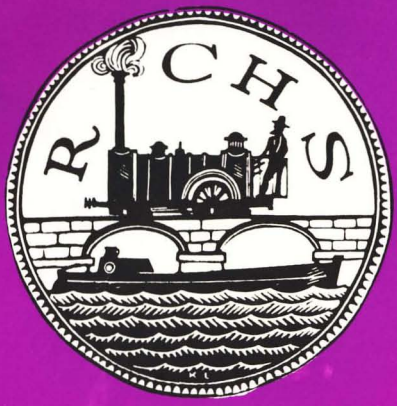
ISSN 0033 8834



Journal

of the

Railway and Canal Historical Society

VOLUME 31 Pt. 5 No. 157 MARCH 1994

JOURNAL OF THE RAILWAY & CANAL HISTORICAL SOCIETY

VOLUME 31 Pt. 5 **No. 157** **MARCH 1994**

Contents

Editorial

John Denton's note 'Before its time' elsewhere in this issue led me to think about the extent the Media (as opposed to the technical press) seem unable or unwilling to pay any attention to historical development, especially of transport. Everything, including the wheel, is a revolutionary new invention. The year 1966 did indeed usher in the Container Revolution, but the revolution was not in the invention of the box, but in the worldwide adoption of the large ISO container. British Railways had not only pioneered the concept but with their 'B' series had created a system-wide service. BR was also operating a 'cellular' ship on the Heysham–Belfast run, as well as pioneering the 'Freightliner' concept with their Hendon-Gushetfaulds 'Condor' trains. What is true, the Beeching Report failed to appreciate the coming revolution in shipping services, which eventually came to supply the bulk of boxes carried on Freightliners. But then the Rochdale Report of 1963 on the major ports also failed to spot it, and it was the private enterprise Felixstowe that dragged both the British port industry and BR into the new container age.

A recent BBC documentary ('Locomotion') also disappointed in the same way. It was stated that opposition to railway development only started when lines invaded the Lake District, whereas of course there had been opposition on environmental grounds from Landowners and even towns from the beginning. Apparently too there was little progress on safety until twentieth century Union pressure for shorter hours. But by then the two basic measures of the block system and continuous brakes were fully in place.

The Oxford Portland Cement Co. Ltd.

BY HUGH J. COMPTON

Cruise down the Oxford canal through the leafy countryside of rural England and shortly after leaving Northbrook lock you come across a pipe, covered in graffiti, astride the canal and immediately beyond this on the eastern side is the site of the former Oxford Portland Cement Co's Works by Washford Hill at Kirtlington.

This came about as a result of a collaboration between four persons each with a very different sphere of interest. Arthur Dillon a stockbroker from Chelsea in London, William Long Franklin a builder from Deddington in Oxfordshire, Mark Morrell a mining engineer from Clifton Hampden in Oxfordshire and John Lamp Spoor a cement manufacturer from Rochester in Kent.

The site chosen was only accessible from the Oxford Canal and therefore water transport was initially the only means available. Indeed even the water for the Marshall horizontal condensing steam engine had to come from the canal and in the first year this cost £5, but by 1910 the canal company had reduced this to £1.

Production started in 1907 with the despatch of 481 tons of cement in returnable one cwt hessian sacks. Next year this had increased to 3,680 tons. The Company quickly saw the need to set up depots at certain points so that orders could be promptly met. To this end the Oxford Canal Company (OCC) were asked in June 1908 to build a warehouse for them on Worcester Street wharf in Oxford. Following completion of protracted negotiations in April 1909, work was quickly put in hand and by September the building had been erected at a cost of £223 against Worcester Street bridge. Later in 1925 an electrical hoist and runway was added to the building.

Similar negotiations took place regarding facilities at Coventry wharf and at Crescent wharf on the Newhall arm of the Birmingham canal.

To help the firm with the intricacies of canal charges, the OCC agreed as from December 1908 to operate a Clearing house system for traffic to all destinations except for those on the Birmingham and Stratford-on-Avon canals, who had declined to participate in the scheme. The latter's refusal also affected traffic to Worcester. Cement for destinations served by rail had first to be taken down the canal for two miles, which involved passing through Pigeons lock with its adjacent 'Three Pigeons' Brewhouse; to Enslow wharf. Here it was unloaded by hand into carts and moved across to the adjacent siding at Bletchingdon station where yet again it had to be loaded into rail vans by hand. Not surprisingly this method of transhipment was extremely expensive and from the railway angle made it difficult to compete on cost with those destinations served by canal.

Naturally the Great Western Railway (GWR) were very anxious to secure as much of the business as possible and therefore in March 1909 discussions were opened with the OCC concerning the possibility of making a transhipment facility just to the north of Enslow wharf where the main line crosses the canal at the extremity of Bletchingdon goods yard. Eventually the OCC agreed to the selling of a 250 sq yd garden plot. On 21 February the GWR paid the agreed price of £40 and two days later introduced into the House of Commons their General Powers Bill which covered this exchange of land in section 36. The Bill passed through all stages without any petitions either for or against and became an Act (10EDW 7 c CCXXII L&P) on 26 July 1910.

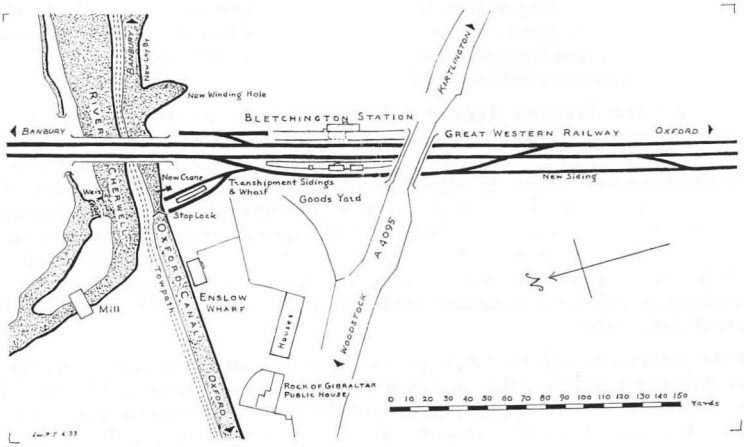
Part of the agreement with the OCC provided for the canal company to dredge out a winding-hole to the north of the railway bridge and this was done in March 1910. Shortly afterwards the Divisional Engineer of the GWR at Wolverhampton completed the drawings on 23 May showing the alterations proposed at the station. These included the construction of two additional sidings to accommodate 14 wagons, a covered platform 80′ × 10′ in between, plus the necessary retaining wall alongside the canal together with a 2-ton crane having a lift of 37′ and a radius of 12′.

Following the usual deliberations work finally started in earnest on 10 January 1911 when the canal was closed for a long weekend to enable the GWR to clean out the lay-bye and construct the retaining wall. At the same time the OCC carried out additional dredging which cost the GWR £104. Next the GWR and OCC engineers met on site in April and agreed the actual layout for the sidings which were quickly laid-in. All in all the GWR initially spent £1,365 on this transhipment facility.

Meanwhile the company had been giving consideration to improving the access to the Works for its personnel. For as built, everyone had to use the footpath which led off the lane from Pigeons lock to Kirtlington village, with a long flight of steps down to the site. Initially the OCC were asked in January 1910 to construct a bridge for both men and horses to cross the canal, but this was declined. In the end agreement was reached in November of the following year to allow the company to operate two ferries across the canal, one for men and one for horses, at a nominal acknowledgement fee of £1 each per annum and at the same time the OCC was to construct some stables adjacent to the towing path which were to be rented to the company on the basis of 5% of the capital cost.

Coal supplies for the works came by canal from a variety of colleries as shown by this statement.

Colliery	*Canal*	*Cost per loaded boat* (eq 26 tons)
Wyken	Oxford	£5.50
Baddesley	Coventry	£5.62
Exhall	Coventry	£5.50
Newdigate	Coventry	£5.50
Pooley Hall	Coventry	£6.00
Measham	Ashby	£7.15
Various	Birmingham	£7.25



The relationship between the Oxford Canal and Great Western Railway at Enslow Wharf/Blechington Station.

Oxford Portland Cement Company's boat Tackley *at Kirtlington (Oxon) on 8 February 1911*

Alan H. Faulkner Collection

To encourage boatmen to work a greater load from their favourite supplier—Pooley Hall—the firm paid a bonus of 25p per ton for every ton carried over the contracted figure of 26 tons. Similarly this same amount was deducted for every ton short of the stipulated amount. Interestingly too there was a penalty of 50p per boat if the load had not been sheeted. On arrival at the works the pair of boatmen were required to unload their 26 tons by shovel and barrow between 7.00 am and 4.00 pm with a thirty minute break for lunch and whilst they were thus employed their dog had to be tied up. Sometimes they worked cement back to the depots in Birmingham and Coventry and in those cases the loaded round trip had to be completed in eight and five days respectively.

The boatmen who undertook this work were the well known 'Oxford' Number-Ones, William Grantham of Banbury with his boats *Hannah* & *The Cat* and his son George with *Marlborough* & *Rose of Sharon*. Arthur Coles of Thrupp with his mother Louisa with their boats *Providence* & *Envy Not* (both registered at Oxford on 29 January 1906 and given numbers 79&80) also worked this trade before 1914. But after that they went to work for the Coop and the boats were then worked by Abel Skinner, the father of the well known Joe Skinner. Eventually he bought both boats and had them re-registered at Banbury on 27 July 1920. Among rare visitors to the works was *Gender*, which came down from Loughborough loaded with Gypsum.

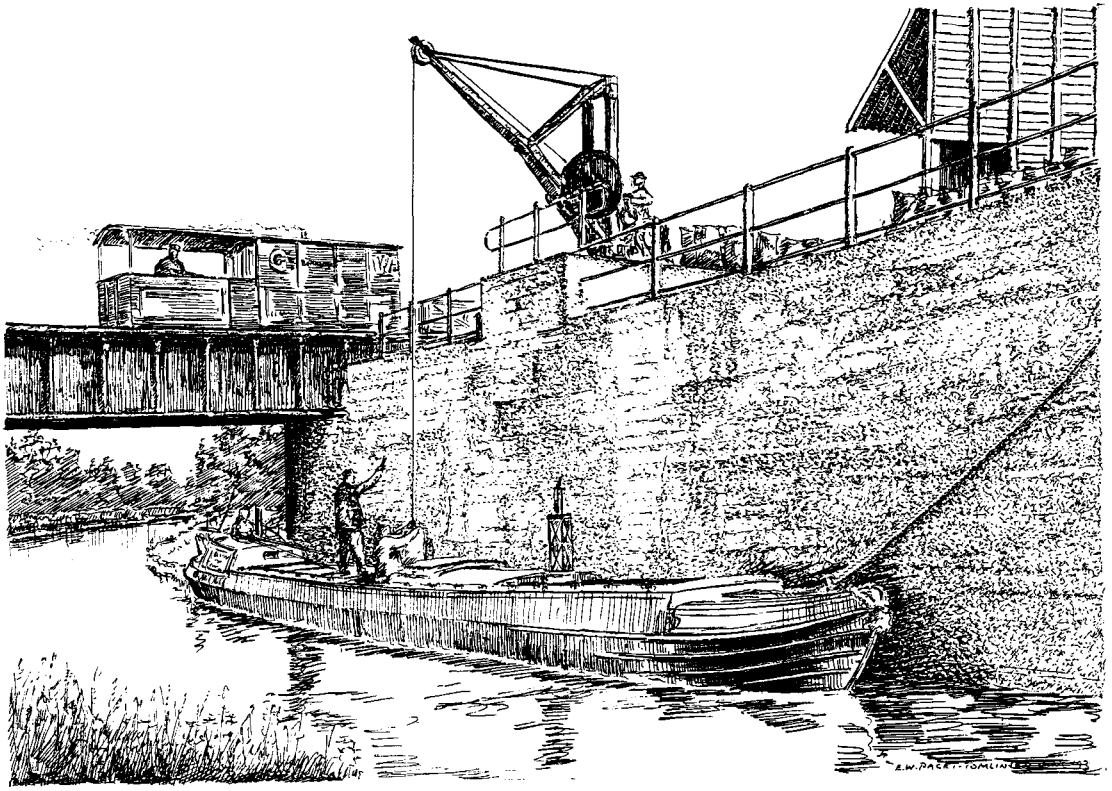
Over the years the Oxford Portland Cement company had eight craft of their own which mainly operated between the works at Kirtlington and the transhipment facility at Enslow wharf with occasional trips to their stores. The pre First World War fleet was built by William Nurser and Sons of Braunston and comprised the following:—

Name	*Date Gauged*	*Registered*	*Sale Details*
*WASHFORD	25 Sept 1908	Daventry No.265	J. Wilson as 'FORGET ME NOT'
*KIRTLINGTON	22 Oct 1909	Daventry No.275	J. G. Grantham as 'SHAMROCK'
BLETCHINGDON	21 April 1910	Daventry No.276	J. Humphries as 'OLIVE ROSE'
TACKLEY	18 May 1911	Daventry No.285	J. G. Grantham

*George Tooley of Banbury added fore-cabins to these boats in Nov 1920.
After the cessation of hostilities a further four boats were added to the fleet.

ROUSHAM	26 Oct 1920	?	J. Millwood as 'RE ECHO'
OXFORD	26 Oct 1920	Banbury ?	S. Barlow of Tamsworth
HEYFORD	3 Nov 1920	?	Bushell Brothers of Tring.
BANBURY	31 May 1921	Banbury ?	A. Harvey-Taylor as 'DAISY'.

In the December 1992 edition of *Waterways World* there is an excellent colour drawing of the stern of *TACKLEY* by Edward Paget-Tomlinson. This clearly shows that the standard livery of these boats was ultramarine framing and white panels with blue lettering and instead of the usual side and top sheets over the top planks on stands, they were covered by removable planks resting lengthways on curved frames fastened to its 6 ins planks built lengthways of the gunwales, with canvas sheets spread over the whole and held down by jamming the hemps with a strip of wood in small brackets above the gunwale.



Cement in bags being transhipped by Crane at Enslow, Oxford Canal to Bletchington Station, GWR—From a drawing by Edward Paget Tomlinson.

Many boatmen considered themselves fortunate if they were able to work these boats, and those whose names have come to hand include: Brammedge, Edwards, Grantham, Hambridge, Hodges, Nixon, Sargent, Westwood and Wilson. In line with the physical improvements to the transport facilities, the OCC switched the charging arrangements to a round trip rate of 12½p per boat between the works and Enslow wharf. The end result was that the cement tonnage increased year by year to 14,072 tons in 1914. This level was not to be exceeded till 17,287 tons was reached in 1922. By then a steel ramp had been made into the works from the lane which was used by two Foden steam wagons for deliveries to those points which could not be reached by rail or canal. Canal borne traffic was weighed at either Enslow or Heyford depending upon the direction of travel. No figures have been found for the cost of rail transport during World War I, but for canal movement are shown below.

Year	*Boats*	*Horses*	*Cement Tonnage*
1915	£635	£161	13,067
1916	£603	£188	11,375
1917	£573	£237	13,577
1918	£544	£195	11,421

Movement on the canal was not always 'plain sailing' since in periods of icing when the ice-breaker from Heyford was elsewhere the boatmen were expected to stand at the bow of the boat and use a long ash pole to which the company's blacksmith had attached an iron tip and a hook to smash the ice and push the pieces out of the way. The depth of water too caused problems for in December 1921 the company complained to the OCC about the lack of dredging who responded by giving the matter limited attention with a hand operated spoon dredger. This did not entirely rectify the problem so in the spring of 1923 the steam dredger dating from 1911 with its associated four iron hopper boats; was put to work on the section between Enslow wharf and the works. This soon revealed what was wrong as in a comparatively short space of time it raised 70 tons of large stones, some weighing as much as 5 cwt, as well as 22,155 tons of mud.

Other complaints concerned the annual stoppage for a week in May during which time repairs to structures were carried out. Generally the OCC allowed craft to pass between the works and Enslow wharf which circumstances permitted, but there were occasions when the wharfinger got it wrong and following complaint to the OCC he was given suitable guidance. Although the statistics produced by the Birmingham Division of the GWR show that merchandise traffic forwarded from Bletchingdon increased from 1,042 tons in 1903 to 9,114 tons in 1913, there is no indication as to how much of this was cement traffic. However this volume of traffic caused operating problems since the main line had to be used for shunting. To overcome this problem work costing £854 was carried out in December 1914 when a connection was made to the down refuge siding with repositioning of the signal box.

Even before the advent of the General Strike the Company was experiencing considerable increase in costs so much so that on 19 April 1926 the decision was taken to wind up the firm and by 12 January 1928 this had been completed, when a new firm with rail siding facilities opened at Shipton-on-Cherwell.

Today the site has become a peaceful haven for wildlife and trespassing is discouraged as there is a very real danger of falling rocks.

My thanks are due to the staff in the Public Record Office, the County Record Offices at Oxford and Warwick, Mr Earnest King former employee of the firm, also to Alan Faulkner, Rodney Weaver and Edward Paget-Tomlinson, fellow Members of the Railway & Canal Historical Society.

