

THE PEAK FOREST CANAL — LIME AND LIMESTONE, 1794-1846

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The Peak Forest Canal ran from a junction with the Ashton Canal at Dukinfield to Bugsworth (now Buxworth), a distance of $14\frac{3}{4}$ miles.¹ There was a branch of half a mile from the main line to Whaley Bridge. The canal enjoyed an independent existence from 1794 to 1846 when it was incorporated in the Sheffield, Ashton under Lyne and Manchester Railway. Not until 1845 did the canal have power to act as a carrier and then only by virtue of general legislation. On the other hand the canal company was heavily involved in quarrying limestone and the promotion of its use. It bought land for this purpose and built a railway from the limestone rocks at Dove Holes to the terminus of the canal. Limestone was its *raison d'être*, and the canal gave rise to large scale quarrying.²

The Limestone Trade

The canal did not however create the trade in lime and limestone, although, as Boden has pointed out, one of the effects of the canal was to remove lime burning from the quarry sites to the canal bank sites near to the small coal pits.³ Limestone burning had long taken place at Dove Holes. Bunting quotes from the general survey of the manor of the High Peak of 1650:

'All those Quarries or Pits of Lymestone lying in ye Crofts by ye Dovehole neare Chapell Frith within the wast grounds of the Manor aforesaid for the burning whereof there are at present 14 Kilns at work or thereabouts the Kilns being set up ordinarily and taken downe again by the people thereabouts at their pleasure without any license in that behalf but if the digging and burning of Lymestone there might be quietly enjoyed by one single person as tenant to the State whose right we conceive it is wee vallue the same to be worth £7 per annum.'

Aiken writing a century and a half later noted that 'the country round Buxton is celebrated for lime of a very strong quality, the kilns for burning of which form a principal object in the scenery of the surrounding hills. It is sent chiefly on the backs of small horses to considerable distances in the neighbouring counties'.⁵ He pointed out that at Mottram the manure used was chiefly lime which was needed in considerable quantities. It was brought from Chapel-en-le-Frith on the backs of small Welsh horses and generally cost 1s 6d per load. The Peak Forest Canal which was expected to pass within four miles of Mottram would reduce the price by nearly one half.⁶

Origins of the Canal

Such considerations had given rise to proposals for a canal which was originally planned as a branch of the Ashton Canal. The decision to build the Ashton itself had been taken in 1791, the main impetus coming from the mine owners of Ashton who wished to sell coal in Manchester at a price matching that of the producers on the line of the Bridgewater Canal. An Act was obtained in 1792 for the canal to run from the Rochdale Canal in Manchester to Fairfield and then to Dukinfield Bridge at Ashton under Lyne, while the northern arm went on to Oldham.⁷ Work started later in 1792, but it had not advanced far when on 8 May 1793 the proprietors resolved that an application should be made to Parliament for an Act to make a canal from the present intended canal at Dukinfield to Disley and Chapel Milton, and a wagon railway from there to Loadshill in Derbyshire. One half of the money was to be subscribed by the present promoters

and the other half by the landowners whose land would be affected by the canal and railway. A separate meeting of the subscribers to the Peak Forest Canal was held on 27 June which ratified the decision taken in May. Even so the two canals, as will be seen, had much in common. Not only did the shareholders overlap, but Benjamin Outram eventually was the engineer to both companies and the resident engineer on the PFC was Thomas Brown who had drawn up the plans for the Ashton Canal.

The Peak Forest Canal Bill was advertised in August 1793.⁸ The deposited plan was based on a canal to Chapel Milton with a series of locks at Whitehough, between Bugsworth and Chapel Milton, as well as the flight at Marple. But otherwise the plan set out the main features of the canal as built. Though relatively short, the route involved climbing over 200 feet from the Ashton Canal at Dukinfield to the summit level between Marple and Bugsworth, and the bridging of the steep valley of the Goyt at Marple. The solution adopted was to build the canal as far as Bugsworth in only two sections, divided by a single, but long, flight of locks.

