



Journal
of the
Railway and Canal
Historical Society

VOLUME XXVII

No. 5

JULY 1982

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CONTENTS

THE RIDEAU CANAL: 150th ANNIVERSARY <i>Roger Squires</i>	82
CHEAP FARES ON THE ARBROATH & FORFAR RAILWAY 1838-43 <i>Don Martin</i>	87
STATIONS IN HEREFORD <i>C. R. Clinker</i>	91
THE CWM DEE RAIL ROAD <i>Gordon Rattenbury</i>	98
PARLIAMENTARY PAPERS AND NINETEENTH-CENTURY RAILWAYS <i>Goulven Guilcher</i>	102
THE MILITARY RAILWAYS OF KENT, PART II <i>Robin M. Lyne</i> ..	110
BOOK REVIEWS	120
CORRESPONDENCE	127

The Rideau Canal: 150th Anniversary

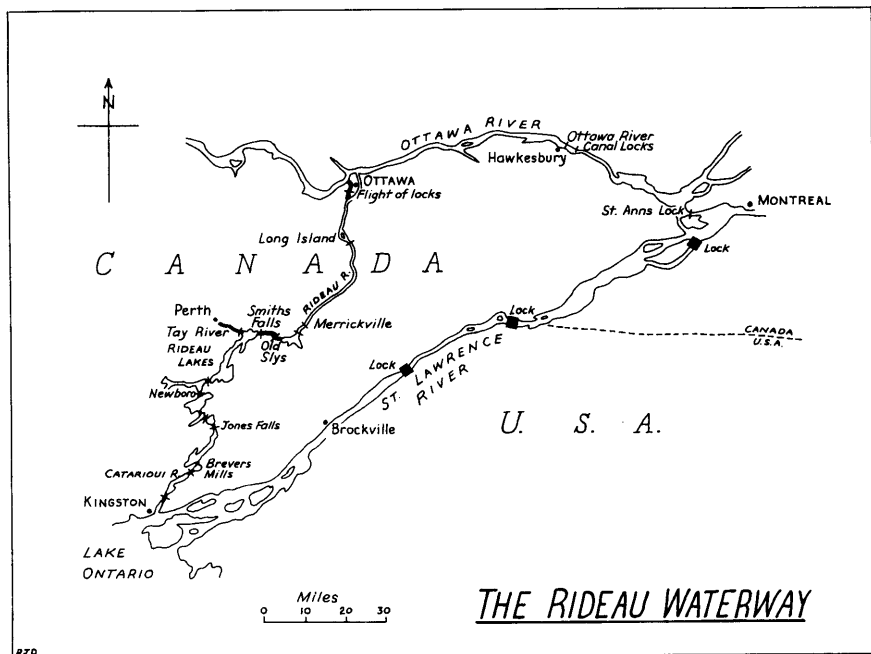
BY ROGER SQUIRES

Throughout 1982 Canadians in the Province of Ontario will be celebrating the 150th Anniversary of the opening of the 123-mile Rideau Canal. A variety of events have been planned by the Canal staff and by the local communities along its route. The highlight of their celebrations was the passage of a flotilla of steamboats visiting the various townships along the route, at the end of May. This voyage commemorated the first complete passage through the canal, from Kingston on Lake Ontario to Bytown (later re-named Ottawa) on the Ottawa River between 24 and 29 May 1832. Then, the passage of the steamboat *Pumper*, re-named *Rideau* for the occasion, marked the completion of 6 years of toil and was the culmination of the most difficult canal building task ever undertaken by British Army Engineers.

We, in England, tend to forget that apart from their transport function some canals were built primarily for military purposes. The prime example of this is the Royal Military canal, which was authorised in 1804 to provide a defence against Napoleon, but whose role was overtaken whilst it was being built as the threat of invasion declined. Default by the contractors meant that the Royal Military Canal was built, for the most part, by Army personnel of the Royal Staff Corps, and it was they who continued to operate it when it was finally opened in 1808. At first it was used to convey troops, but its defensible gun emplacements were never used in war. In 1838 the whole canal was put under the formal control of the Commander of the Royal Engineers at Dover, but even then troops were still garrisoned in barracks at Hythe and Iden to run the canal. The Royal Staff Corps and the Royal Engineers found themselves with a similar role in Canada, where they initially looked after the Ottawa River Canals and the Rideau Canal.

It is easy to overlook the fact that British Troops were regularly serving in Canada from the 1790s. Also, by 1815, the British Ordnance Department had completed much of the task of mapping the area named Upper Canada, which now forms the Province of Ontario. We must remember that at this time Canada was Britain's most important colony, excepting India; and because of its proximity to the hostile Yankees it also created grave security problems for the British forces as the colony was completely landlocked in the winter and only the western half could be protected by the Royal Navy during the summer months, when the St Lawrence River was navigable as far as Montreal. Between Montreal and Lake Ontario the combination of rapids and the American border created a double hazard, especially with the prospect of an Anglo-American war and the fear that American forces could easily break the main supply route and take over Upper Canada by starving the garrisons there into submission. It was this threat which prompted British generals to seek an alternative strategy for defence and also to find an alternative supply route.

Britain's efforts at canal building in Canada date back to 1779, when British Royal Engineers constructed two small canals to by-pass the rapids on the St Lawrence River near Montreal. These works were completed in 1783, and by 1800 further plans had been drawn up both to enlarge these existing canals and to build a new and third by-pass canal at Cascades Rapids. This latter project rapidly gained support and, because of its strategic value, was designated a Military Canal. Amongst those who were involved in its construction was a young Lieutenant, John By, RE. By the time the works were completed in 1806 he had gained the reputation of being a very sound canal engineer. During the American War of 1812 to 1815, the British Commanders were exceptionally hard pressed to maintain the defence of Canada, especially in the Great Lakes region, because of the difficulty of



moving men and heavy supplies. The cost of transport from Montreal to Kingston, on Lake Ontario, was excessive. To ship one 24-pounder gun cost £200 and took weeks rather than days. When the hostilities subsided in 1815, the British authorities had a double dilemma: firstly, the problem of settling the surplus troops; and secondly, improving the transport system of the region. To solve the first problem they decided to create some new settlements in the Rideau River corridor, so as to retain loyal trained men in the border region should the need arise to use them, and also to develop transport in the region, to meet the needs of the new settlements at Perth, Lanark, and Richmond, by the improvement of local water routes. The latter offered the prospect of a defensible inland water route to the fortress and naval base at Kingston.

By 1818 the longer-term defence planning for the region reached a critical stage and the Duke of Wellington was called upon to authorize the defence plans, which included the provision of a sheltered Military Waterway, from Montreal to the Great Lakes, via the Ottawa, Rideau, and Cataraqui Rivers, protected by fortresses of great strength. Local keenness to get the scheme under way had even led to the premature issue of a tender for the construction of the Rideau Canal as early as 1817. This sought bids for the construction of a waterway capable of taking craft of 4-foot draught and 12-foot beam. When the Treasury in London heard of the scheme it was quickly vetoed on the grounds of potential cost. The local supporters of the scheme, however, refused to yield, and sought to find some other means by which they could get the canal built and in some way circumvent the British Treasury ban, ultimately involving false figures, false promises, and a lack of vital

maps, combined with careful manipulation to enable the plan to gain the tacit approval of the British Houses of Parliament. Thereafter the scheme literally went from strength to strength. It ultimately led to the completion of the most important single public work carried out in the Canadian colonies during the nineteenth century exclusively by means of military funds.

The concept of a Rideau Canal gained its first seal of approval when the Upper Canada Government appointed Samuel Clowes to make a report on the viability of the plan to link the Rideau River with Cataraqui Creek to enable boats to pass from the Ottawa River to the Great Lakes. He estimated the cost of the simplest waterway to be £145,802. This low figure was immediately seized upon as the likely cost of the completed canal. Even so, the Upper Canada Government refused to take up an offer of a loan of £70,000 from the British Government to enable them to get the canals project started. This refusal forced the Duke of Wellington to appoint a Military Commission to report on the feasibility of the Clowes plan if it were developed for military purposes with a canal of sufficient size to permit gunboats to pass. The Commission suggested that £169,000 was a more realistic estimate for the larger waterway and recommended that construction should commence.

The military authorities, heartened by the favourable report, decided to press ahead with the scheme, using wholly military finance and expertise and selected Lieutenant-Colonel John By to be the officer in charge. His instructions were to build a canal, with a depth of five feet through its length, from the Ottawa River to Kingston, along the line recommended by Clowes. The Board of Ordnance decided to put the work out to contract and, to enable the contractors to commence work as early in the season as possible, submitted in their estimates to Parliament in London a provisional sum of £5000 to cover the initial expenses of preliminary work on the Rideau River. This small amount was authorized by Parliament without much scrutiny, as they did not have the facility to debate the scheme. With hindsight, it is clear they did not know that they were in fact committing themselves to a much larger and more costly scheme.

Colonel By arrived in Montreal in August 1826 and, after a few days studying the plans, was soon criticizing the estimates that had been made. He believed that the ultimate works would cost at least £400,000. On 21 September 1826 he surveyed the possible points on the Ottawa River for the entrance to the canal and decided on a sheltered bay opposite the small village of Hull. The site was, fortunately, on government-owned land. A village for the workers quickly developed at the spot, which named Bytown. This later became the city of Ottawa. As the works were being undertaken in a self-governing colony, a special Act of the Legislature of Upper Canada was passed which authorised the construction of the canal and gave Colonel By all the powers which the Upper Canada Government would have possessed if it had undertaken the scheme. The only problem was the lack of facility for By to expropriate any land for the defence of the canal.

By the Spring of 1827, By had completed his detailed survey of the route. His resulting scheme for the works was a simple yet daring one which involved a series of strategically-placed dams to convert the Rideau River, the Rideau Lakes, and the Cataraqui River into a series of easily navigable levels, with the added benefit of flood control. He prepared detailed estimates of the likely cost and concluded that a sum nearer £475,000 would be required. A full report was sent to the Board of Ordnance in London, which also recommended that the locks should be increased in size in order to pass steamboats. The Board of Ordnance were seriously concerned when they received the revised estimate and ordered a Committee to review the project yet again to see if Colonel By was exceeding his original brief. The

Committee speedily re-surveyed the route and concluded that he had not exceeded the original brief, that his plans and estimate were quite realistic, and that he should be allowed to proceed. The British Government, however, were not satisfied with the reports, and they sent out a Commission of Military Engineers under Lieutenant-General Sir James Kempt to review the scheme. He reported that 'economy had not been lost sight of by Colonel By' and went further by recommending that the locks should be built to a larger gauge of 33 foot by 134 foot. This addition on Colonel By's own estimate increased the costs still further to £576,757. The Commission, in their wisdom, revised this estimate to £558,000 and reported that they had instructed By to proceed with the revised scheme.

By quickly awarded contracts to a variety of contractors along the route, mainly in a form which enabled them to be paid on a unitary basis as the work progressed. He chose to use four well-known firms of stonemasons for the major works, of which perhaps the greatest was the 62-foot high, 350-foot long, stone horseshoe dam at Jones Falls, with other lesser dams at Smiths Fall, Long Island, Old Slys, and Kingston Mills. In addition, there were the 47 locks needed to complete the scheme. Originally it was envisaged that dry masonry would be used throughout, but as work proceeded it was found necessary to grout the lock walls to prevent leakage.

Work began on the canal at both ends and moved inland. Officers from the Royal Engineers were stationed at key points along the route to superintend the works. The fittings for the lock gates and sluices were made in forges by blacksmiths on each site, using iron bar imported from England. Winches and similar items were brought in from the foundries of Lower Canada (Quebec). Local pine and oak were used on site to build the lock gates.

The work was mainly through uninhabited country, some of which was swamp, and as a result malaria and lake fever soon broke out amongst the labourers employed. There is still, to this day, a graveyard near the Narrows lock which is filled with tombstones recording the loss of those men who had been brought over from Ireland especially for the construction work. For a short time it looked as if the scheme would not be completed, when Colonel By and some of his fellow officers also became ill. Spring floods caused other setbacks, perhaps the greatest of which was the collapse of the nearly-completed Hogs Back dam. This and other similar strengthening exercises caused even more expense. By the Spring of 1830 By had revised his estimates yet again. His latest figure suggested that £762,679 would be required to complete the works.

The ever-growing costs alarmed the House of Commons and in the Spring of 1831 a Select Committee was appointed to enquire into the matter. They did not, however, think of stopping the scheme. Their report indicated that the system for approving funds left much undesirable latitude in the hands of the local Ordnance Commands. By the Autumn of 1831 the water way was generally complete, but its opening was postponed until the following Spring so that the minor works could all be finished.

The Rideau Canal was only part of the defensible inland route. The remainder involved making the Ottawa River navigable by the construction of three small canals to by-pass the rapids at Carillon, Chute à Blondeau, and Long Sault. This project was promoted as early as 1815 by the military strategists. The final plans were drawn up by Capt. F. W. Mann of the Royal Staff Corps in 1819, and it was he and his men who organised the actual construction work. When the work was sanctioned by the Duke of Richmond on 30 May 1819, no doubt they hoped to use the experience they had gained earlier when the regiment built the Royal Military Canal in England.

Capt. Mann certainly could not have contemplated that it would take the Royal Staff Corps some fifteen years to complete the three inter-linked schemes of the Grenville Canal, the much shorter Carillon Canal, and the single lock and navigation channel at Chute à Blondeau, which were required to open the through navigation from Montreal to Ottawa. However, problems of geology, irate land-owners, and incompetent contractors all combined to cause delay. It was not until 30 April 1834, when the Carillon Canal was finally completed, that the first vessel was able to complete the through passage from Montreal to Kingston, using both the Ottawa River and the Rideau Canals. Even then the smaller locks on the Grenville Canal (107 ft by 19 ft 4 ins) restricted the size of craft which could pass through the route until these locks were replaced by larger structures in the 1870s. In 1963 the whole of the Ottawa River Canals were superseded by a new single lock and dam at Carillon, with its lift of 65 feet replacing the seven locks on the old canals.

For the first twenty years of their life the Ottawa River Canals and the Rideau Canal became the predecessor to the more modern St Lawrence Seaway Route, with soldiers guarding the locks.

Although the Rideau Canal was officially opened on 29 May 1832, construction still continued on its formal defence works. Blockhouses were built at Merrickville, the Narrows, Newboro, and Kingston Mills. The other lock stations acquired 'defensible' lock-houses to provide the additional fortifications throughout the line.

In these years the Rideau Canal remained under the administration of the Board of Ordnance and the Royal Engineers. In 1856 it was transferred to Canadian jurisdiction and some twelve years later, following the creation of the Dominion of Canada, was placed under the responsibility of the Department of Public Works. It was subsequently transferred to the Department of Railways and Canals, which became the Department of Transport in 1935. In the Spring of 1972 it was officially designated a National Park and is now under the care of Parks Canada, who safeguard it as a Heritage Waterway.

Throughout its life the Rideau Canal never achieved a major transport rôle. The works were primarily built for defence, but were never needed in war. It did, however, stabilize the water control of the whole region and through this reserve of waterpower local grist, flour, and saw mills were soon developed along its route. These were able to generate local trade. This was even sufficient to warrant the extensive re-building of the Tay Branch to Perth in 1886.

By the mid-nineteenth century the waterway began to develop a recreational rôle. The steamers, which had originally carried passengers and supplies, were increasingly used as excursion vessels. In the 1880s and 1890s summer hotels were built, the most famous of which is Kenny's at Jones Falls, and along the banks of the various lakes summer cottages also appeared.

The depression years of the 1930s saw an absolute decline in trade, but the flood control value of the works ensured that the waterway was maintained. The last regular steamer ceased its scheduled runs in 1935 and the waterway slumbered for a few years, lightly used by pleasure craft. Since the Second World War pleasure traffic has rapidly increased and now the waterway is very heavily used, to the extent that there is heavy congestion at some lock flights. Fortunately, only one of the flights has been replaced by new deep concrete locks. The others are still the masonry locks constructed by Colonel By.

