spare capital which they may possess, in the purchase of shares, as they are likely to become a valuable property for themselves and their posterity.³⁸

Words which the writer must surely soon have had cause to regret, but this passage shows that the urge to invest spread far down the social scale and was not confined to the moneyed classes.

The emergence of these companies accompanied by the demand for their shares resulted in the development of a market in railway shares. Share brokers had long been offering canal shares and occasionally shares in earlier railway companies. Railway shares now became a much more important part of their business, at least for the duration of the Mania. In London, starting in December, *The Times* and the *Morning Chronicle* both began to carry reports of the movements in railway and other joint-stock company shares as editorial matter, not, as hitherto, only as advertisements. But even by the end of January the enthusiasm for railway shares was declining: the *Morning Chronicle* could report on 28 January that 'The Rail-road shares are steady; little, however, is doing in them, as their value must depend much on the discussion on the Bills in Parliament'. On 5 March the same paper reported: 'The Rail-way Shares are still nominal, because some are thrown upon the market, the holders being

sanguine of an improvement'. Early in February 1825 the Grand Junction offered 1,000 of its shares to existing subscribers to the Bristol, Northern & Western which must show that they had failed to place all their shares and that there was now little demand for them. *Jackson's Oxford Journal*, with, one suspects, a touch of schadenfreude, wrote on 19 February:

The mining and other new speculation shares rallied last week, but there is little demand for them from the public – out of eight railway projects on which small deposits have been made, the London and Northern is quoted at 1¼, all the rest at 0!

By the beginning of March railway shares were being offered by the dealers only on a very occasional basis. The last company whose shares were regularly offered by the London brokers (until the end of March) was the London Northern.

Lively markets also existed in the provinces. In Manchester two brokers started to offer railway shares in December. Joseph Macardy had ceased to deal in these on a regular basis by May but Thomas Langston was still offering shares in July – perhaps he was a greater optimist than Macardy. Both brokers dealt mainly, but by no means exclusively, in the shares of local companies. At the height of the Mania, in January and February, Langston was actively seeking to buy Liverpool & Manchester and Manchester & Oldham shares, obviously to meet a demand from clients. Share markets also developed in other centres including Liverpool and Edinburgh.

There can be no doubt that the motives of some of those who floated railway companies at this period were suspect and that their schemes were largely speculative. In the words of John Francis, 'It was the misfortune of some [companies], that persons known in the city to possess darkened reputations, were connected with them ...'.³⁹ However, it would be wrong to assume that this applied in every case. It would not be feasible to examine every company that was floated during the Mania, to identify all those who were associated with their promotion, and to attempt to discover their motives. Rather, brief case studies will be offered of two apparently contrasting groups of companies. The first of these are two companies associated with the notorious John Wilks and Peter Moore, the Kentish Railway and the Norfolk, Suffolk & Essex Railroad; the other, which appears to have a more reputable basis, is the group of four companies centred on Birmingham.

As has been seen, the Kentish Railway was first

brought before the public on 9 December 1824, the Norfolk & Suffolk Railroad (later the Norfolk, Suffolk & Essex) slightly later on 24 December. Both were the creation of the solicitor John Wilks and his close associate, Peter Moore, MP for Coventry. The key description of Wilks in the *Oxford Dictionary of National Biography* is 'swindler' and Moore was described by a contemporary as 'a well known jobber',⁴⁰ descriptions which indicate all too clearly the character of these promotions. During 1824 and 1825 Wilks promoted at least fifteen speculative companies. Moore and a small coterie of four other speculators (S P M Barrett, MP for Richmond (Yorkshire); John Gray, whom it has not been possible to identify positively; AA Surtees, of Newcastle; and Sir Charles Price of the London banking house of Kay, Price, Marryat & Coleman) were directors of nearly every one of these, but also associated with them was a penumbra of investors in one or more of the companies who were perhaps more the victims of Wilks than complicit in his fraud. In the case of the Kentish Railway the original eighteen directors were described as 'gentlemen ... in the county of Kent', but in fact the only one of them who had any active connection with the county was the contractor Samuel Baker of Rochester. The others all belonged to that tight social class which revolved around the City of London, Parliament, the military and polite metropolitan society. There was talk of enlarging the Board to include twelve members from Kent but if it was ever done, their names have not been recorded. The Board of the NS&ER consisted of 21 members and these did include representatives from East Anglia (two from Norwich, one from Suffolk, one from Essex) but the remainder were all from the same circle as those of the Kentish Railway. Five of them were also directors of that concern. Among the directors were Charles Tennyson, MP, uncle of the poet, and Stamford Raffles, newly returned from the Far East.

By the second half of 1825 and a downturn in the economy, the nature of the activities of Wilks was becoming clear to the investors in his companies. Nevertheless Wilks announced his intention of introducing Bills for both railway companies in the 1826 session regardless of the views of the shareholders, who by now were fully aware that the only beneficiaries would be Wilks and his associates. Statutory notices for both concerns were published and the plans were deposited. The independent directors of both railway companies now asserted themselves in order to salvage what they could. The NS&ER was effectually wound up in March 1826 but

correspondence from dissatisfied shareholders continued to appear in the press for several months and meetings were held at which they attempted to obtain explanations from the directors of the various professional fees that had been charged by Wilks and his associates. It appeared that of the £3,346 that had actually been handed over in deposits only £180 remained after the expenses of the solicitors and others had been met. The Kentish Railway was wound up in June 1826 following an acrimonious meeting in April at which the main issue was again the extent of Wilks's fees. The directors negotiated these down as far as they were able but investors still only received a return of six shillings in the pound. As Wilks wrote a little later in another connection, 'I never professed to be what is called a *cheap lawyer*'⁴¹ [*italics in original*]. A further issue, at least in the case of the Kentish Railway, was the remuneration of the directors:

Another cause is also said to have operated. Mr. Peter Moore was one of the directors, and Mr. Moore – who was connected with half the companies of 1825, declaring them all to be as safe as the Bank – was of opinion that his services as director should be liberally remunerated. The late Sir Charles Price, and others of the directorate, did not agree with the gentleman, and this tended to abolish the company.⁴²

If the two companies promoted by Wilks were essentially fraudulent, it does not follow that this is true of all the companies that were promoted during this period. An examination of the group of four companies centred on Birmingham would appear to show evidence of systematic planning by a group of largely local industrialists and financiers who were concerned to secure improved communications for their region, but who at the same time saw railway promotion as an activity that was likely to return a decent profit. Their commitment to the districts to be served by the railways and the absence of any subsequent suggestion of scandal strongly indicates that this group of companies was formed for solid commercial reasons and was no more a speculation than was the Liverpool & Manchester.

The first company in this group was the Birmingham and Liverpool. A group to promote the scheme was formed in 1823; its proposals were made public in April 1824 and a prospectus was formally issued in September. Its principal supporters were iron and coal masters in the Black Country but with significant representation from Liverpool and other districts through which the railway was to pass. George Stephenson was in regular communication

with its promoters from May 1824 onwards.⁴³ Not long afterwards plans for a railway from Birmingham to London started to be formed involving many of the promoters of the Birmingham & Liverpool. The close links between the two companies were very clear: '[a]t a meeting of gentlemen connected with the Birmingham and Liverpool Rail-Road Company held at the Royal Hotel, Birmingham, this 15th day of Dec., 1824 ... the Propriety of extending the projected line of Rail-road from Liverpool to Birmingham, by extending it to London' was considered.⁴⁴ Of the 26 members of the London railway committee, 17 were also on the Liverpool railway committee, and the bankers and the solicitors were the same for both committees. Almost immediately after this meeting the promoters of the Birmingham & London agreed to merge with a group in London which had the same objectives to form the London & Birmingham Railway with separate committees in London and Birmingham.⁴⁵ Meanwhile the Bristol, Northern & Western had been formed in Bristol to build a railway from that city to Birmingham. Its original promoters were largely merchants and other leading citizens of Bristol. Of its 16,000 shares 2,500 were reserved for subscribers in Birmingham and these were taken up largely, it would seem, by the same parties who were interested in the Liverpool and London proposals. The original committee was enlarged to include seven representatives from Birmingham, five of whom were also connected with the Liverpool or London companies or both. Finally, early in January 1825 the Grand Junction Company made itself known, with proposals for a main line from Birmingham to Leeds with branches to Manchester and Goole. The company was London-based but with local committees in Birmingham and elsewhere. It seems to have been prompted by the existing developments centred on Birmingham. The Birmingham committee comprised 16 members, and of these all but two were interested in at least one of the other companies.

A closer examination of the Birmingham coterie who invested in these four concerns reveals a small group of industrialists and bankers at its heart. Foremost among these was the banker, Thomas Attwood (1783-1856), a major figure in the development of the town and one of its first MPs.⁴⁶ He was a committee member of all four companies and his bank, Attwood, Spooner & Co., was the banker certainly to three of the companies and probably to all four. Also with an interest in all four companies was Joseph Frederick Ledsam. His family

had made its fortune through the metals trade and the manufacture of wire, pins and nails, but Ledsam himself was now decidedly a member of the gentry. A further six individuals had an interest in three of the four companies, all of whom were figures of importance in Birmingham and active in its commercial life; there were also a large number of other Birmingham figures who were connected with just one or two of the companies. None of them had an interest in any other contemporary railway company. It has to be noted, however, that the London directors of the London & Birmingham and the Grand Junction fall into a rather different category: they were typical of the financial and mercantile classes of London and of metropolitan society. Many of them were heavy investors in other companies. The involvement of London financiers need not be cause for doubting the motives of the Birmingham promoters: the promoters of the Stockton & Darlington and the Liverpool & Manchester both found it necessary to seek financial backing in the capital for their regional schemes.

Undoubtedly one of the most the most important factors behind the Railway Mania was the recent realisation of the potential of steam power when applied on a railway. '[T]he advantages of rail-roads spring entirely from the application of steam-power to them', declared the *Monthly Magazine* in March 1825. 'The discovery of the Loco Motive engine will be almost as important to the trade and commerce of this country as the discovery of the Steam Engine itself', wrote the *Morning Chronicle* on 18 August 1824. The same newspaper, in an interesting article published a few months later wrote that

... the loco-motive engine, which is to act so prominent a part in the projected roads, has been in operation in the neighbourhood of Newcastle-upon-Tyne some nine or ten years, without exciting much interest or attention. It is only within two or three years that the public appear to be, all at once, alive to the important results to be anticipated from the introduction of this peculiar power.⁴⁷

Steam power was, of course, by now widely used in industrial applications and its successful use at sea was seen as a model for land transport. The *Morning Chronicle* continued:

Almost all our packet establishments between England, France and Holland, Scotland and Ireland, are steam ships. Neither is their office confined to the conveyance of passengers; merchandise to a large extent is transported with extreme regularity and despatch, especially between Liverpool, Dublin, and Glasgow. In a few years we shall not be surprised to

see this same power, under the form of the locomotive engine, conducting the immense traffic between Liverpool and Manchester, Edinburgh and Glasgow, Birmingham and London.

By November 1824 it could be claimed by a responsible engineer that the locomotive had reached a 'present degree of perfection'.⁴⁸ In December 1824 the promoters of the Bristol & Bath Railroad even went so far as to state that the 'application of the Loco-motive Steam-engine, for propelling carriages on railways, has been proved to be certain at all times of the year'.⁴⁹ Both claims were premature: there was no concrete evidence that the locomotive could yet meet the claims that were being made for it. The promise was there, but the ability of the locomotive to work long-distance railways reliably and at speed had yet to be demonstrated. The work of Stephenson and others had resulted in a quite extensive use of locomotives on colliery lines in Northumbria and the Middleton Railway had of course been worked by locomotives since 1812, but these were hardly an appropriate model for the fast, long-distance lines that were being proposed. The opening of the Hetton Colliery Railway in 1822 which was to be entirely steam-worked (by a combination of locomotives and stationary engines) and the decision in the same year by the promoters of the Stockton & Darlington to use locomotives at least on part of their line were both influential and reflect the *Morning Chronicle's* comment in 1824 that locomotives had only come to the attention of the public two or three years previously. They encouraged the promoters of the Liverpool & Manchester and Birmingham & Liverpool companies to recommend steam power. The formation of Robert Stephenson & Co. in 1823 was a further important indication of confidence in the future of the locomotive, although the departure of Robert Stephenson in June 1824 cast a temporary shadow over the concern.

Nevertheless, despite the ambivalent nature of the evidence there was a widespread belief that the locomotive would provide the railway with the 'unique selling point' (to use a modern term) that would give it an unassailable advantage over all other forms of transport. 'Without steam a rail-way would be of no use; it would possess no superiority over a canal', wrote a contributor to the *London Magazine* in January 1825.⁵⁰ For one investor, at least, the locomotive was the determining factor in his decision to invest in the Birmingham & Liverpool: 'I am free to say, that my inducement to become a subscriber to the speculation at all, was my confidence in the

newly-discovered locomotive engines'.⁵¹ Of the Mania companies, ten stated unambiguously in their prospectuses that they intended to use either locomotives or locomotives in combination with stationary engines. The Kentish Railway planned to use locomotives and horses, whilst only on the Surrey, Sussex & Hants was 'the necessity of using locomotive engines ... not contemplated'.⁵²

Equally as important as the development of the locomotive was, of course, the invention of the malleable iron rail, patented by John Birkinshaw in 1820. Without it, it would have been impossible for the locomotive to fulfil its potential. However, there is no evidence that awareness of this invention had any influence on any of the promoters of the Mania companies.

As has been noted above, the initial enthusiasm for railway promotion was starting to wane by March 1825. Promoters and investors alike were awaiting the outcome of the private railway bills then on their way through the parliamentary process. The treatment by Parliament of the two major interurban schemes was not encouraging, with both the Liverpool & Manchester and Birmingham & Liverpool bills being lost. Then, even before the end of the 1825 session, marked signs of an economic downturn appeared. The recent prosperous state of the economy had led to an adverse balance of payments; this in turn had resulted in a high value of gold being exported and a reduction in the amount of money in internal circulation. In April the prices of shares started to fall. Holders of shares in railway and other companies were badly hit: since the initial deposit on each share had been so low they would be liable for large amounts if calls were made on these shares, a fact which made the shares unattractive and difficult to sell at any price. As 1825 progressed the reserves of the Bank of England were drained, largely to support provincial banks which had been too generous in advancing credit and many of whom now found themselves with liabilities in excess of their actual assets. This led to the failure of many country banks in December 1825 and a near run on the Bank of England itself. Credit became impossible to obtain.

In such a financial climate it was clearly difficult, if not impossible for the railway companies formed in the period of euphoria in 1824/5 to proceed with their plans. Even so, several companies deposited plans

for the 1826 session of Parliament; some started on the legislative process before failing at one stage or another and some were successful in obtaining an Act. Most of the successful companies were 'traditional' concerns, but they included two long-distance companies, the Liverpool & Manchester and the Limerick & Waterford. But most of the Mania companies were eventually wound up at meetings of the remaining shareholders: these included the London & Birmingham (22 June 1826), the London & Bristol (2 June 1826), the London Northern (15 August 1827) and the ill-fated Wilks companies. Others attempted to struggle on but on a reduced scale: the Birmingham & Liverpool, after a second failure to obtain an Act in 1826, decided to restrict themselves to a line from Birmingham to Wolverhampton where they would not encounter the hostility of the landed estates; similarly the Bristol, Northern & Western reduced their plans to a railway from Bristol to Worcester, depending on the canal for the rest of the way to Birmingham. Neither plan came to fruition immediately. But most of the Mania companies simply faded from public notice: it can probably be taken that they were wound up but in an unobtrusive fashion and with no formal record of the event being published.

The promises held out by the locomotive and the perceived superiority of the railway over other forms of transport were certainly factors that contributed to the Mania. Equally important were the favourable financial climate, the free availability of money for investment and the desire of those possessed of that money to find a profitable investment for it. Less rational motivating factors such as euphoria and the herd instinct also played an important part. However, these were factors that were present throughout 1823 and 1824: what caused the Mania to start exactly when it did in December 1824? The author of the review in the *Quarterly Review* ascribed it to the encouragement of the Prime Minister, Lord Liverpool, and his colleagues in the cabinet, William Huskisson and Robert Peel.⁵³ However, the nature of this encouragement would appear to have been one of general approbation of the steam engine rather than specifically of locomotives or railways. Perhaps more important as the tipping point was the publication of the prospectuses of the Birmingham & Liverpool in September and of the Liverpool & Manchester in October 1824. These represented firm proposals to build inter-urban railways for the general carriage of goods and passengers in competition with the canals and, in the case of the Birmingham &

Liverpool at least, a clear commitment to the locomotive. (At this stage the Liverpool & Manchester was more guarded in this respect.) Once a clear lead had been given by these two proposals it was almost inevitable, given the existing financial climate, that other investors should rush in to ensure that they too could share in a new and, it was hoped, a profitable type of enterprise.

Whilst it is unquestionable that there were companies promoted by villains such as Wilks and Moore, and that other companies were simply ill prepared and developed on the basis of 'me too', equally there were companies which were designed to serve the commercial interest of a particular region and which were promoted by financiers and industrialists who were actively involved in the economies of those regions. They failed to attain maturity in 1825 partly because of the rapid downturn in the economy, partly because too much reliance was placed on the locomotive which was still in need further development. When the economy revived in the early 1830s, by which time significant advances had been made in locomotive technology by Stephenson and others, then nearly all the proposals of 1824/5 were reactivated and successfully completed.

Appendix

A list follows of all companies that were being actively promoted during 1824 and the first part of 1825. It excludes several schemes which do not appear to have advanced beyond the stage of being 'under consideration'. The order in which they are given is that of the first recorded (or inferred) evidence for the existence of a group taking active steps to promote a railway (which is not to say that any particular proposal might not have been active for some time before that date). The 'Final outcome' column shows the date of Royal Assent (RA) to a private Bill where a company was successful in obtaining parliamentary sanction, failing that the last recorded activity of the promoters.

Name of Company	Principal base	First evidence of existence	Final outcome
Liverpool & Manchester	Liverpool	1821	Bill lost 1825; RA 5.5.26
Tees & Weardale		1823	Bills lost 1824, 1825
Birmingham & Liverpool	Birmingham	1823	Bills lost 1824, 1825
Monkland & Kirkintilloch	Glasgow	4.23	RA 17.5.24
Redruth	London	4.9.23	RA 17.6.24
Kennet, Avon & Old Sarum	Salisbury?	1824	Abandoned 12.24
Birmingham & London	Birmingham	5.24	Merged into London & Birmingham 12.24
Cromford & High Peak	Matlock	2.6.24	RA 2.5.25
Stroud & Severn	Stroud	5.8.24	Bill deferred 1825
Midlothian (Edinburgh & Dalkeith)	Edinburgh	25.9.24	Bill deferred 1825; RA 26.5.26
London & Edinburgh	Edinburgh?	25.9.24	No further mention
Bolton & Leigh	Bolton	1.10.24	RA 31.3.25
Belfast & Dublin	Belfast?	11.24?	Bill withdrawn 17.2.25
Dublin & Kingstown	Dublin	11.24?	Bill withdrawn 14.4.25
Glasgow & Rosebank	Glasgow?	11.24?	Bill withdrawn 25.4.25
Maidstone & Rochester		11.24?	Included in Kentish R., 11.25
Nantlle	Caernarfon	11.24?	RA 20.5.25
Portland		11.24	RA 10.6.25
Thurles & Killenaule		11.24?	No further mention
Canterbury & Whitstable	Canterbury	2.11.24	RA 10.6.25
West Lothian	Edinburgh	6.11.24	RA 22.6.25
Festiniog	Porthmadog	8.11.24	Failed standing orders 18.2.25
Festiniog & Port Madoc	Porthmadog	8.11.24	Failed standing orders 18.2.25
Duffryn Llynvi & Porth Cawl	Bridgend	13.11.24	RA 10.6.25
Edinburgh & Glasgow	Edinburgh,		
	Glasgow	13.11.24	Last mention 10.6.25
Flintshire	Mold?	30.11.24	Bill withdrawn 3.3.25
Womersley	Wakefield	30.11.24	Bill withdrawn 21.3.25
Berwick & Kelso	Edinburgh	1.12.24	Last recorded meeting 12.3.27
Kentish	London	9.12.24	Wound up 1.6.26
Bristol & Bath	Bristol	11.12.24	Shares last offered 28.1.25
London Northern Railroad	London	12.12.24	Wound up 15.8.27
Bristol, Northern & Western	Bristol	13.12.24	Last mention 16.7.25
London & Bristol	London	17.12.24	Wound up 2.6.26
London & Birmingham	London	18.12.24	Wound up 22.6.26
Manchester & Bolton	Manchester	21.12.24	Last mention 17.2.25
Manchester & Bolton (another)	Manchester	23.12.24	Failed standing orders 2.3.25
Manchester & Leeds	Manchester	24.12.24	Last recorded meeting 5.1.25
Norfolk, Suffolk & Essex	London	24.12.24	Wound up 31.3.26
Surrey, Sussex & Hants	London	25.12.24	Merged with LP&SR 4.2.25
Manchester & Oldham	Manchester	27.12.24	RA 26.5.26
Manchester, Stockport & Peak Forest	Manchester	27.12.24	Last mention 28.12.24
Leeds & Hull	Leeds	29.12.24	Decision not to proceed, 1825
Manchester Central Junction	Manchester	29.12.24	Statutory notice 19.11.25; not proceeded in
London & South Wales	London	30.12.24	Last mention 15.1.25

Name of Company	Principal base	First evidence of existence	Final outcome
East Lothian	Edinburgh	1.1.25	Statutory notice 17.11.25; not proceeded in
Kelso, Melrose & Dalkeith	Edinburgh	3.1.25	Wound up 5.12.27
Wirksworth & Derby	Wirksworth	3.1.25	Last recorded meeting 22.1.25
Dundee & Newtyle	Dundee	5.1.25	RA 26.5.26
Grand Junction	London	5.1.25	Wound up 30.5.25
London, Portsmouth & Southampton	London	10.1.25	Last recorded meeting 4.2.25
Taunton Grand Western	Taunton	10.1.25	Last recorded meeting 1.3.25
Limerick & Waterford	Waterford	11.1.25	Failed standing orders 24.3.25; RA 31.5.26
Royal Hibernian General Railroad	London	12.1.25	Last mention 31.1.25
Edinburgh & Leith	Edinburgh	13.1.25	Wound up 10.25
Rumney	Merthyr Tydfil	15.1.25	RA 20.5.25
Grand Western	London	19.1.25	Last recorded meeting 22.2.25
Hibernian General	London	19.1.25	Last mention 28.5.25
East London & United Docks Railroad	London	22.1.25	Failed standing orders 30.3.25; 1826 Bill withdrawn
Stirlingshire & Monteith	Edinburgh	24.1.25	Last mention 15.9.27
Isle of Dogs	London	25.1.25	Failed standing orders 2.3.25
London & Newcastle	Newcastle?	25.1.25	No further mention
Exeter & Exmouth	Exeter	27.1.25	Last recorded meeting 28.3.25
Bury St Edmunds, Sudbury & Mistleigh	Bury St Edmunds	28.1.25	Last mention 5.2.25
Maldon & Witham	Colchester	29.1.25	No further mention
General Railroad (Palmer's patent)		2.25	No further mention
Huddersfield & Wakefield		2.25	No further mention
Maidstone & Tonbridge		2.25	No further mention
Colchester & Halstead	Colchester	5.2.25	No further mention
Ludlow	Ludlow	8.2.25	No further mention
Ipswich & Suffolk	Ipswich	11.2.25	Last recorded meeting 22.2.25
Brighton & Shoreham	Brighton	17.2.25	Failed standing orders 7.3.25
Newcastle & Carlisle	Newcastle	26.3.25	Bill withdrawn 1826; RA 22.5.29

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Jolliffe and Banks, civil engineering contractors, and inland waterways

Jeremy Greenwood

One of the essential factors underlying the Industrial Revolution was an effective transport infrastructure for the carriage of goods and raw materials. By 1800 there had been a large increase both in the numbers of roads turnpiked and of canals constructed. On the back of this, a number of new professions emerged; notably civil engineers. The civil engineering projects of the Rennies and Telford, for instance, have overshadowed the enterprises of William Jolliffe and Edward Banks. They were considered by their contemporaries to be 'mere builders and contractors' which may be the reason for the lack of attention paid to them.¹ They were concerned almost exclusively with projects in an aquatic or maritime setting. By the 1820s, they were by far the largest operators in this field; rivalled only by Hugh MacIntosh.