The House of Commons received the petition for the Bill on 27 January 1794.⁹ John Bower Jodrell¹⁰ told the Committee which considered the Bill that the canal would be of great public utility, as it would open a useful, short and easy communication from the towns of Manchester, Ashton under Lyne and Stockport and the adjacent country to the very extensive limestone rocks at or near Loads Hill and would also open a communication with many large and extensive mines of coal, flagstone and other minerals. Benjamin Outram said it was practicable to make the canal, but thought that it would be most advisable to terminate it about two miles below Chapel Milton and from thence to continue the communication by railways or stone roads to Loads Knowl. It was known at this stage as the Dukinfield and Loads Knowl (or the Peak Forest) Canal Bill.¹¹ On 10 March it was read a third time in the Commons, a clause being added about the provision of a towing path through the estate of one of the principal supporters of the Bill, George Hyde Clarke. The Bill passed rapidly through the Lords and the Royal Assent was given on 28 March 1794.¹²

The Peak Forest Canal Act

The Act¹³ provided for the making and maintaining of a navigable canal from and out of the Canal Navigation from Manchester to or near Ashton under Lyne and Oldham at the intended aqueduct bridge in Dukinfield to or near to Chapel Milton; and a communication by railway or stone roads from thence to Loads Knowl within Peak Forest; and a branch to Whaley Bridge. The company was given specific authority to make and maintain other railways or stone roads from the canal to any coal or lead mines, stone quarries, limestone rocks and iron works already or thereafter erected within two miles of the canal. Power was given to make rollers or inclined planes. The Act empowered the company to take one of two routes between Hyde Bank and New Marple. Later they opted for the eastern variation, ruling out the one via Nab Top, Bowdens and Norbury Smithy.

Finance and Shareholders

Outram's estimate of expense came to £115,794, including a contingency allowance of 15%. The basic cost of cutting the canal was estimated at £6,675: £2,800 for the section to the north of the proposed Marple aqueduct (£400 per mile) and £3,875 for the southern section (£500 per mile). But there were extra costs — the cutting at the road leading to Wernith near Chadkirk Chapel, £6,674; eleven embankments in the northern section £7,000¹⁴; the deep cutting and tunnel at Hyde Bank, £3,600; and in the southern section a cutting and several embankments, £3,000. All these sums were dwarfed by the estimate for the Marple aqueduct and locks, £12,229 and £14,040 respectively. The smaller Goyt aqueduct was estimated at £5,801. Land would cost £11,200, the reservoirs £8,691, and three and a half miles of cast-iron railway, including fencing, cutting, banking, culverts and bridges would cost £5,600.¹⁵

The capital of the company was to consist of up to £90,000 in £100 shares and up to £60,000 in a further issue of shares or by means of a mortgage. The holders with most shares were: the trustees of John Astley (15), John Arden (31), William Cresswell (12), George Hyde Clarke (17), James Edge and John Beswick (11 jointly), Otto Hulme (11), James Harrison (34), Jodrell (21), John Lyon MD (15), Thomas Peter Legh (12), Samuel and Peter Marsland (50), Samuel Oldknow (65), Samuel Phillips (13) and John Whitaker (11).¹⁶

Many shareholders also had stakes in the Ashton and or the Huddersfield canals. Of those listed above, Cresswell, Hulme and Phillips were also shareholders in the Ashton and the Huddersfield, and Astley in the former only. In all about one sixth of the shareholders listed in the Peak Forest Canal Act appeared in the Huddersfield Act of 1794,¹⁷ and as many as one third in the Ashton Canal Act of 1792.

Of those down to subscribe more than £1,000, only Jodrell, Samuel Marsland and Whitaker were on the committee initially. It included three not on the list of shareholders — Samuel Firth of Bank Hall from whose estate in the Peak Forest land was to be taken, and who took the chair at the committee's first meeting, William Gaskell¹⁸ and W. R. Hay, although the latter probably represented Astley who died in 1794.

Nevertheless the other members of the committee had important holdings — John Fletcher held 9 shares, John Lees 6, James Mallalieu 9, Thomas Phillips 7, Robert Thornley 6, John Simpson 6 and Tristram Ridgeway 4. At a special general meeting held in August, Samuel Oldknow and Samuel Greatrix (6 shares jointly with Benjamin Greatrix) were added to the committee. In October Oldknow took the chair for the first time, but most of the meetings in the first year were chaired by Jodrell or Marsland.