The 150th Anniversary of the opening of the Rideau Canal gives us all another chance to consider what Colonel By achieved. The Rideau Canal is one of the most enlightened pieces of canal engineering in the world, and when it was built the

structures were certainly in advance of their time. The skill and vision of By needs to be acknowledged with respect. It is unfortunate that his ability was not recognised when the canal was first opened in 1832, for in that year, when he returned to England, he was made the scapegoat for the lack of financial control which the Board of Ordnance had failed to exercise over the project. Colonel By died four years later, a broken man. The only acknowledgement of his service to Canada was written by his widow for his memorial in Frant Church in Sussex. The epitaph reads:

He resigned his soul after a long and painful illness brought on by his indefatigable zeal and devotion to his King and Country in Upper Canada

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Cheap Fares on the Arbroath & Forfar Railway, 1838-43

BY DON MARTIN

Although only about fifteen miles in length, the Arbroath & Forfar Railway, in the County of Angus, was a line of considerable interest. It seems to have been the brain-child of William Fullarton Lindsay Carnegie of Kinblethmont, a local Peninsular War veteran, who during the 1820s opened up quarries at Leysmill and Border, to the north of Arbroath.¹ The product of these quarries was a sandstone known as 'Arbroath Pavement' or 'Carmyllie Slate' which could be used both for paving and roofing. Large quantities were sent to England and overseas.² In 1835 Lindsay Carnegie engaged Thomas Grainger and John Miller, the well-known Scottish railway engineers, to survey a line between Arbroath harbour and the town of Forfar. The report from Grainger and Miller was submitted to a meeting of local inhabitants held in Arbroath Town Hall on 7 August 1835.³ At the meeting Provost William Anderson of Arbroath moved a resolution to the effect that a railway from Arbroath to Forfar was much required as a means of facilitating the intercourse between these two manufacturing towns; that the completion of such a work would give great facilities for the export of valuable pavement and other stone; and that such a railway would also be productive of important benefits to the agricultural

interest of a great part of the County of Forfar, by opening up an easy and expeditious mode of transmitting farm produce and procuring coal, lime, manure, and other heavy goods in return at a comparatively small expense. There is little doubt, however, that Lindsay Carnegie envisaged the primary purpose of the line as the conveyance of 'pavement' from his quarries at Leysmill and Border to Arbroath for shipment. Provost Anderson's motion was carried unanimously and Lindsay Carnegie was appointed convener of a committee to be set up for the purpose of obtaining subscriptions and other preliminary measures.⁴

During promotion of the line an interesting problem cropped up at Guthrie, about half-way along the route, where the proprietor of Guthrie Castle was concerned to protect the amenity of his estate against the intrusion of the railway. He wanted the railway to run underground through his grounds, but settled instead for the construction of an elaborate gateway to carry the railway over the main drive at the entrance to his property.⁵ The Guthrie Gate has remained as a landmark down to the present time, through it no longer carries rails. By the time the company's Act of Incorporation was passed in May 1836 about £56,000 had been subscribed towards the line, over £49,000 of it locally. A horse-drawn passenger service was begun between Arbroath and Leysmill on 24 November 1838. It was extended to Forfar on 4 December and locomotive traction was inaugurated on 3 January 1839.⁶

Francis Whishaw visited the Arbroath & Forfar in September 1839 and was surprised and gratified to observe 'a party of reapers travelling by the third-class railway-carriages in preference to walking to their work'. He was even more impressed to find, on enquiry, 'that this was by no means an isolated case, but of every-day occurrence'.⁷ It was not so much the fact that working-class people were using the railway that excited him, but that they were using it as a *regular means of travelling to work*. The working classes could, at this early period, be encountered as passengers on a number of railways in England, including the Middlesbrough branch of the Stockton & Darlington Railway, where seated wagons were provided for persons who had previously been in the habit of walking along the line, and the Stanhope & Tyne, where passenger carriages were put on in response to 'constant applications from poor people to ride on the coal waggons'.⁸ It seems, however, that the regular use of public trains by the working classes for the purpose of commuting to work may have been an exclusively Scottish phenomenon at this time.

Lindsay Carnegie was carrying on something of a campaign against the current Government method of reckoning passenger tax ($\frac{1}{4}$ d a mile in respect of every four passengers carried, equivalent to one eighth of a penny per passenger per mile). He found a sympathetic listener in Francis Whishaw. In the A&F section of *The Railways of Great Britain and Ireland* (1840) Whishaw commented that the existing method of levying the tax operated very unfairly on the shareholders of those railways which were 'distinguished for their more than ordinary amount of public accommodation', in other words, for their willingness to lower fares to a level acceptable to the lower classes. Whether the fare per passenger was as low as, say, $\frac{1}{4}$ d per mile or as high as, say 4d per mile the tax payable to Government was still $\frac{1}{8}$ d per mile for each passenger. This was clearly a discouragement to low fares. To Whishaw the remedy was quite clear:

It is much to be desired that the Government tax of one-eighth of a penny per passenger per mile, which is now so unfairly levied on this and other railways, particularly in Scotland, should form an *ad valorem* on the amount received for passengers, instead of a fixed charge per passenger.⁷

Whitshaw's comments echoed those of the Arbroath & Forfar directors in their report to the Annual General Meeting of proprietors, held on 10 June 1839:

It is evident that a tax, at a fixed and indiscriminate rate per mile, must tend to exclude the working-classes from the benefit of railway travelling; and in doing so, it is injurious to the public revenue, since there is no duty paid by these classes when travelling on the ordinary roads, in waggons, or on foot.

The directors were able, however, to report with some satisfaction that the Lords of Treasury 'with great justice and liberality' had agreed to accept a composition of £10 in full of the passenger duty payable by the A&F Company for its first year. In view of the likelihood that the full rate of one eighth of a penny per passenger per mile would be exacted in future years they had petitioned the House of Commons to consider a change in the method of levying tax.⁹

There was a strong feeling that the problem was especially relevant to Scotland, where fares were generally lower than in England. A meeting of representatives from 'the principal Northern Railway Companies' was held at the Glasgow offices of the Glasgow, Paisley, Kilmarnock & Ayr Railway on 24 January 1840, for the purpose of considering 'the best mode of endeavouring to effect a change in the present system of levying the Passenger duty on Railways'. Companies represented were the A&F; the GPK&A; the Edinburgh & Glasgow; the Glasgow, Paisley & Greenock; the Dundee & Arbroath; the Garnkirk & Glasgow; and the Edinburgh & Dalkeith. The special commitment of the Arbroath & Forfar Company to the issue was reflected in the fact that W. F. Lindsay Carnegie was appointed to the chair. At the meeting a number of resolutions were drawn up and unanimously agreed to, including the following:

That the present mode of levying the Government Tax on Passengers is extremely partial in its operation, and bears very heavily on those Railways which, from peculiar circumstances of locality, or poverty of the population are compelled to carry at low rates of fare.

That all Scottish Railway Companies have adopted a very moderate rate of fares, and consequently the per centage on their receipts, which is payable to Government, is much higher in proportion than it is on those Railways in the South, where higher rates are levied on the passengers.

That the Companies now represented, therefore, do agree to form themselves into an association for the purpose of obtaining such a change in the mode of levying the existing Tax as may make it bear more equally on all Railway Companies.

That a Memorial be immediately drawn up in the name of all the Companies represented in the Association, stating the hardship of the present mode of levying the Tax, and suggesting that the rate should be diminished in proportion to the rate of Fares charged, or should be a per centage on the Gross Receipts from Passengers. That separate Petitions from the several Companies be also prepared and entrusted to the Committee of the Association in London, for presentation through Members of Parliament, to the House of Commons.

Nothing very much seems to have come of the Association. The Paisley & Renfrew Railway Company had declined to send a representative to the Glasgow meeting, believing that independent action by each of the companies involved would be more effective. Perhaps this view prevailed.¹⁰

During the spring of 1840 Lindsay Carnegie went to London to give evidence on the passenger tax question before the Select Committee on Railways. At this period the Arbroath & Forfar directors were in effect carrying on two separate campaigns. On

the one hand they were joining in the chorus to influence the Government to change the method of levying passenger tax, while on the other they were again trying to persuade the Lords of the Treasury to make a special case of the A&F and allow a lump sum 'composition' in lieu of a tax per passenger per mile. In this latter campaign they were unsuccessful, for they were given notice that 'the full duty would be rigorously exacted'. This forced the company to raise fares, with effect from 15 March 1841. The Arbroath — Forfar fares were raised from 2s, 1s 6d, and 1s for First, Second, and Third Classes respectively to 2s 3d, 1s 9d, and 1s 3d. The new 1s 3d Third Class fare represented a rate of 1d per mile, the distance from Arbroath to Forfar being 15 miles.¹¹ In 1842 the concerted campaign for a change in the method of levying passenger tax was at last successful, and duty from that date was payable at a rate of 5% upon the gross passenger receipts.¹²

The A&F directors made regular statement of their philosophy with regard to passenger fares. In their report to the 1843 Annual General Meeting, for example, they expounded that 'all who are versant in the working of Railways seem agreed that in the ordinary case, and particularly in a locality where the great bulk of the population is of the Labouring Classes, low fares are essential to a productive Revenue'. They further opined that 'the expenses of a Railway are to a great extent fixed — and generally speaking do not vary with or bear any relation to the number of persons conveyed upon it. A hundred passengers can be conveyed at almost the same expense, and within the same time that would be required to carry a tenth part of the number'. As a practical expression of their philosophy the A&F directors determined to keep fares at their lowest feasible level. Following the change in method of reckoning passenger duty they decided to reduce fares, for an experimental period, to an all-time low: First Class — 1s 9d; Second Class — 1s 3d; and Third Class — 9d, for the fifteen-mile journey from Arbroath to Forfar. The trial period commenced on 13 April 1843 and was continued for one month. To their great disappointment the directors found 'that the Revenue with the reduced fares was not so productive as they were led to anticipate or such as to render it advisable to continue them'. Part of the blame was placed on the prevailing economic depression with its accompanying distress and hardship. There was, in fact, a considerable increase in passenger journeys when the fares were reduced, but not sufficient to improve — or even maintain — profits. Although the reduction in revenue was not great the directors nevertheless felt that the responsible course of action was to raise the fares again. On 15 May they were restored 'to what they were when the Railway was first opened': First Class — 2s; Second Class — 1s 6d; and Third Class — 1s.¹³

The passing of Gladstone's Act in 1844 caused all railway companies to re-examine their attitude to Third Class passengers. During the years immediately preceding this momentous piece of legislation, however, there is little doubt that W. F. Lindsay Carnegie and the other directors of the little Arbroath & Forfar Company saw themselves as front-line crusaders in the cause of cheap fares for the working classes. In conclusion, I should like to pay tribute to Mr Alasdair M. Sutherland, Arbroath Area Librarian, Angus District Libraries, for his help in locating sources of information on the Arbroath & Forfar Railway.

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Stations in Hereford

BY C. R. CLINKER

Among several aspects of railway history which merit study but which have seldom been written up are Acts of Parliament, inter-company Agreements, Running Powers, Working Arrangements, and jointly-owned stations. Hereford provides a good example embracing all of these, and in addition there was an abnormal situation in the presence of a broad-gauge (7'0 $\frac{1}{4}$ ") line, leading to the necessity for providing mixed-gauge track and other facilities for broad-gauge trains using the same station as those on the standard gauge.

Prior to the 1923 Grouping, the railway history of Hereford involved eleven railway companies and one joint committee, excluding the early Hereford Railway opened in 1829. At one time the city possessed three passenger stations, Barr's Court on the east side, and Barton and Moorfields on the west. Barton was closed for passengers in 1893, and Moorfields in 1874. Barton, which opened a year earlier than Barr's Court, was the terminus of the Newport, Abergavenny & Hereford Railway, and was not a joint station in the legal sense although it was used by the Hereford, Hay & Brecon Company and by the four companies which, in succession, worked that line. Its history is an excellent example of the difficulties caused by the Midland Railway management's constant objections to any proposals put forward by other companies and its refusal to compromise in financial matters. The Great Western found it a very troublesome bedfellow at Hereford and elsewhere, especially at Bristol and on the Severn & Wye Joint Line.

The story of Barr's Court and of Barton is set out in some official documentary material recently acquired by the Clinker Collection, and this material is here reproduced in its entirety, with the account of Barr's Court appearing in this issue of the *Journal* and that of Barton appearing in the November issue. A number of characters are mentioned in the accounts who may not be familiar to all readers. For the record, James Grierson and Henry Lambert were General Managers of the Great Western Railway, and R. R. Nelson was the Solicitor to that Railway. John Noble was the General Manager of the Midland Railway. George Findlay was at the time Goods Manager of the London & North Western Railway, and R. F. Roberts was the Solicitor to that company.

Hereford (Barrs Court)

By the Shrewsbury and Hereford (Stations) Act of 1854 power was given to that Company to enter into arrangements with the Hereford Ross and Gloucester Company for the construction of a Joint Station at Hereford and for the appointment of a Joint Committee for its management.

By an Agreement dated the 1st September 1854 between the Shrewsbury & Hereford Company, Thomas Brassey (then Lessee of the Shrewsbury and Hereford Railway) and the Hereford Ross and Gloucester and Great Western companies it was, amongst other things, agreed that a joint Station should be formed at Hereford for the use of the Shrewsbury and Hereford and Hereford Ross and Gloucester companies and their Lessees or other parties working the Railways, and that the possession, management and use of all Station accommodation provided under the said agreement for joint use should be vested in and be subject to a Joint Traffic Committee.

A joint station (Hereford Barrs Ct) was constructed and opened for traffic on the 1st June 1855 the works being carried out at the joint expense of the Shrewsbury and Hereford and Hereford Ross and Gloucester Companies.

The Hereford Ross and Gloucester line which was constructed on the Broad Gauge and opened for traffic on the 1st June 1855, was worked by the Great Western Company under an Agreement dated the 26th December 1851.

In November 1857 the Newport Abergavenny and Hereford Company who then ran all their trains into a station of their own (Hereford Barton) applied for permission to run some trains into Hereford Barrs Court and offered to pay $\frac{1}{2}$ d per passenger for Junction toll and $1\frac{1}{2}$ d per passenger for the use of the Station. This was agreed to by the Joint Committee on the 30th November as from the 1st December of that year and trains were so run.

By Act of 1860 the Newport Abergavenny and Hereford Company was incorporated in the West Midland Company.

The Shrewsbury and Hereford line was leased jointly to the London and North Western, Great Western and West Midland Companies in perpetuity from 1st July 1862 under indenture dated the 9th July 1862 scheduled to the Shrewsbury and Hereford (Leasing) Act of that year and its management placed under the control of a Joint Committee which replaced the Hereford Station committee.

Clause 4 of this indenture provided that subject to the control and management of the Joint Committee, and except as the Lessees might otherwise agree, the lines sidings and Stations &c of the Shrewsbury and Hereford Company might be used by any of the respective Lessees for their traffic or business and

Clause 7 that the Joint Station at Hereford should so far as related to the traffic of the Shrewsbury and Hereford line, but not so far as related to the traffic of the Great Western Company in connection with the Hereford Ross and Gloucester line, be under the control of the Joint Committee.

By Act of 1862 the Hereford Ross and Gloucester was amalgamated with the Great Western Company.

The West Midland was amalgamated with the Great Western Company by the West Midland Amalgamation Act of 1863.

At a meeting of the Shrewsbury and Hereford Joint Committee on the 20th October 1863 it was agreed to recommend that the entire working of the Station should be placed under the control of that Committee; it was also recommended that a through junction line should be made at the joint expense of the two Companies

from the Newport section of the West Midland line, south of the Barton Station to a junction with the Hereford Ross and Gloucester line so as to place Barrs Court Station on the main line from South Wales.

Up to March 1864 no definite Agreement had been come to as to the apportionment of the Station expenses. the Shrewsbury and Hereford Committee remitted amounts from time to time on account and the Great Western did the same in respect of their Hereford Ross and Gloucester interest in the station without prejudice to either party, leaving the adjustment to be made thereafter, and at a meeting of the Shrewsbury and Hereford Joint Committee on the 11th of that month it was agreed as a temporary arrangement and until the apportionment had been agreed that the Great Western Company should bear three fourths and the London and North Western one fourth of the expenses.