Vermuyden's navigation works on the river Don

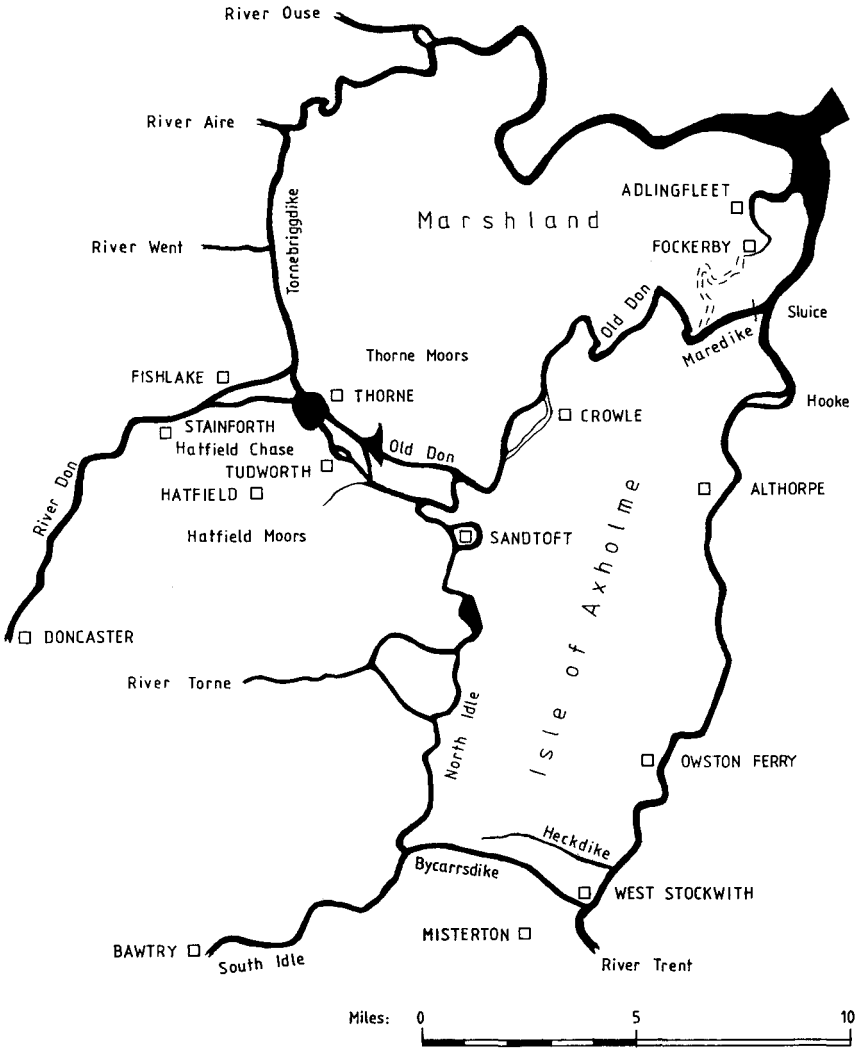
BY PAT JONES

The river Don rises near the former Cheshire border west of Penistone and flows for some sixty miles to the Ouse at Goole, passing through, and giving its name to, the Roman garrison town which became Doncaster. The Don originally fell into the Humber at Trent Falls, but at some distant time, probably during the Roman occupation, an artificial channel was cut, apparently for navigation, from near Thorne to the river Aire.[1] It was described as the 'Aqua de Torne' or 'Torne Fl.' on the Inclesmore maps,[2] and gave its name to the bridge which spanned it, which in turn gave its name to the community which became established nearby, Tornebrigg or Turnbridge.[3] The subsequent application of the suffix 'dike' may imply recognition of the artificial nature of this branch which, in the event, was later forgotten. That part of Marshland which was adjacent to its eastern bank came to be called 'Dikesmarsh'.

The dependance of the Romans upon water-borne transport is now becoming more widely recognised, and there is no reason to suppose that the original course of the Don was not navigable to Doncaster at the time of the Roman occupation. It is known that Doncaster could be reached from the Trent (via the Maredike) in the fourteenth century, but then bridges, mill-weirs, and other obstructions raised the surface level of the lower river,[4] thereby diverting an increasing proportion of the Don's fluvial stream into the Tornebriggdike. This (north) branch became the main navigable channel of the Don,[5] and by the sixteenth century its original course (or south branch) had become known as the 'Old Don', and only its upper reaches remained navigable.

In 1601 an Act (43 Eliz. 1, c.11) was passed 'for the recovery of many hundred thousand acres of marshes, and other grounds subject commonly to surrounding'. It enabled persons investing capital in successful drainage work to be reimbursed by grant of title to the reclaimed land. The circumstances in which Cornelius Vermuyden became involved with the draining of Hatfield chase are well known, and certain aspects of his work (and his ensuing problems) have been the subject of a great deal of literary endeavour. Unfortunately very little of what has been written was based on contemporary material, and the navigational considerations which influenced his work have been virtually ignored. During Martin Taylor's research for his book *Thorne Mere and the Old River Don*, published by Wm. Sessions Ltd, York, in 1987, a 1633 map was discovered in the Public Record Office at Kew. It contained annotation describing locks and sluices concerning which (so far as the present writer is aware) no details had been published. It was not relevant to Martin Taylor's main theme, although he mentioned it, but a copy of the map, much reduced in size, is reproduced in his book. The full-size photographic copy was made available to the present writer, who would like to record his appreciation for this and other help received from Martin Taylor. A tracing of the north-west corner of the map (reduced in size) including the annotation (relettered and slightly repositioned) is reproduced (Fig 1).

Details of Vermuyden's plans do not appear to have survived, but his general intentions were made clear in the wording of his Agreement with Charles I,[6] which authorised the construction of 'Channells, watercourses, Banks, Highways, sasses, sluices, and other Receptacles for water'. At that time the term 'sluice' could also mean 'navigable sluice', but the term 'sasse' described a pound-lock. Therefore it is clear that Vermuyden was required to have regard for navigation interests, a conclusion supported by the separate mention of 'channells' and 'watercourses'. It would



The IDLE, DON, and confluent rivers
c. 1625, before VERMUYDEN's drainage.

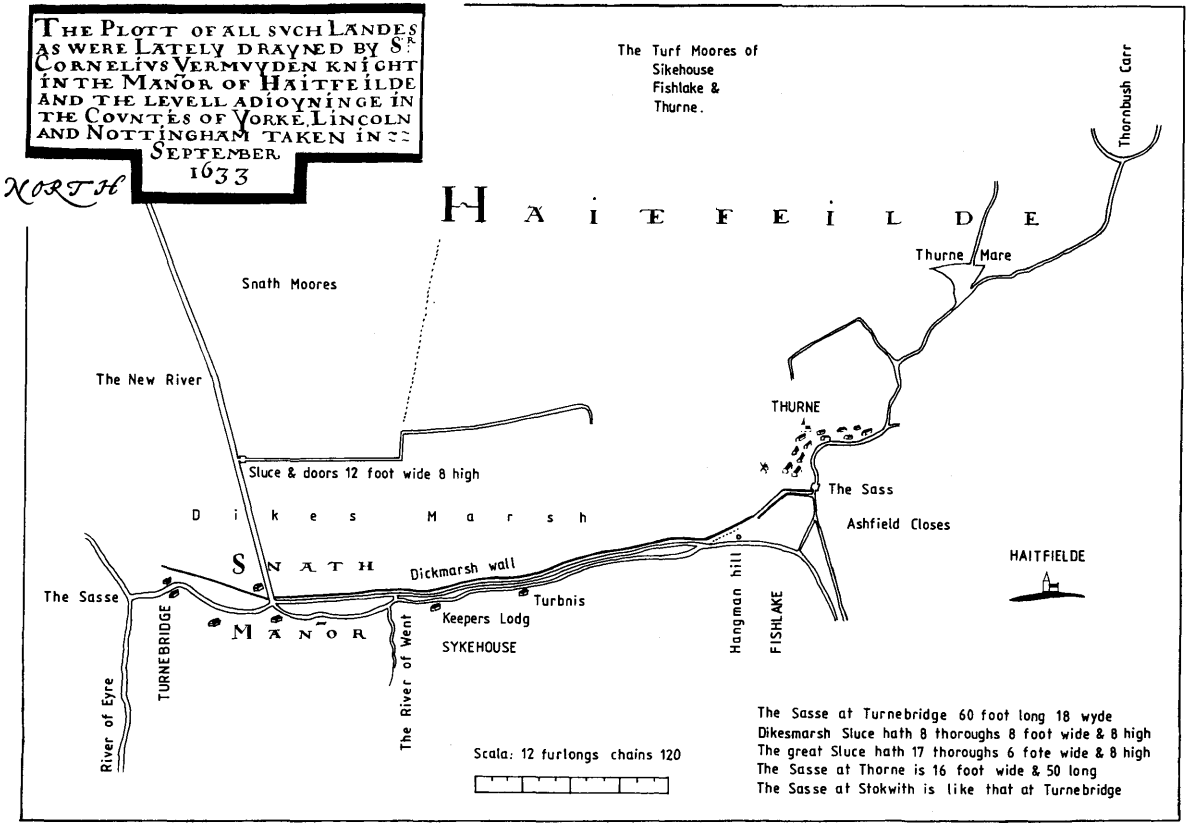

THE PLOTT OF ALL SVCH LANDES AS WERE LATELY DRAYNED BY SR CORNELIVS VERMVYDEN KNIGHT IN THE MANOR OF HAITFEILDE AND THE LEVELL ADIOYNINGE IN THE COVNTES OF YORKE, LINCOLN AND NOTTINGHAM TAKEN IN ?? SEPTEMBER 1633
NORTH
The Turf Moores of Sikehouse Fishlake & Thurne.
Thornbush Carr
HAITFEILDE
Thurne Mare
Snath Moores
The New River
THURNE
Sluce & doors 12 foot wide 8 high
The Sass
Dikes Marsh
Ashfield Closes
HAITFIELDE
SNATH
Dickmarsh wall
The Sasse
Turbnis
TURNEBRIDGE
MANOR
Keepers Lodg
SYKEHOUSE
Hangman hill
FISHLAKE
River of Eyre
The River of Went
Scala: 12 furlongs chains 120
The Sasse at Turnebridge 60 foot long 18 wyde
Dikesmarsh Sluce hath 8 thoroughs 8 foot wide & 8 high
The great Sluce hath 17 thoroughs 6 fote wide & 8 high
The Sasse at Thorne is 16 foot wide & 50 long
The Sasse at Stokwith is like that at Turnebridge

Fig. 1

seem that Vermuyden intended to construct locks in order to exclude the tide from navigable rivers swollen by flood-water, and to augment or replace the existing minor watercourses with new drains, from which the tide would always be excluded by means of sluices. Embankments and roads would be built, and navigation would be maintained by cutting new channels where necessary. The map of 1633 details the very considerable works on the Don, and by reference to previous accounts it is possible to determine approximately the order in which they were undertaken.

Vermuyden is known to have established his base on the island of Sandtoft in the summer of 1626, to where his supplies were brought via the rivers Ouse and Aire, the Tornebriggdike, the Old Don, and the North Idle. Vermuyden would have built Thorne Sasse at the same time as the embankment to the west of Dikemarsh ('Dick-marsh Wall' on the 1633 map) if for no other reason than to maintain his own supply line. Thorne Sasse subsequently gave access to the 'boating dikes', one of which is shown on the 1633 map, which served the peat trade,[7] and drained the Dikemarsh into the Old Don. There is no record of the level to which the old rivers were retained for nagivation, but it is very unlikely that the level would have been set at less than a foot below that of the adjoining land. A report of 1772 states that certain reclaimed land was only eight feet above the level of low water at Althorpe.[8] Low water there was probably a couple of feet lower than at Thorne, where the range of neap tides would have been about seven feet. Therefore it seems likely that the retained level would have been no higher than two feet below high water of neap tides. The 'New Cutt', as it became known, upstream from Hangman Hill,[9] probably also dates from this time. All this work, together with a great deal of work elsewhere, was apparently completed during 1628, and in July of that year Vermuyden obtained title to the first of the reclaimed land. On 6 January 1629 he received the accolade of knighthood from the hands of Charles I, in recognition of the skill and energy he had displayed in reclaiming so much cultivable land.

Vermuyden had successfully protected the King's land from inundation by flood water, but in doing so he had caused the river to rise above the ill-maintained old embankments which should have protected Fishlake, Sykehouse, and Snaith. In the winter of 1628 rioting followed flooding there. Similar problems were experienced beside the river Idle.[10] It seems probable that it was at this stage that Vermuyden decided to build a second sasse, which would be situated near the end of the Turnbridgedike, between Turnbridge and the confluence with the river Aire. It also seems probable that it was the knowledge of its construction which prompted newly appointed Commissioners of Sewers at their first meeting on the 14th August to require a third sasse to be constructed near Misterton, close to the mouth of the river Idle.

Turnbridge Sasse was probably completed before the winter of 1629; Misterton Sasse was probably completed during 1630. It is known that Misterton Sasse was constructed from local timber and that each sasse had at least one guillotine gate; probably both gates were guillotines. It is also known how Misterton Sasse was operated, and it is unlikely that Turnbridge Sasse would have been operated differently. The Idle was normally retained at a level suitable for navigation in its lower reaches—perhaps a foot or two below the level reached by ordinary spring tides. Both gates were raised for those tides which rose above the retained level (so that craft could be borne upstream on the tide) and lowered when the tide fell to the retained level. When flooding was anticipated the river was run down to the lowest possible level; both gates would only be raised when the tidal river was lower. In the event Misterton Sasse was a success; Turnbridge Sasse was not. With the information now available it is not difficult to understand why. The flow of the Idle typically varies between 1.5 cubic metres per second in near drought conditions, to 35 cubic metres per second in flood conditions.[11] The mean flow of the Don is 15.56

cubic metres per second, dropping to 5.15 cubic metres per second after seven days of dry weather, and increasing in flood conditions to the maximum observed mean daily flow of 171.7 cubic metres per second.[12]

On 12 May 1630 the inhabitants of Fishlake, Sykehouse, Snaith, and other places nearby petitioned their King, representing that they had sustained infinte loss by repeated inundations caused by Vermuyden stopping up the eastern branch of the Don. They prayed that he be compelled to so alter his works as to prevent this. For Vermuyden it was pointed out that it was the decayed condition and lowness of the petitioners' old banks that caused the inconvenience, and that if they were made of sufficient height there would be no flooding. After consideration, the Court to which the matter had been referred ordered Vermuyden to restore their ancient banks to their original height and breadth, and keep them in repair. The petitioners were ordered to pay Vermuyden £200.

The petitioners were wrong to attribute their problems to Vermuyden 'stopping up the eastern branch of the Don', but their error has been repeated by virtually every writer on the subject. It would have been an easy matter to build a sluice alongside Thorne Sasse to augment its capacity, but Vermuyden would have known that the channel of the Old Don was quite incapable of conveying a significant volume of flood water into the Trent. He decided to build the 'Great Sluice' beside Turnbridge Sasse and thereby increase the rate at which the Don's flood water could be sluiced into the Aire. It is interesting, and an indication of Vermuyden's great ability, to note that the flow in flood conditions of the Don is nearly five times that of the Idle, and that the dimensions of the Great Sluice are such as to increase the combined sluicing capacity of the works on the Don to over six times the capacity of the sasse on the Idle. It is known that the works were operational by the summer of 1631—they are mentioned by Thacker in *The Thames Highway*.[13] What an impressive sight they must have been!

It would seem that the construction of the works was under the direction of Hugo Spiering, a Dutch colleague of Vermuyden. Thacker relates how in 1630 Charles I—who apparently 'interested himself more intimately than any other sovereign with the well-being of the Thames'—had commissioned a group of peers to survey and remedy the defects of the river below Staines. Having dealt successfully with that part of the river, on 18 August 1631 the King commissioned them to act between Staines and Oxford, 'devoting special attention to the impediments to the navigation between Bircot and Oxford . . .' Hugo Spiering was apparently recommended to Lord Dorchester (Secretary to the Oxford-Burcot Commissioners) as a 'gentelman of understanding in such like affairs'. Lord Dorchester wrote to Spiering setting up an appointment 'to meet him at Oxford to take view of the River there, and the same to make navigable'. On the 6th September Spiering replied to Dorchester from 'Thorn(e)', apologising for having missed the appointment to meet him, explaining that he had 'taken charge of certain Sluices and a Sasse through the which boats and vessels do pass in and out'. He added 'Oxford is distant from this place about 200 miles', hoped the Secretary 'will hold him excused', and promised 'at two weeks notice' to keep any further appointment. But a reminder to Lord Dorchester dated 4 November 1631 of his continued existence and anxiety to be employed on the works, is the last mention of Spiering in the records of the Oxford-Burcot Commissioners. The only other reference to Spiering known to the writer relates to a slightly later period, and suggests he was also a friend, rather than merely a colleague of Vermuyden.