The major shareholders and committee members were mainly either local landowners or cotton manufacturers with a heavy representation from Stockport, or both. Oldknow's activities are well-known.¹⁹ The Marslands owned mills in Stockport and elsewhere. Whitaker, Lees, Robert Thornley, John Simpson and Thomas Phillips were also millowners. James Harrison was a cotton merchant who had recently bought Cheadle Hall and also moved into manufacturing in Stockport.²⁰ Older Cheshire families were represented by Legh, who joined the committee later in 1794,²¹ Arden of Harden Hall,²² Clarke of Hyde Hall and Jodrell. Hay, later Vicar of Rochdale, married in 1793 the widowed third wife of Astley of Dukinfield Hall.²³ Clarke who had eloped with Astley's daughter by his first wife, owned valuable coalmines.²⁴ Aiken commented: 'His estate abounds with coal and will be greatly benefitted by the Peak Forest Canal which runs at a small distance behind the house'.²⁵ The Greatrix's were landowners at Disley where Samuel was a dyer, printer and bleacher.

Other millowners with shares were: James Doxon, Whitaker's partner (6), James Brown (5), John Collier (3), all of Stockport, Peter Drinkwater (5) and Samuel Hardman (5) of Manchester and Robert Grimshaw (7) of Gorton. Other shareholders included William Egerton MP (6) of Tatton Park and Wythenshaw who was on the committee of the House of Commons which considered the Bill; Reverend Ralph Harrison (2), Minister of Cross Street Chapel, Manchester; John Lingard, the prime curate of Macclesfield; and George Buxton Brown (4), a Liverpool merchant. Ralph Harrison later became a member of the Canal committee and on occasions took the chair.

John Bower Jodrell generally took the chair at the committee's early meetings, but from mid 1796 onwards Samuel Oldknow frequently did so. He was not only, as shown above, the largest shareholder initially, he increased his holding considerably and at one time held 261 shares. In many ways he was the main force behind the canal, but his relationship with it was complex. His interests in the Marple area, no doubt coupled with his personal characteristics, meant that he used the canal to further his own ends. His unsound financial position following his losses in spinning in Stockport and elsewhere, and his heavy investments in property in and around Mellor meant that his purse never matched his ambition. Thus, as will be seen, he had to be chased to

meet his calls on the PFC shares and had to draw back from financing the building of the Marple locks with Richard Arkwright — Oldknow's financial support both before and after the crisis of 1792-3 when he abandoned most of his activities outside Mellor. Oldknow's relationship with the PFC has been explored in a separate article.¹⁹

Construction of the Canal

The committee wished to concentrate first on the northern part of the canal from Dukinfield to Hyde Hall to ensure that it was open by the time that the Ashton Canal was operating from Dukinfield to Manchester. On 5 June 1794 Outram²⁶ was directed to take the necessary steps so that cutting could start as soon as the corn harvest was got in. In September he was authorised to proceed with the execution of the southern part of the canal from the head of the proposed locks at Marple to Whaley Bridge.

A contract for cutting part of the canal was let in October to Robert Fulton and Charles McNiven, and the contract for building the aqueduct at Marple was let in February 1795 to William Broadhead, Bethel Furness and William Anderson. But Fulton advised on this, for in April 1795 the committee accepted his idea of cast iron arches instead of stone, though in the event this was not done. He was also asked to print his ideas on the comparative advantages of twenty ton boats and was awarded 100 guineas for his trouble and time passed in and about the canal 'because he had suggested many ideas'. Moreover Fulton at his own suggestion took over McNiven's share of the contract in March 1795.

Fulton's²⁷ main theory was that small boats and canals were preferable as they would obviate the use of locks which could be replaced by inclined planes or lifts. He had been stimulated by the Earl of Stanhope's description of the proposal to use railways instead of locks to link the ponds on the canal from Bude to Halsworthy and Hatherleigh because water was scarce and the country steep. His ideas were taken seriously. Outram and Lees went to see small boats and inclined planes in operation at Coalbrookdale. In March 1796 Outram was asked to have six trading boats made of 20 to 25 tons capacity and up to ten small boats. In July he was requested to prepare a paper on whether it was preferable for boats to descend from the top level of the canal at Marple by locks, inclined planes, caissons or by any other means. It was the autumn of 1797 before he put to the committee estimates for a railway to serve this purpose. By then the comparison in costs was with locks alone.