Banks' career started long before his partnership with Jolliffe. He was born in Hutton Hang near Richmond in North Yorkshire, in 1770, the son of a weaver; although many biographies are somewhat apocryphal about his life and his reputed rise from a sheep stealer and 'navvy'.²

Nothing is known of his early life or education. He was involved first in sea banking and drainage at Holderness in 1789.³ Whilst his first contract is said to have been for part of the Leeds & Liverpool Canal (under Whitworth) in 1791, it is unlikely he was more than a ganger i.e. a subcontractor for the provision of labour.⁴ However in 1792 John Rennie surveyed a route and produced a plan for a 1½-mile ship canal from Morecambe Bay to Ulverston; reputedly the shortest in the UK. At the age of only 23, Banks' tender of £3,084 was accepted for part of the works which he completed in 1796.⁵ It is surprising that he had managed to accumulate such construction knowledge and had the requisite financial backing so young although the latter may derive from his marriage to Nancy Franklin in 1793 at Colne. The source of the former is unknown.⁶ Concurrently the Lancaster Canal nearby was under construction, also with Rennie as Engineer.⁷ The exact extent of Bank's contribution, as a subcontractor for these ventures,

is not known but there were, deliberately, a large number of contractors following the unsatisfactory work of the Pinkertons, then the only large canal constructors.

After this, Banks was to become a subcontractor for several canals to the southeast of Manchester including the Peak Forest Canal where he met Benjamin Outram (1764-1805) in 1795.⁸ Outram had studied under William Jessop (1745-1814) and they built the Cromford Canal, authorized in 1789, which ran from the Erewash Canal to Arkwright's mills at Cromford. Outram established an ironworks at Butterley close to the canal (with local backers) and was joined in partnership, in 1792, by Jessop. Benjamin Outram & Co. was thus established and Outram took up residence at Butterley Hall; within a few years the business had expanded to include a limestone quarry, brickworks, collieries and ironstone pits spread over the region around Butterley Hall. In addition, Outram (both individually and in conjunction with Jessop) built up a considerable civil engineering practice whilst Outram managed the firm⁹ known as the Butterley Company in 1807.¹⁰

Banks entered into various small contracts for the Company, including the geographically linked Peak Forest (built mostly in 1794-8) and Ashton-under-Lyne Canals;¹¹ the latter (constructed 1792-7) gave access to Manchester. Later he was a subcontractor to them on the Huddersfield Narrow Canal in 1800 (where he had contracts for repairs at the ends of canal and several reservoir sites).¹² About this time he moved to Butterley Park and undertook various local projects including work on the Nottingham Canal in 1800; local turnpikes in 1802-05, and the colliery railway on the Pinxton branch of the Cromford Canal.¹³ In addition, by the end of the century, Banks had built up a fleet of some thirty boats initially plying the canals in the Cromford-Nottingham area, even eventually providing a scheduled service for freight and passengers as far as Boston. He maintained a close association with the Butterley Company but although he was their main logistics operator he was never part of the firm;

their sales contracts often specified him as the shipper of the goods. He shipped limestone, on his own account, from Crich to kilns based at canal wharves along the Cromford Canal, Erewash Canal and the Trent.¹⁴ Also he carried coal locally for the Butterley Company as well as some of their iron goods southwards; particularly after the completion of the Nottingham Canal when he built a central depot at Nottingham which linked to London.¹⁵ He built limekilns at Codnor Park in 1802-3 for the company as well as the short branch canal that served them.¹⁶

In spite of his close relationship with the Company throughout (for materials and steam engines) Banks still maintained his links with Rennie (and later his



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sons John and George) which were destined to last all his life. They were the supervising architects and/or engineers on all their major projects.¹⁷

It is difficult to conceive the background of his partner, William John Jolliffe, being more of a contrast. The younger son of William Jolliffe (1745-1802), MP for Petersfield (and owner of much of it) he was born in the family's London house in 1774.¹⁸ The Jolliffes were an old established gentry family who had profited from marrying land-owning heiresses; his father had thereby acquired the Chester-

le-Street collieries which were added to the family estates in Derbyshire, Hampshire, Surrey and Sussex.¹⁹ He had the conventional education of a gentleman (and younger son). After Westminster School he read law at Emmanuel College, Cambridge before being ordained in 1798.²⁰ However apart from a short curacy in Suffolk, he almost immediately forsook the church as a career. He incurred debts that his father would (or could) not pay and he went to live at Mint House in Merstham.²¹

William Jolliffe senior had bought the Merstham estate in 1792 and lived there rather than Petersfield where he was increasingly at odds with the inhabitants.²² Included in the estate were limestone and stone quarries, which were then little used. His eldest son, Hylton Jolliffe, took part in the administration of the Durham coal mines but the latter's brother, William's interest in quarrying was only financial, prompted by his dire straits. William Jolliffe and Edward Banks leased the Merstham quarries from Hylton Jolliffe in 1813.²³

Jolliffe and Banks were therefore from radically different social and educational backgrounds, so what had brought these diverse and apparently divergent characters together? The opportunity was apparently provided by the extension southwards of the Surrey Iron Railway by the construction of the Croydon, Merstham & Godstone Railway, completed in 1805.²⁴ This new railway (actually a plateway) extended to the Jolliffe quarries. It was constructed by the Butterley Co. with Henry Henfrey as the company's agent at Merstham during its construction (1802-5).²⁵ Although the role of Banks (if any) in this project is unknown on its opening day, a well known account describes a Mr. Banks having a successful wager with the other gentlemen present about the amount that could be pulled by one horse over the railway.²⁶

A partnership was entered into between Hylton Jolliffe, Banks and Anderson, Eades & Co., in 1806 with a capital of £3827 4s 7d — exactly — in the business of quarrying chalk and limestone and burning lime. Henry Henfrey was appointed manager of the business.²⁷ Anderson, Eades were not only London agents for the Butterley Co. but were also their bankers until they went bankrupt in 1810. Alexander Anderson, the senior partner, was Outram's brother-in-law.²⁸

William Jolliffe replaced his brother in 1807 and immediately became engaged in various building works as well as their limeworks.²⁹ Their first works included the Croydon courthouse and various prisons.

It was during the building of Dartmoor prison in 1809 that they were introduced to the use of granite, a previously little used stone. Later they were to make extensive use of both English and (later) Aberdeen granites in many of their works; investing in the Haytor (Devon) quarries which failed financially.³⁰

Later they became more involved in riverine projects particularly in the Fens.³¹ Between 1817 and 1821, under the direction of John Rennie (with the involvement of Thomas Telford), they made the Eau Brink Cut, a three-mile waterway shortening the River Great Ouse south of King's Lynn. This was designed to improve the outfall of the Bedford Level and drain 300,000 acres of the Fens.³² It was said to be a labour by which 'an immense value has been given to otherwise worthless swamps and wastes'. Similar works were executed on the Nene outfall, a new cut of over five miles where they employed about 1300 men (1827–31), and this extended to the Cross Keys embankment. They also carried out the drainage works for Swaffham and Bottisham Fen (designed by John Rennie senior but mostly implemented by his son), a new outfall for river Witham at Boston (1828), and Ancholme Level (1828) were designed by John Rennie junior.³³ The schemes which Jolliffe & Banks carried out for the Aire & Calder Navigation were even larger. Commencing in 1822, under the direction of George Leather, (as resident engineer for John Rennie junior), they constructed in Goole a basin with locks at the entrance to the river Ouse, and a barge and ship docks. A canal almost 19 miles in length was built westwards from Goole to Ferrybridge on the River Aire. Approximately 45% of the expenditure on this scheme (£361,484) went to Jolliffe & Banks. The navigation company created the new town of Goole, on land which it owned. Although it kept tight control over building, Jolliffe & Banks built a few houses in the new port and spent £4000 for the erection of a 'large and commodious Inn', the New Inn (now the Lowther Arms) although it never rivalled the extensive residential development carried out by Banks at Sheerness.³⁴

The Napoleonic war and the consequent invasion scares provided an impetus to inland transport improvements and led to several fanciful schemes for canals and railways including some in the southeast.³⁵ Rennie proposed a canal between Tonbridge and Portsmouth whilst Jolliffe & Banks were associated with a planned extension of this to their Merstham quarries.³⁶ Later they also proposed another canal similarly to join their works to the Wey & Arun Canal by way of Horsham.³⁷ None of these ever came to

fruition and indeed it is doubtful if it would have been physically possible to build them as the technology did not then exist to overcome the problems provided by the local geology as well as the enormous financial cost.³⁸

Rennie established himself as the principal bridge builder in the capital, (replacing Thomas Telford) on the basis of his canal bridges and aqueducts, and routinely used Jolliffe & Banks as contractors. First was the Strand (Waterloo) Bridge (1811–17), where Banks was clearly in charge of building operations although making reports to Rennie and discussing problems with him.³⁹ As with several other projects, they invested heavily in it and (quite coincidentally) were paid preferentially before other suppliers. In this particular instance this caused rancour amongst the other creditors when the project went bankrupt. Southwark Bridge (1814–19) was a radical departure, being the largest cast iron bridge then constructed with a central span of 240 feet. Jolliffe & Banks constructed the masonry piers and foundations whilst the components of the cast iron superstructure were made by Samuel Walker of Rotherham.⁴⁰ It featured the first use of steam driven pile drivers; supplied by the Butterley Co. to Jolliffe & Banks.⁴¹ The construction of a new Staines bridge to the younger Rennie's design was built by the partnership in 1828–32 although they were not paid for several years.⁴² The improved river flow resulting from the increased arch width of the new bridges was ultimately detrimental to their foundations with reinforcement being needed within a few years. The Serpentine Bridge is the only surviving unaltered building by the firm.

Their public renown for bridge building inspired the verses:

And those eminent men, Messrs. JOLLIFFE and BANKS,

For their labours, deserve our unanimous thanks

They'll next make an Arch, I suppose, to reach over,
Without any trouble, from Calais to Dover.⁴³

Their most famous work was undoubtedly the new London Bridge and its approaches (its shell is now in Arizona). The matter of the new bridge had occupied Parliament for many years and Jolliffe & Banks made use of their previous contacts, during their work at Sheerness, with the prominent politician, the second Earl of Liverpool and his colleague, Lord Melville (First Lord of the Admiralty, 1812–27) to facilitate the granting of the contract to them.⁴⁴ They were also recommended by John Rennie junior, who

described them as:

gentlemen of the first respectability and experience in these kinds of works... Waterloo and Southwark bridges, new works Sheerness, Woolwich, Eau Brink.⁴⁵

His brother, George, was more forthright:

With respect to London Bridge ...My opinion is that Mess. Jolliffe & Banks should have the contract, there are no persons fit to come into competition with them so great is their experience & such command have they of capital & I sincerely trust that the good sense of the committee will appoint them.⁴⁶

Constructed just to the west of the Old Bridge to the modified (by Telford) plans of John Rennie (by then deceased)⁴⁷ and under the supervision of his son John Rennie (knighted for this work in 1831) the contracted price was £460,000.⁴⁸ There were later alterations to the London Bridge contract including the removal of the old bridge and the building of new approaches which increased the final amount paid to the partnership of over £1.5million.⁴⁹

Elsewhere in Kent, Jolliffe & Banks undertook various projects at Woolwich and Deptford dockyards (1816), also minor works at Queenhithe, Romney bridge and Ramsgate harbour (between 1812 and 1814).⁵⁰ On the Thames, they also constructed the wall at the Victualling office in Deptford (c. 1816) and various very minor works to Thames bank walls. Most of these involved the construction of coffer dams using the machinery also used for bridge construction; some were very minor works.⁵¹ A number of minor works were executed by the partnership in the London docks including the reconstruction of the Limehouse entrance to the West India Dock in 1811; in 1816 they excavated for the No. 2 Rum warehouse at West India Dock — an early example of the use of cast iron columns, whilst in 1817 they built a new entrance for London Docks.⁵² Although theirs was not the lowest tender for a new river wall and wharf at the London Custom House in 1817, Rennie recommended them because they had all the required materials in hand as well as pile engines and other machinery from work on Southwark Bridge, stating 'from their great experience in works of this sort there is the best assurance of its being well and speedily executed'.⁵³

Banks lived in the Adelphi Terrace (off the Strand) and had country properties at Oxney Court, Dover, and Sheppey Court, both in Kent. His business premises were at Beaufort Wharf near the Strand. He was knighted on 12 June 1822 for his skill and perseverance in building Waterloo and Southwark Bridges; the first knighthood bestowed on a civil

engineer (the elder Rennie having declined one in 1817). He died on 5 July 1835 leaving a fortune estimated at £250,000.⁵⁴

Jolliffe lived in the family house at Merstham although he also had a house at 20 Adam Street, London and a business headquarters at Beaufort Wharf with Banks. Like Banks, Jolliffe was not inclined to spend the firm's profits but to invest them in new concerns. His fortune in 1824 was stated to be £25,000.⁵⁵ He spent most of his time (apart from hunting) at home in Merstham yet his wife's diaries contain no reference to social meetings with Banks.⁵⁶

All the evidence points to the firm's contracts being supervised almost exclusively by Banks.⁵⁷ Jolliffe was little more than a sleeping partner who represented the firm on public occasions such as the opening of London Bridge, although it is claimed he supervised work in the Fens on the Nene outfall, when it was said:

the work proceeded, under the personal superintendence of Mr. Jolliffe, until June, 1830, when having nearly completed the embankment, he engaged, in addition to his own large force, the assistance of the neighbouring farmers, with their teams, and by a grand effort forced the waters from their old course.⁵⁸

Rennie said of him in 1820:

Mr Jolliffe was never considered by me in any other light than as a person who might attend to the books and pecuniary arrangements connected with their contracts.⁵⁹

Jolliffe & Banks made their reputation through their proficiency when working on aquatic (particularly tidal) projects. They could usually be relied upon to bring a project to completion on budget, to specification and on time although the firm was not paid for the Ancholme work until years after their deaths.⁶⁰ The Jolliffes were asset-rich but cash-poor like most of their class but their lands (particularly during the inflation in prices during the French wars) provided collateral for the many bankers from whom they raised the necessary working capital. Although they narrowly avoided becoming 'Victorians' by their deaths in 1835, their endeavours and innovations were typical of that somewhat mythical era as well as being extremely profitable. Although none of their new techniques and materials, which they introduced, was in itself revolutionary their overall contributions to advances in civil engineering should not be underestimated. The firm was not continued by their descendants who had inherited large private incomes from the success of the partnership.

Following death of both partners in 1835, the firm

ceased to trade. Of its employees/associates, Henry Henfrey (d.1827) was an associate partner with the role of a combination of site agent, financial manager and supplies organiser.⁶¹ His son, Charles, became a major railway contractor, particularly in Italy, where he later lived. John Plews was superintendent of accounts, having worked for them from 1812 until their deaths: he continued as a civil engineer on his own behalf.⁶²

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Canal Contractors 1760-1820

Peter Cross-Rudkin

The period 1760-1820 saw great changes in the nature of civil engineering construction. Political stability and technical development during the previous 70 years had brought economic progress and an increasing number of civil engineering projects, though these latter were usually relatively small and their organisation fairly simple. Only Westminster Bridge (1738-50) exceeded £100,000 in value. During 1760-90 there was a dramatic increase in the number of schemes. Six-figure works included a number of canals:

Staffordshire & Worcestershire Canal 1766-72 £100,000
Trent & Mersey Canal 1766-77 £300,000
Birmingham Canal original line 1768-72 £112,000
Forth & Clyde Canal phase 1 1768-77 £164,000
Oxford Canal phase 1 1769-78 £200,000
Leeds & Liverpool Canal phase 1, 1770-77, £230,000
Chesterfield Canal 1770-77 £150,000
Grand Canal, Ireland phase 2 1773-91 £375,000
Thames & Severn Canal 1783-89 £220,000
Basingstoke Canal 1788-93 £150,000

During this period, only Blackfriars Bridge in London and Ramsgate Harbour were of comparable value.

In the next 30 years projects increased in number and value. Other than the canals mentioned below, only fen drainage in Lincolnshire, Highland roads and bridges, London's Waterloo Bridge and docks in London, Bristol, Liverpool, Dun Laoghaire, cost more than £400,000. Canals over this value included:

Royal Canal, Ireland 1789-97 £1,400,000
Worcester & Birmingham Canal 1791-1815 £610,000
Lancaster Canal phase 1 1793-1803 £490,000
Grand Junction Canal 1793-1805 £1,500,000
Rochdale Canal 1794-1802 £580,000
Ellesmere Canal 1794-1805 £460,000

Kennet & Avon Canal 1794-1810 £860,000
Caledonian Canal 1803-23 £855,000
Regent's Canal 1812-20 £700,000
Edinburgh & Glasgow Union Canal 1817-22 £460,000

From this it can be seen that canal construction formed a significant part of civil engineering expenditure during 1760-1820.

If asked 'Who built our canals?', people might answer 'the Duke of Bridgewater', or 'James Brindley' or 'William Jessop', or 'the navvies'. Probably few people would reply 'contractors' and even fewer would volunteer the name of one of them. Defining a contractor as the person or partnership (in 1760-1820 limited companies could only be set up by Act of Parliament) who entered into a contract with a canal company for some part of construction (and therefore was the employer of the tradesmen or navvies), until the year 2002 only three of them had been the subject of biographical articles in national literature, and one other had been a chief protagonist in two articles.^{1, 2, 3, 4, 5} Yet when the *Biographical Dictionary of Civil Engineers of Great Britain and Ireland, 1500-1830* was published in that year, it contained memoirs of 30 men who had been canal contractors for part or all of their career:

Sir Edward Banks, Thomas Baylis, William Bough, John Dyson, Mark Faviell, James Houghton, Hugh McIntosh, William Mitton, John Murray, John Pinkerton, William Seed, Thomas Thatcher and Jonathan Woodhouse were canal cutters;

James Spedding, Andrew Bocket, Benjamin James and James McIlquham were masons;

Josiah Clowes, Richard Coates, Thomas Dadford senior, Thomas Dadford junior, Samuel Hodgkinson, James Hollinsworth, Charles McNiven, Thomas Sheasby senior, Thomas Sheasby junior, Samuel Weston and John Wilson were contractors who subsequently became canal company engineers, sometimes reverting to contracting;

and Samuel Simcock and William Underhill travelled in the other direction, becoming contractors after starting as

surveyor/engineers.

Half as many names again were not included in the Dictionary despite having worked on several canals, either because their contracts were not particularly important or because their career could be traced but not their biographical details:

John Clark – Kennet & Avon, Wilts & Berks, Southampton & Salisbury;

Thomas Dunn – Gloucester & Berkeley, Brecknock & Abergavenny (twice);

Edward Edge – Stroudwater, Staffordshire & Worcestershire, Kennet & Avon;

John Fletcher – Ellesmere, Montgomeryshire;

Thomas Ford – Shrewsbury, Ellesmere, Montgomeryshire;

Jonathan Gee – Staffordshire & Worcestershire, Neath, Worcester & Birmingham, Brecknock & Abergavenny;

James Hogg – Staffordshire & Worcestershire, Coventry, Leeds & Liverpool;

Samuel Hyde – Birmingham, Stourbridge;

Gregor McGregor – Lancaster, Kennet & Avon, Wilts & Berks;

John Mansfield – Montgomeryshire, Ellesmere, Worcester & Birmingham;

John Pixton – Thames & Severn, Shropshire, Neath, Worcester & Birmingham, Gloucester & Berkeley, Warwick & Birmingham;

George Roe – Leeds & Liverpool, Wilts & Berks, Regent's;

Ralph Sheppard – Staffordshire & Worcestershire, Thames & Severn, Southampton & Salisbury;

Paul Vickers (of Thorne) – Leeds & Liverpool, Lancaster, Rochdale;

William Wright – Staffordshire & Worcestershire, *Birmingham, *Basingstoke (* as Clerk of Works).

Examination of the canal company records in the National Archives at Dublin, Edinburgh and Kew reveals the names of over 200 more who appear only once. These records are very variable in their consistency in listing the letting of contracts, and frequently the names only appear when the company is in dispute with a contractor, but it seems that a substantial proportion of the canal network was built by local men who took a one-off opportunity to obtain work. This appears to be confirmed by the list of contractors above. Of the 15 men named there, only George Roe appears to have travelled more than 100 miles in the course of his career. However, of

contractors whose previous base is specifically mentioned in contracts or company minutes, most did make a substantial leap. (Table 1) This discrepancy may perhaps be because it was indeed an unusual circumstance and therefore considered to be noteworthy.

Further evidence to support this view may perhaps be found from the location of newspapers that canal companies selected in which to advertise for contractors. (Table 2)

The choice of relatively distant York by the Birmingham in 1768 may be explained by the fact that there were several substantial land drainage works in progress in the East Riding at the time, from which the company may have hoped to attract interest. The wider range used by the Rochdale in 1794 may reflect that their parliamentary bill had been rejected in 1792 and again in 1793 and therefore there were already several other canals in progress locally when their turn came to employ contractors. The experience of the Worcester & Birmingham mirrors this - in 1792 they advertised in two newspapers, in 1793 in seven. Otherwise proprietors seem to have expected that a sufficient pool of willing tenderers existed within their area. That is not to say that people came from farther afield, and that word of mouth may have played some part. Much of the early work on the Southampton & Salisbury was done by Thomas Jinkins, fresh from the Leominster Canal, but there was a request from John Nock, another contractor on the Leominster, asking for payment for putting in a tender.⁷

Canal construction

Surprisingly for something so fundamental, there appears to be no single definition of 'contract' in English law, but the gist of those most commonly used is that it is an agreement between parties that is enforceable at law. In most contracts for canal construction during the period 1760-1820, contractors agreed to undertake specific types of work in return for payment by the client. How far the parties honoured these agreements is one of the issues that will be examined here.