In addition to reinstating the petitioners' old embankments and building Turnbridge Sluice, at some time before September 1633 Vermuyden doubled most of the channel of the Turnbridgedike downstream from Hangman Hill, (and it was the last mile

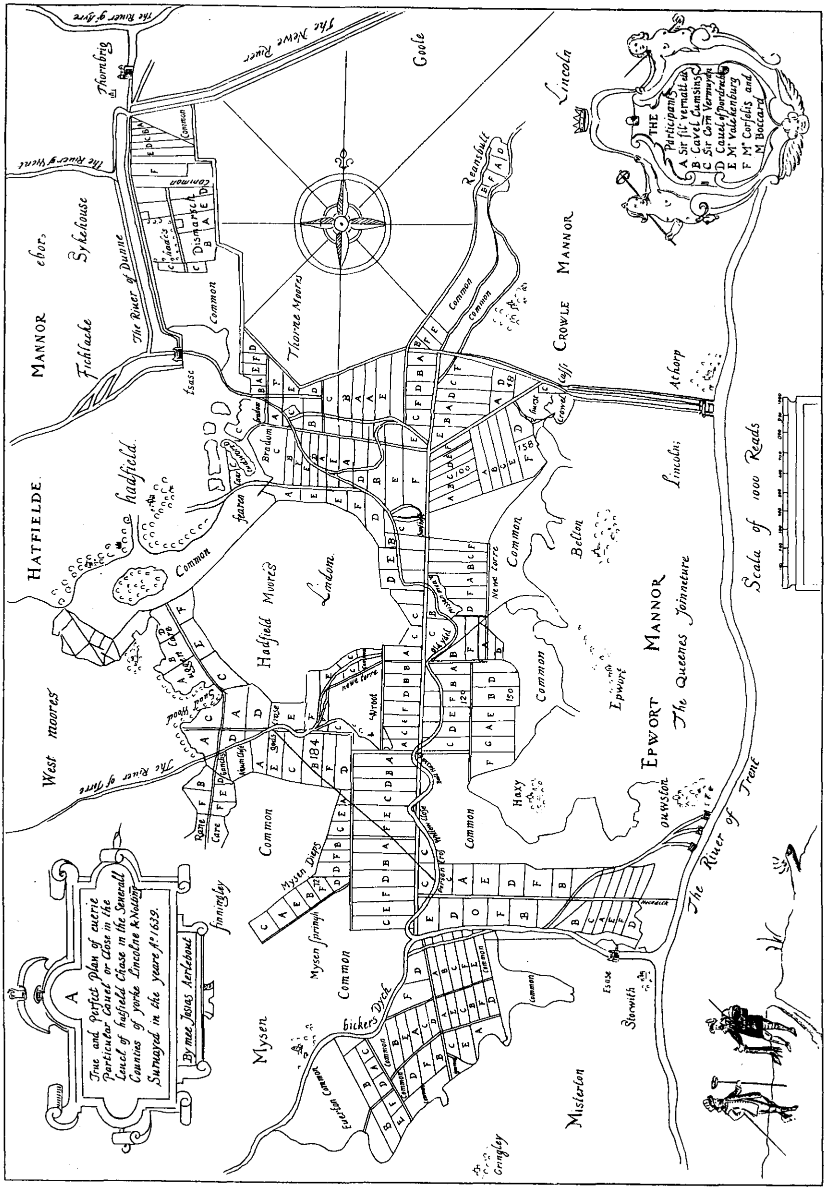

A True and Perfect Plan of euerie Particular Cauel or Close in the Leuel of hadfield Chase in the Seuerall Counties of yorke Lincolne & Noting Surnayed in the yeare Ao 1639.
By mee Josias Aerlebout
THE Participants
A Sir Phi. vernatti etc
B Cavel Cumsins
C Sir Corn Vermuyen
D Cauel of Dordrecht
E Mr Valckenburg
F Mr Corselis and M Boccard
Scala of 1000 Reads
The River of Aire
The Newe River
The River of Went
The River of Dunne
The River of Idle
The River of Trent
Thornbrig
Goole
Lincoln
Sykehouse
Fishlacke
Mannor
ebor
Hatfielde
hadfield
West moores
Common
Thorne Moores
Hadfield Moores
Lindom
Crowle Mannor
Athorp
Reansbull
Epwort Mannor
The Queenes Joinneture
Epwort
Belton
Haxy
Lincoln
Ouwston
Mysen
Mysen Common
Mysen Diggs
bickers Dyck
Misterton
Gringley
finningley
Stocwith
Everton Common
Wroot
Rane Care
newe torre

Fig. 2

of this straightened course that was to survive and first become known as the Dutch River). It now became apparent that the river Aire could not accept the increased flow of flood water from the Don. The Aire backed-up, and repaired banks of the petitioners now proved to be neither high enough nor long enough to protect their lands. The flooding continued. The 1630 petition was reconsidered and referred to the Lords Darcy and Wentworth for settlement. After viewing the works, they made a new order on 26 August 1633 requiring, among other things, the construction of a new drain into the Ouse.

Presumably the course of 'The New River' was added to the map after it had left its draughtsman's board; the place where it joined the Ouse is off the edge of Fig 2. It was built by cutting two parallel ditches a small distance apart and throwing-up the spoil to form embankments. It seems likely the intention was to scour out the land from between the ditches by opening Dikesmarsh Sluices during each low tide period. The drain and twelve feet wide sluice is of particular interest; and opening of that width cannot possibly have been necessary to release water from so short a drain. It seems probable that the drain was in fact one of the 'boating dikes' which served the peat trade, and that boats passed through the sluice when the tide rose to a suitable level, proceeded up the New River, and through one of the 'thoroughs' of Dikesmarsh Sluice into the Turnbridgedike. Perhaps the building marked 'Turbnis' was the depot where turf was dried and stored before being shipped-out on larger craft.

The cills of the sluices must have been set to correspond to the level at which the river was retained; the top of the sluice gates would have corresponded with that of the flood-banks, and been at least four feet six inches above high water of ordinary spring tides. Spring tides at Goole rose about five feet six inches more than neap tides; since the sluice gates were eight feet high it follows that the retained level must have been at least two feet higher than high water of neap tides. The Keels of that era (drawing three feet to three feet six inches laden) would have been able to navigate between Turnbridge and Fishlake, and pass through Thorne Sasse to Thorne, Tudworth, and Sandtoft, at any time, without regard for the state of the tide. Moreover in the absence of tidal stream, craft could have proceeded under sail whenever the wind served. Spring tides would have carried craft upstream beyond Fishlake, but access to Donacaster still, of course, depended upon the volume of flow.

The judgement of 1633 had required the tide to be excluded from the drain or 'New River' by means of sluices at Goole, which had not been built for want of funds. The level at which the river above Dikesmarsh Sluice was retained proved to be too high to allow the Don's flood water to be sluiced away during that part of the tide's cycle when the tidal rivers were lower. Flood water continued to over-top the inadequate old banks, and in 1635 the Court of Sewers issued an Order compelling the settlers on the reclaimed land to bear the cost of completing the work, by building sluices at Goole. The cost is said to have totalled £33,000, an enormous sum in those days, and not all of them could raise their share. The sluices did, however, achieve the desired result.

The annotations on the 1633 map are undated, but the absence of any mention of the very important sluices at Goole indicates that the annotation is unlikely to be later than 1635. Josias Aerlebout's map of 1639 (Fig 2) shows how the reclaimed land was divided between Vermuyden and his financiers, who had in turn sold shares in their undertaking to the settlers, of whom all but two of the original 57 were French or Dutch, and mostly refugees from religious persecution. Together with Vermuyden and his financiers they were known as the 'Participants'. The sasses at Misterton, Thorne, and Turnbridge are represented by a single guillotine gate; the sluices into the Trent are shown, but the navigable sluice into the 'Newe

River' has disappeared. The drain or 'boating dike' it served is, however, now shown connected to the channels which run into the Old Don below Thorne.

The works of Vermuyden were not undertaken with the approval of the native inhabitants of Marshland and Axholme, and persecution of the settlers did not end with their arrival in England. In February 1643 the native inhabitants banded together, and taking advantage of the War between the forces of Charles I and Parliament, and ostensibly in support of the latter, destroyed most of the navigation and drainage works, thereby submerging the lands reclaimed and occupied by the hated immigrants. At the Court of Sewers held at Thorne on 18 May 1645 an order was made for the repair of Vermuyden's works:

> Ordered and decreed at the Session of Sewers that the Sasse or Sluice at Misterton which is totally pulled up by malicious people, be again re-edified, as also the sluices at Althorpe, upon the River Trent, and Gowle, upon the River Ouse, be sufficiently repaired, and the Great Sasse at Turnbrigg be re-edified which is almost now totally destroyed by divers ill-affected persons to the drainage, and that the banks from Idle Stop to Misterton Sasse, the banks from Stockwith to Owston Ferry, and from thence to Allthorpe, as also from Gowle to Turn Brigg on both sides of the New River, which leads down into Ouse and so to the Holmes Closes adjoining upon Rawcliffe west Field, and so to Turn Brigg Sasse, and thence to Ashfield Banks be all repaired and amended by the respective owners as hereafter expressed . . .

In the reign of Charles II, circa 1688, a great flood caused by melting snow again destroyed the sluices at the Goole end of the New River, and also, presumably, the sluices at its head. No one would accept responsibility for the necessary repairs, and the ebbing tides soon scoured a much larger channel. The New River became a new river in name as well as character, by adopting the name formerly applied to the straightened reach of the Turnbridgedike—the Dutch River. The larger Keels then coming into service could only proceed beyond Hangman Hill on spring tides. Small Keels (carrying less than 30 tons) could reach Stainforth on the tide all the year round, and usually reach Wilsick House, which is about 16 miles from the Ouse. Small craft could travel eight miles further to Doncaster during three-quarters of the year, but larger vessels could only reach there in high flow conditions. The Dutch River was never an easy river to navigate, and in high flow conditions it became extremely dangerous.[14]

The name 'Turnbridgedike' was now only applied to the reach between the Dutch River and the river Aire.[15] Its navigation works were abandoned and its channel became 'warped up'.

> In 1703 certain of the inhabitants of Cowick and Snaith petitioned the West Riding Quarter Sessions: 'At Turnbridge there hath formerly been a place for landing merchant's goods which came from Hull and for that reason Turnbridge was made to open in the middle to lett the vessells go through with their masts up but now the wharfage is taken away to Rawcliffe and the River Dunn* is almost warped up'. They successfully appealed for the bridge to remain fixed, as the boatmen had threatened to cut the fixed timbers used in repairs 'though no thoughts of any boats coming through again'.[16]

Evidently the boatmen thought differently, but Turnbridge never again witnessed the passage of trading craft.

At some time in the first half of the 1720s Misterton Sasse was rebuilt as a 'soss', with two pairs of mitred gates pointing to the Trent. Thorne Sasse apparently

---

* Turnbridgedike was meant.

received the same treatment: in 1722 it was described as Thorne Sluice, and Jeffreys' map of 1767–70 shows it with two pairs of mitred gates pointing to the Don. A lock designed to give access to and from tidal water has at least three, but more usually four pairs of mitred gates, alternately pointing in opposite directions. Therefore it seems possible that Thorne Sasse was rebuilt at some time before 1688, while the Don was still non-tidal. After the Don became tidal and the level of the old rivers—and hence their navigable depth—would have become purely a function of their volume of flow. It is unlikely that they could have been used by craft larger than the small open boats which carried peat from the moors. Their loads were trans-shipped into Keels on the Don at Hangman Hill, where Thorne Wharf had been built by 1737.

The Don was canalised upstream from Stainforth by the early 1740s, and in 1772 a canal from Stainforth to the Trent at Althorpe, with a side branch from near Thorne to Hangman Hill, was proposed. The canal which was authorised by Acts of 1793–98 and opened in 1802 entered the Trent near Keadby, and the side branch was not built. Much of its course near Thorne follows one of the old channels of the Don. It is carried through Vermuyden's embankment by Thorne lock, which is built on the site of Vermuyden's sasse, and like its progenitor it is smaller than all the other locks on the system.

NOTES

1 Dr G. D. Gaunt, 'The artificial nature of the river Don north of Thorne, Yorkshire', *Yorkshire Archaeological Journal* Vol. 47, 1975 pp. 15–21. And: J. Samuels and P. C. Buckland, 'A Romano-British settlement at Sandtoft, South Humberside', *Yorkshire Archaeological Journal* Vol 50, 1978 pp. 65–76. And: P. C. Buckland and J. Sadler, 'The nature of Late Flandrian alluviation in the Humberhead Levels', *East Midland Geographer* Vol. 8, 1986 pp. 239–51.
Dr Gaunt showed that this northward-flowing channel has been confined between man-made embankments for the entire period of its existence. The fact that it was cut across a gently eastwards-dipping plain (i.e., at 90 degrees to the direction of natural drainage) both precludes the possibility of natural fluvial migration, and suggests to this writer that it was intended to serve the interests of navigation, not drainage.
Excavation in the bed of the river Idle downstream of the Bycarrsdike revealed a marked change in the pattern of alluviation leading to flooding 'during the late Roman period or immediately after it'. A similar change occurred in the bed of the river Don downstream of the Tornebriggdike. The change appears to have been due to a prolonged reduction of the fluvial stream of both rivers, which could be explained by the diversion of part of it into the Bycarrsdike and Tornebriggdike. It seems unlikely that these channels were actually cut during the late Roman period. They are more likely to have been cut earlier, and retained at their natural levels to their respective junctions with the rivers Trent and Aire by means of sluice gates, which fell into disuse following the Roman's departure. Samuels and Buckland recognise that 'neglect of (the Tornebriggdike's) necessary sluices could have led to flooding'.

2 Two versions of the 'Inclesmore' map are reproduced in Taylor's *Thorne Mere*, copied from originals held by the Public Record Office. The maps are undated, but PRO MPC 56 is probably early sixteenth century; PRO DL 42/12 is probably early fifteenth century. Since the map is associated with a 1331 enquiry concerning Inclesmore—the old name for Thorne Moors—it may be assumed that an earlier version failed to survive. Both show the Don's original course through Fockerby and Adlingfleet; neither shows the Maredike (which existed in 1315) and the Don's shortened course into the Trent. This suggests that each was

produced by reference to an earlier version, and not as the result of a complete re-survey.

3 Thomas Allen, *History of the County of York* Vol. 3, 1831, Book VI p. 24. The bridge did not turn; prior to 1442 the timber bridge was fixed and 'so low, so near the stream, and so straight in the arches' as to seriously impede the passage of trading craft to and from the Don. In that year it was rebuilt with a 'moveable leaf in the centre'.

4 Sir William Dugdale, *The History of Imbanking and Drayning of Divers Fenns and Marshes both in Foreign Parts and in this Kingdom, and of the Improvements thereby.* Alice Warren, 1662. Yorkshire-West Riding—pp. 116-8. And:
George Dunston, *The Rivers of Axholme, with a history of the navigable rivers and canals of the district.* A. Brown and Sons, 1909, pp. 14-5. It is known that most of the tidal reaches of the original course of the Don downstream from Stainforth were duplicated by secondary channels. Dugdale cites a 1344 reference to the digging in 1315 of a channel in excess of 16 feet wide from 'Crulleflete Hill (near Crowle) unto Denmyn' (the mouth of the Maredike). The Maredike would have captured the scouring fluvial stream and ebbing tides, and the natural convoluted reaches of the river past Fockerby would have made up with silt to a level approaching the height of the highest tides. The lowest reach became a minor tidal creek navigable at high water to Adlingfleet, too small to be shown on Saxton's 1577 map.
The records of an enquiry conducted in 1413 reveal that Jeoffrey de Gaddesby, Abbot of Selby (1342-68) had caused a strong sluice of timber to be erected at the mouth of the Maredike to exclude the tides of the Trent from the Don. It was said he had done so from 'his free will and charity for the care of the country', but it seems equally possible he did so to maintain the differential head of a mill-weir, and so protect the Abbey's income from milling. Be that as it may, all through navigation thereafter must have been via Tornebriggdike.
In the time of John de Shireburn, the successor of Jeoffrey de Gaddesby (1369-1408), the sluice was destroyed by un-named inhabitants of the nearby Manor of Hatfield, presumably to restore the right of navigation on the south branch of the Don. A Patent Roll entry in 1392-3 stated that the channel of the Don had been cleared at the charge of the inhabitants. John de Shireburn had the sluice rebuilt in stone, but the structure failed; apparently it was 'not strong enough for that purpose, being both too high and too broad'.
The Commissioners at the 1413 enquiry resolved that the then Abbot of Selby, William Pigot (1408-1429), should cause sluices 'of strong timber to be set up, consisting of two flood-gates; each flood-gate consisting in itself four feet in breadth and six feet in height', and also a 'bridge upon the said sluices, in length and breadth sufficient for a cart and other carriages which in future might pass that way'. The structure (or its successor) survived to be shown on Saxton's 1577 map. Clearly only a small part of the Don's fluvial stream still flowed this way.

5 Confirmed by a Charter from Edward IV dated 30 January 1463. The Charter appointed the Mayor, Aldermen, and Recorder of the City of York
> Commissioners of the waters and Great Rivers of Ouse, Humber, Wharfe, Derwent, Aire, (etc.,) and the Don *from the Ouse* to the town and stank of the mills of Doncaster, pursuant to the statutes for the supervision of the rivers and of weirs, mills, stanks, pales, piles, and kiddles, made before the reign of Edward I, and in the same manner as the Mayor and Citizens of London are Commissioners of the River Thames.