However the decision to end the canal at Bugsworth rather than Chapel Milton was taken much earlier as in July 1795 the committee resolved that from the calculations made by the engineer it would be in the best interests of the company to make the canal as far towards Chapel Milton as it can be extended on the level of the canal at Disley and the railway be made from thence to the limestone rocks. Apart from the need for an additional flight of locks at Whitehough, there would probably have been water supply problems in a terminal basin at Chapel Milton. In October the engineer was asked to stake out the line of the canal from Dukinfield to Hyde, subject to Clarke and Oldknow having made the necessary preparations to bring their coals upon the canal as soon as it was open. Funds were always stretched and consequently the committee had to keep a careful watch to ensure that income followed expenditure as quickly as possible. In May 1796 they stopped work near Clarke's pits at Hyde and said it was only to resume in time to complete the canal when the coal could be delivered.

As early as September 1795, when £23 per share had been called up, the Company was £1,100 in 'advance' and the treasurers were asking for security from individual proprietors. The clerks pointed out that a further call of £10 was due in October and in fact another £30 in three instalments was called up before the following August. But before the last of these was due the Company was in debt to the treasurers to the extent of £4,000 and they declined to pay out more. It was intended that the committee should give security for £5,000 as to stop work would have prevented the completion of the southern part of the canal for several months, and delayed work

on the railway to the limestone rocks. The security was therefore to be devoted to reducing the debt of £3,000 and the balance to the southern part of the canal and to the railway.

The bond was cancelled at the next meeting because not all the committee had signed; instead individual members signed notes of hand at six months for £350 each, to be cancelled when the debt was reduced to £3,000. Meanwhile a limit of £14,000 was placed on the demands which the clerk could make on the treasurers in the first six months of the year. Shareholders were offered five per cent on their money if calls were paid before the due date.

Costs were rising.²⁸ In September 1795 Fulton's contract was revised in consideration of the advance in the price of labourer's wages. He was allowed 6½d per yard instead of 6d. The line of the canal had to be changed between Marple aqueduct and Hyde Bank tunnel as the original was on a slippery foundation. Later in 1796 Outram was directed to cause a reservoir to be built in the Combs Brook valley. In February 1797 plans were approved, but since it was not likely that the reservoir could be made use of that summer the work was postponed until after the corn harvest. Although at the same meeting Outram and Brown were directed to proceed with the execution of such of the works of the canal between Hyde Hall and the Marple locks as from their magnitude needed to be immediately proceeded with, within a month it had been decided that only works on the southern or summit level should be completed as soon as possible. On other parts of the canal, the aqueduct excepted, work was to be suspended until funds would permit. Even the aqueduct was not going ahead as planned. The contractors, having been delayed by the committee, were given until September to complete their work.

Subscribers were asked to pay arrears to prevent a stop being put to the work and actions were later commenced against defaulters. Only £80,600 of the £90,000 authorised had been paid up. In June 1797 the clerks were instructed to take counsel's opinion whether the powers in the Act were sufficient to enforce the payment of more than £100 per share. The two counsels consulted gave different opinions! Meanwhile the annual general meeting had agreed that a further £40,300 was to be raised in proportion to paid up holdings.

Various expedients were considered to overcome the shortage of money. The principal measure was to dispense with the building of the Marple locks. Outram was asked to estimate the cost of a railway from the head of the proposed locks to the aqueduct. He reported that it would cost £2,720 to make a railway with proper wagons, cranes, wharves etc, excluding the cost of making a proper track for the railway across the aqueduct. This plan was approved in November 1797, as was a move to raise £30,000 more for financing the canal and railways by an advance from the proprietors secured by a mortgage on the tolls, duties and profits.

The great advantage of the railway was that in addition to costing £16,800 less, it could be ready twelve months sooner than the locks. Thus by late 1797, three years after the construction of the canal started, the achievement of a link between the limestone rocks and the Ashton Canal was in sight, though much remained to be done. Apart from the aqueduct and railway at Marple, the northern section of the canal still had to be completed, particularly Hyde Bank Tunnel. Nevertheless the southern or summit section was operating by then, as was the railway from Bugsworth to the quarries — see below. The southern section was possibly open by June as instructions were then given for milestones to be erected and Oldknow was allowed to take water from the canal to raise coal from his mines provided he replaced an equal quantity. In July he was allowed to navigate one or more of his passage boats on the top level provided he paid the Company half the money collected from the passengers without deducting the cost of boats, horses or men, and did not navigate at more than three miles per hour.