Canal construction involved a number of distinct aspects — excavation and puddling, the building of locks, bridges and aqueducts, tunnelling, and carpentry in lock gates and bridge and tunnel centres. For much of the canal era, contractors offered to

Contractor	Date	From	To
James Hogg	1770	Warwickshire	Leeds & Liverpool
John Tickle	1770	Stone	Leeds & Liverpool
George Leather	1770	Sankey	Leeds & Liverpool
John Lewis	1794	Welshpool	Lancaster
Paul Vickers	1794	Thorne	Lancaster
William Montague	1794	Wokingham	Gloucester & Berkeley
George Mills	1795	Hamstead	Gloucester & Berkeley
Daniel Lowry	1795	Ash, Hampshire	Lancaster
Thomas Jinkins	1795	Leominster	Southampton & Salisbury
William Macdonald	1796	Matlock	Brecon & Abergavenny
John Hughes	1803	Walton-le-Dale	Ellesmere
four partnerships	1807	Preston, Manchester, Shrewsbury, London	Glasgow, Paisley & Ardrossan

Table 1

undertake one trade only, and companies organised their works accordingly. Indeed, such importance was attached to some of these trades, particularly carpentry, that companies frequently created their own teams to undertake these by direct labour. Within a month of gaining their Act in 1766, the Staffordshire & Worcestershire Canal had entered into five contracts for cutting, and a month later they employed a salaried bricklayer and gave orders for a start to be made on a lock. In March 1767 they advertised for a jobbing smith and another bricklayer and appointed Thomas Dadford senior, 'a Carpenter and Joiner to serve us in the way of the said trades in prosecuting and carrying on this navigation for the space of five years if the said Navigation shall not be sooner completed at a salary of £70 pr annum payable

monthly ... The said Thomas Dadford to provide the persons necessary to work under his direction but to have no profit whatsoever from them.'⁸ His importance to the company can be gauged by his salary, which lay between those of the Clerk and Under-clerk of the Works.

It was still the practice in 1783, when Josiah Clowes, who had worked on the Trent & Mersey and Chester Canals, was appointed Surveyor, Engineer and Head Carpenter of the Thames & Severn Canal.⁹ Effectively the Resident Engineer under Robert Whitworth, his contract of employment specifically mentioned that he was to supervise the carpentry and masonry. When Clowes' five-year term ended, William Large, a millwright who had had day-to-day supervision of the carpentry during

Canal	Date	Newspaper
Birmingham	1768	Gloucester, York, Manchester
Carlisle	1819	Carlisle, Liverpool, Glasgow, Edinburgh, Lancaster, Bristol, Stamford, Leeds
Coventry	1786	Birmingham, Coventry, Oxford
Cromford	1789	Nottingham, Derby, Leicester, Coventry, Birmingham, Oxford, London
Neath	1792	Gloucester, Birmingham, Bristol
Worcester & Birmingham	1792	Birmingham, Worcester
Worcester & Birmingham	1793	Birmingham, Worcester, Oxford, Gloucester, Hereford, Manchester, London
Ellesmere	1794	Chester, Shrewsbury
Montgomeryshire	1794	Shrewsbury, Birmingham, Chester
Rochdale	1794	Manchester, Liverpool, Leeds, Chester, Derby
Southampton & Salisbury	1795	Salisbury, Hampshire, Bristol

Table 2

construction, was appointed Carpenter and Superintendent of the Canal Works. Conversely, when John Rennie took over as Engineer of the Chelmer & Blackwater Navigation in 1793 and recommended that the locks and public bridges be made of brick instead of timber as hitherto, John Horner of Claydon, bricklayer was employed by the company on a weekly salary.¹⁰

Cutting the canal seems to have been done almost entirely by contract. In a few cases a company took over from a defaulting contractor, and in 1769 the Birmingham Canal employed its own men to cut through the land of an influential owner.¹¹ Experience was not absolutely necessary; in the same year the Oxford Canal gave preference to Mr John Watts for cutting in Lord Craven's estate at Coombe near Coventry; Watts seems to have been Lord Craven's agent.¹² An unusual contract was that in 1786 for

completion of the Oxford Canal from Banbury to Oxford, with Samuel Simcock, Samuel Weston, John Churchill, Henry Tawney, Stephen Townesend and James Lord.¹³ Simcock and Weston had experience as engineers and contractors; the others appear to be local landowners who financed what was for the time a large contract, with a company that had previously lacked the cash to progress any further. As late as 1821 the proprietor of an estate on the line of the Edinburgh & Glasgow Union Canal was accorded the same privilege.¹⁴ Further down the social scale were Mordecai Brooks, an innkeeper of Devizes, who worked for the Kennet & Avon Canal in 1795,¹⁵ and two shopkeepers, Thomas Parry of Llangattock and Thomas Powell of Abergavenny who contracted with the Brecknock & Abergavenny Canal in 1796/97.¹⁶

But these were exceptions. For the early canals there were three obvious sources of experience – landscape gardening, turnpike road construction and land drainage. Capability Brown had been in independent practice since 1751, eight years before

the Act for the Duke of Bridgewater's Canal. Giving evidence in an arbitration much later, William Dickson recalled that he had been brought up a gardener and setter out of land or pleasure grounds before going on to become a long-time agent of John Pinkerton.¹⁷ John Beswick is noted in October 1765 in the estate accounts at Enville Hall near Stourbridge, whose



A lake at Enville Hall, Staffordshire, where John Beswick had earthmoving contracts in 1765/66

owner the Earl of Warrington and Stamford was also a shareholder in the Staffordshire & Worcestershire Canal. When the canal at the start of construction wanted some wheelbarrows as templates for those it intended to supply to its contractors, it obtained them from Enville, and Beswick was one of the first contractors to be appointed to the canal. Even in 1801, by which time there were plenty of experienced contractors, James Kerr was awarded a contract by the Southampton & Salisbury Canal on the strength of a testimonial from his work removing land at Avington, a stately home in the Itchen valley.¹⁸

One of the most prolific families of contractors was the Pinkertons. They seem to have originated in Lincolnshire or the East Riding of Yorkshire. The first of the family to be noticed was James senior, who was described variously as a yeoman or gardener in the late 1760s when he won contracts with John Dyson senior for the Adlingfleet drainage near the mouth of the River Trent, the Driffild Navigation in the East Riding and the Laneham drainage in

Nottinghamshire. With his brother John senior, James worked through to 1780 on a number of other large drainage schemes as well as cutting the Selby Canal and the Erewash Canal. The Engineer for several of his contracts was William Jessop, later the leading canal engineer of the mania years, and Jessop was sufficiently impressed by Pinkerton to join him in commercial enterprises and stand surety for some of his canal contracts. John senior is first noticed on his own on the Broadwaters extension of the Birmingham Canal in 1783 and amongst other significant contracts, was responsible for the whole of the Basingstoke Canal in 1788-94. His nephews, George, Francis, James junior and Robert followed in his footsteps, with varying success. George was the son of James senior and had been apprenticed to William Jessop; his father paid a £100 premium for this and also, George was careful to mention, provided him with a horse. That the younger members of the family were at least as skilled as some of the supervisory staff for whom they worked would cause problems, as will be seen when John Pinkerton's career is discussed in more detail below.

John Beswick is the earliest contractor whose career can be traced in some detail from remaining canal company records. (Table 3) He appears several

foremen most employed on difficult matters, and Bill o Toms and Busick Jack seem also to have been confidential workmen in their respective departments.¹⁹ It is clear from the canal accounts though that Beswick was a contractor for some of his work, employing navvies and being paid by the quantity of soil excavated; at other times, presumably in difficult ground or awkward excavations, he and his men were paid by the day.²⁰ In 1766 he held two contracts, in Staffordshire and Carmarthenshire, which implies that by then he had trusted agents who could be relied on to run a contract in his absence. By 1768 his abilities were sufficiently well regarded for him to be proposed by Sir Richard Whitworth as a suitable person to make the survey of a possible canal from the River Dee at Chester to the River Severn at Atcham.²¹ By 1770 he was the Birmingham Canal's preferred contractor for excavation.

Another early contractor whose career can be traced was James Houghton. In 1800 he claimed to have had 40 years' experience,²² though possibly starting as a navvy as the first mention of him in the records is as a 'master cutter' on the Stroudwater Canal in 1776. In 1785 he was an agent for John Pinkerton on the section of the Coventry Canal that was built by the Trent & Mersey, and the following year on the Birmingham Canal. In 1789 he swapped sides, when the Shropshire Canal employed him 'as an additional Superintendent of the Works and Workmen for three months and that his wages be a guinea and a half a week certain and an additional sum per week in case his abilities and attention to the employ aforesaid shall appear to the said Committee to deserve it.'²³ By February 1793 he had returned to contracting, with a small job at the north end of Kings Norton Tunnel on the Worcester & Birmingham,²⁴ and in July that year he, his son also called James, and Thomas Ford obtained the first of two contracts under which they would complete the whole of the excavation of the Shrewsbury Canal.²⁵ While engaged there they also won contracts on the Ellesmere Canal and the Somersetshire Coal Canal. James junior appears to have been in charge on the Ellesmere, as on 10 August 1795 'It appearing to this Committee that James Houghton junior who has been employed by Messrs Houghton & Ford the contractors for executing a part of the Llanymynech and the Chirk and Hordley lines of the canal has in various instances behaved very improperly in the exercise of the powers of the said Act, It is ordered that the said Messrs Houghton & Ford be required to discharge him from their employment conformably

1759	Duke of Bridgewater's
1763	Calder & Hebble
1766	Kymer's
1766	Staffordshire & Worcestershire
1769	BCN
1771	BCN
1775	Dudley
1776	Stroudwater
1777	Stourbridge
1780	Dudley
1784	Thames & Severn, tender
(George Beswick)	
178x	Trent & Mersey (Coventry)
1786	BCN
1792	Dudley
179x	BCN
1795	Kennet & Avon

Table 3

times in James Brindley's notebooks as 'Busick', which gives a clue as to how his surname might have been pronounced. Samuel Smiles, in his *Lives of the Engineers*, states that 'Black David was one of the



The Ellesmere Canal at Rednal, a length of canal cut by James Houghton

to the promise made by them to the Committee when they contracted to execute the works they are now employed in and that no more money be paid them on account till they shall have discharged the said James Houghton junior from their employ.²⁶ The precise offence is not specified, but it may well have been that Houghton trespassed on lands outside the permitted line of the canal. (George Pinkerton's contract with the Ipswich & Stowmarket Navigation was cancelled in 1790 when he started work before the company had obtained possession of the land)²⁷ In 1796 Houghton returned to supervision when the Warwick & Birmingham Canal dismissed their Engineer, William Felkin, and appointed him instead. In 1804 James Houghton of Wellow, Somerset contracted for parts of the Kennet & Avon Canal, but this was probably James junior, who was also a contractor on the Bridgwater & Taunton Canal in 1824 and the Grand Western Canal in 1831.

Another canal contractor of ability was William Mitton, who gave evidence in Parliament during the progress of the Rochdale Canal bill. His first job had been the construction of the turnpike road over Blackstone Edge between Halifax and Rochdale, a work of some difficulty because of the peaty nature of the ground.²⁸ He then worked on several canals including the Thames & Severn in 1786, before returning home, from where he was able to contract with the Leeds & Liverpool in 1790 and the Rochdale in 1796.

Quite early in the canal age there appeared a second generation of contractors, men who had been employed by the first generation and then struck out on their own. One of the foremen who collected money for John Beswick from the Staffordshire & Worcestershire Canal in 1766 was John Clegg. Then on 14 June 1768, now resident in Falkirk, he was awarded the first contract for cutting on the Forth & Clyde Canal.²⁹ For some reason, presumably the responsibility of the company, he was unable to start immediately and the

company employed him to assist the Resident Engineer in surveying and levelling. Other contractors from the Staffordshire & Worcestershire who continued elsewhere were Ralph Shepperd, who later worked in the Thames & Severn Canal³⁰ and the Salisbury & Southampton Canal³¹ and James Hogg, who ran a contract on the Coventry Canal in parallel.³² Shepperd's foreman on the Staffordshire & Worcestershire, Jonathan Gee, has been mentioned above. He also worked as a subcontractor; when he tendered for work on the Neath Canal, he was described as 'a person employed by Mr Dadford',³³ presumably on the Glamorganshire Canal, where Dadford was working at the time.

Canal companies could, as noted above, seek contractors by advertising in newspapers. They could also do so more directly, as the Stroudwater Canal did in 1776 when they sent their Engineer, Edmund Lingard to Warwick and Leicestershire looking for (stone) cutters.³⁴ They also seem to have approached the other companies that were active, as they employed John Pashley to do carpenter's work, recommended by the Ripon committee and 'Joseph' (actually James) Bough for masonry, recommended by Birmingham committee. The latter agreed to bring four or six hands with him. James Bough will reappear in connection with the Pinkertons, when he was remembered on the Stroudwater by James Houghton as being good at his business but much given to drinking.

Canal masonry, including brickwork, was something of a speciality and a few contractors made careers from it. John Nock was employed by the Birmingham Canal in 1770,³⁵ and Samuel Nock in 1771.³⁶ John Nock was a contractor for locks on the Dudley Canal in 1777³⁷ and locks and bridges on the Stourbridge Canal the following year.³⁸ He returned to the Dudley in 1786, when he was also employed by the Thames & Severn.³⁹ His son, John junior was ultimately unsuccessful, though the substantial aqueduct he built for the Leominster Canal over the River Rea has survived two centuries of almost total neglect. He failed on the Montgomeryshire Canal, when the moneys due to him on several occasions were paid in front of his creditors, who duly relieved him of what they were owed. In August 1795 he was obliged to appoint Thomas Dadford his agent for completing the works; presumably this was Thomas junior, who was assisting his brother John as Engineer to the canal at that stage.⁴⁰

Some were content to work as subcontractors. Benjamin Simcox was a bricklayer for upwards of thirty years, on the Chesterfield Canal for seven years, then as an employee of the Trent & Mersey and Stourbridge Canals, and then for John Pinkerton on the Coventry and Birmingham & Fazeley Canals.⁴¹ But the employment of nationally eminent contractors such as John Simpson and William Hazledine, the builders of Pontcysyllte, was no guarantee of success. Their Vyrnwy Aqueduct on the Montgomeryshire Canal was built to an incorrect width, and quite early in its life it required extensive repairs.⁴²

Commercial risks

The financial hazards to which a contractor might be exposed can be seen in the career of John Pinkerton. In 1785 he contracted to build a tunnel under Dudley Hill for the Dudley Canal, giving with William Jessop a bond for £4000 as surety for satisfactory completion of the works. In preparing his tender, as there was no ground investigation, he had consulted some local miners about the ground to be expected but their knowledge was faulty and after two years less than half of the length had been done. As a result he gave up the contract, paying £2000 to the company to be allowed to do so. One of the directors who had been most critical then took over, and spent 1½ years making even less progress. The tunnel was then completed in a further three years by the experienced and competent Josiah Clowes,

using direct labour. Pinkerton received £16,015 for his work; the director spent £8239 and Clowes £18,498,⁴³ and it is hard to escape the belief that the company might have done better to have persevered with Pinkerton.

While the tunnel contract was grinding to a halt, Pinkerton was contracting with the Birmingham & Fazeley Canal for the eastern half of their line. Here the Resident Engineer was James Bough, who had been a fellow contractor on the Birmingham Canal in 1783. At the tender stage George Pinkerton had checked Bough's levels and found them wrong; John Pinkerton tendered on the correct quantities and won the contract as a result. For various reasons the contract was delayed, and Thomas Sheasby, the contractor for the other half of the line, employed most of the available labour. Pinkerton also complained of interference by Bough, who probably felt sore about his mistake, and the company alleged bad workmanship by the contractor. When Pinkerton declined to accept an ultimatum to rebuild some of his work, he was dismissed and the canal was finished by the company. They then claimed £4800 from Pinkerton for the costs of completion and repairs; he counterclaimed for £550 that he said was due to him under the contract. The company's solicitor admitted that a claim for extras had been 'overlooked'. Eleven years later the argument went to arbitration, and a further year later Pinkerton was awarded £436, a statement in principle at least that Pinkerton had most of the right on his side. He rather spoilt the effect by publishing his account of the arbitration, including an attack on the honesty of the company's Clerk; he was prosecuted for libel and spent three months in prison.

At that time he was also in a drawn-out dispute about the work he had done for the Barnsley Canal, where his old colleague William Jessop was Engineer. In accepting the contract, Pinkerton agreed 'to abide by the estimate of the said Mr Jessop', which only became available eight months later when some of the work had been done. But this was a time of inflation caused by the canal mania and the Napoleonic wars, and the rates were insufficient for the later work. When Jessop was asked in 1796 to adjudge on Pinkerton's claims for extra money, he examined Pinkerton's books and reported that they were kept methodically, and awarded extras for unforeseen ground conditions. But the company insisted that Pinkerton abide by the rates fixed earlier by Jessop and had to advance £2000 to him to enable him to continue. Pinkerton continued to work for

them for another three years, but eventually they claimed, as the Birmingham & Fazeley had done, for moneys overpaid and the cost of repairs they said had been necessary. Although Pinkerton won the preliminary rounds of the litigation, when the matter eventually reached the Court of Chancery the Master of the Rolls was critical of Jessop who, he said, had misunderstood his position. He had been wrong to fix the rates as he had done, and should have acted as an arbitrator rather than the employee of the company. But the contract was clear and, 16 years after the dispute arose, Pinkerton was obliged to repay the £2000 with interest, £3136 in all.⁴⁴

Tunnelling was, as Pinkerton had found out the hard way at Dudley, commercially as well as physically a hazardous job for a contractor. Although ground boring to significant depth was used when prospecting for coal, it seems that few canals tried to determine the nature of the ground through which their tunnels would pass, preferring to place the risk of unforeseen problems onto the contractor.

The authorised lines of both the Blisworth Tunnel on the Grand Junction Canal and the Crick Tunnel on the Grand Union had to be abandoned and new alignments sought after construction had started. The Leeds & Liverpool Canal contracted in March 1791 with John Parkin and Thomas Leybourn for part of Foulridge Tunnel. By July Leybourn had already given up and Parkin, overpaid by the company and in debt to his workmen, was obliged to sell his tools in order to pay the latter.⁴⁵ On the Leicestershire & Northamptonshire Union Canal, one of the contractors for Saddington Tunnel, Thomas Hill, owed the company £86 in 1795 and could not proceed without more money. The company decided to dismiss him and prosecute him for debt. Not surprisingly, it was reported at the next meeting that he had absconded.⁴⁶ Three of the other

contractors for the tunnel were also in debt to the company. One of them was Henry Ludlam, who had made the Old Park and Snarestone Tunnels on the Ashby de la Zouch Canal. With his brothers Joseph and Benjamin, he was at work on the Blisworth Tunnel in the late 1790s when the company decided instead to abandon the line and provide a railway over the hill instead. More serious were the problems faced by the two pairs of brothers, John and Jonathan Woodhouse and George and Anthony Tissington when work resumed on the revised line in 1802. Experienced tunnellers and miners, they lost £13,000 over two years and had to give up the contract. The first contractor to complete a number of tunnels



Hincaster Tunnel, one of those built by Daniel Pritchard

successfully was Daniel Pritchard. He built the Bosworth and (re-aligned) Crick Tunnels of the Grand Union, Islington and Maida Hill on the Regent's, Hincaster on the Lancaster, Strood on the Thames & Medway and lastly the second Harecastle Tunnel on the Trent & Mersey, described by its Engineer, Thomas Telford as 'more perfect than any other that was hitherto constructed'. Presumably Pritchard was more contractually aware.

Relationships on site

In a relatively small world, on projects where more often than not several contractors were employed at the same time, it was likely that contractors would become acquainted with each other. This sometimes led to partnerships, usually on a one-off basis. Thomas Green tendered unsuccessfully with Edward Edge for tunnel work on the Thames & Severn Canal in 1783⁴⁷, but was in partnership with John Nock and John Brawn on the Dudley Canal in 1786.⁴⁸ In 1792 Brawn contracted by himself to build the Wyrley & Essington Canal⁴⁹ but in 1796 he was with Samuel Brawn and his old partner Thomas Green on the Southampton & Salisbury Canal.⁵⁰ William Mitton contracted with William Corbitt for some cutting on the Thames & Severn Canal in 1785,⁵¹ and with Paul Vickers for work on the Rochdale Canal in 1794,⁵² where he seems to have been the lead partner. At the end of 1790 he took a contract on the Leeds & Liverpool Canal,⁵³ where a couple of months later Paul Vickers 'of Thorne' and John Taylor of Drayton were also partners in a contract.⁵⁴ William Lawson and Murdoch McLean took a contract together there in July 1791 but Vickers and Lawson had come together for a contract on the same canal in November 1791. By 1794 Vickers had been joined by John Lewis of (Welsh)Pool to cut from Standish to Wigan on the southern end of the Lancaster Canal.⁵⁵

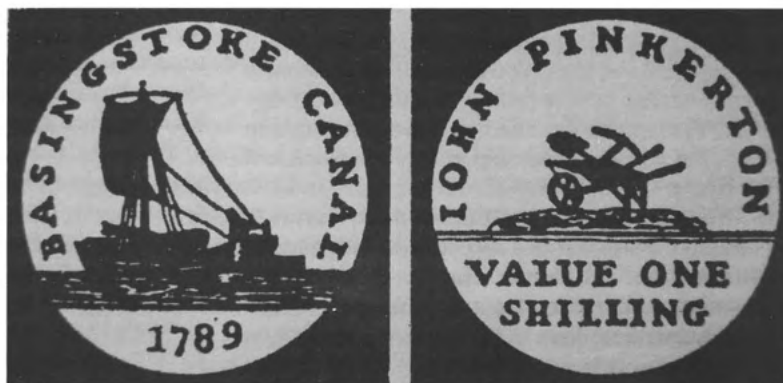
Totally informal, but potentially quite valuable, were the relationships that could be established with the canal company's Engineer. Several of the contractors who obtained work on the Leeds & Liverpool Canal in 1790/91 had come south with Robert Whitworth from the Forth & Clyde Canal. Hugh McIntosh worked as a navvy on both of these before winning a contract on the Lancaster Canal for John Rennie, who later used his influence to have McIntosh appointed to other, larger contracts. (Sir) Edward Banks was also working for Rennie at that time, a connection that would lead to some of the largest contracts in the country.⁵⁶ William Jessop was much less actively engaged in the actual construction of canals, and apart from occasional appearances by the Pinkertons, few contractors won repeat work on his projects. Later, William Seed was a contractor for 20 years on canals where William Crosley junior was Engineer. Both went on to work on railways, Seed on the Grand Junction and Crosley on the London & Birmingham, though they were unusual in making that transition. Someone who was aged

20 at the height of the canal mania in 1793 would have been 60 when work started on the Grand Junction and London & Birmingham Railways.