The arrangement recommended by the Committee on the 20th October 1863 referred to above, was not carried out in its entirety but by Heads of agreement dated the 1st June 1864 (scheduled to the London and North Western (Additional Powers) Act of that year it was provided:

- 1 That the North Western company should construct the Hereford Curve with two lines of narrow gauge rails and all the necessary connections with the Newport, Abergavenny and Hereford and the Hereford Ross and Gloucester lines.
- 2 That the Great Western Company should lay down on the portion of the Hereford, Ross and Gloucester line between the junction of the Hereford Curve and the Barrs Court station a double line of narrow gauge rails.
- 3 That the North Western should pay to the Great Western Company £3000 towards the expense of the work to be done by them.
- 4 That mutual running powers free of toll should be given over the lines laid down by each Company
- 5 That all expenses of maintenance repair and renewal of the lines constructed under the powers of the Act of 1864 mentioned above, and of the signals etc. and the expenses of signal men at the junctions should be borne in moieties between the Great Western and the North Western Companies but the latter were not to contribute any portion of the expense of the maintenance of the broad gauge third rail between the junction of the Hereford Curve and the Barrs Court station
- 6 That the working expenses of the Joint station exclusive of the expenses of working goods traffic and of the signalmen at the junctions of the lines and the curve, but inclusive of yardmen, pointsmen and the necessary staff for the outdoor working of the passenger station should be borne in such proportions as might be decided that each Company were liable under the Indenture of the 9th July 1862
- 7 That each Company should, at their own expense perform all services in connection with their goods traffic in the station
- 8 That all business of the two Companies at Barrs Court (except in connection with Goods traffic) should be under the control of the Joint Committee —

By Heads of Agreement between the Great Western, Hereford Hay and Brecon and London and North Western Companies, dated the 1st July 1864, it was agreed that in consideration of the Hereford Hay and Brecon Company withdrawing their Bill then pending in Parliament, and their opposition to the North Western (Additional Powers) Bill of that year, the Great Western Company would consent to a junction being made between a line which the Hereford Hay and Brecon Company were to construct from a point on their railway about 466 yards from their terminus at

Hereford to a point on the Newport Abergavenny and Hereford line about 850 yards from the north end of the Down platform of the Hereford Barton station and would, in conjunction with the North Western Company, construct a curve with a double line of narrow gauge rails connecting this railway with that of the Shrewsbury and Hereford Company.

The Hereford Hay and Brecon Company were also given powers to use the Curve so constructed and that portion of the Newport, Abergavenny and Hereford and Shrewsbury and Hereford lines between the junction so formed and the Hereford Barrs Court station at which latter place the Great Western and North Western Companies would provide accommodation for and perform all services in connection with the traffic of the Hereford Hay and Brecon Company.

The terms for the user of the station and lines were to be agreed or settled by arbitration but the powers conferred upon the Hereford Hay and Brecon were limited to that Company and were not to be transferred to any other than the Brecon and Merthyr Company should they amalgamate, work or lease the line.

The cost of constructing and maintaining the curve was to be borne jointly by the Great Western and North Western Companies but all other expenses both of the line and the junction, including maintenance of the latter, were to be repaid by the Hereford Hay and Brecon Company half yearly to the Joint Companies.

Power to make the junction and the line was obtained by the Great Western (Additional Powers) Act of 1865 and the work was put in hand the following year.

The Hereford Hay and Brecon was amalgamated with the Brecon and Merthyr Company by Act of 1865 but the latter did not construct the connecting line from the Hereford Hay and Brecon line to the junction with the Newport Abergavenny and Hereford railway, and at a meeting between Messrs Grierson & Findlay on the 6th July 1867 it was agreed that as by the Agreement of the 1st July 1864 the powers of the Hereford Hay and Brecon Company were compulsory against the Joint Companies to allow them the use of the Barrs Court station but that there was no power to compel the Brecon Company to use the station and as the Joint Companies had fulfilled their engagements, the matter should be allowed to drop. This was approved by the Joint Committee at their meeting on the 22nd of the same month. (NOTE: The connection between the Hereford Hay and Brecon and the Brecon & Merthyr Companies was severed by Act of 1868.)

The Hereford Curve was open on the 16th July 1866 and from that date the Joint Accountant divided the wages paid through the Hereford Station Joint Pay Bills as under:

2 Booking Clerks	
1 Parcels Clerk	
1 Left luggage Clerk	
1 Inspector	
1 Foreman	Three fourths to Great Western
13 Porters	One fourth to North Western
1 Cleaner	
8 Pointsmen	
1 Lampman	
1 Ticket Inspector	

1 Goods Foreman
 3 Shunters
 1 Machine man
 2 Number takers
 1 Carriage Inspector
 1 Greaser
 3 Horse Drivers
 1 Gateman
 Permanent Way Staff

Moiety to Great Western
 do ,, North Western

The North Western Company however objected to this division, contending that only the Permanent Way Staff should be divided in moieties and all others three fourths to Great Western and one fourth to North Western, and it was finally agreed, at a meeting between the Officers of the two Companies that the division of the revenue expenditure and receipts should be dealt with in the follow proportions:

Great Western —Three fifths
 North Western —Two fifths

subject to a months notice at any time.

This arrangement was based upon a statement shewing the user and traffic of the station prepared by the Accountant of the Joint Line and dated the 30th June 1870, and was confirmed by the Joint Committee on the 6th January 1871.

(MARGINAL NOTE: Insert Note here as to allotment of office accounts (see Page 110) This shows the Great Western as renting from the Joint Committee 1660 feet (1867) and 1967 feet (1869), both at 6d per foot per annum.)

As before mentioned, the station was constructed at the Joint expense of the Shrewsbury and Hereford and Hereford, Ross and Gloucester Companies, the Capital expenditure was therefore borne

	Great Western	North Western
Shrewsbury and Hereford	$\frac{1}{4}$	$\frac{1}{4}$
Hereford, Ross & Gloucester	$\frac{1}{2}$	—
	$\frac{3}{4}$	$\frac{1}{4}$

but in 1871 a bridge was constructed over a level crossing at the station, the cost of which £5,472, it was finally agreed, in January 1879, to bear in moieties by the Great Western and North Western Companies. (This bridge was within the Joint Station boundaries.)

The Broad Gauge rail was removed in the station in August 1869 and the expense borne one fourth by North Western and three fourths by Great Western Companies.

On the 5th July 1870 a train, consisting of an Engine and two Wagons, was run over the Brecon Curve at the special request of the Joint Committee.

From April 1874 the Midland Company ran their passenger trains in the Barton station at Hereford, built by the Newport, Abergavenny and Hereford Company, and in 1878 complaints arose as to the insufficiency of the accommodation provided by the Railway Companies at Hereford and a plan was recommended to improve and enlarge the Barton station so as to make it capable of accommodating the combined traffic of the Great Western, North Western, and Midland Companies, but the scheme fell through, chiefly owing to the Midland Company declining to bind themselves to use the station in perpetuity and it was finally decided to

abandon the plan of making Barton the central station and to improve Barrs Court instead, and on the 10th February 1880 this decision was communicated to the Midland Company.

The works for the improvement of the Barrs Court Station were carried out in 1883 and at a meeting between the Managers & Solicitors of the London & North Western & Great Western Companies on the 8th January 1883 it was agreed that the cost of carrying them out should be borne two fifths by the London & North Western and three fifths by the Great Western Company but it was understood that this arrangement should not prejudice any rights of either Company in the station. This was Confirmed by the Joint Committee at their meeting on the 2nd February 1883.

At a meeting between Mr Grierson and Mr Noble on the 13th January 1885 to discuss the question of the payment to be made by the Midland Company for the user of the Barton station, Mr Grierson asked Mr Noble whether the Midland Company desired to remain at Barton or run their trains into Barrs Court, at the same time explaining that he asked this without any authority either from the Directors of the Great Western or from the North Western Company.

Mr Noble undertook to consider the matter and on the 24th January 1885, Mr Findlay was asked to ascertain whether his Directors were prepared to concur in the Midland Company running their trains (passenger) into the Barrs Court Station on terms to be agreed. On the 26th of the same month Mr Findlay replied in the affirmative.

The actual cost of the Passenger Station and the Brecon Curve (including land) over which the Midland Company would have to run to get into Barrs Court was, on the 13th May 1885, estimated by the Joint engineer as under:

Barrs Court Station	£56,352
Brecon Curve	£3,857

and the cost of land and works which would be necessary if the Midland Company decided to run in:

	£
1 Alterations in the Barrs Court Station	5,245
2 Putting Brecon Curve in order	3,600
3 Connecting Hereford Hay & Brecon line with the Brecon Curve	
Work within Midland Co's boundary	2,600
Work within Great Western Co's boundary	1,700

Mr Grierson, by letter dated the 20th October 1886 submitted these figures to Mr Noble with a draft of the terms which he suggested that the Great Western, North Western and Midland Companies might agree upon if the last mentioned finally agreed to run into Barrs Court. A plan prepared by Mr Armstrong (the Great Western Engineer) of the manner in which it was proposed the junction should be put in and the station yard rearranged was also forwarded with the letter.

The terms proposed were that the Midland Company should pay to the Joint Committee:

- 1 A rent of £600 per annum
- 2 One fifth of the working expenses and cost of maintenance of the passenger station and of the charges incidental thereto other than interest on Capital.
- 3 A toll of (amount not mentioned) for the use of the lines from the Junction with the Midland Company's Hereford, Hay and Brecon line to the junction with the Brecon Curve in the Barrs Court station.

4 Expenses of the Junctions

Accidents to be dealt with as arranged under the Bristol agreement.

At a meeting between Messrs Grierson and Noble on the 8th December 1886 the latter asked to be furnished with particulars of the revenue expenditure of the passenger station for two years, and on the 14 May 1887 this was sent as under:

	1884	1886
(Passenger Station only) Salaries, Wages, Stores etc.	£3,312.13.1	£3,225.2.7
(Goods and passenger station) Maintenance	3,762. 0.0	847.0.0
Telegraph Expenses	714. 0.0	432.0.0

The large amount charged for maintenance in 1884 arose in consequence of extensive improvements which were made in the Station accommodation in that year and a large amount of repairs and painting to old buildings.

At a meeting between Messrs Lambert and Noble on the 15th January 1889 the latter referred to Mr. Grierson's letter of the 20th October 1886 and stated that he was not prepared to agree to the terms therein set out but offered

- 1 £500 per annum for rent
- 2 Interest at 4 per cent on the outlay on the Curves in lieu of toll
- 3 Signalling expenses at Junction of Hereford, Hay and Brecon with Great Western Main Line.
- 4 Proportion of working expenses of the station according to user.

The Midland Company were to pay for all the work necessary to be done within their boundary and their running powers under Agreement of 1863 to be extended from Shelwick Junction to Barrs Ct.

These terms were not accepted and a counter proposal was made by the Great Western, after consulting the North Western Company, that the Midland Company should pay

- 1 £550 per annum for rent
- 2 Toll as for two miles for the use of the curves and piece of Great Western line between the junction with the Hereford Hay & Brecon line and the Joint Curve.
- 3 Working expenses of Junction between Great Western and Hereford Hay & Brecon lines
- 4 Proportion of working expenses in accordance with the number of trains

These terms, with the exception of No. 4 were accepted by Mr. Noble who however considered that the proportion of the expenses to be paid should be calculated according to passengers. (NOTE: See Mr. Lambert's letter of 14 Mch. 1889 & Mr Noble's reply of 15 March 1889.) The Great Western Company suggested that the average between trains and passengers should be taken as the basis for the calculation & to this Mr. Noble agreed (see his letter of the 18th April 1889). These arrangements were embodied in an agreement between the L&NW—GW—and Mid. Companies, dated the 21st May 1891. (NOTE: Printed No.434.)

The Midland company's trains commenced to run over the new loop into Barrs Court station on the 2nd Jany 1893 & ceased from that time to use the Barton station.

(To be continued)

Cwm Dee Rail Road

BY GORDON RATTENBURY

At Pontnewynydd, to the north of Pontypool, the valley of the Afon Llwyd is joined by that of the Nant Ddu which runs westward for about a mile before reaching the watershed between the Afon Llwyd and the river Ebbw. At one time it was probably a most delightful place, but nearly two hundred years of quarrying, coal mining, and digging for brick-clay have left scars that, to the present, Nature has found it impossible to cover.

Coal working in Cwm Du, and in Cwm Ffrwdoer, which joins it from the south about a quarter of a mile from Pontnewynydd, probably started on a small scale early in the 18th century, when the Hanbury family of Pontypool opened a forge and rolling mill at Pontnewynydd using coal for their re-heating processes,¹ but full industrialisation did not arrive until the last decade of the century, when the construction of the Monmouthshire Canal was under active consideration and there was a reasonable prospect of access to larger markets than those available locally.

In 1789 Moses Harper, of Astley, Worcs., and Benjamin Pratt, of Wilden Forge, near Stourport, (one of the original partners in the Blaenavon Ironworks), leased land at Pontnewynydd and in Cwm Du in their joint names as tenants in common. Later in the same year they were joined by Pratt's son, James, in a partnership known as the Cwmdee Coal Works. It appears that all the capital was supplied by Harper, but in view of the agreement that Pratt, senior, was to receive the first £1000 of any profits it is probable that much of the 'know-how' came from him. Benjamin Pratt died in May 1794, leaving his share of the Blaenavon Ironworks to his executor, Thomas Hill, junior, the son of the senior partner in the works. The residue of his estate was left to his widow, Jane, who mortgaged it to Harper as security for his advance of capital to the partnership in the coal works. Harper and the younger Pratt carried on the partnership, undertaking to pay Jane a £100 annuity.²

Until the construction of the Monmouthshire Canal it is probable that any exports from the Pontypool district went out through Caerleon, the shorter distance to be covered by the then expensive land transport off-setting the superior port facilities of Newport. In a half-hearted attempt to direct the traffic from Cwm Du onto their line, the Monmouthshire Canal Co. ordered their engineer, Thomas Dadford, junior, to survey a branch canal from their Pontypool line to 'Cwm Dee Mill' of Hanbury on 12 March 1793, but no action resulted.

The Cwm Dee Coal Works was, however, capable of looking after its own local transport requirements, and the Cwm Dee Rail Road company was formed some time before October 1795. On that date John Tye, a shareholder in the railroad, offered to fence the canal where it passed through the company's property at Pontnewynydd at 5s 0d per perch of 7 yards, which was accepted.

A plan of the canal line through Pontypool of c.1798 does not show the railroad, but it does show a canalside wharf (on the site of the later Pontnewynydd railway station) as belonging to 'Mrs. Pratt';³ and deeds of 1799, 1803, and 1809 quote as a boundary '...a certain Tram Road leading from Pontnewidd (Pontnewynydd) to Gwain Allt Rhyd and the Brook called Nant Dri...' The Cwm Dee Coal Works was at approximately SO 258 020, and to reach it would have been necessary for the railroad to pass through Gwaun Allt Rhyd at SO 262 018.

In view of the fact that Harper sub-let land adjacent to the wharf in 1818, and there is no mention of the Pratt interest in the lease,⁵ it appears probable that by that

time the whole concern had passed into his hands. Whether by foreclosure of the mortgage or by purchase is not known.

The accounts of the railroad company for the six months June to November 1818 have survived,⁶ and show that eight shareholders were present at a meeting on 24 November either in person or by proxy. There is no indication of the holding of any individual nor do they mention the holdings of those present. John Tye was dead, the approval of the accounts being signed by his executors on behalf of 'Elizabeth Williams, late Elizabeth Tye'. Two similar entries on the receipts side of the account indicate that William Kemeys and John Tye were original shareholders, each entry showing that £20 in respect of two unpaid calls of £10 each had been paid in the period by their executors. The accounts were also signed by Moses Harper for himself and C. S. Harper, Charles Valentine, Alexander Jones, and by their proxies Mrs Carlow, Mr Guest and Mrs Preston.

At the period, it was customary for joint ventures to distribute as dividend any surplus of income over expenditure immediately, retaining only a small sum to cover day-to-day outgoings, no provision being made for bad debts or suchlike contingencies. The excess income in the accounts is shown to be £70 3s 10d, and a dividend of £4 per share was declared, indicating that there were in all 15 shares issued allowing a sum of £10 to be carried forward to the next account.

On the expenditure side the accounts show that little was spent in the period covered on repairs and maintenance, a total of 12s of which 9s was in respect of new plates and 3s to cover two days work! By far the largest item was the salary of Thomas Littlehales, the Clerk, who received £25 for his half year's work, with coal for heating the Machine House costing £1 5s at 5s per ton.

The receipts show that payment was received in respect of the carriage of 5,269 tons of coal, 4,639 for Moses Harper and 630 for William Harry giving total receipts from tonnages of £54 17s 8d. Tonnage accounts were normally settled three months after the liability was incurred, and thus the 1,881 tons that were paid for by August were probably carried in the previous half-year. The last receipts for tonnages were on 3 October, and anything carried later that that would be settled for in the next account.

The printed minutes of the meeting accompanying the accounts give the only indication that has been found that the railroad was built under the eight mile clause of the MCC act of 1792 stating:

This Meeting is of opinion, that the Proprietors have no power to demand more than at the rate of Two-pence Half-penny per Ton per Mile on the said RAIL ROAD, as the *Monmouthshire Canal Act directs*; and that the Clerk be ordered to take such Tonnage accordingly.