Only essential work continued however in the autumn of 1797. In January 1798 activity increased, works being proceeded with subject to a limit of £2,000 a month. In March Outram and Company, who were the contractors for the Marple railway, were told that the rails were not to be more than three feet long and that the railway was to be finished by the end of May. Broadhead and Anderson were given until the end of May 1799 to complete the Marple

aqueduct, but paying the contractor was a constant problem. In November the Company paid Anderson the money necessary to discharge the shopbills of the men employed on the aqueduct, but their wages were not to be paid until it was keyed. The men were however to be given a handsome treat to such an amount and in such a way as Oldknow and Anderson thought most proper and the men were to be assured that in future they would be paid regularly monthly.

On the northern section Outram was asked in May 1799 to cause the canal to be completed to Hatherlow as soon as possible. Because of the extraordinary difficulties encountered in completing part of Hyde Bank Tunnel, William Medlicott was allowed 12 guineas a yard instead of the usual seven. Brown took up residence in this area to supervise the work personally. Keen's cutting between Hyde and Hatherlow also gave rise to problems.

To maximise the Company's availability of capital, energy had to be devoted to the chasing up of subscriptions. Jodrell's executors²⁹ were written to in strong terms and later Mrs Jodrell was told that the Company was in great want of money to carry on the works of the canal. £3, to £4,000 of the additional £50,000 was at stake. A deputation went to see Thomas Smith of Rochdale who owed £1,500. This included Oldknow who in the previous year had been pressed for payments on his own shares, a special meeting of the committee having been held without him for the purpose of instructing the clerks to write a stiff letter to him and to others in arrears. By February 1799 a general meeting was being held to consider raising more money through shares as no more was obtainable from the £50,000.

It was decided to invite existing subscribers to put up money on the mortgage of the tolls. James Harrison and Oldknow were invited to wait upon John Arden, William Egerton and Thomas Smith to ask for £20 per share and such further sums as they could prevail upon those gentlemen to lend. Lees went to Winchester to see Francis Jodrell. Marsland and Mallalieu went to see subscribers in Liverpool. By April funds were still £1,300 short of the £10,000 which it had been agreed should be raised to complete the canal. Some of the committee agreed to make this up on the understanding that they would be excused if they persuaded others to pay.

By 1800 the canal was complete. The greatest work was the Marple aqueduct with its three semi-circular arches each of 60 foot span. The central arch was 78 feet high and the shoulders of each arch were pierced with half cylinders, so lessening the weight of each pier. George Borrow referred to the aqueduct as 'the stupendous erection near Stockport' which filled his mind as a boy with wonder and yielded to nothing in the world of its kind with the exception of the great canal of China.³⁰ The canal itself was opened on 1 May,³¹ but not of course for continuous traffic as the northern and southern halves of the canal were linked only by the railway at Marple. This was in fact to prove to be only a temporary arrangement because the development of the limestone traffic, to which we turn in the following section of this article, was such as to make the building of locks at Marple, as originally planned, imperative.

Building up the Limestone Trade

Concurrently with the building of the canal, arrangements for the getting and transporting of limestone to the canal had proceeded with some urgency because it was well appreciated that this must be the major source of revenue. When most workers were discharged in August 1797 an exception was made for those engaged in the limestone trade.

As early as August 1794 the clerks had been directed to complete an agreement with Mr Richard Kirk for limestone to be obtained from his Hallsteads estate at 2d per ton.³² This was done and formed the principal source of limestone in the early years of the Peak Forest Tramway. In September a contract with Anthony Bellott for getting limestone and other stone in his estate at Bowden Edge was signed and put into effect.

The committee was told in May 1795 that Samuel Firth was willing to grant a lease of certain lands in the parish of Chapel-en-le- Frith called the Doveholes and of the liberty to get limestone therein, but it was not until 1797 that a draft of the lease was approved. Meanwhile there were

protracted negotiations with Reverend Thomas Gisborne who owned land in the area.³³ Terms were approved in December 1794, but Gisborne wished to protect the position of his son, a minor, and the committee thought that the PFC should have more than a life interest.