Most canals were built by companies whose shareholders elected a management committee, who were expected to take a hands-on role in the supervision of construction. On the Staffordshire & Worcestershire Canal, one of the earliest trunk canals, the committee appointed one of their number as Clerk of the Works. He frequently deployed the contractors' workmen to suit the company's concerns; as the contractors were paid by the volume of soil excavated, they were presumably reimbursed for time wasted travelling from one part of the canal to another. It is not clear whether these early canal companies entered into written contracts, but even by the 1790s, when that was becoming common practice, contracts were written on two or three large pages of vellum, which did not allow for much detail in the specification. Not many of these documents survive, so it is not possible to generalise, but it is probable that in some cases contractors were merely required to provide works that were fit for purpose, and left to decide themselves how best to do so. There was often a term in the contract that required the contractor to be responsible for the maintenance of the works for, typically, seven years after completion, to guard against scamping. However, the canal company might have a higher standard in mind than the contractor and use its control over cash flow to put pressure on the contractor. The consequences of such disagreements could be severe. When a breach occurred in the banks of the Glamorganshire Canal, an explicitly design-and-build contract, and Thomas Sheasby senior and Thomas Dadford senior refused to repair it without a cash advance, the company had them imprisoned. Robert Whitworth subsequently awarded them all but £1000 of the monies that they claimed were due to them.

John Pinkerton in accusing the Birmingham & Fazeley Canal of 'taking the direction of the buildings upon themselves, has to observe that after the foundations were set out by the Company's Agents, they had, properly speaking, done with him, and ought not to have further interfered with him or his men. He was bound by his contract to execute the works properly, and if he failed in so doing he was liable to the consequences, but certainly if he was to be considered as liable, he ought to have had the entire management and direction of the work he was to be so answerable for; instead of which ... the Company's Agents interfered in the direction of the buildings,

and mixing of the mortar from the first, which they had no right to do ... and the Company seemed to countenance them in it.⁵⁷ Pinkerton used proportions in his mix of mortar that were specified by William Jessop, then coming into his own as the leading canal engineer, but which may well have been inadequate — John Rennie later, in a discussion about harbour works, was strongly critical of them. As the canal age progressed and experience grew, engineers like Rennie provided more detailed specifications that produced better quality but transferred some of the technical risk to the client.



Small or large?

Contractors on the early canals do not seem to have been men of capital. Most canal companies provided all of the tools and wheelbarrows required, and paid the contractors weekly. Although it seems to have been the practice from the start to pay for the quantity of material excavated, with different rates for different types of soil and depths of cutting, and for wheeling it along the canal rather than banking it immediately to one side, the companies usually employed too few experienced staff to measure up the works frequently. Instead, contractors were paid a daily rate for each of their employees, 'counters' being employed by the canals to take daily tallies of the number of men on the works. When measurement did take place, contractors might find that their men had not matched the productivity on which they had tendered and that they were in debt to the company. Since they usually did not have the resources to repay the difference, the usual response was to abscond quickly, before the company could have them arrested for debt. Companies had long memories — Thomas Thatcher had left the Kennet & Avon Canal owing £720 five years previously when the company learned that he had obtained contracts at Bristol Docks and was presumably worth suing.⁵⁸

On the other side, a problem for contractors could be the inability of the company to pay them in ready money. No regal copper coinage was minted between 1775 and 1797, a period that included the height of the canal mania. The Rochdale Canal's bankers in 1796 required an additional 2s.6d per cent

commission 'on account of having to provide cash at a considerable expense and to advance it frequently'.⁵⁹ At least they were willing to do so. In 1789 John Pinkerton solved the problem on the

Basingstoke Canal by issuing tokens with a face value of one shilling, a little less than a day's wages for his workmen. It seems likely that the local shopkeepers received enough of them to be able to redeem them for banknotes. In 1791 the contractors on the Leeds & Liverpool were being paid in bills, which they had to discount in order to obtain the cash they needed to pay their workmen.⁶⁰ In 1793, the Monmouthshire Canal Treasurers were only able to pay two-thirds in cash, with one-third in their notes.⁶¹ Even when minting resumed there could be problems. In 1811 the *Taunton Courier* reported 'On the Saturday evening a number of the workmen, employed in excavating the bed of the Grand Western Canal, assembled at Wellington for the purpose of obtaining change for the payment of their wages, which there has been lately considerable difficulty in procuring.'⁶² As a result of their treatment then, 300 men rioted at Sampford Peverell on the Monday, and one man was shot.

Occasionally a canal company was unable to make any payment at all. In August 1798 the Southampton & Salisbury Canal was a month in arrears to its contractors.⁶³ As well as the chronic problem of unrealistically low estimates of the capital required, most canal companies were required by their Act to pay interest on the capital advanced by their shareholders. If a company was also restricted in the rate at which it could call on shareholders, sometimes to only 20% in one year, 10% of the capital could be eaten up in these payments. And particularly for the canal mania schemes, companies could spend a lot of unsuccessful effort in trying to make shareholders

who had subscribed in the hope of 'staggering' the issue. A contractor without the capital to tide over the problem would dismiss his workmen, but they might well have moved on by the time that the company could meet its obligations and work resumed.

Companies could also be very reluctant to recognise that contractors had legitimate claims to extra payment. The cases of the Glamorganshire and the Birmingham & Fazeley Canals have been noted above. Canal contractors did however enjoy one benefit that their railway successors arguably did not. Arbitration was usually provided by two engineers, one chosen by each side, with the two arbitrators nominating a third and final umpire if they were unable to agree. An exception was John Rennie, who insisted on being the sole arbitrator for works where he was the Engineer, though he was clear that clients should make proper payment if they expected to get good workmanship from their contractors.

Companies varied in their attitude to the type of contractor they wished to employ. The Forth & Clyde Canal decided in 1787 to advertise for contractors for digging, ordering that 'the Chief Engineer do make three divisions of the same ... for the purpose of admitting three sets of contractors in order to create emulation and give facility in the execution.' Whether the company appreciated the problems of coordination that would thereby devolve on themselves is not clear.⁶⁴ The Rochdale Canal sought 'labourers' to undertake small lots on their summit level in 1794,⁶⁵ and also declined a proposal to undertake the whole length from Rochdale to Manchester. The Southampton & Salisbury, still struggling on in 1801, re-advertised their work in smaller lots but expected to find contractors who would execute £500-worth of work before receiving any payment.⁶⁶ On a larger scale, the Gloucester & Berkeley contracted with Thomas and Benjamin Baylis in 1817 for £20,000 and the following year for a further £65,000; the brothers were sufficiently well financed to agree to spend £8000 before invoicing the company.⁶⁷ When they resigned their contract because of a disagreement about the type of stone to be used, the work was completed by Hugh McIntosh, who had been recommended by Rennie to another employer as 'one of the fittest persons I know for the execution of your works ... He is besides a man of considerable property ...'⁶⁸ It is difficult to imagine McIntosh even considering tendering for work on the Lancaster Canal in 1813, whose printed specification stated 'The contractor will not be

permitted to re-let the building or setting of any part of the masonry but must personally attend to the execution thereof.'⁶⁹ More realistic was the Carlisle Canal in 1820, who 'ordered that Messrs Millington & Bainbridge have liberty to sublet their masonry to Mr Knowles, they being still responsible for the due performance of the contract.'⁷⁰

In the absence of any records of the contractors, it is difficult to know how many navvies the contractors employed, though estimates can be made from what financial information remains. The total numbers were often restricted by the rate at which the canal company was permitted by its Act to call on its shareholders for cash. In the early days of the Staffordshire & Worcestershire Canal perhaps 400 men were employed, with John Beswick the largest contractor having 80-100. The Trent & Mersey in 1767 was said to have about 600, but that may have included all the trades.⁷¹ When they contracted with the Oxford Canal on 2 January 1770, Thomas Jackson and John Robinson agreed to spend at least £200 per week, which implies a workforce of more than 400 men. There were already 700 at work, and Robinson contracted by himself for another length of the canal at the same time.⁷² Against that, John Brawn, the sole contractor for the Wyrley & Essington Canal, reported in 1792 that he could complete an embankment in the time allotted without increasing his workforce from the existing 30; the company thought that he would need 100 overall to meet his other commitments.⁷³ From the mid-1790s the Leeds & Liverpool Canal did record the numbers on each section, though without attributing them directly to the contractors. Numbers varied significantly from season to season and year to year — 577 in November 1798 and 277 a year later.⁷⁴ The Crinan Canal was limited by its remoteness from centres of population and the difficulties of feeding large numbers in a sparse area; in June 1800 the number employed rose to 507, but the Resident Engineer did not expect to achieve that again.⁷⁵

One worry for a contractor was competition for his labour force from other sources, whether another contractor or local farmers at harvest time. The Herefordshire & Gloucestershire Canal minuted on 20 November 1793 'Ordered that if any Contractor shall inveigle a workman from another contractor, that the first Contractor shall never be suffer'd to take any future contract, and moreover, that if any workman shall leave a Master with whom he is engaged during the performance of any contract, and hire himself with another, that such workman shall

be immediately discharged from the employment of the Company, and that hand bills to this effect be published thro' the Works.'⁷⁶

Because canal proprietors were often local landowners, they could sometimes exert influence on the companies to allow navvies to leave the works during harvest time. The Peak Forest Canal in 1794 delayed a start at Dukinfield until after the corn harvest had been got in.⁷⁷ The Kennet & Avon instructed its contractors in 1795 not to employ labourers for six weeks during harvest time, if they lived within 20 miles of the canal.⁷⁸ In 1796 the Ashby Canal 'Resolved that Mr Whitworth be directed so to reduce the number of men employed on the works as to be within the compass of the expence of £600 a fortnight for the harvest months in order to let them go off to harvest work for the benefit of the country.'⁷⁹ What, if any, compensation the contractors received for this variation to the terms of their contract is not recorded. Not all canals took the same view. A Birmingham paper printed a letter from the Rector of Sutton Coldfield on 6 February 1798, that last summer's harvest had been injured by lack of men to gather it in. It was alleged that they were digging canals. As many Bills for new canals were then before Parliament, he suggested inserting a clause in them to prevent labourers working on canals from mid-August to mid-September, or later if necessary.⁸⁰ It made no progress as it was pointed out that farmers might resolve the issue themselves by offering competitive wages.

Conclusion

After the passage from the *Lives of the Engineers* quoted above, Samuel Smiles goes on to say that he had been informed that most of the labourers employed were of a superior class. This came from (Sir) Robert Rawlinson, who presumably was speaking of his time as Engineer to the Bridgewater Canal in the 1840s. There is little evidence one way or the other about the earlier contractors, but an indication is given by the receipt books of the Staffordshire & Worcestershire Canal, at the start of the canal era.⁸¹ Anyone receiving money from the company was required to sign for it. Only one of the contractors made his mark; one had clearly taken pains to learn how to write, for his signature is ragged and his name spelt three different ways at different times; the others signed in a clear hand. But the contractors often did not collect their wages in

person, and their foremen or occasionally their wives did so on their behalf and they too signed their names. Only the carters who delivered the materials to the site seem to have been generally illiterate.

Contractors operated within a framework largely created by the management committees of canal companies and their consulting engineers. Comparing 1820 with 1760, it is possible to discern major progress in the organisation of canal construction. There were still companies who operated much as their predecessors had 60 years previously, but those 60 years had brought forward systems and people who would make possible the much larger scale of the last trunk canals and the railways. In that process, the best of the canal contractors played a full part.

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The GWR Comes to London - Why Paddington?

David Hodgkins

The Great Western Railway and Paddington have been closely associated for so long that the terms are almost interchangeable. Why their terminus was built there and not elsewhere is of course briefly explained in MacDermot's *History of the Great Western Railway* and more fully in Michael Tutton's *Paddington Station, 1833-1854*, but even the latter does not do justice to the many interests which led to the choice of Paddington and rests mainly on the records of the GWR itself, though there is much relevant material to be found in other sources, particularly the Parliamentary records, papers of the Turnpike Commissioners of the Metropolis, and the London & Birmingham Railway archives which reveal the difference in views within that company.¹

Initial Uncertainty

The GWR were slow to settle on a London terminus. At the outset in August 1833 the directors decided that the plan and prospectus should show two lines of road from London to Maidenhead and explain that no route had yet been finally adopted.² One line on the plan terminated in the Paddington area; the second crossed the Thames below Kingston and terminated in Lambeth, opposite Westminster. The latter option was soon abandoned. Philip Hardwick³ was asked to confer with the Marquess of Westminster, Lord Holland, and other great landed proprietors who were interested in the proposed line of railway on its approach to London. By October Brunel, in Hardwick's absence, was asked to consult the Marquess's agent about the book of reference as a matter of urgency. Already there had been changes in the approach to London as Charles Saunders, the London Secretary of the GWR, wrote early in October that the design of passing through the playground of the Westminster scholars had been abandoned.⁴ At the end of October the London Committee resolved that the line of railway ought to commence at the London end on the west side of the Vauxhall Bridge Road, contiguous to the River Thames and the works of the Equitable Gas Company. This proposal was incorporated in the

parliamentary plans deposited in November 1833 for railways from London to Reading and from Bath to Bristol. Thus from South Acton only one route was shown through Hammersmith, Brompton and Pimlico to Vauxhall Bridge Road (Figure 1).⁵

Opposition from Earl Cadogan

The kind of works that were involved in the approach to the London terminus can be seen from another letter from Saunders to Hardwick. The railway would be 25 feet above the Fulham Road and at that point carried for a considerable distance on either side on a viaduct composed of a succession of arches. The width of the base of the structure would be about 36 feet.⁶ This plan however encountered strenuous opposition from the landowners in Chelsea and Pimlico, particularly Earl Cadogan and the Marquess of Westminster. Cadogan's surveyor asked Hardwick for information on the ornamental parts of the railway, the description of arches etc across his lordship's property which the model did not sufficiently illustrate.⁷ He warned that Cadogan's support would depend to a great measure on the answer he received. The board agreed to meet Cadogan's wishes regarding the passage of the railway through the valuable part of his property in Chelsea, provided that he gave his support and that the success of the application to Parliament was not endangered.⁸ Following the successful second reading of the Bill in the Commons by a 'triumphant majority' (182 to 92) on 10 March, Hardwick was sent to Paris to see him.⁹ Cadogan however was adamant despite a number of concessions.

Brompton and the Turnpike Commissioners

The result was that following discussions in the early stages of the lengthy Commons Committee, the board decided on Brompton as a terminus, noting that the concession had already been made to Cadogan, though they then seemed unwilling to abandon extension through Chelsea and Pimlico at

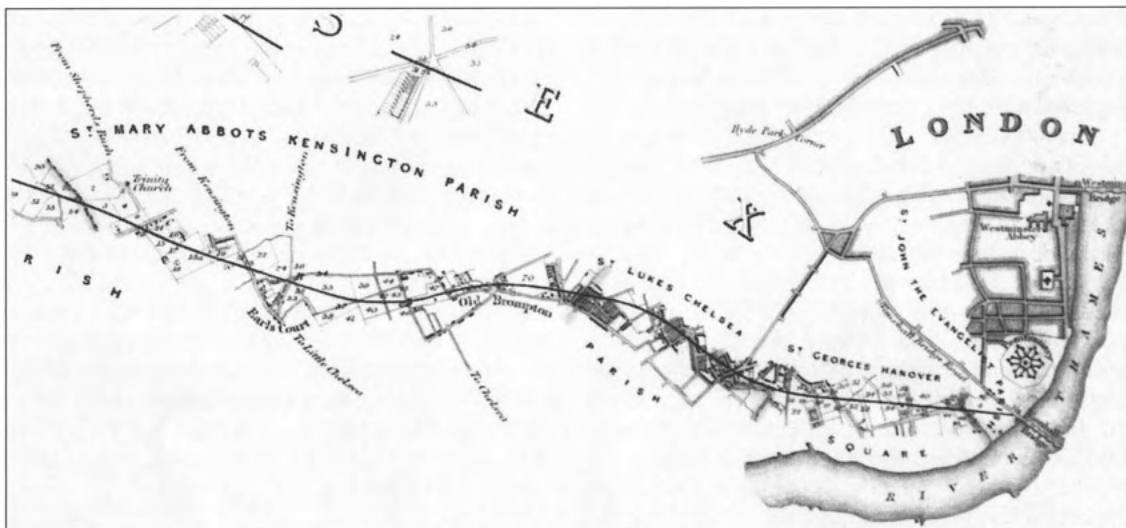


Figure 1.

some future date.¹⁰ Although the Brompton terminus was included in the amended version of the bill which went to the Lords, by then the GWR had run into serious difficulties over this proposal. The main objection came from the Turnpike Commissioners of the Metropolis¹¹ who when informed of the proposal reacted sharply. The plan was to terminate the railway at the Hoop and Toy public house at the western end of Thurloe Place. The inn was first licensed in 1760 and still flourishes today, though the brick and timber building of the latter part of the late fifteenth or early sixteenth century was replaced in 1844 and reconstructed in 1927.¹² The actual site proposed for the station was to the rear of the inn close to the site of the future South Kensington station. However 'as it appeared to the commissioners that the adoption of such a measure might be detrimental to the interests of the public', they appointed a sub-committee which included Lord Grosvenor, the Marquess of Westminster's son.¹³ They first asked for plans, but considered that these did not satisfactorily explain the mode of crossing the roads, so they decided to summon Brunel, Ward, the GWR's solicitor, and Saunders. The GWR officials attended on 22 April, but failed to convince the commissioners. The main difficulty was that the railway would cross the Old Brompton Road by a bridge of 11 arches, 21 feet in width which was less than the width of the road. There was also a problem

that part of the road leading to the terminus was too narrow for the likely increase in road traffic arising from the station. The commissioners were ready to consider any suggestions the GWR might have for overcoming the problem of the narrowness of the road, for providing sufficient ground for the standing of the various vehicles necessary to take away the railway's passengers and loads, and for widening the road from the Hoop and Toy to the Fulham Road. The GWR quickly replied that they did not have, nor could they obtain, power to widen the road.¹⁴

George Carr Glyn and a Joint Terminus

The initiative for a joint GWR-LBR line was taken by the Metropolitan Turnpike Commissioners doubtless in order to reduce the impact of the new railways on their roads. They petitioned Parliament not to allow the GWR to cross the roads under their jurisdiction conceiving that one railway on that line (i.e. of entry to London from the Acton area) was as much as was necessary and ought to be permitted. Their solicitor asked the LBR if the GWR could enter London by the LBR route and if so where they could join it. He specifically asked for Robert Stephenson's opinion on the matter and whether four lines would be necessary, and whether the two lines in Primrose Hill Tunnel would suffice.¹⁵ George Carr Glyn, a

director of the London & Birmingham Railway, when telling James Cropper, a fellow director in Liverpool, about this idea, added that he had 'urged this suggestion on the Great Western six months back' (i.e. in November 1833 or thereabouts) 'and its adoption would have saved that body much opposition and expense, but the Bristolians did not like it.'¹⁶ Glyn was not yet chairman of the LBR, but he was an influential director, and was on the Finance Committee. He also had close links with the GWR. He was a partner in Glyn, Hallifax & Mills, the LBR's London bankers, and Edward Wheeler Mills, the brother of one of Glyn's partners in the bank and himself a partner from 1835, had taken the chair at the first joint meeting of the GWR's Bristol and London Committees and was a director of the GWR from 1834 until 1863. Glyn, Hallifax & Mills were appointed the GWR's bankers in London. Glyn's brother-in-law, Riversdale William Grenfell was also a director, but Glyn himself never became a member of the GWR board, though he held shares — he was listed as a shareholder at the end of 1835 and was appointed Treasurer in October 1835.¹⁷ Glyn was therefore in strong position to bridge the interests of the LBR and GWR.

Glyn now told Cropper that the idea of the Turnpike Commissioners was of the greatest importance and required serious consideration. It could be a source of much profit if not attended with too much increase of business for the LBR's purpose. He mentioned in confidence

'that the proposition now came with a job, not to the LBR's cost, hanging to it, but it would be entertained or not according to the recommendation of our practical officers and put with a single view to our proprietors. It is the joint offspring, I suspect, of one of our colleagues and the Commissioners.'¹⁸

He added that the (parliamentary) opposition to the Western Railroad continued to be most severe. The Bill was still in Committee and the preamble not proven, but the case for the bill had stood all efforts against it hitherto.¹⁹ Cropper replied that he and Theodore Rathbone, another Liverpool director of the LBR, agreed in thinking it very desirable to encourage the ideas thrown out by the Commissioners. 'It would no doubt be a considerable source of profit to us besides the advantage we derive from making our station the starting point for all roads North and West.'²⁰

Stephenson immediately gave his view that a junction might very conveniently be made 4½ miles

from the depot at Camden Town at the intersection of the road from Harlesden Green to Acton. He did not conceive that four lines from the junction to the depot would be necessary. The difficulties of traffic would be confined to the depot. The whole of the passengers might, he thought, be accommodated but how far it was desirable to bring the whole of the goods to the LBR depot he was scarcely prepared to offer any decided opinion. It must materially depend on the capabilities of the Regent's Canal.²¹ Glyn subsequently commented that Robert Stephenson's report on the communication from the solicitors on the Metropolitan Trust was rather meagre. He also wrote that George Stephenson had said that it would be almost impossible to carry on the traffic of both lines from one station, but added his view was not officially before them.²²

Earl Cadogan and the GWR's defeat in the House of Lords

In July the Metropolitan Commissioners, when they heard that the Western Railway Bill had passed the Commons, decided to oppose it in the Lords since they were opposed to the alternative of Brompton.²³ In the Upper House Cadogan was the main opponent. On second reading he listed several reasons for his opposition including the fact that the GWR had changed their proposed terminus since the Bill was presented to Parliament, and that the Bill was not for a complete railway from Bristol to London, as authority was not sought for a line from Reading to Bath, an objection made strongly by other peers. He was vigorously attacked by the Earl of Wharncliffe, who had introduced the bill for the GWR. Wharncliffe pointed out that the company had altered its proposals because of Cadogan's opposition through whose estates in Chelsea the railway would have passed. 'After preventing it coming to London, the noble Earl ought not to turn round and object to the whole measure'. Cadogan protested that although the railway would materially injure his property, his opposition to the Bill 'arose out of any but public grounds'.²⁴ Though other peers spoke in favour, there were only 30 votes for the bill and 47 against.

The plan for a joint line – 1834

The proposal to make use of the LBR's proposed terminal now came to the fore. Glyn told Rathbone,

that it was very probable that the Committee of the GWR would 'make a proposal to us for a junction of their line with ours about four miles from our station — their object being to get rid of the opposition which defeated their Bill in the present Session. This may be a matter of very great pecuniary advantage to us and I do not think it would be attended with any insufferable inconveniences to our operations.'

