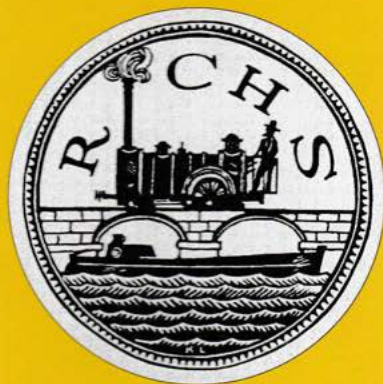
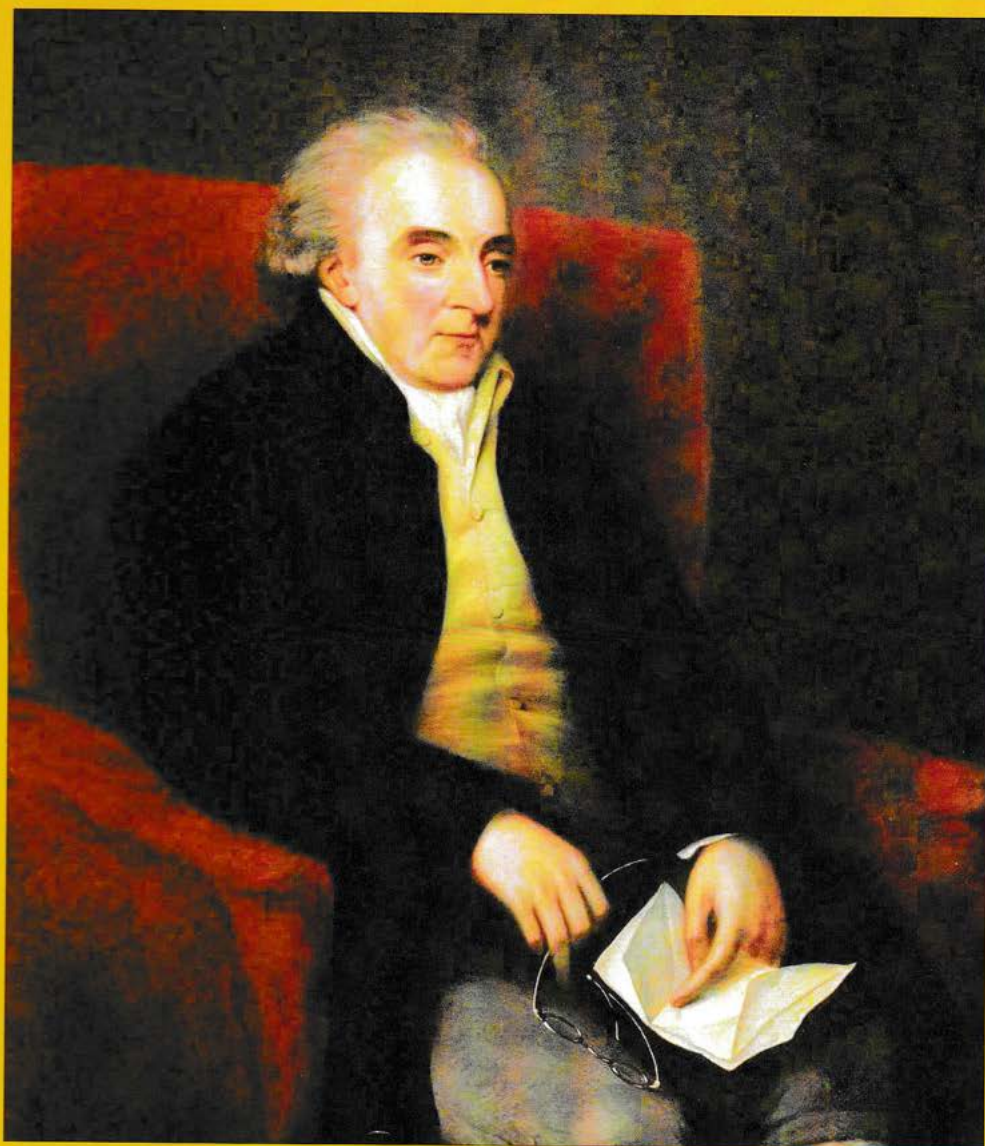




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Front : The Right Honourable Thomas Harley (1730–1804), the principal promoter of the Leominster Canal (artist unknown; reproduced by kind permission of Edward Harley of Brampton Bryan) (see pp 337–345).

Back : The Stafford Branch Canal (see pp 362–367). *Above*: Front view of St Thomas' (Baswich) Lock House, c 1955, with Olive Shaw in the front doorway (courtesy of Olive Price, née Shaw). *Below*: Entrance to Baswich aqueduct from the Basin, 1968. The brickwork shows the walls of the Basin (photograph courtesy of Peter Freakley Collection, Staffordshire & Worcestershire Canal Society)

The early development of the Outram-pattern plateway 1793–1796

Rowan Patel

Benjamin Outram was the leading figure in the development of plateways for surface use, yet he seemingly had little or no knowledge of plateway technology late in 1792. By the end of 1796 the Peak Forest railway was operational, exemplifying all of Outram's main principles for railway construction. Outram had developed a reputation as an authority on railway matters by this point. Although his 'Minutes to be observed on the construction of Rail-ways' were not to be published for another four and a half years, his characteristic style of plateway had already evolved. Outram's involvement with railways in the period 1793 to 1796 therefore makes for an interesting study. This formative period saw him progress from having little railway experience to establishing the 'Outram-pattern' line, later used for hundreds of miles of railway in many parts of the country. The iron plateway above ground was new technology when adopted by Outram, thus these years are of crucial importance to the rise and progress of this form of railway.

Outram's first major civil engineering work was as superintendent engineer of the Cromford Canal. In his capacity as superintendent of works, Outram initially supervised contractors Thomas Dadford and Thomas Sheasby carrying out the construction. However, by January 1791 these contractors were insolvent, from which point he managed the works directly right through to their completion in 1794.¹ In September 1793 Outram arranged for the sale of surplus equipment 'lately used in executing the Works of the Cromford Canal'. These items were to be sold on the canal at Butterley and included 'Miners' Waggons and Waggon Rails'² (Fig 1). This was probably a narrow gauge wooden railway system. Its likely use lies in the removal of spoil during the excavation of the Butterley Tunnel, nearly 3,000 yards in length, but largely completed by the date of the auction. The driving of the Butterley Tunnel began in 1790, and this temporary railway could have been in use for some years prior to its advertisement for sale. In this modest mining railway, no doubt typical of the time, we may have the first example of Outram's involvement with a railed transport system.

HORSES, ENGINES, and IMPLEMENTS.

TO BE SOLD BY AUCTION,
By JOHN CANNER,

On Monday the 16th Day of September Instant, on the Cromford Canal at Butterley, in the County of Derby;

S**SIXTEEN** very good Draught Horses in high Condition, with their Collars, Packfaddles, and Gearing. Some of the Horses are of the heavy Kind, others very fit for Posters, and some very capital Gin Horses.

Eight very stout Asses, with their Packfaddles and Bridles.

A narrow-wheel'd Waggon and several good Carts, fit for the Road or Farmers' Use.

Nine Gins or Horse Engines fit for Collieries or Mines.

Four Pairs of Turnstiles and Wallows, six large Water Barrels, three good Water Engines, several Pumps of different Kinds, a great Number of Ropes, Boxes, and Trunks, Miners' Waggons and Waggon Rails, two flat-bottomed Boats for removing Earth, Stone, &c. a good Machine, with 6 Waggons and Rails, for raising Earth out of deep Cutting.

A good narrow-wheel'd Waggon, and several Carts fit for Farmers' Use on the Roads.

A great Number of Barrows, Planks, Trucks, Working Tools, and other Implements lately used in executing the Works of the Cromford Canal.

The Goods may be viewed 3 Days previous to the Sale, & Particulars had by applying to Mr. BENJ. OUTRAM, at Butterley Hall near Alfreton.

N. B. The Lots will be made agreeable to the Purchasers, and the Purchase Money must be paid at the Time of Sale.

Figure 1. The Derby Mercury of 5 September 1793 included a notice that surplus equipment recently used in the construction of the Cromford Canal was to be auctioned, and could be viewed on application to Outram. 'Miners' Waggons and Waggon Rails' included amongst the equipment could be the first railed transport system with which Outram was associated. (© The British Library Board and reproduced by permission of the British Newspaper Archive)

Outram's first significant railway project began when William Jessop reviewed his survey for the Derby Canal and recommended that his proposed canal beyond Little Eaton should be substituted by a railway. Outram then began to consider the form of this railway. In October 1792 he was

contemplating 'Oak Rails these Covered with Cast metal Plates'.³ This was old technology, as developed in Coalbrookdale from 1767 and it does not appear that Outram then had any experience with plateways. Interestingly Dadford, one of the contractors originally working on the Cromford Canal with Outram, had previously been engineer to the Trent & Mersey Canal Co. In this capacity he probably re-built their Caldon Low line in 1785, which was built using Shropshire technology as described by Outram.⁴ The Cromford Canal Act of 1789 contained a section authorising the construction of feeder railways to convey minerals to the canal.⁵ Outram is thus likely to have familiarised himself with the form such railways might take, even prior to his involvement with the Derby Canal. In this period Jessop was a major influence on Outram and there seems little doubt that he would have advised him on the railway practices of the day.

In 1790 Outram established Benjamin Outram & Co, an ironworks later famously known as the Butterley Company. The mining of ironstone and coal under Outram's direction was underway by June 1790, whilst the company's first furnace was being built by November 1791.⁶ The movement of minerals on the Butterley estate, especially underground, could feasibly have utilised railways such as that used for the Cromford Canal construction. It is some time later that the first known railway was engineered by Outram for the company's use. This linked limestone quarries at Crich with Amber Wharf on the Cromford Canal, a distance of 1.25 miles. Farey described this line as operational from 1793. It is certainly true that the lime kilns built at Amber Wharf were working by April 1793, which suggests that the railway conveying stone to them was also then in use.⁷

It has generally been assumed that the Crich line was built as a plateway on opening, this being Outram's first known involvement with flanged rails. In reality however, no solid evidence exists regarding the original form of the Crich track, and in many ways this possibility seems unlikely. The construction of the Crich line must have begun at the start of 1793, if not late in 1792. Outram was discussing oak rails with a cast iron plating for the Derby Canal line in October 1792. This line was a much larger scale undertaking than that at Crich, therefore it seems reasonable to assume that this was Outram's favoured form of railway at that time. For him to have utilised a plateway at Crich would have necessitated a rapid change of thinking. It would have required Outram to use all-iron plate rails just

months after discussing iron-plated wooden edge rails. In many ways it seems most likely that the Crich railway initially utilised edge rails, either entirely of wood, or iron-plated wood. This would represent a natural progression from the railways Outram had utilised during the construction of the Cromford Canal. The limestone extracted at Crich was initially mined, with the mine later opened out into a quarry. The Crich line began underground in the mine, which suggests further parallels to the mining railways likely to have been used during the driving of the Butterley Tunnel.

Work also continued on the Derby Canal railway in 1793, a line which is now often known as the Little Eaton Gangway (Fig 2 on following page). Two notices were printed for the Derby Canal Co in the *Derby Mercury* of that year. These are illuminating regarding the permanent way under consideration for the line. In August '10,000 Oak Sleepers four and half Feet long' were requested, the first third of them to be supplied prior to 5 November 1793. In December 1793 a request was made for '4000 cast Iron Rails of the toughest Metal, of one Yard in length, and weying 28 lb. each, of the Form described by a Model left at the Talbott Inn, in Derby'. The rails were to be delivered to Little Eaton in February 1794.⁸ These specifications demonstrate Outram's thoughts on railway construction late in 1793; cast iron rails one yard long and laid upon wooden sleepers. This request also shows how early Outram adopted a rail length of three feet. Cast iron rails, either all-iron or as a plating overlying wood, had until now often been four to six feet in length. Due partially to Outram's influence, one yard was soon to become typical, especially for surface lines.

The type of rail to be used is not specified in this advertisement. As built the Derby Canal line probably represented Outram's first use of flanged plate rails. Assuming Outram's Crich line was an edge railway, then he had hitherto only used edge rails, and he evidently underwent a rapid conversion to suddenly become one of the plate rail's greatest exponents. It has already been noted that Jessop was a strong influence upon Outram, who looked up to and greatly respected this older engineer. Jessop's advice would undoubtedly have been sought on the permanent way for the Derby line. It is therefore interesting to note that at this point Jessop was engineering, and had nearly completed, the railways of the Leicester Navigation Company. These were edge railways, probably utilising iron bar rails,⁹ which Jessop must have considered the best choice

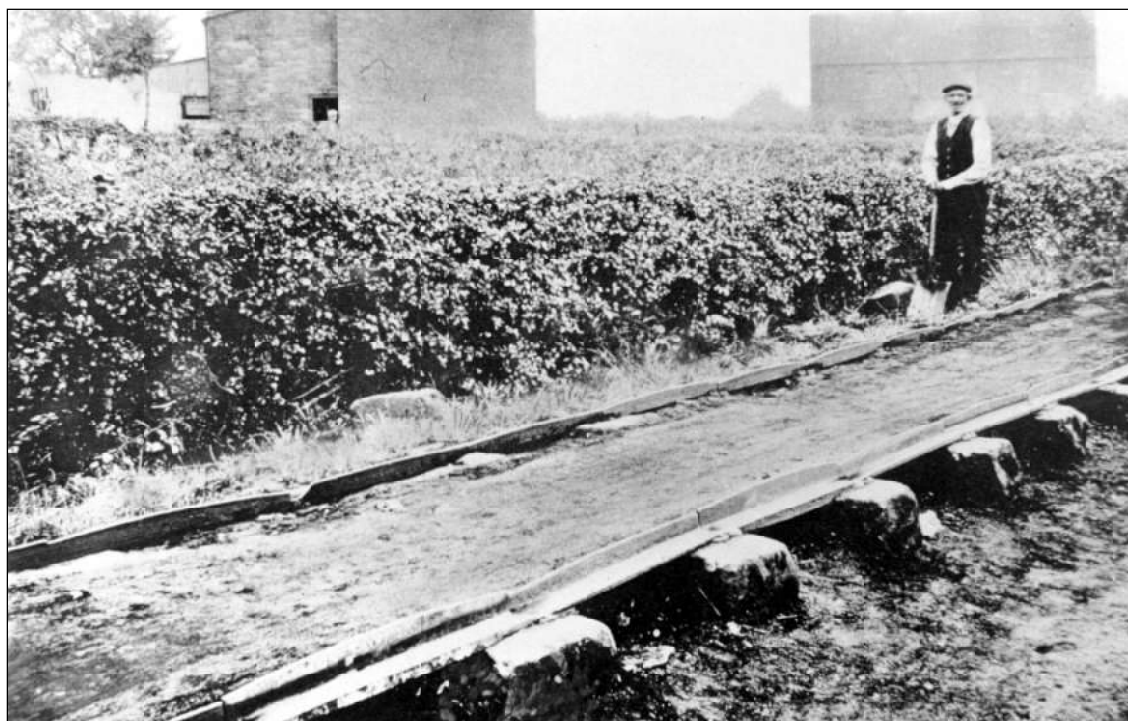


Figure 2. This photograph of the Derby Canal Railway or Little Eaton Gangway was taken just prior to its closure in 1908. It provides an excellent example of a fully developed Outram-pattern plateway. All of the design features of the plateways constructed by Outram for surface use are well illustrated here. (Courtesy of Picture the Past)

of rail at that time. The rails were ready to be laid in March 1793.¹⁰ The original specification dated 6 July 1792 describes the permanent way as ‘Rails of Iron to be cast in lengths of three feet. Each length weighing Twenty eight Pounds’.¹¹

It is intriguing that in December 1793 Outram was requesting rails weighing 28 lb/yd, a weight which had been utilised by Jessop earlier that same year. Indeed, it is tempting to consider that this might be more than a coincidence, and to speculate that Outram was considering 28 lb edge rails for the Derby line. Adopting plate rails on his largest railway contract to date, would have been to take a risk and step into the unknown. Jessop would surely have recommended the use of Leicester Navigation-type rails, since that is where his most recent experience lay. It would certainly not be surprising if Outram decided to emulate Jessop, replicating the permanent way he had just used. Joseph Butler of Wingerworth successfully tendered to supply the first rails to the Derby Canal Co, these being ordered in December 1793.¹² It was also Butler who cast rails for the

Leicester Navigation lines. The Derby Canal Co may have awarded Butler the contract, based on a recommendation from Outram, that Butler was recommended by Jessop.

Butler was an ironmaster based in the Chesterfield area. In this time period he was operating two coke furnaces at Wingerworth and a foundry at Stonegravel. Butler is famed for perhaps the first use of plate rails above ground in 1788, utilising rails four feet long and weighing 24 lb/yd. This plateway ran to the furnaces at Wingerworth from ironstone mines in Woodthorpe.¹³ If this line was the first use of flanged rails on the surface then the Derby Canal line seems likely to have been the second significant use, certainly in England. Assuming that Crich used edge rails and the advertisement for the Derby rails was for plate rails, then Outram must have been converted to the merits of plateways between October 1792 and December 1793. Alternatively, if the Derby advertisement of 9 December 1793 was actually for edge rails, then Outram must have decided on the use of plate rails between then and February 1794

when Butler cast the first rails. Indeed, one would expect the type of rail to have been settled by 23 December 1793, when Butler's tender was accepted.¹⁴ This leaves such a narrow time period for Outram to alter his plans, that it seems likely that it was 28 lb plate rails which tenders were invited for. If so, Outram may intentionally have used the same rail weight as Jessop did on the Leicester Navigation lines, even though his form of rail was totally different.

Outram used plate rails on the Derby canal line, when in likelihood he had hitherto only used edge rails. His colleague and friend Jessop had also recently used the most advanced edge rails of all-iron construction, thus to use plate rails would seem to go against what Outram had become familiar with. It has been shown that October 1792 to December 1793 is the longest period over which Outram could have been converted to the use of plate rails. If any factors were different, such as if the Crich line was built as a plateway, then the conversion period would be significantly shorter. Indeed, the fact that the chronology of events given leaves the longest possible period for Outram's conversion, is what makes this sequence of events most likely. In considering the factors which influenced Outram in this impressionable period, John Curr and Joseph

Butler are most likely to have made an impact on his decisions.

John Curr was the original inventor of the angled plate rail for use underground. He had completed a manuscript version of his famous book *The Coal Viewer* by November 1793, when a prospectus of its contents was published.¹⁵ Butler was an innovator who first used Curr's plate rails on a surface line, and the two men must have known each other. It also seems probable that Outram was acquainted with Butler before December 1793 when Butler applied to cast the Derby rails. Jessop certainly knew Butler by this point and may even have seen the plateway supplying his ironworks. Butler's line would seem to be the obvious inspiration for Outram's use of plate rails. Communication with Butler while considering his options for the Derby line could even have put Outram in touch with Curr himself.

The first trackwork for the Derby Canal railway was provided by Butler, whose tender to supply rails was accepted in December 1793. Whereas Butler used a gauge of only 20 inches on his lines, a figure clearly inspired by Curr's similarly narrow gauge, Outram chose to go his own way, building the Derby line to the much wider gauge of 3 feet 6 inches.¹⁶ The canal company minute book records that 'the proposals of Mr Joseph Butler for supplying Cast

Dr William Drury Lowe					
Sept	19 To 90 Gangwaggon Rails	1	3	3	20
	26 To 92 d	1	10	1	11
Oct	7 To 100 d	3	1	10	
	10 To 100 d	2	19	7	
	15 To 100 d	2	10	2	25
Nov	27 To 94 d	1	5	3	22
	29 To 100 d	1	10	3	10
Dec	9 To 211 d	2	19	2	11
	10 To 216 d	3	3	10	
1795	1 To 210 d	3		16	

Figure 3. *Furnace Ledger A (DRO, D5974/5/1) is the earliest existing ledger recording items cast by the Butterley Company. The first rails entered in this ledger are the '90 Gangwaggon Rails' cast on 19 September 1794 and weighing 36 lb each. These rails are entered twice in the ledger. They are listed in the Derby Canal Co account and also in William Drury Lowe's account as seen here. The rails were cast for the canal company but seem to have been paid for by Drury Lowe. (Courtesy of Derbyshire Record Office)*

Metal Rails' were to be accepted, the first rails to be delivered at Little Eaton in February 1794.¹⁷ It is generally stated that Outram & Co did not supply any rails for this line, yet in fact they cast the final 1.5 miles of track. This is the earliest rail order present in Butterley's first Furnace Ledger (Fig 3). Rails were supplied to the Derby Canal Co beginning in September 1794 and continuing until April 1795.¹⁸ The cost was £10 10s per ton, exactly the same as charged by Butler. Importantly these rails did not weigh 28 lb/yd as stipulated in the *Derby Mercury* notice of the previous year, for on average they weighed 36 lb/yd. This demonstrates that by September 1794 Outram had already developed a markedly heavier plate rail than had ever been used previously, half as heavy again as Butler's rails of 1788.

Assuming that the request for tenders did concern 28 lb plate rails, this raises the intriguing question of when the rail weight for this line was changed from 28 to 36 lb. Did Butler also cast 36 lb rails, or was the line laid with rails of inconsistent weight when it opened in May 1795? The only available clues with which this puzzle might be answered, seem to lie with the payments made to Butler for rails. These payments are recorded in the minute book of the Derby Canal Co. Having fulfilled the original order for 4,000 rails, Butler was awarded a further order in April 1794. This was to 'make as many [? (manuscript torn)] cast Metal Rails as will complete the Gang Way to Cox[bench]'.¹⁹ This could be interpreted in two ways. The order could have been for as many rails as were required to reach Coxbench. Alternatively, the order could have been for as many rails as the previous order, this being another 4,000 which was enough to get to Coxbench.

The canal company paid Butler £1,050 between 7 April and 10 November 1794. The cost of the castings was £10 10s per ton, therefore this cost equates to 100 tons of rails. If the rails weighed 28 lb each then this weight would be equivalent to 8,000 rails. It seems unlikely that this is coincidental, and it suggests that the second rail order placed with Butler was for another 4,000 rails at 28 lb each. It seems too convenient for it to be by chance that the amount paid to Butler is equivalent to two orders of 4,000 rails each. Additionally, 8,000 rails are equivalent to 2.3 miles of track. With passing places this would be a suitable quantity to reach Coxbench, which was 2 miles from Little Eaton. If the rails cast by Butler weighed 36 lb then the 100 tons of rails supplied would fall a little short of Coxbench. These

facts strongly suggest both that Butler did supply 28 lb rails, and that the original notice of December 1793 was for plate rails. However, when the rail supplier was changed to Outram & Co towards the end of 1794 the rail weight was increased to 36 lb/yd. If this is true then one wonders what Outram's reason was for increasing the rail weight by around 30 percent. This would have needed justifying to the canal company, given the additional cost which would be incurred in using heavier rails. Perhaps the 28 lb rails broke too frequently proving them to be inadequate, even while the line was under construction. In July 1795 Outram & Co refunded the Derby Canal Co £10 10s per ton for 3,675 lb of 'Broken Rails returned'.²⁰ Presumably these were Outram's 36 lb rails, around 100 of which had evidently broken in the first two months of operation. It seems likely that even more of Butler's 28 lb rails must have broken.

Further 'Gang Waggon Rails' weighing 33 lb/yd were cast for William Drury Lowe by Outram & Co beginning in December 1794. By August 1795 enough rails for 0.75 miles of railway had been cast.²¹ Drury Lowe owned Denby colliery, which was the terminal point of the Little Eaton line from its opening in May 1795. Indeed, Drury Lowe donated the first coal to pass down the line from Denby to the poor on its arrival in Derby.²² The final length of the Derby Canal line, from Smithy Houses up to the colliery at Denby must have been constructed at Drury Lowe's expense. These rails were evidently for that length of line and for use at the colliery itself. Only the portion of the route from Little Eaton to Smithy Houses was authorised by the original Act, therefore the canal company can only have been responsible for constructing that section. The extension to Denby must have been built using the Act's provision that branches could be built from the main line, up to 2,000 yards in length.²³ Outram & Co also cast 73 wheels for Drury Lowe beginning in June 1795, along with 'Castings for two Large Gangwaggons'.²⁴ In May 1795 Outram wrote to John Radford, Drury Lowe's agent at Denby colliery. He had recently visited Coalbrookdale and commented that 'they have every sort of Waggon Road that has been put in use and I am convinced ours is preferable to any of them'.²⁵ The superior railways referred to must have been the Derby Canal line and any plateways at the colliery.

By December 1794 Outram had gained enough experience to propose supplying the Peak Forest Canal Co with a railway. This proposal was accepted

and a contract for the work was approved in February 1795 'between Benjamin Outram and Company and this Company for Cast Iron Railways'.²⁶ The first rails weighing 42 lb/yd were cast on 4 March 1795, the heaviest rails Butterley had cast thus far.²⁷ Just a little over two years previously Outram's railway knowledge had been of iron clad wooden rails; he had made phenomenal leaps from this stage to cast what were probably then the heaviest plate rails ever made. Major hallmarks of Outram's plate rails were a raised foot and half-hemispherical lug at either end. These increased the rail's rigidity and inhibited rocking. It is not known when these design features were introduced, but they could already have been established on the early rails cast for the Peak Forest Canal. His other trademark was to cast a square notch in the end of each rail; these formed a hole when two rails were butted together, through which the rails could be nailed down (Fig 4). This characteristic way of affixing rails was in use by this point. Outram's heavier pattern of plate rail was therefore developed rapidly, and the rails detailed in his 'Minutes to be observed' were probably fully fledged by 1795.

Outram & Co went on to supply several other customers with rails in 1795. In March and November came two batches of 375 rails each for the Grand Junction Canal, which had been ordered for the canal company by William Jessop.²⁸ These weighed only 26 lb/yd and were probably for

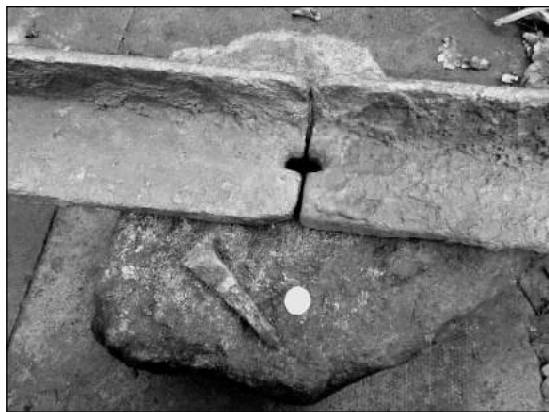


Figure 4. Details of the rail joint between two Outram-pattern plate rails. Square notches cast in the ends of each rail form a hole when the ends of two rails are butted together. A wrought-iron spike of the type shown was hammered through this hole and into an oak plug inserted into the stone sleeper. (Author, scale: 20 pence)

temporary lines used during the canal's construction. By this point Outram's ironworks seem to have established a local reputation for the supply of plate rails. In the fullness of time most local ironworks must have cast such rails, however, since these heavy-duty rails were apparently Outram's innovation they may only have been available from Butterley in 1795.²⁹ In November a private customer, the Rev D'Ewes Coke, bought an unspecified number of 'Gang Rails'. Presumably these were for his collieries at Pinxton.³⁰

Beginning in 1796 Outram's 1793 limestone railway at Crich was re-laid. Outram & Co cast themselves something over a mile worth of 35 lb rails between July and December of that year.³¹ This was nearly enough rails to re-lay the entire Crich line, and further rails cast in 1797 would have been enough to complete the route throughout. Some of the rails were specified to be delivered at Amber Wharf, which is a clear indication that they were for use at Crich. Further proof that they were for use on this line comes from Outram commenting 'we have some men laying rails for us at Crich' in October 1796.³² These points prove the original Crich rails to have been unsatisfactory, for after just three years a complete re-building of the line seems to have been undertaken. This adds further credibility to the suggestion that the Crich line was originally built using wooden edge rails, possibly topped by a cast iron plating. Another interesting point which further compliments this possibility, lies with a list of railways published in 1801 by James Anderson, Outram's father-in-law. Anderson listed seven railways built using plate rails to Outram's principles, stating that they were 'executed nearly in the order stated'.³³ The Derby Canal railway is mentioned first and the Crich railway second, possibly an indication that the Crich line was only updated to a plateway after Outram had successfully engineered other lines using plate rails.