The tramway from Bugsworth to the limestone rocks has been described elsewhere in some detail.³⁴ About six miles long, it reached a height of over 1,100 feet above sea level. From Bugsworth it rose 206 feet to Chapel-en-le-Frith, an average gradient of 1 in 20. Then there was an inclined plane about 520 yards long, rising 209 feet at about 1 in 7. It then climbed a further 200 feet to the summit before descending in branches and sidings to the various quarries and kilns which it served. The cast iron rails, three feet in length, were attached to stone blocks. On the main sections wagons were hauled up by horses,³⁵ and descended by gravity. The incline was operated by a chain or wire rope attached to a wheel, empties being balanced by the loaded wagons ascending. A rope was tried first, then a patent twisted chain, but they were not successful and recourse was had to a chain with five inch links in 1809.³⁶

The tramway was constructed in 1795 and 1796. The order for rails was formally approved in February 1795. In March valuation of the land was authorised. Work started later that year for as Ripley points out in September 1795 Mrs Grace Bennett saw men working on the railway.³⁷ In December her husband objected to the direction the line took through Stoddards, his estate. The consequence was the building of a short tunnel. In March 1796 Outram was asked to cause 20 wagons with two to two and a half tons capacity to be made. Hadfield quotes the *Derby Mercury* of 8 September as the authority for an opening date of 31 August.³⁸

Limestone was sold at Bugsworth at 20d per ton. 2d of this was accounted for by the rent paid to Kirk. Getting the stone and loading it at the quarries cost 6d. It cost 7½d to convey to Bugsworth where ganging the stone cost 3d. The balance of 1½d was accounted for by repairs and maintenance of wagons.

In February 1797 it was agreed that a cottage should be placed at the foot of the inclined plane near Chapel-en-le-Frith for the residence of a person to manage the plane and keep a check on the tonnages, and a second house built near the basin at Bugsworth for a toll collector. In April German Wheatcroft³⁹ was appointed to the latter office. Two sorts of stone were then being quarried from Kirk's estate: that not fit to be burned into lime was to be sold for road repairs at the best price obtainable. Poor limestone was to be sold at the foot of the plane at 10d per ton, 1s at Chapel Milton, 13d at Whitehough, and 14d at Bugsworth compared with 20d for good stone.

Oldknow and others were asked to view the limestone rocks on or near the railway and to consider the disputes with the getters. In October Brown was asked to advertise the ganging of the stone from the limestone rocks to Bugsworth as available for letting in one, two or three sections. Some idea of the scale of operations can be gauged from the fact that in June 1798 Brown was asked to employ sufficient workmen to get 20,000 tons of limestone from Gisborne's estate alone in the year. He was also asked to get different sets of stone getters, each set not exceeding 15 of whom not less than one fourth should be partners. He was to ensure that two proper hovels with fireplaces be made for sharpening tools and for sheltering under in rainy and stormy weather. The Company rented from Kirk six workmen's cottages with proper conveniences and gardens twice the size of the cottages.

In January 1798 Brown was asked to negotiate a new contract with Kirk for stone from Hallsteads at any sum not exceeding 1d per ton. The price at Bugsworth was consequently reduced to 19d per ton. It was decided to recommend to a special general meeting that the tolls should be reduced to 1d per mile on limestone and coal for burning limestone and to 1½d for lime.

The railway was improved. Brown was authorised to pay William Cotterell £45 over and above the 5s per linear yard agreed for driving the railway through the limestone rock in Black-hole on account of his having to take on, at Brown's insistence, an extra man to expedite the work.

A longer term lease was later concluded with Kirk at £100 a year for 21 years provided the soil and turf were kept unmixed with stone and deposited in heaps or ridges most convenient to

be spread at the end of the lease on the area from which the limestone had been taken. At the end of the year a plot of land in Fairfield was leased from Firth for 21 years and rules applying to getters, gangers and other persons employed in the limestone trade were approved. The quarries were divided into two lots for letting to getters. Not all went smoothly for by May 1799 Wheatcroft was asked to apply to a magistrate for warrants to apprehend the several men who had deserted their work and neglected to perform their contracts for getting stone in the Company's quarries in Peak Forest. As an aid to sales Outram was asked to request Dr Anderson to write and publish 1,000 copies of a treatise at 1s each on the nature, effects and proper application of lime as a manure. Oldknow himself had invested substantially in kilns at Marple which began operating in 1797. They originally cost some £1,500, but he later spent a further £3,000 on more kilns and associated works around the Canal.