6 Dated 24 May 1626, quoted by Dunston, *Rivers of Axholme* p. 121.

7 John Goodchild, 'The Peat-Cutting industry of South Yorkshire' *South Yorkshire Journal*, pt. 3, May 1971. Cusworth Hall Museum, Doncaster, pp. 1-5.

8 Thomas Tofield, 'A Report of the practicability of making a Navigable Canal from the River Don at Stainforth Cut, to the River Trent at Althorpe', dated 28 October 1772. Quoted by Taylor, *Thorne Mere.* pp. 75-9.

9 Will. Palmer & Partners, 'A Survey of the River Dunn in order to improve the Navigation from Hull to Doncaster', 1772. Reproduced in T. S. Willan *The Early History of the Don Navigation*, 1965.
10 Pat Jones, 'Soss on the Idle', *Waterways World* Pt. 1 August 1991 pp. 84–7. Pt. 2 September 1991 pp. 90–3.
11 Data kindly provided by the National Rivers Authority.
12 Data kindly provided by Yorkshire Water Authority.
13 Fred S. Thacker, *The Thames Highway—General History*, 1914, pp. 69–71.
14 'A case in relation to improving and completing the navigation of the River Dun' (1725 Petition to Parliament) Quoted by Alan W. Goodfellow, 'Sheffield's Waterway to the Sea', *Transactions of the Hunter Archaeological Society*, Vol. V, Pt. V, May 1942, p. 249:

> . . . (At Rawcliffe Bridge) the (Dutch) river is worn so very deep that the tides flow 14 feet perpendicular; by the rapidity whereof the Vessels lie by till the most part of the tide be over, which loses 12 hours in sailing. (An improvement will save the subject 1 shilling a ton by reducing the time of sailing).

The bridges spanning a tidal river are always a potential hazard to shipping; to this day vessels passing through Selby bridges are required to do so either against the tide, or else to come about and slowly drop through the bridges stern-foremost head to tide, with engines running ahead to provide control. The Dutch River's three bridges were particularly dangerous; it was the practice to haul craft through them against the tide. Vessels bound upstream reached the Don too late to make further progress, and were obliged to 'lie by' to await the next tide.
15 Palmer, 'Survey of the River Dunn'
16 Goodchild, 'Peat-Cutting Industry', p. 2.

Some Unpublished Letters of Robert Stephenson[1]

BY PETER S. RICHARDS

In the course of his work Robert Stephenson made many reports in person to the various committees of the London and Birmingham Rly. Company, especially to the Committee of Survey.[2] In addition, he wrote a number of letters to the two secretaries of the Company, Captain (later Admiral) Constantine Richard Moorsom RN and Richard Creed. Both these gentlemen joined the Company in the early 1830s.[3] Moorsom was the Company's indoor secretary and had transferred from the Royal Navy to the Railway at a time, the early 1830s, when the armed forces, especially the Navy, were being run down. He was just one of a number of surplus captains who found employment on the railways;[4] and he died in 1861 after the effects of an operation rendered necessary in consequence of a wound received in the arm at the time of the seige of Copenhagen.[5] Several railway secretaries, among them Henry Booth of the Liverpool & Manchester Railway, Charles Alexander of the Great Western Railway and Richard Creed of the London & Birmingham Railway, had relevant financial and administrative experience from commerce.[6] Creed was so highly thought of that in due course he was elected to the Board of Directors and was presented with a cheque for 2,100 Guineas for his services.[7]

George Stephenson was not well versed in reading and writing, although of course, he had a high reputation as a mechanic and engineer. His son, Robert, however,

had the benefit of a better education.[8] The rest of this paper is concerned with a transcript of five of the letters he wrote, with comments thereon.

Letter of the 9 January 1834 to Richard Creed

Robert Stephenson paid much attention to the siting of stations; it is interesting to note that all the stations which this letter shows he thought would be necessary were eventually built. Harrow and Wealdstone (b below) (opened 20th July 1837) was originally the first station out of Euston. In May 1844, however, two intermediate stations were opened. One was at Willesden (which might be identified with Lower Place Crossing(a)?), just by Acton Lane level crossing. The other was at Sudbury, since renamed Wembley Central. There is a mystery about this Willesden Station: it was probably opened in 1841, for it appears in a railway time-sheet of that year, but it seems to have been closed again. The story that it was opened for the general manager of the London and North Western Railway, Captain Mark Huish, who resided at Harlesden House, is without foundation; in 1844 Capt. Huish had not yet come to Euston—indeed at that time he was still secretary and general manager of the Grand Junction Railway.[9] A station was eventually built at Kilburn High Road (opened 1851/2). Bushey and Oxhey station(c) was opened in May 1844 and just before World War II Apsley was opened. The station at King's Langley was opened in 1846.

To R. Creed from R. Stephenson

The following are the only places between London and King's Langley where I conceived it at all likely that additional land for stations will be required:

(a) Kilburn—Lower Place
(b) Crossing the road between Harrow and Harrow Weald
(c) Crossing the London Road near Watford
(d) Crossing the road leading from Watford to St. Albans
(e) Crossing the upper high way opposite the village of King's Langley

I have stated the dimensions (where?) requisite to give ample room for a siding on each side of the double line of railway and a shed, say 8 × 140 yards. I do not apprehend that more than two or three of such stations will be required for sometime after the railway is completed in the above distance, but I see no objection to these portions of the land being purchased at once.

Letter of 20 May 1834 to Captain Moorsom R.N.

The precise route north of Rugby presented problems and needed to be determined exactly before a petition could be presented to Parliament seeking powers to build the line.[10] To get a level track with gentle gradients, as Stephenson thought necessary, many embankments and cuttings were required. Landowners, too, were very obstructive in their attitude to the railway.[11]

To Capt. Moorsom RN from R. Stephenson:

All the necessary data were given to Mr. Gooch, when I was last in Birmingham, for proceeding with and completing the plans of land from the river Sow to Birmingham. I also ordered him to employ another draughtsman to assist in completing them in the shortest possible period. The whole of my time is now occupied in preparing plans of bridges etc. with specifications for contracts between Birmingham and the river Soar. In a fortnight they will be in a very forward state, at least they will be so far advanced to enable me to state to the Committee the date for the appearance of the advertisements.

You would have had the plans of land from Ashton to Weedon before this time, but I have been prevented from fixing the slopes in the Blisworth Cutting, owing to great fluctuation in the nature of materials, as shown by the different shafts. They are all now completed except one, which, in a week or ten days will have reached the required depth. We have been much delayed by water in sinking this cutting. I have also been compelled to increase the number of shafts beyond what I originally intended from the stratification of the materials, as well as the quantity of water being very capricious. The last named shaft will, however, furnish the requisite information both for determining the slopes and for proceeding accurately with the specification and plans. The Committee may now reckon upon my undivided attention to the Birmingham contracts. Both Mr. Phipps and Mr. Birkinshaw are and have for some time past been employed with plans for your division of the line.

Letter of 11 September 1837 to Richard Creed

By this time work was under way with the actual construction of the line. Some embankments were causing problems and evidently, too, the contractors were not very efficient. One of the problems caused by trains is the effect of vibration on the bed on which the track is laid. The vibration is worst on embankments and in cuttings. The effects of vibration are more destructive and serious the higher the speed of the train. Water, too, affects the bed, hence these letters, two to Richard Creed and one to Captain Moorsom on these matters.

To Richard Creed from R. Stephenson

I consider the objectionable parts of the permanent road between London and Tring are confined to the Brent, Colne and Boxmoor embankments together with some parts of the Aldbury contract. The three first named points must be expected to continue in imperfect condition until the middle of next summer and even at that period they will require constant and vigilant attention to keep them passable for engines at high velocities say from 20–25 m.p.h. In the Aldbury Contract the rails have certainly bent laterally since the opening to Tring for just previous to this opening I inspected the permanent way throughout this contract and considered the rails with some very few exceptions to be in fair working order.

I attribute the lateral movement which has taken place to two causes combined:

(i) The foundation of the blocks consisting of a mixture of chalk, gravel and a portion of clay may be considered unfavourable and easily affected by wet, especially for some time after its first formation.

(ii) The bearings being at a great distance apart, the hold which the blocks have of the ground is not sufficient to resist the side join*(sic)* of the engines and carriages.

Both these causes of disturbance will be gradually lessened.

I have requested the resident engineer to speak to the contractor and to arrange for more platelayers to be put on throughout this contract as the number is insufficient.

Letter of 2 January 1838 to Capt. Moorsom RN

The Brent, Colne and other embankments were still causing problems. Repairing embankments at night was considered dangerous if trains were also run at night.

To Captain Moorsom RN from Robert Stephenson

> Night travelling—I still hold to the opinion that repairs done during the day would cost less—but it's not a question of expense but safety. The portion of the line now opened and that to be opened shortly, contains, as the Directors are aware, some of the heaviest embankments ever executed, composed, too, of the worst possible material readily affected by rains. I am consequently quite prepared to expect that during the winter, after rapid thaws, we shall have considerable subsidence as well as lateral movement in the Brent and Colne Embankments, and also those completed recently at Stoke Hammond and Bletchley. During the day these movements can be watched and the rails kept in such adjustment as will admit of trains passing at moderate speeds; but during the night I am persuaded this cannot be done, in the case of movements such have incurred in both the Brent and Colne Embankments. When the road is worked during the day, I consider that in fact we have both the day and the night for keeping it in order; but if worked at night, the day only could be advantageously or safely used for repairing.
>
> Opinion is based on actual observation of the movements which have been and are daily taking place on almost all our high embankments and of the difficulty we have experienced in keeping some spots on the line already opened in passable order.

Letter of 27 June 1838 to Richard Creed

Further problems with embankments and train speeds at night

To Richard Creed from Robert Stephenson

> On the completion of the line throughout I consider that the speed of night trains ought to be very moderate over the portion of the line between Denbigh Hall and Rugby [the last part of the line to be opened because of the problems faced in the excavation of Kilsby Tunnel] as this distance comprises the Wolverton, Blisworth, Weedon and Hill Morton embankments all of which will require the greatest care to maintain the rails in good order. The speed over this portion should not exceed 15 or 16 m.p.h. Over the portions of the road already in operation the speed may be safely increased so that the average from London to Birmingham might be 20 m.p.h. including stoppages.

These are not the sum total of Robert Stephenson's letters to the Board of Directors [the precise number cannot be ascertained] and no concession has been made to style; the spelling appears to be perfect. The originals are handwritten and in a fairly legible script.

The letters reveal much about the character of the writer and the problems he faced as engineer in charge of building the London and Birmingham railway line. He was obviously skilled in his profession, meticulous in detail (he is said to have walked the route between London and Birmingham at least seventeen times in order to familiarize himself with the route.) and a man who served his Company well. The Directors were so pleased with him that they not only paid him a handsome salary, but presented him with the usual free pass to travel between London and Birmingham whenever he wanted to and for as long as he wished to.

Although he was much concerned with engineering and technical matters, economic and commercial matters did not escape Robert Stepehnson's attention. He realized that, in the final analysis, railways exist to transport passengers and goods, so he paid much attention to the siting of stations. There was considerable foresight in his

choice; all the stations between Euston and Watford eventually became very important for commuter traffic. King's Langley, too, although a village, benefited from the coming of the railway. A few years before the line was opened, paper mills had been opened in the area,[12] and these found the railway very useful for transporting both raw materials and finished products.

The cuttings, embankments and tunnels on the London and Birmingham line are substantially the same as when they were originally constructed. Since that time certain local failures of cutting and embankment slopes have occurred and consequent strengthening and drainage of the slipped areas has been effected. In some cuttings the track formation has broken down in clay sub-soils. This has been remedied by digging out the weakened clay and the affected areas have been blanketted with sand.

Considering just how little experience the builders had in constructing railways it must be acknowledged that they did a first class piece of work and when it was finished, Stephenson could well be proud of it, and rightly so.

ACKNOWLEDGEMENTS

The keeper of Public Records, for permission to quote from documents formerly in the possession of the British Transport Commission Historical Records' Department.

J. W. Tonge Esq., formerly Public Relations and Publicity Officer, British Railways (1956), London Midland Region.

NOTES

1 Peter S. Richards 'A note on two unpublished letters of Robert Stephenson' *Journal of the Railway and Canal Historical Society* Vol. xxix pt. 4 No. 138 1988 pp. 183-186.
2 Peter S. Richards 'A geographical analysis of some of the surveys made for the London and Birmingham Railway Line' *Transactions and Proceedings of the Birmingham Archaeological Society* Vol. 80 1962 pp. 17-25. Based on an analysis of the *Minutes* of the Committee of Survey of the London and Birmingham Railway Company.
3 Victor A. Hatley 'Northampton Hoodwinked? How a main line railway missed the town a second time' *Journal of Transport History* Vol. vii No. 3 1966 p. 161.
4 Harold Pollins *Britain's Railways: An Industrial History* 1971 p. 67.
5 Peter E. Baughan *The Midland Railway North of Leeds* 1987 p. 67.
6 Pollins *op. cit.* p. 67.
7 J. A. Francis *A History of the English Railway: its social relations and revelations 1820-1845* 1851, 1967 pp. 206-7.
8 Michael Robbins *George and Robert Stephenson* 1980 p. 3, 13 & 22.
9 Michael Robbins 'Railways and Willesden' *Transactions of the London and Middlesex Archaeological Society* Vol 26 1975 p. 310.
10 Peter S. Richards 'The struggle to obtain Parliamentary Sanction for the building of the London and Birmingham Railway line' *Stephenson Locomotive Society* No. v Vol. xlv no. 484 pp. 318-322.
11 Peter S. Richards 'Railways, Landowners and Farmers' *Journal of the Railway and Canal Historical Society* No. 1 1977 pp. 23-28.
12 Alfred H. Shorter *Paper Making in the British Isles: An Historical and Geographical Study* 1971 pp. 111, 119 and 153.

Park Royal: A Brief Note on Water Transport

BY JOSEPH BOUGHEY

John Armstrong's excellent article on the Park Royal Industrial Estate (JRCHS Vol. 30 pp. 459-468) omitted one small but significant influence on its development—its location close to the Grand Junction Canal, providing facilities for the interchange of dock traffics and the route to Birmingham. The canal could be used as an alternative to rail or road, or to provide a direct connection, mainly with materials imported through the Port of London, loaded overside, and lightered up the canal from Brentford or Regents Canal Dock. One early user was McVitie & Price, who built a dock on the offside of the canal; this survived into the interwar period.[1]

From 1929, when the Grand Junction amalgamated with the Regents Canal to form the Grand Union Canal Company, the canal was considerably improved. While the main improvements concerned the enlargement of the canal to Birmingham, there was also much dredging and piling on the barge canal, the lower reaches of which were viewed by the GUCCo as an elongated dock. Improvements included works on the provision of wharves at Park Royal which are still extant.

Referring to the Park Royal and Greenford areas, the Grand Union Canal Company's promotional handbook, 'Arteries of Commerce', asserted that 'many firms . . . have quickly realised the advantages of canal transport, and have taken land adjoining the canal on which to erect their premsies.'[2]

The most significant firm was H. J. Heinz, to which raw materials, in the form of preserves, were brought by canal from Brentford or Regents Canal Dock. The wharf facilities included the construction of a layby, and deep dredging, completed in 1936.[3] Even in 1959 all 14,000 tons of imported canned tomato puree and pickled vegetables used by Heinz arrived by canal, and further expansion was then under consideration; a small quantity of finished goods were sent for export by canal.[4] Traffics here survived until 1967.[5]

While Guinness did not, apparently, make use of the canal in the 1930's, it was certainly used in wartime. Beer in barrels was moved by the Grand Union's carrying subsidiary, in narrow boat pairs to Sampson Road in Birmingham, no doubt for onward local distribution.[6]

Road and rail transport were generally crucial to the development of Park Royal, but its proximity to the London docks gave canal transport an importance which did not apply to many other interwar industrial estates.

NOTES

1 Allamand J. L., *The Grand Union Canal in West London*, B.A. Dissertation, Liverpool University, March 1960, p. 15. Traffic to McVitie & Price had ceased by 1960
2. Grand Union Canal Company, *Arteries of Commerce*, Gloucester Printers Ltd, Gloucester, no date (c. 1935)
3. This is evidenced by the date set into the concrete banking by the Heinz works.
4. Allamand, *op. cit.*, p. 19.
5. Evidenced by newly accessioned, unclassified papers in the British Waterways archives at Gloucester.
6. Faulkner A. H. *The George and the Mary*, Robert Wilson Publications, Kettering, 1973.

The Impentitent Sinner

BY DAVID STIRLING

A number of authors[1] have commented on the differing views of the Highland Railway and the Board of Trade Railway Department and most have attributed this to the railway's failings in safety matters. Acworth,[2] in comments which contain a number of errors of fact, describes the railway as 'an impenitent sinner'. The tone of these comments suggests that the railway recognised the error of its ways and sought to evade its responsibilities. While the HR was by no means perfect, the actual situation was a good deal less straightforward than this suggests, for a series of incidents over a period caused the railway to develop a rather jaundiced view of the Board of Trade's officers, leaving the two of them odds over the method of working the line for almost forty years. I know of no comparable situation where a company became so estranged from the Railway Inspectorate.