Sales of rails to local collieries also continued in 1796, for Edward Miller Mundy purchased some for mines on his Shipley estate in January. He bought further rails in April, the weights of which are specified in the Furnace Ledger at 45 lb and 30 lb. Between April and June William Drury Lowe bought enough 31 lb rails for 0.7 miles of track. William Fenton, another colliery owner who had supplied Butterley with coal in 1794, then went on to order enough rails for around 300 yards of railway. At the end of the year Outram began casting 33 lb rails for Henry Case Morewood, which were for his wife's railway to Hermitage colliery. These rails supplied

to local mines were probably all for surface use, indeed the 45 lb rails for Miller Mundy were even heavier than those sent to the Peak Forest line. They were also all a yard long, for this was now established as Butterley's standard rail length. The ironworks sometimes cast light-duty four-foot rails in this period, the length then being specified in the ledger. Four-foot rails cast for H Hunter in February 1796 weighed only 20 lb/yd, suggesting these must have been for use beneath ground. Hunter was probably a local colliery owner. The following month Outram & Co cast more 20 lb rails for their own use.³⁴

The sophistication of the trackwork supplied by Outram & Co is suggested by the range of rails they could provide. In Butterley's first Furnace Ledger, the standard plate rail is generally referred to as a 'Gang Rail', sometimes as a 'Gang Waggon Rail' and occasionally simply as a 'Rail' in the earliest orders. No other varieties of rail are mentioned in 1794 or 1795. However, by late 1796 and in the first few months of 1797, a host of new terms are encountered. In all likelihood other types of rail must have been cast prior to this but were not differentiated in the ledger. Philip Riden has previously elucidated the meanings of the terms 'Road', 'Bevil' and 'Cross' rail; the first type was for use at level crossings, the others for forming plateway turnouts.³⁵ In December 1796 the ironworks supplied some 'Short Rails'. The use of these is explained in one of Outram's letters: 'Please do direct your Workmen to lay the shorter rails in the curved parts of the Railway'.³⁶ There are also intriguing references to 'Double', 'Flat', 'Sorted' and 'Passing' rails,³⁷ but unfortunately the exact form and purpose of these interesting items of permanent way is currently unknown.

By September 1796 Outram had calculated recommended loadings for plate rails of different weights – '18 lb Rails are for Carriages of ½ Ton loading, 24 lb of 1 Ton, 30 lb of 30 Cwt., 36 lb of 2 Tons to 50 Cwt., 40 lb of 50 to 70 Cwt'. The ability of a heavier rail to bear a greater load seems a simple enough relationship today, yet Outram was certainly amongst the first to apply such scientific considerations to plate rail design. The guarantees offered by Outram & Co against broken rails were based on these loadings, and were void if the wagons used exceeded the stipulated weights. It was also a requirement that the rails were 'properly laid down on a bed of stone'.³⁸ A month later Outram was advocating 'small stone laying upon it [the trackbed] to make a firm bed for the Rails'.³⁹ These are earlier references to 'the bed of small stones or gravel',

which Outram discussed in his 'Minutes to be observed' and which the sleepers were to be well bedded into.⁴⁰

Outram had gained sufficient experience to become an ardent believer in railways being well graded by late 1796 and wrote to his customers with authority. This is shown by his exchange of letters with Mrs Morewood regarding her Hermitage colliery line. His brother Joseph first examined the route, and he too demonstrated a good understanding of railway engineering. He commented that 'instead of finding it formed [the trackbed] to descend gradually some parts of it prove to be near 3 Inches at a yard & others in different gradations to a dead Level & some absolutely ascending the wrong way there the Horse would be overloaded & in the other exstream would be overpowered by the push of the Waggons'.⁴¹ Outram himself later declared that if it were not altered 'the present line would be a bungled piece of work neither profitable to Mrs Morewood or creditable to us and if Mrs Morewood is determined to have it done in that imperfect manner I hope she will excuse us for declining to have any thing to do with it ... I cannot help considering our Credit as outballancing the profit in a business so near home'. These strong feelings were entirely centred on the formation of the trackbed, to which Outram had 'insurmountable objections to those parts that are so irregularly formed'.⁴²

It has been shown that Outram rapidly adopted a heavy-duty plate rail, which must have virtually reached its classic form by 1795 (Fig 5). By the following year he insisted on the careful grading of railway trackbeds, an opinion he must have developed in the previous few years. However, the Derby canal railway was originally laid on wooden sleepers, so what of Outram's later experience with sleepers? Five local colliery owners have been mentioned who purchased rails, for probable surface use, from Outram & Co in 1794–1796. Outram was not directly involved in the laying of these rails. However, he probably dictated his principles to his customers, suggesting that for the rails to perform well they should be laid on properly graded routes, well supported by ballast. It seems likely that all these rails must have been laid on wooden sleepers, at that point the standard sleeper material. In 1797 the company's own railway at Crich was laid on wooden sleepers. In this year a payment was made 'for wood sleepers for Crich Gang Road', which shows that wood was used here even when the line was re-laid in 1796.⁴³



Figure 5. A plate rail cast at Butterley to Outram's pattern and used on the company's own line at Codnor Nether Park, Derbyshire. The stone sleepers are from John Rennie's Lane End line, Staffordshire. This plateway was built to Outram's design using Butterley rails. The height of the flange is greatest in the centre of the rail for increased strength. (Author, scale: 12 in rule)

An alternative sleeper emerged when Outram laid the Peak Forest line on stone blocks rather than wooden sleepers. Some writers have stated that the Derby Canal line utilised stone sleepers on opening.⁴⁴ However, this is misleading and most unlikely. It has been shown that the canal company invited tenders for wooden sleepers for this line in August 1793, and the Crich line was laid on wooden sleepers even when re-laid in 1796. Only after stone blocks proved their worth on the Peak Forest line did Outram advocate their use elsewhere. The first known use of stone sleepers is on the Monmouthshire Canal railways in 1792. It seems likely that Outram heard of this innovation, and then decided to emulate it, unless he developed it independently.⁴⁵ Railway technology originating in south Wales may have been transmitted to Outram via Thomas Dadford, who possibly still corresponded with Outram, having moved to Wales and left Outram to manage the completion of the Cromford Canal. Dadford's business partner, Thomas Sheasby, also originally employed on the Cromford Canal but later working in south Wales, could also have been responsible for passing ideas to Outram.⁴⁶

An intriguing entry in the Furnace Ledger of April 1796 is '142 Sleepers deliv[er]ed Bull Bridge for Gang Road'.⁴⁷ The weight of these mysterious castings was 24 lb each, whilst the fact they were to be used on the Crich railway is clear, for Amber Wharf where the Crich line ended was at Bullbridge. In south Wales the plateway 'sill' was developed.

This was a single casting consisting of two chairs to accommodate plate rails, joined together by an iron bar which had the benefit of maintaining the gauge. The earliest such sill currently known was cast at Ebbw Vale in 1794.⁴⁸ If Outram imported the stone block from south Wales, then it is entirely plausible that he could also have heard of the sill. Perhaps these cast iron sleepers were Outram's take on such a sill and the Crich line was his test bed. They cannot have been successful as no more were cast.

The stone sleeper is now as deeply associated with Outram's name as the pattern of plate rail which he developed. His first use of stone blocks must have been on the Peak Forest line, excepting any experimentation conducted beforehand. The first blocks were probably laid on this six-mile route late in 1795, and the railway opened in August 1796.⁴⁹ From this point onwards, stone sleepers became standard practice for heavy-duty railways. Outram was obviously impressed by them, for he always promoted their use over other forms of sleeper subsequently. The form of railway illustrated by the Peak Forest line was the result of some three and a half years of experimentation and development by Outram. He would continue to refine his style of plateway while conducting other work in the 1790s and up to his death in 1805. However, by the end of 1796 the typical Outram-pattern plateway already existed in a form which would go on to conquer many corners of the country. The remains of these historic lines are today perhaps Outram's most famous legacy.

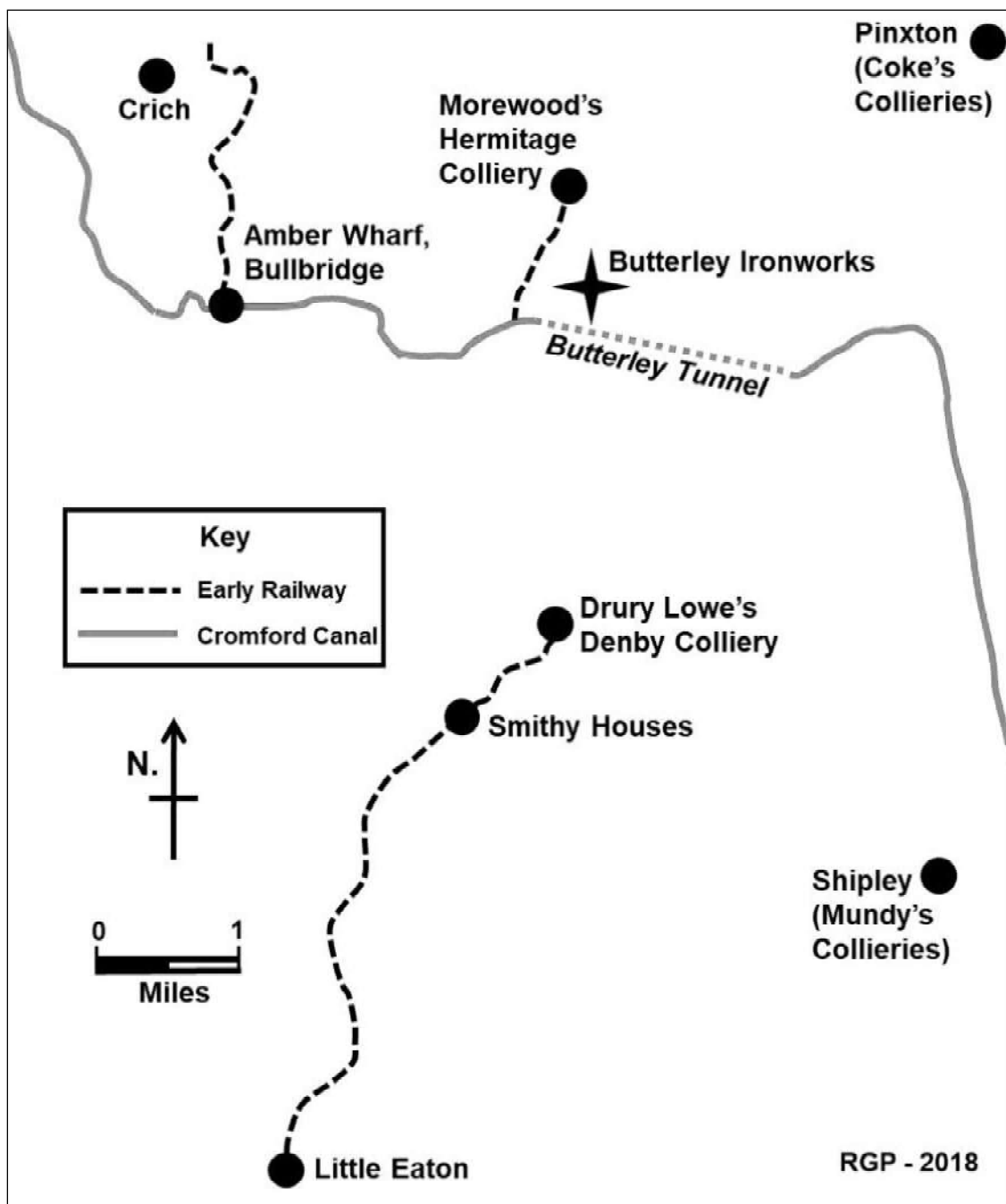


Figure 6. Sites where Outram supplied plate rails up to 1796, as shown in relation to the Cromford Canal and Butterley Ironworks. The vast majority of the sites where Outram had early involvement with railways were near to the ironworks in which he was a partner. All of these local sites are shown, with the exception of the locations where Fenton and Hunter were supplied with plate rails. These have not been identified, but are likely to have been local collieries. In the period up to 1796 the only non-local sites where Outram & Co supplied rails were related to the canal engineering activities of Outram (Peak Forest Canal) and Jessop (Grand Junction Canal).

Appendix: A chronological summary of permanent way associated with Outram up to 1796

The following table summarises in chronological order Outram's involvement with permanent way up to 1796. All of the lines discussed are included where Outram was involved either as a railway engineer, or as a supplier of plate rails via Outram & Co.

Line or customer	Date	Track type	Outram's connection
Derby Canal <i>Track type discussed, but not used.</i>	Oct 1792	Edge (iron-on-wood)	Engineer
Cromford Canal construction <i>Temporary line, probably for construction of the Butterley tunnel beginning in 1790. Rails sold as used in Sept 1793.</i>	Pre-Sept 1793	Edge (wood)	Engineer
Crich limestone quarry <i>Quarry owned by Outram & Co.</i> <i>Lime kilns in use by Apr 1793 were supplied by the line.</i>	By Apr 1793	Edge (wood or iron-on-wood)	Engineer
Derby Canal <i>Cast by Joseph Butler. Rails of this weight were specified in Dec 1793.</i>	Feb 1794	Plate (28 lb)	Engineer
Derby Canal <i>Rail supplier changed from Butler to Outram & Co by Sept 1794.</i>	Sept 1794	Plate (36 lb)	Engineer and rail supplier
William Drury Lowe <i>For use on extension of Derby Canal line from Smithy Houses to Denby Colliery and at colliery.</i>	Dec 1794	Plate (33 lb)	Rail supplier
Peak Forest Canal <i>Outram first used stone blocks with these rails.</i>	Mar 1795	Plate (42 lb)	Engineer and rail supplier
Grand Junction Canal <i>Temporary line for canal construction, ordered by William Jessop.</i>	May 1795	Plate (26 lb)	Rail supplier
Rev D'Ewes Coke <i>Coke owned collieries at Pinxton.</i>	Nov 1795	Plate	Rail supplier
Edward Miller Mundy <i>Mundy owned collieries at Shipley.</i>	Jan 1796	Plate (30 lb and 45 lb)	Rail supplier
H Hunter <i>4 ft rails, presumably for underground use.</i>	Feb 1796	Plate (20 lb)	Rail Supplier
Crich limestone quarry <i>Outram & Co owned the line and cast the rails.</i> <i>Enough rails ordered 1796–7 for full re-laying of line.</i>	July 1796	Plate (35 lb)	Engineer and rail supplier
William Fenton <i>Fenton was a colliery owner.</i>	Aug 1796	Plate	Rail supplier
Henry Case Morewood (Hermitage Colliery) <i>For use on Hermitage Colliery line.</i>	Nov 1796	Plate (33 lb)	Rail supplier

Acknowledgements

I would like to express my sincerest gratitude to Michael Lewis and Martyn Taylor-Cockayne. Having read a draft of this article they both made many helpful suggestions and kindly shared the fruits of their own research. I am also grateful to the staff at Derbyshire Record Office where I spent several enjoyable days examining the early records of the Butterley Company.

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The Right Honourable Thomas Harley of Berrington Hall : the driving force behind the Leominster Canal

David Slater

Background

Thomas Harley, whose portrait appears on the front cover, was the 4th son of Edward Harley, the 3rd Earl of Oxford and Mortimer. Harley was, in all probability, born at Eywood in Herefordshire but quickly became introduced to London life with his education at Westminster School. He is largely remembered in relation to his Berrington estate and its connections with Henry Holland and his father-in-law, Lancelot 'Capability' Brown, who designed respectively Harley's new mansion and its park. Harley's numerous achievements outside the boundary railings of Berrington are, however, not so well recognised. Therefore, to make good this deficiency, this article provides a summary of Harley's national importance, his local role in Leominster and Herefordshire, his substantial involvement with the Leominster Canal and those aspects of his life that specifically link Harley to the local parishes of Moreton and Eye and the church at Eye.

The evidence presented in the article strongly supports the view that Thomas Harley was the principal driving force behind the early days of the Leominster Canal.

Harley was born in 1730 and died in 1804, predeceased in 1798 by his wife Anne. Both are buried in the Church of Saint Peter and Saint Paul at Eye, memorialised by a wall-mounted tablet in the north chapel in the shape of a sarcophagus. The inscription is elevated and now faint, but lists the significant dates in his life and his major London achievements. The sculptor's name is shown as 'C Lewis, Cheltenham'.

Harley's importance nationally and in Leominster and Herefordshire

In London Harley was essentially a shrewd political, commercial and financial entrepreneur, with the normal successes and failures. Although Harley started as a wine merchant (probably using some of his marriage settlement of £4,000), he quickly

became linked to the world of banking and in particular with important names such as John and Henry Drummond, Charles Raymond and Donald Cameron. Following the downturn of the banking house of Raymond, Harley, Lloyd & Cameron he was able to pay off his liabilities and retained his good reputation as a 'Father of the City'. He held the prestigious positions of Member of Parliament for London (1761–74), Lord Mayor (1767/8), Alderman, and Sheriff. Harley was an opponent of John Wilkes and in 1763, as Sheriff, condemned his offensive publication (number 45 of the *North Briton*) to be burnt publicly as libel. In 1768 he restored law and order during the Spitalfield weavers' riots when the Mansion House was attacked; despite the violence, he rushed out and seized the ring-leader which resulted in the mob dispersing. The riots put his own life at risk, with his coach being attacked and overturned and his face badly cut by a heavy stick. For these achievements he was granted the status of Privy Councillor. In 1768, on the death of Sir Samuel Fludyer, he replaced him as the partner of Adam Drummond and others as the holders of a highly lucrative government contract worth £17m as paymasters and providers of military uniforms and blankets for the troops in North America. He was also President of St Bartholomew's Hospital and the London Lying-in Hospital.

Harley married Anne Bangham in 1754 and enjoyed hunting at his father-in-law's estate in Kent (Hooley House, near Croydon). There is a roadside tower near Margate erected in his honour. It should be noted, however, that Harley Street in London is not named after Thomas Harley but after Edward Harley, the 2nd Earl of Oxford.

There is still uncertainty as to how exactly Harley acquired the Berrington estate. It is commonly thought that he bought it in 1775 from Charles Cornwall, Speaker of the House of Commons and a member of the Herefordshire Cornwall/Cornwall family. This family have impressive alabaster effigies in Eye church and had originally purchased Berrington from the de Gorges of Eye Manor. Definitive proof, however, for Harley's purchase is lacking and there are two alternative possibilities centring on Cornwall selling Berrington, rather than to Thomas Harley, to either Robert Harley or to a member of the Bangham family. This is supported by Cornwall selling Berrington in 1756 and not later. Robert Harley was Thomas Harley's uncle, MP successively for Leominster and Droitwich, who died in 1774. However, proof that Thomas Harley either

bought or inherited Berrington from his uncle is not available. Anne Bangham's grandfather, Edward Bangham senior, had also been a MP for Leominster and her father, Edward Bangham junior, had been Bailiff of Leominster but then moved to London. Anne Harley could have inherited Berrington on the death of her mother Anne. In either eventuality, such a substantial inheritance or acquisition would have been typical of Harley's luck. Thomas and Anne initially split their time between London and Berrington but in the 1770s moved back to Harley's native Herefordshire, to live on the Berrington estate. They eventually moved into his new Berrington Hall in 1781/82.

Harley was MP for Herefordshire for 26 years from 1776 to 1802 and in addition was Recorder and High Steward of Leominster, a trustee of the Leominster Turnpike Trust, a principal subscriber for the new Hereford Infirmary, Lord Lieutenant of Radnorshire and Mayor of Shrewsbury. The latter two positions were held while Harley was acting as guardian for his nephew, the 5th Earl of Oxford. In 1794, at his own expense, he fitted out a regiment of volunteers for the county of Hereford and became their captain. Harley was also a churchwarden at Eye church.

Harley and the Leominster Canal

There can be no doubt that one development which was particularly supported by Harley was the Kington, Leominster & Stourport Canal (commonly shortened to the Leominster Canal). This was surveyed by Thomas Dadford junior in 1789 and purposely ran just outside the railings of the western boundary of the Berrington estate. Possibly above all his other undertakings, it seems to have represented Harley's favourite commercial 'baby' but, as can happen when feelings take precedence over logic, it paradoxically turned out to be a source of significant personal financial loss. Harley moved in broad social circles including the Lunar Society and its members Wedgwood, Darwin, Priestley, Boulton and Watt. Accordingly Harley would have been completely *au fait* with the canal mania, which was at its height at the time, and with the potential commercial and personal rewards of constructing a new canal to carry coal from Stourport to Kington, going via Leominster. To initiate this project, he astutely brought together the principal local landowners along its intended line, including the Blounts at Mawley and Soddington, Clutton at Pensax, Dansey at Easton Court, Bateman at Shobdon, Greenly at Titley Court and Edward Harley,

his brother, the 4th Earl of Oxford, at Eywood. The 1791 Leominster Canal Act established statutory powers enabling the Company of Proprietors of the Leominster Canal Navigation to construct a canal from the River Severn near Stourport to Kington. The company was permitted to raise up to £150,000 in £100 shares with the option of a further £40,000 if needed.¹ Harley was the largest shareholder with 72 shares (worth nearly £1,000,000 in current money) and as the Blounts had only 70 shares in total, he had the largest individual voice in the Company. Harley owned the prestigious number 1 share and the first block of 50.

It appears likely that Harley and the Blounts conspired together to limit the length of the proposed canal to their own advantage by ensuring that share subscriptions were closed prematurely when a total of only £68,582 (686 shares) had been raised. The result, instead of the originally proposed 45-mile long canal connecting with the Severn, was a solitary 18-mile length which was isolated from the main English canal system. It ran from Southnet/Broombank where it was connected to the Blounts' coalfields at Mamble by a horse tramway, through to Leominster, going via Newnham Bridge, Tenbury, Easton Court, Wooferton and Berrington. Of no surprise, the bank of Harley, Cameron & Son acted as the recipient of the shareholders' subscription monies until it went bankrupt in 1797. Thomas Harley was the Company's first President, a named proprietor in the 1791 Act and chairman of the 1789 inaugural committee; until his death, he chaired many subsequent meetings and committees. Edward Harley (the 4th Earl of Oxford) also chaired some of the early meetings and without doubt would also have played a major role in the canal had he not unfortunately died in 1790, even before share subscriptions had opened. There was little chance, however, of the 1791 and 1796 Leominster Canal Acts ever failing, as Thomas Harley steered both acts through Parliament, carefully dealing with all petitions against the bills and thereby ensuring that the Acts were passed successfully.² One such important petition was presented by Lord Craven and Thomas Botfield, who, with their own interests in Cleehill coal, saw the Leominster Canal's coal trade as a threat. The Canal Company even paid Harley's expenses in relation his work with the 1796 Act, although somewhat belatedly in 1802.

The Canal Company is known to have incurred early debts of approximately £25,000 and it is believed that a substantial part of this (approximately

£18,000) was in the form of a personal loan from Harley. In common with many gentry, Harley was asset rich and cash poor and between 1790 and 1801 he is known to have used Berrington Hall and its estate as mortgage collateral to obtain loans to a total of £51,000 from the Drummonds' bank (later Royal Bank of Scotland) and from other banks.³ In view of the broadly similar timing of the loan and mortgage, it seems highly probable that at least some of the mortgage money was used to cover his own large loan to the Leominster Canal Company. Eventually, however, enough seems to have been enough and uncharacteristically Harley initially opposed the bill which led to the 1803 Leominster Canal Act until it included a requirement for this debt to be repaid.⁴ Accordingly the 1803 Act included a specific requirement for the Canal Company to repay the £25,000, although this was never carried out. Evidence given to the House of Commons in 1800 during the passage of the Bill also adds substantial credibility to the suggestion of an earlier conspiracy between Harley and Blount. Perry and Littleton, giving evidence for the Staffordshire & Worcestershire Canal Company, openly accused Harley of stopping calls to the benefit of Sir Walter Blount.

Harley was assisted tremendously in his many Leominster Canal activities by his butler, steward and agent, James Crummer (1749–1821), who resided at Berrington Hall between 1781 and 1807. Crummer was of Irish origin and was an exceptionally astute entrepreneur in his own right. Although Crummer failed to receive a salary from Harley for 25 years, it comes as no surprise that he was also a substantial shareholder in the canal and was named as a proprietor in the 1791 Act; he was also a churchwarden at Eye. For those who visit Berrington Hall today, Crummer's suite of rooms is said to have been just on the right, entering the Hall from the courtyard. Crummer was involved in numerous other aspects of the Leominster Canal, but in particular the 1803 Canal Act, thereby attempting to ensure that Harley's loan would be repaid.

Interestingly, Harley's first daughter Martha married a Drummond and both Henry Holland and Capability Brown used the Drummonds' bank. Harley's local physician was Dr Richard Proctor who practised until 1826 in both Leominster and Eye and, possibly with Harley's encouragement, was also a shareholder in the canal. Perhaps Harley even shared the vision that the Leominster Canal would eventually link to the Herefordshire & Gloucestershire Canal

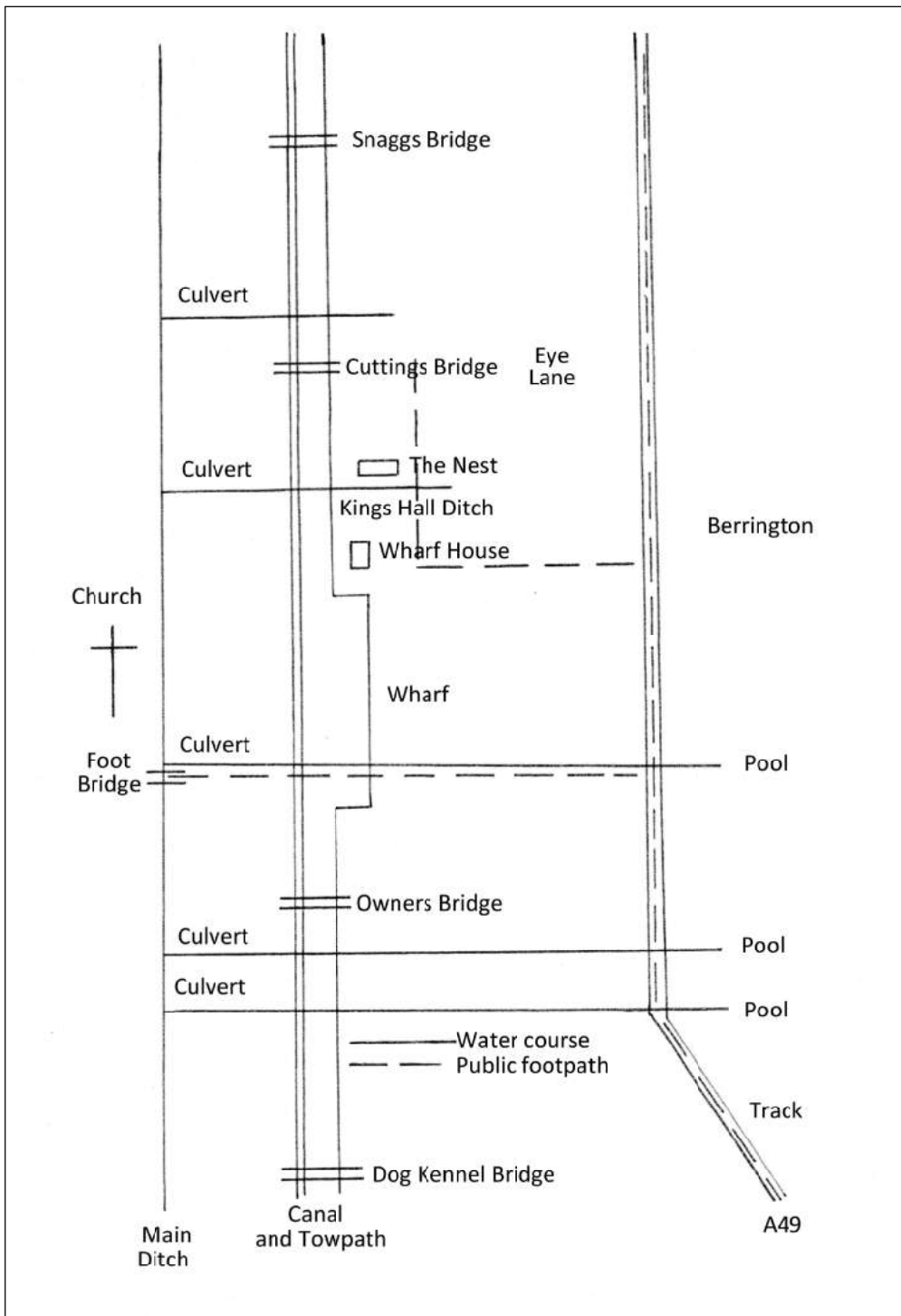


Figure 1. Diagrammatic representation of the Leominster Canal in Moreton and Eye and associated features

via the River Lugg, as in 1791 he also bought shares worth £500 in that canal. Clearly, however, Harley did not pay heed to James Watt, who lived in the area and knew both Harley and Crummer. In addition to being a famous national expert in steam engines, James Watt was also an astute investor in many canals, although it is very noticeable that he never bought shares in the Leominster Canal. Seemingly Watt had intuitively sensed the Leominster Canal's eventual demise and final destiny.