Whilst there can be little doubt that it was constructed under the Act, it is strange that there is no mention in the MCC minutes of an application for its construction.

From its title it could be inferred that the Cwm Dee was a line of edge-rails, the term 'rail road' usually being reserved at the time for lines of that type. In fact, at the time the Cwm Dee was built, the plate rail had not gained any popularity in South Wales. But another passage in the printed minutes casts doubt on this point, stating that:

This Meeting also is sorry to observe, that owing to the Tram Plates being so slender, and the Stone Blocks or Bearers on which they rest too small, a heavy Expence in repairs will be incurred, which otherwise would have been avoided.

It is possible that it had been the intention originally to connect the Cwm Dee with the MCC's edge-railroad to Blaenavon, and that by 1818 it had been altered to a plateway in the wave of enthusiasm for that type of line that spread throughout the Monmouthshire valleys in 1800-02.

Traces that have been found in the Nant Ddu valley indicate that it was a plateway, but owing to later heavy mineral working such traces have been minimal. It has been impossible to ascertain the gauge of the line either as a plateway or an edge-railed line.

In July 1819 Harry let his colliery to Sir Henry Protheroe at a sleeping rent of £50 p.a. and a galeage or royalty of 4d per ton, and Harry was to supply any stone blocks needed and to permit the gratuitous use of the tramroad he had laid down.⁷ At a royalty of 4d per ton Protheroe would have needed to raise 3,000 tons of coal to have covered his sleeping rent, considerably more than Harry was himself raising on the showing of the November 1818 accounts.

Moses Harper tightened his hold on the Rail Road Co. in 1824, when John Guest of Dale End, Birmingham, mortgaged his three shares in the company to him as security for a loan of £123 3s 2d⁸ and it is probable that he was in entire control of the collieries by 1831 when these were let to William James of Trevechin, no other party being mentioned in the deed.⁹ In both these transactions Harper is stated to be of Barbourne Bank, Claines, Worcs., and it is probable that he had retired there at the time of the later lease.

By 1830 the Pontypool Tramroad had been completed by the MCC connecting Pontnewynydd with Pontymoile via the Trosnant Tramroad. On 6 October, James Morrison, who had acquired interests in Cwm Du, asked the MCC to insert a parting in the Pontypool Tramroad at the end of the drawbridge at Pontnewynydd,

...and also that a branch Road might be made across Mr. Harper's wharf to unite the Cwm Nant Ddu Tram Road with the Company's Road.

The canal company were willing to accommodate him, but pointed out that unless an application was made under the eight mile clause of their Act they had no power to construct a tramroad on other than their own land.¹⁰

T. H. Gwynne, one of the Lords of the Manor of Wentsland and Bryngwyn, opened a brickworks in the valley at SO 254 021,¹¹ in 1835, but it is doubtful if this brought any traffic onto the Cwm Dee Line, as in May 1834 the MCC had given him permission to establish a wharf on the canal side some 300 yards lower down the canal than Harper's wharf.¹² From such records as have been found relating to the conduct of the Graig Ddu Brickworks it appears probable that Gwynne made his own tramroad to the canal.

It is unlikely that the Cwm Dee Rail Road was in a fit state to accept any extra traffic. Doubts as to the suitability of the track as expressed in 1818 have already been noted, and in 1835 the company's solicitors, Jones & Waddington of Usk, circularised all shareholders advising them that the line was in such bad repair that an indictment to the Sessions had been threatened. The line had been surveyed and it was considered that the sum of £150 would be necessary to put it into repair, involving a levy of £10 on each share in issue, confirming the assumption that the capital had been divided into 15 shares.¹³ The railroad survived, so it must be assumed that the levy was paid by all shareholders.

Harper died in 1836, leaving his property to nephews and nieces by the name of Mence who sold off most of the Cwm Du estate.¹⁴ The collieries were sold to James Morrison, and in 1838 were being worked by the Pentwyn & Golynos Coal & Iron

Works, of which Morrison was a partner. It appears that this company also took over the working of the Cwm Dee Rail Road, although in view of the purchase of a share by Mary Mence of Claines in November 1837 for £32 it would seem unlikely that the possession of the line passed to the iron company.¹⁵

In May 1839 the MCC committee received a report that the Pentwyn & Golyns Coal & Iron Co. had interfered with the MCC watercourse supplying the canal from the Nant Ddu, and instructions were given to their solicitor to take immediate steps to 'abate the encroachment'. The matter was settled on 23 July by the canal company granting permission for the feeder to be piped under the tramroad. For this concession and the right to construct a further wharf wall on the side of the canal the iron company was charged £1 p.a.

The Cwm Dee was untouched by the substitution of a railway for the canal in 1854, although the MCC engineer had been instructed in September 1844 to survey for railways up both the Nant Ddu and the Ffrwdoer valleys. When these branches did not materialise, plans were drawn up c.1855 for a branch from the Cwm Dee to a new colliery being opened at Gelli Deg in Cwm Ffrwdoer (SO 246 002).¹⁶ It is possible that the Gelli Deg colliery was not opened at this time following the collapse of the tramroad scheme, but the matter was revived in May 1858 when Charles Crofts Williams of Roath, Cardiff, requested the Monmouthshire Railway & Canal Co. (as the company then was called) for a branch from their Eastern Valley line at Pontnewynydd to Gelli Deg Colliery; the proposal was thrown out by the committee on 6 July 1858 on the grounds that it would interfere with existing sidings at Pontnewynydd.

In 1865 the MR&CC deposited plans for their Cwm Nant Du and Cwm Ffrwdoer branches.¹⁷ These show parts of the Cwm Dee Rail Road, and the Book of Reference shows the owner to be 'Cwmdu Railway Co., Richd. Mence and John Vipond, Assignees of Wm. Williams, a bankrupt', of Snatchwood House, into whose hands the erstwhile Harper estate had passed in 1846.¹⁸ The occupiers are shown to be the 'Pontnewinidd Iron Works Co'.

The railway was opened in 1870 and consisted of a line from Pontnewynydd to Branches Fork Junction (SO 266 008), where it bifurcated, one line going up each valley,¹⁹ effectively rendering the Cwm Dee Rail Road superfluous after nearly a hundred years of service.

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- 10 PRO MCC committee minutes, 6 October 1830
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- 13 GRO D749/399. This must be a rare case of a tramroad being regarded as a public thoroughfare, and liable to indictment.

- 14 Collier, L. B. *A Detailed Survey of the History and Development of the South Wales Coal Industry from c.1750 to c.1850*, University of London, Ph.D. Thesis, 1940
- 15 GRO D749/399
- 16 GRO D454/856
- 17 GRO P&BR 304
- 18 GRO D130/150
- 19 MacDermot, E. T. *History of the Great Western Railway*, Vol. ii, p. 616, London, 1938

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Parliamentary Papers and Nineteenth Century Railways

BY GOULVEN GUILCHER

I RAILWAYS IN HOUSE OF LORDS AND HOUSE OF COMMONS SESSIONAL SETS

Most good recent railway histories and most Victorian periodicals include many references to the Parliamentary Papers (PP is used for Commons Papers, PPHL for Lords papers). But the number of people using this source is much too limited. One of the reasons is difficult access to complete collections and another one is the bad reputation the Blue Books have enjoyed since they began invading the bookstalls around Parliament in the 1830s at the end of each session, when most MPs were very anxious to get rid of their annual sets.

Although complete runs of the originals from 1801 on are unlikely to be discovered now, quite a few collections have survived all over the country, from which a lot of work can be done. Modern reproduction techniques have also provided us with various types of microcard, microfilm, or reprint editions.¹

It is true that the classification of PP is too often tricky and deceptive. The volumes have never been popular with librarians because of their enormous size and weight, and also on account of their sheer number (sixty to a hundred folios per session). The arrangement of the volumes according to sessions (not years) is awkward for the non-specialist (e.g. 1859 sess. 1 or 1867/8). Their numbering is erratic at times (two parts i.e. two volumes for PP1867 vol. XXXVII, Royal Commission on Railways), which means a great waste of time before obtaining a specific volume if the collection is not on open shelves. Incomplete runs or isolated papers would require expert knowledge to receive adequate treatment in libraries. Finally, the indexes are frequently puzzling because of the vague titles given to many papers. The page numbering is also a little exasperating.²

These preliminary remarks are not meant to deter would-be researchers from exploring the immense possibilities of PP, but rather to warn them that some precautions may help them to save time.

Before attempting any work on the PP themselves, the reader is strongly advised to study carefully—or at least to consult—the remarkably useful *Guide to the Parliamen-*

tary Papers written by Professor Ford,³ which explains in 87 pages 'What they are, How to find them, and How to use them'. It is all too easy to get lost in the nine million pages of sessional papers printed for both Houses in the nineteenth century.

The mass of documents relating to railways is enormous. They fall into four main categories: Public Bills on railways, Committees on Railway Bills, Reports of Select Committees and Royal Commissions on Railways (hence *Sel. Cttee* and *Roy. Com.*), and Miscellaneous Reports and Returns issued by the Board of Trade. In the second part of this article non-railway reports with elements on rail travel will be reviewed, as will, more briefly, printed PP outside the sessional sets: Public Petitions, Private Business, Journals of both Houses, Hansard Debates, and Acts. Additional notes will cover illustrations and railway maps in PP, errata and omissions in the General Indexes, lists of volumes including periodical returns on railways, the mode of citation of PP, with concluding remarks on the sales and actual circulation of PP on railways.

A. Public Bills

In the sessional sets of each House, every session begins with a few volumes in which the texts of the public bills are printed in alphabetical order with their amendments. Each House prints only its own bills and some texts are omitted, e.g. *Railway Passenger's Protection Bill*, PP 1877, vol. VI, p. 9.

In the 1840s many bills testify to attempts at legislation on railways, the most notable one being Gladstone's Bill of 1844, the *Poor Man's Charter*. It is also a fascinating subject for research but somewhat outside the scope of this article as it requires a good deal of specialist knowledge on parliamentary procedure (see note 5). The progress of bills in both Houses should be studied in Hansard, in both Journals, in both sessional sets, and finally in the collections of Public Acts. Many important bills on railways were passed in the nineteenth century, but the indexes to the PP reveal a large number of bills which were rejected or withdrawn. Many of them are of some social or political significance. The titles of some of them display their great variety: *Constables for the Construction of Railways* in 1837, *Powers of the Railway Commissioners* in 1847, *Medical Assistance for Accidents on Railways* in 1850, *Abuse of Return Tickets* in 1859 (HL), *Accidents on Railways (Guards' and Passengers' Communication)* in 1854/5, 1866, 1867, and 1867/8, *Footwarmers* in 1870, *Passenger Accommodation* in 1875 (HL), *Extension of Return Tickets*, and *Cheap Trains* in the 1890s, and *Coroners' Inquests* from 1896 to 1914.

The General Indexes for HL are more detailed for amendments on public bills. For example, the entry for the *Bill to Amend the Law Relating to Railways*, PPHL 1867/8, VI, 109-215, runs to nineteen lines.

B Committees on Railway Bills

Printed evidence before committees of HC on railway bills is scarce and disappointing, with the notable exceptions of two famous test cases: the *Croydon & Epsom (Atmospheric) Railway* PP 1844, XIV, and the *Oxford & Rugby and Oxford, Worcester & Wolverhampton (broad and narrow gauge) Railways*, PP 1845, XI. One has to look elsewhere for such documents: archives in Parliament for the manuscript minutes of evidence, the contemporary press or privately printed selections issued as advertisements for or against particular lines of railway.⁴ The HC sessional papers on railway bills deal mostly with procedure and litigation on subscription lists.

The House of Lords did print a considerable volume of evidence from the hearings of committees on private bills in its sessional series, but this material is by no means complete. It includes the following: Liverpool & Manchester PPHL 1826, CCIX; London & Birmingham PPHL 1831/2, CCCXI; London & Southampton PPHL 1834, XXXIII pt.2; Great Western PPHL 1835, XXXIX to XLI; Dublin & Drogheda PPHL 1836, XXXIII; London & Brighton PPHL 1836, XXXIV pt. 1 and 2. Even on these very important lines we miss the evidence not only on the London & Birmingham in 1833 and on the Brighton line in 1837, when their Acts were passed, but also the evidence on the fierce struggle in committee in 1834 for the GWR and in 1835 for the Brighton line, when the Lords rejected their bills.

The entries concerning bills on railway lines are much more complete in the General Indexes to the Lords papers than in the Commons series (22 pages, against only 7 pages in the first General Index).

The evidence on twenty railway bills was printed in the Lords papers between 1834 and 1848, and there is a lot to find in these documents on opposition to early railways, and on land, river, canal, and sea traffic before the railways.⁵

C. Reports of Select Committees and Royal Commissions

Although forming but a small part of PP on railways, these documents obviously constitute one of their best known and most interesting aspects. The numerous reports on the audit of railway accounts after the Railway Mania or on the general problems of railway bills and their legislation do not make very exciting reading, but the range of subjects touches on so many railway matters that anyone doing research can always find something of interest:

Six important reports in the 1830s (Taxation, Ireland, Mails, and Turnpike Trusts)

Twelve in the 1840s (General Policy and Management, Atmospheric Railways, Land Compensation, Railway Labourers, and two Royal Commissions in 1846: Railway Gauge, and London Termini)

Four in the 1850s (Amalgamations, Mails, Accidents, and Railways and Canals)

Nine in the 1860s (London, Steamships, Communication in Trains, and the Royal Commission of 1867)

Five in the 1870s (Amalgamations, Taxation, and several reports about safety, including the Royal Commission of 1877)

Six in the 1880s and 1890s (Ireland, Railway Rates, Ventilation of the Metropolitan Railway, and Hours of Labour of Railway Servants), with a further ten committees sitting on the same problems and on Workmen's Trains and London Transport in the early years of the twentieth century.

The references to these reports will be found in the General Indexes.⁶

The structure of reports is analysed in Ford, *Guide to Parliamentary Papers* pp. 5-7 (Select Committees) and 9-10 (Royal Commissions). The same book sums up on pp. 32-4 the important points to study:

- 1 The Terms of Reference or Limits of Inquiry prescribed by Parliament must be compared with the text of the report and with the type of question put to the witnesses.
- 2 The Proceedings of the Committee or Commission (not printed until 1836 for HC and 1852 for HL) and the list of members are particularly interesting. The chairman was generally elected by unanimous agreement, but the Committee on Rates and Fares did not follow the usual pattern—there were three candi-

dates (see PP 1881 XIII,5). The votes about amendments to the draft report or supporting one draft report against another are revealing about individual commitments. *Bradshaw's Railway Manual* and general political or railway histories of the period must be consulted, as well as the *Dictionary of National Biography*, Hansard, and John Marshall's *Biographical Dictionary of Railway Engineers*, since members of Committees (MPs) or Royal Commissions are not officially identified as belonging to one particular section of the railway lobby or fighting against it.

- 3 The Texts of the Reports vary in length from a few purely formal lines to over a hundred pages, generally in proportion to the extent of the inquiry — that is, to the number of questions in the minutes of evidence. Obviously when several members dissent from the report and cause specific reservations to be appended to it, or when several minority reports are printed, the volume of the report is much increased: 126 pages for the report of the Royal Commission on Railways PP 1867, XXXVIII pt 1 (18 000 questions), and 169 pages for the report of the Royal Commission on Railway Accidents PP 1877, XLVIII (44 000 questions) The situation becomes even worse with the Royal Commission on London Traffic (eight volumes in 1905 and 1906) and the Vice-Regal Commission on Irish Railways (four volumes in 1907-1909), while the reports of other Royal Commissions, Railway Termini in the Metropolis (1846) and Gauge of Railways (1846), are much shorter.

The overwhelming majority of reports from Select Committees cover less than ten pages, with a few notable exceptions: the Second Report on Railways 1839 (12 pages), the Fifth Report on Railways 1844 (26 pages), the Second Report on Railway Acts Enactments 1846 (19 pages), the Fifth Report on Railway and Canal Bills 1852/3 (18 pages), the Report on Railway Companies Amalgamation 1872 (49 pages), and the First Report on Rates and Fares 1882 (13 pages), all of which must be considered as extremely important papers on major contemporary issues.