He asked Rathbone for any information on the terms and conditions which it was intended the Grand Junction Railroad should use the Liverpool & Manchester Railway. He added that he would be inclined to treat the Western Company in the most liberal way consistent with the LBR's interests and 'to leave them as much unshackled as we can in the use of our line. They would require a portion of our land for a station, which might be leased of us without interfering with any of our arrangements.'²⁵

On 2 September the GWR board agreed to negotiate with the LBR to ascertain and determine whether a junction might be made with their line at or near Harlesden Green.²⁶ The GWR proposed a conference between Stephenson and Brunel to find out whether any and what steps could be taken for a junction of the GWR and Birmingham lines to the mutual advantage of both companies, to which the LBR agreed.²⁷ Stephenson reiterated his view to the LBR's London committee that there was no objection on his part to the GWR joining the line at Lower Place, the point preferred by Brunel.²⁸

GWR and LBR representatives met on 25 September to discuss preliminary points. The GWR proposed that the junction should be at or near Lower Place. The traffic of the Western line was to pass over the Birmingham line to the terminus of that line where a separate depot would be formed for the Western Company. Sufficient space would be sold to the GWR at a fair valuation for their depot and station house at the present or any future terminus. The LBR reserved the right to extend from Camden Town, which line was to be open to both companies' traffic. On any future extension of the line, land was to be procured for a Western depot. A sum was to be agreed as to the annual value of the line to be jointly used based on construction and maintenance costs and also profit to the LBR. This gross sum was to be the basis for valuing any time set out for the exclusive use of the line, the actual sum to depend on usage. Times would be fixed for exclusive use and arrangements made to avoid delay or detention to

either party to give as much as possible free and uninterrupted use of the line during such times. On the basis that the construction cost was £200,000, an 8 per cent return would mean an annual cost of £16,000 and with other costs, such as maintenance at £5,000 a year (£21,000 in total) the rent to the GWR would be £4,200, if their traffic amounted to one fifth of the whole, and £10,500 if their traffic were half the total.²⁹

The idea of the two companies having an exclusive period to operate their trains was soon abandoned.³⁰ The London Committee of the LBR agreed a variation on 29 September as they wanted 10 rather than 8 per cent so that, including maintenance, the total annual rent became £25,000 with £5,000 as the minimum. The GWR was not content with this assessment of the annual value but accepted it as a basis for calculating the sum. In any case the LBR were insisting that a new valuation by Stephenson would be final.³¹

Following this board meeting Glyn, who had been at the meeting on 25 September, was optimistic. Indeed Saunders wrote to Creed the following day recording the agreement of the GWR directors to the principles recorded in the LBR's minute of 1 October, on the understanding that they were to be accorded a perfect equality of right and convenience in every respect for the passage of traffic of both companies and with reciprocal penalties to be enforced, phrases which later in the month Creed said had excited a considerable degree of doubt both in Liverpool and Birmingham as to the views and expectations of the GWR in the proposed detailed arrangements.³² Glyn told Rathbone that after much discussion they had come to an arrangement with the GWR which he thought an equitable one. He had examined the GWR's prospects and thought there was good ground for supposing that 'in passengers it would fully equal our expectation, but in traffic the LBR would probably exceed them.' He hoped that they would come to a determination the following week.³³ There was correspondence during October about the details of the agreement with the GWR pressing for finality as it was imperative to publish notices for the Bill in which it was intended to include a provision for the joint line.³⁴ Creed explained that the LBR directors considered that it was sufficiently understood in the course of the discussions on the general question that 'we were to be your landlords but that you were to have the same advantages and accommodations for your traffic which we were to have for ours' and that the police and regulations for

the general use of the railway were to be with the LBR.³⁵

On 30 October the GWR's London Committee pressed that no delay should take place in securing the formal agreement of the LBR Board as they had assented to the agreement of 1 October and subsequently surveyed the line and notified a general meeting in Bristol of the proposed junction. They also proposed to confer with Brunel as to the course to be pursued in amending the parliamentary notices by the addition of a line to Paddington or elsewhere to be adopted as an alternative in case the agreement made with the LBR London Committee should be overruled by the LBR board.³⁶

On 5 November the London Committee of the LBR, though keeping to their decision of 1 October, said they were not in a position to make a formal agreement with the GWR as the latter could not make one, as it had not yet been incorporated under Act of Parliament, though their respective engineers had agreed it. The GWR accepted this as a mere legal technicality and were prepared to rely on an informal agreement as a basis for their bill.³⁷ Their Bill thus went ahead with the terminus at the point near Lower Place and the alternative of a line to Paddington was not pursued.³⁸

The GWR's supplementary prospectus, issued in November 1834, prepared for the second bill, therefore stated that the line would be 114 miles long from Bristol to the point of junction with the Birmingham line near Wormwood Scrubs. The station in London for passengers was intended to be near the New Road in the parish of St Pancras as the LBR plans for an extension to Euston were now going forward.

Putting flesh on the agreement

The matter was then dormant until after the GWR succeeded in obtaining its Act on 31 August 1835, as the LBR was reluctant to commit itself in advance of the GWR securing its Bill. Indeed in February 1835 the directors decided that an answer of 'Neuter' be given to the application of the GWR in respect of the proposed junction on their line with the LBR at Lower Place.³⁹ The Act of 1835 provided that the LBR would be open to them for use on the same terms as might be charged to other parties whenever it might be convenient to exercise that right, and that all communication between the two railways should be

under the direction and superintendence of the engineers of the LBR. In September the GWR directors resolved that the importance of an early and final arrangement with the LBR Co. required the immediate attention of the London Committee.⁴⁰ Two new cross currents then developed that complicated and eventually were to wreck the proposal to make joint use of Euston. First, before further negotiations with the LBR started Brunel had begun to mount his case for a wider gauge than 4ft-8½in. Second and more fundamental, as will be described, the powerful Liverpool interest in the LBR, made its presence felt, taking the line that a joint station was inimical to the interests of the LBR.

For the first time Brunel was insisting that the broad gauge was vital to his plan for the GWR though according to MacDermot he had paved the way by persuading Lord Shaftesbury, chairman of committees in the House of Lords, that the usual clause defining the gauge be omitted from the GWR bill of 1835.⁴¹ He pointed this out in his report to the directors of 14 September. He also wrote

It is known to some of the Directors that I have always contemplated recommending an increased width between the rails forming each separate railway for the purpose of using broader carriages and larger wheels. ... Should the Directors approve of my recommendation the only impediment would be the refusal of the Birmingham Railway Co. to allow us to lay the additional rail upon that part of their line to be used by us.

He emphasised the need for speed. The arrangements with the LBR must be immediately entered upon in order that should any difficulty appear likely to occur the necessary Parliamentary notices could be given before 1 November for a separate and distinct entrance into London as a mere precautionary measure, otherwise should an advantageous arrangement with the LBR unfortunately be found impracticable the Act for a separate entrance into London could not be obtained until the Session of 1837 and consequently the most profitable parts of the GWR could not be brought into use till the end of 1838 at the very earliest.⁴² His more detailed report of the following day on the gauge issue concluded that the inconvenience of effecting a junction with the LBR was the only real obstacle to his plan as one additional rail to each railway would have to be laid down. He did not foresee any difficulty in doing this but undoubtedly the LBR might object to it and in that case he saw no remedy: the plan would have to be abandoned.⁴³ Nevertheless he himself continued to believe that the

broad gauge did not rule out a joint line. Early in October he wrote 'I suppose that an advantageous arrangement with Birmingham Railway Company will be effected.'⁴⁴

On 1 October Saunders asked the London Committee of the LBR to be kind enough to give their early attention to completing the agreement in the manner contemplated the previous year. Creed was asked to enquire whether the GWR desired the agreement to apply to the new line to Euston Grove. In view of the terms of the agreement of 1834 this hardly seemed to be necessary. Nevertheless matters seemed to be going well.⁴⁵ At a conference between representatives of the two companies London Committees on 19 October an agreement was reached and approved by the Bristol Committee of the GWR the same day.

On 29 October the GWR Board took their decision in favour of the broad gauge. The board emphasised to Robert Bright, the deputy Chairman, and other board members going to meet the LBR at Birmingham on 5 November that if they did not succeed in gaining their object the company would be empowered to take the necessary measures to apply to Parliament that session for another terminus for the GWR. They were influenced by a report from Brunel who had met Robert Stephenson who had left him with the impression that he would advise the L&BR board not to accede to the proposal 'to lay rails of a greater span on that railway', though Stephenson apparently refrained from being quite so clear cut. He told Creed following this meeting that the Primrose Hill and Kensal Green tunnels were sufficiently wide. He was not prepared to deny the practicability of arranging the rails so that carriages of different widths could be admitted to pass along the LBR, 'yet I am confident that great inconvenience would result to both parties from such an arrangement and the expense of keeping the road in order would be augmented, repairs being less efficiently performed than with the present dimensions, in consequence of the blocks being less accessible.' He continued 'one of the chief advantages of a junction would be neutralised because the land necessary for a depot would no longer be rendered mutually useful — the business of the two railways must be conducted as distinct and would require as much land as if the depots were in different parts of London.' He concluded 'I have throughout the various discussions advocated a joint entrance to London, but the adoption of different widths will tend to introduce

so much complexity into all the arrangements as to render questionable in my estimation the propriety of a junction. I cannot refrain from recommending the committee to hesitate before they acceded to the proposition.'⁴⁶

Meanwhile the GWR proprietors were told that the terms of the arrangement contemplated in the Act for making use of a portion of the LBR were under the consideration of the two boards and on a basis of mutual accommodation and advantage.⁴⁷

On 5 and 6 November, the LBR board met twice and there was also a meeting of representatives from the boards of both companies who drew up an agreement which the LBR board accepted on 6 November. They confirmed the resolutions of 1 October 1834 and agreed the following tariffs:

for 1750 passengers or tons of goods or under, £15,000

for 1000 additional passengers or tons of goods at rate of 5^d each

for 1000 additional passengers or tons of goods 4^d each, and all above that number 3^d each

The arrangement would be terminable on two years notice by either party. The board considered that the extent of traffic and the detailed plans of the requisite buildings needed further consideration, but said that on the faith of this agreement the GWR should not give the parliamentary notices for the extension of their line into London.⁴⁸ Although this point was not dealt with in the LBR minutes, the GWR clearly believed that this agreement on 'pecuniary terms' did not affect the allotment of land at Euston and Camden which was recognised and admitted. They were still wanting to acquire the land by purchase, or at least a building lease.

On 11 November the LBR London Committee asked Stephenson, in conjunction with Brunel, for a general outline of the arrangements required for the accommodation of the GWR on the railway and at the depots a Camden Town and Euston so that their traffic would interfere as little as possible with the LBR's. The following week Stephenson attended and assured the Committee that he considered the depot at Euston Grove fully equal to the accommodation of any imaginable traffic and that detailed plans of the required buildings were reserved for future consideration.⁴⁹

The Liverpool Interest

Meanwhile the LBR board was running into internal opposition from its powerful Liverpool shareholders. This may well have been part of a wider move to exercise their muscle as the proportion of the company's shares they held rose. Increasingly LBR shares were held by people who lived in areas not linked to the railway and particularly by those in Liverpool and the northwest. The proportion held by London and Birmingham shareholders declined rapidly. Already in 1833 Liverpool shareholders held more shares than those from Birmingham and London combined. By 1837 70 per cent of LBR shares were held in the northwest with Liverpool predominant.⁵⁰ Glyn's correspondence with Cropper and Rathbone seems to have been initiated with a view to establishing strong and friendly links with the Liverpool interest. Glyn himself had close associations with the Bank of Liverpool. By late 1835 and early 1836 the Liverpool interest was becoming very dissatisfied with their limited voice in the company's affairs. Indeed in February 1836 Laurence Heyworth proposed to the board that there should be six directors from Liverpool elected at the expense of London. The board expressed unqualified surprise as they thought Cropper, Rathbone and Garnett⁵¹ had satisfactorily represented the interests of Liverpool shareholders. In the event the change was more limited. Hardman Earle was elected in place of Copeland, a London director.⁵²

In addition to Glyn's correspondence with Cropper, Garnett wrote to Creed in October 1834 welcoming the fact that the agreement had not been concluded, wanting it to contain a specific limit of five years or better still three, concerned about the loss of short-haul traffic and opining that the compensation contemplated 'by our London friends' was far too low. He did not attach much importance to the GWR taking off the LBR's hands any of the land at the London station because he had no doubt its value would greatly increase very soon after 'our whole line is in operation'. Several proprietors had spoken to him about the issue.⁵³ In November Creed was asked to explain the draft agreement with the GWR fully to J B Boothby, an influential and active Liverpool shareholder, and Garnett. Nevertheless until late October 1835 there was no specific indication of opposition from Liverpool to the agreement with the GWR. Indeed in early October the three non-resident directors each wrote to say that in their opinion it was expedient to admit the

GWR traffic on lower tolls than provided in the Act of Parliament provided the LBR were given complete power over the working of the line, though they added that they preferred an abatement of tolls to the proposed rent.⁵⁴

Then Boothby wrote to Cropper, Rathbone and Garnett setting out four main objections to a connection with the GWR. He concluded that a junction with the GWR was not desirable and was not to be invited by any concession of toll, nor was it desirable to endanger or impede the LBR's independent traffic of £800,000 or £1,000,000 per annum for this paltry consideration of £15, or 20,000, a proposition which he trusted the Board would no longer entertain. It would not bring any traffic in goods or passengers and might take some traffic away especially those for short distances and excursions of pleasure. It would take up room on the station which might be wanted for other companies 'more beneficial to our traffic' such as a line from Cambridge or Portsmouth, or what was still more probable, a connecting line round London for the convenience of forwarding goods from the southern ports, nearly all of which, from Dover to Plymouth, would probably have a railway communication with London in a few years. Since the line to the junction was little more than five miles the tolls would not be adequate to the expense and inconvenience. Extra lines might be needed because on the GWR short distance traffic would predominate, requiring trains every hour or even in the morning and evening every half hour with delay to the LBR trains and risk of accidents. Any reduction in tolls might be regarded as a precedent which could later held against the LBR by other companies, so full tolls should be charged at least for the first year. He did not believe the GWR could get an equally good entrance to London at a cost less than £500,000. Indeed he wanted to let the GWR apply to Parliament and try to obtain another entrance to London and see what it would cost. He argued for toll payments rather than a fixed rent as proposed. He feared that the GWR starting from Euston would, owing to the superior country through which it passed, rob the L&B of two-thirds of its short distance passengers. He would feel it his duty to publish these objections and oppose the proposal if pursued.⁵⁵

This was followed by a meeting of some of the largest proprietors of the LBR in Liverpool on 16 November 1835 under the chairmanship of David Hodgson, who was also a director of the LMR. Cropper and Rathbone were present and 21

shareholders including Boothby, as well as Heyworth and Richard, James and Edward Moon.⁵⁶ They resolved to set up a committee which agreed unanimously that the proposals were not so framed as to obviate many difficulties which might ensue to the LBR, nor founded on a safe or proper basis with reference to other traffic which might hereafter develop. They recognised however the need for good feeling and the advanced state of the negotiations and therefore suggested that a fixed toll of 2d per ton of merchandise per mile on all traffic but when £3,000 a mile was reached a discount of 50 per cent should apply. These terms should be limited to two years, at the end of which a more permanent obligation might be entered into founded on the experience of both parties and in a spirit of equity, mutual interest and accommodation becoming two great public companies. It was altogether undesirable to part with any of the land by sale or by lease comprising the stations at Camden Town and Euston Grove. Buildings required should be let.

When the outcome of this meeting was reported to the London Committee of the LBR they thought that such an arrangement could not be carried out on the principle suggested without involving a minimum of remuneration. They were sure no prejudice to the LBR could arise from the arrangement the Board had approved.⁵⁷ The Liverpool shareholders then assented to the Board's terms as to tariffs.⁵⁸

Directors of the two companies met on 9 December. The meeting was adjourned for further information as to the capabilities of the Euston depot which Stephenson was instructed to furnish, but the LBR's position was hardening on depots and other buildings. The GWR 'shall have the best accommodation we can afford for the traffic of their line at our depots but the cession of any part of the stations at Camden Town or Euston Grove for their exclusive use, whether by sale or leaser is inadmissible. We will build workshops for their use on fair terms but not give up any portion of the ground for a distinct establishment.' Creed told Moorsom it seems that they (or rather some of them) have imbibed a notion that they can come to Euston Grove cheek by jowl and keep one half of the ground for themselves. If this was the case the discussion yesterday has dissipated the illusion completely.⁵⁹ There was a further meeting of the Liverpool proprietors on 29 January 1836 to which Cropper and Rathbone were invited as non-resident directors. Resolutions were passed on a number of matters to

assist the deputation appointed to attend the general meeting on 18 February. The first related to access to Euston. No contracts should be entered into with the GWR (or other companies), for the lease or sale of land at the London end, but LBR should confine themselves to the provision of such accommodation as required.

Breakdown

Negotiations now came to a head. The GWR asked for a lease of 21 years, but were told by the LBR London Committee that this was a matter for the board.⁶⁰ When the board met on 17 February 1836 they decided that while a portion of the station at Euston Grove should be exclusively allotted for the use of the GWR it would be subject to two years notice to quit on the part of the GWR and five years for the LBR.⁶¹ This was not quite what the Liverpool party had advocated but it was very close to their view. When the GWR board saw Creed's letter setting out this decision they declined to accede to the conditions proposed made relating the allotment of land at Euston Square.⁶² The same day in a statement to their proprietors they said the permanency of the junction would be defeated by such conditions. As well as setting out their reasons they said that they were informed that a large and influential body of 'distant' LBR proprietors were pressing their directors to retain the power to break any lease at the shortest possible notice in the hope that better financial terms might be obtained and some also feared that there would not be room for both lines at the depots. In deciding against going to Euston 'the GWR were reinforced by their confidence that an excellent and independent terminal could be secured without much difficulty in the next session of Parliament'.⁶³ Significantly in this statement the GWR did not mention the question of the difference in gauge, nor had the Liverpool objectors in their representations.

Conclusions

These were complex and long-drawn-out negotiations between companies building railways of unprecedented length. There was virtually no experience of shared lines and stations to draw on. Although a number of factors, including amour propre, were very much in the background, the

breakdown clearly came following the intervention of the Liverpool proprietors who held strong views on the matter and were trying to establish a greater power base in the direction of the company. It was the terms on which the GWR would be allowed to hold the land which gave rise to fundamental difficulties. The question of the broad gauge does not seem to have been decisive, but the GWR, when faced with what they regarded as oppressive terms, ability to pursue that and other ambitions free of the shackles of Euston was no doubt seen as a benefit.

The completion of the GWR entry into London was delayed in consequence of the time taken to reach a decision, as Brunel had foreseen. As late as November 1835 the GWR was relying on success in the negotiations so notice of a bill to build a line to Paddington was not given in time to permit it to go forward in 1836. The line to Paddington was only authorised in 1837 and the line from there to Maidenhead opened in June 1838.

Once the GWR had declined to go to Euston on the terms offered there seems to have been little examination of the matter by either party. However in 1839 Saunders and Stephenson gave their views on the episode to the Select Committee on Railways. Saunders was quite clear that what prevented agreement was not money, but the position the GWR would have had in Euston and the conditions on which they were to hold their tenure. He also

mentioned the gauge, the danger of the junction, the expected greater speeds of the GWR trains, and the difficulty of arranging their times. William Unwin Sims, by then Chairman of the GWR, added that the LBR were glad to get rid of them.⁶⁴ Saunders also said that at the time the proposal was made the general view was decidedly in favour of several lines running to the same terminus, but this quickly changed with further practical knowledge of railways.

Stephenson made the same point saying that it had been thought advantageous especially on the approaches to London that one main line should run to a common terminus of several railways. However he denied that there would have been problems at Euston. Half the space at Euston was still vacant. The site was designed 'by me for two distinct stations' (Figure 2). The location of Euston would have been more advantageous for the GWR and the public. LBR passengers could have had access to the GWR without coming into London. As there were four lines from Camden Town any danger would have arisen at the junction and despite the gauge problem he thought it all could have been managed without danger to the public. Indeed when Euston opened it was served by four tracks, only two of which were equipped for cable haulage by stationary engines, the normal means of exit from the station until 1844.⁶⁵

Neither Saunders nor Stephenson blamed the 'distant proprietors' of the LBR, but it is hard to

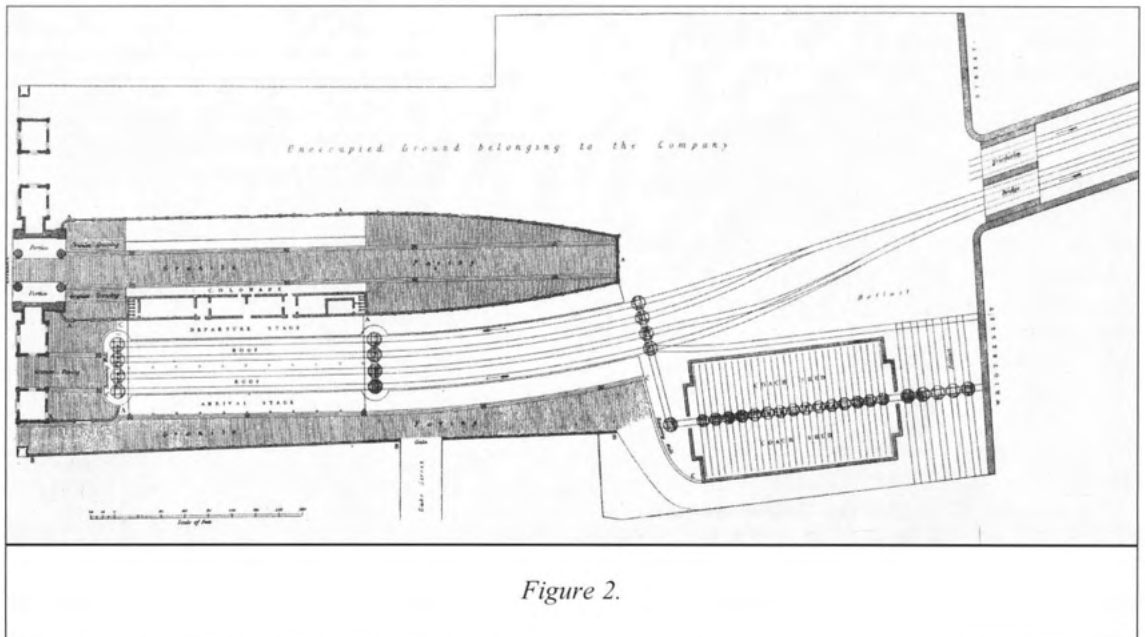


Figure 2.

escape the conclusion that it was their determination to put what they perceived to be the interest and profitability of the LBR before wider considerations which ruled out bringing the GWR closer to London than Paddington, a defect only remedied a quarter of a century later by the opening of the Metropolitan Railway in 1863.