The Leominster Canal operated from 1796 until 1858, when it was bought by the Shrewsbury & Hereford Railway Company for £12,000.⁵ The dominant traffic on the canal from Southnet to Leominster was always coal transported by Blount, Boyce, his agent at Marlbrook Wharf House, or the Canal Company itself. On average, it formed an overall yearly total of approximately 6,500 tons. Timber (described as poles and slabs) comprised the cargo on some return journeys and it seems highly likely that some of the timber originated from Harley's estate.

Although the Blounts owned the Mamble coalfield, Thomas Harley was undoubtedly the principal enthusiast, brains and political power behind the Leominster Canal. Indeed, the evolution of the Leominster Canal in its first 15 years was largely due to the input and steerage of Thomas Harley. Accordingly, following Harley's death in 1804 and the loss of its main proponent, it is not surprising that the Canal Company only managed to struggle on with ever increasing difficulty and that no dividends were ever paid to its shareholders, even up to the time of its final closure. James Crummer continued to participate in canal activities for a few years after Harley's death, effectively in Harley's memory. At the age of 62 he married Esther Davies, aged 28, and moved permanently away from Berrington.

The Leominster Canal in Moreton and Eye : then and now

This is shown diagrammatically in Figure 1.

In 1794/5 Harley arranged for the Canal Company to contract John Gethin, a local stonemason from Kingsland (later the County Surveyor of Bridges), to create a wharf house at Moreton (Fig 2 on following page) together with an adjacent stone wharf and a stone footbridge over the Main Ditch. All of these were under Harley's ownership and remain extant today. Gethin, however, unwisely covered the

upfront cost with his own money but he was never repaid, even after a successful court case against the Canal Company in 1822 and being awarded £900. Moreton wharf (Fig 3 on following page) was originally approximately 22 yards by 195 yards and accordingly was 90 yards longer than that remaining today. (It should be noted that the wharf house and wharf lie on private land and that permission must be sought to view them.) Although 250–500 tons of canal coal were landed at the wharf each year for the Berrington Hall estate, not all Berrington coal came via the canal, as Southnet coal had a high sulphur content and was of poor quality. In particular, some Berrington coal was transported from Cleehill. The wharf, from its very large size, must have had additional important functions other than simply landing coal and winding boats. This may, for example, have included maintenance and repair work on the company's 16 boats. There may also have been a timber pond for the wet storage of timber, to be used for locks and other canal work, again, with the timber probably coming from Harley's land. Elm, ash and oak were plentiful at the time in the area, with a considerable trade as evidenced by local auctions. Accordingly, Moreton/Berrington wharf appears to have been one of the most important operational hubs on the canal, all trade being carried on in close proximity to Harley's watchful eye. Contrary to the norm of most wealthy landowners, who wanted any canal passing through their land to be hidden from view, the Leominster Canal and Moreton Wharf Cottage are on a direct line of sight from the front entrance of Berrington Hall (although admittedly seen better with the use of binoculars). It seems highly likely that Harley had anticipated the arrival of cheaper coal at Berrington by about 1793 with the completion of a new peach house, although in the end the arrival of canal coal was delayed for a further three years due to the problems experienced in completing Putnal tunnel. The 1791 Act laid down specific requirements for private wharves with regard to the terms of use and tonnage costs, but with exemptions when using the portion of the canal between Wooferton and Leominster or by having the Canal Company's permission. It must be more than co-incidence that Harley was conveniently covered by both of these clauses.

The 1791 Canal Act gave Harley protected provision of a water supply for his land from Stockton brook for two days in a week and three culverts still exist (again all on private land) to take water from Berrington's pools and springs, under the canal to



Figure 2. The wharf house at Moreton



Figure 3. The Leominster Canal wharf at Moreton

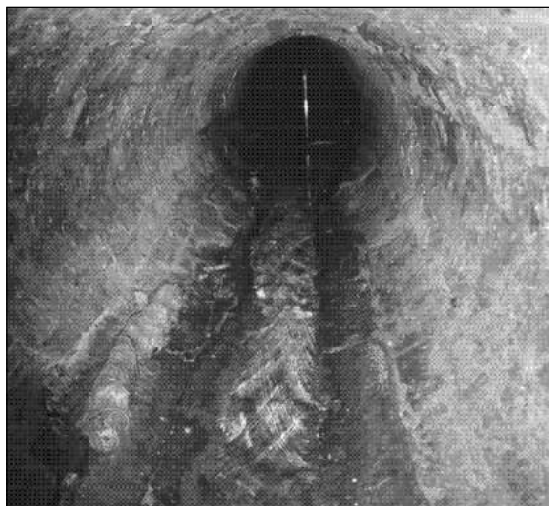


Figure 4. The culvert under the wharf at Moreton

what possibly would have been Harley's water meadows. The one that went under Moreton wharf was the most substantial and is still partially extant, although also on private land (Fig 4). Similarly, the Kings Hall Ditch remains culverted under the canal on private land, to join the Main Ditch. Interestingly, the right to water supply was repealed in the 1826 Act,⁶ well after Harley's death. There is also a suggestion on later Ordnance Survey maps that Moreton wharf may have been later partially or totally relocated or duplicated next to Cuttings bridge (no longer extant), where the canal went under Eye Lane.

The origin of the domestic water supply to Berrington Hall has varied over time. Initially it was from wells and springs, but from the 1970s it was mains water. In between, however, there was also a hydraulic ram. This was located at the southern aspect of the estate, with its water reservoir near the triumphal arch. In addition, as emergency back-up for the ram, the late Lord Cawley had to install a diesel pump. The hydraulic ram was invented by Montgolfier in 1796 but Matthew Boulton obtained an English patent in 1797. Although it is only speculation, Harley may have been aware of rams through his friendship with Boulton, and Stockton brook would have been the obvious choice for the supply of water to a ram.

The attractive black and white, but unlisted, wharf house (currently Moreton Cottage) (Figure 2) was occupied in the 1800s by two generations of the Bayliss family, Henry and Elizabeth and then Thomas

and his consecutive wives, Lucy and Ellen. Most of the family are buried in one grave in Eye churchyard and although still locatable, it has been understandably reused.⁷ Thomas Bayliss, however, is not buried in Eye churchyard as he had an indiscretion and an affair of the heart and was delicately relocated after 1841 to work for the other branch of the Harley family living at Brampton Bryan. The adjacent, equally attractive Grade 2 listed dwelling, the Nest (possibly a yeoman's cottage dating from 1530), has no known primary connection with the canal, although it was also owned by Harley and used by his workers. One occupant, however, Mrs Sarah Carless, bought a length of the canal from the Shrewsbury & Hereford Railway Company in 1861 and this stretch is still in water.⁸ Although on private land, the canal can be observed from the Eye Lane and has been expertly transformed into a gloriously colourful natural habitat, with wildflowers and wildlife and several protected species such as the great crested newt.

After the canal had been opened, there would have been an attractive countryside walk for residents in Berrington Hall to attend Eye church for its Sunday services. It constituted leaving Berrington across Moreton (Park) Ride and crossing over the canal by Harley's own Owners Bridge to gain access to the towpath. There was then a short walk northwards along the towpath towards Moreton, turning west and crossing the main ditch by the footbridge (now wooden rather than stone) and thence to Eye church. At that time only individuals directly connected with the canal would have been legally permitted to be on the towpath. Harley would, however, have considered that he had sufficient authority and contacts to permit access to the towpath from Berrington, for this purpose.

The iron boundary railings and posts to the Berrington Hall estate appear particularly attractive, being topped by black spear-headed arrows or balls. Their origin appears to have been from several works including Thomas Peverall (Ludlow), Alexander and Duncan (Leominster) and Bayliss, Jones & Bayliss (Wolverhampton). Understandably, the named posts tend to be in locations that will be seen by visitors or passers-by.

South of Moreton to the end of the Berrington Hall estate, the canal has been filled in and Owner's Bridge was demolished in the 1950s. Occasional trees, however, still mark the original line of the canal and, by being seemingly offset, the location of the original

and longer Moreton wharf can be deduced. All of the wharf stone has been removed at some time in the past, possibly for use in local buildings. When originally visible, the line of the canal was slightly wavy, rather than taking a straight course, as might be more expected. This variation is not adequately explained by field boundaries and, although initially perplexing, the wavy course is now considered to mirror a boundary in the geological strata – amazingly, since Dadford was not in possession of a modern geological atlas. The public footpath/bridleway going south from Moreton lies just outside the Berrington Hall estate railings and runs parallel to the canal but slightly to its east. Owner's Bridge was located close to where there is a private entrance to Berrington/Moreton Ride. A few local residents remember the bridge being of a 'substantial' stone nature with a towpath. The public footpath enters a wood and the canal still survives at its western periphery. An inspection cover near the railings marks the place where a small stream goes under the footpath, taking drainage water from the Berrington estate; to the west it is culverted under the canal. At the extreme southern aspect of the wood, the tithe map and a later estate map show a canal crossing, although the location now has only a canal culvert, again carrying water from the Berrington estate. The latter supply here is complex and includes free drainage water, Berrington Pool, and water that has by-passed the hydraulic ram. Where the public footpath finally veers away from the line of the canal on private land, a picturesque section of the canal survives with a private nature reserve. The canal, still partly in water, continues to Park Farm which also had its own canal bridge (Kennel/Dog Kennel/Park Farm bridge). This is no longer in existence but intriguingly, the land on the tithe map, just south of the site of Park Farm bridge, includes the field name 'tunnel'. Certainly no evidence for a tunnel is apparent today and there appears no obvious reason for a tunnel to have been required at this location. Dadford's 1789 and 1791 survey maps show that the current public right of way (bridleway EX22) which goes by the side of Berrington Hall estate railings was, at the time, part of a track leading from the current A49 at Park Farm to Tunnel Lane, Orleton, going around Shutstocks Hill. This hill was the origin of the red sandstone for the building of Berrington Hall. Although no longer shown on Ordnance Survey maps since 2005, the track constitutes part of the Marches Way, an unofficial long-distance footpath from Chester to Cardiff.

Going south from the modern A49 road, the next track to the west will take walkers to the site of Moor's Bridge and a picturesque stretch of the canal which is often in water. The Stockton feeder entered the canal here, just before it descended down the flight of the three Leominster locks, eventually reaching the canal terminus with its coal wharf, a machine house with its weighing machine and Leominster Wharf House with its stables. Of these features only the Wharf House and its converted stables, next to the A49, are still extant, the Wharf House itself having its origin in the previous Three Tuns public house.

In the opposite direction from Moreton, there is another extant canal culvert and the mysterious Snaggs Bridge lay half a mile north of Cuttings Bridge. This is also no longer in existence and the site lies within the current Park Lodge Farm, which itself was not built until the late 1800s. It is interesting to note, however, that Harley's agent James Crummer occupied the land next to the bridge. Why a bridge was necessary at this site remains uncertain, but presumably its name originated from the snagging of ropes related to canal activities. It has been suggested, however, that a canal-related business was run from the location, possibly involving timber, as part of a return canal freight to Southnet. It is noted that the Bryant's 1835 map of Herefordshire reverses the names of Snaggs and Owners bridges. It appears more appropriate, however, for the purposes of this article, to use the names as shown on the tithe map, where the adjacent field names reflect the position of the bridges.

There is a possible link between Eye church and the Leominster Canal through its bells. Six of these were cast in Devon by John Taylor & Co at Buckland Brewer. A freight invoice to William Thomas of Eye Cottage indicates their transport in 1830/31 between Bideford and Bristol by the sloop *Albion*, with onward carriage to Hereford by the sloop *City of Hereford* on the River Wye. In theory, the final stage to Eye could have been made by the River Lugg and Leominster Canal. This route would not have been new for church bells, as the Leominster Priory bells had been transported to Chepstow to be recast in 1756 and back again using the Rivers Wye and Lugg. Sadly, however, it is unlikely that either the Lugg or the canal were used for the Eye bells, as by then the navigational state of the Lugg to Leominster had deteriorated substantially, although enthusiasm to link the two waterways revived briefly in 1796 when the canal was fully opened.

Berrington Hall today and the lack of recognition for Thomas Harley

The history of Berrington Hall after 1804 is well known and recorded elsewhere.⁹ In brief, Thomas Harley left the estate to his favoured second daughter Anne who married George Rodney; it passed to the Cawley family in 1901 and eventually to the National Trust in 1954.

An intriguing political question, however, still remains as to why the Right Honourable Thomas Harley was not given a title of nobility in recognition of all his important achievements. Was it that he was seen to have already profited sufficiently from his many political positions and financial activities? Alternatively, although equally speculative, was it because Lady Brilliana Harley of Brampton Bryan successfully defended their castle against the royalists in the Civil War and such historical events may have a negative impact many years after the event? Although the reason may never be known with certainty, there can be little doubt that Thomas Harley was fully worthy of a knighthood or peerage, although sadly it was never bestowed upon him.

Acknowledgements

The Friends of the Leominster Canal (FoLC) are grateful to several landowners who have kindly granted access to their land to see the canal and its features. In particular this includes the National Trust, the late and current Lord Cawley, Keith Auckland of Moreton Cottage and Sue Evans and Guy Poulton of the Nest. FoLC are also grateful to the Leominster Team Ministry for their assistance in the exploration of Eye church. I am extremely appreciative to Edward Harley of Brampton Bryan for displaying his enthusiasm, knowledge and support for this article and for permitting access to his family archives, paintings and artefacts. I am personally particularly grateful to Mr John Harnden for his expert contribution to some of the historical and genealogical aspects of this article and to Carol Killinger (through the National Trust at Berrington

Hall) for her expert and deep factual knowledge of many aspects of Thomas Harley's interesting and diverse life. The interpretative opinions expressed in the article regarding Thomas Harley are, however, largely my own. Sadly, factual knowledge surrounding the Leominster Canal remains extremely limited, in particular because the minute book(s) for the Canal are yet to be located.

Notes and references

1. An Act for Making and Maintaining a Navigable Canal from Kington in the County of Hereford, by or through Leominster, to join the River Severn, near Stourport Bridge, in the County of Worcester. 31 Geo III c. lxix (1791).
2. An Act to enable the Company of Proprietors of the Leominster Canal Navigation to finish and complete the same. 36 Geo III c. lxx (1796).
3. Royal Bank of Scotland Archives. Drummond records, 1790–1810
4. An Act for enabling the Company of Proprietors of the Leominster Canal to raise money to discharge their debts and to complete the canal, and for explaining and amending the Acts for making and maintaining the said Canal, and for granting to the said Company further and other Powers. 43 Geo III c. cxli (1803).
5. An Act for authorizing the Sale of the Leominster Canal and other Property of the Company of Proprietors of the Leominster Canal Navigation, and for winding up and adjusting the Concerns of the same Company. 10-11 Vic c. cclxvi (1847).
6. An Act for enabling the Company of Proprietors of the Leominster Canal to raise further sums of Money to discharge their debts and to complete the Canal, and for amending the Acts and for making and maintaining the said Canal, and for granting to the said Company further and other powers. 7 Geo IV c. xciv (1826).
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FC Santiago & Valparaíso no 23 and the Leith Engine Works

Robert Humm

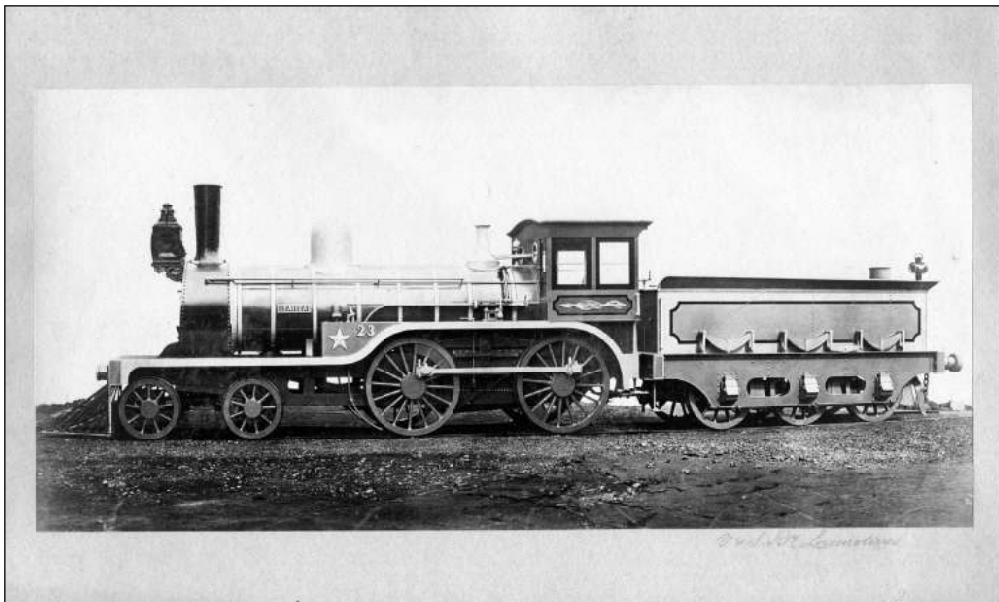


Figure 1. FC Santiago & Valparaíso no 23, Llai Llai. [Robert Humm collection]

The works official locomotive photograph depicted here (Fig 1) emerged in 2015 during the great clear-out at Station House. I have no idea how long I have had it – perhaps twenty or thirty years – or where it came from. So thick was the layer of grime on the glass that it was almost thrown out with a mountain of other junk. I am glad I relented as it proves, after cleaning, to be something of a landmark.

No 23 was the first of a class of twelve 5 ft 6 ins gauge 4–4–0s built by Hawthorns & Co for the Ferrocarril [FC] Santiago & Valparaíso of Chile. Construction of this privately promoted line, 187 km from the country's principal port to its capital, was commenced in 1852. Progress was slow and work was abandoned between 1857 and 1861. In the latter year it was taken in hand by the American entrepreneur and engineer Henry Meiggs who got the line finished and opened by 1863. The FCSV became part of the State Railway (EFE) in 1884.

The earliest locomotives were six passenger and four goods 0–4–2s built by Hawthorns of Leith in 1853–56. They were followed by three classes from Slaughter Gruning: three 4–6–0s, three outside

cylinder 4–4–0s and five 0–4–2s, delivered between 1863 and 1866. These were subsequently designated the 1st to 5th classes. The first two of the Hawthorn '6th class', the subject of our photograph, were delivered in 1868, a further eight in 1869, and the final two in 1870. The details are as follows.

No	Name	Works no
23	<i>Llai Llai</i>	386
24	<i>Maquis</i>	400
25	<i>Vichiculen</i>	388
26	<i>Rabuco</i>	389
27	<i>Aranda</i>	390
28	<i>Limache</i>	391
29	<i>Viña del Mar</i>	395
30	<i>Quilpue</i>	396
31	<i>Peña Blanca</i>	397
32	<i>La Calera</i>	398
33	<i>Ocoa</i>	399
34	<i>Montenegro</i>	387

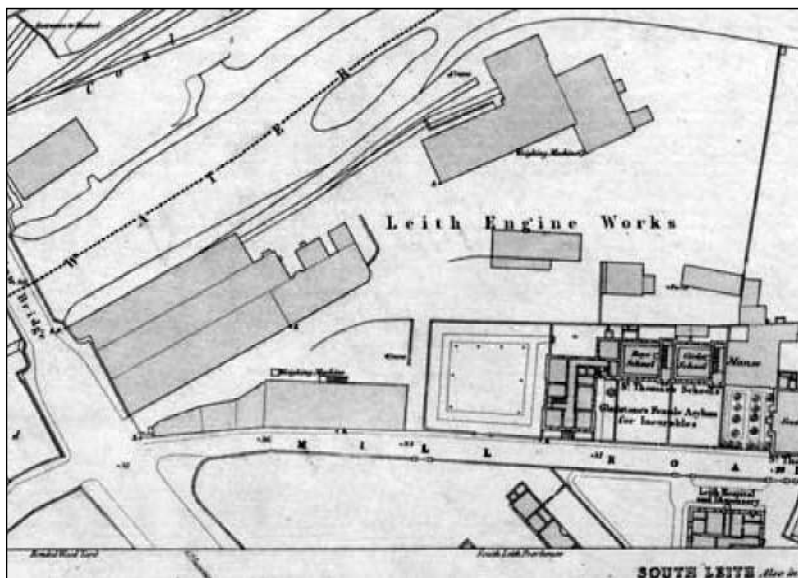
As was the custom in those days, the locomotives were shipped in a disassembled state, two at a time, and reassembled at Valparaiso. The long sea voyage, possibly in a sailing ship, took perhaps three or four months. The class was highly thought of and most lasted for some fifty years. Soon after the first two were put into traffic the following statement was made by the Ministry of the Interior in its annual report:

Recently have arrived the second series of two locomotives, *Vichiculen* and *Rabuco*, identical to

Despite this glowing report the 6th class were the last Hawthorn locomotives to be delivered to Chile. Subsequent locomotives were built by Avonside or in the company's own Valparaiso shops, the latter in one or two cases utilising Hawthorns' spare parts.

Hawthorn locomotives were distinguished by an elaborate works plate, as carried on the cab side of *Llai Llai*, consisting of a spear streaming a pennant with the company's name displayed on it.

The Leith Engine Works was established at Great Junction Street, Leith, in 1846 by the well known Newcastle locomotive builders R & W Hawthorn. Leith is the ancient seaport of Edinburgh and even after the 19th-century enclosed docks were built, the Water of Leith (the principal river running through the town) was busy with the smaller type of sea-going vessels. At that time there was no direct rail link



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between Newcastle and Edinburgh and the chief function of the works was to assemble Newcastle-built locomotives for the Scottish railways. After the completion in 1850 of the final rail link, the Royal Border Bridge, R & W Hawthorn had no further use for the Leith works and they were sold to new owners who traded as Hawthorns & Co.

Knowledge of the Leith firm is fairly sparse. James W Lowe in the exhaustive *British Steam Locomotive Builders* (1975) notes that company records and locomotive lists are virtually non-existent but estimates that about 425 locomotives were built up to 1871. They continued to build after that, though latterly business was largely rebuilding and repair. Most new output was for Scottish railways and industry, one distinctive product being a design of 0-4-0 and 0-6-0 well tank with outside Stephenson valve-gear. Locomotives delivered abroad included some for railways in Germany, India, South Africa, and, as we have seen, Chile.

Location of Hawthorns' Leith Engine Works is clearly identified as such on the 1:1056 Ordnance Survey map of 'Edinburgh and Environs' surveyed in 1852 (Fig 2 on previous page). It was on an approximately triangular plot of land having its apex

on Great Junction Street (nos 204-208), the main road running from the centre of Leith towards Granton. The southern boundary was a narrow thoroughfare called Mill Road. The north boundary was delineated by the Water of Leith, where there was a wharf for inward raw materials and the export of finished locomotives. The boiler, forge and erecting shops are shown on the northern part of the site abutting Great Junction Street and there were further buildings facing Mill Lane.

Although a small internal rail system is shown on the map there is no evidence of an external rail connection at that time. The works were only a few hundred yards from North Leith goods yard and it is possible that the relatively small locomotives of the day were trolleyed through the streets behind teams of horses.

Recently I had a brief opportunity to view what remains of the works (Fig 3). There is not much to be seen on the river frontage, which is now covered by dense tree growth. The main workshops must have been cleared by the 1940s and a building of vaguely art deco appearance occupies the Great Junction Street frontage. But the two-storey range along Mill Lane still survives, occupied at the west



Figure 3. The surviving part of Leith Engine Works in Mill Lane. [Robert Humm, 19 May 2017]

end by a hostelry called Gladstone's Bar. When John R Hume photographed it in 1970 (Fig 4) the entire building was still in industrial use (a wooden extension at the east end was improbably emblazoned 'The Eldorado Stadium Ballroom'). Hume thought that this was originally the Hawthorns' machine shop. One might speculate further that the upper floor was occupied by the drawing or administrative offices.

The place of *Llai Llai* in railway history

The inside cylinder four-coupled tender locomotive with leading bogie was the most distinctive passenger type on British railways for fifty years from the 1870s until superseded by the 4-6-0. General construction did not cease until the last of the 2P Class of the LMS was delivered in 1932. Last of all, and I think last in the world, were the five U Class built in 1948 by Beyer Peacock for the Great Northern Railway of Ireland. Thousands of 4-4-0s were built for every large and many smaller companies, while the Great North of Scotland Railway used nothing else except for shunting and its small Aberdeen suburban traffic. Respected companies like the Midland and the South Eastern

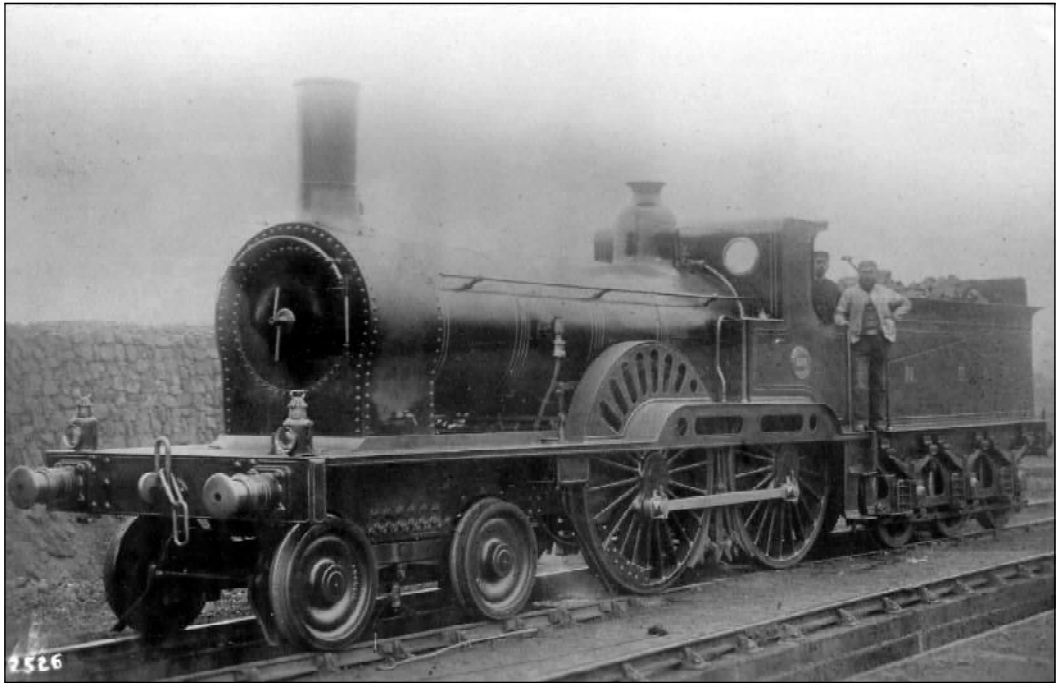
& Chatham never acquired anything larger for their express passenger traffic. Many more 4-4-0s were built for railways abroad, as diverse as the Dutch Railways, Egyptian State Railways and the North Western Railway of India.