It is perhaps worth recalling that the HR grew from the Inverness & Nairn and Inverness & Aberdeen Junction Railways, there being continuity of management through the succession of companies, and that these concerns arose to build a railway that others, notably the Great North of Scotland Railway, had failed to build. The various companies were financed and directed by the local gentry, who would not be accustomed to taking instructions from elsewhere.

The method of working the single line was the first source of friction between the railway and the BoT. When the Elgin–Keith section of the I&AJR opened on 18th August 1858, the single line was worked by the block system, with separate 'train telegraph instruments' for each section.[3] In this arrangement the station at one end of a single-line section asked permission from the station at the other end before sending a train, and the block instruments were kept at 'Line Blocked' until the train had emerged from the section. Permission to dispatch a second train, in either direction, could not be given until the first had been signalled clear of the section. This was very advanced for the time as most railways then, and for years to come, relied on time-interval to control their traffic.[4] On single lines time-interval working had to be supplemented by some means of regulating the direction of trains to avoid head-on collisions, the commonest one being the train staff and ticket system, although other arrangements were used. The Highland and its predecessors never used the time-interval system and so its traffic was always protected against the possibility of one train's overtaking the one in front.[5] The directors were no doubt rather pleased with themselves, not only for building the railway but also for their advanced views on safety, so it must have been somewhat galling when a letter arrived from the Board of Trade enclosing the L&NWR's rules for train staff and ticket working as an example of how things should be done.[6]

The BoT inspector on that occasion, Captain Tyler, did not endear himself to the railway with his subsequent performance on the matter of the Spey Viaduct at Orton. This was not opened with the rest of the line, being unfinished, and passengers walked over the viaduct between platforms at either end.[7] Tyler appears to have fallen out with everyone on this question, at one point apparently taking the view that the bridge was safe for double track (which had been laid for test purposes) but not for a single line. His objections must have had some substance, however, for alterations were eventually promised.[8] The railway appears to have taken matters into its own hands and opened the viaduct without BoT approval.

Tyler crossed swords with the railway again in 1863 on the opening of the Dingwall—Invergordon section, when he recommended using 'the train staff (or train ticket) for safety and the telegraph for convenience'.[9] This time the I&AJR Board deliberated on the matter and decided that the staff system was more suitable

for short lines and inappropriate for their railway.[10] This is not the place for a discussion of the merits of the two modes of working, but we should note that the staff system, which the BoT preferred and promoted at the expense of all other methods, did have serious drawbacks. The case had recently been forcefully put by John Hawkshaw, FRS, President of the Institution of Civil Engineers, 'But persons might be preserved from railway accidents by not going on a railway at all; and the train-staff system was an approach to doing away with railway travelling.' He considered that the staff system was wholly inappropriate to any railway on which the traffic was large.[11] (The problem with the staff system was the need to anticipate the sequence of trains to ensure that the staff was at the correct end of the section. If trains ran out of course, considerable delay could result when a staff was at the wrong end. The later introduction of electric tablet instruments was a way of eliminating this difficulty while retaining a physical token.) Others held the same view as the Highland, if not quite so tenaciously defended, and we find that the Great North of Scotland Railway used the same scheme of things. At the other end of the country, and on another gauge, the Great Western retained its block working without the train staff on the single line portion of its Exeter—Penzance line for another quarter century.[12]

The Highland was not shy about its views. In 1873 what was in effect an open letter was sent from the BoT to the companies on the subject of safety, complaining that danger was increased by the want of suitable appliances and hinting at legislation to come.[13] Matheson, as Chairman, wrote to the Railway Times in reply on behalf of the Highland, including the sentence 'The directors adopted the block telegraph system of working at a very early period, and at considerably outlay, not in consequence of the recommendation of the Board of Trade Officers, but against their opinion, as they did not seem at that time to have been so much convinced of its advantages as they have been since.'[14] This evidently stung the BoT, for it wrote to the railway enquiring when any of its officers had expressed an opinion against block working. The HR Board noted this, and approved the Chairman's letter.[15]

The Board of Trade did not like the HR's method of working, but it could do nothing about it as long as it was one of the methods permitted by the BoT 'Requirements' for new railways. A fuss was, nevertheless, made when the line to Wick and Thurso opened.[16] Shortly afterwards the 'Requirements' were changed and the HR's method of working was no longer allowable for new lines. This did not affect lines already open and a clash was inevitable when the HR opened its next line, the Buckie branch, in 1884. On this occasion, mindful that the same issue would arise on the Great North of Scotland, the inspectors laid down the law rather firmly, although the companies were given the option of adopting the then fairly new electric tablet system.[17] The Highland accepted the required form of words describing the way it would operate its Buckie branch, that there would only be one train on the branch at a time, although in practice the method of working was identical to that on the rest of the railway. As the traffic on the new line was light the matter was not really put to the test except on special occasions, when more than one train did venture onto the branch at the same time. Curiously, the railway was allowed to use its customary method without question on the Strathpeffer branch a year later.

By the late 1880s, the company was open to criticism on other grounds. While the signalling installed in the 1860s was up to the best current practice, with interlocked signal cabins at the junctions,[18] by 1889 the situation looked less satisfactory—that year only 53 per cent of the connections to the passengers lines were returned as interlocked.[19] This was partly a consequence of the decision to resignal only those stations at which the mail trains did not stop,[20] so that the larger stations had not been brought up to date, nor had modern interlocking been provided on the less densely used lines north and west of Dingwall. The bare proportion is unflattering to

the company since the large stations, at which all trains would be moving slowly, thus presenting less risk, had a disproportionately large number of connections. A reduction in the company's profitability may also have been a factor in its not re-equipping with the most modern signalling. The company was also behind the times in providing continuous brakes, Newall's brake still being in use on some trains.[21] The use of mixed trains, with the wagons in their usual place in the front, and of through carriages from companies using a different brake, ensured that the continuous brake was not always used, even if it was provided.[22]

For all that, the Board of Trade treated the HR gently even when it had the company at its mercy. One interesting outcome of an accident at Elgin in 1889 was the discovery that the company had not been reporting alterations to its track, as had been made obligatory by the Regulation of Railway Act 1871, an omission which rendered it liable for penalties. The railway pled ignorance and by September had supplied a list of 22 other 'offences' which it wished to be taken into account.

Nobody seems to have been troubled that the accident which occurred at Keith in July, and was investigated by Major Marindin, revealed further alterations not on the list.[23] It is recorded[24] that the HR used to issue 'Clynelish' whisky to staff clearing snowdrifts; but it did not give the Board of Trade the potential pleasure of inspecting Clynelish siding at Brora, another reportable alteration which went unreported. One reason for the BoT's leniency in the face of apparent transgressions may have been that the HR had a good safety record, perhaps from the Railway Inspectorate's point of view, an aggravatingly good one, for no passenger was killed on the line until 1894, and then only one person who was travelling in a horse box.

Shortly after this the Board of Trade wrote on 24th October 1889, indicating how it intended to use the powers it had acquired under the Regulation of Railways Act 1889 to compel the adoption of continuous brakes, interlocking, the block system and the printing of fares on tickets. The company's reply, on 23rd December, stated that it already complied with much of this and would do the rest as required, except for the matter of mixed trains, where it saw 'many difficulties'.[25] As the railways interpreted the BoT as envisaging all vehicles in mixed trains being fitted with continuous brakes the HR was far from alone on this, and the BoT, following pressure from the Railway Companies' Association, modified its position.[26] The Highland, as we shall see, was not so accommodating.

In due course the draft Order implementing this was sent to the railway. Although the BoT recognised that it had no power to compel the railway to alter its method of working the single line, it included the comment that the HR's block working was not as safe as the tablet or staff system. This brought forth a spirited reply from Andrew Dougall, the company Secretary and General Manager:

> 'With regard to Electric Tablet or Staff System I have to remark that the Block System has been in use on this line since its commencement, 35 years ago, and has been found in every respect satisfactory. My Directors are not therefore prepared to make any change seeing that the expense would be considerable and no benefit would be given to the public.'[25]

The company's position on mixed trains was weaker but it adopted an equally robust position. This began with a plea that the proposals would injure the traffic and that the HR was in a special position; this must have been rather boring for the BoT, for most railways claimed much the same.

For the next couple of years there ensued a string of petitions and letters of protest to MPs and quite an effective publicity campaign. The railway went as far as to publish the correspondence and protest to Parliament before beginning a legal challenge to the Board of Trade's Order. That at least singled the HR out, for railways generally no more challenged the BoT in the courts than did the BoT use the law to enforce its

will. It was not until the end of 1894 that the HR accepted the validity of the Order, on paper, at least.[25]

In its reaction to the draft Order the railway had claimed that the experience of the last 35 years had shown it that the comfort and safety of passengers was best ensured by placing the carriages of mixed trains behind the wagons. For the next few years the HR simply defied the BoT on the matter of mixed trains, marshalling the freight vehicles at the front, thereby depriving the passenger carriages of the use of the continuous brake and exposing them to a higher risk of breakaway caused by coupling failure. There were two well-known accidents on the Dingwall & Skye line arising from coupling failure, one of them occurring rather embarrassingly a few days after the new General Manager had assured Major Marindin that the BoT Order would be complied with.[27] The instruction about marshalling in the approved manner had actually been issued and came into force on 30th September 1897, when the HR fell into line on the question of mixed trains.[28] One consequence of the change was the necessity of shunting the passenger coaches of mixed trains into goods yards at certain stations. When, in 1905, a railwayman was injured by the carriages being shunted into the goods shed at Buckie, no comment was made by the BoT.[29]

Some time after the Highland conformed on most counts, 'Jones Goods' 4-6-0 No 103 shunts a southbound freight at Ballinluig. The station was not a point of controversy, having received interlocked signal boxes at both ends when the Aberfeldy branch was opened in 1865 (though the north end one was not replaced after a fire a few years later). The signalling was renewed to current practice in 1885 and 1919.
J. G. Spence Collection

The position on the working of the single lines was only slightly different. The old system was adopted on the new Hopeman branch in 1892 without comment,[30] but a year later when the Fochabers branch opened the company had to undertake that it would be worked by one engine in steam 'carrying staff.[31] Despite this sealed undertaking, this line was worked on the old system without a staff for many years, and the railway was even prepared to admit this in its returns to the BoT.[32]

The company could no doubt have resisted pressure for its existing lines to comply with BoT opinion for some time, as the Great Western did in the case or some single line tunnels.[33] However, matters were not so easy for new lines, which required approval before they could be opened. There had been one trial installation of the tablet system in response to the BoT's suggestion of it in 1884 (but, characteristically, the BoT was not informed of it), and the Aberfeldy branch received the tablet system in 1897, shortly before the new line to Kyle of Lochalsh, also fitted with tablets, opened. The following year a number of sections were converted, including the new direct Aviemore–Inverness section, and the rest of the line, other than a few branches, changed over in 1899. The Chairman stated the position thus at the April 1898 half-yearly meeting:

'The tablets, on which we have spent a considerable sum, are imposed on us: but that, again, is to promote the safety, efficiency and economy of the working of the line.'[34]

Given that the Highland Railway had spent nearly forty years in dispute with the Board of Trade on the matter of block working, the rapid capitulation seems odd, particularly since there is evidence that the railway tried to adapt its system to what we would now called tokenless block, although that, too, was anathema to the BoT.[35] The most likely explanation is the personalities involved. The HR had unusual continuity of its senior staff and several of those from the early days were still in harness until the 1890s. What had begun as a constructive difference of outlook, with the HR's position different but arguably as good as that of the Railway Inspectorate, had degenerated by the mid-1890s, with the railway's actions on mixed trains clearly indefensible. Can we detect old age causing the officers to become more awkward or, to use a Scots word, thrawn? About this time, however, there was a substantial change at the top of the HR, and the last of those who had served the company since its beginnings left the scene. In particular, Andrew Dougall, Secretary and General Manager for 41 years, left in 1896 and his replacement came from outside. By then the company had several senior staff from other railways, who would no doubt be accustomed to more conventional practice and who certainly did not have forty years of resistance to the BoT engrained in them. One wonders whether the railway Inspectors missed their old adversaries.

NOTES

1 H. A. Vallance *The Highland Railway*, David & Charles, London, 1985, W. M. Acworth *Scottish Railways*, John Murray, London, 1890, O. S. Nock, *The Highland Railway*, Ian Allan, London, 1965.

2 Acworth, *op. cit.*, p145ff. Acworth was under the erroneous impression that block instruments were not used. The crossing orders to which he refers were used in addition.

3 PRO, MT6/17/38.

4 See, for example, the Select Committee on Railways of 1869 (e.g. BR/SC(S)/1/15) to show how little block working there was. Even by 1875 the BoT returns (PRO RAIL 1053/187) show that other than on the Highland and the Great North of Scotland Railways, only 41% of double and 12% of single lines in Scotland had block working.

5 There is a period of a few weeks after the opening of the Dalvey–Elgin section about which we cannot be certain, as the telegraph was not ready for the opening (PRO MT6/16/44). It appears to have been provided by May 1858 when trains were scheduled to cross at Forres (Elgin Courant 23/4/1858).
6 PRO MT12/14, letter of 2/10/1858.
7 Report on accident at Mulben, 4th Sept 1858, (PRO RAIL1053/56).
8 There is a long series of reports on this in the PRO: MT6/19/31, /37, /41, /42, /44, /55, /59 and /64.
9 PRO MT6/27/36.
10 SRO BR/IAJ/1/8, minute of 10/4/1863.
11 *Proc. Inst. Civil Eng.*, 13/1/1863, p. 238.
12 BoT returns for 1887, PRO RAIL1053/189.
13 *Railway Times*, 19/11/1873.
14 *Railway Times*, 6/12/1873.
15 SRO BR/HR/1/2, MINUTE OF 6/1/74.
16 PRO MT6/124/15.
17 PRO MT6/368/2.
18 PRO MT6/26/31, MT6/32/9.
19 Interlocking returns to BoT for 1889, PRO RAIL1053/189.
20 SRO BR/HR/1/5, minute of 7/4/85.
21 Report on accident at Keith, 21/6/1889.
22 Reports on accidents at Aviemore, 25/7/1887 and Elgin, 14/2/1889.
23 PRO MT6/497/1.
24 J. E. Campbell, 'The Iron Track Through the Highlands', *Highland News*, Inverness, c1923, p. 128.
25 PRO MT6/1056/1.
26 Deputation of 7/1/1890, in RCA minutes, PRO RAIL1098/3.
27 Report on accident of 25/9/1897.
28 SRO BR/HR/1/10, minute of 1/6/1898.
29 Report of accident on 11/11/1905, in PRO RAIL1053/94.
30 PRO MT6/1690/8.
31 PRO MT6/632/4.
32 BoT returns for 1895, in PRO RAIL1053/189.
33 The tunnels at Ledbury, Colwall and Quakers Yard; see for example PRO MT6/389/6.
34 Half-yearly report, April 1898, in SRO BR/HR/1/10.
35 The HR's normal arrangements did not physically control the signals as in modern 'tokenless' block. For the BoT view on 'tokenless' block (then referred to as lock and block) see the comments of Major Pringle in PRO MT6/1815/9.

Before its time

BY JOHN DENTON

It may be a hackneyed phrase but it has applied to so much in the course of technical development. Sometime in the 60s, the West Midlands Group of the Society sat enthralled at a Birmingham lecture. The speaker had been allowed to examine and make slides of detailed drawings at Swindon Works of carriages and wagons from the Broad Gauge era. The slide that particularly thrilled was of a drawing that dated back a hundred years. It showed a new form of suspension devised by Brunel. It proposed to do away with springs and use instead a sort of rubber 'doughnut'. It thrilled the audience simply because the 'mini' had just come into existence—and one of its much publicised features was the 'newly invented' form of suspension: a sort of rubber 'doughnut'.

It is not necessarily surprising that the earlier invention fell by the wayside and was forgotten. Just as the leather flap valves on the atmospheric railways had their problems, rubber needs the advanced technology of today for successful utilisation. Even the early mini cars soon changed to something else, although an advanced form of the rubber doughnut is now in use on rail vehicles again. But another invention, well established once on both canals and railways, seems to have slithered into such oblivion that the media ignored its existence even though it continued to be used.

On November 30, 1966, *The Times* included a ten page supplement titled 'Container Transport'. The first word of the first article was 'Revolution'. The theme throughout was how this new invention was to revolutionise world transport—as, indeed, it has. It went so far as to introduce the subject with the claim that 'Containers are said to be the most important development since steam took over from sail'—and perhaps that is true.

But why, why, why did all the media then hail this advance as a new invention? Or should this question really be: why was something that had been established both on railways and even back to the beginning of the canals, so little used or underdeveloped by then that the wider world seemed unaware of its existence? Containers of coal swung by crude cranes from early wagonway bogies into canal boats were seen in several parts of our early canal system and the container spread to many forms so that by the 1930s the Great Western Railway was boasting of its daily increase and citing as a particular example its furniture removal service, door-to-door by container for the furniture and cheap travel facilities for its owners.