- 4 The Minutes of Evidence are well indexed, with entries for authors and subjects (except for reports under 500 questions) and an analysis of the index or table of principal headings for easier reference. This is most useful, as the indexes to the Royal Commissions extend to well over 100 pages: 120 pages for the Commission on Gauges in 1846 (6 500 questions), and 150 pages for the Commission on Railways in 1867. The Commission on Railway Accidents in 1877 gives instead an analysis of evidence (35 pages) and an abstract of evidence for the principal witnesses (50 pages). The full papers of these three Royal Commissions form vols 8, 10-11, and 14-15 of the Irish University Press Transport Reprint Series.

There were Select Committees with over 3 000 question in 1839, 1840, 1844, 1846 (Railway Acts Enactments), 1852/3 (Railway and Canal Bills), 1872 (Railway Companies Amalgamation), 1876 (Railway Passenger Duty), 1882 (Rates and Fares), 1890/1 and 1892 (Hours of Labour of Railway Servants). All except the Committees in 1876, 1890/1, and 1892 have been reprinted in the IUP series. A dozen important reports with less voluminous minutes of evidence were printed between 1841 and 1905 and are worth studying too. They cover Railway Legislation (1841 sess. 1), Atmospheric Railways (1845), Compensation to Landowners (HL 1845) Railway Labourers (1846), Amalgamation and Canals (1846 and 1857/8), Accidents (1857/8 and 1870), Interlocking (HL 1873) and Workmen's Trains (1903, 1904, and 1905). The only reports to have been reprinted by IUP are those for 1841, 1846 (Railway Labourers), and 1857/8 (Canals).

There is generally a list of witnesses, but it is not always easy — particularly in early reports — to ascertain their origins, their jobs, and their positions in life. All the answers are numbered, except for the reports printed before the early 1830s for HC and the late 1830s for HL. If there are several reports from a Committee in one session, the numbering of the questions is continuous, e.g. in the six reports of 1844 or in the five reports of 1852/3; an exception is 1840 with five reports, the second report with 19 questions being numbered separately and excluded from the index (presumably a late addition). Duplications are rare in question-numbering e.g. PP 1904, VII, Workmen's Trains, Sel. Cttee, QQ44-49, pp. 722-30, and, on p. 731, another set of questions bearing the same numbers.

One finds a lot of unexpected material in the minutes of evidence, but some types of witnesses are more likely than others to provide it. The safest method is to read all the questions and answers. It should be remembered that very often some members of the Committee or Commission put the same question to every witness, suggesting the same answer each time. Caution is needed before drawing conclusions from what look like unanimous opinions in the index in such cases. On the other hand, lengthy statements or memoranda might have been prepared by some pressure group who sent the witness to the Committee. General managers, railway directors, and the chairmen of railway companies were always heard as witnesses, as were representatives of the Board of Trade. Railwaymen could not express their grievances before the 1870s and no Committee or Commission (except in 1839) thought fit to hear railway travellers. All the reports of Royal Commissions on railways were printed in HC and HL during the nineteenth century. Nearly all reports of Committees of both Houses on railways were reprinted in HC, with exceptions such as PPHL 1836, XII, Danger of Fire from Locomotives; PPHL 1841, XXI, Carriage of Goods on Sunday (both reprinted in the Journal HL); and PPHL 1867/8, XXVII, Guards' and Passengers' Communication. Many reports from HC are also found in the HL sessional set, particularly in the 1840s and 1850s. The reports of Select Committees of one House are reprinted in full in the other series with the minutes of evidence and the appendices (exception: PP 1844, XI, Railways, Sel. Cttee, six reports → PPHL 1844, XXI first five reports only) and during the same session (exception: PP 1846, XIV, Railway Acts Enactments → PPHL 1847/8, XXXII). Some reports are printed as usual in their session and reprinted at a later session, e.g. PP 1837/8, XVI, Mails by Railway, Sel. Cttee, reprinted in 1844; and PPHL 1845, XVIII = PP 1845, X, Compensation to Landowners, Sel. Com. HL, reprinted by both Houses in 1847/8). There is an enormous amount of research to be done in these reports, which represent a virtually untapped source, except for those which have been reprinted by IUP.

- 5 The Appendices, various documents listed in a table, are appended to the minutes of evidence, sometimes also to the report itself. They consist of summaries of the questions, correspondence, articles from newspapers and magazines, legal opinions by experts, reports from annual general meetings of associations, but mostly of statistics, very often in the form of circulars with answers by the railway companies. Most of the originals have been destroyed, but the documents survive in these appendices. Every important report constitutes a digest of information on all aspects of railways at the publication date (for Royal Commissions the data were often collected several years previously) and it is well worth having a look at the list of appendices. The coverage of the material in the appendices by the General Index HC is very poor (see PP 1830,

IV, 52), and little better by the General Index HL before 1870. Their treatment in the individual indexes to the reports varies from very poor to mediocre.

D. Miscellaneous Reports and Returns on Railways (Board of Trade)

These were all grouped to form the sessional volumes of Accounts and Papers on Railways (one volume per session from 1841, and generally two consecutive volumes from 1874). The volumes included the Annual Report on Railways with its appendices on the inspections of new lines and investigations into railway accidents or returns by the companies about them. The inquests having become more and more detailed, an Annual Report on Accidents was introduced in 1854. Traffic returns started officially in 1846 (half-yearly to 1861, thereafter yearly) but some data had already been available since 1839. Later the volumes were closely packed with returns by the companies about automatic brakes, inter-locking of points and signals, level crossings, hours of working of railway servants, to mention only the most bulky papers. The reports about accidents provide a wealth of practical information about the working of railways and the behaviour of railwaymen and passengers. In the correspondence annexed to these reports we can see how the inspectors sometimes had to shift from their customary policy of suggestion and resort to threats in the face of railway directors full of determination. Here again the tables give very little information about the nature of the accidents, and since interest is generally indirect and incidental for the modern reader, it is only by studying a large number of reports that useful elements come to light.

A variety of other miscellaneous returns fills these volumes. The 1840s are rich in circulars (bye-laws, level crossings, six- or eight-wheel engines, third-class traffic, returns of railway accidents, breaking of axles, locking the doors of carriages, strikes, pleasure trips, propelling trains from behind, boiler explosions, safety of iron bridges, buffers, communication in trains, cheap trains, etc.) and in short reports on atmospheric railways, gauges, railway schemes, amalgamation, and returns on a number of subjects including traffic, finance, passenger duty, and Sunday trains. Many of these returns are answers to circulars and appear in carefully-drawn-up tables. The flow continues in the 1850s and 1860s with a growing concern for the prevention of accidents from the 1870s (footboards 1878/9, bridges 1880, 1881, 1883, 1890/1 and 1896, carelessness of the companies 1874, continuous brakes, overwork, late trains) and also better accommodation for male travellers (workmen's trains), or female travellers (gentry in 1888 or working class in 1895), British (1881), Scottish (1899) or Irish (1878 and 1892).

Most of these inquiries were undertaken at the request of MPs, a good number of them after accidents, and they reflect the growing unpopularity of the railway companies. Except for regular returns, which are generally printed in both series as Command Papers (with more detailed entries in HL than in HC General Indexes), most accounts and papers appear only in the series where they originated. The HC series is considerably more comprehensive than the HL series for Accounts and Papers, but Lords Papers should not be neglected, e.g. PPHL 1852 XVII, Return of all the mail trains late in 1851. For some unknown reason, in the whole series of periodical returns about accidents for the nineteenth century, those covering April to December 1877 have been printed only in PPHL 1877, XII, 493-816. Accounts and Papers, being short, are not indexed. However, twenty-six reports issued by the Railway Department between 1837 and 1846 were all indexed separately in PP 1847, LVIII, pt. 2, 1-284.

E. The General Indexes

The official General Indexes to the PP include references to Public Bills, Reports of Committees and Commissions, and Accounts and Papers. They are very complete, remarkably free from errors, and they abound in cross references. The most useful ones for HC in the nineteenth century have been reprinted by IUP: 1801-52 (in three volumes, Bills, Reports of Committees, and Accounts and Papers including Reports of commissions), 1852/3-1868/9, 1870-9, 1880-9, and 1890-9. Similarly, the best General Indexes for HL have been reprinted by Oceana: 1801-59 (in two volumes in alphabetical order), 1859-70, and 1871-84/5, no General Index having been printed for HL after 1884/5. Numbers of Command Papers are not given in HL General Indexes before 1870. In both series the last volume in each session includes a sessional index and a list of papers in numerical order.

The usefulness of the two series of General Indexes varies according to the type of document, as indicated in the various sections above, but as a general rule the basic source for research on railways in PP should be the HC series, because of its easier access, with occasional glances at the HL series for individual papers.

REFERENCES

The author is indebted to the librarians and staff at the French Senate, the Assemblée Nationale, the Bibliothèque Nationale in Paris, the House of Lords Record Office, the British Library, the University of London, and the University of Southampton for much help and for exceptional access facilities.

- 1 Principal libraries with collections of PP in the British Isles (M = Readex Microcard edition, completed 1960, M82 = Chadwyck-Healey Microcard edition, completed late 1982, IUP (not given, found in many libraries). All other collections are original series.)

House of Commons Series

—Parliament and Government Offices: House of Lords Record Office (HLRO), House of Commons, House of Lords, Board of Trade (former), Treasury and Cabinet Office, Public Record Office (PRO); No access except to HLRO and PRO.

—National Libraries: British Library (original + M82); Wales, Aberystwyth (incomplete + M82), Scotland, Edinburgh; and Republic of Ireland, Dublin (incomplete).

—County Libraries: Bedfordshire (M82), Derbyshire (M82), Leicestershire (M82), and Nottinghamshire (M82)

—Public Libraries: Birmingham (M82), Cardiff, Liverpool (M), London (Guildhall), and Manchester (incomplete).

—Universities: Bristol (original + M82), Cambridge (original + M82), Essex (M82), Exeter (M82), Hull (Brynmor Jones) (M82), Leeds (M), Leicester (M), Liverpool (Sydney Jones) (M82), London University (original — bound by subject in the 1840s — and M82), North East London Polytechnic (M82), Manchester (John Rylands) (M82), Oxford (Bodleian), Open University (M82), Reading (M82), Southampton (original + M82), Trent Polytechnic (M82), Bangor (M82), Edinburgh, Queen's University Belfast (M), Trinity College Dublin

House of Lords Series

HLRO, British Library, and Department of Trade and Industry. More limited collections: Cambridge University, Oxford (Bodleian) (nearly complete), Leicester University (Oceana reprint), and National Library of Scotland in Edinburgh (90% complete).

Sources: W R. Powell, *Local History from Blue Books*, Historical Association, 1962, appendix 2; Sir Kenneth A. Mallaber, 'House of Lords Sessional Papers', *Journal of Librarianship*, vol. IV, April 1972, pp. 106-14; and personal inquiries

- 2 On the peculiarities and idiosyncrasies of PP see P. and G. Ford, *Select List of British Parliamentary Papers 1833-1899*, Blackwell, Oxford 1953, 2nd Edn, Irish University Press, Shannon 1970, pp. vi-xi, and *General Index to the Bills, Reports and Papers of the House of Commons 1900-1948/9*, HMSO 1960, pp. v-viii. Each paper has a separate printed pagination and an identification number (within the session for papers printed by order of the House, with independent numbering for bills from 1854 for HC, but continuous numbering in two series — before and after 1870 — for Command Papers, i.e. papers printed by order of the Crown). Each volume receives a manuscript pagination from beginning to end. For some examples of too few or too many numbers allotted for manuscript pagination of railway papers see PP 1857/8, LI, 355 (which is assigned to 67 pages including the infamous Round Oak disaster on the Oxford, Worcester & Wolverhampton Railway), PP 1859 sess. 1, XXV, 644 (= 13 pages), PP 1867, LXII, 259 (which follows immediately page 250) and PP 1873, LVII, 507 (= 7 pages)
- 3 P. and G. Ford, *Guide to the Parliamentary Papers*, 3rd Edn, Irish University Press, Shannon 1972, with a good index and bibliography. A much more detailed description of this type of document is given in M. F. Bond, *Guide to the Records of Parliament*, HMSO 1971, which covers manuscript sources as well and is meant specifically for those doing research at the HLRO.
- 4 Private publishers also compensated for the shortcomings of HC in this particular case. James Bigg, the parliamentary publisher, inserted on p. 16 of the advertisement section of the *Official and Descriptive Catalogue of the Great Exhibition*, vol. 1, 1851, a list of eighteen volumes of evidence before select committees of HC on railway bills. The ones about the Liverpool & Manchester (1825), the London & Brighton (1836), the South Eastern (1836), and the Blackwall (1836-9) bills are very bulky and were not printed in the sessional papers.
- 5 Apart from Bond's *Guide* . . . , see also his article 'Materials for Transport History amongst the Records of Parliament', *Journal of Transport History*, vol. IV, 1959/60, pp. 37-52; H. S. Cobb, 'Sources for Economic History amongst the Parliamentary Records in the HLRO', *Economic History Review*, Second Series, vol. XIX, 1966, pp. 154-74; O. C. Williams, *Historical Development of Private Bill Procedure . . . in the House of Commons*, two vols, HMSO 1948/9 (useful on private bills); and Sir Thomas E. May, *Parliamentary Practice* (any edition) for the procedure on bills in general.
- 6 All important reports from Committees and Commissions, except Committees on individual private bills, are listed in Ford, *Select List*, pp. 4-5 (general private bill legislation), 23-4 (transport in the Metropolis), 52-5 (railways) and 124-5 (Irish transport). Comments on the main Committees and Commissions can be found in E. C. Stevens, *British Railways, their Development and their Relation to the State*, Longmans, 1915 (mostly concerned with amalgamations and state control). *Jubilee of the Railway News*, Railway News, 1914, Part One, provides a convenient comment on pp. 39-42 and a comprehensive list of PP on railways on pp. 221-3. For PP reprinted by IUP we have the excellent notes on each paper in the *Catalogue of British PP in the IUP 1000 Volume Series*, IUP, Dublin 1977, pp. 223-8 (Transport: nineteen volumes on railways) and p. 130 (committee on Railway Labourers, 1846).
- 7 For a fine appraisal of the work done by the Inspectors of Railways, see J. Simmons, *The Railway in England and Wales 1830-1914*, Vol. 1, Leicester University Press, Leicester 1978, pp. 234-8. On railways and the Board of Trade, see H. W. Parris, *Government and the Railways in the Nineteenth Century*, RKP, 1965, and the two much older but still useful books by H. G. Lewin, *Early British Railways*, Locomotive Publishing Co., 1925, and *The Railway Mania and its Aftermath*, Railway Gazette, 1936, which cover 1801-1844 and 1845-1852 and also include a meticulous study of Reports of Committees on Railway Bills.

The Military Railways of Kent, Part II

BY ROBIN M. LYNE

RAILWAYS OPERATED OR BUILT FOR MILITARY PURPOSES

Admiralty. Hoo Ness Island (Later Ministry of Public Building & Works, Now Operated by the Department of the Environment)

As part of the 1860 proposals for the defence of the Medway estuary a number of fortifications were constructed, one of these being Hoo Fort which was built in 1861 on the island. A narrow gauge railway was laid down. As no details exist of this, it was possibly constructed towards the end of the nineteenth century. A railway existed on the other side of the River Medway at Upnor, of an identical gauge. A similar purpose might have prevailed, i.e. that of ordnance movement. The status of the island, in common with the Hoo Peninsular, has changed in the defence role, and it has now passed to the DoE, who operate the railway for the maintenance of embankments and sea defences.

The narrow gauge railway was 2ft 6in. when originally constructed, and it employed various locomotives, the first being acquired from the Admiralty Chattenden & Upnor Railway. Petrol locomotives first appeared in 1926, these being worked until about 1952 when the line was regauged to 2ft. At present the line is worked by two 4wPM locomotives built by F. C. Hibberd & Co. Ltd.

The Chattenden & Upnor Railway⁸

Since the mid-nineteenth century the Hoo Peninsula has possessed various military depots, and the proximity of the large dockyard at Chatham placed it in a strategic position. In 1872 work began on the construction of a new military installation at Chattenden, and to assist in the conveyance of building materials from Upnor Wharf, on the River Medway, the RE constructed a standard gauge line. Further work, in 1880, involved an extension to Hoo Fort which was never completed, the railway reaching the third island in Hoo Creek. By the early 1880s the standard gauge lines had been abandoned, but their course was followed in the construction of a 2ft 6in. gauge line in 1898. This was laid down by the 8th (Railway) Company RE, now based at Chattenden, partly as a training exercise and also to convey munitions. Chattenden served as a training base for RE until the founding of the Longmoor establishment, when they were transferred there.