These 4-4-0s were perfectly suited to British conditions where relatively easily graded main lines and light wooden carriages were the order of the day. Mostly they ran steadily and freely and were powerful for their size. When coaches became heavier and formations longer they could be double headed without the necessity of replacing numerous turntables required for longer locomotives. The type was also capable of considerable enlargement. Locomotive engineers knew where they were with a 4-4-0.

Although the first outside cylinder 4-4-0s (*Lowther and Brougham*) appeared on the Stockton & Darlington Railway as early as 1860, the first inside-cylinder, inside-frame, variant for a British company was a pair built by Thomas Wheatley for the North British Railway in 1871, numbers 224 and 264 (Fig 5). That was four years after *Llai Llai* was



Figure 4. Leith Engine Works, nos 1-3 Mill Lane, showing the Mill Lane frontage of the works from the south-east. The two-storeyed building probably housed the light machine shops. [© HES. Reproduced courtesy of J R Hume. SC 784513]



**Figure 5. North British Railway no 224, the locomotive that went down with the Tay Bridge in 1879.
[Robert Humm collection]**

completed and the writer can discover no earlier example than the Chilean locomotives built anywhere in Great Britain. (I exclude from this statement the broad gauge Great Western *Waverley* class of 1855 in which the two leading axles were rigid in the main sandwich frames.) The classic 4-4-0 was developed by Wheatley's successor Dugald Drummond on the NBR, the Caledonian and later the London & South Western. So there is little doubt that *Llai Llai* stands at the head of a distinguished Scottish family tree.

There might be another connexion between Wheatley and *Llai Llai*. Whilst the principal NBR works was the former Edinburgh & Glasgow Railway establishment at Cowlairs, Glasgow, Wheatley was also responsible for the original NBR works at St Margarets, Edinburgh. Now, St Margarets was no more than three-quarters of a mile from Leith. Might Wheatley have been on good terms with the Hawthorn proprietors and decided something on the lines of *Llai Llai* could be an ideal replacement for the miscellaneous collection of 2-2-2s and 2-4-0s

that he had inherited? Take away the cowcatcher, the huge headlamp and the all-weather cab (and no self-respecting 1860s Scotch driver would be seen dead in something as effete as that) and 224 looks rather similar, even down to the stove pipe chimney.

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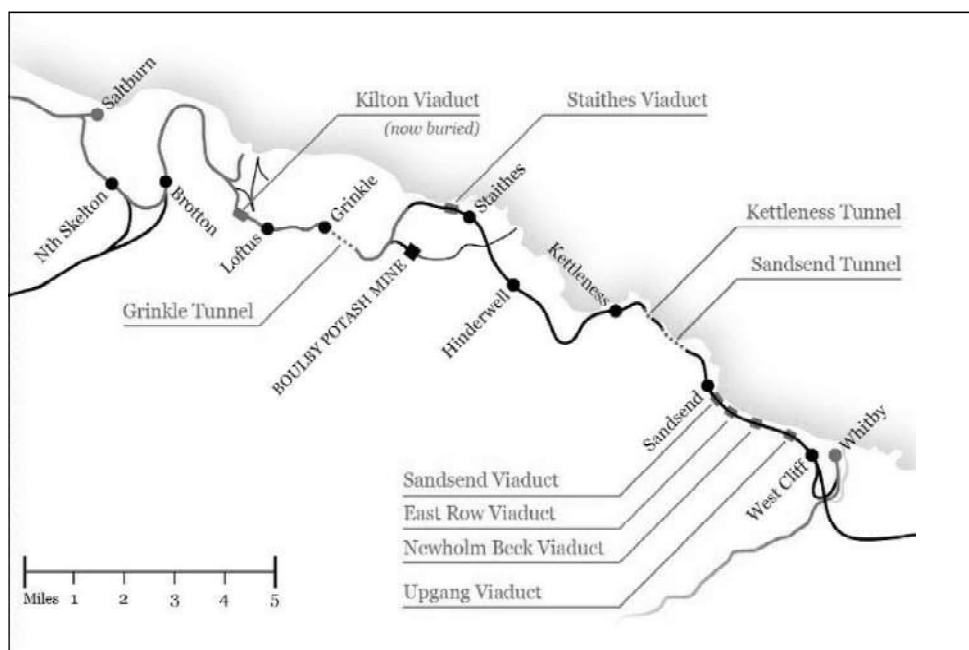
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I am grateful to Martin Coombs for his unpublished catalogue of Chilean locomotives and the translation of the Ministry of the Interior report.

The costs of working a failing branch line : a financial study of the Whitby–Loftus line, 1910–1933

Michael Aufrere Williams



Introduction

It was quickly obvious that the financial difficulties affecting the Whitby–Loftus line, which had become apparent many years before its opening date in December 1883, were to continue long after the trains started to run.¹ Yet the takings of the line in later years were to show that with the passage of time those early difficulties were possibly being overcome.² This article will consider three discrete years of operation, 1910, 1920 (the most successful year of the line's 75-year existence in terms of passenger bookings) and 1933, and by estimating operating costs, try to construct an operating profit/loss account. Six estimates will be given. They will show the most optimistic view and the most pessimistic.

These estimates are made by adding together the wages of the footplate staff, the permanent way staff, station staff and setting these against the income of the line as given in the relevant traffic receipts.³ The

most pessimistic view will be that where, for example, every train is operated by a different crew; whilst the most optimistic view will be that where, for example, a train crew operates a 'there and back' shift, thus halving the labour costs of locomotive operation. A further assessment of the profits or losses experienced by the line will be undertaken by considering optimistic and pessimistic viewpoints regarding station expenses. Other expenses such as locomotive costs, rolling stock repairs, maintenance of the permanent way and of headquarters staff will be briefly considered. On the revenue side, the income from passenger tickets issued at each station will be estimated. A rough-and-ready estimate of income attributable from passengers travelling from further afield is also made by subtracting the numbers of passenger tickets booked at local stations from those collected. It should be clearly understood that the final figures can only be rough estimates, as the evidence has many lacunae.

Operating costs

Some indication of the complexity of the business of running a railway may be gained from a number of texts published in the 1920s which attempted to explain, sometimes in considerable detail, all the many elements of railway administration and working.⁴ Although this chapter will deal with only the major costs, these texts demonstrate how wide-ranging operating costs were. For example, C P Mossop, in his book *Railway Operating Statistics*, notes eight major categories of locomotive operating costs: superintendence, repairs and renewals, enginemen's wages, engine shed labour, coal, oil, water, and other stores.⁵ Similarly A E Kirkus looked at, *inter alia*, the costs involved in repairing locomotives, passenger carriages and freight wagons.⁶ The two-volume *Modern Railway Administration* by G W Ede and others was more concerned with the management operation than Mossop or Kirkus.⁷ Not only are there numerical lists of personnel employed on the railways in 1923, there is also a section dealing with the headquarters staff. Then there are the divisions involved in dealing with freight and a section on the different types of tickets. These made for impressive numbers. For example on the weekend of 25 March 1922, just a few months before the implementing of the Railway Act of 1921, the North Eastern Railway (NER) employed 59,270 staff. A year later, the newly formed London & North Eastern Railway (LNER) employed 202,232 members of staff.⁸

The numbers of headquarters staff in the upper reaches of railway hierarchy is equally impressive.⁹ These employees do not feature in the calculations in this chapter, but nevertheless they still had to be paid and the money (or most of it) would have come from revenue from freight and passenger services. Apart from the wages and salaries paid to the various classes of railway staff, there were four general requisites for the running of a passenger service. These were: a properly maintained permanent way; properly maintained equipment (such as rolling stock); up-to-date signalling and train telegraphing, or train control; and supervision.¹⁰ The price of coal, too, was an important factor in the assessment of costs. The approximate cost of coal at the mines fluctuated considerably; for example, in 1890 the approximate cost of a ton was 8s 3d, whereas by 1897 it had fallen to 5s 11d, whilst in 1900 the price had risen quite dramatically to 10s 9½d a ton.¹¹ In 1908 it had fallen from this exceptionally high price

to 8s 11d a ton, while in 1910, whilst still comparatively high, it was now 8s 2½d a ton.¹²

Revenue

Concerning revenue from passenger services, the many varieties of passenger tickets could be classed into five groups, namely ordinary, tourist, excursion, season (contract) tickets and cheap tickets by ordinary trains which included weekend tickets and the one thousand mile coupons.¹³ Not all of these types would have been available throughout the period. Statistics for the seven stations on the Whitby–Loftus line for the years 1910–38 include the number of passengers booked at each station, the number of tickets collected from passengers booked from places local to the station, and the number of tickets collected from those travelling from far beyond the station. There are also figures for passenger receipts, station expenses (salaries and wages) and total receipts at the station, which include freight statistics. The statistics from the seven stations on the Whitby–Loftus line (excluding Loftus) are central to this article, so before considering the income from each station for the selected years, it is useful to understand the details of ticketing in the 1920s and the way in which these applied to the compilation of statistics. A very useful text, therefore, is A E Kirkus, *Railway Statistics: their compilation and use* (published in 1927).¹⁴ Firstly, ordinary tickets were divided into three classes – first, second, and third, although in actual practice there were few second-class passengers. Each return ticket was counted as two journeys, and when recording the number of passenger journeys no discrimination was made between children and adults. Season tickets could be obtained for periods varying from one week to 12 months, and it was the practice for statistical purposes to equate the figures to twelve-monthly tickets, for example a ticket issued for three months was counted as one quarter. When estimating the number of journeys taken by season ticket holders it was assumed that each annual ticket was equivalent to 600 journeys. In 1925, across the whole of Britain's railways, approximately 53 percent of the aggregate number of journeys were taken by passengers holding ordinary tickets, 29 percent by season ticket holders, and the remaining 18 percent by workmen. The corresponding figures for receipts were: ordinary passengers 80 percent, season ticket holders 15 percent, and workmen 5 percent.¹⁵ Workmen's tickets were issued at reduced fares; on the outward journey they were available only by

certain specified trains in the early morning and the return journey could not be made before a specified time later in the day. Excursion and weekend bookings were advertised at reduced fares and they included cheap day bookings by ordinary trains.¹⁶ With the increase in bus competition, and as a means of combating it, the LNER introduced cheap day returns on some lines in 1926, and generally in the northeastern area by 1929. This had the result of increasing passenger journeys by 18.3 percent in 1928 but only managed to stem the decline in receipts by 0.7 per cent.¹⁷ By the 1930s most traffic at rural stations was at cheap-day return fares and first-class travel by branch line trains had virtually disappeared.¹⁸ All the above elements must be taken into consideration when considering the profitability – or lack of it – of the Whitby–Loftus line.

Operating profit and loss on the Whitby–Loftus line

The primary sources for the following analysis are all to be found at The National Archives, Kew.¹⁹ There are a few caveats which should be taken into consideration. Firstly, the figures for Loftus station are not considered. This is because there were some wild fluctuations in certain figures, especially those dealing with goods received and forwarded. Loftus was close to Liverton mines which would have been a major source of these heavy goods;²⁰ also, although at one end of the line, Loftus was a through station and had never been a part of the original Whitby, Redcar & Middlesbrough Union Railway, as it initially joined the NER end-on. Secondly, it is not clear from the Station Traffic Book whether or not the station expenses (that is, wages and salaries) have been taken into account when the final figure of total receipts was made. I have therefore completed two sets of figures. The more pessimistic assume expenses had not been deducted from the total receipts. The more optimistic assumes that they had. Thirdly, the figure for station expenses (wages and salaries) ends in 1929. In order to attempt to reach a figure for net station receipts in 1933 I have used the 1929 station expenses figure. It is clear from the figures that, by and large, station expenses had fallen throughout the 1920s (although there were some fluctuations) and that the 1929 figure is, in four out of the six stations under consideration, the lowest of the decade. Given the Great Depression and its effect on railway wages, it is reasonable to assume that costs in 1933 would have been no higher than in 1929. Thus the figures for total receipts in 1910, 1920 and

1933 for the six stations on the line are as shown in Tables 1 and 2.

	<u>1910</u>	<u>1920</u>	<u>1933</u>
Grinkle	£430	£730	£(259)
Staithes	£1,746	£3,523	£1,223
Hinderwell	£1,271	£3,503	£1,484
Kettleness	£140	£(69)	£(85)
Sandsend	£1,284	£2,523	£(73)
Whitby (West Cliff)	£2,882	£5,881	£1,217
Total	£7,793	£15,391	£3,507

Table 1. Total station receipts (assuming station expenses had not been deducted).²¹

	<u>1910</u>	<u>1920</u>	<u>1933</u>
Grinkle	£616	£1,605	£246
Staithes	£2,005	£4,663	£1,254
Hinderwell	£1,548	£4,476	£2,218
Kettleness	£299	£677	£275
Sandsend	£1,476	£3,316	£330
Whitby (West Cliff)	£3,379	£7,930	£2,218
Total	£9,333	£22,666	£6,541

Table 2. Total station receipts (assuming station expenses had been deducted).²²

The year 1920 marks the high point of the fortunes of the line, as may be seen (especially in the passenger figures) in the Station Traffic Book.²³ However, looking at the station expenses for the three years it is immediately apparent that costs were at their highest in 1920 (Table 3).

	<u>1910</u>	<u>1920</u>	<u>1929*</u>
Grinkle	£186	£875	£505
Staithes	£259	£1,140	£463
Hinderwell	£227	£972	£732
Kettleness	£159	£708	£360
Sandsend	£192	£793	£403
Whitby (West Cliff)	£497	£2,049	£1,001

* The nearest figure available

Table 3. Station expenses for 1910, 1920 and 1929 (TNA RAIL 398/293)

It is immediately apparent that a very large increase in station costs, to be considered later in this article, occurred in the ten years 1910–20; also considered will be how attempts to lower those costs achieved some success. It will be instructive to consider later in this article how wages for footplate and permanent way staff compare with those of station staff. However, as noted above, the costs of the line involved much more than the wages and salaries of the station staff. Apart from the detailed maintenance (wages as well as cost of materials) necessary for all aspects of railway operation, it was wages which were the main cost to set against the operating surplus made by the line and which was available as a contribution to central charges (for example, headquarters staff and interest on debentures). Table 4, based on figures published in 1909,²⁴ shows average wages on the NER in 1908.

Average wage for Engine Drivers	£2.0.10 per week
Average wage for Firemen	£1.7.2 per week
Average wage for Cleaners	£0.14.5 per week
Average wage for Passenger Guards	£1.8.7 per week
Average wage for Goods Guards	£1.8.5 per week
Average wage for Signalmen	£1.6.0 per week
Average wage for Ticket Collectors	£1.4.6 per week
Average wage for Gangers	£1.3.10 per week
Average wage for Platelayers	£1.0.4 per week
Average wage for Linesmen (and Signal fitters)	£1.4.11 per week
Average wage for <i>all occupations</i>	£1.4.9 per week

**Table 4. Average wages on the North Eastern Railway in 1908
(TNA RAIL 1021/31)**

After considering the total station receipts for a year and, at the same time knowing the average wages of footplate, train, and permanent way staff, an estimate of the line's wages per year may be made. To do this, it is necessary to know how many trains per day used the line. The working timetables for the years under consideration give a very clear picture. In 1910, in the period from January to June 1910, 11 passenger and mineral (goods) trains worked on the line in the Saltburn–Whitby direction. However three of these mineral workings were from Middlesbrough to Grinkle (in fact to the nearby Boulby mines) and I have omitted them from the calculations. Therefore eight passenger and goods trains worked on the line from Saltburn to Whitby, while in the opposite direction, after omitting one Boulby mines to Carlin How Junction working, the

number of relevant trains is nine.²⁵ In the second half of the year, from July to December 1910, excluding six workings from Newport and Middlesbrough to Boulby mines, there were 12 passenger and goods workings in the Saltburn to Whitby direction, one of which was a Wednesdays only, 13 July to 7 September, (empty) steam autocar working from Staithes to Whitby (Town). In the other direction, not including the four workings from Boulby mines, there were 13 passenger and goods train workings each day. Sundays were not worked.²⁶

In making an initial estimate of the line's finances in 1910, I have made an unrealistically pessimistic assumption that each train on the line had a different crew. It is possible, of course, that the same crew may well have taken the same train up and down the line, but there is no way of knowing this from the

available evidence. One train, then, would have a driver, a fireman, and a guard. I also assume that the same crew worked the same train each day of the week. Using the 1908 figures for average wages for NER railwaymen produces the following estimates. Between January and the end of June 1910 17 trains a day worked up and down the line. There were 24 weeks in this period, so an engine driver's wage (at £2 0s 10d a week) per train would be £49 4s 0d. Thus the total cost for engine drivers during this 24 week period would be £833 14s 2d. In the second half of the year, when there were 27 weeks, 25 trains worked up and down the line. An engine driver's wage for this period would be £55 6s 6d. The total cost for engine drivers for this period would be £1383 2s 6d. The wages for the entire year for engine drivers alone would thus be £2,069 16s 8d. A fireman's wage

for the first period of 24 weeks would be £32 12s 0d, the total cost for firemen during that period thus being £549 4s 0d. For the second period of 27 weeks a fireman would earn £36 13s 6d, the total cost for firemen being £916 17s 6d. The wages for firemen for the entire year would therefore be £1,466 1s 6d.

The difference in average wages between passenger and goods guards on the NER was negligible (the former earning 2d a week more than the latter); consequently I have taken the median figure of £1 8s 6d per week. The cost, then, of guards for the first 24 weeks of 1910 for the Whitby–Loftus line (in which period a guard would earn £34 4s 0d) would be £581 8s 0d. For the remaining 27 weeks (in which period a guard would earn £38 9s 6d) the cost would be £1,005 17s 6d. The total cost for the year for guards on the line was thus £1,586 17s 6d.

It is difficult, if not impossible, to know how many platelayers and foreman gangers worked on the line. Platelayers maintained the track including lineside fences, kept culverts clean, and acted as fog signalmen in such conditions. They worked in a group under a foreman ganger, and each gang was allocated a length of line which they examined twice a day. Simmons and Biddle maintain that in 1860 there was perhaps less than one platelayer per mile, but by 1889 this figure had risen to approximately 2.5 men per mile.²⁷ Therefore I have made the difficult decision to argue that on the 16 miles of track between Bog Hall Junction and the end-on

connection with the NER at Loftus there were 32 platelayers at work with four foreman gangers. This being the case, the cost of platelayers for the first period (January–June 1910) would have been £785 16s 0d, and for the second period (July–December 1910) the cost would have been £ 824 8s 0d. The total cost for the year for platelayers was therefore £1,610 4s 0d. The gangers cost £114 8s 0d for the first period, and £128 14s 0d for the second half of the year, the total being £243 2s 0d.

I have included the costs of signalmen and ticket collectors in that of the station expenses and so, although there are many other hidden costs, it is possible (though fraught with danger) to attempt to assess the operating profitability (or lack of profitability) of the line in 1910. To begin with, the total receipts for the line were £7,793. The costs of labour (drivers, fireman, guards, platelayers, gangers) total £6,976 1s 8d. If there were no other expenses at all (but of course there were many) the line would have shown a surplus for 1910 of £817 (rounded up to the nearest pound). This was not, of course, a true profit because the figure takes no account of central charges such as the cost of headquarters staff. It was, however, a sum that was available to help meet such costs, which were generally regarded by contemporary managers as fixed overheads when considered in relation to any particular line. All these costs are shown in tabular form in Table 5.

	<u>Weekly wages</u>	<u>Wages Jan-June</u>	<u>Wages for 17 trains</u>	<u>Wages July-Dec</u>	<u>Wages for 25 trains</u>	<u>Total</u>
Engine Drivers	£2.0.10	£49.4.0	£833.14.2	£55.6.6	£1,383.2.6	£2,069.16.8
Firemen	£1.7.2	£32.12.0	£549.4.0	£36.13.6	£916.17.6	£1,466.1.6
Guards	£1.8.6	£34.4.0	£581.8.0	£38.9.6	£1,005.17.6	£1,586.17.6
Platelayers	£1.0.4	£785.16.0	-	£824.8.0	-	£1,610.14.0
Gangers	£1.3.10	£114.8.0	-	£128.14.0	-	£243.2.0
Total						£6,976.1.8

Table 5. Estimated costs of running the Whitby-Loftus line in 1910 (pessimistic view)

Now let us take the more optimistic view, in which the train crew works a train to its destination, and then takes it back to whence it came. This is not an unlikely scenario, and at once it approximately halves the costs of driving and firing. Let us also assume that the guard also works the same pattern. The gangers and platelayers, of course, remain the same. The costs then are for 9 trains (January to June) and 13 trains (July to December) for drivers, firemen, and guards. This is shown in tabular form in Table 6.

Thus the line would show an operating profit (rounded up to the nearest pound) of £3,195.

By far the best year for the line was 1920, when the station receipts totalled £15,391. It has already been noted that the costs of signalmen and ticket collectors are included in the figure for station expenses. There are very detailed figures for rates of pay in 1920. However, these rates are graded according to length of service and show a considerable difference between the pay for the most and least experienced. For example, a driver in his first year would be paid £4 4s 0d per week, while a man with six years' experience or more would earn £5 2s 0d per week. For a fireman, the difference

	<u>Weekly wages</u>	<u>Wages Jan-June</u>	<u>Wages for 9 trains</u>	<u>Wages July-Dec</u>	<u>Wages for 13 trains</u>	<u>Total</u>
Engine Drivers	£2.0.10	£49.4.0	£448.16.0	£55.6.6	£719.4.6	£1,168.0.6
Firemen	£1.7.2	£32.12.0	£293.8.0	£36.13.6	£476.15.6	£770.3.6
Guards	£1.8.6	£34.4.0	£307.16.0	£38.9.6	£500.3.6	£807.19.6
Platelayers	£1.0.4	£785.16.0	-	£824.8.0	-	£1610.14.0
Gangers	£1.3.10	£114.8.0	-	£128.14.0	-	£243.2.0
Total						£6976.1.8

Table 6. Estimated costs of running the Whitby-Loftus line in 1910 (optimistic view)

	<u>Weekly wages</u>	<u>Wages for 51 weeks</u>	<u>Wages for 16 trains</u>	<u>Wages for 2 Sunday trains</u>	<u>Total</u>
Engine Drivers	£4.3.0	£211.13.0	£3,386.8.0	£423.6.0	£3,809.14.0
Firemen	£3.8.0	£173.8.0	£2,774.8.0	£346.16.0	£3,121.4.0
Guards	£3.11.6	£182.6.6	£2,948.14.0	£364.13.0	£3,313.7.0
Platelayers	£3.3.0	£5,120.16.0	-	-	£5,120.16.0
Gangers	£3.8.6	£698.14.0	-	-	£698.14.0
Total					£16,063.15.0

Table 7. Estimated costs of running the Whitby-Loftus line in 1920 (pessimistic view)

	<u>Weekly wages</u>	<u>Wages for 51 weeks</u>	<u>Wages for 16 trains</u>	<u>Wages for 2 Sunday trains</u>	<u>Total</u>
Engine Drivers	£4.3.0	£211.13.0	£1,693.4.0	£211.13.0	£1,904.17.0
Firemen	£3.8.0	£173.8.0	£1,387.4.0	£173.8.0	£1,560.12.0
Guards	£3.11.6	£182.6.6	£1,474.7.0	£182.6.6	£1,656.13.6
Platelayers	£3.3.0	£5,120.16.0	-	-	£5,120.16.0
Gangers	£3.8.6	£698.14.0	-	-	£698.14.0
Total					£10,931.12.6

Table 8. Estimated costs of running the Whitby-Loftus line in 1920 (optimistic view)

would be £3 6s 0d in his first year and £4 4s 0d if his firing service was more than eleven years. For guards (passenger and goods) this difference would be between £3 8s 0d and £3 18s 6d (in his sixth year).²⁸ I have therefore taken an average figure from those examples given above, and assumed that the driver, fireman and guard are in the fourth years of their respective service. The working timetables for 1920 are available and thus it is possible to make an attempt at a fairly detailed analysis.²⁹ These timetables cover a longer period (October 1919 to March 1921); I have used them to consider *only* the weeks of 1920. Four working timetables were issued for the period October 1919 to March 1921; their most striking aspect is their similarity. Apart from two conversions from Saturday only running to all-week running during the July–September period, there is very little difference between them (occasionally a train is timetabled to leave two or three minutes earlier or later). Perhaps the major differences between 1920 and 1910 are the number of trains (1920 has 16 trains compared to 25 in 1910, and there are two Sunday workings, both workmen’s trains). The results are shown in Table 7.

The considerable increase in wages since 1910 was enough to ensure that even in the line’s most successful year it was running at a loss. It must be emphasised, though, that this is the pessimistic view of the line’s finances. In this view, the loss in 1920 was (to the nearest pound) £133. However, if we put this figure against the optimistic figure for station receipts (that is, with station expenses not deducted, £22,666) then an operating profit of £6,602 is made. However, it must be repeated that the figures used in this analysis are far from comprehensive, and that they can only offer a somewhat nebulous guide to the fortunes of the line rather than a definitive statement. Even so, a possible operating profit of £6,602, compared with that of £3,195 (the optimistic view) for 1910, indicates that the line was (relatively) prospering and that it appeared to have a fairly bright future.

Again, using the optimistic view, we can use the alternative scenario given for the 1910 figures, that of assuming that the train crew (driver, fireman, and guard) worked to the destination and back, thus halving the costs of those three men. This may be seen in Table 8.

This then gives the line a profit for the year 1920 (to the nearest pound) of £4,459. If the station expenses are not deducted from the overall figures, then the profit would be greater: £11,734.

However, the most astonishing aspect of 1920 is the number of passengers using the line. The figures demand considerable attention. Tickets issued at each station in 1910 and 1920 are as shown in Table 9.

	<u>1910</u>	<u>1920</u>
Grinkle	7,791	11,552
Staithes	19,663	63,703
Hinderwell	21,024	44,044
Kettleness	5,160	8,653
Sandsend	43,844	54,043
Whitby (EC)	70,360	88,436

Table 9. Tickets issued in 1910 and 1920

It is also possible, in some cases (for the figures are incomplete) to know how many tickets were *collected* at each station. Here the statistics, when they exist at all, indicate the number of tickets collected local to the station and those collected beyond the station. This definitions might be difficult to interpret were it not for a further document, showing receipts from the line 1935–37, which clearly states that the first definition means ‘tickets collected available to the station or short thereof’, and the second ‘available to stations beyond’. These figures are shown in Table 10.

	<u>Local to station</u>	<u>Beyond station</u>
Grinkle	14588	n/a
Staithes	69950	30
Hinderwell	57811	n/a
Kettleness	9814	n/a
Sandsend	n/a	n/a
Whitby (West Cliff)	133,532	115,428

Table 10. Tickets collected in 1920

Whitby (West Cliff) presents an anomaly for tickets collected available to stations beyond. This was because, in all likelihood, most tickets were issued to Whitby (or Whitby (Town) as the station later became known. However, it is immediately apparent that far more tickets were collected than issued; quite possibly indicating that many travellers could very well be from the larger centres of population, especially Middlesbrough. Seaside resorts generally collected far more tickets than they issued; many passengers departing would already have return

tickets.³⁰ The differences between tickets collected in 1920 (local to the station) and tickets issued are shown in Table 11. For Whitby (West Cliff) it should also be remembered that a line approached from Scarborough as well as from Whitby (Town).