What went wrong? Had we rested on our laurels and failed to update the system? No solution is offered here; maybe readers know the answer. Perhaps nowadays it is fashionable psychology to suggest that something is only going to succeed if it is hailed as entirely new—like dropping the word 'railway' and calling it 'rapid transit' instead. Or were these things really 'before their time'? Could it be that a children's cartoon series a few years ago had the answer? It showed a group of children who were always out doing mischief, all, that is, except for a rather dozy but studious character called Marlon who stays at home inventing things. One day his sister looked over his shoulder and asked him what he was doing. 'I'm inventing the wheel' he said. 'But Marlon', said his sister, 'the wheel's BEEN invented'. Quick as a flash came the reply: 'not lately it hasn't.

The Challenge of Alternative Routes

BY STEPHEN BRAGG

The piecemeal development of many of Britain's main lines, and the competition between rival companies serving the same centres of population, meant that until the closures in the second half of this century there were few rail journeys of any length that could not be undertaken by more than one route.

Enthusiasts wishing to use these alternative routes to broaden their knowledge of railway geography were much helped by three factors:

1 Where alternative routes existed, the fare from one place to another was based on the shortest route;
2 Holders of ordinary and monthly return tickets could travel back by any recognised route, including one belonging to another railway; and
3 break of journey was permitted en route.

Note first that the fare was based on the shortest distance by rail between two places, not between two particular stations. The example given in Bradshaw's Guide for many years was that of the journey from London to Manchester. The fare was based on the distance by the LNWR route from Euston to London Road (now Piccadilly), which was 183 miles. Incidentally this was the distance via Macclesfield: it was 187 miles via Crewe. The same fare applied to the journey by the Midland route from St Pancras to Manchester Central, 190 miles; by the GNR from Kings Cross to Manchester via Retford, 203 miles; and by the GCR from Marylebone to Manchester, 206 miles. These four options all remained after Grouping even though two were worked by the LMSR and two by the LNER. That is, the new companies retained alternative routes within their own systems.

The shortest distance was defined by the shortest rail connection between the two places, whether or not passenger trains actually used that route. For example, I possess two single tickets issued at Edale on the same day, one to Chinley, which cost 10d, and one to Chapel-en-le-Frith via Chinley, which only cost 8d. The reason for the apparent anomaly is the existence of the curve from Chinley East to South Junctions, which reduced the nominal distance to Chapel-en-le-Frith by rail even though no service was actually provided over the curve.

Most of the alternative routes were originally provided by competing companies. Mr T. R. Perkins recalled a day return trip that he had made from Stafford to London Kings Cross via Derby and Grantham at a fare that was competitive with that of the LNWR to Euston, even though the distance was 47 miles longer each way. The distance from Paddington to Swansea High Street is 191 miles via the Severn Tunnel; but one could travel on an LMSR through coach from Euston to Swansea Victoria via Shrewsbury and the Mid Wales line at the same fare for 278 miles. Since break of journey was allowed, this concession must have brought down to the Swansea level the fares to intermediate places on the longer route, such as Llandilo, to which the shortest distance from London was actually 35 miles more than that to Swansea. I myself have travelled by an (almost) entirely LNER route from York to Boat of Garten via Aberdeen at a fare based on the partly LMSR route via Perth which was no less than 96 miles shorter. Coming back I amalgamated the return half with another, valid from York to Chesterfield Central, so that I could break my journey at Leeds: I arrived there on a through Newcastle to Liverpool express that went via Stockton, Harrogate and Wetherby! In truth, however, by the time I had reached Leeds the original ticket had been so perforated by travelling inspectors that I could have claimed almost any four-letter destination for it without dispute.

This story raises the question as to what could be accepted as a recognised route. There was often considerable latitude in this matter. For example the LMSR allowed passengers holding tickets from stations south of Rugby to Carlisle and beyond to travel via Manchester and/or Liverpool and to break their journey at either place. In general, before BR published its list of alternative routes, the best line of argument with ticket inspectors was the appeal to tradition—that the route chosen was a competing one in pre-grouping days. For example, I recall a friend telling me that he was sitting in a train at Crewe, bound for Wellington, when an inspector who looked at his return half ticket to London suggested that he would do better to catch a direct train to Euston from another platform. 'Thank you,' said my friend, 'but I prefer to travel by the Great Western Railway.' 'I quite understand, Sir' was the inspector's reply.

A second line of argument was that there was a through train between the two places which used that particular route. For example the train which left Peterborough East about 11 pm, and conveyed a travelling post office, ran through to London Liverpool Street via Bury St Edmunds and Ipswich: ergo, Ipswich must be on a recognised route between Peterborough and London.

A rather weaker argument, partly justified by the concession that allowed passengers from inner suburban stations to travel via London at a fare no more than that from the London terminus, was to suggest that the route being used was in fact the quickest between the two places. I once found myself on the platform of Leicester London Road station at an hour when the quickest way to get to Cambridge was to take the Yarmouth express as far as South Lynn and then to travel via Kings Lynn and Ely. This was allowed on the grounds that it was the late arrival of a connecting train that had prevented me travelling via Kettering, as would have been the normal route.

Using these three arguments one could construct all sorts of interesting roundabout journeys. For example Derby-Grantham-Peterborough-Ipswich-Liverpool Street in the east could be matched by Derby-Leicester-High Wycombe-Maidenhead—Paddington in the west. In the past I have persuaded ticket collectors that it was not unreasonable to return from Appleby to Derby by the LNER route—Darlington, York and Nottingham—and from Barnoldswick to Derby by the L&Y/LNWR/NSR route via Manchester, Stockport and Stoke. In contrast, I was present on an occasion on a Cambrian coast train when a ticket collector felt impelled to travel from Barmouth to Fairbourne with a passenger who held a return ticket from Pwllheli to Manchester in order to explain to him that it was not available via Dovey Junction. The matter was finally settled on payment of 10d excess fare!

Care had to be taken when breaking one's journey to ensure that it was resumed from the same place. A friend who held the return half of a ticket from Skipton to Derby heard that, because of track maintenance in Clay Cross tunnel, passengers were being asked to travel by Trent. So he determined to break his journey there. As the early train from Derby was not convenient to him he went to Trent by bus and caught the Leeds train there later in the day. The ticket collector argued that he had effectively started his journey at Trent and made him pay excess from Trent to Derby because he had not travelled from Derby to Trent. The application of logic does sometimes seem to produce a perverse result.

'But we don't have a fare to Derby via Leicester', I was told by a booking clerk at Euston, 'We never have had one'. 'Do you mean to say', I replied, 'that there was no through booking in 1850 when that was the recognised route?' It turned out afterwards that he had a fare via Tamworth: but I had no time to enquire if he could book me to Oxford or to Cambridge via Bletchley. Inevitably many decisions on

(concluded on p. 283)

Who was 'Veritas Vincit'?

BY MICHAEL ROBBINS

A series of 51 letters on locomotive management—or rather on the management of railway locomotive departments—appeared in the railway press between December 1842 and July 1847. They were written from Birmingham over the signature 'Veritas Vincit' (Truth Prevails). These were collected and reprinted in a single volume in 1847 under the title *Railway Locomotive Management . . . [reprinted from the 'Railway Record']*, printed for the author and sold by H. Winnall, High Street, Birmingham; Simpkin & Co., London; the printer was T. Ritson, 63 Carey Street, Chancery Lane, London.

These letters castigated several railway officers in a way that must have been very painful for them, and they urged on the Railway Department of the Board of Trade various courses in the furtherance of safety on the railways which that body was not willing, or perhaps rather was unable, to adopt. They were written with a freedom of expression, amounting sometimes to outright accusations of impropriety, of a kind which if published today would certainly lead to libel actions. The anonymous author put on his title-page the Shakesperian motto:

'I do confess it is my nature's plague
To spy into abuses.'

He was clearly well-informed, independent, and highly critical of much that was going on. J. E. McConnell of the Birmingham & Gloucester, then of the LNWR (Southern Division), was one of his favourite targets; so too was Matthew Kirtley on the Birmingham & Derby Junction and the Midland. But among all the polemics the letters give much factual information as to working practices and about wages and conditions of service for enginemen. The book is a useful source for the 1840s; it provided helpful material for a study I did of the dispute between the North Midland Railway and its enginemen (*Journal of Transport History*, 1st ser., 4 (1960), 180, reprinted in *Points and Signals* (1967), 132).

When I wrote that article, I had to say that the anonymity of 'Veritas Vincit' had not, so far as I knew, been penetrated. An old guess, in S. Cotterell's bookseller's catalogue (*The Railway Handbook*, Birmingham (1893), 94, item 309; reprinted 1969; Ottley 48) was that he was Peter Lecount, who had been engaged on the construction of the London & Birmingham Railway and wrote a description of that undertaking ([1839]: Ottley 6303). But this is not convincing, for the letters return again and again to the proposition that good enginemen deserved better pay and treatment, whereas Lecount wrote in his article on railways for the seventh edition of the *Encyclopaedia Britannica*: 'The present class [of enginemen] are working mechanics, and are too little interested to be as careful as is requisite; and in addition to this, they get more wages than with propriety they can spend on their family, which leads to a habit of drinking, and has occasioned loss of life in several instances.' The *Britannica* article was separately reprinted (Edinburgh, 1839) with some expansion as *A Practical Treatise on Railways*; the sentence quoted is on page 190.

A more likely conjecture is John Robertson. A number of people having this or a similar name were writing and publishing at this period. First was J. Clinton Robertson, editor of *The Railway Times* on its establishment in October 1837 by John Braithwaite, the engineer of the Eastern Counties Railway. In its earlier years *The Railway Times* had a strong bias in favour of the ECR John Clinton Robertson is listed by Ottley (5795) as author of a *Letter to Henry Northcott Ward Esq. on the progress and prospects of the Eastern Counties Railway Company* (1837). Charles E. Lee in his article 'John Herapath and the Birth of Railway Journals'. *Journal of the Railway and Canal Historical Society*, 15 (January 1969), 1, noted Robertson's connection with

Braithwaite and the ECR and mentioned incidentally (p. 5) that *The Railway Record* began publication on 13 April 1844 under the editorship of John Robertson, M.A. (late editor of *The Railway Times*).

It might be inferred from this that J. Clinton Robertson, first editor of *The Railway Times*, and John Robertson, M.A., were the same person. But it seems unlikely that this was so. Robertson was a fairly common name, and the coincidence would not be extreme; in our own day we have had two Robert Reids in succession as chairman of British Railways. The reasons for thinking that they were different people are that it would have been very odd for an established writer to change his title-page signature from 'J. Clinton Robertson' to 'John Robertson, M.A.' in the middle of his career; and, more to the point, the 'Veritas Vincit' letters are firmly based on Birmingham and show little familiarity with ECR locomotive affairs—there are only two references to them, on pages 133 and 155, the former admittedly as the result of a brief visit. (There was another J. Clinton Robertson (1788–1852) writing at the time; he was a patent agent in Fleet Street and joint compiler of the literary miscellany called the 'Percy Anecdotes', noticed in the *Dictionary of National Biography*; but his first name was Joseph.)

In spite of the titlepage statement that the letters of 'Veritas Vincit' were reprinted from the *Railway Record*, the first sentence of the preface states: 'Some of the earlier Letters of the following series appeared originally in the *Railway Times*, then under the Editorial management of Mr. JOHN ROBERTSON. When that gentleman retired from the Journal in question and established the *Railway Record*, the Writer commenced, and has continued, to address the public through the latter medium.'

He concludes his preface with the paragraph: 'With the Editor's permission, the *Letters* will be continued, as opportunity may serve, in the columns of the *Railway Record*—a journal which has from its commencement taken a very warm interest in every thing connected with the efficiency of the Railway system and the safety of the public, and which (as the Writer of these letters has had many opportunities of knowing) has in matters of LOCOMOTIVE MANAGEMENT proved for years "a terror to evil doers and a praise to them that do well".'

On the face of these words, the writer and Mr John Robertson were two different people; but they are more probably a disingenuous screen for the fact that they were the same person. It would be well within the convention of early Victorian journalists for a writer under one name to give a puff to his productions by piling heavy compliments on himself in another capacity; and the move of both John Robertson and the letters from the *Railway Times* to the *Railway Record* is consistent with this interpretation—indeed, it lends force to it.

The only fresh evidence I have found since 1960, when I originally put forward the identification of 'Veritas Vincit' with Robertson, is in a 32-page booklet *Midland Railway Memories: Personalities of Other Days: Lights and Shadows of the Railway Service*, by George J. Pratt (Hon. Sec. M.R. Institute), reprinted from the *Derby Daily Telegraph* by Harpur & Sons, 10 Friar Gate, Derby (1924). On page 19 is the following paragraph, headed 'The Loco.!':

'Mr Matthew Kirtley, in the struggle for position at the amalgamation in 1844, succeeded in becoming locomotive superintendent of the Midland, much to the annoyance of the 'Railway Record', which for many years had been very vindictive towards him, as well as towards his brother, Mr Thomas Kirtley, of the North Midland. This paper, or rather its editor, Mr John Robertson, M.A., a self-elected tribune before whom many people had prostrated, advocated the claims of Mr Josiah Kearsley, of the Midland Counties, but when defeated pursued Mr Matthew Kirtley and all his doings with the utmost venom for long afterwards. Most of the offensive matter appeared in the form of letters signed 'Veritas Vincit', but I am

going to deal with them on another occasion. These letters were of a very scurrilous nature, and were supposed to be written by an old schoolmaster named Marshall, of Birmingham, or by Peter Lecount, the author of a 'Practical Treatise on Railways'. I was told that the real secret was the writer's son, once a fireman on the Birmingham and Derby railway, had been discharged by Mr. Kirtley.'

There was a second series of Mr Pratt's memories (Derby, 1924, 76 pages: Ottley 6918), but there do not seem to be any further references to the 'Veritas Vincit' letters there. The Lecount attribution has already been rejected above. The idea that an old schoolmaster of Birmingham could have written a series of 51 lengthy contributions, exhibiting a close insight into locomotive management and personal acquaintance with many of the characters involved, is not persuasive.

One test which could be applied with a good chance of resolving the mystery is that of handwriting. My copy of the work (which as an inscription on the fly-leaf shows was given by one eminent student of locomotive history, W. J. Bell, to another, A. C. W. Lowe, at Xmas 1931) bears on its title-page the words, written in a bold and flowing hand: 'Mr James Moss from the Author'. We should be able to determine whether 'Veritas Vincit' was or was not in reality John Robertson by comparing an authenticated autograph of his with this manuscript. Until that can be done, or fresh evidence directly bearing on the point is produced, the balance of probability seems to be that he was John Robertson.

Book Reviews

RAILS THROUGH THE CLAY: A HISTORY OF LONDON'S TUBE RAILWAYS, Second edition, Desmond Croome and Alan Jackson, 574 pp. 245 X 180 mm, 174 illus, 12 maps and plans, Boards. Capital Transport, 1993, ISBN 185414 151 1. £25.

First published in 1962 this book soon became recognised as authoritative and it was reprinted in 1964. In this edition the work has grown from 406 to 574 pages and now spans a century instead of 72 years. The original text has been recast to include later research, to take account of modern additions to the bibliography and to correct such errors as thirty years have revealed. The new text records the events of the 28 years up to the end of 1990. By no means the least of the authors' achievements has been to chart the course of modern tube history through a political system in which, too often, sleight-of-hand seems to be a substitute for action. Apart from the major considerations of promotion, construction and development the myriad details are carefully chronicled—stations, power supply, depots, track, trains and signalling.

A straightforward style and a deft sense of humour make for a very readable text despite the mass of material handled. The illustrations are well chosen from the LT Museum and other collections, the main omission being a portrait of the American financier Yerkes. The Chapter Notes are much more than bare references, the extensive biographical passages on the prominenti being especially welcome. There are appendices for opening dates (the addition of distances would have given a useful ready-reckoner for total route miles), accidents, lifts and escalators. A select bibliography is followed by that vital tailpiece, a 19 page index. Good proof reading, clean production and a handsome symbolic jacket based upon the orange of London clay all contribute to a pleasing volume.

In the course of the complex story there are surprises. One might have expected that with the City location and its patent need for better public transport, money would have flowed in freely, but in fact there were often the same financial problems as were encountered in rural districts, namely difficulty in raising capital and (initially) meagre traffic requiring borrowing to meet day-to-day expenses. Illuminated track diagrams dated from as early as 1905 and the dead man's handle and pinch-wire tunnel telephone were also very early features. On the Yerkes tubes of 1906/7 the signals were spectacle plates moved vertically by compressed air, with oil lamps which were apt to be blown out by strong draughts, although the existing tubes already employed electric signal lamps. There are curiosities also; the reader will learn of stentorphones, hustlers and fluffers, as well as knowing what the compromise height is and why Eros left Piccadilly in 1924.