Notes and References

1. E T MacDermot (1927), *History of the Great Western Railway*, 1 (part 1), 10, 14-16, 27-28, 34-36; Michael Tutton (1999) *Paddington Station, 1833-1854*, 7-14.
2. TNA, RAIL 250/1, 30 Aug. 1833
3. TNA, RAIL 250/84, 7 Sep. 1833. Hardwick, architect, is best known for his work at Euston but also worked for St Katherine's Dock and the GWR. Later he would design the hotel at Paddington.
4. TNA, RAIL 250/85, letter to Hardwick, 5 Oct. 1833.
5. NA, RAIL 250/84, London Committee of Management, 7 Sep., 5 and 26 Oct. 1833. The GWR did not seek authority at this stage for a complete line from Bristol to London because of the difficulty of raising sufficient capital in time and also because they wanted to preempt the rival projected railway from London to Windsor which would have traversed some of their route (TNA, RAIL 250/96, (Bristol Committee) 1 Oct. 1833).
6. *ibid*, Saunders to Bray and Warren to 27 Jan. 1834
7. *ibid*, Handford to Hardwick, 13 Jan. 1834.
8. TNA, RAIL 250/84, 1 Mar. 1834.
9. The phrase 'triumphant majority' is Benjamin Shaw's in a letter to shareholders, *ibid* 11 Mar. 1834. Shaw of Cornhill, London, was a London director and the first chairman of the company — according to MacDermot (1 (1), 50), 'a shadowy figure of whom little more than his name is recorded.' His other claim to distinction is that with two other City figures he purchased and donated the land for University College, London when it was founded in 1826 (*The Survey of London*, 21, 87-90). He was a director of the Equitable Gas Company whose works were adjacent to the first terminus proposed for the GWR (*The Times*, 8 Feb. 1830) and had chaired the abortive London, Portsmouth & Southampton Railway in 1825. (*ibid*, 26 Jan. 1825)
10. TNA, RAIL 250/1, 3 May 1834.
11. In 1826 the metropolitan turnpike trusts north of the Thames had been consolidated into one commission with James McAdam as surveyor-general. (T C Barker and Michael Robbins (1963) *A History of London Transport*, 1, 13)
12. *The Survey of London, Southern Kensington, Brompton*, 1983, 60.
13. London Metropolitan Archives, MRC 4, 18 April 1834.
14. *ibid*, MRC 11, minutes of sub-committee, 19, 21, 22, 24 and 28 April 1834.
15. Robert Stephenson was Engineer to the LBR.
16. TNA, RAIL 384/51, 14 May. Henry Rowles, a London director, reported the Commissioners' request. The LBR was also in discussion with the Metropolitan Commissioners at this time about the relationship of certain tunnels and bridges on the LBR to their roads. (MRC 11 and 17 May; RAIL 384/51, 30 April and 21 May 1834). No other reference has been found to Glyn's suggestion of 1833 in his letter of 15 May to Cropper (RAIL 384/276), or to the Bristol Committee's attitude at that time, but the Bristol Committee on 31 Oct. 1834 cordially approved the London Committee's resolution requiring the LBR to endorse the draft agreement relating to the use of Euston (TNA, RAIL 250/96), and also thanked the group who came to the revised agreement in November 1835 (RAIL 250/97, 10 Nov. 1835).
17. TNA, RAIL 250/1, 24 and 27 Aug. 1833; RAIL 250/2, 30 Oct. 1835; RAIL 251/1, 1835-6; R Fulford (1953) *Glyn's*, 81; Geoffrey Channon (2001) *Railways in Britain and the United States, 1830-1940*, 168-9, 171.
18. I have not traced any indication of the nature of the 'job', or of the name of Glyn's colleague, possibly Rowles who was a leading London builder (*Oxford DNB*, 48, 17).
19. TNA, RAIL 384/276, letter of 15 May 1834.
20. TNA, RAIL 384/257 19 May, 1834.
21. TNA, RAIL 384/257 for Stephenson's report of 15 May 1834.
22. TNA, RAIL 384/276, letter of 22 May 1834.
23. MRC 4, 18 July 1834.
24. Parliamentary Debates (3rd series), 25, 25 July 1834, 461-2.
25. TNA, RAIL 384/276. This letter bears no date, but has been attributed to circa April 1834 in RAIL 384/276. However it was certainly written after the defeat of the Bill in the Lords on 25 July 1834. Rathbone was a director of the Liverpool & Manchester, as was James Cropper's son John.
26. TNA, RAIL 250/1, 2 Sep. 1834.
27. TNA, RAIL 250/84, Saunders letter of 2 Sept. and Creed's reply of 4 Sep. 1834. Richard Creed was the London Secretary of the LBR.

28. TNA, RAIL 250/84, 20 Sep.; RAIL 384/51, 24 Sep. 1834.
29. TNA, RAIL, 384/50, papers of conference of 25 Sep. 1834
30. TNA, RAIL 384/257, Creed to Moorsom, the Birmingham Secretary of the LBR, 13 Oct. 1834.
31. Minute 183, RAIL 384/50, 1 Oct. 1834
32. TNA, RAIL 250/85, Saunders to Creed, 2 Oct. 1834; TNA, RAIL 1008/92, Creed to Moorsom, 15 Oct. 1834.
33. TNA, RAIL 384/276, 2 Oct. 1834.
34. Notices and plans for a Parliamentary Bill had to be submitted by 30 Nov.
35. TNA, RAIL 1008/92, Creed to Moorsom, 15 Oct. 1834.
36. TNA, RAIL 250/83, 30 Oct. and 5 Nov. 1834.
37. TNA, RAIL 250/83, 5 Nov. 1834.
38. TNA, RAIL 250/83 and 384/51, 5 Nov. 1834.
39. TNA, RAIL 384/2, 12 Feb. 1835.
40. TNA, RAIL 250/1, 17 Sep 1835.
41. MacDermot, 1 (1), 31-2. The London and Southampton Railway Bill of 1834 had been passed without such a clause.
42. TNA, RAIL 250/82, 14 Sep. 1835.
43. TNA, RAIL 250/82, 15 Sep. 1835.
44. *ibid*, 8 Oct. 1835.
45. TNA, RAIL 384/41, 7 Oct. 1835. Indeed Creed had told Moorsom on 2 October 1834 'If we obtain the line to the New Road at Euston Grove they are to pay for the use of it on the same terms and are to buy the 8 acres of ground which we must purchase to get rid of Lord Southampton's right of way at the price which we pay.' (RAIL 1008/92)
46. TNA, RAIL 1009/92, Stephenson to Creed, 31 October 1835.
47. TNA, RAIL 250/2, 29 Oct. 1835 and 250/64, report of directors.
48. TNA, RAIL 250/97, 5 and 6 Nov. 1835
49. *ibid* 10 Nov. 1835.
50. A detailed analysis is to be found in M C Reed (1975) *Investment in Railways in Britain, 1820-1844*, 133-8.
51. These three were known as the non-resident directors. Robert Garnett was from Manchester.
52. William Copeland was a porcelain manufacturer of Stoke-on-Trent, but was also a London merchant and Lord Mayor in 1835.
53. TNA, RAIL 1008/92, Garnett to Creed, 15 Oct. 1834.
54. TNA, RAIL 384/52, 14 Oct. 1835.
55. TNA, RAIL 385/257, 26 Oct. 1835.
56. Liverpool merchants. Richard Moon was the father of the future chairman of the LNWR, also Richard Moon, born 1815. James and Edward were his uncles.
57. TNA, RAIL 384/52, 25 Nov. 1835
58. Letter from Rathbone referred to in London Committee's minute of 9 Dec. 1835 (RAIL 384/52)
59. TNA, RAIL 1008/92, Creed to Moorsom, 10 Dec.; RAIL 385/52, 16 Dec. 1835
60. TNA, RAIL 384/42, 10 Feb. 1836.
61. TNA, RAIL 384/2, 17 Feb. 1836.
62. TNA, RAIL, 250/2, 25 Feb. 1836, 250/52, 2 March 1836.
63. TNA, RAIL 1110/264, half yearly report, 25 Feb. 1836.
64. William Unwin Sims, was on the original London Committee and was closely involved in the negotiations with the LBR. 'another shadowy figure today' according to MacDermot (1 (1), 50), but he was a partner in Jacob Sims & Co., India merchants, a director of the Bank of England, chairman of the Glenarvon Iron Co., and a director of insurance companies. He committed suicide on 15 November 1839: 'destroyed himself in a fit of temporary insanity' according to the coroner's jury. Financially sound according to E W Mills, his fellow director and banker, he had told his solicitor he had too many irons in the fire and was depressed following his sister's mental illness. (*The Times*, 18 Nov. 1839).
65. Parliamentary papers, 1839, X, Select Committee on Railways, 38, for the evidence of Saunders and Sims; 207, for Stephenson's.

Longer but better?

The proposed deviation of the Montgomeryshire Canal, 1821

Peter Brown

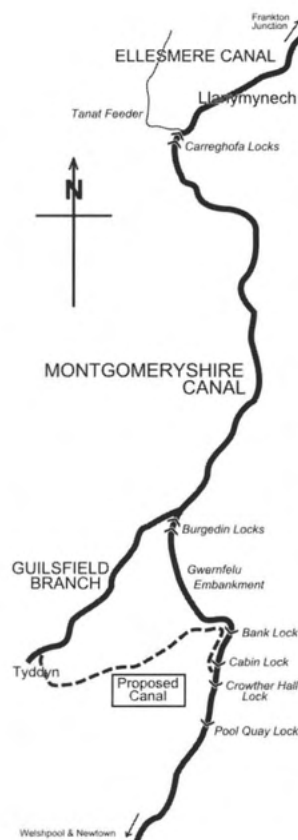
In the 1820s the Birmingham and Oxford Canals had Acts passed to shorten their main lines. The Montgomeryshire Canal did the opposite: its 1821 Act authorised it to increase the length of its main line by three miles.

The Montgomeryshire Canal was opened in 1797 from Carreghofa, where it joined the Llanymynech Branch of the Ellesmere Canal, through Welshpool to Garthmyl. (The extension to Newtown was not fully operational until 1821.) A lock-free branch $2\frac{1}{4}$ miles long went up the valley of the Guilsfield Brook to Tyddyn Basin, some $\frac{7}{8}$ mile short of Guilsfield village. This was built to a lower standard than the main line, the minimum width at water level being 24ft, compared with 28ft on the main line. The canal was fairly unusual in being a 'sump canal' — water came south from the River Tanat and north from the River Severn. The lowest pound was the $1\frac{1}{4}$ miles from the bottom of the two Burgedin Locks to Bank Lock, the lowest of the four locks leading up to Pool Quay. In this pound the valley of the Guilsfield Brook was crossed on the Gwernfelû embankment almost $\frac{3}{4}$ mile long.

The canal was evidently poorly constructed because less than twenty years after it had opened the Committee was considering rebuilding the locks. Someone, possibly Joseph Hill, the Company's Clerk & Engineer, made the suggestion of altering the line of the canal from the Pool Quay flight to join the extremity of the Guilsfield Branch. This would eliminate the need for repairing the two Burgedin Locks and also Bank and Cabin Locks of the Pool Quay flight. In October 1815 the Committee decided to ask Josias Jessop, the consulting engineer for the extension to Newtown, to examine the suggestion and Hill's calculations of the costs. However, Hill went off work with a serious illness, and judging from the lack of a report back, no action was taken.

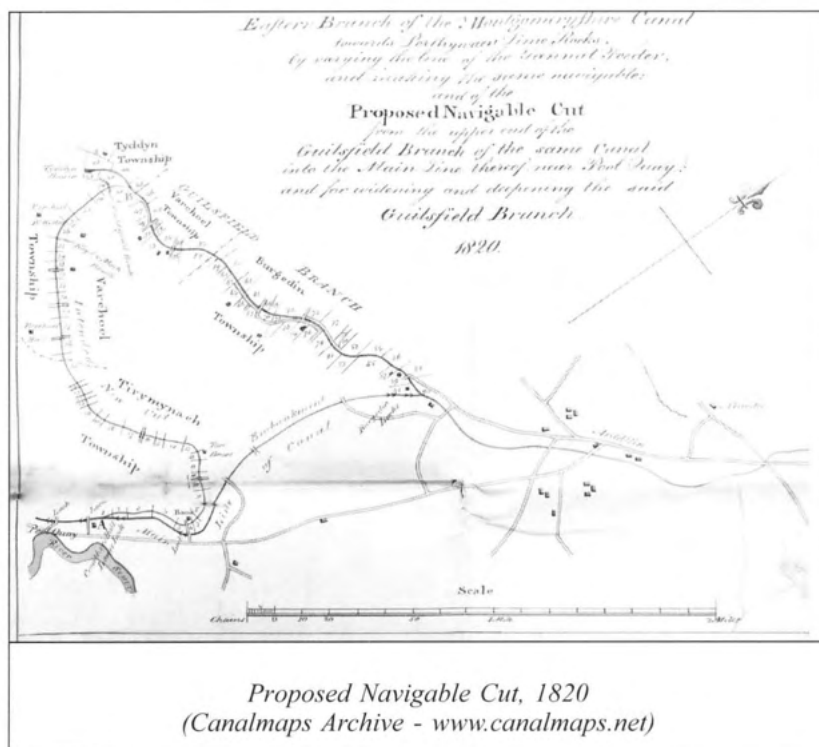
Joseph Hill retired early in 1819 and George Buck was appointed in his place. The proposal for diversion was resurrected, and Buck's detailed report considered by the Committee on 3 July 1820.

The new line to be cut would be just over $2\frac{1}{2}$ miles



long; the cost, including the widening and deepening of the Guilsfield Branch, was estimated as 'not more than £6,726.15s.6d'. Buck considered that the alternative of reconstructing the four locks would cost at least £7,000, assuming they were done in the same substantial manner as those locks south of Welshpool which had been recently repaired: Rectory Lock had cost £1,877 and Brithdir Lock £1,986. There would also be on-going savings: three lock-keepers at an annual cost of £80 and maintenance of the four locks estimated at £70 a year. There

would no longer be a risk of failure of the Gwernfelû embankment from an accident or from floods or other natural causes. A further benefit would be the avoidance of stoppages; when locks were rebuilt stoppages were inevitable, whereas the new line could be constructed without interfering with the traffic on the canal. Once it was opened, the land across the valley could be sold and the material from the locks and bridges taken up and cleaned for use elsewhere. A practical advantage claimed for the new line was that the sump pound would then be ten miles long (actually it would have been just over nine miles), which would not necessarily save greatly on water supplies but would make them less prone to losses



hour — a net additional half an hour's extra journey time.

In September 1821 George Buck reported on the priorities for action and also returned to the issue of the tonnage. He considered that the Tanat Feeder should be done first, which would necessitate borrowing £1,400. This would enable boats from Llanymynech entering the Montgomeryshire Canal to be fully loaded. He estimated that traders to Newtown would save 7½d a ton for boats laden with coal or 3½d a ton for boats with limestone. The Guilsfield deviation would add 4½d a ton on coal and 2¼d on limestone. Thus, Buck argued, the traders would be better off overall and so the quantity of goods carried

through leaking gates.

The Committee accepted that the canal's income would be increased by at least £1,000 a year because they would be able to charge traders for the three extra miles they would have to travel. This assumed that the rates of tonnage being applied continued, and that trade did not diminish. The justice of this action, and whether it would be accepted by the traders, does not seem to have been considered.

A special General Assembly meeting on 18 November 1820 approved an application to Parliament to authorise this deviation. The Bill also asked for changes to the Tanat Feeder, principally because the water supply from the Feeder and from the Ellesmere Canal was then so inadequate that the maximum loading of boats in the pound above the Carreghofa Locks was only 16 tons.

The Act was passed on 23 June 1821, including a clause that the same rates of tonnage would apply as in the original 1794 Act. The first clause in the Act gave the reasons why the measure was advantageous to the public, including 'avoiding the delay in passing several locks'. It is difficult to envisage that more than half a hour would be saved by having four fewer locks, whereas the extra length would add about an

would not be reduced.

However, he felt that the next priority after improving the Tanat Feeder should be rebuilding the two Carreghofa Locks at a cost of £3,400, which would have to be borrowed. He pointed out that by the time this was repaid in 1826, there would be only two years left under the Act to complete the Guilsfield diversion.

In fact the Tanat feeder and weir cost £4,110, much more than his estimate. Unplanned repairs to the Vyrnwy Aqueduct added £1,447. Belan Locks (south of Welshpool) were repaired in 1824–5 (£906), followed by Carreghofa Locks in 1825–6 (£1,365, much less than the forecast).

Buck had not forgotten about the Guilsfield deviation as there is an oblique reference to it in his notes in August 1826, but in reality the idea had been abandoned. Cabin and Bank Locks were repaired in 1827 at a cost of £1,425, though a further £1,265 was spent in 1831–2 rebuilding the heads of these locks with iron gates and 'upon a new principle, the advantages of which are economy in the first cost, a diminished liability to accident or injury from boats, and a saving in time in passing, a boat may ascend each of these locks in about two minutes' — from

which one infers that these were the first locks to be fitted with what is now usually known as 'Buck gear'. The two Burgedin Locks were repaired in 1828–9 at a cost of £1,446. Even with the improved design, the cost of these four locks was considerably less than the £7,000 in the original financial appraisal for the Guilsfield deviation.

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Act: 1–2 George IV Cap.cxix

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RAIL852/1, General Assembly, 18 November 1820

RAIL852/11–13, Committee, 26 July 1794, 15 October 1815, 3 & 17 July 1820

RAIL852/11 & 13, Annual Reports, 1797, 1819–32

RAIL852/5, Clerk & Engineer's notes, 1 September 1821, 7 August 1826, 10 January 1827

Correspondence

Newspapers as a Transport History Source

(*RCHS Journal*, July 2009, 108–109)

Philip Scowcroft's article was very apposite. Indeed, I would go further and say that one ignores local and national newspapers at one's peril. My recent experience has been with local authority records when I was researching a 1930s railway airport project that never materialised – Lullingstone near Eynsford in Kent. Whilst the most important primary record document – the Southern Railway General Manager's policy file P.W.Pad 412 – has not reached the National Archives at Kew and is assumed to have been a victim of enemy action on Waterloo Station during the war, there are many other primary sources that have survived including the records of the Air Ministry, LCC, Kent County Council; Dartford Rural District Council, Ministry of Health, Ministry of Transport, Kemp Town Brewery and so on.

I had examined the minutes of the records of the Dartford Rural District Council and two parish councils but until I looked at newspapers, I could not understand why there was never any concerted action against the Southern Railway's proposal which became public knowledge in 1936. On 1 December 1936, it was reported by the Clerk to a meeting of the Dartford Rural District Council that plans for an extension of the railway into the proposed airport had been received, but it did not appear that any action needed to be taken. On this occasion there was no record of any discussion about the proposal in the local press.

Ten days later the proposal was considered by the Eynsford Parish Council which similarly decided that no action should be taken. It was the subsequent local press report that revealed that there was concern, but it was considered that the cost of opposition would be too expensive. Dartford RDC changed its attitude at its meeting on 5 January 1937 and resolved to oppose the railway's Bill. On 21 January this was supported by the Lullingstone Parish Council. Five days later Dartford decided not to oppose it, but the reason for this change was not recorded in the minutes. It was the local press that reported the discussion at the meeting in some detail. The cost was not mentioned, but the Clerk pointed out that there were no valid legal reasons for opposing the line.

During the course of reading the local papers, I discovered another danger. When the airport story first broke in August 1936, it appeared to be reported in every issue of the *Kentish Times*. The later deliberations of the local authority were not always reported in all issues.

It is of course most unfortunate for the researcher that so many local authority policy files do not end up in the county archives. This is the case with the erstwhile Dartford Rural District Council of which the only records that appear to have survived are the minutes, although the Sevenoaks District Council was slow to release them to the Kent Archives at Maidstone. Fortunately the records of the Ministry of Health which was then responsible for town planning, include correspondence with the local authority.

John King

Reviews

***Building a Railway – Bourne to Saxby – the M& GN Joint Railway 1893* — Stewart Squires and Ken Hollamby, editors**

151pp, 330x215mm, 136 photographs, 24 maps, hardback, The Boydell Press, PO Box 9, Woodbridge, Suffolk IP12 3DF, www.boydellandbrewer.com, 2009, ISBN 978 0 90150 386 2, £30 (plus £3 postage); reduced price to R&CHS members £22.50 until 30 April 2010, quoting reference 09302 09328

This is a very high quality volume of photographs, maps, drawings and text of the construction of the 20-mile railway between Bourne and Saxby which provided the Spalding and Melton Mowbray link which became part of the Midland & Great Northern Joint Railway in 1893.

Details of the construction techniques for bridges, stations, and earthworks in the late-19th century are depicted with the working conditions of the time apparent. The picture captions are superb. There are 'now' pictures to complement the original 'then'

pictures taken by the resident engineer, Charles Stansfield Wilson. The book on the line featuring traffic and usage, decline, closure and remains by John Rhodes and published in 1989 is included in full as an appendix. There is a detailed bibliography and index.

Based upon a splendid collection of contemporary photographs, this is a time-frozen portrait of history. A fascinating and unmissable book.

KENNETH BIGNALL

***Wartime Southern (Southern Way Special Issue no.3)* — Kevin Robertson**

112pp, 213x270mm, 169 b&w illustrations, 1 table, paperback, Kevin Robertson (Noodle Books), PO Box 279, Corhampton, Southampton SO32 3SX (www.kevinrobertsonbooks.co.uk), ISBN 978 1 906419 16 5, £14.95

That the Southern Railway was in the front line in the Second World War is readily apparent in the photographs here, many of which come from the RCHS's photographic archive, especially the Spence Collection. The majority of the generally well produced photographs represent the aftermath of air-raid incidents at Portsmouth, Malden, Purley, Norwood, Waterloo/Nine Elms, Clapham Junction, Victoria, Charing Cross, Southampton, Wandsworth, Streatham, Peckham Rye, Barnes and Plymouth. There are interesting sidelights on the 1939 children's

evacuation, the SR's ARP and Home Guard initiatives, ambulance train workings, armoured trains, women employees and accidents not due to enemy action. Not always are the most interesting illustrations the most dramatic or harrowing — the SR Chairman is depicted doing Home Guard duty, a band at Ashford Works shows how the SR kept up morale, while cabbages in Norbury Station's flower bed exemplify its contribution to 'Dig for Victory'. All in all a fascinating issue — although the proofreading could have been more careful.

PHILIP SCOWCROFT

***Down by the River, The Thames & Kennet in Reading* — Gillian Clark**

204pp, 170x 250mm, 132 b&w photos and drawings, 15 maps, 8 charts, paperback, Two Rivers Press, c/o RISC, 35-39 London Street, Reading RG1 4PS, 2009, ISBN 978 1 901677 58 4, £16

Dr Gillian Clark is no stranger to Berkshire Historical Records. For this particular study, she also had access to the personal histories and photographs of two of the local river families: Freebody and Gyngell. The book considers 900 years of the development of

Reading, focusing on the two rivers, and generally takes a chronological approach.

The initial chapter covers the development of Caversham from 1100 to 1600 and is followed by an overview of commercial development and settlement

along the river up to 1750. The key chapters for the transport historian are those that detail the development of traffic and the role of bargemen, on both the Kennet Navigation and the Thames, between 1700 and 1820.

The coming of steam power to the area and the competition that developed between water freight and rail is investigated. Likewise the leisure development on the Thames is identified with the completion of the new Caversham Bridge in 1869 which stimulated a growth in pleasure boating. The Freebody family, amongst others, were leaders of this innovation. As the leisure usage of the river grew, so did regulation.

The end of the Victorian era saw further expansion of the boating businesses based in the town. By then, Reading was seen as a leisure resort. This prompted the Corporation to bring the land alongside the river into public ownership, with the Promenade opening in 1906.

The concluding chapter provides a useful overview of the towns' growth. A table listing the Reading waterways workers, between 1423 and 1930, rounds off this evaluation of the shifting patterns of social, economic and technological change in Reading.

An interesting book, which will appeal to social historians as well as those with a special interest in the town.
ROGER SQUIRES

***Aylesbury – a county town and its station 1877–1905: an examination of the goods statistics of the Aylesbury branch of the London & North Western Railway and the characteristics of railwaymen from the censuses 1881–1901* — Keith Bailey**

27pp, 4 illustrations, 3 maps, 13 graphs, 13 tables, softback (*Buckinghamshire papers*, no. 14), Buckinghamshire Archaeological Society, County Museum, Church Street, Aylesbury, Buckinghamshire HP20 2QP, <http://www.bucksas.org.uk>, 2008, £5 (inc. p&p)

This monograph is based on a single source: a semi-official record of goods in and out of Aylesbury over an extended period, a very rare survival. Mr Bailey does this proud, subjecting it to a detailed analysis which brings out a clear picture of what went on in a typical small county town's goods yard over the period, supplementing it by some information on the men who carried out the work. There is plenty of

food for thought for anyone with an interest in the operation, economics and social influence of the pregrouping railways, including a significant rise in traffic of most kinds over the century's turn, and the size of the livestock traffic.