Grinkle	1964 more collected
Staithes	6277 more collected
Hinderwell	13767 more collected
Kettleness	1161 more collected
Sandsend	n/a
Whitby (WC)	160,524 more collected
[both types]	

Table 11. Difference between tickets issued and collected in 1920

Unfortunately the relative success indicated by the 1920 figures was not to last. Station receipts for 1933 show that takings had fallen dramatically. The working timetable, like that for 1920, does not show as many trains as that for 1910; it is also, again like that of 1920, remarkably similar for the whole year, with only a few minor seasonal differences which

do not affect the overall analysis. Once again, it must be stressed that the figures contain a number of lacunae, not least the lack of station expenses for 1933. The closest wage rates available are those for 1929 and it is these that are used in the following figures.³¹ A reduction in wages, owing to problems with the national economy and the threat to rail income by competing road transport, meant that in July 1929 the three railwaymen's unions agreed to a 2½ percent reduction of wages for all staff. The deductions were to start on 13 August 1929.³² This explains the lower figures for wages in the following tables. As in the previous two years under discussion, I have constructed an optimistic view (crews taking their train there and back) and a pessimistic view (a separate crew for each train). As no statistics for station expenses exist for the years 1930 onwards, I have used the 1929 figures to help express the pessimistic view. Also, as with the figures for 1920, the 1929 figures for pay for drivers, firemen and guards are graded according to length of service. Again, I have based my calculations on an imagined length of service of four years for each job. Examples of the differences in pay according to service are, for drivers in rural areas, £4 10s 0d for a man with

	<u>Weekly wage</u>	<u>Wage for 52 weeks</u>	<u>Wage for 14 trains</u>	<u>Total</u>
Engine Drivers	£3.18.0	£202.16.0	£2,839.4.0	£2,839.4.0
Firemen	£3.3.0	£163.16.0	£2,293.4.0	£2,293.4.0
Guards	£2.15.0	£143.0.0	£2,002.0.0	£2,002.0.0
Platelayers	£2.4.0	£3,660.16.0	-	£3,660.16.0
Gangers	£2.12.0	£540.16.0	-	£540.16.0
Total				£11,336.0.0

Table 12. Estimated costs of running the Whitby-Loftus line in 1933 (pessimistic view)

	<u>Weekly wage</u>	<u>Wage for 52 weeks</u>	<u>Wage for 7 trains</u>	<u>Total</u>
Engine Drivers	£3.18.0	£202.16.0	£1,419.12.0	£1,419.12.0
Firemen	£3.3.0	£163.16.0	£1,146.12.0	£1,146.12.0
Guards	£2.15.0	£143.0.0	£1,001.0.0	£1,001.0.0
Platelayers	£2.4.0	£3,660.16.0	-	£3,660.16.0
Gangers	£2.12.0	£540.16.0	-	£540.16.0
Total				£11,336.0.0

Table 13. Estimated costs of running the Whitby-Loftus line in 1933 (optimistic view)

over six years service, but only £3 12s 0d for a man in his first year of driving. For firemen the equivalent figures are £3 12s 0d and £2 17s 0d, and for guards £3 5s 0d and £2 10s 0d. Results are shown in Tables 12 and 13.

The station receipts for the line for 1933 were £3507. Thus the line was making a loss of (rounded up to pounds) of £7,829 on the pessimistic point of view or £4,261 on the optimistic. Without the station expenses being deducted, the figures are £4,895 and £1,227. Whatever viewpoint is considered, however, it is clear that in 1933 the line was suffering considerable losses. The figures may be summarised thus:

	<u>1910</u>	<u>1920</u>	<u>1933</u>
A	£817	(£668)	(£7,829)
B	£3,357	£6,603	(£-4,261)
C	£3,195	£4,459	(£-4,795)
D	£4,734	£11,734	(£-1,227)

Table 14. Estimated profit/losses for the Whitby–Loftus line in 1910, 1920 and 1933 using four different criteria

- A: Using the pessimistic view for costs against the pessimistic view for station receipts
- B: Using the pessimistic view for costs against the optimistic view for station receipts
- C: Using the optimistic view for costs against the pessimistic view for station receipts
- D: Using the optimistic view for costs against the optimistic view for station receipts

However, it is possible to construct a further estimate for 1933. Butterfield (1995) suggested that ‘it seems fair to suggest 1s 9d per mile as a conservative estimate for the cost of operating the North Eastern area’s local passenger services’. Butterfield based this figure on the LNER’s 1938 overall figure for locomotive running costs, the main pooling committee’s 1934 allowance for ordinary passenger services and the precise estimates of train running costs prepared for the London Passenger Transport pool in the 1930s.³³ Although Butterfield’s figure refers to 1938, I have used it to construct the following estimate. The line (to the nearest mile) is 17 miles in length.³⁴ Therefore using the 1933 working timetable, which showed 14 trains used the line daily (excluding Sundays), the estimated costs are £6,340 (1s 9d per mile, 17 miles, 14 trains, 317

days). This is considerably less by £1,429 than the most optimistic estimate prepared above, but even so the line would still have shown a loss of £2,833, seen against the station receipts of £3,507.

Increased wages (over the 27-year period under discussion) did, of course, account for some of the loss but, as has been noted in earlier chapters, it was the competition from the motor bus, its regularity and convenience, which caused the decline of passenger numbers and the concomitant losses. Thus Irving’s assessment of the line, as a ‘financial disaster of some magnitude’ which he applied to its earliest days, could nevertheless be said to be valid for most of its existence. Even in the immediate years before the First World War, it barely made an operating profit and, although there were one or two good years at the beginning of the 1920s, it soon lapsed into loss. The question then may be asked why the line was not closed earlier. Perhaps the key to answering this question lies in the numbers of tickets collected at each station. As noted above, these were nearly always greater than the number issued, and thus the idea of the railway providing urban as well as rural mobility may be seen to have some validity. No doubt it was only considerable cross-subsidisation that enabled such a loss-making line to continue to run until May 1958. Its value as a provider of transport to the seaside for those living in urban environments was high, even though that value could only be said to have any importance in the short summer season. Even so, this utility was fast diminishing in the 1950s. Bradshaw’s Guide for 14 June–4 July 1954 (but with the timetable running through to 11 September) shows 10 trains in each direction on weekdays and six on Sundays.³⁵ The final timetable, however, for the winter of 1957–58 shows only three trains each way (with a Saturdays only evening service from Middlesbrough to Staithes). This latter timetabling was far more representative of the line in its latter days than the relatively frenetic summer service.

Official reasons for closing the line

In April 1956 British Railways announced their intention of converting to diesel traction all the lines running into Whitby, except that along the coast to Middlesbrough via Loftus. This was followed 18 months later in September 1957 by a proposal to withdraw all services and to close the Loftus–Whitby (West Cliff) section completely. Both Loftus and Whitby (West Cliff) stations would remain open. British Railways argued that a net annual saving of £10,950 could be expected and also that an

expenditure of £57,000 on structural maintenance over the next five years could be avoided.³⁶ This 'structural maintenance' was for the tunnels between Kettleness and Sandsend and the Staithes, Sandsend, Eastrow, Newholm, and Upgang viaducts. The main problem of the line, that of traversing the section between Sandsend and Kettleness, which had caused such difficulties and expense during its construction, was to prove its downfall. Photographs taken at the time show the interim, and surely temporary, maintenance which had been given to the western portal of Sandsend (Deepgrove) tunnel. Such photographs indicate the British Railways' assessment of the need for expensive structural maintenance was justified.

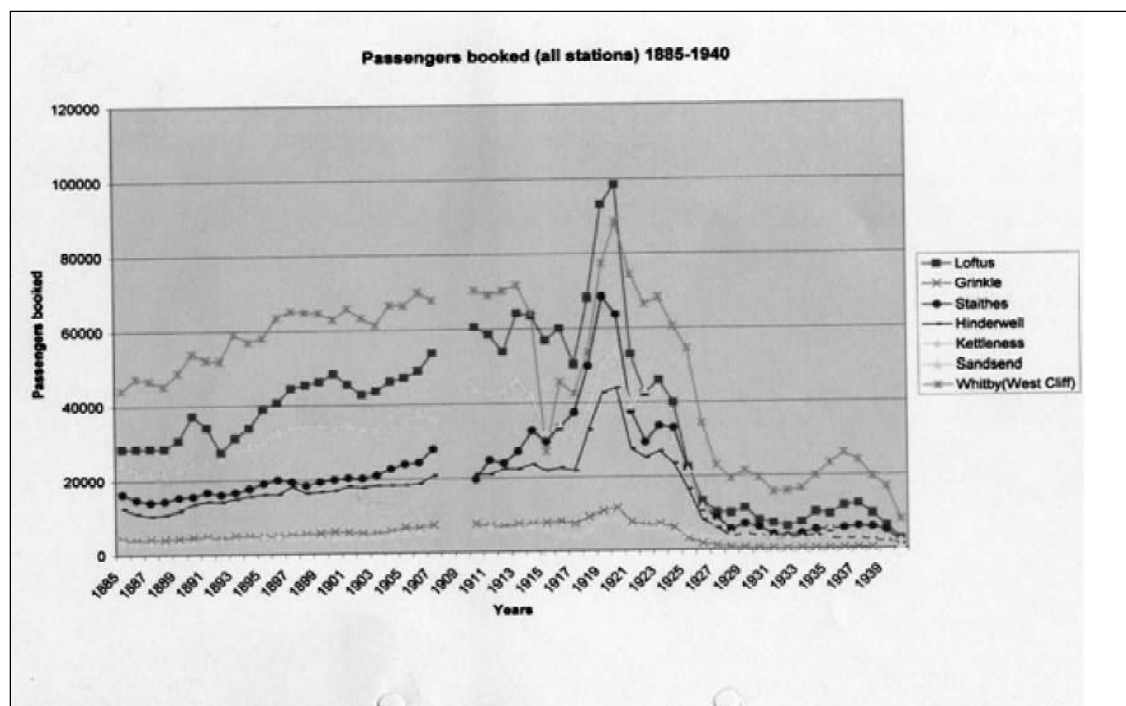
The figures given by British Railways leave no doubt that there was a very large gap between operating expenses and receipts on the section between Loftus and West Cliff. The basic costs, analysed earlier in the chapter for the years 1910, 1920, and 1933 were exacerbated, by 1956, by falling revenue and higher wages, even though, out of the very short season, the number of trains on the line was minimal. The average passenger traffic at the four stations to be closed (Grinkle had closed in 1939, almost certainly because of the drastic fall in station receipts) is shown in Table 15.³⁷

	<u>Joining</u>	<u>Alighting</u>	<u>Total</u>
Per weekday, summer	168	209	377
Per Saturday, summer	460	207	667
Per Sunday, summer	74	81	155
Per weekday, winter	30	33	63
Per Saturday, winter	74	70	144

Table 15. Passengers joining and alighting from Staithes, Hinderwell, Kettleness, and Sandsend

Coal traffic (the greater part of what goods traffic remained) amounted to 4,285 tons at the four stations to be closed. Those opposing closure argued that closure would cause considerable inconvenience to those living in those villages which the line served, but only Kettleness and the nearby hamlet of Goldsborough were not served by bus routes; the other stations being comparatively well-placed. Not surprisingly, these arguments were not entertained and the line closed on 5 May 1958, with the last trains running on the previous Saturday, 3 May.³⁸

What is a railway for? Merely to provide profits for a company and its shareholders? Or to also provide a social service to its locality and, if it connects with a main line, the country as a whole? The Whitby–Loftus line certainly failed in the former



but, after the takeover by the NER in 1889, it became part of the wider NER network and, mainly through cross-subsidisation, was able not only to survive but to grow. Irving's 'financial disaster of some magnitude' cannot, I believe, be applicable to the line after it began to develop some fifteen or so years after its opening. As a project for an independent company and its shareholders it failed, but I have suggested above that it played an important – or fairly important – rôle in the history of both railway and society in the north-east of England in the period up to 1939, its existence being based more on its social function than any other element.

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7. Ede 1925, vol 1, pp 87–8, 113
8. Ede 1925, vol 1, p 113
9. Ede 1925, vol 1, p 87: 'Here [at the LNER] there is a headquarters staff, including a Chief General Manager (with two Assistant General Managers, one for staff matters); Joint Secretaries (with an Assistant Secretary); Chief Legal Adviser, Solicitor, and Chief Assistant Solicitor; Chief Accountant, Deputy Accountant Assistant Accountant; Registrar; Chief Mechanical Engineer, with Chief Assistant Mechanical Engineers; District Mechanical Engineers (for each section); Locomotive, Carriage and Wagon Works managers; Electrical Engineer and officers in charge of the principal sub-works and depots; Chief Stores Superintendent, Assistant Stores Superintendent, and District Stores Superintendents; Advertising Manager; and other departments concerned with the system as a whole.' And on p 88: 'Under the Chief General Manager there are three Divisional General managers, in charge, respectively, of the southern, northern, and Scottish areas, and under these are Assistant General managers and other Assistants, together with Area or Divisional Accountants, Superintendents, Passenger managers, Goods managers, Engineers, Running Superintendents, etc, while further subdivision is made in regard to the respective departments, some of which are officered on a central or an area or divisional basis.'
10. Ede 1925, vol 1, p 174
11. R J Irving, 'The profitability and performance of British railways, 1870–1914', *Econ Hist Rev*, vol 31, pt 1 (1978), pp 46–66, as at p 56
12. P S Bagwell, *The Railwaymen : the history of the National Union of Railwaymen* (London : Allen & Unwin, 1963), pp 209–10
13. Ede 1925, vol 2, p 106
14. See note 4 above
15. Kirkus 1927, p 37
16. Kirkus 1927, p 39
17. P Butterfield, 'Branch lines, wayside stations and road competition', *JTH*, ser 3, vol 16, 1995, 2, pp 179–195, as at p 181
18. Butterfield 1995, p 184
19. TNA, MT 49/19, Ministry of Transport, Private papers, Geddes papers, Railway wages (1919–21); RAIL 398/293, NER/LNER Station traffic book (1910–34); RAIL 527/1098 NER, Wages and working conditions of employees (1912); RAIL 944/63–64 LNER, Working timetables 1933; RAIL 968/62, NER Service timetables January–July 1910; RAIL 968/63, NER Service timetables July–December 1910; RAIL 1021/31, Census of wages, hours of labour etc., of men employed on the railways of the United Kingdom (issued by the Amalgamated Society of Railway Servants, 1908); RAIL 1025/19–20, NER Wages and hours arbitration, vols 1–2, Minutes of proceedings and awards (1909); RAIL 1025/60 National Wages Board, Proceedings and decision (1923); RAIL 1025/88 Railway staff conference: summary of railway national agreements (1929); RAIL 1172/1271, Railway staff conference: Rates of pay and conditions of service (1925)
20. Butterfield 1995 p 186 recognises this. He wrote '[figures for] ... total revenue would be swamped by 50% of Loftus's iron ore traffic which had grown massively, and was despatched to points west of Loftus'.

21. TNA, RAIL 398/293
22. TNA, RAIL 398/293
23. TNA, RAIL 398/293
24. TNA, RAIL 1021/31
25. TNA, RAIL 968/62
26. TNA, RAIL 968/63. One unusual working, not found on any other timetable used in this chapter, was the steam autocar working from Scarborough to Kettleness, departing Scarborough at 5.5 p. m. and arriving at its destination at 7.10 p.m. Another unusual working (from 13 July to 7 September, Wednesdays only) was the steam autocar service from Robin Hood's Bay to Staithes, which took 51 minutes for the journey. This accounts for the empty late evening working from Staithes to Whitby (Town) mentioned above.
27. J Simmons and G Biddle (ed), *The Oxford Companion to British Railway History* (Oxford University Press, 1997), p 381
28. TNA, MT 49/19. Conciliation grades shown in agreement of March 20th, 1920
29. TNA, RAIL 968/77. Working timetables for the North Eastern Railway from October 1919 to March 1921
30. Butterfield 1995, p 190
31. See Appendix 1
31. TNA, RAIL 1025/88
32. Bagwell 1963, pp 510–11
33. Butterfield 1995, p 187
34. The line was 16 miles and 53 chains in length. There are 80 chains to the mile.
35. *Bradshaw's Official Guide for Great Britain and Ireland*, no 1449, 14 June to 4 July 1954 (London : Blacklock, 1954), pp 868–868a
36. G H J Daysh (ed), *A Survey of Whitby and the Surrounding Area* (Windsor : Shakespeare Head Press, 1958), p 236
37. In 1920 the total net receipts had been £1,605, but these had fallen to as low as £56 by 1937. The numbers of passengers booking at Grinkle in 1935 was 321, less than 1 per day.
38. Daysh 1958, p 236

Nineteenth- and twentieth-century gazetteers of the inland waterways of Britain, 1816–1975 : with particular reference to the Stafford Branch Canal / River Sow Navigation

David Jones

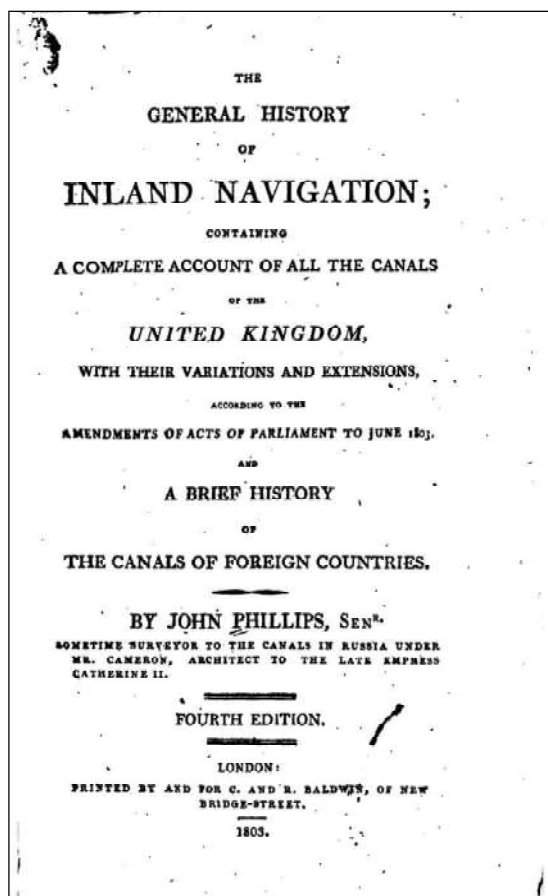
Introduction

It should be possible to find out what the Stafford Branch Canal (River Sow Navigation) was like in the nineteenth and early twentieth centuries by consulting relevant waterways handbooks published at the time. This article looks at several gazetteers/handbooks of the inland waterways to discover what information they contain about the Stafford Branch Canal, not only while it was open (1816 to the 1920s) but also after closure until about 1975.

A gazetteer is a compendium of information about a particular geographical topic. The essential information is normally presented alphabetically and the amount of detail can vary. It seems that there are

several gazetteers which were published between 1816 and 1975: Priestley's (1831), those of de Salis (1897, including Bradshaw's 1904, 1918 and 1928), the Imray Publications (1939, 1947, 1950 and 1962 – there are later editions) and the Shell Guides (1975 and 1981). As will be seen, some of these gazetteers are more useful than others, but each makes its own contribution to our understanding of the Stafford Branch (and how it was perceived) over the years.

It seems that the first gazetteer of Britain's inland waterways was written by the surveyor John Phillips at the height of 'canal mania' at the end of the eighteenth century. It was called *A General History of Inland Navigation, Foreign and Domestic*;



containing a complete account of the canals already executed in England with considerations on those proposed. It was first published in 1792 and there were five editions. It was a mammoth undertaking, detailed and one can sense the enthusiastic, confident vibrancy throughout its pages as the industrial revolution unfolds in the days before the advent of the railways.

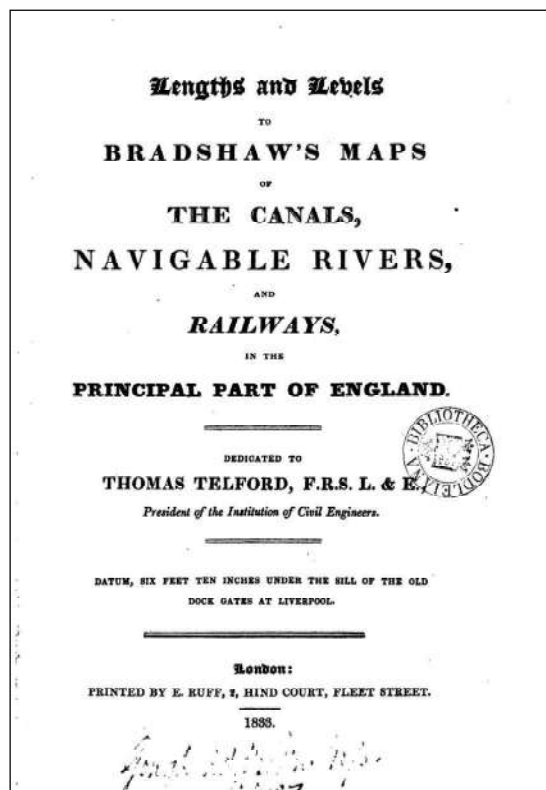
Unfortunately the last edition appeared in 1805, eleven years before the Stafford Branch opened. Unsurprisingly, Phillips made no mention of the Stafford Branch although 'Baswick' is mentioned in the discussion about the construction of the Staffordshire & Worcestershire Canal.

The 1805 edition was reprinted in 1970 by David & Charles and was called *Phillips' Inland Navigation 1805*. Charles Hadfield wrote the introduction to the 634-page reprint.

Historical Account of the Navigable Rivers, Canals, and Railways, of Great Britain (1831)

The first gazetteer of Britain's inland waterways published after the Stafford Branch Canal opened in 1816 appears to have been the *Historical Account of the Navigable Rivers, Canals, and Railways, of Great Britain*.¹ It was meticulously researched and compiled by Joseph Priestley (1767–1852) of the Aire & Calder Navigation and published in 1831. Over 700 pages long, it covered all canals and railways that had been authorised by relevant Acts of Parliament up to 1830 and listed them alphabetically. The railway age had begun and one can sense a foreboding that canal transport would be hard pressed to compete with the emerging challenge, even with some express boats (packet boats and fly boats) carrying passengers.

As Charles Hadfield noted in his introduction to the 1969 David & Charles reprint of the original edition, Priestley had written in the days before the penny post, the telephone or the typewriter and had compiled an almost complete list of canal and railway Acts and used them to write a short account of each



line, identifying the Act and usually including information such as the promoter, engineer, opening date, route, distances, locks, tunnels, aqueducts, bridges, reservoirs, tolls and goods carried, mostly without error or omission. It was essential reading for anyone with an interest in the waterways – canal companies, carriers, local businesses, investors and Members of Parliament – but it was not a ‘tourist guide’. The canals described were *as authorised* and do not take into account that some of the canals were altered or not built.

Unfortunately however, there was no mention of the Stafford Branch / Sow Navigation even though it had opened on 19 February 1816 because, unlike most canals, an Act of Parliament had not been needed as all the land was owned by Lord Stafford. Priestley was aware of Baswich, as it is mentioned in the section which describes the route of Staffordshire and Worcestershire Canal, from the River Severn (at Stourport) to the Trent and Mersey Canal (near Haywood).

A Chronology of Inland Navigation in Great Britain (1897)

There does not appear to have been another compendium about Britain’s inland waterways until *A Chronology of Inland Navigation in Great Britain* was published in 1897. The author, Count Henry Rodolph de Salis, came from a well-connected family. He was born in 1866 and educated at Eton College. The De Salis family had been associated with the Grand Junction Canal and he became a director of the canal carriers Fellows, Morton & Clayton, and at one time was its Chairman. In 1906 he was a witness to the Royal Commission on Canals and Waterways, and from 1911 to 1916 was on the Thames Conservancy Board.

Between 1887 and 1896 de Salis travelled the waterways network, mostly in his own steam launches (*Dragon Fly I, II and III*), and covered around 14,000 miles.

The book was a ‘record of the dates of the principal works and events connected with Inland Navigation’ up to that time. The appendix gave the mileage travelled by de Salis – for each navigation he recorded the number of miles, locks, tunnels and lifts; and whether he used his own steam launches or other vessels or walked. He also mentioned the principal places visited. For example, under ‘Staffordshire and Worcestershire Canal’, he records: ‘in own steam launches covered 55½ miles, 51 locks, 1 tunnel; in other vessels 10 miles, 2 locks, 0 tunnels; total 65½

miles, 53 locks, 1 tunnel, principal places visited Great Haywood, Penkridge, Autherley, Kidderminster, Stourport, Churchbridge.’

Another source of information about the Stafford Branch perhaps? However, at no time did he mention either the Stafford Branch Canal or River Sow Navigation. The waterway had opened in 1816 but the only entry for 1816 recorded the opening of the Leeds & Liverpool Canal when the last section of main line from Wigan to Blackburn was completed.

Why was the Stafford Branch omitted? Perhaps de Salis had not ventured into Stafford? Perhaps he had inadvertently forgotten to include it? Or perhaps he simply did not notice it was there as he passed by? It was probably nothing to do with it not requiring an Act of Parliament to construct, because an entry for 1843 noted that the Hatherton Branch (Staffordshire & Worcestershire Canal) was constructed without an Act of Parliament. But whatever the reason, it was omitted.

The book is a concise, well-written book, which clearly shows how the ascendancy of the railways had affected canal and river transport between 1830 and 1897.

Bradshaw’s Canals and Navigable Rivers of England and Wales (1904, 1918 and 1928)

Bradshaw’s Canals and Navigable Rivers of England and Wales first appeared in 1904. It gives an insight into the inland waterways as they were on the eve of the First World War and the Stafford Branch is listed in the section dealing with the Staffordshire & Worcestershire Canal.

This book was also written by Henry Rodolph de Salis and had its origins in *A Chronology of Inland Navigation in Great Britain* published seven years earlier. Although written by de Salis, the book was called *Bradshaw’s* because it was published by Henry Blacklock & Co Ltd., the publishers of the *Bradshaw’s Railway Guides*.² However, unlike the *Railway Guides* which are tourist guide books, *Bradshaw’s Canals and Navigable Rivers* is basically a *working manual* containing essential information about the waterways, more useful to canal companies and carriers than tourists, with nothing about the history and places of interest to visit along the way. It seems that by 1904 the railways were considered as having a dual purpose, serving both industry and the travelling public (including tourism), while canals were perceived only as part of the *working* fabric of the country.

The first 30 pages of the book give excellent general information about canal and river navigations, and describe different forms of haulage, locks, weirs, lifts, tunnels, bridges, aqueducts, tides and types of vessels used. There are also tables of principal through routes between towns and cities. The main part of the work (nearly 430 pages) is devoted to listing all the navigable waterways in alphabetical order. For each waterway, the following information was given:

- a short description of the waterway, including branches
- proprietors, officers and office address
- a table of distances of places on the waterway (miles and furlongs)
- locks
- maximum size of craft able to use the waterway (feet and inches)
- tunnels
- towing path
- tidal information
- type of craft using the waterway

In addition there is a list of principal places and towns connected to the waterway system by river or canal, and also a useful glossary of canal terms.

The Stafford Branch

According to the 1904 *Bradshaw's Canals and Navigable Rivers of England and Wales*, the Stafford Branch was operated by the Staffordshire & Worcestershire Canal Company. Their Head Office was at 87 Darlington Street, Wolverhampton. Mr J Neve was the Company Clerk and Mr A G Butler was the Traffic Manager. The Canal Company leased part of the River Sow which formed the Stafford Branch from Lord Stafford.

The Stafford Branch left the main line of the Staffordshire & Worcestershire Canal near Baswich at a point 42 miles and 0 furlongs from Stourport. It descended through Baswich Lock to the River Sow, the course of which it followed to Stafford Wharf, 1 mile and 0 furlongs away. There were no tunnels.

The vessels using the Branch were narrowboats, most likely hauled by horses – the system usually used on inland waterways in 1904. The maximum size of narrowboats using the Branch was:

- Length: 72 feet 0 inches
- Width: 6 feet 9 inches

- Draught: varied from 3 feet 10 inches up to 5 feet 0 inches, depending on the amount of water in the River Sow
- Headroom: 8 feet 8 inches

Although there was a towing-path for the whole of the route, *Bradshaw's* says nothing specific about its condition but generally points out that 'canal towing-paths vary considerably, from the well-appointed and well-metalled way to the neglected track – often in winter nothing but a slough of mire, and bounded by a hedge so overgrown as seriously to curtail the width necessary for the passage of a horse'.