For such a large work there are very few loose ends or question marks. However, one wonders for example, what was 'the full parallel position' which Waterloo & City drivers could not use (p. 34)? Was the GER Decapod locomotive of 1902 really so heavy that it 'smashed up the track beneath it' (p. 56) or was it rather that its regular use would have required bridge-strengthening? There is a reference to 'The closed station at Dover Street' (p. 273) but no other indication that it was ever closed as a station, although a new ticket hall and entrances with a new name (Green Park) were provided in 1933. This reader would have appreciated a general tube map because existing maps show many other railways. The tubes, although part of a transport system, are separate from the other lines in their nature and because of their limited physical connections, and with this book the reader has to 'think tube'. Another map, dated 1901 and showing the existing tubes, those authorised and those for which Bills were under consideration, would also have been welcome.

This is a magnificent history, of Byzantine proportions, full of interest but more than that; it is of great current significance because these railways are a vital part of everyday London life. They are beset by major problems, solutions to which may be found in part from a knowledge of previous events. The book should therefore be read, not only by those interested in the history of London and its railways, but by London's politicians and transport mandarins, for in their task of finding answers they cannot have too much knowledge. HARRY PAAR

ROAD TRANSPORT BEFORE THE RAILWAYS: RUSSELL'S LONDON FLYING WAGGONS, Dorian Gerhold, xvii + 316 pp, 19 illus, 5 figs, 6 maps, 24 tables, boards, Cambridge University Press, 1993, ISBN 0 521 41950 6, £35.00.

This book is highly recommended, not just to those interested in the early history of road transport, but also to those whose interest in railways includes their relationship with other modes. We recognise that many features of the first 'modern' railways of the 1830s were derived from the canals (e.g. their financial structure, and civil engineering technology), from the edgerail tramroads, and to some extent from road transport (e.g. the standard gauge and the early passenger carriages). But it is much less appreciated that there was a similar continuity of development from the long-distance road carrying industry into the new railways. This was an industry which already had a very long pedigree; a national system for carrying cloth from the wool-growing regions for export though the port of London had probably been established by the early 14th or early 15th century.

This is the history of one firm, which became the principal carrier between the West Country and London, and one of the largest in England. From 1768 to 1843 it operated under the name of successive generations of the Russell family. However, it can be traced further back: certainly to 1673, probably to the 1630s, and possibly much

earlier. Russell's main service ran from Exeter to London, with connecting services from Plymouth and Falmouth. By the 1760s the firm was operating a daily (except Sunday) service of 'flying waggons', travelling continuously day and night, with changes of waggoners and horse teams at intervals, and covering the distance between Exeter and London in 4½ days. Like the railways, they did not provide a door-to-door service. The waggons operated on a fixed route with fixed calling points in intermediate towns. The collection and delivery was done by local carriers, who provided subsidiary services feeding into the calling points. They were at least as reliable as the later railways; delays longer than a few hours were rare, even in winter unless there was heavy snow, and losses and damage of goods were low.

Later in the 18th century the firm established what is recognisable as a company structure. It set up its own premises along the route—replacing its use of inns—with its own bookkeeping, waggon repair workshops, and direct purchasing of horse provender (which represented over half its total costs). The railways' bookkeeping methods for goods traffic, using way bills and road books, were based upon long-established carriers' practice, as were the terms *up* and *down* to indicate direction of travel (the earliest use of these terms found by the author was in 1727, nearly 60 years before the first reference quoted (in relation to mail coach services) in the Oxford English Dictionary).

During the past twenty years it has been recognised that earlier historians were mistaken in believing that there was insignificant long-distance transport of goods by road, because of high costs and the poor state of the roads. This thorough piece of research considerably extends our understanding of how the industry was organised and its economic significance.

It is perhaps the closing chapters on how the railways swept away the long-distance carriers that are of greatest interest to the railway historian. The author suggests that it was the quest for speed that led to their demise. This was the period of canal fly boats and early trials of steam vessels and steam carriages. In 1821 Russells responded by introducing a daily service of lighter 'fly vans' for perishable and very urgent goods, complementing its flying waggon service. They travelled at a speed of about 6 m.p.h. and offered a journey time from Exeter to London of 36 hours, but at higher prices which could only attract limited traffic. They were not a great commercial success and were withdrawn after ten years. But it was also the quest for speed that brought on the development of the railway. As the GWR and L&SWR advanced towards the West Country, the waggons could compete neither on speed nor on price. The carriers tried to realign themselves as railway carriers, as their road services shrank back into the areas not yet penetrated by railways. The most successful, like Pickfords, became railway agents. But most of those that managed to continue in business did so in a much reduced role. The rump of the Russell firm survived as a cartage and forwarding agent in London until the nationalisation of the road haulage industry at the end of 1947.

The publishers are to be commended for the fine quality of production, giving one the feeling that one has got value for the book's relatively high price.

GRAHAME BOYES

QUAKERS & RAILWAYS, Edward H. Milligan, 40 pp, 290 × 205 mm, 71 illus, 3 diagram maps, soft covers. Sessions Book Trust, York, ISBN 1 85072 099 1. £4.

This is an attractive, if slight booklet pointing to the connections between the English Quaker community and the railway world, and the relationships of these people with one another and in particular with the Quaker School at Ackworth. As the author writes, it is an episodic rather than a logically developing story, which is another way of saying that it is rather scrappy. The principal names are Abraham Darby, Edward Pease and his family, James Cropper, John Ellis, Samuel Bowly, George Bradshaw, Thomas Edmonson, the Clarks of Glastonbury, the four Worsdells, James Holden and Philip Burtt. These were directly engaged in the railway business. There are also Charles Holden, the architect for the Underground (with a typically scrupulous note that he was never in fact a Friend), George Ottley the railway biographer and James Tangye who murmured on his deathbed: 'I *love* trains'. The story of the naughty boy from Bootham who scaled the North Eastern's head offices at York in 1916 and painted his initials in huge white letters on the roof is here too. But there is no attempt to explore the financial network among Friends in Darlington, Norwich and London that put up the money for the Stockton & Darlington.

Members of the RH&CS will reach for their reference books to check some of the statements: that Edward Pease was a 'coalowner'; that the Somerset & Dorset was jointly leased by the Midland and the L&SWR in 1889—the operative Act was 1876; that the compartment carriage dates from 1838. They will find little sketch-maps unsure of the way some of the junctions faced. But these are relatively trifling things which do not detract from the appeal that this well-illustrated production will have for Friends and others who can appreciate the sincerity and shared beliefs of their persuasion. MICHAEL ROBBINS

TRAMWAY LONDON—Background to the abandonment of London's trams 1931-1952, Martin Higginson (Edt), 73 pp, 295×210 mm (A4) numerous illustrations, card covers. The Light Rail Transit Association, 13A The Precinct, Broxbourne, Herts EN10 9HY. ISBN 0948106 16 6. £5.95.

This production is exactly what it says it is—it provides background to the total abandonment of a network of 300 route miles, which in the 1920s were operated by 3,000 cars carrying 1,000 million passengers a year. It is a collection of four essays. The first is by Oliver Green and Martin Higginson entitled 'London's Tramways in their years of decline'. This reveals that, although the climate of opinion was increasingly hostile, 1933 was a turning point, the LCC among other operators were willing to go forward, but the LPTB were not. Ian Yearsley explores the hitherto almost closed book of tramway finances. He reveals the almost incredible fact that loans (no risk capital was possible for the 'Municipals') were repayable over 40 years for assets with a life of half or less, while 'profits' were diverted to the relief of municipal rates. Whereas if the LCC system were 'commercial' it would have paid 5%. J. H. Price deals with technology and gives a mixed impression of innovation and stagnation. One of the millstones round the LCC's neck was the high-cost conduit system of current collection forced on them by the Boroughs' refusal to allow overhead on environmental grounds. An interesting hitherto unpublished report by A. D. Murdoch of Melbourne Tramways on his 1933 visit to the LCC system completes the collection and gives a good impression of aspects of management and operation.

The book is lavishly illustrated with well-chosen photos, including the innovative 'Feltham' cars of the LUT and MET Companies. Worthy of comment is the one of Turnpike Lane showing the direct connection between the islands of the tram stop and the station below. Would there have been more of such integration.

The overwhelming impression is London's pathological dislike of its efficient people mover. Every obstacle was put in the way of development, including police prohibition of windscreens to protect drivers. It is a book to be recommended as source material for an important aspect of transport history. H. P. WHITE

THE ROMANCE OF SCOTLAND'S RAILWAYS, D.St. John Thomas & P. B. Whitehouse, 208 pp, coloured frontispiece, 170 photo illus, 12 reproductions of coloured postcards, endpaper map, maps & plans in text, sketches, gradient profile, copy documents, boards. D.St. John Publisher P.O. Box 4, Nairn IV12 4HU, ISBN 0 946537 89 5, £19.95.

This most attractive book is a profusely illustrated volume of articles, essays and anecdotes covering a wide variety of Scottish railway subjects—so wide and varied as to resist concise analysis. Sadly two of the principal contributors died last year.

In the wide-ranging introductory chapter we are told that the NBR was never in the top dozen British companies, yet in 1914 it ranked seventh in terms of net receipts and fifth in route mileage. Lesser known features are discussed, such as the Monkland Railways, the Caledonian lines serving the Lanarkshire coalfield and the working of iron ore trains to Ravenscraig steel works, all with maps.

The order is not always easy to follow. A 'filler' entitled 'Beyond Aberdeen' deals briefly but competently with the GNS lines although Cairnie Junction appeared in public timetables long before 1965. A snippet on traffic working at Maud Junction appears in the margin of the following chapter on carriages. There some enlightening paragraphs on GNS section traffic working in an earlier chapter headed 'The Scottish Country Railway'.

There are short but capably written histories of five individual Scottish locomotives and the work of locomotive building establishments is covered. There is an article on priately-owned lines—and much else.

Amongst tabulated information is a list, not entirely complete, of closing dates of lines from 1930 onwards. There is a list of all locomotives of Scottish pre-grouping origin or design extent at the end of 1947 with shed allocations. Also a list of Scottish engine sheds at the same date with the engines allocated to them.

The photographs are well reproduced, with locomotives very much to the fore, mostly taken in the period 1948–1967. Those of the grouping period show 22 LMS and only 5 LNER, with only 20 pre-grouping scenes.

Whilst not a history as such the book contains useful historical background, and is a good introduction to the railways of Scotland. It contains a useful index.

D. F. TEE

SOUTHAMPTON'S RAILWAYS, Bert Moody, 144 pp, 216 photo illus, plans and diagrams, boards. Waterfront Publications, 463 Ashley Road, Parkestone, Poole, Dorset, 1992. ISBN 0 946184 631 1, £15.95.

Members who attended the 1993 Annual General Meeting at Southampton will recall Bert Moody. He is a retired railwayman who worked in the Southampton area for nearly 50 years. During this time he has been studying railways and ships in Southampton—for much of the time the railway owned and managed the docks and links between sea and rail were close. He retired when the District Office at Southampton was closed rather than leave the area, which is one of the reasons for the high quality of the book.

The work begins with sufficient introductory material to place the Southampton railways in context, but most of the book is devoted to a detailed appreciation of the Southampton railway scene. The author first examines the various stations, eight out of ten being still open. All of them are associated with the trains which over the years have either called or passed. Next he looks at the railways on the Town Quay, Royal Pier and in the docks including a section on the industrial railways, train ferries of the First and Second World Wars, also the famous South Western Hotel and finally there are some notes on the railway steamers, the last of which were withdrawn from Southampton in 1972. Needless to say, based upon so many years of study illuminated by practical experience, the text is impeccable. However even more outstanding are the numerous photographs, supplanted by plans and diagrams. Although communication is not the publisher's strong point, the book is both well produced and reasonably priced. It is difficult to imagine a better work on Southampton's railways. EDWIN COURSE

MAP OF EUROPEAN WATERWAYS, David Edwards-May, 94 mm × 54 mm folded, three colours. Produced by and obtainable from Euromapping, 20, Quayside, Bridgwater, Somerset TA6 3TA, ISBN 2 910185 00 1. £6.50 inc. p&p.

The breaking down of the Iron Curtain and the freedom of transit that has resulted from this political re-ordering of Europe has made nearly all maps of Europe incomplete. This is particularly so in relation to navigable waterways where interconnections are now possible between the waterways of France in the West to Ukraine in the East. Or, for those willing to skirt the coastline of Estonia, even to the River Volga itself. These flights of fancy are now clearly visible on one of the two maps which on a scale of 1:6,000,000 stretches from the Atlantic to the Caspian Sea and from the Mediterranean to the Baltic.

A second map on a scale of 1:3,600,000 covers the nearer cruising areas in far greater detail with distances and the number of locks between fixed points clearly displayed. Colour shaded highland areas bring out the major problems the waterway engineers had to face when constructing such a comprehensive network.

Inset maps on a scale of 1:2,000,000 define the waterways of Ireland and the Benelux-Ruhr in greater detail, whilst insets of the Midlands, Norfolk Broads and London on a 1:1,000,000 scale together with a map of Paris show how the mass of waterways interlink in these major boating areas. Additional inset maps of Sweden and Finland at 1:3,500,000 scale and Italy at 1:2,000,000 complete this major mapping advance.

This is a must for every waterways enthusiast and even the armchair sailor. It offers to all for the first time in compact form the waterways atlas they have been looking for since the Berlin Wall came down. Whilst the maps can be used for route planning they cannot take the place of the detailed navigation charts. However they do place in context the inter-relationship of the canal and river links that offer us such a splendid opportunity now to visit places by boat that were forbidden just over four years ago. David Edwards-May and his team are to be congratulated on their efforts in publishing such a splendid set of maps. ROGER W. SQUIRES

THE CULM VALLEY LIGHT RAILWAY, Michael Messenger, 96 pp, profusely illustrated, photos, maps, plans, drawings, reproductions of timetables, boards. Chy Mengleth, Twelveheads, Truro, Cornwall TR4 8SN 1993, ISBN 0 906294 29 0 £12.95 (post free if ordered from publisher).

Opened in 1876 and finally closed in 1975 the Culm Valley Light Railway served the rural Culm Valley in east Devon, linking the small towns/villages of Hemyock,

Culmstock and Uffculme with the main GWR West of England line at Tiverton Junction. For the greater part of its life much of its traffic was provided by the dairy at Hemyock. Like so many lines which served rural areas it was never prosperous financially and was obliged to sell out to the GWR as early as 1880.

The present volume is the first full history of this fascinating branch line. It traces the inception and construction of the concern, its brief period as an independent railway company, its life as a GWR and later BR branch line and subsequent decline and closure, which was finally brought about by the closure of Hemyock dairy. Subsequently this establishment was reopened for the production of butter substitute, but by then the railway was no longer there and all distribution has been by road transport. A full description of the line, its stations and other features is given in Chapter 6 which is entitled 'The Journey up the Valley'.

Appendices include a brief chronology of the main events in the history of the branch, details of locomotives that worked the services, a summary of timetables from the 1876 opening until the cessation of passenger traffic in 1963, and a list of shareholders.

Production is of a high standard, art paper being used throughout and the book constitutes a well researched and balanced account of a charming rural branch line. There is also much interesting material concerning the Culm valley itself, which is a part of Devon that is not nearly so well known as the popular holiday coastal areas. Highly recommended. NEIL PITTS

WREXHAM RAILWAYS—A COLLECTION OF PICTURES, A Bodlander, M. Hambly, H. Leadbetter, D. Southern and S. Weatherley, 111 black and white photographs, maps and track diagrams, Bridge Books, 61 Park Avenue, Wrexham, Clwyd LL12 7AW, 1993, ISBN 0 872424 28 7, £6.95.

Wrexham, largest town in Wales north of the Valleys, has been served well by a succession of historians writing on different aspects of it. All have had an eye for accuracy, detail and colour. This paperback, by a group of well qualified authors, continues that tradition.

Commendably clear, extended-caption photographs capture the flavour of an area where the GWR was dominant, the Wrexham Mold & Connah's Quay prominent, and the Cambrian Railways and LNWR had a presence. Also remembered are the systems of local coal mines and steelworks. A second volume is under discussion. REX CHRISTIANSEN

Shorter Reviews

THE LEOMINSTER CANAL—a reproduction of the 1789 survey by Thomas Dadford junior, R. Dean, 610 mm × 432 mm, folding into plastic wallet, published by and obtainable from M & M Baldwin, 24, High Street, Cleobury Mortimer, Nr. Kidderminster, Worcs DY14 8BY, £2 + 40p p&p.

The second in the series of historical waterway maps from M & M Baldwin, it is a facsimile reproduction of a plan of the intended canal from Kington to the River Severn near Stourport. 'Intended' is the operative word. Much of the canal was never built but the plan shows the whole of the proposed route. Accompanying the map are extensive notes on the history of the canal, a list of Acts of Parliament, table of distances and a history of the map itself. Of considerable historical value.

LORD ORFORD'S VOYAGE ROUND THE FENS IN 1774, 64 pp, portrait, diagrammatic map, card covers. Published by and obtainable from Cambridgeshire Libraries, £4.

This is a reprint of an account first published by Edwin White of Doncaster in 1868. With an introduction by H. J. K. Jenkins and notes by Mary Liquorice it describes a voyage in Fenland, much having been undertaken under sail. Three participating members of the crew have given their accounts in diary form.