The railway originated south of Upper Upnor, at Tower Hill Camp, and ascended past Tank Feild, where there was a passing loop and a signal box. Another branch led up from a pier at Lower Upnor. The two branches crossed Lower Upnor Lane to Upnor Junction, joined, and ascended steeply round the flanks of Beacon Hill to cross the main Strood — Grain road on an impressive girder bridge. The line encircled Chattenden Barracks, where there was a siding, and entered Lodge Hill ammunition depot. Here there were exchange facilities with the Chattenden Naval Tramway.

The Chattenden Naval Tramway⁹

The CNT was originally authorised in 1901 for the construction of a double track, standard gauge, railway to provide transport between the magazines at Lodge Hill and the River Medway at Kingsnorth. A change in Government policy, however, led to an alteration to this plan, and only a single track railway was constructed, running between Lodge Hill and Sharnal Street on the Hundred of Hoo line. This undertaking was an Admiralty operation, and on 1 April 1906 the Admiralty also acquired control of the Chattenden & Upnor Railway.

In 1915 the CNT was extended from Sharnal Street to Kingsnorth in order to serve a munitions factory and airship hangars. A later extension was made to Abbott's Court Pier. With the cessation of hostilities the two depots were closed. The former became the property of Holm & Co., Chemical Manufacturers. This company also negotiated with the Admiralty for the lease of the railway to Sharnal Street. Further legislation transferred these powers to an independently-formed company, the Kingsnorth Light Railway. Running powers between Sharnal Street and Kingsnorth were obtained by Admiralty Deed on 14 August 1924, and the Transfer Order given on 25 July 1929. The line closed in 1940 and the tracks were removed as a war economy. The KLR operated an 0-4-OST, which was transferred to Woolwich Arsenal, and also two petrol locomotives.¹⁰

The CNT possessed several standard gauge steam locomotives, and in 1944 the first diesel-mechanical locomotive appeared. The CU had at one time or another sixteen narrow gauge steam locomotives. By the end of the Second World War only five remained. During the next few years these locomotives were replaced by diesel and battery-electric locomotives. There were also numerous 4-wheel battery trolleys used inside the ammunition area. These were little more than powered platforms used to haul trucks of ammunition.

After 1904 the CU was worked as an inter-works connection with irregular passenger services for the conveyance of workmen. These did not become regular until 1942. The freight service was at its height during the Second World War, but with the ending of the war sections of the line began to be run down, although the Upper Upnor section beyond Tank Field had already closed in 1941. Train services became infrequent with the last diagrammed service being run on 19 May 1961. Workings continued in the vicinity of Chattenden Barracks until complete closure on 31 December 1961. The CNT shared the same fate even though it was used more in post-war years. The entire area has reverted to Army ownership, with Lodge Hill and Chattenden being taken over by the REME.

The route of the CU railway has not been entirely lost. At Upnor a new road, owned by the Ministry of Defence, leads north through a gateway on the north side of Upnor Road at a sharp bend in the latter, just before Upnor High Street. The new road closely parallels the former railway, seen as a low embankment to the west. South of Upnor Road there is no trace of the line to the terminus at Tower Hill Camp. The cutting for the new road has destroyed the site of the junction of the 'main line' with the Lower Upnor branch just to the north of Lower Upnor Road, while south of the latter and on to Lower Upnor there is no trace of the line. The new road (now Upchat Road) continues on the line of the CU round the base of Beacon Hill and then diverges to the west to cross the A228 on a new bridge. At a point 200 yards east of this bridge, on the north side of the A228, the CU girder bridge abutment is visible, but the south face has been lost in road widening. The embankment between here and Chattenden Barracks has a length of track still *in situ*. The course of the line between the Barracks and Lodge Hill Depot has been converted into a MoD road.

Continuing onto the course of the CNT from Lodge Hill, the formation is visible from Lower Deansgate, with the High Halstow road bridge existing. This is evident only to Solomon's Farm, where it has been removed to Sharnal Street. Here the separate arch on the A228, adjacent to that on the existing Hoo—Grain railway, is visible, together with the site of the exchange sidings, east of the bridge. On the course of the KLR line, at Beluncle Farm, there is an overbridge on an old section of the Stoke road. To the east the formation is covered by an orchard, with the area beyond being built over by the Berry Wiggins oil refinery and Kingsnorth Power Station.

War Department, Royal Engineers. Lydd Military Railway. (RA Gunnery Establishment)

Since the 19th century Lydd has been an important military town. The WD purchased a considerable acreage of the shingle between Galloway's and Jury's Gaps for shooting ranges. Originally the troops were entirely under canvas, but gradually 'Hut Town', as it was called, grew up. In 1888 Lyddite was first tested here. After 1906 Lydd became a Siege Artillery School, but with the ever-increasing range of guns the 4000-yard ranges became useless and the school was moved to Salisbury Plain. Lydd was then established as a station for a Battalion of the Royal Tank Corps until 1937. With the opening of the SER branch line through Lydd in 1888 a standard gauge railway was constructed, the materials used being those returned from the ill-fated Suakin — Berber railway. The railway ran from the camp to connect with the goods yard at Lydd Station and also round the gun ranges to the sea. The system opened in 1893. An Ordnance Survey map of 1899 shows the railway which was quite extensive. Two locomotives, 132WD and 134WD, used by the contractors in the construction of the railway, were later operated by the WD, together with four others. In 1927 the complete system was closed and the tracks removed.

During the Second World War, Lydd was very much in the front line. The ranges were extended and adapted for anti-tank weapon training. A narrow gauge railway (60cm) was constructed by the RE for the Support Weapons Range and is still operational for target practice. This range is now under the DoE, but the railway is operated by the MoD Army Department. The locomotives in present use are five 4-wheel diesel-mechanical types, and a number of self-propelled target trolleys.

Richborough Harbour¹¹

The Inland Water Transport Section of the RE was originally formed in December 1914, to deal with and develop transport on the canals and waterways of Northern France and Belgium. The first recruits of the IWT received their training at the depot of the railway troops at Longmoor, and the first base from which craft were despatched to France was situated at Dover. Owing, however, to its importance as a Naval base, this was not an ideal port for IWT services, whilst the store formed at Ashford proved inconvenient. A more suitable site was eventually found at Richborough, and in 1916 work commenced on the construction of the Transportation Depot and Train Ferry Terminus. The River Stour was widened and deepened and a canal cut through a meander in the river (The Stonar Cut). With the reclamation of the marsh the complex covered an area of 2,200 acres. An extensive railway system within the harbour was developed, with about 60 miles of standard gauge track being laid. The system comprised five distinct yards, and there was a through main line connecting these yards, giving access to the SECR. The military railway left the SECR main line at Minster 'B' Junction and proceeded in a south-easterly direction towards the River Stour, crossed the Sandwich — Ramsgate road at Weatherlees, and continued towards the Train Ferry Berth. The five yards, listed below, were built at different periods and were subsequently linked for through working by a 3-mile-long line, which ran from Minster 'B' Junction to Stonar Camp.

Weatherlees	Reception, marshalling, and despatch of trains.
Train Ferry	Traffic for shipment by train ferry.
Saltpans	Traffic for cross-channel barge service.
Richborough	Handling and storage of material to order or for internal work.
Salvage Transit Depot	Reception, storage, sorting, and despatch of battlefield salvage.

The Salvage Transit Depot was served by a group of sidings capable of storing 500 wagons. This yard had a special connection with the SECR main line at Sandwich 'A' Junction

The train ferry to Calais commenced operation on 10 February 1918. Three steamers, each of 3,654 tons, with four 270-ft long tracks on their train decks and capable of accommodating 54 ordinary 10-ton wagons, were built for the service. *Train Ferries Nos. 1* and *2* were built at Newcastle in 1916 and 1917 respectively, with *Train Ferry No. 3* being built at Govan in 1917. The train ferries were especially useful for the transfer of heavy siege guns on their own mountings. On 26 May 1918, for example, two 14 inch railway guns, each weighing 296 tons and measuring 87 feet long, were taken over. These two pieces of ordnance were to become famous as *Boche-Buster* and *Scene-Shifter* in the Second World War.

The East Kent Light Railway,¹² an independent line at this time, saw great potential in the new port and in 1916 made a connection from Eastry. A goods service was at first operated, which continued until 27 October 1949. Although a passenger station was built at Richborough it was never used; the passenger service, commencing in 1925, ran only between Eastry and Sandwich Road, and was withdrawn on 31 October 1928.

After the armistice in 1918 most sea traffic ceased, and the port degenerated into a dump for battlefield salvage. In 1921 the port was abandoned, and then purchased from the Government by the Queenborough Port Co. Ltd. In 1924 the Ramsgate British Legion ran a ship-breaking service to employ demobilized ex-servicemen. Messrs Pearson-Dorman Long, the developers of the Kent Coalfield, acquired the port in 1927 with plans for the construction of steelworks and coke ovens. These did not materialize, and only the export of coal and importation of timber and stone were carried out. In February 1939 one of the four hatted camps became a transit camp for Continental refugees. At the outbreak of war the whole area was again taken over by the Government and used as a central NAAFI store for Southern England. The Royal Navy used the port area for servicing and repairing MTBs and small craft. In 1944 parts of the prefabricated Mulberry Harbour were transported to Richborough and assembled there preparatory to the D-Day Invasion. After the war Messrs Pearson-Dorman Long continued to use the workshops until the nationalization of the coalfield in 1947. The National Coal Board then maintained a Divisional HQ until 1953. The port facilities were spasmodically used, cattle being exported in the 1950s. When the power station was being constructed in 1962, on the site of Weatherlees marshalling yard, the wharf was used for the unloading of building materials.

All that can be seen today of the vast Richborough Port is the occasional hut or larger building among the complex of factories fronting the main road and the remains of the level crossing gates at Weatherlees Crossing. The former railway connection at Minster 'B' Junction now provides access to the power station. Along the river bank the wharf still remains, as do the piling and concrete bases of the train ferry bridge and the dock, the barge slipways, and the concrete anti-tank defences erected in 1940.¹³

The Martin Mill Military Railway¹⁴

This railway was originally built and operated by S. Pearson & Son in connection with the construction of the Admiralty harbour at Dover, begun in 1897. Opened as a standard gauge line, it ran from Martin Mill Station, on the Dover & Deal Joint Railway, to the top of East Cliff, and then zig-zagged down to the eastern arm of the harbour. On completion of the harbour in 1909 it was intended to use the railway as a passenger line, but this never developed, the tracks eventually being removed in 1937. With the outbreak of the Second World War and the need to operate railway guns, the line was relaid from Martin Mill to within a few yards of the St Margaret's Bay — Dover coast road. Three firing spers were also added and tracks laid to the long range 14-inch static guns, *Winnie, Pooh, and Bruce*, at Wanstone Farm. A narrow gauge railway was also laid for the movement of shells at these batteries. The mobile railway guns sited here, at various times, were the 13.5 inch pieces *Scene-Shifter, Piece-maker, and Gladiator*.

Diesel locomotives were employed. In 1941 there were six LMS and three SR 0-6-0 types. The railway was active throughout the war and was dismantled shortly afterwards.

The Trench Warfare Filling Station Light Railway¹⁵

This standard gauge railway was opened in 1917 and ran from the east end of the SECR's Slades Green locomotive depot, out across marshland for about 1½ miles. This is stated to have been worked by a WD locomotive and also SECR and LBSCR steam railcars. The purpose of the line is obscure, but it was probably constructed in connection with the large expansion in the production of munitions in the area between Woolwich and Dartford. At Erith the Nordenfelt gun works had been established for some years, at Crayford Ness was the Thames Ammunition Factory, and at Crayford the Maxim machine-gun works.

After 1918 the line was sold and became part of Hudson's Refuse line. It was closed in about 1924.

Yantlet Creek Gunnery Testing Station¹⁶

On the Isle of Grain, situated at the mouth of Yantlet Creek, an Admiralty Proof and Experimental Establishment was constructed in 1917 for the testing of naval ordnance. A standard gauge, single track railway was also built connecting with the SECR's Hoo Junction-Port Victoria line, at Grain. This line was the responsibility of the WD Tramway, Shoburyness, who provided the locomotives. This operating body was responsible for the operation of the railway system at Shoburyness military establishment. Here land was first purchased for experimental artillery ranges in 1849. The line at Yantlet was largely out of use by 1935.

To provide loading and unloading facilities for the guns, a large barge dock was constructed, the guns being transported from Woolwich Arsenal in the barges *Gog* and *Magog* towed by the steamship *Katherine II*. A large, rail-mounted steam gantry was built by Vickers Armstrong, and this ran out over the barge dock to haul the guns back onto a concrete apron for proof testing. The guns, when fired, were sited out across the River Thames. These were very large naval pieces, i.e. 14-, 15-, and 16-inch.

The establishment was in use until the 1950s, but with the cessation of ordnance manufacture at Woolwich Arsenal it was closed. Although the site is still WD property the only remains are the barge dock, jetty, concrete apron, and some buildings which now form part of a farm. Of the railway nothing remains. The junction at Grain is now part of the rail facilities for the Grain Oil Refinery.

The Chatham Ring Fortress¹⁷

In connection with the land defences constructed around Chatham during the second half of the 1870s, four forts, Borstal, Bridgewoods, Horsted, and Luton, were constructed. After suspension of work for a time in the 1880s, they were completed by the mid-1890s. Work on the forts involved construction of a 1ft 6in.-gauge railway which originated on the River Medway with a spur from a cement works at Borstal. The track then ran up the steep side of the valley, where the trucks were probably rope hauled, to Fort Borstal, and then on to Fort Bridgewoods, and Fort Horsted, and it terminated at Fort Luton. By 1899 another fort, Fort Darland, had been added, completing the Chatham Ring Fortress. The railway was not used in the construction of this work, and would appear to have been dismantled on completion of the original four forts. There is no information as to the locomotion used, but it is probable that power was provided after the initial rope haulage on the incline.

Very little evidence is visible today as to the course of the line. At Fort Borstal 600 yards of track are *in situ*. Between Forts Bridgewoods and Horsted an embankment exists, whilst at Fort Horsted a filled-in cutting with an overbridge remains alongside a road.

RAILWAYS AND INSTALLATIONS TAKEN OVER FOR MILITARY PURPOSES

The Elham Valley Railway

After the evacuation from Dunkirk the military authorities, anxious to deploy the heaviest of large calibre guns against any invasion fleet, selected this railway as a suitable line for the operation of railway guns. This was taken over by the WD as from 1 December 1940, when the passenger service from Canterbury to Lyminge was withdrawn. Three heavy guns were sited on the line, two 12-inch at Elham Station and one at Bourne Park Tunnel. The howitzer gun at Bourne was the most renowned of all the Second World War railway guns, *HMG Boche-Buster*. This and the other railway guns are detailed in the later section RAILWAY GUNS.

The locomotives employed on the movement of the guns, troops and stores were ex GWR 0-6-0s taken over by the WD. The main depots for these and other locomotives on military service, on the SR, were Canterbury South and Lydden Halt (between Dover and Shepherdswell). The line was eventually returned to its normal duties when, on 7 October 1946, the passenger service resumed, but only for a short duration, as from 1 October 1947 the line was abandoned.

The Romney, Hythe & Dymchurch Railway¹⁸

This railway, a scaled-down version of a standard gauge railway, was opened from Hythe to New Romney in 1927 and thence to Dungeness in 1928. With the proximity of the line to the invasion coast, during the Second World War, it was taken over by the Army within a few months of the outbreak of war. The line was equipped with an armoured train made up from former bogie hopper wagons, mounting Lewis anti-aircraft guns. The wagons were armour plated, as was the locomotive. It appears that the reason for this mobile battery was that a War Office official decided, on a railway map, those lines which were of coastal strategic value and suitable for naval guns, such as those which patrolled between Wells and Hunstanton, in North Norfolk. Thus the RGDR was selected without realizing that the railway was of 15-inch gauge. So, to save the official's face, the miniature armoured train was made up. A Polish brigade operated the line, and towards the end of the war it was used by the Petroleum Warfare Department, and also to carry the pipes for *Pluto* after the D-Day invasion.

Having served its war service the railway was returned to its owners in October 1945, in a very run-down condition. It was not until 3 March 1946 that the public service was resumed between Hythe and New Romney, and to Dungeness on 21 March 1947. The railway has continued to operate, although under different ownership and with fluctuating fortunes. There is some doubt as to whether its entire length will remain.