Bradshaw's reminds us that traffic on river navigations is more likely to be interrupted by floods and drought than on canals. 'When the banks of a river overflow, although there is plenty of water in the channel, the surrounding country being submerged, it becomes a trackless waste, where risk of the navigator losing his way is great, and headroom under bridges is much diminished.' It is well-known that the River Sow floods periodically and this would affect the movement of boats. The depth of water is also affected by weeds and this varies according to the season. However, *Bradshaw's* also points out that traffic on river navigations is not stopped by frost as soon as it is on canals, since running water freezes less quickly than still water.

Revised editions of *Bradshaw's* appeared in 1918 and 1928.

The 1918 edition essentially contains the same information as the 1904 edition but the Canal Company Clerk was now Mr E B Thorneycroft. The text states that:

The Stafford Branch, which leaves the main line near Baswich, and passing through Baswich Lock, descends to the River Sow, the course of which it follows to Stafford.

The portion of the River Sow forming the Stafford Branch is leased from Lord Stafford by the Staffordshire and Worcestershire Canal Company.

By the time the 1928 edition was published, the Branch Canal had closed. There was just one brief note:

The portion of the River Sow forming the Stafford Branch leased from Lord Stafford has now been relinquished by the Staffordshire and Worcestershire Canal Company as, owing to land drainage schemes, the river is not now navigable.

There was not to be another edition of *Bradshaw's Canals and Navigable Rivers of England and Wales*.

Henry Rodolph de Salis was found shot dead at home in his bedroom at Acton Lodge (Leamington Spa, Warwickshire) on 25 February 1936. A revolver was found close to his body.

Bradshaw's 1904 edition was reprinted in 1969 by David & Charles and more recently in 2012 by Old House (Shire Publications Ltd) (ISBN 978 1 908402 14 1).

Inland Waterways of Great Britain (1939 and 1947)

In 1939 a new publication appeared, greatly reduced in size – just 178 pages – and included only some of the information contained in the 1928 *Bradshaw's*. This was *Inland Waterways of Great Britain* compiled by W Eric Wilson and published by Imray, Laurie, Norie & Wilson. However, neither the 1939 first edition nor the 1947 second edition made any reference to the Stafford Branch Canal – no acknowledgement that it had ever existed – even information on the Staffordshire & Worcestershire Canal has been condensed to a single page. In his 'Introduction' Wilson states that waterways of little importance were omitted.

Inland Waterways of Great Britain and Northern Ireland (1950)

Inland Waterways of Great Britain and Ireland (1962)

The waterways were nationalised in 1948 and another publication appeared in 1950 which reflected the change. This was *Inland Waterways of Great Britain and Northern Ireland* which was compiled by Lewis Arthur (Teddy) Edwards – he was the Honorary Secretary of the Inland Waterways Association (IWA) from 1950 to 1958. The Publisher was again Imray, Laurie, Norie & Wilson.

The book was an updated version of the 1928 and 1947 gazetteers. It is clear that the target audience of the book had changed, and that the waterways had a different role – perhaps they could be used for leisure activities? There was a forward by Robert Aickman, Chairman of the IWA, a list of canals and rivers, and a list of the nationalised waterways with the names and addresses of Regional Offices of the newly created Docks and Inland Waterways Executive. The gazetteer proper came next – nearly 400 pages long. There was also a section on 'Navigation Hints for Pleasure Craft' and a note for 'walkers, cyclists and fishermen' using the towing path.

Both the 1950 and 1962 editions (with a revised title), contain a brief mention of the Stafford Branch in the section dealing with the Staffordshire & Worcestershire Canal, under *General Remarks*: 'Stafford Branch formed by River Sow Navigation is now converted into a drain and no navigation is now possible'.

The Shell Book of Inland Waterways (1975 and 1981)

A different type of gazetteer appeared in 1975. This was *The Shell Book of Inland Waterways*, written by Hugh McKnight and published by David & Charles. The editorial adviser was Charles Hadfield. It was illustrated and its style reflected the changed use of the waterways – commercial traffic had been largely replaced by pleasure craft, and canals and rivers were now the focus of leisure activities. It was written for 'the long distance canal enthusiast, the day tripper, towpath walker, or the motorist intent on discovering some new and peaceful aspect of the British countryside'.

Some historical background was included, and there were chapters on Water Supply, Locks and Lifts, Bridges, Aqueducts, Buildings and Design, Public Houses, Towns and Villages, Operation and Maintenance, Working Boats, Commercial Carriers, Pleasure Cruising, Boatyards and Marinas, Waterways Museums, and Associations and Boat Clubs. Then came the Gazetteer, over 250 pages, covering England & Wales, Scotland and Ireland, and including all the waterways that were then open and some that were in various stages of restoration such as the Kennet & Avon Canal. For each navigation, an introductory paragraph was followed by a list of places on route including a brief description of various features of interest. Some abandoned waterways were mentioned but many were omitted such as the Andover Canal.

In the section dealing with the Staffordshire & Worcestershire Canal, reference is made to the former navigation into Stafford:

[Stafford] was formerly connected with the main line of the S & W by a mile-long branch entered via Baswich Lock near Weeping Cross Bridge (no 101). This branch consisted of a canalised section of the River Sow and became derelict during the early 1920s.

A second edition appeared in 1981 which included an additional chapter on Animal and Plant Life written by Carolyn Barber.

Conclusion

It is perhaps surprising, but not entirely unexpected, to find that there appears to be no gazetteer of the waterways which acknowledges the existence of the Stafford Branch during its first 88 years of existence. The *Bradshaw* publications of 1904 and 1918 give most information about the Stafford Branch, after which the Branch is either not mentioned or is dismissed in a sentence or two. Even a book such as *Lost Canals of England* by Ronald Russell and published by David & Charles in 1971 does not mention the Stafford Branch or River Sow Navigation. It would seem that the Stafford Branch was well and truly lost.

Notes

1. Priestley's book was intended to be used in conjunction with a *Map of the Inland Navigations, Canals and Rail Roads, with the Situations of the various Mineral productions, throughout Great Britain, based on the Ordnance Survey* by John Walker of Wakefield. Although Walker's map had good points, it had disadvantages – the scale was too small, and the canal and railway routes were shown as originally authorised by Parliament rather than what was actually constructed.
2. George Bradshaw was a cartographer, printer and publisher. He was born in 1801 in Pendleton (Salford). By 1830 he had produced a series of maps: *Map of the Canals, Navigable Rivers, Rail Roads &c* 'situated in the counties of Lancaster, York, Derby & Chester'; 'in Southern England'; and 'in the Midland Counties of England'. These showed actual routes (including locks, tunnels and wharves) and were superior to the Walker map mentioned in the previous footnote above. A copy of Bradshaw's book that accompanies these three maps, *Lengths and Levels to Bradshaw's Maps of the Canals, Navigable Rivers and Railways in the Principal Part of England*, is available on-line at: <https://archive.org/details/lengthsandlevel00bradgoog>

In 1839 Bradshaw produced the first compendium of railway timetables. Over the years these railway publications were extended to include maps and described various features of interest about the history and places to visit along the routes – the modern age of tourism had begun!

George Bradshaw died of cholera in 1853 at Christiania (now Oslo) while visiting Norway-Sweden. His name and publications lived on, and more recently the 'Bradshaw' brand is closely linked to the railway journeys of Michael Portillo produced for television.

References and sources of information

John Phillips, *A General History of Inland Navigation, Foreign and Domestic; containing a complete account of the canals already executed in England with considerations on those proposed* (London : I and J Taylor, 1792).

A copy of the 1803 fourth edition is available on-line at: <https://archive.org/details/generalhistoryi00philgoog>.

Joseph Priestley, *Historical Account of the Navigable Rivers, Canals and Railways, of Great Britain* (London : Longman, etc, 1831).

A copy is available on-line at: https://archive.org/stream/Rivers_Canals_Railways_of_Great_Britain.

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A copy of this book is available on-line at: <https://archive.org/stream/inlandwaterwayso032039mbp>.

Lewis Arthur Edwards, *Inland Waterways of Great Britain and Ireland* (London : Imray, Laurie, Norie & Wilson, 1962).

Hugh McKnight, *The Shell Book of Inland Waterways* (Newton Abbot : David & Charles, 1975 and 1981).

James Garrard – goldsmith and railwayman

Terry Jenkins

To many people the name ‘Garrard’ immediately brings to mind the name of the former Crown Jewellers: R & S Garrard. Robert (b 1793) and Sebastian (b 1798) Garrard were appointed Crown Jewellers to Queen Victoria in 1843 and the company continued to hold the royal warrant until 2007. The family name still lives on through the Regent Street shop in London. Originally a third brother was involved in the business. He was James Garrard (b 1795) and, after the death of their father in 1818, the three brothers initially traded as R J & S Garrard. The trio were appointed ‘Goldsmiths, Silversmiths and Jewellers’ to George IV on 5 April 1820, shortly after he came to the throne, and were re-appointed, simply as ‘Goldsmiths’, to William IV on 16 August 1830 after he succeeded his brother and became King.¹ However in 1835, for some unknown reason, James Garrard left the business, and Robert and Sebastian thenceforth continued alone.

James did not sever all connections with the goldsmith’s trade, but his interests developed into an administrative and regulatory role. He became an active member of the Goldsmiths’ Company and served twice as Prime Warden. He was involved, as senior officer of the Company, in arrangements for the Great Exhibition of 1851 and was a juror in the class devoted to precious metals and jewellery. All of this work was unpaid and I was therefore curious to discover how he earned a living. In 1832 he had bought a large estate in rural Middlesex called Pinner Place,² but he cannot have had sufficient capital to live the life of a country squire on his private means for long and he must have found some other form of employment.

After various failed business ventures, the 1861 census shows James’s occupation (somewhat imprecisely!) as ‘railways’.³ His involvement with this new form of transport actually started in the boom years around 1845, when railway mania was at its height, and lines were being built all over the UK. His name can be found, for example, as a member of the provisional committee for the proposed Hull, Birmingham & Swansea Junction Railway.⁴ This line was never built and Garrard’s initial railway interests turned out to lie not in this country, but in France. In September 1845 he was listed as one of the English

Directors of an Anglo-French company involved in the construction of the Paris to Lyon railway.⁵

The procedures that governed the construction of the earliest French railway lines were not the same as those in the UK. In the UK, there was no overall design for the network and many competing companies sought to build lines, which often led to duplication of routes between towns and cities. In France a different procedure was followed. The government designated the routes for the whole country and a series of seven routes, all starting from Paris and radiating out in different directions, was envisaged. There was no provision (in the early days) for any cross-country routes. The French government acquired the land that was needed, and started construction. Before the work was complete companies were invited to bid for the concession to run a particular line. A date for the adjudication of the bids was fixed, and the successful company then owned the concession for a fixed number of years. The price that the company paid was intended to cover the construction costs and reimburse the government’s expenditure, although clearly this could not be accurately calculated while construction was still proceeding. The government then took a percentage of the operating profits when the line opened.

The route from Paris to Lyon was seen as being potentially extremely lucrative and many companies intended to bid for the concession. Several of these were Anglo-French concerns, as the money that needed to be raised was exceedingly large. One such firm was the *Compagnie du Sud-Est*, and James Garrard was one of its English Directors. The company placed its first advertisements in the British press in September 1845, seeking deposits of £2 per share for the 400,000 shares on offer (Fig 1). Each share would eventually be priced at 500FF (around £20) thus raising £8million for the project. The company was commonly known as the *Compagnie Griolet*, after its prime mover and principal director in France, Eugene Griolet. This was a convenient format and the newspapers referred to the other rival companies in similar fashion as *Compagnie Laffitte*, *Compagnie Ganneron* etc.

PARIS and LYONS RAILWAY (COMPAGNIE DU SUD-EST). Entire Capital 200,000,000 francs (£8,000,000 sterling), to be raised by the issue of 400,000 shares of 500 francs (£20). Of which sum £120,000,000 francs (£4,800,000) is subscribed in France, and £8,000,000 is to be subscribed in England. Deposit £2 each share, to provide the usual caution money required by the French Government, which will be returned without deduction in case this Company shall not become the lessees of the railway.

DIRECTORS IN FRANCE.

M. Eugene Griolet	M. Pillet, alné
M. Chopin d'Arnouville	M. Guerin
M. Odlot	M. A. J. Robillard
M. le Baron de Vaux du Cler	

DIRECTORS IN ENGLAND.

Charles Barry Baldwin, Esq., M.P.
 James Garrard, Esq., Finner, Middlesex
 William Jackson, Esq., Birkenhead
 Robert W. Kennard, Esq., London
 William Mackenzie, Esq., Liverpool and Paris
 Richard Paterson, Esq., London
 William Reed, Esq., Paris and Twickenham
 George Stephenson, Esq., C.E.
 William Strahan, Esq., banker, Strand.
 Engineer in Chief—Robert Stephenson, Esq.

Bankers—In London, Messrs. Smith, Payne, and Smiths; in Liverpool, The Union Bank; in Manchester, Messrs. Cunliffe, Brooks, and Co.; in Paris, Nath. A. Gouin and Co., Rue Laffitte.

Solicitors—Messrs. Beavan and Anderson, 2, Adelphi Terrace, London.

This Company has been constituted in Paris by the active promoters of the French Reanmel Company for the Great North line, for the purpose of tendering for the lease of the projected railway from Paris to Lyons; and as it has been thought advisable by them to obtain English co-operation, the gentlemen abovenamed as directors in England have, at their solicitation, associated themselves with the undertaking.

The line of railway has been surveyed and laid out by the French Government.

It is divided into three sections. The first from Paris to Dijon; the second from Dijon to Chalon sur Saône; and the third from Chalon to Lyons.

The construction of the first and third of these is to be undertaken by the constituted Company. The second is already in an advanced stage of construction, and will shortly be completed by the government, at the charge, however, of the Company.

The line is to be completed in five years at latest, from the date of the adjudication.

The maximum term for the lease to be tendered for is not fixed forty-five years.

The privilege of using the railway now making from Lyons to Avignon is secured, on terms of equality, to such Company as may obtain the concession of this line.

The government reserves to itself the right of redemption at the expiration of the first fifteen years, reckoned from the end of the five years allowed for the making of the line, at a price to be calculated on an average of the net profits of the five best years of the seven immediately preceding the redemption.

The law confers on the Company all the powers and privileges requisite for carrying the undertaking into effect, and constitutes it a "Société Anonyme," or corporate body.

Applications for shares are to be addressed to the solicitors, Messrs. Beavan and Anderson, 2, Adelphi-terrace; or to the Secretary, at the offices of the Company, 14, Old Jewry Chambers, London; and all applications must be made by filling up and sending a printed form, which may be had at the Company's offices.

14, Old Jewry Chambers, London, Sept. 8, 1845.

Figure 1. Advertisement from the Morning Post, 9 September 1845 for the Paris and Lyon Railway (Compagnie du Sud Est). Note Garrard's name among the 'Directors in England'.

As the date for the adjudication drew near in December 1845 it became apparent that none of these individual companies had raised enough money to make a successful bid on their own. And so a period of 'fusion' took place. Eleven companies, one of which was the *Griolet*, eventually amalgamated and on the day were the only bidders. The adjudicator had no option but to grant them the concession. The *Griolet* company was nearly the smallest in the

conglomerate, and was allotted just 27,500 of the 400,000 shares that were issued (6.87 percent).⁶ The shareholders of each individual company therefore did not receive the full entitlement they might have hoped for and many were due a refund on their investments. However, none of the investors should have lost money on the venture if the refunds were properly made.

Construction of the line proved to be more expensive than at first thought. It also took longer than expected and it was not only engineering problems that caused the delay. Social and political factors were involved and had an impact on progress. There was panic throughout Europe in 1847, for example, of an impending famine. The potato famine in Ireland is well-known in this country but there were also poor grain harvests for many years in the 1840s across the whole of Europe. The economies of countries suffered, leading to political turmoil: 1848 was a year of revolutions throughout mainland Europe, and France was no exception. It led, in that year, to the overthrow of the government, and the establishment of the 2nd French Republic under the presidency of Louis-Napoléon Bonaparte. The succeeding years were relatively quiet but, after four years in office Louis-Napoléon staged a coup d'état. He was not permitted to seek re-election as President, and in 1852 he reclaimed the title of Emperor as Napoleon III, thus inaugurating the period now known as the Second Empire.

Although construction continued during this turbulent period, at the end of 1851 only the section of railway from Paris to Chalon-sur-Saône had been completed, and there remained a further 80 miles to finish before the entire route to Lyon could be opened. The 4 km tunnel at Blaisy, north of Dijon, had also delayed progress and eaten up money. A fresh appeal for funds was made in 1852, and a new concession was granted for the unfinished section. This led to disagreements between all the parties involved, and the line did not fully open until 1854.⁷

Meanwhile, concessions for the remaining sections of the complete route down to Marseille were also negotiated, and the *Griolet* company was one of those bidding for the Lyon-Avignon section. Once again, there were problems. The political situation and economic uncertainty led the British investors to claim that the costs and predicted income were incorrect, and they sought to renegotiate the contract. Construction stalled, but the investors were confident that the French authorities accepted their arguments

and that a new agreement was imminent. After the coup d'état in 1852, however, the British investors discovered that the new government had arbitrarily awarded the concession to a different (French) consortium. This caused consternation in London, as the original investors had lodged a large sum of 'caution-money' with the previous government to show their good faith in honouring the terms and conditions of the contract. A meeting of investors was held in London, and the chairman, David Salomons MP, was deputed to go to Paris and make the French government honour their original contract or, at least, return the caution-money. One can see that Garrard attended this meeting as he seconded the motion authorising Salomons to travel to France.⁸

Salomons was unsuccessful. The new National Assembly felt no obligation to honour the agreements made by a previous government. And a direct appeal to Louis-Napoléon also failed. He replied:

Sir, – I sent you the official report on the subject of the claim which you have addressed to me in the name of the former English shareholders of certain railway companies. I regret exceedingly that the result is not favourable to their pretensions, for I should much desire to attract English capital to

France, and to give you personally a mark of my distinguished sentiments.

(Signed) Louis NAPOLEON.⁹

The British investors, with James Garrard amongst them, presumably lost their money.

There is no way of knowing precisely how and why Garrard became involved in the construction of French railways. There were many Anglo-French firms seeking investors, and that alone may have been what attracted him. However, it is also possible that he was persuaded to invest his money in the *Compagnie Griolet* by Monsieur Gustave Odiot. Gustave Odiot was the foremost French silversmith of his generation. Like Garrard, he came from a family who had worked in precious metals for generations and both his father and grandfather had been distinguished silversmiths in Paris – the *Maison Odiot* was established there in 1690. It may be that Odiot and Garrard first became acquainted through their mutual activities as gold and silversmiths. However, Odiot was also an investor in French railway companies and was one of the French directors of the *Compagnie Griolet*.¹⁰ The friendship between the two men clearly came to extend beyond

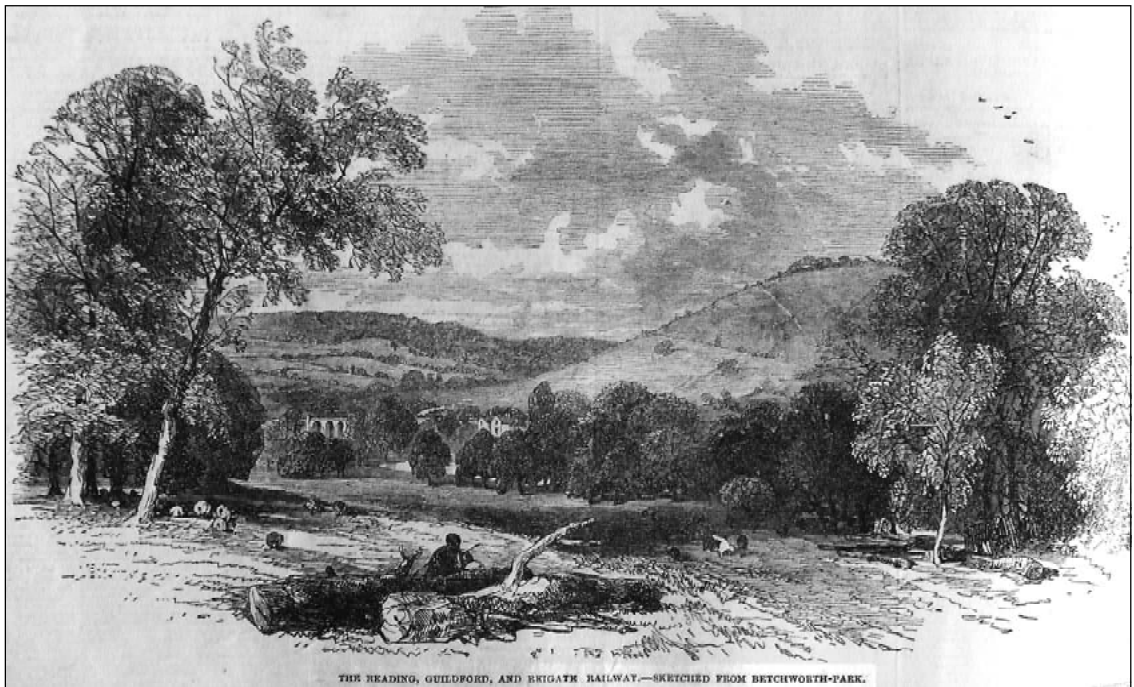


Figure 2. 'The Reading, Guildford and Reigate Railway sketched from Betchworth Park' (Illustrated London News, 22 September 1849). The only evidence for a railway close by is the plume of smoke and viaduct in the far distance.

their professional interests – and one can appreciate this as Gustave Odier was staying with James Garrard at Pinner Place on census night in 1851, and is listed in the census returns there.

After his experiences in French investments, Garrard limited his railway interests to the UK. Early in 1848 he became a Director of the Reading, Guildford & Reigate Railway Company (Fig 2).¹¹ The chairman of this company was David Salomons, the same man who had gone to Paris to try and rescue the caution-money from the Lyon-Avignon fiasco. Garrard's appointment as a director of this cross-country route presumably grew from their common interests in the affair.

James Garrard then became the prime mover and founding chairman of the Staines, Wokingham & Woking Railway (SWW).¹² It was apparent that a gap in the network existed at the time between Staines and Wokingham. Staines was already linked to London Waterloo, and Wokingham lay on the Reading to Reigate railway just mentioned. Connecting the two towns would enable through trains to run from Waterloo to Reading, thus providing an alternative route to the GWR into Paddington. Parliamentary approval for the line was obtained in 1852 and construction started in 1853. The line passed through Ascot, and was advertised as being a convenient method for race-goers to travel to the course. It might also be worth mentioning that James Garrard's brother, Robert, had a country estate in Wokingham. The railway could prove a more convenient way for him to travel to London! The route from Staines to Wokingham opened in 1856, but the proposed line from Staines to Woking via Chobham was never built.¹³

The SWW spawned an offshoot in 1863 with the Sunningdale and Cambridge Town (now Camberley) branch. This left the existing route at Ascot, and travelled south through the afore-mentioned towns to Aldershot and Guildford. James Garrard was the chairman of this company; and he also became involved as a director and chairman of the Mid-Sussex line from Horsham through Billingshurst and Pulborough to Petworth which started construction in 1857.¹⁴

These railways were never viable as separate entities, and were always intended to be operated as part of a longer route by the larger companies. As such, they lent themselves to acquisition by these companies and, as early as 1860, the London Brighton & South Coast railway was considering

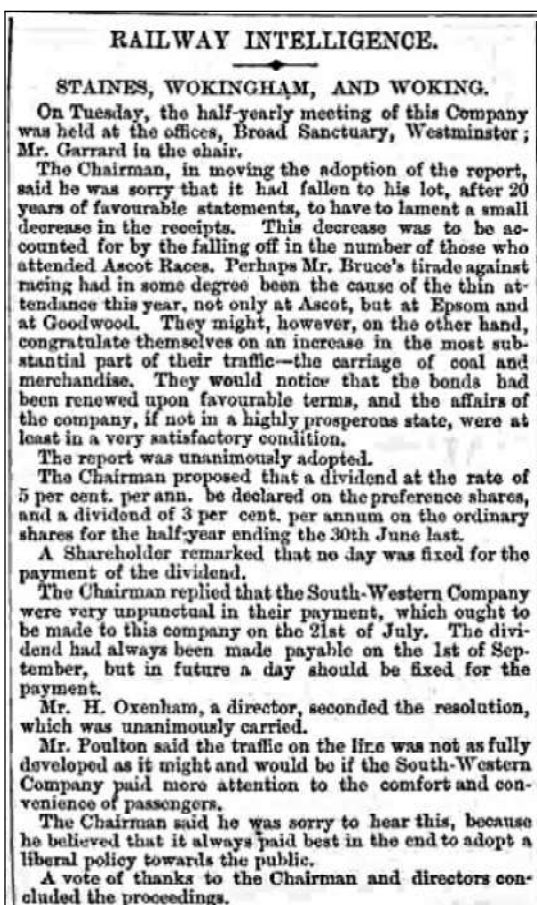


Figure 3. A report of the last meeting of the Staines, Wokingham & Woking Railway to be chaired by Garrard. He died two months later (Reading Mercury, 3 September 1870).

purchasing the Mid-Sussex line.¹⁵ The SWW was leased to the London & South Western Railway in 1858, and absorbed by them in 1878. The SWW was therefore still an independent company in 1870 and Garrard chaired a meeting of the Directors on 11 October (Fig 3). At the following meeting on 7 November 1870, the Secretary reported that 'Mr James Garrard died suddenly on the 3rd inst'.¹⁶ There is no further comment about his death, which must have been unexpected, in the Minute Books, or any appreciation of his work for the railway. The lines with which he was involved are all still in operation, although the section of the Mid-Sussex line to Petworth no longer exists. The section from Horsham to Pulborough still remains as part of the route from London to Littlehampton. And the line

through Camberley is one I travelled on many times as a teenager when we lived in the town.

I do not know how profitable – or otherwise – Garrard's railway activities might have been, but in 1855 he found it necessary to mortgage Pinner Place.¹⁷ Twelve years later in 1867, at his request, the ownership of the entire estate was transferred to his goldsmith brother, Sebastian.¹⁸ The terms of the sale allowed James to continue living in the house until his death and I assume Sebastian Garrard promptly paid off the mortgage.

James Garrard died on 3 November 1870. When probate on his will was granted, his effects were valued at 'under £1,500'. Not a negligible sum, but much less than the value of the Pinner Place estate. It indicates that he had had monetary problems in the past, and the sale of the estate in 1867 was probably necessary to pay off his debts. Coincidentally, his brother Sebastian died the following week, on 8 November 1870. The probate indexes show that *his* effects were valued at 'under £120,000'. Clearly, being a goldsmith to royalty was far more profitable than running railway companies!

I live in Pinner; and my house stands on land that was formerly part of the Pinner Place estate.