THE FINTONA HORSE TRAM, N. Johnston, 96 pp, numerous photo illus, maps and diagrams, card covers. Published by and obtainable from West Tyrone Historical Society, c/o Ulster American Folk Park, Camphill, Omagh, Co. Tyrone, NI, 1992, £5.95 + 50p p&p.

Sub-titled 'The Story of a Unique Irish Branch Line' the book consists of a full history of what surely must have been one of the shortest of all branch lines. The origins of the Omagh-Enniskillen line, from which it formed a branch, are also described, together with rolling stock, operations and final closure in 1957. Mention is made of the personalities involved in the running of the railway, and also of the latter day motive power, the last horse called Dick. An ideal example of a history of a small branch line.

IRISH STEAM LOCO REGISTER, J. W. P. Rowledge, 144 pp, profusely illustrated, card covers. Irish Traction Group, 31, Hayfield Road, Bredbury, Stockport SK6 1DE, 1993, £13.95.

This is a comprehensive catalogue of all known steam locos that worked in Ireland. There is a summary of engines by builders followed by a detailed list of the engines of each railway/tramway company, and those owned by industrial concerns and contractors. There is an index of locos and details of preserved items.

LNWR GREAT WAR AMBULANCE TRAINS, R. A. Millard, 46 pp, photo illus, drawings, diagrams, card covers. Published by LNWR Society Publications 1993. Obtainable from the Societys Sales Officer, E. M. Bray, 48, Richmond Road, Nuneaton, Warks CV11 5LT, £6.75 inc. p&p.

The latest publication by the LNWR Society, Premier Portfolio No. 11 describes the ambulance trains provided by the LNWR for military and naval personal in the war of 1914–1918. The scope covers all forms of ambulance trains, Continental, US Army, Headquarters Staff trains, Home and Naval Ambulance trains. Although primarily concerned with the substantial LNWR commitment, contributions to the pool of ambulance carriages by other railways are mentioned. An appendix illustrates conversions carried out to ambulance vehicles on their return to railway service.

NORTHERN WASTES: THE STORY OF THE UNCOMPLETED NORTHERN LINE EXTENSIONS, Jim Blake and Jonathan James, 48 pp, 81 photo illus, 19 drawings, diagrams and plans, card covers. North London Transport Society, 8, The Rowans, Palmers Green, London N13 5AD, £6.95.

This a full account of the pre-war plan to extend London Transport's Northern Line from Finsbury Park to Highgate and Alexandra Palace, and from Finchley Central to Edgware and Bushey Heath: 'what was intended, what was completed, what was wasted and what remains today'. Originally published in 1987 it has now been reprinted with the addition of a postscript on the inside back cover. As a facsimile reprint the quality of the reproduction is not as crisp as the original, but it is still recommended for those who missed it first time round.

INDUSTRIAL LOCOMOTIVES OF SOUTH STAFFORDSHIRE, R. M. Shill, 172 pp + 24 pp photo illus, 12 maps, card covers. IRS Publications, 28, Tennyson Way, Melton Mowbray, LE13 1LJ, £14.95 (also available hardback at £17.95) inc p&p in each case.

The newest offering from the IRS relates to the area covering the Cannock Chase coalfield together with Lichfield, Tamworth and Burton-on-Trent. Much new material has become available since earlier editions included this region in pocket books entitled 'Industrial Locomotives of the West Midlands'. Last year a fresh Handbook with the same title was published relating to the new county of that name and further books will cover the adjacent parts of the Warwikshire and Worcestershire and also North Staffordshire. The format of these books has been standardised, with a great deal of information about the various industrial concerns as well as their locomotives. In this connection the brewery railways of Burton feature strongly as well as the NCB lines. Preservation sites, engineers and dealers and non-locomotive worked lines are included. The illustrations are well selected and reproduced. The work maintains the high standards one has come to expect of IRS publications. Highly recommended to all interested in industrial railways.

(continued from p. 272)

what was and what was not an alternative route were made on the spot in individual circumstances as the result of more or less plausible argument by those involved. So let us hope that this note will unleash a flood of reminiscence that will enable us to define the boundaries of legitimacy a little more clearly.

NOTE

The Southern Railway had a concession for Cheap Day tickets (and perhaps also for Week End and Monthly tickets) that the return could be made from any other SR station on payment of the difference in fare, if any. This was of great benefit to walkers and cyclists—Editor.

Correspondence

Sass and Soss

Sir—Keith Fairclough's article 'A Survey of the River Lea by Sir Christopher Wren' in March and July 1993 R&CHS *Journal* was of great interest, not least because it appears to confirm my belief that the OED definition of *sasse* (summarized as note 27, p 110) is inadequate. Sir Christopher's report refers to 'Sluices and Sasses' (p 15) from which it would seem that a *sasse* was not merely a *sluice*, and 'Locks or Sasses' (p 16) which infers that a *sasse* was not merely a *lock*. Ablaut—by which I understand a modification of meaning is conveyed by a vowel change within a word—suggests that *sasse* and *soss* were not alternative terms describing identical devices.

My research into Vermuyden's work on the rivers Idle and Don has led me to believe that the term *sasse* described a guillotine gated pound-lock, intended to exclude the tide and/or enable the level upstream to be run down in high-flow conditions, while permitting vessels bound in either direction to pen up or down in normal-flow conditions, and to assist navigation upstream by admitting the flood tide in low-flow low-depth conditions. Such a device would need to be manned. Vermuyden found it necessary to augment the flood-water releasing capacity of Tornebrigg (Turnbridge) Sasse with sluices, and self-acting sluice gates were eventually provided at Misterton, long after its *sasse* had become a *soss*.

The term *soss* appears originally to have described a mitre-gated pound-lock having gates which pointed downstream, unlike the conventional *lock*, which has gates pointing upstream. Definition is, however, confused by local inconsistency; Thorne Sasse was apparently rebuilt as a conventional lock, became a soss as the consequence of changes elsewhere, when it was known as 'Thorne Sluice'.

The OED attributes *sasse* to the Dutch *sas* 'of obscure origin'. In my article 'Soss on the Idle' *WW* August and September 1991, pp 92-3, I showed there is reason to believe the term was current during late Saxon times. Vermuyden appears to have reintroduced the term.

Irrespective of whether or not you consider the foregoing suitable for publication as a 'letter to the editor', I would be most grateful if you will forward the enclosed copy to Dr Fairclough. I would be very interested in his comments, and to learn if he has been able to establish whether there were structures on the river Lea to which the term *sasse* was applied, and if so whether it has been possible to recover details of their situation, construction, and manner of use. I look forward to reading his 'Navigation devices along the River Lea 1600-1767', and if he now knows the date of its publication I would appreciate that information. PAT JONES

Canals and Music

Sir—Philip Scowcroft poses the question of what pieces of music have a waterway connection. Leaving aside the 'Song of the Volga Boatmen' and other pieces with a Venetian connection (since we are concerned with British Railways and Canals), I should like to note some examples from my record collection. I should note that my interest is particularly in recorded sound, rather than the music itself.

There have been a number of recent recordings by waterway-oriented groups of their own material. Mikron Theatre Company have now released five albums: Last Run (1977: PBR-5001), I'd go back tomorrow (1979: Allemande ALP1001), Mud in your eye (1981: Mikron MTC1), Over the top (1983: MTC2) and Mikron V (1987: MTC3). All except Over the Top (which is songs about ways over the Pennines) are full of songs about the canals. Mikron have performed a number of musical plays

which do not feature in their albums, and some of the songs from featured shows have also not been recorded. The Day Star Theatre Company perform a similarly waterway-based repertoire, but as far as I know have not recorded any of their songs.

A group called Pumpkin Pie recorded an album of their waterway songs in the 1970s but I do not have a copy and am unable to give details.

The Restorers, who are a group of musicians belonging to the Manchester Bolton and Bury Canal Society, have issued a tape containing songs and poetry, entitled Reflections on the MB&B Canal (1991: MBBCS).

Ian Wallace recorded in 1957 a song called The Gay Gondolier—about the only gondolier on the Manchester Ship Canal! (Even if he was a bit out in declaring 'The Transport Commission gave me permission—one gondola, Canal or Tamesis'—in that BTC never controlled MSC or Thames!) The song was credited to Flanders & Swann and was issued on Parlophone GEP8642.

I have a curious 78 which must date from around 1930, credited to Bob Smith's Ideal Band (artists) and Park and Smith (writers), entitled 'The Canal Cruise', Part 1 on side one and Part 2 on the reverse. It consists of a poetic monologue about a cruise on the Forth & Clyde Canal, illustrated by the artists and music who performed on the boat. It was issued on Beltona DeLuxe, number 1541 (Matrices M.12795/12796). Since this item must now be out of copyright, I would be pleased to send any interested a copy on receipt of blank tape.

I am sure there must be many other waterway songs, which no doubt this corrrespondence will elucidate in due course! RICHARD CHESTER-BROWNE

Passenger Stations

In the March 1993 Journal Michael Robbins gave us an excellent up-date on the first two and their cosmopolitan setting with reference to the recent developments at Liverpool Road Station Manchester. The only problematical paragraph is the second on page 3, dealing with the definition of a station. The following questions must have been asked before but re-clarification would be useful (see page 151 in the July Journal).

1 Should not the first phrase say specifically that 'a station is a stopping place for passenger trains?'
2 Why must the stopping places be attended by railway staff or by any staff at all?
3 Is the word channel (from French and Latin for a canal or trench) correct in the definition of a railway station?
4 Does it matter whether authority to travel comes from the station or on the train or, as on the latest development at Manchester, from the passenger before he enters the train?
5 However desirable a sheltered area may be is this within the essence of a station?

If the Robbins definition stands this means that the 94 miles of primarily passenger carrying railway between Newport (Gwent) and Shrewsbury has stations at only Cwmbran, Abergavenny and Hereford, leaving Pontypool Road, Leominster, Ludlow, Craven Arms and Church Stretton as halts or platforms.

Bearing in mind the origin of the word station as well as its use in railway parlance, why not define the word as 'the place where advertised trains start or stop to pick up passengers and to allow others to alight?'.

On the route mentioned above, as doubtless elsewhere, it is amusing to note that the normal BR intercom message is 'Ladies and Gentlemen *we* are now approaching

(say) Ludlow. The next STATION stop is Ludlow'. One would hardly expect BR to go in for stations, halts and platforms but considerable thought has probably gone into this message. The emphasis is on the next station stop. The non-automatic 'slam door' is not yet obsolete and in the event of a signal or emergency stop before the station is reached, well, the 'customer' has been warned and had better 'look before he leaps'. Don't blame BR or claim 'charter rights'. DAVID TIPPER

Sir—In your Editorial (Vol 31—November 1983) your mention of Holehouse Junction brought back the memory of spending the best part of a Saturday in 1926 in order to travel on the line from Dalmellington to Holehouse. There was one train a week in one direction only on Saturday afternoons. Quite a lot of people got off at the only station, Rankinson. I still wonder how they got to Dalmellington during the week! According to my one inch OS map, however Holehouse Junction does in fact stand on the roadside.

However there were quite a number of exchange stations without road access. Two more in Scotland, Methven Junction and Cairnie Junction: two in Ireland, Toobam Junction and Moyasta Junction: three in England, Rowdham Junction, Hope Exchange, Moresby Junction (I believe at one time there was also Farlington between Havant and Portsmouth): and three in Wales: Moat Lane, Bala Junction and Croesor.

You suggested Queenborough Pier (*actually I mentioned Port Victoria—Ed*), three more piers to add, Ryde, Stokes Bay, Tollesbury.

I can only think of one station that is not a junction, Berney Arms (near Lowestoft). Also possibly Corrour (West Highland) (*true formerly but now the Forestry Commission have developed a land-roverable track—Ed*).

I think one must ignore Halts and some stopping places on minor railways. For example, the Rye & Camber Tram finished in a run round in the sand dunes with not even a hut, as also the Fairbourne and the Tallylin.

Another line of curiosities would be railways built by Estate Owners to develop their estates. The following come to mind—Sandy & Potton, The Buscot Railway; The Wootton Tramway, The Sand Hutton, Little Bytham and Edenham, Cemmes Road & Dinas Mawddwy. I have been told there was a horse worked line at Diss, but I don't know that part of the world well. MICAHEL F. KEEF

The Great Days of the Southern Railway

Sir—As a contributing author, I read Edwin Course's review (p 193 no 155) with interest. The hiding away of authors' names at the back of the book under 'Acknowledgements' with the introductory expression 'based on material supplied by . . .', which he mentions is indeed a curious feature, and I protested against it; to no avail. This practice was also adopted, again despite protests, for the similar and earlier 'best-seller' works from the same stable and led to another magazine attributing my work to the names prominently printed on the dust jacket and title page.

Just for the record, so far as my piece on pages 141–8 was concerned, what was printed was not 'based on material supplied', which rather sounds like a building contract, but was in fact reproduced verbatim. ALAN A. JACKSON

Railways and Scotland's First Air Display

Sir—Phillip Scowcroft's piece on 'Railways and Britain's First Air Display' in Journal No. 156 has prompted us to relate two incidents from Scotland's first air

display at Lanark in August 1910 in which the railway played a significant, if unexpected, role.

Two monoplanes and a biplane set off on a cross-country flight, gradually disappearing into the distance. Drexel, one of the aviators, drifted away to the north until he could no longer be distinguished without glasses, and gradually disappeared from view at about 7.30 pm. Time passed and, as there was no news of him, a feeling of alarm spread among the spectators and officials. Shortly before 9 pm, a telegram from Dexel read: 'Have landed near Cobbinshaw Station. Please send mechanic to station'.

Drexel had borrowed a bicycle to ride from his grounded plane to Cobbinshaw station where he arrived numbed with cold and very hungry. The Stationmaster's wife served the aviator with tea, after which he was reported to have said that he had not enjoyed a meal so much for a long time.

News of Drexel's presence spread fast and soon crowds besieged the little Cobbinshaw station, soon to be swelled by those returning by special trains from the air display.

The other incident involving the railway could not have given pleasure to Mr Colemore, an aviator expecting to take part in the Lanark display. His 'Short' biplane, along with another flying machine, never arrived. Although dispatched from Blackpool by the London & North Western Railway, both were destroyed by fire at Lancaster station. These are among many other sporting events served by railways which we have described in our book 'Away for the Day'.*

ARTHUR & ELISABETH JORDAN

*'Away for the Day—The Railway Excursion in Britain, 1830 to the present day.' Silver Link Publishing. ISBN 0 947971 63 7.

The Light Railway King of The North

Sir—My attention has been drawn by Mr A. M. Ross to a further error in the captioning of this book. Page 51, fig 31. This should read 'In spite of what it says on the box, this was Crofton Junction on the L&YR's Wakefield (Kirkgate)—Goole line. The Dearne Valley Junction Railway diverged to the right just beyond the dismantled splitting signal at Crofton West Junction. The line to the immediate right is the West Riding & Grimsby Joint Railway to Hare Park'.

ARTHUR BARNETT

What about Abbots Ripton?

Sir—The recently published *Nineteenth Century Railway Accidents* by John Dixon is a superb publication and a wonderful book of reference, but there is one very important omission. On page 25 there is no mention of the Abbot's Ripton disaster. BRIAN WHITE

RAILWAY & CANAL HISTORICAL SOCIETY
A company (No 922300) limited by guarantee and registered in England as a charity (No 256047)

Local Group Secretaries

London	N. A. Howell, 'Croftside', 109 Epsom Road, Guildford, Surrey GU1 2LE
North West	E. R. LI. Davies, 'Fron Fawnog', Hafod Road, Gwernymynydd, Mold, Clwyd CH7 5JS
North East	D. B. Slater, 8 Granger Avenue, Acomb, York YO2 5LF
West Midlands	M. Searle, 81 Teignmouth Road, Selly Oak, Birmingham, B29 7AX
East Midlands	R. A. H. Sladen, 25 Linden Grove, Beeston, Nottingham NG9 2AD
South West (acting)	A. Richardson, 25 Boscombe Crescent, Downend, Bristol BS16 6GR

Co-ordinators of Special Interest Groups

Tramroads	P. R. Reynolds, 87 Gabalfa Road, Sketty, Swansea SA2 8ND
Air Transport	J. B. Sheldon, 9 Gloucester Avenue, Nuthall, Nottingham NG16 1AL
Road Transport	P. L. Scowcroft, 8 Rowan Mount, Doncaster, South Yorkshire DN2 5PJ
Docks & Coastal Shipping	A. D. Nicholson, 77A Main Street, Lowick, Berwick-upon-Tweed TD15 2UD
Railway Chronology (acting)	A. R. Warren, 126 Millfield, Sittingbourne, Kent ME10 4TP

All copy for the July 1994 *Journal* should be with the Editor by 7 April 1994 and must conform to the Society's style-sheet. The Editor will supply potential contributors with a copy on receipt of a 8½" × 6" stamped and addressed envelope.

Original typescripts and other 'copy', maps, diagrams and photos, of published articles will not be returned unless requested by Contributors.

Published by the Railway & Canal Historical Society (Registered Office: Fron Fawnog, Hafod Road, Gwernymynydd, Mold, Clwyd CH7 5JS), and printed by Hobbs the Printers of Southampton.
The Society is registered as a charity (no 256047)