The Rye and Camber Railway¹⁹

This railway has been included as it is only just across the county border into East Sussex. Constructed to a gauge of 3ft by the Rye & Camber Tramways Company, it was opened from Rye to Camber on 13 July 1895, and thence to Camber Sands on 13 July 1908. The railway was solely passenger carrying up until its closure in 1939. In 1940 the Admiralty took over the line, and part of the track near Rye was provided with a concrete surface so that it could be used by road as well as rail transport. In 1946 the line was de-mobilized, but was in such an unusable condition that it was never reopened.

Ridham Dock²⁰

The building of Ridham Dock, at the mouth of the River Swale, was commenced in 1913 to serve the needs of Edward Lloyd Ltd (now Bowaters' United Pulp Mills Ltd). During the First World War part of the dock, although still not completed, was taken over by the Admiralty as a General Salvage Depot. At that time two standard gauge locomotives were obtained to work in the dock, one being an ex-LSWR 4-4-2T No. 488, the other an 0-4-2T named *Skylark*. By the end of 1919 both locomotives had left Ridham, *Skylark* being sold to the Snailbeach District Railways. But No 488 had a very chequered career. Having been sold to the East Kent Light Railway, she was withdrawn in 1945. The following year she was purchased by the Southern Railway, and finally withdrawn in 1961 to be acquired by the Bluebell Railway in Sussex, where she now runs.

Armoured Trains and Railway Guns

In 1859, when Great Britain appeared to be faced with the prospect of invasion by France, there appeared in a London periodical *Once a Week* of 13 August an article on 'English Railway Artillery: A cheap defence against invasion'. The writer was W. B. Adams, an authority on railways. Heavy artillery, he wrote, had the disadvantage of requiring many horses to draw it. To dispense with this could best be done by rail mounting and having it drawn or propelled by a locomotive. A gun of 20 tons could be mounted on a railway truck with a circular traversing platform. Such a battery would be almost a moving fortress and could be used on coastal railways. Among the other suggestions advanced on the same occasion were some for the defence of London. Here again, the employment of armoured trains was advocated. The most effective line of defence which London could have would be a circular railway around the capital at a distance of 15 miles. On this railway there should be truck mounted, Armstrong Whitworth ordnance, as was suggested by W. B. Adams. Another early advocate of the use of railways as an actual instrument of warfare was Col. E. R. Wethered who, in 1872, suggested that heavy ordnance should be mounted on wheeled carriages. He later stated that 'Portable Batteries' should be stationed at three large central depots which might be utilised for London's defence.²¹ These suggestions were largely developed, as will be seen later.

Whilst the subject of rail-mounted ordnance had been under discussion in Great Britain, the United States, in the Civil War, had set a precedent by actually introducing armour-protected, gun-carrying trucks.²² In the Franco-Prussian War guns mounted on four armour-plated trucks were taken into action by the French during the siege of Paris. Further use was made of armoured trains in the Egyptian Campaign of 1882 and also in 1885 on the abortive Suakin—Berber Railway.

In January 1886 some important experiments were carried out to determine the practicability of firing guns at right angles to the line of the railway, the result being that a 40lb RBL could be safely fired broadside from a wagon. Other experiments, begun in 1885, were successfully conducted over several years in France to determine definite data on the subject of firing at right angles to the railway. Some experiments carried out at Newhaven, Sussex, in 1894 were more interesting, being a combined effort of the 1st Sussex Artillery Volunteers and of the LBSCR. An armoured gun truck was constructed mounting a 40lb Armstrong breach-loading gun mounted on a turntable. Full trials took place on 19 May and proved satisfactory — a precursor of the railway guns of later years.

It was during the Boer War that the armoured train underwent its greatest development. In the protection of railway lines the trains rendered an invaluable service, and in addition to the organisation and running of armoured trains there was included, in every ordinary train, a special truck mounting a quick-firing gun.

The First World War saw the railway gun emerge in its own right, although in improvised forms, such as a 6-inch Naval gun mounted on a railway truck for heavy anti-aircraft work and a 12-inch Naval gun for defence needs. Much more sophisticated equipment was developed during the Second World War. In Kent, Ashford railway workshops were used for the construction of armoured trains and special wagons for rail-mounted guns. 40 armoured trains were constructed for coast protection and mounted a light machine gun and a 6lb Hotchkiss. A mobile force of 26 First World War 9.2-inch guns was assembled on railway mountings. These armaments were deployed on various coastal lines after the evacuation from Dunkirk. In preparation for the expected German invasion, 12 LNER 2-4-2T locomotives were taken into WD service, fitted with armour plate, and camouflaged so that they could be used for hauling various armoured trains, distributed at strategic centres around the country. 2 additional locomotives were kept as spares.

As these locomotives were a tank type, armoured tenders were supplied by the LMS to increase their operational sphere. In Kent 3 were stationed at Canerbury and 1 at Ashford. With the subsequent abandonment of the invasion these trains were never used and the locomotives were dispersed on other duties. From 1943-45 they were gradually returned to the LNER and restored to their original condition.

As mentioned previously, in Kent, the Elham Valley Railway was a line selected for the operation of railway guns, one being the renowned *HMG Boche-Buster*. This gun was originally a 14-inch designed for *HMS Eagle*, but during the First World War it was railway mounted and was the largest gun, 243 tons, to be manned by the RA in the field. It was made famous by the firing of 'The King's Shot' near Arras on 8 August 1918, during a visit of inspection by King George V. The gun was returned from France and stored at Nottingham until early 1940, when its potential for military defence was realized. This, together with its pair *Scene-Shifter* and two other identical mountings, *Piece-Maker* and *Gladiator*, were resurrected from store. For this war, *Boche-Buster* was rebarrelled to 18-inch, the work being carried out at Darlington railway workshops in 1940. *Boche-Buster* was manned by 50 men and several specialist gunnery officers from the 2nd Regiment RA. The complete battery of 80 men was known as the 11th Super Heavy Battery. After initial training at Catterick Camp the battery moved south, arriving at Bishopsbourne, on the Elham Valley Railway, in February 1941. The first test firing was made on 13 February 1941 from Kingston, when several rounds were shot out into mid Channel. In the Kingston and Barham village areas severe blast damage was caused and only two other test firings were made. Apart from the blast damage much work was involved in track strengthening, for the 250 ton gun, whenever it was fired. Winston Churchill inspected the gun at Bishopsbourne in April 1942.

The Admiralty was given the task of the installation of heavy naval guns in the Dover area with the co-operation of the Royal Artillery, Royal Engineers, and Royal Marines. This involved the siting of *Winnie* and *Pooh*, 14-inch MK VII static guns, at Wanstone Farm, St Margaret's at Cliffe. These guns were served from the Martin Mill Railway. *Bruce*, a 13.5 inch experimental Hypervelocity gun tubed down to 8-inch, was sited near Bockell Farm. It was fired on a few occasions only and never used in action, the wear on the rifling being too great. The mobile 13.5 inch railway guns were *Scene-Shifter*, *Piece-Maker*, and *Gladiator*. *Winnie* and *Scene-Shifter* were ready for action by 7 August and 20 September respectively, and installation was complete by May 1941.²³ The railway guns were later to be stationed at various locations. The Germans, for their part, operated 21 cm K12(E) and 28 cm K15(E) railway guns. With the building of the Atlantic Wall, permanent artillery was installed.

The previously mentioned Royal Marine Siege Batteries were coastal artillery regiments. The Super Heavy, railway gun, regiments formed to cover the possible invasion beaches from inland were RA 1st, 2nd and 3rd Super Heavy, plus two independent batteries (2 x 12 inch Howitzers each), the 14th at Wareham, Dorset (after September 1941 at Chichester, Sussex) and the 18th at Hailsham, Sussex. These two batteries were withdrawn in December 1942 and the equipment withdrawn. The 1st Super Heavy Regiment soon disappeared, having probably been stationed on the East Coast. The 2nd and 3rd SHR lasted from 1940 until 1945. From September to December 1944 both were brought up to war preparedness preparatory to leaving for France to form a Super Heavy Army Group RA but, on 25 December 1944, the 2nd had these plans cancelled. It was said that the French railway was afraid that the equipment would block the supply routes, which were in a parlous state. This would be the case if *Boche-Buster* were in transit. This

regiment had been disbanded by February 1945. The 3rd SHR was re-equipped for a tractor-drawn role, using US 270 mm guns, on 3 August 1944. This regiment was in action at the Rhine crossing

From the railway operating point of view each SHR had an RE (Transportation) Lieutenant or Captain attached to it, who had under him the necessary railway-trained men to drive the locomotives (one per battery), and carry out shunting and signalling operations. These men worked closely with the professional railwaymen. In the case of the Elham Valley Railway, the 2nd SHR RE detachment took over the entire running of the line. The locomotives used were WD ex GWR 0-6-0 types and in 1944, in preparation for the abortive trip to France, the 2nd SHR was re-equipped with ex-LMS 0-6-0 diesel-electric locomotives.

The movement of *Boche-Buster* and the other railway guns, subsequent to the war, is obscure, but in the early 1960s this and several other railway guns were located at the Royal Arsenal, Woolwich. It was the time of the great reduction in that ordnance factory's activities, and in the process the guns were cut up. No railway guns exist today in the United Kingdom, and only one 18-inch barrel, at Shoeburyness. This was one of four specially made for *Boche-Buster* and *Scene-Shifter* and sent to France in 1918 in case their 14-inch ones were inadequate.

CLASSIFICATION OF RAILWAY GUN TYPES

Boche-Buster

18-inch Howitzer, high angle gun, elevation 40°, traverse only 2°. Sections of railway chosen which allowed gun to traverse target area by moving along line, range marked on track, recoil shot gun down the line.

Scene-Shifter, Piece-Maker, Gladiator

13.5 inch ex-naval guns, mounted on WW1 mountings, elevation 39°, recoil absorbed by special brakes, special cordite charge to increase range. *Scene-Shifter* converted to 18-inch Howitzer November 1943.

9.2 inch Guns

Guns could be traversed at 90° to mountings, stabilised by a series of hawsers attached to ground anchors. Prior to 1941 baulks were used. Usually operated in pairs within battery.

12-inch Guns

High angle guns, mounted and stabilised as 9.2-inch guns.

During the First World War a little-known event occurred concerning a railway gun, in France. It was during the German offensive in 1918 that the 31st Australian Infantry Battalion was in action at Wiencourt on 8 August. A railway gun was noticed steaming up and down and on reaching a point some 800 yards from the Battalion opened fire. There then followed a disputed episode. An RAF Sopwith Camel attacked the locomotive hauling the gun and immobilized the train, thus staking a British claim on the grounds that they impaired the gun. The French coveted the gun as a war trophy, claiming that it had been captured on French soil. It was subsequently decided that the 31st Battalion should be awarded the gun by virtue of the fact that, whilst still firing, it had come under fire from the unit. The 8th Field Company, 5th Australian Divisional Engineers, attached to the 31st, also assisted in the capture. The railway gun, the latest 28 cm German artillery piece,

was removed to Paris and exhibited in the Champs De Mars. Later it was moved to England via the Channel Ferry. After certain alterations, to enable it to be moved by rail, it travelled to Woolwich Arsenal for detailed examination and finally to Chatham Dockyard, thence to Sydney. After a period of exhibition it was eventually moved to Canberra in 1923. In 1927 the *Amiens Gun*,²⁴ as it had come to be known, was set on a concrete base at Canberra Railway Station. Here the gun remained until the Army took an interest in it, in 1942, when it was installed at the artillery proof range at Port Wakefield, South Australia. In 1948 the gun was re-united with its carriage and set up adjacent to the Australian War Memorial in Canberra, where it now rests.

CONCLUSION

This account has attempted to follow the evolution of the railways built for military purposes and their subsequent uses in Kent. There are, doubtless, a number of obscure lines for which no information exists. Indeed, a number of fairly modern lines in this report are not well documented. All the railways have played their role in peace and in war, with, after the Second World War, their gradual decline.

ACKNOWLEDGEMENTS

The author would like to thank Mr. D.E. Collins, Mr. J.D. Smale, Mr. W.K. Williams (Industrial Railway Society), The RE Corps Library, and Chatham Public Library for their help in providing source material. Invaluable assistance on railway guns was received from Mr. D.G. Collyer (Kent Defence Research Group), Mr. G.L. Somerwill (7th Battery 2nd SHR), Major D.N. Brook RAA (Australia), and Lt. Col. S.M. Cleeve RA, also from the RA *Gunner* which provided a request for information.

(To be continued)

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Book Reviews

A REGIONAL HISTORY OF THE RAILWAYS OF GREAT BRITAIN, VOLUME 13 THAMES & SEVERN, by Rex Christiansen. 205pp, with 32 b and w plates and 12 maps. David & Charles, Newton Abbot 1981. ISBN 0 7153 8044 4. £8.95.

'On banks of Thames they must not say' wrote A. E. Housman, 'Severn breeds worse men than that'. Your reviewer is left with the impression that neither have been as well served as they might have been in the latest addition to this series. It takes in a roughly triangular region with apexes at London, Bristol, and Shrewsbury, although the boundary is set by other volumes in the series. Each chapter takes a specific area and summarizes railway developments within it.

Yet therein lies a fault. Railway developments are traced in isolation from the economic history of the area. Only rarely, as in the case of Shrewsbury, are the consequences of the railway in the area considered. Instead, the inception of the line is too often followed by the developments of the 1960 to 1980 period. There is thus a curious feeling of a gap in the story; it would have been better to delete descriptions of what might have been in favour of the effects of what was built.

Sometimes the book reads as if the writing had been undertaken directly from published material. The narrative therefore seems cluttered with references to books and magazines, even down to saying of one that '... one was delighted to see [him] writing once more with splendid clarity ...'. For myself, I should prefer to read what Mr Christiansen has to say in the text and be referred to the work of others in a Bibliography.

Obviously these are personal opinions, and in fairness it must be recorded that the book tells the story worthily enough. Yet in a series that aspires to show something of what railways have meant in social history, questions remain unanswered. What effect did the GWR have on the development of Swindon? And when did the town's dependence on the railway cease? What arrangements were made for traffic to race meetings at Cheltenham, Stratford, or Newbury? What was the main traffic to and from country goods yards? To quote Housman again, 'The whistles blow forlorn,' for the economic history has yet to be written. R. DAVIES

THE ARCHAEOLOGY OF RAILWAYS, by P. J. G. Ransom. 304 pp, 260 × 222 mm, with 55 colour and 180 b and w illus, maps and etchings. World's Work Ltd, 1981. SBN 437 14401 1, £12.50

This is a book of the 1980s. As one examines books collected over the years the major impression is of striking improvements in presentation, in printing, in photographic reproduction, in drawing, and in format, and these improvements are all here. So too are commendably clear maps, good contents lists and index, and a happy literary style.

The topic is daunting in magnitude. Mr Ransom has steered well between the two hazards of over-simplification and bewildering detail, and has devised a satisfactory and satisfying route through the subject; a good blend of history and of a guide to physical remains in use and derelict has been achieved.

The contents are divided into nine chapters with well-organised contents which make each self-contained. The illustrations are well chosen and presented, and of widespread chronological and geographical origin. Every reader, casual or determined, expert or not, could learn much from them. There is, too, a surprising amount of local detail. I learned much about the Edinburgh — Perth route in its several forms, about the Liskeard — Looe line, and about many tramroads and plateways. The chapter 'Some localities of special interest' is notably good; it gives details of the history and present state of the Tranent — Cockenzie waggonway, the Stockton & Darlington Railway, Edge Hill (Liverpool), the Settle — Carlisle line and narrow gauge in Caernarvonshire. Your reviewer's pet aversion — the over-dominant steam locomotive — is kept in its place; there is a chapter on the subject (there needs to be) but it does not overwhelm the book.

In a subject of such breadth it is unlikely that there will be no errors and equally unlikely that anyone will spot them all. I saw no serious ones, though I feel that the statement that the waterway age lasted longer in the West Country than elsewhere is debatable, and I find that motor cars are reliable for a good deal more than 30,000 miles (and I am not a car worshipper).

All in all, the book is very good — I am tempted to be even more enthusiastic — and in these inflationary days it is value for its price. The serious student of railway history may know most of what is here, but it would take him a long time to marshal his facts so well. I. P. NOSS

RAILWAYS OF MARPLE AND DISTRICT FROM 1794, by Warwick R. Burton. 60 pp, A4 size, card covers, with 34 photos and 3pp maps and plans. Published by M. T. & W. R. Burton, 69 Bowden Lane, Marple, Cheshire SK6 6ND. 2nd Edition, 1981. ISBN 0 9507288 0 2, £2.95 (+ 45p post)

1794 was the date of incorporation of the Peak Forest Canal, which used a tramway in Marple until the locks and aqueduct were completed.