Notes and references

1. The National Archives (TNA), LC 3/69 no 10 (5 April 1820); and LC 3/69 no 156 (16 August 1830)
2. Patricia A Clarke, *A History of Pinner* (Chichester : Phillimore, 2004), p 150
3. It is incorrect to state that James's wife was described as a 'clerk in the Admiralty' in this census (see Silver Forums at: www.925-1000.com). The entry has been scratched out, and rewritten on the following line. It refers to Ernest Dawson, a visitor.
4. Advertisement in *The Scotsman*, 4 October 1845 etc
5. Advertisement in the *London Evening Standard*, 8 September 1845
6. *Evening Chronicle*, 8 December 1845; *Evening Mail*, 8-10 December 1845, etc
- 7 *Railway Times*, January 1852, pp 17, 25, 33, 58
8. *Morning Post*, 18 December 1851
9. Printed in *Railway Times*, 17 January 1852, p 50
10. Advertisement in *London Evening Standard*, 8 September 1845
11. *Berkshire Chronicle*, 26 February 1848
12. Advertisement in *The Globe*, 27 October 1852
13. A history of the line was published in *Railway Magazine*, November 1956, pp 723-744
14. Advertisement in *Sussex Agricultural Express*, 27 June 1857
15. *Brighton Guardian*, 16 May 1860
16. TNA RAIL 660/3
17. London Metropolitan Archives: MDR/1855/4/186; seen on m/f X073/097
18. London Metropolitan Archives: MDR/1867/3/639; seen on m/f X073/399

Long-distance driving conditions, 1933

Speeding-up has been sensationally applied in the case of the London bus service, evoking an equally sensational reaction in the dispute of 1932, the establishment of the busmen's rank-and-file movement, and the strike of January 1933. Workers on the motor-coach lines that ply from London work scandalously long hours, in some cases up to 80 a week, with no overtime pay. It has been stated that on the coaches of a large concern operating in the eastern section of the Greater London area, drivers work 73 hours one week and 60 the next; and the proprietor has been fined more than once on charges brought under the Road Traffic Act, for working drivers in excess of the legal limit of hours. Lorry drivers are exploited even worse. Cases of men driving for 15 and even up to 29 hours are frequently before the courts; and men have constantly been dismissed for protesting against hours of 16 to 20 a day, and for refusing to break the law by exceeding the speed limit.

Allen Hutt, *The Condition of the Working Class in Britain* (London : Martin Lawrence, 1933), p 174

Correspondence

Could this be one of Joseph Boughey's 'new directions for waterways history'?

RCHS Journal no 230 (November 2017), pp 142–155

Nicholas Hammond writes ‘When the railways continued the tradition of small masonry bridges, they reverted to the segmental [arch] design, this was probably due to their preference for skew bridges. It would have been difficult to design and build a three-centred skew bridge, as the segmental blocks would involve three-dimensional geometry’.

It may be a case of the proverbial exception that proves the rule but the engineer W S Moorsom used a three-centred design for the masonry over-bridges on the Southampton & Dorchester Railway, constructed 1845–47. Three of these still survive on the closed section of line between Brockenhurst and Ringwood, including a fine three-arched skew

example, the former bridge no 43 (illustrated below). Clearly the contractor S M Peto's bricklayers were up to the challenge!

Inexplicably, whilst bridges 43 and 44 were of 28 ft span, bridge 62 (Crow Arch) was only 23 feet. This drew comment in Captain Coddington's inspection report:

Bridges over the Railway: ... The span is generally 28 feet, and there are 5 bridges of 26 feet span and 4 of only 23 feet. These latter, though not exactly dangerous, are in my opinion injudiciously narrow, being even of less width than tunnels are ordinarily made where the enormous expense attendant upon their construction induces the smallest convenient opening.

The Southampton & Dorchester was of course built mainly as a single track railway but with provision made for doubling, so the narrow bridges were not an immediate problem.

Philip Brown



Low Water Pier 1870–c1890 : an overlooked railway station at Cardiff

RCHS Journal no 232 (July 2018), pp 293–305

Stephen Rowson appears to have overlooked two significant events which are likely to have hastened the demise of the Low Water Pier – the opening of the Severn Bridge in 1879 and the Severn Tunnel in 1886. Prior to these openings the railway route between Cardiff and Bristol was via Gloucester and the Bute Trustees might very well have had a case for promoting a maritime link across the Severn estuary, available at all states of the tide. It surely must be the case that the opening of shorter and faster rail routes – especially the tunnel which did not suffer from the capacity constraints of the single line bridge – destroyed their business virtually overnight?

Andrew Overton

Review : The Hixon Railway Disaster : the inside story

RCHS Journal no 232 (July 2018), p 313

In your July edition there is a review, by Grahame Boyes, of my book *The Hixon Railway Disaster : the inside story*. The review is entirely condemnatory and, given that he does not, in the main, support his comments with references to factual material, is hardly the ‘courteous reasoned criticism’ specified in your journal’s guidelines for contributors. Instead, the reviewer merely asserts opinions about the situation analysed in the book; first, it is described as a ‘sensational volume’, in the sense of a vulgar and trivialising approach, towards what, I fully concur, was, ‘one of the most significant railway accidents of the British Railways era’. In response, my assertion is that the book is both truly sensational and deeply serious, in that, amongst other things, it brings to the light of day apparent examples of gross negligence on the part of officers of the Railway Inspectorate (RI) of the time, and thoroughgoing and (largely successful) attempts by the Railways Group of the Ministry of Transport (MoT) to cover the Inspectorate’s tracks. All of which are, of course, documented within the book. Furthermore, the reviewer accuses my book of portraying one of the senior Inspecting Officers, Colonel W P Reed as the ‘villain of the piece’. Not so, he is much more the ‘tragic hero’, whose admirable determination to get as many Automatic Half Barrier crossings (AHB) in

place across the rail network, as quickly as possible, morphed into a fatal blindness towards their potential dangers.

Secondly, the reviewer states that the MoT/RI have been incorrectly identified in the book as being culpable for the botched introduction of AHBs into this country in the 1960s. He asserts that ‘unlike today, there was a clear separation of powers between government and the statutory corporations, with strict limits on the extent to which the Minister of Transport could interfere in the British Railways Board’s responsibility for managing the railways’. Against this we should remember that the RI had been instructed by the British Transport Commission in the mid 1950s to investigate, report on, and then oversee the introduction of AHBs into the UK. (The reviewer must surely be aware that this was by no means the first time that the RI had been used by government as a convenient and overarching organisation, to drive forward change in the railway industry; for example, in the 1890s, the RI had overseen the introduction of vacuum brakes across the disparate railway companies.) Moreover, Colonel Reed was without question in close, determining, charge of all the important aspects of AHB installation and operation from late 1961 to January 1968; one example of this is picked up on by the Chairman of the Hixon Inquiry, Brian Gibbens QC, when he ticks off Reed for appearing to claim that he had specified an approach speed of 80 mph for express passenger trains at a particular AHB, whereas he had actually specified an approach speed of 90 mph. Given that AHBs are designed to operate as a consequence of the relationship between the speed of the striking-in train, and the distance of the strike-in mechanism from the level-crossing, it is clear that Reed was, and expected to be, very close to the nitty-gritty of day-to-day AHB operation.

Thirdly, the reviewer objects to the book specifically identifying Reed as being antipathetic to equipping AHBs with telephones for the use of the public; my response is that Reed altered the RI’s installation requirements in 1963, to make crossings without phones the standard installation; this was reiterated in the requirements of July 1966. Prior to 1963 AHBs had phones fitted as standard. At the time of the Hixon accident in January 1968, 10 percent of AHBs had no phones; Hixon AHB itself was originally specified to have no phones. Also, illustrating Reed’s views on the matter, we have site meeting minutes from Leominster crossing in 1965, in which Reed argues the point with a National

Farmers Union representative that the rural crossing did not need phones for the use of the public.

Linked to this issue, the reviewer makes his solitary fact based observation, claiming that BR, 'exercised its freedom of decision ... to provide telephones at all new AHBs from the beginning of 1966'. BR may well have done this, but if it did, it will have been in defiance of the RI's installation requirements, hence their reiteration in March of 1966, a final skirmish in the 'turf war' over phones for the use of the public, which was only resolved in October 1966, when the requirements were returned to the pre-1963 specification of having phones in all new AHBs.

Finally, the reviewer damns me with a bit of faint praise: 'The author deserves credit for ... reading through the voluminous records, but his interpretations of the evidence are suspect; they fail to consider how the circumstances of fifty years ago differed from those of today'. Well, there is no answer to that, is there, if my interpretations are wrong, that's it. Except, that I have a personal letter from a very distinguished and senior manager on BR Western Region during the 1960s, who, having read my book, came to the conclusion that I had portrayed matters accurately and fairly. He knew a number of the people described in the book as colleagues, and went out of his way to give me his opinion.

Richard Westwood

Grahame Boyes responds:

During my career with British Railways I was at various times a manager and then a senior officer in four of the five BR Regions and also at BRB HQ. This included my appointment as Area Manager at Crewe, in the same Division (Stoke-on-Trent) as Hixon, just two years after the disaster. There I worked with Bob Mackmurdie, Divisional Operating Superintendent, who is mentioned in the book. Later I was seconded for a year to the Department of Transport at the request of the BRB Chairman, Peter Parker, to help develop improved understanding between the Board and the Department. So I write with personal knowledge of the workings of the management of both BR and the Department of Transport's Railways Directorate at that period, and of the relationships between BR and its sponsoring minister, government department and safety inspectorate.

It seems that I was too restrained in my review. This might appear to be an arcane debate, were it not for the central theme of the book – to show that

Colonel W P Reed, who led the Railway Inspectorate's work on AHB crossings, should have been indicted for manslaughter. However, the evidence for Col Reed being in some way uniquely responsible for the Hixon disaster does not stand up to a moment's scrutiny. If Reed had been put in overall charge of the introduction of the AHB crossings while still an inspecting officer, as the author repeatedly asserts, this would clearly have been an illegal conflict of interests. If Reed had issued an instruction to BR not to install telephones at AHBs, he would have been exceeding the inspectorate's powers; the story of a turf war is an invention. The idea of a BR general manager replying 'How high, sir?' when told to jump by an inspecting officer is make-believe. In the case of the LM Region its successive general managers at the time held the rank of major and colonel.

This fabricated character assassination of Colonel Reed must not be allowed to become another of railway history's myths.

Reviews

Twenty Years under the Channel and Beyond? (*La Revue d'histoire des chemin de fer* combined volumes 48 and 49) — publication director Jean-Louis Rohou

518pp, 240x170mm, 6 colour photographs, 81 maps, graphs and diagrams, softback, Association pour l'histoire des chemin de fer, 9 rue du Château-Landon, F-75010 Paris, 2018, ISSN 0996-9403 (for access contact reviewer – see note below)

The rather jokey cover (the artist describes the symbolism of the various elements at length – the question mark in the title was added after the Brexit vote result) belies the physical and academic weightiness of this tome. At over two kilos the 28 papers printed here, perforce written in different styles and rigour, are crammed with interesting facts and data relating to this mega civil engineering and transport project. This publication marks the conclusion of an international interdisciplinary project that was launched in 2014 at the British Embassy in Paris and encompasses papers from a symposium on 'Traffic Flows and Regional Economic Impacts' held in Lille in 2015, another entitled 'Capital and Governance in Major Infrastructure Projects' held in London in the same year, and a round table debate in London in 2016. This academic endeavour therefore spans the twentieth anniversary of the opening of the Channel Tunnel and the thirtieth anniversary of its birth by the Treaty of Canterbury.

One thing is quite clear from these papers (those printed are just a selection of those submitted during the project): that economists and political scientists continue to find the 'Chunnel' endlessly fascinating, and that there is no shred of consensus as to its impact or financial viability. Before mentioning a few of the contributions, some generalisations may be appropriate. Some of the differences in the conclusions reached by different authors are the result of this being the fruit of such a long programme. The figures in some cases include only 2014, whereas others reach to 2017 (some sadly are obviously a re-hash of much earlier papers with the minimum of updating). Dramatic conclusions can follow depending on what is or is not included – is air traffic capital-to-capital or does it include low cost regional (largely fed by second-home 'Brits' we are told) and are the figures for the £1 ferry 'booze cruises' or not?

One very broad generalisation may be permitted, and one key question quoted. The generalisation is that the tenor and conclusions of the articles written by Belgian and French authors is more positive than

those written by British authors – is this our national and natural pessimism coming to the fore, is it continuing angst at the breach of our historic moat, or is it that this country has not grabbed the opportunities provided by the Tunnel as quickly and enthusiastically as our continental neighbours? Judging from much of this volume the last of these is perhaps nearest the mark. The question is posed by Professor Roger Vickerman of the University of Kent in his paper on the wider economic aspects of the Channel Tunnel – 'the best test is to ask what would have happened if the infrastructure had not been developed' – and it is clear that sooner or later some form of fixed link would have been necessitated at an even more astronomical cost.

Finally, a brief commentary on some of the more interesting papers published here. In an opening speech Professor Terry Gourvish, author of the official history of the Channel Tunnel build, summarizes the five themes of this programme – transport, geography and economic; financial management of major projects, regional development, migration and frontiers, and international relations (he also remarks that writing the history took longer than building the tunnel).

Professor Jim Cohen's study of failed high speed rail project in Florida is perhaps somewhat peripheral but Julien Defornoy, of the French Ministry of Transport, provides a very significant and useful summary of 27 worldwide public/private partnership projects since the Channel Tunnel (not itself a PPP, of course). Whilst Roger Vickerman asks if the Channel Tunnel could be delivered today, Patrick Boeuf and Hugh Goldsmith, of the European Investment Bank, give a much more positive reading of the figures, and suggest a return of between 3 percent and 6 percent for the Tunnel in the long term. Their findings are disputed by Anguera Camos in 'The Channel Tunnel cost-benefit analysis after 20 years of operations' but it all depends what factors are included or excluded from the calculations; in this instance I would give more credence to the bankers.

The former Chairman and CEO of Eurostar Group, David Azéma, provides some fascinating insights into privately financed infrastructure projects. He concludes that rail projects need to take account of the whole rail delivery infrastructure; that being more complex, cross-border is always more risky; traffic forecasts are often wildly biased; and, ignoring forecasts, one should carry out proper due diligence on how the service will be delivered once the line is open – not forgetting that ‘one never learns from history’.

These papers reveal some clear beneficiaries from the building of the Tunnel. Louis Gilleaux makes clear that it was the catalyst for the modernisation of much of the Belgian railway system and that although it had a major impact on ferry traffic from Belgian ports, Zeebrugge took the opportunity to advance whilst Ostend retreated. Papers on the impact of cross Channel regionalisation and its impact on the Pas de Calais suggest that lack of energy, finance and initiative over the years have resulted in major missed opportunities. In fact there is a clear winner as the title of Etienne Auphan’s paper – ‘Lille: from a dead end to a major crossroads or how to take advantage of a new network’ – makes clear. It also re-emphasises how often chance can play a major part in the winners and losers in such projects. There is no doubt that if Pierre Mauroy, former Prime Minister of France, had not been mayor of Lille at the time, the rail links would have avoided the city and it would not have reaped the major benefits that it has.

From the British side, whilst some papers acknowledge the economic impact on the hinterland of HS1 and around the Channel Tunnel, there is some reluctance to see this as an unalloyed benefit. Even if they cannot prove the case, the suspicion remains that these areas have gained at the expense of others and so the net benefit is minimal. Perhaps the most

closely argued and researched paper that takes this line is that by John Preston, Professor of Rail Transport at the University of Southampton, whose calculations suggest that the HS1 corridor is outperforming the national average over key economic development metrics but has in turn been outperformed by other corridors radiating from London. He considers that the regeneration benefits envisaged at the genesis of HS1 have not yet occurred.

As already indicated, this review can only give the baldest summary of some of the papers in this fascinating volume. The volume of figures and metrics can be daunting, and, whilst not *War and Peace* it is a daunting challenge to read from cover to cover but it is certainly a rewarding exercise. For anyone interested in any aspect of the Channel Tunnel, in mega civil engineering project planning, financing, building and service development, and in high speed rail, this is essential reading.

WILLIAM FEATHERSTONE

As the Society’s correspondent with our sister organization in France, the AHICF, I receive all their publications. The printed version of the volume under review will not be generally available in the UK. If any readers wish to borrow it I am very happy to forward it to them provided postage is paid in both directions. There is, however, an interesting alternative. The AHICF is proudly advertising that this is their ‘first review in augmented reality’. In order to take advantage of this it is necessary to have a smartphone and scans of the cover, spine and back of the review (which I will happily provide by post or email); one then uses the smartphone to download the ARzone application and scan the covers in. Contact me at 114 Dunkirk Avenue, Desborough NN14 2PN or bilcon@kirkfield.idps.co.uk.

***Gilbert Szlumper and Leo Amery of the Southern Railway: the diaries of a General Manager and a Director* — John King**

221pp, 255x180mm, 40 photographs, hardback, Pen & Sword Transport, 47 Church Street, Barnsley S70 2AS <www.pen-and-sword.co.uk>, 2016, ISBN 978 1 4738 3527 6, £25

Leopold Amery’s private education allowed his lifestyle to be funded by collecting directorships. He admitted to knowing nothing about transport when at the 1932 AGM, despite dissent from many shareholders, he was elected a director of the Southern Railway. Following Chamberlain’s fall, in May 1940 he joined the Churchill war government

and so resigned his railway directorship. His autobiography and previous publications of his diaries have largely ignored what contribution he made to the railway but John King here uses what he can of Amery’s meeting appointments to describe, for example, the Southern’s foray into aviation (the Railway Air Services), planning Lullingstone airport,

inaugurating a London to Paris train ferry service and the abortive attempt to create a London day trippers' alternative to Southend at Allhallows-on-Sea on the Medway.

The more informative diaries of Gilbert Szlumper start in 1936 and King combines entries by both men to record the Southern's continuing electrification programme and their expansion into bus and road haulage services. Unlike Amery, Szlumper was a career railwayman. He had started with the London & South Western Railway in 1902 and, following the grouping, was Assistant General Manager of the Southern Railway from 1925, becoming General Manager on Sir Herbert Walker's retirement in 1937. This last event relieved the fear that Walker was about to reorganise the Southern's management structure along the lines of the LMS.

Szlumper's diaries continue until 1945. By all accounts, including his own, he was well thought of. The War Office recognised the geographically strategic importance of the Southern and invited him to be Director-General of Transportation. From this position he was to supervise and coordinate railway, inland waterway and dock requirements overseas and at home. He organised transport of men and equipment into mainland Europe, dealing with issues as they arose, such as when forces railwaymen should take over from civilian railwaymen. The retreat from Dunkirk made the position redundant and he was

moved to the Ministry of Transport as Railway Control Officer. Then from 1942 he was Director-General of Supply Services at the Ministry of Supply.

Rather than give a transcription of the diary entries with explanatory footnotes, John King has decided to present his own narrative interpretation with only some of the diarists' words appearing within quotation marks. For the reader who is wishing to get close to these people, this takes some getting used to. Sometimes one can never be sure what has come from the diaries and what King has added from his own knowledge of the events and of the people named. Nevertheless, Szlumper's candid views on the individuals he worked with are quoted in full: this is a constant theme of Szlumper's together with his own job security and protecting his income. Throughout the war years he longed to return from civil servants and politicians to his beloved Southern Railway but that never happened. Missenden had taken over from him in 1939 and when the war ended he would not relinquish that position.

John King is light on his assessment of the two diarists' personalities – the introduction could have summarized more the content of the diaries and what contribution they have made to transport history of these years. The diaries cover many themes but the inadequate index does not acknowledge these. The choice of illustrations is excellent.

STEPHEN ROWSON

***Fife's Railways Remembered* — Michael Mather**

96pp, 234x165mm, 211 photographs (104 colour), softback, Amberley Publishing, The Hill, Merrywalks, Stroud GL5 4EP <www.amberley-books.com>, 2018, ISBN 978 1 4456

The inhabitants of Fife surely must mourn an asset lost to tourism with closure, in 1966, of the railway that linked the picturesque fishing towns around the coastal fringe of the county. It may be gone but it is not forgotten; it features strongly in this title from Amberley's railway range, as does the A4 Pacific *Union of South Africa*, which spent early years of retirement from British Rail isolated on the terminal length of the East Fife Central Railway.

These and other Fife lines are illustrated by photographs with extended captions largely from the 1950/60s. The author, a Fife resident, has included interesting accidents and industrial lines closed in living memory.

A minor criticism is the lack of a basic map for those unfamiliar with the county. However, as the book should have particular interest for readers in Fife, this may prove unnecessary.

JOHN HOWAT

***A History of the Metropolitan Railway & Metro-land* — Irene Hawkes**

160pp, 280x210mm, 189 illustrations (4 colour), 20 maps, 6 tables, hardback, Crécy Publishing, 1A Ringway Trading Estate, Shadowmoss Road, Manchester M22 5LH, 2018, ISBN 978 0 86093 674 9, £30

In the 1830s proposals to alleviate London's acute congestion by constructing a rail system below street level foundered amid householders' concerns about noise, dirt and subsidence. Irene Hawkes' history of the Metropolitan Railway opens with an account of solicitor Charles Pearson's long struggle to convince his fellow Londoners of the case for building an underground railway from Paddington to the heart of the City. Although he never lived to see it, Pearson's – literally – ground-breaking Metropolitan Railway opened in January 1863.

Part 1 of Hawkes' book traces its development beyond its underground origins. Intent on making the Metropolitan a main-line concern, railway magnate Edward Watkin aspired to connect it with the Manchester, Sheffield & Lincolnshire line (he was chairman of both companies) in order to open a direct route from northern England to Paris by way of a channel tunnel. The plan evaporated but not before the Metropolitan had advanced into Buckinghamshire, Hertfordshire and Middlesex.

Its masterstroke was to secure power to buy and use land for non-railway purposes, and in the

book's second part, Hawkes relates how it purchased tracts of pasture around London to develop for housing.

'I know a land where the wild flowers grow,

Near, near at hand if by train you go' –

pledged the marketing men, tempting weary city-dwellers with the prospect of wholesome country living in what soon became known as 'Metro-land'. Metropolitan advertisements for half-timbered villas, golf-courses (within easy reach of a Metropolitan station) and hotels serving cream teas nurtured a taste for 'bracing air and rural delights' and a favourite destination for early twentieth century school outings and cycling trips was Watkin's Eiffel-inspired Wembley Tower. Sadly, it was demolished in 1906–7 when it emerged that the foundations were sinking into the London clay.

As a contribution to socio-railway history, this well-illustrated book has much merit. Sentences opening 'As we have already pointed out' or 'As we will see in another chapter' sometimes make for ponderous reading, but its scope and detail are impressive. An appendix lists Metropolitan Railway locomotives; there is an extensive bibliography, copious reference notes and a comprehensive index.

VICTORIA OWENS

***The Ups and Downs of the Clifton Rocks Railway and the Clifton Spa* — Maggie Shapland**

317pp, 285x215mm, over 430 illustrations (mostly in colour), hardback, Bristol Industrial Archaeology Society on behalf of the Clifton Rocks Railway Trust, 97 Princess Victoria Street, Clifton, Bristol BS8 4DD <www.cliftonrocksrailway.org.uk>, 2017, ISBN 978 1 908905 05 5, £15 (plus £4 p&p)

The funicular railway which linked the road by the Avon Gorge to Clifton was unusual: it was in a tunnel and it was four-track. Financed by George Newnes as part of a spa development and engineered by George Croydon Marks, it cost treble its estimate. Apart from on its opening day in 1893, traffic never reached expectations and it closed in 1934. During the Second World War the lower part of the site was occupied by the BBC, the upper parts including a barrage balloon unit and an air-raid shelter. Since 2004 much work has been done to investigate and interpret the remains and to make the site accessible to visitors.

About a third of the book is devoted to the history of the railway. This is inevitably limited by the available sources: the construction and opening are related in detail and some interesting

maintenance records survived in a supplier's archive, but a financial analysis and passenger numbers are available only for the period of receivership, 1908–13. The central chapters deal with the spa and with the various wartime uses of the railway tunnel. Readers who are involved in the preserving industrial sites and opening them to the public will find the last two chapters a valuable case study.

It may seem churlish to be of the opinion that too much information is given, but press reports are quoted at excessive length and reminiscences take over fifty pages. Tighter editing, selecting the key comments, would have made the book more rewarding to read. And to put the information fully in context, one needs to have attended an open day at the site. Nevertheless, this is a beautifully produced book with an incredibly low price.

PETER BROWN

***Sir Sam Fay* — John Neville Greaves**

287pp, 235x157mm, 56 illustrations, softback, The Book Guild, 9 Priory Business Park, Wistow Road, Kibworth, Leicester LE8 0RX, 2018, ISBN 978 1 911320 93 7, £12.99

Sam Fay (1856–1953), who was knighted in 1912, is best known as the enterprising General Manager of the Great Central Railway. He joined the London & South Western Railway as a Junior Clerk at Itchen Abbas. Promotions rapidly followed. When Chief Booking Clerk at Kingston in 1881 he co-founded *The South Western Gazette*, profits going to the L&SWR Widows & Orphans Fund; a couple of years later he wrote a history of the L&SWR. In 1885 he became Chief Clerk in the office of the Superintendent of the Line, then in 1892 became General Manager of the Midland & South Western Junction Railway, transforming its fortunes. He returned to the L&SWR in 1899 as Superintendent of the Line.

At the GCR from 1902 he built up the through traffic, as he had done at the M&SWJR, introduced weekly zone tickets for local journeys, developed public relations and pictorial publicity, and oversaw the building of Britain's first hump marshalling yard and Immingham Docks. In 1907–8 he negotiated an amalgamation with the Great Northern Railway but this was defeated in Parliament. An advocate of

'controlled private ownership', he was a supporter of the 1923 grouping.

A quarter of the book discusses his secondment to the War Office from 1916 to 1919, latterly as Director of Movements. Fay's observations, especially his comments on the various personalities, are exceptionally interesting: he clearly had a high regard for most of the military commanders he worked with but a low opinion of the politicians. In mid-1918 plans were made in case the Germans over-ran the allies' lines and occupied the Channel ports; the armistice that year was unexpected.

Much attention is given to Fay's management style, but his occasional shortcomings are not neglected. Politically Fay changed from being a Disraeli Tory in his twenties to a Liberal in his fifties. His private life was complex, with two illegitimate sons by different women.

This well-sourced and satisfying biography achieves a good balance between comprehensiveness and brevity. Privately published, it deserves a wide readership.

PETER BROWN

***Narrow Gauge Locomotives* — Anthony Coulls**

64pp, 234x165mm, 87 photographs (79 colour), softback, Amberley Publishing, The Hill, Merrywalks, Stroud GL5 4EP <www.amberley-books.com>, 2018, ISBN 978 1 4456 7556 5, £8.99 (also available as e-book)

This is a short illustrated guide to the history and technological development of narrow-gauge locomotives in Britain, written by a senior curator at the National Railway Museum who is also a volunteer on the Talylyn Railway. The introduction defines what is meant by the narrow gauge and notes that the earliest lines relied on horse power. Subsequent chapters cover various types of locomotive (steam, internal combustion, electric) and oddities such as steam to electric conversions, fireless, compressed air and sail. The book concludes with a brief survey of the narrow-gauge scene in the twenty-first century and the future prospects – notably the growth of pleasure lines. Major museum collections are mentioned and there is a note on websites and publications, but the scope of the book does not extend to a gazetteer, bibliography or index. There

is an interesting selection of photographs, predominantly of preserved locomotives and replicas, which illustrate well the wide variety of types covered by the text. Interspersed with the main text are boxed 'Did you know?' snippets of information, which sometimes duplicate the main text and are not always positioned appropriately in context.

The author writes with authority and enthusiasm to provide something which has sufficient breadth to appeal to those who already have some knowledge of the subject while also offering a guide for visitors to museums and heritage railways who seek an accessible introduction. It is an attractive and informative little book and offers good value for money.

TIM EDMONDS

***Rails Across London* — John Glover**

192pp, 280x210mm, 155 illustrations (151 colour), 18 maps & diagrams, hardbound, 2018, Crécy Publishing Ltd, 1a Ringway, Shadowmoss Road, Manchester M22 5LH, ISBN 978 0 86093 690 9, £25

The building of new railways across London has long preoccupied planners, railway managers and the general public. This volume sets out to review the main proposals of the past (largely unfulfilled) and then to examine in more detail the history and objectives of the contemporary Thameslink and CrossRail schemes. Its appearance is therefore timely.

Most London Underground lines, of course, offer cross-London travel to a greater or lesser extent, but they are principally used by those wishing to travel into or within central London, or for short-distance journeys within the West End and City. The Underground system is therefore not considered in detail except insofar as it impinges on the 'heavy rail' schemes.