Mr Bailey and his publisher are to be congratulated on making this information available, and it deserves to be much more widely known than its geographical provenance might suggest.
MATTHEW SEARLE

***Canals of Britain – a comprehensive guide* — Stuart Fisher**

304pp, A4, approx. 90 b&w and 900 colour illustrations, 61 maps, paperback, Adlard Coles Nautical, 36, Soho Square, London W1D 3QY, 2009, ISBN 978 1 4081 0517 7, £25

This book, due to its size, may perhaps not be as useful as some guides, when actually boating or otherwise visiting the canals. However, particularly for the boater, canoeist or towpath walker as well as the student of canal history it would be excellent for planning and for reference before and after the event. It provides a comprehensive survey of the canal network within the British Isles, covering both the linked up waterways, together with the isolated and quieter waterways which may not be fully navigable to larger craft.

The author, who is Editor of *Canoeist* magazine, has written guides to the canals and waterways of Britain for many years, often using a kayak to reach isolated parts of the system and this book is a result of his work. It is excellently illustrated, contains comprehensive maps in colour and has a good index. Certainly a useful addition to a canal library, but may perhaps be slightly expensive for the average reader.

RODNEY HARTLEY

***The Briggers: The Story of the Men Who Built the Forth Bridge* — Elspeth Wills**

142pp, 280x240mm, 104 photographs and contemporary engravings, 2 maps, paperback, Birlinn Ltd, West Newington House, 10 Newington Road, Edinburgh EH9 1QS, 2009, www.birlinn.co.uk, ISBN 978 1 84158 761 5, £16.99 (incl. p&p)

From its opening day in 1890, Sir William Arrol's Forth Railway Bridge was a symbol not only of Scotland but of Victorian engineering at its finest. This is the human story of the Briggers, ordinary working men gathered from throughout the UK and Europe, who laboured under extreme conditions risking life and limb to build it. At least 73 were confirmed to have died in accidents related to the construction and there were probably many others whose later death was associated with the bridge.

The author has collated the research of four local historians and illustrated it with outstanding period photographs and engraved prints often spread over

two pages. Following an introduction outlining the construction of the bridge, the falls, crush injuries, fractures, burns, drowning and, for those working in pressurized caissons beneath the sea, the ill-understood bends, are catalogued in some detail using information gathered from archives of local newspapers, councils and health services. The effect that the huge project had on the communities of North and South Queensferry both in the short and longer term is described. Appendices list the individuals and the date and manner of their deaths. Macabre perhaps but an unusual look at an aspect of a familiar and much-loved structure.

JOHN HOWAT

***There and Back Again: Restoring the Cromford Canal 1968-1988* — Simon Stoker**

128pp, 248x172mm, 250 illustrations, paperback, Amberley Publishing plc, Cirencester Road, Chalford, Stroud, Gloucestershire GL6 8PE, orders@amberley-books.com, 2009, ISBN 978 1 84868 153 8, £14.99 (p&p free in UK from publisher)

The book covers the restoration efforts of the Cromford Canal Society and its company on the 5-mile western end of the canal to 1989. There is a very short introductory history to the whole canal, useful coverage of the Leawood pumphouse and engine and chapters on the societies trip boats and horses.

The restoration is covered in some detail and well illustrated. The text is complete in what it covers but

leaves the reader guessing on the politics and the events behind the scenes and behind the end of the company in 1990; a complete story waits to be told. In the 'back again' section of the book there is a final, wistful, sometimes bitter, return to the canal now which helps set the scene for the Friends of the Cromford Canal and their campaign for full restoration.

TONY CONDER

***Poster to poster. Railway Journeys in Art: Vol.1, Scotland* — Richard Furness**

x+236pp, 235x310mm, 337 illustrations, 9 maps, hardback, JDF & Associates Ltd, Rydal Water, The Old Pitch, Tirley, Gloucestershire GL19 4ET, 2009, ISBN 978 0 9562092 0 7, £35

This book, beautifully printed by Amadeus Press, is the first of seven volumes intended to cover the United Kingdom. Short chapters attempt a brief history of the railway poster and summarise ways in which companies advertised their services. The bulk of the work covers specific geographic areas within which posters, usually one or two to a page,

accompany a superficial travelogue extolling Bonnie Scotland and its distilleries. Two-thirds of the images are landscapes, which outnumber railway scenes by five to one. Most of the great names of poster art are represented, along with lesser-known artists, few of whom feature in the biographical section. Most images are from the years 1925-65 with some earlier

material and a few modern-style posters from the nineties. An appendix, compiled with V & S Kilvington, lists six hundred posters published between 1890 and 1970. The entries do not always distinguish between different versions of a particular subject.

Observations are non-critical and no mention is made of printing techniques and printers. No attempt has

been made to date posters using features such as changes in typeface or company monogram or illustrations in staff magazines. Historians, as distinct from poster collectors, will find this attractive picture-book no more than a quarry whose ores they must themselves refine.

DENNIS HADLEY

***The Industrial Railways & Locomotives of County Durham, part 2: The National Coal Board and British Coal* — Colin E Mountford and Dave Holroyde**

4+412pp, 240x169mm, 267 photos, 16 coloured location maps, 28 maps and track plans/diagrams in text, hardback, Industrial Railway Society, 24 Dulverton Road, Melton Mowbray LE13 0SF, 2009, ISBN 978 1 901556 56 5, £29.95 (plus £2.99 p&p)

Industrial railways were a vital, yet often neglected, part of this country's transport history †nowhere more so than in County Durham, where there were almost as many miles of private industrial railways as public railways. We must be grateful to the Industrial Railway Society for systematically recording and publishing details of this country's industrial railways. Credit for the Durham volumes is due particularly to Colin Mountford who has devoted the past forty years to collecting information on the industrial railways of his adopted county while it was still available.

Such was their scale that this is the third volume of what was intended to be a trilogy, but a fourth will now be needed to complete the work. It carries forward the story of the coal industry since nationalisation, with a useful introduction to the complex history of the National Coal Board in Durham, followed by details of all the collieries, drift mines and opencast workings, the associated coking plants, brickworks and workshops, and the NCB railways that connected them. There is also good coverage of the colliery underground railways.

GRAHAME BOYES

***The Aldwych Branch* — Antony Badsey-Ellis and Mike Horne**

112pp, 30 b&w and 13 colour illustrations, 28 maps and diagrams, hardback, Capital Transport Publishing, PO Box 250, Harrow, Middlesex HA3 5ZH, 2009, ISBN 978 1 85414 321 1, £19.95

There is an interesting article yet to be written about the ratio of pages per mile in railway history books. At first sight, over a hundred pages might seem a challenge when just considering a branch of less than a mile which operated for less than ninety years. However, this is never a problem in a book which ably and confidently demonstrates that London Underground's Aldwych branch is an interesting line despite its geographical and historical brevity.

Alert readers might query the use of 'is' in the last sentence, since the branch is disused. This is because the authors tell a compelling story about the line's 'life after death', with a succession of films and pop videos — some very famous — filmed in its tunnels

and on its platforms. Before reaching this final stage, the story covers the complex origins of the Piccadilly line, the planning and opening of the branch, and its early train services including the interesting but short-lived through services for theatre-goers. Many interesting maps are included.

Much attention is given — justifiably — to non-railway use, with the most significant being in wartime when Greek, Roman and Egyptian antiquities were stored at Aldwych. At the same time part of the line was used as an air raid shelter. This is an interesting study which combines the conventional topics of railway history with much of wider interest.

ADRIAN GRAY

(1) *The Peak Forest Canal: Its Construction and Later Development* — Olive Bowyer with additions by Don Baines and Peter J Whitehead

68pp, A5, 30 photographs, 8 maps and diagrams, paperback, 2008, no ISBN, £3.25 (inc. postage)

(2) *The Peak Forest Canal: Lower Level Towpath Guide* — Olive Bowyer with additions by Don Baines and Peter J Whitehead

64pp, A5, 22 photographs, 10 maps, paperback, 2009, no ISBN, £3.25 (inc. postage)

(3) *The Peak Forest Canal: Upper Level Towpath Guide* — Olive Bowyer with additions by Don Baines, Derek Brumhead and Peter J Whitehead

88pp, A5, 54 photographs, 13 maps, paperback, 2009, no ISBN, £3.25 (inc. postage)

(4) *Marple Lime Works, Mineral Mill and Brickworks* — Peter J Whitehead

20pp, A5, 19 photographs, 2 maps, 7 tables, paperback, 2009, no ISBN, £1.75 (inc. postage)

all available from New Mills Local History Society & Inland Waterways Protection Society, Top Lock House, 7 Lime Kiln Lane, Marple, Stockport, SK6 6BX

(1) The aim of the Peak Forest Canal was to tap the limestone of the Peak District. The canal was opened in 1796 with the exception of Marple Locks, which were not completed until 1805; meanwhile a temporary tramroad linked the upper and lower sections of the canal. The canal was taken over by the Manchester, Sheffield & Lincolnshire Railway, along with the Ashton and Macclesfield Canals in 1858, but continued to flourish into the 20th century. The decline of the industries which the canal served led to decline until the canal seemed doomed, but the Peak Forest Canal Society was formed and this led to the canal's re-opening in 1974.

There are very useful sections in this book on canal promotion, construction and operation as well as on the people who worked the barges. This and the following three books were originally produced by the New Mills Local History Society and have been re-issued by the Inland Waterways Protection Society, which concentrates its activities on the Peak Forest Canal and Bugsworth Basin. The books have the occasional misprint. The maps, though attractive, are difficult to read and the photographs are occasionally muddy; but these are minor points. The books are

very readable, easy to use and an indispensable addition to the literature on the canals. The IWPS has also produced a very useful CD ROM of archive material on the canal at £12, available from the same address.

WARWICK BURTON

(2) (3) These two books are a guide to the Peak Forest Canal. The first covers from Ashton to Marple and the second from Marple to Bugsworth and Whaley Bridge, with sections on the Peak Forest Tramway and Cromford and High Peak Railways. They give a lot of history of places near the canal and the industries they served. Both books include the flight of 16 Marple Locks and the magnificent Marple aqueduct.

(4) This booklet charts the history of some of the industries spawned in Marple by the opening of the Peak Forest Canal and the enterprise of Samuel Oldknow. A welcome addition to the literature on the subject, with some useful new research on the people working in the lime processing industry in Marple.

***Caphouse to Calder Grove: the story of a colliery mineral line* — Malcolm Till**

68pp, 170x235mm, 22 plates and 29 figures, hardback, National Coal Mining Museum Trading Ltd, Caphouse Colliery, New Road, Overton, Wakefield, West Yorkshire WF4 4RH, 2007, no ISBN, £4.95 (plus p&p £1.50)

The five-mile 'Kaye' line was built for Sir John Lister Lister Kaye (1801-1871) in 1854 to link his several collieries lying to the west of Wakefield with staithes on the River Calder and with the country's main railway network. The line also acted as a general carrier for its district and went out of use un about 1944. Miners were at times carried as passengers, their fares being deducted from their wages.

The line, although short, was interesting from the point of view of railway mechanical engineering and operation. It included the single-track 400-yard Stockmoor Tunnel. It was worked in part by locomotives and in part by inclines equipped with wire rope haulage operated by two stationary winding engines. The track bed remains visible in places and

a tunnel portal and relics of the engine houses survive. A short branch served the abortive Kaye drift, a coal mine abandoned after about 1,000 yards in the 1920s.

This history, written in or about 1987 but hitherto unpublished, contains much information about the collieries and their owners and managers and includes exceptionally well-illustrated descriptions of the trackwork, winding engines and staithes. Maps showing the regional and local context and track diagrams are included. The human story of how the enterprise was operated in all weathers and how setbacks were overcome makes this compelling reading. The railway was the pits' lifeline, in the absence of a road transport option. If it failed, the men's wages were not paid.

PAUL SOWAN

***Samuel Morton Peto, a Victorian entrepreneur* — Adrian Vaughan**

192pp, 229x152mm, 35 b&w photographs, hardback, Ian Allan Publishing, Riverdene Business Park, Hersham, Surrey KT12 4RG, 2009, ISBN 978 0 7110 3378 8, £19.99

This is the second biography of Peto to appear within a year — the first, by John G Cox was published by the Railway & Canal Historical Society and was reviewed in the *Journal* in March 2009. A longer book than either was written by Revd E C Brooks in 1996, and there was the 'memorial sketch' by Henry Peto in 1893.

Starting out as a building contractor with his cousin Thomas Grissell, the railway mania provided a much larger stage on which Peto could display his talents. In 1844 Peto purchased Somerleyton Hall in Suffolk, using money borrowed from relatives and friends. The following month he bought the moribund port of Lowestoft and proceeded to improve it and promote railways to it. The financial dealings of these and other Peto projects worried Grissell and their partnership was dissolved in 1846.

As the driving force behind many of the companies with which he was involved, Peto was able to use money from one to develop another. Many of his later railways were built on credit, as were those of

several other significant contractors. Eventually the banking system collapsed under the weight of worthless paper and investors who had lost money pursued Peto into bankruptcy.

Cox's book was subtitled 'the achievements and failings of a great railway developer', Vaughan's, as noted above, 'a Victorian entrepreneur'. Vaughan is rather more sympathetic towards Peto than Cox. The emphasis in his book is on Peto the man, his Baptist faith and his zeal for improvement. He makes more use than Cox of Peto's letters and his public statements, but less of the records of the companies with which he was involved. Some of the background material is a statement of the author's opinion, and very occasionally wrong. The years after 1860 are dealt with cursorily in a few pages at the end of the book. The index is inadequate for a serious study.

Dr Brooks' book, friendly but not uncritical, was rather let down by a number of errors. Vaughan's book complements the one by Cox, but we still await a full biography of Peto.

PETER CROSS-RUDKIN

***The Watford to St Albans Branch, second edition* — Stanley C Jenkins**

128pp, 210x148mm, 86 b&w photos, 10 maps & diagrams, paperback, Oakwood Press, PO Box 13, Usk, Monmouthshire NP15 1YS, 2008, ISBN 978 0 85361 675 7, £10.95

Sponsored from the start by the LNWR, the Watford–St Albans branch was opened on 5 May 1858; its 150th anniversary prompted the second edition of this book. The line led an uneventful existence until the usual closure threats materialised after World War II. However the eventual outcome, perhaps surprisingly, included electrification and a new station at How Wood in 1988, followed by the conferral of Community Railway Partnership status in the 1990s.

The main author devotes four chapters to the 19th century, the 20th century, stations and route, and ‘minor details’ respectively — the latter including a brief account of the Bricket Wood Miniature Railway,

active between 1904 and 1911. A fifth chapter, ‘Modern Times and Renewed Optimism’, is contributed by Geraint Hughes.

The style is workmanlike and readable, and the history of the line is well covered, but views of the 1934 diesel railcar experiment and of *Lion* at Bricket Wood for filming in 1937 would have been welcome. Why the 1922 working timetable shows unadvertised trains in the early hours of the morning (presumably for railway staff) is not explained. But these points do little to detract from an excellent book.

GRAHAM BIRD

***The Duke's Cut: The Bridgewater Canal, second edition* — Cyril J Wood**

128pp, 235x165mm, 150 photographs, 23 maps, softback, The History Press, The Mill, Brimscombe Port, Stroud, Gloucestershire GL5 2QG, 2009, www.thehistorypress.co.uk, ISBN 978 0 7524 5111 4, £12.99 (incl. p&p)

The difference between this edition and the first of 2002 is not obvious as there is no new introduction that might have explained it. The four main chapters encompass a brief history of the canal, a description of the route, a section of linear maps and navigational and general information. The book is copiously illustrated with both bygone and present-day photographs; perhaps a number of the latter could

have been omitted as in the rural areas a few want for interest and the reproduction of some is lacklustre. The linear maps, although inexplicably varying in the shading by which the canal is depicted, show approximately two miles of canal each and are a useful adjunct for those cruising the canal or exploring on foot.

JOHN HOWAT

***The Atock/Attock Family: a worldwide engineering dynasty* — Ernie Shepherd**

264pp, A5, laminated, 125 illustrations and 44 diagrams, paperback, The Oakwood Press, PO Box 13, Usk, Monmouthshire NP15 1YS, 2009, ISBN 978 0 85361 681 8, £15.95

The name of Atock (or Attock) may not be well known to readers. In this detailed study of the work of twenty members of the family in many aspects of railway engineering over a period of 130 years, Ernie Shepherd has filled a gap in the history of progress in this field, overseas as well as in Britain.

The earliest mention of the family's part in railway history was in the mid-1800s when George Attock joined the Eastern Counties Railway as locomotive superintendent. Martin Atock obtained a similar

position with the Midland Great Western Railway of Ireland in 1872 and the family's railway connections then began to expand. At(t)ocks were found in many parts of the British Empire, where their contribution to locomotive development is well documented. In contrast to his namesakes, Martin Oldacres Attock joined English Electric and the story takes on a new dimension as he makes diesel his choice of motive power.

Apart from railways, there is an account of Kenneth Atcock who was a member of the Australian forces in the Mediterranean theatre of war in the 1940s. He became a prisoner and lost his life in an attempt to escape. But such information adds to the interest of the narrative which, as one digs deeper into the

achievements of the family, becomes compulsive to read and not easy to put down. The book is well illustrated with photographs and diagrams ranging from family portraits and groups to a wide variety of motive power, in which even a Covenant tank manages to make an appearance. GEOFFREY HUGHES

American Civil War Railroad Tactics — Robert R Hodges jnr

64pp, A4, 48 b&w and 13 colour illustrations, paperback, Osprey Publishing, Midland House, West Way, Botley, Oxfordshire OX2 0PH, ISBN 978 1 84603 452 7, £11.99

It is generally accepted that the American Civil War was the first major railway war. Railroads (to use transatlantic terminology), of which the US had 30,000 route miles in 1861, moved troops hundreds of miles and vitally supplied armies in the field. Unsurprisingly, major battles were fought for (mainly Confederate) rail centres: Chattanooga, Atlanta, Richmond and Petersburg. Hospital trains were pioneered. But this study, excellently illustrated — a balanced mix of contemporary photographs, drawings and Peter Dennis' artwork — also stresses the railroads' tactical capacity. The steam locomotive was then the world's fastest vehicle and railroads could rush troops in and out of battle, be used for command and reconnaissance and be adapted as weaponry. The

earliest armoured trains, of various types, date from the War. Railroads and their associated telegraphs were vulnerable and the attempted protection and the repair of tracks, bridges, stations, depots, tunnels and rolling stock absorbed considerable resources. The author's descriptions of railroad actions seem to favour the Confederates who indeed had dash and imagination; but the Union held the advantage in mobilising the co-operation of the railway companies and in their organisation at the top. Brigadier General Herman Haupt was an outstanding figure. This slim, yet remarkably comprehensive volume should be on the shelves of all interested in railways and war.

PHILIP SCOWCROFT

An Illustrated History of the Travelling Post Office — Peter Johnson

144pp, 293x213mm, 183 b&w photographs, 62 colour photographs, 15 illustrations, maps and diagrams, hardback, Oxford Publishing Co, an imprint of Ian Allan Publishing Ltd, Hersham, Surrey KT12 4RG, www.ianallanpublishing.com, 2009, ISBN 978 0 86093 620 6, £19.99

An earlier title, *A Look at the Night Mail* (ISBN 1 903633 04 4), produced by the M30272 TPO Group, splendidly celebrated the tradition and ethos of one of those railway specialities which, like slip coaches and water troughs, has disappeared. The present volume is hot on technicalities, especially rolling stock, but adds little to the 'feel' of the subject, the least-satisfactory section, on the general history, being somewhat turgid and full of long quotes.

Such detail as there is about life on the TPO is mainly hidden in the 58-page illustrated section on the rolling stock. This emphasises how design improved erratically and very differently among the companies well into Grouping days. We are reminded that less than ten years after the opening of the Liverpool & Manchester, there were day and night

mails between Euston and Liverpool taking less than twelve hours: with the penny post, what a revolution.

There are also good accounts of the changing schedules with route diagrams, the automatic exchange apparatus, and letters franked on board... a reminder that the letter box enabling late posting was itself an institution. Letters were frequently transferred between TPOs including between those going in opposite directions.

There is much to be gleaned here, the most is made of the large format for a handful of astonishing photographs and there is good colour. But the spirit of the famous film, *The Night Mail*, is far more strongly evoked in the earlier book.

DAVID ST JOHN THOMAS

***Sir William McAlpine: A Tale of Locomotives, Carriages and Conservation* — John Chacksfield**

120pp, A5, 97 b&w photographs, 3 maps, 4 facsimiles, 5 carriage drawings, paperback, The Oakwood Press, PO Box 13, Usk, Monmouthshire NP15 1YS, 2009, ISBN 978 0 85361 688 7, £10.95

A member of a civil engineering dynasty with railway connections from the Victorian era to the present day, Sir William McAlpine is an outstanding figure of the railway preservation movement. This book is a tribute that interweaves biographical information with stories of many heritage projects on which Sir William has had an influence — through financial, management or political help or as figurehead. Among projects discussed here are the Romney, Hythe & Dymchurch Railway, *Flying Scotsman*, The Steam Locomotive Operators' Association, the Pullman rolling stock of the reborn Venice Simplon Orient Express, the Railway Heritage Trust and his own private railway and museum at Fawley Hill near Henley. Although aspects of Sir William's personal and professional life are included, his railway activities are the focus. There

are numerous illustrations, a bibliography and a short index. Production is of the high quality to be expected from this publisher and it is good value for money.

This is an enjoyable book and tells a fascinating contemporary story with enthusiasm. As an historical work it has limitations. In particular the text relies heavily on sources from the McAlpine family and thus lacks balance and perspective. Sir William has been closely involved in some complex, difficult and controversial heritage projects, notably the rescue and repatriation of *Flying Scotsman* from the USA, but sources from other sides of the stories appear to be inadequately represented. Nearly half the photographs are from McAlpine collections. Many are undated and poorly captioned. **TIM EDMONDS**

***Narrow Boat* — L T C Rolt**

230pp, 215x137mm, 40 engravings, 14 photographs, 1 map and 1 diagram, paperback, The History Press Ltd, 160 Milton Park, Abingdon, Oxfordshire OX14 4SD, 2009, ISBN 978 0 7524 5109 1, £14.99

Essentially this new edition of what is a seminal work is the same as the 1994 edition, which added a number of photographs taken on the voyage described and which were introduced by Sonia Rolt. It is a classic book, well presented, and suffers, compared to the original hardback, only from the lack of that glorious canal art dustjacket.

It matters not that more recent research has removed some of the rosy tint from Rolt's account of canal life, especially of the role of the 'Number Ones', the independent, live-aboard, owner-operators. There is no better description of a landscape and life that is now only a distant memory, and which was to be the single spark that started the re-incarnation of our canals during the last 50 years.