Marple was relatively late in joining Britain's railway network, its permanent station opening in 1865 on a single track branch of the MSLR. The arrival of Midland Railway trains enhanced its status which was further exalted due to MR and joint line expansion, and Marple station became a busy junction; in 1898 the station had about 40 staff and saw some 250 trains daily. The New Mills — Heaton Mersey cut-off, opened in 1902, eased the pressure on the bottleneck, and a spacious junction station at Chinley supplanted Marple, which had no room for expansion. In fact increased traffic prevented a real decline in Marple's use until the savage cuts of 1914-18; since then its passenger trains have been predominantly suburban.

This book goes into detail about each stage in the development of Marple's railway. The story is brought up to the present date, through the closures of the 1960s and the station rebuilding in 1970. Throughout the book there is competent and penetrative comment, even post-war events being shown in a clear perspective. In order to include all relevant details of matters affecting Marple, especially inter-company rivalry, the text covers most parts of the country between Manchester and Derby, even further at times. (For example, MR trains at Kings Cross and the CLC at Garston are both pertinent to Marple's development.) The author's local knowledge is often evident, such as mention that Middlewood's platform shook alarmingly in the wind, and of a private path to Marple station from the home of the MSLR Secretary.

Other stations within or just outside the boundaries of the former Marple UDC (Rose Hill, Middlewood, High Lane, and Strines) are described in detail, as is the railway from Marple to Macclesfield. Principal differences from the book's first edition are the inclusion of an additional map and three extra photographs.

A reviewer is expected to find fault if he can, and I did come across a few errors and misprints (for example, the extension from Whaley Bridge to Buxton opened on 15 June 1863 and Chinley — Matlock closed on 1 July 1968). But all relate to minor and peripheral matters. This history is of high standard by an author who knows and enjoys his subject. Printing is on glossy paper; there are good large-scale plans and many interesting photographs. ALLAN BRACKENBURY

GREAT WESTERN ADVENTURE, by Brian Hollingsworth. 174pp with 31 photographs. David & Charles, 1981. ISBN 0 7153 8108 3, £5.95

One day the story of preservation following Beeching and the demise of steam will be the subject of theses for transport students. For the Great Western story they will find this book a most useful source of reference; indeed it may prove to be the sole source, as preservationists feel no pressing need for minute books.

Mr Hollingsworth's book brims with enthusiasm; we read again of the superiority of the Dean Goods over the BR Standard 2-6-0, and we may wince a little at the thought that by her exile in Australia *Pendennis Castle* may thereby 'escape a possible nuclear holocaust!'

However, the book amply demonstrates how well the GWR is now represented in the preservation movement — and this in spite of the Company's own dismal record. Surely there can be no actions more philistine than the destruction of *North Star* and *Lord of the Isles* in 1906. Interesting comparisons may perhaps be drawn between Churchward's early regime at Swindon and the anti-steam sentiment at 222 Marylebone Road in the late 60s and early 70s!

The book has a pleasing format with bright illustrations, most of them unknown to your reviewer. The converted will find much joy in it; agnostics may find it confirms their worst prejudices about Western pretensions. E. R. LL. DAVIES

BRITISH LOCOMOTIVE CATALOGUE 1825-1923: VOLUME 3A, THE MIDLAND RAILWAY and its constituent companies. Compiled by the late Bertram Baxter, edited by David Baxter. 240pp, card covers, no illus. Moorland Publishing Co., 1982. ISBN 0 903485 52 4, £5.50

The first volume of the *British Locomotive Catalogue 1825-1923* — a general summary — was published by Moorland in 1977, and this was followed by Vols 2A and 2B covering the London & North Western Railway, the former being reviewed in Book Review Supplement No.27, Feb. 1979.

Now we have Vol 3A covering the Midland Railway and its constituent companies in the same way. The first locomotives to be listed are those of the constituent companies — not only the original constituents of the MR in the 1844 amalgamation but those of all companies absorbed by the MR, up to and including the London, Tilbury & Southend in 1912. Then follow the locomotives of the MR itself, listed by classes, with a brief note on each class and the dates of introduction, rebuilding, reboiling, renumbering, withdrawal, &c. of each engine in the class.

A Number Index and a Class Index enable any particular locomotive to be found, despite the complication of the renumbering of the entire locomotive stock in 1907, and the book concludes with a bibliography of the various classes, largely references to magazines and journals. H. C. L. TRICKETT

NORTH DEVON CLAY, by Michael Messenger. 104 pp., 230 × 180 mm, with 51 photos and 22 maps and plans. Twelveheads Press, Chy Mengleth, Twelveheads, Truro, Cornwall, TR4 8SN. 1982. Hardback £6.45 plus 60p postage; cardcovers £3.75 plus 40p postage. ISBN 0 906294 06 1, and 0 906274 07 X respectively.

The north-western corner of Devon appears to be a rural area and yet, as Michael Messenger tells in his latest book, it has much of interest to RCHS members. Here are to be found the remains of a former canal, 3-ft gauge railway engineered by J. B. Fell, an extension of the London & South Western Railway, Colonel Stephens-promoted North Devon & Cornwall Junction Light Railway, all of which served the transport needs of the industry founded upon the local ball clay deposits. Ball clay, originally used in the making of pottery is now also used in animal feeding stuffs, fertilisers, paint, rubber, and plastics. Its transportation to the ports of North Devon started by use of horse-drawn waggons, thence via the Rolle Canal opened in 1827, followed by the 3-ft gauge Torrington to Marland Railway in 1881 providing a connection with the L&SWR at Torrington over which it was conveyed to Fremington on the Taw estuary for export or by rail to UK destinations. The opening of the ND&CJLR, in which Colonel H. F. Stephens was involved, in July 1925 brought a standard gauge railway to both Marland and Meeth so that clay could be sent away by rail direct from both mines. Whilst the Beeching axe saw the closure of the ND&CJLR in March 1965 and the lifting of the line beyond Meeth to Halwill Junction, the rest of the line to Torrington and via the former L&SWR line to Exeter remains open for the daily clay train and the occasional tour special. At the mines, use of rail has ceased and road vehicles now convey the clay to BR wagons or to the quayside at Bideford for loading into family-owned continental coasters that come to convey it to European ports.

The book tells the story of the ball clay industry of North Devon and its transport. It contains photographs showing the mines and railways in operation together with clear maps and layout diagrams. It is well produced and written, and worthy of a place in the library of the transport or industrial historian. It is to be hoped that it will also attract them to examine this part of Devon in more detail.

ALAN P. VOCE

THE BRECON FOREST TRAMROAD, by P. R. Reynolds. 142pp with 3 maps and 6 photographs. Published by the Author at 87 Gabalfa Road, Sketty, Swansea, 1981. £2.40 (+ 25 post)

The Brecon Forest Tramroad was part of a bold attempt to open up and exploit the resources of the Great Forest of Brecon that eventually bankrupted its promoter. The plateway functioned from 1822 until superseded by a standard gauge railway in the mid-1860s and its story is intimately bound up with those of its builder, his banker, and the later railway companies.

Paul Reynolds has plumbed great depths to produce an admirably detailed account of all aspects of the tramroad. It is well written, and points of conjecture are made thoughtfully and argued with care. A final chapter devoted to Walking the Tramroad includes some very sensible advice, and two appendices neatly give biographical and topographical notes. Whilst the maps are adequate, larger and more would have enhanced the book, in particular one showing the later railways would have been useful.

One's only real criticism of this book is the poor production. In his introduction Paul Reynolds states that the book only became possible owing to the help of the Students' Union of the University College of Swansea, who printed it, but if this effort was the best response the Union could make to such an excellent manuscript they should be ashamed. Artwork is sloppily assembled, pages are unevenly inked and not printed square, while reference numbers are inserted by hand, to comment on but a few faults. A little more care would have given everyone a lot more credit.

Having said this, one must state categorically that the content of the page enables one to overlook the appearance of it. The quality of the research is such that this book must take its place amongst the really first-class histories of minor railways. It is a sad reflection on the publishing business that the author has had to publish his work himself, but his confidence is well justified. He deserves support.

M. J. MESSENGER

SEVERN & CANAL AND CADBURY'S, by Alan H. Faulkner. 48pp, card covers, with 45 illus. Robert Wilson, 23 Cecil St., Rothwell, Northants, 1981. £1.25 (+ 20p p&p)

This is the fourteenth booklet in the well-known series, introduced by Robert Wilson a decade or so ago, which deals with boats and trade on inland waterways. In common with earlier volumes, it is essentially a photographic record of the carrying activities of the Severn & Canal Carrying Co. and of Cadburys. In fact, the presentation of a fascinating collection of hitherto unpublished material is presumably the main purpose of the book

In the accompanying text Alan Faulkner, who is no newcomer to the series, briefly traces the ancestry of the S&CC Co. up to its formation in 1873. The bulk of the work is concerned with the subsequent history of the company and with its carrying activities until trading ceased in 1948, and the book ends with a short account of the Cadbury fleet. Details of narrow boats operated by both companies are listed, but the reader must search the text for information on river craft operated by the S&CC Co. As is usual in the series, no references to source material are given, which perhaps limits the usefulness of the work for the serious student of transport history. J. IAN LANGFORD

THE HORSE ON THE CUT, by Donald J. Smith. 184pp, 244 × 203 mm, with 94 plates and 51 drawings. Patrick Stephens Ltd, 1982. ISBN 0 85059 514 2, £8.95

This book at last fills a gap which has long existed in the recorded history of our inland waterways. At the time the canals were built the horse had long been established as the chief means of lessening man's labours, besides providing him with a ready means of transport. In fact, the horse played an important if unassuming role in the actual building of the canal system, not only hauling wagons but also providing power to work gins for de-watering tunnels and raising spoil. Nor must one forget that many of the surveyors used the horse for long-distance personal transport when surveying or setting out the initial lines.

Once the canals were built, it was but a short step for the horse to take over the haulage of boats and reduce the number of men employed in bow-haulage, a role it held until well into the age of mechanical propulsion. In fact, this noiseless form of propulsion can be likened to that of the steam engine and is synonymous with the very tenor of the canals themselves.

Every aspect of the specialised management and use of these hard-working and, in the main, uncomplaining animals — not forgetting of course the mule and the humble donkey — has been dealt with by the author in a manner befitting the wealth of detail he has accumulated from extensive research. It is saddening, though, to read of the many cases of deliberate ill-treatment, bringing in their wake the necessity for legislation to control, if not to eradicate, such behaviour.

It is unfortunate that a number of errors, spelling or otherwise, were allowed to pass into print, possibly due to inadequate proof reading. On page 97, for example, Basingstoke is rendered as Basingstock, while the captions to photographs on pages 32 and 56 should refer to Lady Capel's, not Lady Chapel's. The boat shown entering a lock in the upper photograph on page 29 is a motor boat, so the caption is somewhat misleading; presumably the horse is towing a boat out of sight of the camera. Referring to page 126, Netherton Tunnel was originally lit by gas, while on page 174 Harecastle New Tunnel should surely be included in the list of tunnels provided with a towpath.

As in several other books I have reviewed, it would appear that the difference between side *pound* and side *pond* is still not fully understood (cf. p. 131). All the water in a side pound is available for lockage purposes, whereas only a part of that in a side pond can be so used.

These errors, which could have been eliminated at source, detract in a small way from what is otherwise an excellent and readable book, nicely presented with an attractive and appropriate coloured jacket. It is copiously illustrated with photographs and copies of old lithographs portraying the horse, an added attraction being the large number of line drawings which enhance the text, blending as they do with an age that has now receded into history. For added measure there are several appendices which provide aspects of canal history condensed into a minimum of space. By today's standards, the book is well worth the price asked and should appeal to many more people than those specifically interested in canal history. PHILLIP WEAVER

COAL, COTTON AND CANALS—THREE STUDIES IN LOCAL HISTORY, by Hugh Malet. 16pp, A4 format, typescript, with 15 illus. Published by Neil Richardson, 375 Chorley Road, Swinton, Manchester M27 2AY. £1.00 (+ 20p post)

This booklet brings together three of the author's earlier essays, with additional illustrations.

'Coals to Manchester: the Duke of Bridgewater and the eighteenth-century fuel crisis' first appeared in the *Journal of the Royal Society of Arts* in 1975. It deals with the Duke's contribution both to the development of canals and, through provision of cheap transport for coal, to the industrial and economic growth of Britain.

James Brindley — canal engineer' (from *History Today*, 1973) is an account of Brindley's career, which gives him due credit for his achievements while correcting the popular misconception that the prime engineering genius behind the Bridgewater Canal was Brindley's rather than the Duke's.

'Passenger services' (from *Waterways News*, 1977) deals primarily with the packet boat services on the Bridgewater Canal, which ran from 1766 until well into the railway era, but includes mention of other canals, including interesting diary entries recorded by one of the author's antecedents on a journey on the Grand Canal of Ireland in 1842.

Dr Malet needs no introduction as the expert on the Bridgewater canal, so further comment is superfluous. However, in the interest of accuracy, one small error calls for correction: the River Wey Act 1651 specified the maximum, not minimum, fare between Guildford and London. GRAHAME BOYES

Correspondence

Richard Whitworth

Sir,—Mr Dean has done a very welcome service by drawing attention to the canal schemes of Richard Whitworth and the evidences of his activities at Batchacre. But on a small point, that of title, whence the Knighthood or Baronetcy? Charles Hadfield in *Canals of the West Midlands* also dubs Whitworth 'Sir Richard', yet S. A. E. Burne, in the biographical paper to which both authors make reference, gives no evidence of such entitlement. Burne, of nearby Loynton Hall, was a meticulous scholar who did a great deal of research in local history for the *Victoria County History* and I would expect him to be accurate. Staffordshire Record Office staff confirm that the contemporary obituary notice was to 'Richard Whitworth Esq'.

E. A. SHEARING

The Packet Boat Age

Sir,—I am grateful to Professor Alan Smith of Salford University for informing me that the statue of St Christopher which once guarded the Mersey ferry run by the monks, mentioned in my article 'The Packet Boat Age' (July 1981), has recently been returned from the Merseyside Museum at Liverpool to the new Norton Priory Museum near Runcorn — a very proper action.

To Mr Tom Wood, Clerk of the Wax Chandlers' Society, I am indebted for the correction on p. 11 of that article, that it is the Fishmongers' Company which organizes the race for the Doggett's coat and badge — now the oldest annual sporting event in England. HUGH MALET

Season Tickets

Sir,—With reference to p. 68 of the *Journal* for March 1982, members may like to know that amongst other North London Railway items at the Public Record Office in Kew there is a Circular giving full details of NLR Season Tickets. There is another Circular in the Railway Museum at York.

When the connecting line from the GNR to the NLR at Canonbury was opened in 1875 Season Tickets between GN stations and Moorgate were also available to Broad Street. Later, soon after the opening of the Great Northern & City Railway in 1904, these tickets were also available over that line to Moorgate, and to Liverpool Street (Met). The colours of these tickets were:

First class	Red Cream,	Gold lettering
Second class	Blue Green	Black lettering
Third class (when issued)	Chocolate Yellow	Black lettering

The issue of these tickets ceased in 1964 when the section between Drayton Park and Finsbury Park was closed.

Three-route season tickets were issued from all GN stations north of Finsbury Park. Receipts were divided between the four companies on a fixed percentage based on a census taken about every three years.

See also the *Railway Magazine* for December 1977 p. 612 and for February 1978 p. 92. H. V. BORLEY

The LB&SCR Provident Society

Sir,—David Wallace of Cambridge University has kindly sent a full-size photostat copy of Certificate No. 2248 of the above Society (formed in 1842), dated 1 March 1872. The document carries a coat of arms, flanked on the left by a drawing of a domeless boiler 2-4-0 locomotive *Westminster* and on the right by one of paddle-steamer *Orleans*. According to Burt's *Locomotives of the LB&SCR 1839-1903*, the locomotive was built as a 2-2-2 in 1864, being rebuilt to 2-4-0 and receiving its name in July 1872 — if so, it is perhaps strange that its likeness should appear on a certificate dated four months earlier, but not impossible; a case of 'coming events casting their shadow before'? If a member is studying such societies, and would find the copy useful, he may contact me, enclosing s.a.e. HARRY PAAR



Material for the November *Journal* must be with the Editor by 5 July. All material should conform to the style-sheet printed in the November 1981 issue.

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Published by the Railway & Canal Historical Society at 12 Victoria Gardens, 195 London Road, Leicester LE2 1ZH, and printed by Hobbs the Printers of Southampton.