Virtually the only early proposal which came to fruition – if in somewhat imperfect form – was the subsurface link from St Pancras/Kings Cross to Blackfriars; however, it lost much of its passenger traffic once buses started competing and services ceased in 1916. It was also used for freight but severe gradients and curvature limited its effectiveness. After a period of complete closure it was reactivated in 1987 and now forms the basis of the current Thameslink project.

Much 'planning for the future' was undertaken during and after World War II, notably the Greater London Plan of 1944 and the Railways (London Plan) Committee Report of 1948; both of these, and others, contained extensive proposals for new railways. However the author rightly emphasises that the plans of this period were not demand-based and had little economic justification; much of the post-war planners' attention focussed on the elimination of cross-river bridges, notably those at Charing Cross and Cannon Street. But with little funding available and inadequate consideration of their practicality, few of the proposals survived; a rare exception, if in somewhat different form, was the Victoria Line twenty years later.

The book gives a useful account of its subject and is well written and illustrated but the amount of space devoted to views of rolling stock is over-generous; the historian is likely to feel that some of this space might have been better devoted to additional details and analysis of earlier cross-London schemes.

A few minor errors can be found; Tramlink is not a quarter of a century old, for example, and the view of Barbican on p 133 looks west, not east. There is a bibliography but the index is fairly basic, with key locations such as Farringdon being omitted.

GRAHAM BIRD

***The Longparish Branch Line* — Peter A Harding**

32pp, A5, 48 photographs, map, track plans, timetables, gradient profile, softback, Peter A Harding, 'Mossgiel', Bagshot Road, Knaphill, Woking GU21 2SG, 2018, ISBN 978 1 910356 16 6, £4.00 (plus 50p p&p from publisher)

The Longparish branch was opened by the London & South Western Railway in 1885 to connect their west of England main line at Hurstbourne with the Andover to Redbridge line at Fullerton Junction. It was a response to a perceived threat from the Great Western Railway which was supporting the development of the independent Didcot, Newbury & Southampton Railway. It was thought that a junction at Whitchurch would eliminate the need for the DN&SR to have its own line to Southampton and thus capture this traffic for the L&SWR.

In the event the junction was not completed and the DN&SR continued southwards to Winchester and a junction with the L&SWR at Shawford. The expensively built double track Longparish line thus never achieved the traffic levels expected. As a result

the line was singled in 1913 and closed to passengers in 1931. The section of the line north of Longparish was abandoned and lifted in 1934. The goods traffic continued till 1956, having had a brief boost during the Second World War when an ammunition depot was established at Longparish. The line was used for wagon storage until 1960 and a short section at Fullerton remained until 1964.

This is a revised and expanded edition of a book first published in 1992. The author ends this comprehensive and well-illustrated history of this little-known line by describing the remains that can still be seen. There is a short bibliography but no index.

RICHARD COULTHURST

***The Early Railways of Leeds* — Anthony Dawson**

96pp, 234x165mm, 83 illustrations (46 colour), 7 maps & plans, softback, Amberley Publishing, The Hill, Stroud GL5 4EP <www.amberley-books.com>, 2018, ISBN 978 1 4456 6780 5, £14.99

Leeds has an honoured place in British railway history and this concise, well-written, well-illustrated and relatively inexpensive volume is a first-rate introduction to its earlier history. We start with the Middleton Railway, the first railway built with authority of an Act of Parliament, the first of its kind to employ steam traction and the first standard-gauge line to be preserved.

The Leeds area has other railway ‘firsts’: the first railway viaduct (Flockton, 1757) and the earliest public railway (Lake Lock, near Wakefield). The city was also early in the field with locomotive builders: Fenton, Murray & Wood, Hunslet, and Todd, Kitson & Laird.

The book goes on to detail the earlier history of main lines to and from Leeds. The Leeds & Selby, engineered by George Stephenson, came first (in 1834) and with its extension to Hull and the later Manchester & Leeds (to be the germ of the Lancashire & Yorkshire Railway) provided railway

connection between England’s east and west coasts. Then the North Midland line (another of George Stephenson’s) came up from the south and provided a link, ultimately, to London – a line in which George Hudson played his part. A final chapter on Leeds stations outlines the main terminals – Wellington, New and Central – with a mention of the surviving Leeds (City).

The author makes generous use of extracts from a variety of local newspapers which both aid readability and provide fresh insights. The illustrations strike a good balance between historic drawings and diagrams and modern photographs of historic sites. There are no footnotes or endnotes and no index – not really to be expected in such a short volume – though there is a short but useful bibliography embracing original and secondary sources. This is a readable introduction to its subject and readers are unlikely to be disappointed by it.

PHILIP SCOWCROFT

***Locomotive Builders of Leeds: E B Wilson and Manning Wardle* — Mark Smithers**

199pp, 270x215mm, 107 photographs (12 colour), 91 drawings, hardback, Pen & Sword Transport, 47 Church Street, Barnsley S70 2AS, 2018, ISBN 978 1 4738 2563 5, £30

The Round Foundry, in Leeds, first known as the Railway Foundry had a history back to 1811 when it supplied locomotives to the Middleton Railway and its rack system. This and the involvement of Matthew Murray and John Blenkinsop is covered in Chapter 1 of this book. There was then a lapse until 1831 when the Foundry began to supply locomotives to a growing railway system, including the Liverpool & Manchester and Leeds & Selby: this is covered in the second chapter. Chapter 3 examines the origins of E B Wilson & Co but half the chapter precedes this by outlining the activities of Charles Todd, James Kitson and David Laird (their financial backer). John Gray, the inventor of expansive motion, was indirectly involved as it was applied to locomotives on the Hull & Selby Railway at his behest.

Chapters on the Jenny Lind type (a seminal development), Crampton locomotives and the influence of Archibald Sturrock follow. Chapters 7

and 8 mark the end of this activity whilst noting possible future influences on Manning Wardle policy, which forms the subject for the ninth and largest chapter and covers the products of Manning Wardle which were mainly small tank engines for industrial use. The corporate history follows which briefly summaries the demise of the company in 1926.

This is a history of locomotive manufacture. Little, if any, is indicated of other foundry activity. The illustrative material has been well chosen and presented but tends not to be linked to the text on the page upon which it is displayed. The index is poor and the meagre bibliography fails to gather many of the textual references to published material. Inexplicably there is no reference to Lowe’s *British Steam Locomotive Builders* (recently reprinted by the present publisher).

KEVIN JONES

***Adrian Shooter: a life in engineering and railways* — Adrian Shooter**

240pp, 245x172mm, 140 photographs (100 colour), hardback, Pen & Sword Transport, 47 Church Street, Barnsley S70 2AS, 2018, ISBN 978 1 4738 9319 1, £25

If one were to list the most significant literary contributions to the history of British Railways, this would surely be included. We have Terry Gourvish's monumental two-volume scholarly history of BR which provides a top-down step-by-step analysis of how British Railways evolved over a period of forty years from a leviathan that was too big to manage to, arguably, the most successful railway in Europe. By the mid/late 1980s, exploitation of the progressive increase in computer power had unquestionably enabled BR to be managed as one organisation (sub-divided into business sectors and sub-sectors, each with 'bottom line' accountability).

But to understand fully this view from the vantage of the BR Board, we need insightful studies of how this was achieved at lower levels of the organisation. Adrian Shooter has provided one such story, an autobiographical account of how one railwayman contributed to this success. In many ways it is representative of parallel stories that have been, or could be, written by many of his predecessors and contemporaries. It starts from his early life, when his interest in railways was first aroused. This seems to be a common feature of all these stories, and perhaps explains why there was such commitment to the job from the majority of those who worked in the industry.

Succeeding chapters describe his progress as an apprentice and management trainee and then as a mechanical and electrical engineering manager at depot, area and regional level. A decision to gain experience in operational/business management as Area Manager, St Pancras can be seen as crucial to his future successes. This experience led to his advance to the positions of Managing Director of Red Star Parcels and then Director of the Parcels business sector. The book finishes in 1992 when he became involved in the preparations for the privatisation of the Chiltern Line, which was the subject of his 2013 Clinker Lecture (*Journal* 220).

Although unstated, the book's underlying theme is how those who became successful BR managers acquired a range of experience that enabled them to 'know what they didn't know' across the full spectrum of railway expertise, together with the contacts who could fill any gaps if required. This was an essential foundation for taking decisions which didn't carry the risk of unintended consequences. It helps to explain why Adrian Shooter ran the most successful privatised train operating company, Chiltern Railways. Regrettably he was perhaps the last with this skill, which can no longer be acquired in a railway industry that was broken up at privatisation. The consequences are today all too obvious.

GRAHAME BOYES

***Scottish Railways 1923–2016* — David Ross**

256pp, 280x215mm, 129 illustrations (some colour), 8 maps, 6 tables, 7 appendices, hardback, Stenlake Publishing, 54-8 Mill Square, Catrine KA5 6RD, 2018, ISBN 9781 84033 783 9; £40

The industry of this author is enormous. In the last few years, as well as a short but comprehensive overview of all Scottish railways from start to the present day, he has produced definitive histories of the five major pre-grouping Scottish railway companies. This volume fills in the period from the grouping to 2016.

The (small-scale) maps are adequate for the story although, as with many broad-scope histories, you need a rail atlas to follow the detail. There are three natural parts – 1923 to nationalisation; 1948 to 1990 when privatisation was rearing its head; and then up to date.

Part 1, perhaps surprisingly, takes up only just over one third of the total narrative. It covers what has

since become common, namely private companies subject to an inflexible and commercially-insensitive regulator. Re-organisation and standardisation was one of the major problems (only the LMS and LNER of course in Scotland). Previous inter-company rivalry was a well-known, but really rather strange, issue for a long time. The two companies also differed in their approach to possible London-based centralisation. It can only be deduced that, in view of the overlapping spread of lines of the two organisations over the country, there was no social or commercial justification for the difference, merely the attitudes of the personalities involved.

It is a feature of this author's books that from time to time he throws in interesting social issues, such as

the eerily modern problem of changing habits when ‘Buckie and District Traders’ Association protested in December 1934 against cheap evening tickets to Elgin, drawing trade away from their shops’.

Part 2 starts in 1948 with political euphoria about a new transport dawn, ignoring the already declining role of the railways. Journalists, when commenting on the British Rail/privatisation debate always seem to refer to dirty delayed trains run by incompetents. Historical analysis, as here, always seems to come up with a different view, although the author also suggests that Scottish rail was better than the rest.

Part 3, through no fault of the author and as he is fully aware, contains many tedious recitals in its 40 pages of organisations, re-organisations, reports and

assorted bureaucratic diversion from the running of a railway – not to mention changing from a British to a Scottish government.

There is an eclectic selection of appendices, including two listing openings and closures. One is wholly devoted to trying to describe the European Union’s required considerations for railway operations (basically to have a full social and economic cost/benefit analysis).

The only real criticism of this book is its price – and incidentally, how is it apparently cheaper to produce something which is made of locally produced components by having it printed in China and shipped half way round the world for sale?

DAVID PEDLEY

***The Railway Empire: how the British gave railways to the world* — Anthony Burton**

264pp, 252x180mm, 133 illustrations (35 colour), hardbound, Pen & Sword Transport, 47 Church Street, Barnsley S70 2AS <www.pen-and-sword.co.uk>, 2018, ISBN 978 1 4738 4369 1, £25 (e-book also available)

This is a reissue of a book published in 1994 by John Murray and reviewed in the *Journal* that November. Organised regionally, it is about the work and influence of British engineers and contractors in building railways around the world. The text is the same as in the first edition apart from correction of some errors, but duplication of material on the São Paulo railway is retained (pp 115–17, 129–30) and some of the errors pointed out by our 1994 reviewer remain, while a few errors appear to have been introduced by optical misinterpretation during scanning of text – notably superscript characters. There has been no attempt to include new information and some has become dated.

The major change is an increase in the number of illustrations from the original 24. However, in many

cases the captions have insufficient detail to explain what is being depicted. This is a problem when illustrations are placed away from the text to which they relate or do not relate directly to the narrative. For example, Ghana is not discussed in the text, but the caption to a Ghana photo on page 220 tells us neither the location nor locomotive details. Captions to pictures on pages 216 and 219 have been reversed and there are a few errors, notably ‘Blister Hill’ for ‘Blists Hill’ (p 17) and ‘Grand Central’ for ‘Great Central’ (p 30).

In spite of these shortcomings the writer tells a fascinating story and the quality of the writing is excellent. The book is attractively produced at a reasonable price.

TIM EDMONDS

***Diesels on the London Midland* — Michael Welch**

120pp, 255x225mm, 145 colour photographs (plus 61 ticket facsimile), hardback, Rails Publishing, Ground Floor, 117 Old Roar Road, St Leonards-on-Sea TN37 7HD <sales@capitaltransport.com>, 2017, ISBN 978 1 85414 419 5, £19.95

This book oozes quality – the binding, the paper on which it is printed, the reproduction standards of the photographs – and compared to others in the field the price gives outstanding value. This is a survey of all the first generation diesel classes, locomotive

and multiple unit, that graced London Midland metals. The captions are full and informative, the locations evocative, and often rarely pictured. It will grace any enthusiast’s bookshelf.

BILL FEATHERSTONE

***Holding the Line: how Britain's railways were saved* — Richard Faulkner and Chris Austin**

344pp, 280x210mm, 41 illustrations of 24pp, softback, Crécy Publishing, 1A Ringway Trading Estate, Shadowmoss Road, Manchester M22 5LH, 2018, ISBN 978 0 86093 676 3, £9.95

In this 'Goodall paperback' edition of a book first published under the Oxford Publishing imprint in 2012, the authors have brought together a comprehensive account of the history of public railway closures since 1827. In an extensively researched text the authors have comprehensively brought together information from a wide range of sources (including trade union documents) in order to describe all the essential factors in the process and procedure of railway closures through to the present time, as well as briefly recording briefly the recent openings and re-openings in the modern era. It is a book that is a useful source for those interested in following the history of modern railways. The chapters that deal with the closures of lines and stations under the British Transport Commission is of particular use for those times, as is the background to the reshaping of British Railways under Dr Richard Beeching. The complex period that followed occupies more chapters in a style approaching on the definitive that mentions closures, lines saved and the rise of the heritage railway. Notes on rail union involvement, the many government papers including the Blue Paper of 1972, the Orange Paper of 1976 and the White Paper of 1977 also receive detailed consideration. The chilling revelation of how close the railway network came to drastic pruning during the railway strikes of 1982 and the Serpell review that followed is a salutatory warning of how our

network might have become under Margaret Thatcher's government.

Credit is given to the work of the BR Chairman, Peter Parker and the NUR general secretary, Sidney Weighell. The 'Didcot scandal' of 1977 is discussed as 'an example as a disgraceful example of pro-road industrial action on the part of the Transport and General Workers Union'. Trades union involvement, in general, had political consequences, culminating in the privatisation of the network following the sale of assets such as Sealink, British Transport Hotels and British Transport Advertising. Yet new roles for the railways are acknowledged by the authors. Factors such as Community Rail Development and station openings have cemented a stronger base to the network. Yet, the legacy of closures has left many areas for concern such as the absence of strategy for the provision of diversionary routes to aid maintenance work or to provide alternatives to the times of closure through accident. The authors conclude that in all the evidence collected in the book the most relevant observation was the immense danger caused by a concerted attempt to shrink the network and the role it played in meeting Britain's transport needs. Associated with this interpretation were bad planning, dogmatism, political chicanery, ineptitude and a lack of imagination that characterised mid twentieth-century railway policy.

RAY SHILL

***Lost Lines: Railway Treasures* — Nigel Welbourn**

256pp, 297x210mm, 400 illustrations, hardbound, Crécy Publishing, 1A Ringway Trading Estate, Shadowmoss Road, Manchester M22 5LH, 2018, 978 0 86093 691 6, £25

Nigel Welbourn's fifteen volumes in the *Lost Lines* series will be familiar to many readers. In this book he draws together many of the themes of the series: 25 chapters cover closed stations and goods depots, ports, light railways, railway building materials, lost traffic flows and much more. The text is relatively brief: the attraction of the book lies in its illustrations, the majority the author's own colour photographs with informative captions, covering the length and breadth of the British Isles, and ranging from the

Haytor Granite tramway through the Rothesay & Ettrick Bay's car sheds to the weed-strewn wilderness of what was once Temple Mills marshalling yard. The book can be recommended for a wallow in nostalgia and a guide to seeking out remains. It may also induce indignation at the destruction wrought on the railways under successive managements and governments.

TONY KIRBY

***Ifor Higgon's Cambrian Diary* — Gwyn Briwnant Jones**

72pp, 275x215mm, 84 photographs, softback, Lightmoor Press, Unit 144B, Lydney Trading Estate, Harbour Road, Lydney GL15 4EJ, 2018, ISBN 978 1 911038 38 2, £10 (plus £2.50 p&p)

Ifor Higgon (1908–1996) was a talented railway photographer who lived for most of his life in Arthog at the heart of Cambrian Railways territory. After a biographical introduction, the well-reproduced photos present a themed cross-section of Higgon's output from the late 1920s to the 1960s, the majority from the 1930s and 1950s. They cover much of the former Cambrian system, the GWR Ruabon–

Dolgelley and Aberystwyth–Strata Florida lines, some Welsh narrow-gauge lines, the Shropshire & Montgomeryshire and Bishops Castle Railways. The pictures form a valuable record of the changing railway scene in mid and north Wales but are of trains rather than infrastructure.

TIM EDMONDS

***Policing South Wales Docks: an illustrated history* — Viv Head**

96pp, 234x165mm, 110 photographs (42 colour), softback, Amberley Publishing, The Hill, Stroud GL5 4EP <www.amberley-books.com>, 2018, ISBN 978 1 4456 7366 0, £14.99

Thanks largely to the efforts of the British Transport Police History Group, the story of this profession is gradually making its way into the open. Although most of the south Wales docks were of railway origin, this work makes it clear that their policing was run separately from that of the operating railway.

Although a moderately entertaining read, this book, by a former officer, does not pretend to be more than a collection of anecdotes and illustrations, and there is still scope for more in-depth research.

MATTHEW SEARLE

***The Shrewsbury & Welshpool Railway (including the Minsterley Branch)* — Bob Yate**

96pp, 275x215mm, 125 photographs, 16 maps & plans, softback, Lightmoor Press, Unit 144B, Lydney Trading Estate, Harbour Road, Lydney GL15 5EJ, 2018, ISBN 978 1 911038 34 4, £12

The Cambrian Railways have been well covered in the literature; now their only remaining link to the rest of the system takes the spotlight. Coverage extends from Sutton Bridge Junction at Shrewsbury to beyond the end of the London & North Western and Great Western Joint ownership at Buttington Junction into Welshpool station. The narrative history stops rather abruptly at 1867, but the book's strength lies in its description of the lines as they

were at the end of steam, well-illustrated in the publisher's usual style and with Ordnance Survey maps, together with full coverage of operations, in which the 'Cambrian Coast Express' plays a starring role. A postscript brings the story up to date, restrainedly describing the modern Welshpool station as 'rather unattractive'.

MATTHEW SEARLE

***Ponds, Tonzs and Boorts: tales from the Chesterfield Canal* — David Bownes**

56pp, 210x149mm, 38 photographs (13 colour), softback, Chesterfield Canal Trust, Hollingwood Hub, 22 Works Road, Hollingwood, Chesterfield S43 2PF, 2018, ISBN 978 1 9999465 0 0, £7.50 (plus £1.50 p&p)

The author has known the waterway since 1949 and his reminiscences of others who worked on it, which form most of this book, take recollections back to the earlier years of the century. For those who know the Chesterfield, the Trent Navigation and the local

area, this will add human life – and some local vocabulary – to history. The last part of the book describes construction of the replica 'cuckoo' boat *Dawn Rose* under the author's direction.

MATTHEW SEARLE

Brief Notes

***The Broad Gauge Engines of the Great Western Railway, Part 1, 1837–1840* — Brian Arman**

144pp, 275x215mm, 52 illustrations, 45 drawings, 7 maps & plans, hardback, Lightmoor Press, Unit 144B, Lydney Trading Estate, Harbour Road, Lydney GL15 5EJ, 2018, ISBN 978 1 911038 36 8, £22.50

This comprehensive work, by the subject's expert, is obviously one for locomotive specialists, but should certainly not be overlooked by those more generally interested in early modern railways, especially of the broad gauge persuasion, for the many sidelights it sheds on management and operation in the pioneering age.

***Coasters on Canals* — Bernard McCall**

96pp, 196x246mm, 97 colour photographs, hardback, Coastal Shipping Publications, 400 Nore Road, Portishead, Bristol BS20 8EZ <www.coastalshipping.co.uk>, 2018, ISBN 978 1 902953 88 5, £16

One of a series produced by this author/publisher primarily for enthusiasts of modern-day coasting shipping, this volume depicts seagoing vessels over the past forty years on Europe's larger artificial waterways; the Manchester, Weaver and Gloucester navigations make appearances. Quality colour photographs of the ships are matched with knowledgeable captions.

***Waterways Journal, volume 20* — Cath Turpin (editor)**

74pp, 198x210mm, 88 illustrations, softback, The Boat Museum Society, South Pier Road, Ellesmere Port CH65 4FW <www.boatmuseumsociety.org.uk/publications>, Spring 2018, ISSN 1466-3732, £7.99 + £2 p&p

Another welcome return of this annual. The first article, by Terry Kavanagh, covers pre-1840 traffic on the Upper Dee, and is followed by two on later twentieth-century history: Joseph Boughiey on nationalisation of the inland waterways, with some intriguing counterfactual speculations, and the journal's editor on British Waterways' direct operation of leisure craft. The issue concludes with notes on archives and boat preservation at Ellesmere Port.

***Industrial Locomotives & Railways of the North West of England* — Gordon Edgar**

128pp, 168x242mm, 205 photographs (123 colour), softback, landscape, Amberley Publishing, The Hill, Merrywalks, Stroud GL5 4EP, 2018, ISBN 978 1 4456 4938 2, £19.99

This primarily pictorial work covering historic Lancashire and Cheshire (Cumbria having initiated the series in 2016) from the late 1950s to near-recent times presents a wide variety of operations from standard gauge steam at Bickershaw colliery to narrow gauge internal combustion on Chat Moss. The high-quality photographs capture the often grimy reality of the sites included and are complemented by very full captions.

***Rail Guide 2018* — Colin J Marsden**

336pp, 210x150mm, approx 500 colour illustrations, hardback, Crécy Publishing, 1A Ringway Trading Estate, Shadowmoss Road, Manchester M22 5LH, 2018, 978 1 910809 51 8, £22.50

The 9th edition of this annual guide comes at an apposite time, when each new franchise seems to involve provision of new trains, the IEPs are replacing the HSTs and stock such as the 319s and 365s is cascaded to unfamiliar territory. Half of the book is a numerical listing of stock (DMU, EMU and hauled) arranged by Train Operating Company, the rest covers freight operators, leasing and infrastructure companies, private operators, light rail (excluding the London Underground), preserved locomotives, NIR and IÉ, and other systems including such exotica as the Thames cable cars and the 0–2–2–0 motive power (named but un-numbered) of the Douglas Horse Tramway.

The following three 'Middleton' books: 96pp. 236x166mm, 120 photographs plus maps, timetable, tickets etc, hardback, Middleton Press, Easebourne Lane, Midhurst GU29 9AZ, 2017, £18.95 (post free from publisher)

Preston to Blackpool including Fleetwood — John Matthews and Peter Fitton

ISBN 978 1 910356 16 6

The electrification of the line from Preston to Blackpool is an opportune time for a new book on the railways in the Fylde area. These very busy lines which carried large volumes of passenger trains and a not insignificant amount of freight traffic required a large number of signal boxes many of which are illustrated. Several of the illustrations are by the joint authors and are comparatively recent but there are older scenes as well.

Leicester to Nottingham, also Syston to Melton Mowbray — Vic Mitchell and Keith Smith

ISBN 978 1 910356 15 9

The usual mix of early to modern photographs and maps unite in a reasonably balanced depiction of the lines referred to in the book title. As usual the captions are somewhat repetitive and idiosyncratic in the facts, railway and non-railway, they present to the reader. The publisher's claim to be 'Evolving the ultimate railway encyclopaedia' appears less and less credible: perhaps 'gazetteer' would be a more appropriate word?

Gainsborough to Sheffield including Brigg and Torksey — Vic Mitchell and Keith Smith

ISBN 978 1 910356 17 3

The latest album starts in Brigg (unusually not at the preceding junction) and, pausing for breath at Gainsborough Central, then rattles along in the company of some distinctly third class passenger trains to reach Sheffield Victoria with a nod to Midland. Then we backtrack to Leverton for a jaunt as far as Torksey station which surprisingly does not include a decent picture of the historic viaduct (discussed in these pages some years ago). This is now accessible by foot but hopes of it forming part of a cycleway seem a distant prospect. As with all Middleton books, the fun is really in the odd wayside places and sometimes mildly eccentric commentaries or historical snippets. We are told that 'Promotion of soap was not unusual, but often necessary until deodorants arrived in the 1950s'. A shame that the original MS&L station house at Retford – a remarkable survival – misses out but there is plenty of other interest to sustain the armchair wanderer.



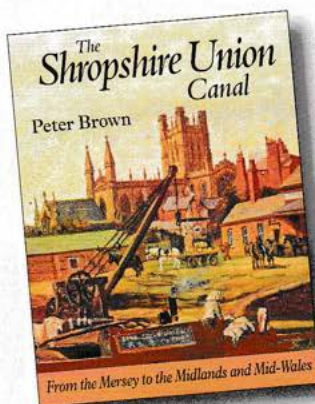
*Cottam station, Great Central Railway
(from Gainsborough to Sheffield including Brigg and Torksey reviewed above)*

The Shropshire Union Canal

*From the Mersey
to the Midlands and Mid-Wales*

BY

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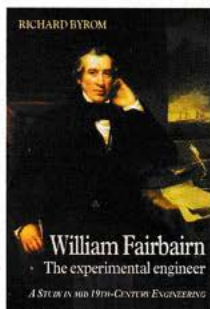


The Shropshire Union was created in the 1840s by the amalgamation of the Ellesmere & Chester, Birmingham & Liverpool Junction, Montgomeryshire and Shrewsbury Canals to form a network some 200 miles in length.

The main line went from the north-western edge of Wolverhampton, through Market Drayton, Nantwich and Chester to the Mersey at Ellesmere Port, together with a branch to Middlewich. The long 'Welsh Branch' ran from near Nantwich via Whitchurch, Ellesmere, Llanymynech and Welshpool to Newtown, together with a branch to Pontcysyllte and Llangollen. A further branch served Newport, Wellington and Shrewsbury. The intention when the companies merged was to convert many of their canals into railways and to build further railways. In the event, only one railway was built, from Stafford to Shrewsbury. Not long after the merger, the Shropshire Union was leased to the mighty London & North Western Railway.

This book relates the history of the constituent companies all of which were originally formed in six decades from 1770, comparing their policies and progress. It follows the Shropshire Union under railway control, examines the reasons for the decline and closures, then brings the story up to date with nationalisation, revival and restorations. To keep the length of the book manageable, Ellesmere Port, Liverpool docks and the cross-Mersey trade are considered only to the extent that they relate to the canal network.

The emphasis is on the canals as businesses and as part of local history, the economic and social aspects being stressed. As far as possible, the reasons why decisions were made is explained. The final chapter discusses the changing role of the canals and considers the lessons to be learnt from the various restoration schemes.



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William Fairbairn the experimental engineer *by Richard Byrom*

Richard Byrom has won an Outstanding Scholarship Award for his book on William Fairbairn.

At its annual conference at the University of Nottingham in September, the Association for Industrial Archaeology gave its prestigious Peter Neaverson award for Outstanding Scholarship to Richard Byrom, for his book William Fairbairn - The experimental engineer.

The result is the first book devoted to Fairbairn, one of the giants of 19th-century engineering, since 1877. But it is far more than a simple biography; it provides a detailed analysis of Fairbairn's methods and contributions to structural engineering. It also contains a comprehensive list of the projects to which he contributed. The judges described this book as 'a superb achievement which is certain to remain the definitive work on this subject for generations.'

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