WILLIAM FEATHERSTONE

***The Blakesley Miniature Railway and the Bartholomew family* — Bob Tebb**

184pp, 240x170mm, 141 b&w and 26 colour illustrations, 5 maps and 2 family trees, paperback, Silver Link Publishing, The Trundle, Ringstead Road, Great Addington, Kettering, Northamptonshire NN14 4BW, www.nostalgiacollection.com, 2009, ISBN 978 1 85794 339 9, £19.99

Can less than half a mile of 15-inch gauge railway really warrant a full-length book? In this case, the answer is 'yes'. Firstly, as the author reminds us, railways are about people, and here they are the intriguing family associated in particular with the Aire & Calder Navigation, and in general with the South Yorkshire coal industry, from which came the money

to indulge in this venture on a rural Northamptonshire estate. The other rather remarkable part of the story is that this line was a pioneer of internal combustion and that Dr Tebb is the present custodian of one of the centenarian petrol locomotives.

The author has left few avenues unexplored in disentangling the story of this line from the legends

and scandals which have surrounded it, and he sets out the facts and arguments lucidly, if occasionally repetitiously, aided by clear reproduction of both text and illustrations.

A convincing case is made that this line should be seen as more of a pioneer in the little world of small railways than usually been the case hitherto, and the author backs this up by unravelling some of the

relationships and influences among the network of miniature railway enthusiasts. Taken together with recent works on Sir Arthur Heywood's lines and Bassett-Lowke's locomotives, this fills out our picture of the high summer of the Edwardian gentleman's estate railway in a very satisfying way.

MATTHEW SEARLE

***On Roads: A Hidden History* — Joe Moran**

312pp, 215x132mm, 8 photographs, hardback, Profile Books, 3A Exmouth House, Pine Street, Exmouth Market, London EC1R 0JH, 2009, ISBN 978 1 84668 052 6, £14.99

This thoroughly enjoyable book is a social history of roads, concentrating on the period from the birth of the first motorways to 'our road-sceptical age'. Its wide-ranging topics include the development of the motorway network, signs, maps, driver etiquette, road rage, legislation intended to improve safety, roadkill cuisine, Eddie Stobart, distribution centres, service stations, and the roads protest movement. The discussion is even-handed rather than passionately committed, with plenty of interesting asides. For example: homing pigeons follow the lines of motorways and roads; traffic cones were designed by someone who encountered a problem when trying to mould toy elephants; satnav relies on a few members of the US Air Force at Schriever Military

Base in Colorado; Britain's longest traffic jam was a 32-mile tailback on the M1 between Milton Keynes and Rugby on 5 April 1985, caused by roadworks; and 2½ million Mills & Boon novels were used in the construction of the M6 Toll Road.

It is not a conventional or comprehensive history — there is little on engineering and no chronology. The lack of photographs is sometimes a weakness. The eight-page discussion of sign lettering would benefit from illustrations of the various styles. A map of the motorway network would also be useful. However, unusually for a book intended for popular consumption, sources are extensively referenced and there is a good index.

PETER BROWN

***The Highland Railway* — Keith Fenwick and Howard Geddes**

128pp, 236x164mm, approx 200 photographs, 1 map, 4 diagrammatic drawings, paperback, The History Press, The Mill, Brimscombe Port, Stroud, Gloucestershire GL5 2QG, www.thehistorypress.co.uk, 2009, ISBN 978 0 7509 5094 7, £12.99

This is the fourth album of Highland Line pictures to appear since 1974, a tribute to the photogenic appeal of the old HR and its routes. Almost every facet of operations is shown, apart from Lochgorm Works, the ships and the hotels. Chapters are themed to allow a mixture of ancient and modern throughout the volume — which although part of a *Britain's Railways in Old Photographs* series, includes scenes as recent as January 2009. The selection makes a fine conspectus, with little duplication from previous albums. All images are black and white and

reproduction is generally good.

Chapter introductions give a concise account of how the railway operated and how it works today. The pedantic critic can spot only a very few trivial errors. Stroudley 'Terriers' did not work on the Highland in World War I, but on the Admiralty-owned line alongside the Cromarty Firth. The Drummond 4-4-0 No. 14417 is noted as suffering the ignominy of having its name, *Ben na Caillach*, mis-spelt by the LMS as *Ben na Caillich*. In fact the latter is the correct version.

DAVID ROSS

***A History of the London & Birmingham Railway, Volume Two, Bletchley to Rugby* — Peter Richards & Bill Simpson**

160pp, A4, 148 photographs, 32 diagrams, paperback, Lamplight Publications, 260 Colwell Drive, Witney, Oxfordshire OX8 7LW, boydpubs@ntlworld.com, 2009, ISBN 978 1 899246 22 9, £18.95

This volume is a detailed review of a 36½-mile section of the London & Birmingham Railway from Bletchley to Rugby together with the branch from Weedon to Daventry and Marton Junction and the Northampton Loop. The first chapter sets the scene and considers the conflict between the L&BR and the Great Western Railway over the Great Western's proposed route to the Midlands. Subsequent chapters are devoted to each station on the line plus a chapter on Kilsby Tunnel. The final chapter considers the legend that the original main line avoided Northampton due to the opposition of the town and quotes recent authoritative studies which indicate that this was not

the case. As would be expected, the length of the chapters varies greatly with the importance of the location from only a few words on Church Brampton on the Northampton Loop ('a mysterious, little recorded ... station') to substantial sections on Bletchley, Wolverton and Rugby.

The book is copiously illustrated with archive and contemporary photographs and most of the stations described are accompanied by plans. There is an index and there are suggestions for further reading. This book is exhaustively researched and forms a useful addition to the literature on the history of the London & Birmingham.

ROGER CRAGG

***Footplate and Signals* — L F E Coombs**

128pp, 237x170mm, 75 illustrations, paperback, Silver Link Publishing, The Trundle, Ringstead Road, Great Addington, Kettering, Northamptonshire NN14 4BW, 2009, ISBN 978 1 85794 319 1, £17.99

It might be thought that nothing new could be said about the steam railway: this book proves the contrary. It deals with two related themes: the ergonomics of the footplate and the interface between the enginemen and the signaling systems which governed their progress: rather than the mechanics of the block system, the author is concerned with how crews saw, interpreted and acted on signal aspects. An underlying theme is the failings of drawing offices to pay much (or indeed any) attention to the optimum layout of controls, or the driver's view of

the line ahead; there were major failings on late designs (such as the Stanier and Bulleid pacifics) and even the BR Standard classes — the first on which footplatemen were actually asked for their views — had weaknesses in this respect. The book is enhanced by many of the author's own illustrations, his acerbic comments on some of the doyens of *Locomotive Practice and Performance* (although Dr Tuplin emerges rather well) and a survey of the footplate in literature and film. Highly recommended.

TONY KIRBY

***West from Paddington* — Stuart Cole**

168pp, 215x125mm, full colour throughout with 236 photographs, 101 maps (all sections of the same map), 78 linear maps, paperback, Etica Press, www.eticapress.com, 2007, ISBN 978 1 905633 05 0, distributed by Middleton Press, Easebourne Lane, Midhurst, West Sussex GU29 9AZ, www.middletonpress.co.uk, £12.50 (post free)

This new travellers' guide covers the three routes from Paddington to Bristol Temple Meads, to Carmarthen and to Penzance. Its outer appearance incorporates the branding of its sponsor First Great Western so that one can be forgiven for overlooking it as a book of timetables. Perhaps this is why, after two years, it has been re-launched by a new distributor.

The design works. Each double-page has the relevant portion of the 1930s GWR route map and accompanying textual descriptions. Postage-stamp sized photographs direct one to the real-life view through the carriage window.

Although format is uniform, content thankfully is not so that the journey does not get boring after Swindon. Brunel has his place but is a modest player

and while long-closed stations and branch-line junctions are adequately described this is not a book for the narrow-minded rail enthusiast. Entries on historic landscapes, office blocks, churches and villages are mixed with arbitrary celebrity connections. We are treated to the famous (Kate

Winslet's school) and the infamous (Neil and Christine Hamilton's manor house) but Cole stops short at celebrating Newport's modern claim to fame as the train glides past TJ's where Kurt Cobain proposed to Courtney Love.

STEPHEN ROWSON

***Horton's Guide to Britain's Railways in Feature Films – second edition* — Glyn Horton**

208pp, 235x153 mm, 40 b&w photos, paperback, Silver Link Publishing Ltd, The Trundle, Ringstead Road, Great Addington, Kettering, Northamptonshire NN14 4BW, 2009, ISBN 978 1 85794 334 4, £17.99

This intriguing directory starts with a five-page 'History of railways in British film'. The meat of the book, however, is its alphabetical listing of about 1000 British- and Irish-made feature films in which railways (and tramways) appear. Each entry includes basic data such as year of release, director, principal players and a one-sentence outline of the plot. These are followed by a longer commentary on the nature and plausibility (or, frequently, the opposite!) of the railway sequences, including a note of any identifiable locations and locomotive numbers.

Classics such as *Brief Encounter* and *Oh! Mr Porter* are given due attention, but many of the films listed are obscure or have little railway content. In some cases the locations used, such as Belfast docks or Plymouth Millbay, have rarely been seen on film. Two appendices list the titles of films shot on preserved railways and at London termini. There is also a brief bibliography, although it surprisingly omits John Huntley's *Railways in the Cinema* (Ian Allan, 1969). One or two minor errors and mis-spellings are apparent but, these apart, the book is both useful and well produced.

GRAHAM BIRD

***The History of the Whittingham Hospital Railway 1884–1957* — Mark Cornwell**

96pp, A4, 105 photographs (4 colour on cover), 7 maps, paperback, published by the author, 1 Higher Simpson Fold Cottage, Higher Wheelton, Chorley, Lancashire PR6 8HW, 2009, no ISBN, £12 plus £1.50 p&p

This quirky two-mile private railway ran from the LMS (ex LNWR/L&YR joint) station at Grimsargh near Preston to the vast asylum at Whittingham which, in the 1930s, had 550 staff looking after 3,500 patients. The facilities included a large boiler-house and gas works, so there was considerable freight traffic as well as a free scheduled passenger service offering up to ten return journeys per weekday. This admirable monograph describes the history of the railway from its conception in 1884 to its closure in 1957, when traffic by road became financially compelling. The hospital closed in 1995.

Individual chapters describe the route in detail, the unusual station at Whittingham, the 500-yard

extension to the boiler-house of 1920, the four disparate steam locomotives used at various times and the highly individual, antique rolling stock. The depth and breadth of information that the author has accumulated is extraordinary and the comprehensive illustrations are admirable; it is merely a pity that the same attention to detail has not been exercised with punctuation and proof-reading. This minor criticism apart, this is a well researched, well presented (large format on art paper) publication that does full justice to a unique railway enterprise of particular charm.

MILES MACNAIR

The Stephenson Locomotive Society has published a 16-page illustrated supplement to their 'Centenary Celebration' reviewed in *RCHS Journal* 206. It is available from 5 Pentrosfa Crescent, Llandrindod Wells, Powys LD1 5NW at £1.50, postage included

Short reviews

Transportation and Thorne: A Brief History

— Philip L Scowcroft

16pp, A5, 3 maps, paperback, Thorne Local History Society, 2009, no ISBN, available from Laurie Thorp, 6 Middlebrook Lane, Thorne, Doncaster, South Yorkshire DN8 5LB, £1.65, p&p included

Thorne is a small town north-east of Doncaster. Road transport covered in this booklet includes early stage coaches through to public transport and local freight. Water transport on the River Don, the Stainforth and Keadby Canal and other outlets to Goole is accounted for. The growth of the railways around Thorne is described — the little town had five stations by 1869. Air transport takes a page of very varied historical titbits. The author admits that it is only the flat land around Thorne that has given the place 'a vestige of an aviation history'. Ten suggestions for further reading are given.

Talking Tickets: Issue 1, Summer 2009 — Transport Ticket Society

18pp, A4, 132 (ticket-sized) colour photos, 1 map, unbound, Transport Ticket Society, 182 Park Avenue, Waterlooville, Hampshire PO7 5EZ, 2009, ISBN (for this issue) 978 0 903209 69 4, £2.95 or £10.50 for four issues

There is a new twice-yearly publication subtitled *The Magazine for Historical Rail Tickets*. This first issue contains articles on the Leen Valley area, Kent & East Sussex Railway through bookings, LNWR 'London' prefixes and Ryde to Portsmouth season tickets. The first three deal mainly with Edmondson-style issues but the Ryde article illustrates, inter alia, some larger 'Compounders' Tickets' for payment of pier tolls. There is also a short item on an outsize 'Trader's Season Ticket' from 1917, jointly issued by 13 different railway companies, which has had to be split into three parts for the purpose of illustration.

Steam : The Mystic Harmony — W Elgar Dickinson

144pp, 238x172mm, 254 b&w photos, 33 colour photos, paperback, Silver Link Publishing Ltd, The Trundle, Ringstead Road, Great Addington, Kettering, Northamptonshire NN14 4BW, 2009, ISBN 978 1 85794 328 3, £17.99

A sequel to the same author's *A Friend in Steam*, this volume effectively conveys his enthusiasm for photographing British steam locomotives. The book is divided into twelve sections with titles such as 'Pristine Paintwork' and 'Death Row', each introduced by a page of text. The illustrations, mainly from the Midlands and North of England, are undated and the locomotives are often unidentified. The views are generally well composed and full of 'atmosphere', but their technical quality is often indifferent.

Kerr, Stuart & Co. Ltd., Locomotives 1911

40pp, A4, 42 sepia photographs, paperback, Industrial Railway Society, 24 Dulverton Road, Melton Mowbray, Leicestershire LE13 0SF, 2009, ISBN 978 1 901556 55 1, £7.65, p&p included

This is an elegant reprint of Kerr, Stuart's 1911 locomotive building catalogue with large, clear and detailed photographs of each type. Most went to the colonies or south America but the GWR railmotor and the Metropolitan 4-4-4- tank are also here.

Kerr, Stuart & Co. Ltd. Fifteen Shillings Change 1929

30pp, A4, 20 b&w illustrations, paperback, Industrial Railway Society, 24 Dulverton Road, Melton Mowbray, Leicestershire LE13 0SF, 2009, ISBN 978 1 901556 57 5, £7.65, p&p included

Another elegant book designed to sell Kerr, Stuart's small diesel locomotives as available in 1929. There are detailed technical descriptions, pictures of loco details and performance data. Some hyperbole — 'the machine rides over even indifferent track as smoothly and pleasantly as a Pullman car'. The title refers to the claim that fuel cost for diesel was a quarter of that for steam.

***Norwood Tunnel: Four Centuries of Challenge* — Christine Richardson**

36pp, 206x190 mm, 9 b&w photographs, 10 maps, 2 drawings, paperback, Richlow Books, PO Box 3994, Sheffield S25 9AZ, 2009, ISBN 9780955260964, £4.50 post free

This is a short but detailed booklet that deals with the long tunnel on the Chesterfield Canal summit that was opened in 1775, the same year as the much better-known one at Harecastle. It contains much useful detail on construction, operation and decline and an intriguing section about the prospects for restoration of the tunnel route (much of the tunnel itself being incapable of restoration). Photographs are markedly limited but there are several useful explanatory maps.

The following five books, each 96pp, 236x166mm, are available from Middleton Press, Easebourne Lane, Midhurst, West Sussex GU 29 9AZ:

***Branch Lines around Spalding* — Michael Back**

120 photographs, 24 maps and plans, timetable extracts and publicity material, hardback, 2009, ISBN 978 1 906008 52 9, £15.95 (post free)

This volume covers the western end of the Midland & Great Northern (including the purely Midland Saxby – Little Bytham length). There is extensive coverage of Bourne and Spalding and of the sad last day, 28 February 1959: ‘That’s it, then’ said the Long Sutton signalman, sending his final 7-5-5. Captions are detailed and informative and there is a good chronological range of photographs: many show the line in its ‘freight only’ days (1959-65), with a remarkably healthy level of traffic that was quickly lost.

***Branch Lines around Hertford and Hatfield* — Vic Mitchell and Keith Smith**

2009, ISBN 978 1 906008 58 1, £15.95

This volume explores the branch lines radiating from Hertford to Broxbourne, St Albans and Buntingford.

The delightful station at Hertford East contrasts starkly with the modern architecture at Broxbourne station, which was rebuilt and relocated in 1960, although both are Grade II listed. The St Albans branch, which lost its passenger service in 1951 and had a halt serving the Salvation Army’s printing works, and the long rural Buntingford branch, which had stations mostly located away from the communities they were intended to serve, both receive detailed attention.

***Barmouth to Pwllheli* — Vic Mitchell and Keith Smith**

not paginated, 236x166mm, 121 b&w photographs, 5 timetables, 23 illustrated tickets, 5 gradient profiles and 26 maps, laminated hardback, Middleton Press, Easebourne Lane, Midhurst, West Sussex, GU29 9AZ, www.middletonpress.co.uk, 2009, ISBN 978 1 906008 53 6, £15.95 (post free)

The straight-forward subject of this book is the northern section of the Cambrian Railways’ west-Wales coastal route. There were no branch lines and only the one junction (at Afon Wen with the LNWR line to Caernavon and Bangor). All stations are illustrated. Exchange sidings with the various narrow gauge slate railways at Minffordd and Portmadoc are noted

***Cardiff to Dowlais (Cae Harris) including the Coryton and Aber branches* — Vic Mitchell and Keith Smith**

20 b&w photographs, 8 timetables, 14 illustrated tickets, 5 gradient profiles and 32 maps, laminated hardback, 2009, ISBN 978 1 906008 47 5, £15.95 (post free)

This journey on the Rhymney Railway lines from Cardiff to Dowlais (via Bedlinog and Cwm Bargoed) reads like a Monmouthshire Railway Society excursion as it mops up branch lines on the way. These are: the Cardiff Railway from Heath to Coryton (but, inexplicably, not including the four stations beyond to Rhydyfelin that were closed in 1931), the RR Aber branch from Caerphilly to Senghenydd and both Brecon & Merthyr lines from Caerphilly to Machen (which included that other Waterloo station). The RR in Cardiff and Caerphilly are particularly well described.

***Machynlleth to Barmouth* — Vic Mitchell and Keith Smith**

122 b&w illustrations, 13 maps, timetables, tickets etc, hardback, 2009, ISBN 978 1 906008 54 3, £15.95

This book covers a scenic part of the Cambrian Coast line and also includes chapters on Aberdovey Harbour and the Fairbourne Railway. Large scale maps, usually of 1901, show the stations and their surroundings; the halts appear on one-inch maps of 1947. Practically all the photographs depict the stations and halts as we would like to remember them, before reduction of facilities. Also included are signal box dates, a selection of tickets and snippets of interesting information.

***Railway Walks: GWR and SR* — Jeff Vinter**

194pp, 235x155mm, 47 photographs (8 in colour), 11 maps, paperback, The History Press, The Mill, Brimscombe Port, Stroud GL5 2QG, www.thehistorypress.co.uk, 2009, ISBN 978 0 7524 5103 9, £14.99

This volume in the reprint series includes ten walks along abandoned railways in the South of England — from the Camel Trail in the West to the Cuckoo Trail in the East. The Forest of Dean and the Stroud Valley are the most northerly, with references to the ill-fated Severn Bridge. The maps helpfully include detailed navigation instructions. The colour pictures are present-day, the others portray the railways in use many years ago.

***Railway Walks LNER – From East Anglia to the Durham Moors* — Jeff Vintner**

172pp, A5, 49 illustrations, 17 sketch maps, paperback, The History Press, as above, 2009, ISBN 978 0 7524 5105 3, £14.99

This book is a new edition of the book by the same author published in 1990. The major part of the book consists of ten chapters each describing a walk on an abandoned railway line. The text in these chapters is almost identical with that in the original book. The author visited the sites in 1988 but has not been able to revisit them all recently. Illustrations are the same rather muddy black and white photographs although

eight new colour views have been inserted.

The major improvement in the 2009 edition is Appendix B which gives brief, updated descriptions of 84 routes which have been converted to railway walks.

Amberley Publishing of Cirencester Road, Chalford, Stroud, Gloucestershire GL6 8 PE, www.amberley-books.com, have, in 2009, published A5 paperback reprints of three classic early railway and canal history books:

***The Canals of England* — Eric de Maré**

144 pp, 180 b&w illustrations, ISBN 978 1 84868 160 6, £14.99

This book, published in 1950, stands alongside Rolt's *Narrow Boat* as the foundation of public interest in and appreciation of the 'inland waterways'. The text is informative and accurate but the author's photographs are the glory. Reproduction here is not as sharp as the originals but never mind.

***The Thames and Severn Canal* — Humphrey Household**

258 pp, 80 b&w illustrations, ISBN 978 1 84868 035 7, £14.99

This is an exemplary canal history first published by David and Charles in 1969 with a foreword by Charles. Meticulously researched and referenced, also a good read with photographs by the author and many earlier images.

***George and Robert Stephenson* — L T C Rolt**

330 pp, 30 b&w illustrations, ISBN 978 1 84868 164 4, £14.99

This book includes the first modern biographies of Stephenson father and son and eschewed the eulogistic tendencies of earlier efforts such as Smiles. Rolt, however, perhaps portrays George in a more favourable light than later research would justify.

Notes for Contributors

The Editor welcomes the submission of interesting relevant articles. Potential contributors should contact him for a copy of the Guidance on writing for the Journal, including the style sheet. A copy is also available on the RCHS website, www.rchs.org.uk

Authors need not be members of the Society, though preference for publication is normally given to members.

Articles must be relevant to the aim of the Society, which is 'to encourage the study of the history of transport, with particular reference to railways, waterways and all matters associated with them'. Articles will therefore be considered on:

- any mode of transport (not just railways and canals);
- any historical aspect of transport, including social and economic; and
- subjects that would assist others in undertaking transport research.

Articles should be of potential interest to a significant proportion of the general membership. Thus, if they are on a particularly detailed or obscure subject, they should help to illuminate a wider topic.

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Letters are welcomed where they provide further information concerning topics arising from articles from articles published in the *Journal* or where they are, in effect, short articles of interest in their own right.

As the *Journal* is the Society's formal permanent record, letters appealing for information or concerning Society issues may be more appropriate for publication in the *Bulletin*. (The 'lead time' for the *Bulletin* is also shorter) Similarly, some letters submitted to the *Bulletin* may be more appropriate for publication in the *Journal*. If the Editor wishes to switch letters between publications, the author will be consulted.

Production

Preferably, articles should be submitted to the Editor in the form of a printed copy accompanied by a CD or 3.5-inch diskette produced by a word processor. The preferred format is MS Word, though Wordperfect or Rich Text Format can be accepted. The CD/diskette must be clearly labelled with the author's name and the title of the file including the extension showing the software format used. The CD/diskette must be clearly labelled with the author's name. It, together with any accompanying it, will be returned before the article is published.

Authors without access to word-processing equipment may submit their articles typed on white A4 paper, or clearly hand-written. Pages should be numbered. A covering letter should be sent, giving the author's name, address for correspondence, plus telephone number, fax number and e-mail address if available. Authors should keep a copy of their text, in case anything goes astray.

Detailed 'Guidance on writing for the Journal' for potential authors is available from the Editor, who would be grateful if authors would adhere to it as far as possible.

Publications of the Railway & Canal Historical Society

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