Financial inducements were offered to encourage the limestone traffic. In February 1799 it was agreed that anyone who built kilns on or near the banks of the Canal by 1802 should receive a premium by way of a drawback on the tolls paid by them on limestone, coal, lime and ashes. The amount would vary from 5% for those built in 1799 to 2% for those to be built in 1802, subject to a limit of £100 per kiln. In 1800 further premia were offered including one of £10 for every boat which was built and launched on the southern stretch of the canal capable of carrying at least 20 tons.

This coincided with a period of further expansion at the quarries which was the main reason why the building of the locks at Marple became essential. The lease with Gisborne was renewed. In the autumn of 1800 it was agreed to increase the number of workmen at the quarries to 200, and to engage an active and resolute man to superintend them. Wheatcroft was eventually given the job, being told to delegate his duties as toll collector and wharfinger. Brown, now the engineer, as Outram resigned that year, was to erect a blacksmith's shop at or near the quarries and to arrange for the provision of 200 more wagons for the railway. The railway was to be doubled from the head of the limestone rocks to the head of the inclined plane and from its foot to Bugsworth. Until this could be done passing places were to be made at convenient distances. This doubling of the line was carried out except in Stoddard tunnel and the bridge under the Buxton road. The railway at Marple was also to be doubled. Outram was asked for a new chain strong enough to pass eight wagons down the plane at one time. 20 boats were ordered. 1,000 tons of limestone a day were to be passed down the canal. Wheatcroft was given *carte blanche* to 'give such a price for limestone getters' as would achieve this target and advertisements were to be placed in the Manchester, Derby, Staffordshire, Leicester and Blackburn papers. 500 handbills were to be printed. To reach the target by December Wheatcroft was to cause stone to be ganged during the night as well as the day.

The blacksmith's shop was to be enlarged to include a dinner house for the workmen and a stable for the horses used by the gangers. A proper person was to be procured to provide the workmen with stores and provisions at one of the houses built by Mr Kirk, the Committee offering every help and protection to such a person on his supplying the workmen on the best possible terms. Wheatcroft himself was later instructed to supply the provisions at prime cost.

A number of appointments were made to build up trade. First Samuel Lloyd⁴⁰ was engaged to promote trade, as distinct from Brown's primary task of managing the carrying out of the work of construction. The latter was however promised a bonus when the works, including the locks, were completed, and also £100 as soon as 800 tons of limestone had been passed down the railway in 18 hours. In 1802 William Wright was engaged as agent and commercial manager of trade at £250 a year, and in 1804 George Briggs was appointed the agent of the Company in Manchester at £150 a year, together with a house in Ancoats of £30, and a sum equivalent to the dividend on 50 shares. His duty was to extend the trade of the canal.

In 1805 James Meadows was appointed principal agent to the PFC and the Ashton Canal jointly. Briggs moved his residence to Marple to superintend the quarrying and the limestone

traffic. By this date Wright seems to have concentrated on the financial side. Later in 1805 both Briggs and Wright went. The former was dismissed because some financial dealings were unsatisfactory. Wright resigned because he was not content with a subordinate position. Some years later German Wheatcroft was dismissed because he failed to co-operate with Meadows.

Much of the stone taken down to Bugsworth was burnt at Oldknow's kilns at Marple. His 12 kilns could burn 2,500 bushels of lime a day. About half the kilns' output was transported by canal, largely to industrial users. Three eighths went by cart and wagon for agricultural use, and the rest by cart and wagon for industry, mainly cement, but also for bleaching and calico printing.⁴¹ The PFC sought the Ashton's help in finding ways of encouraging sales of lime and limestone in Manchester. Edward Stelfox was offered £50 towards the cost of building two lime kilns on the banks of the Ashton Canal on such a plan and to such dimensions as 'our Engineer shall approve and on condition that he burn thereat no other limestone than what shall be bought from the Peak Forest and navigated along the PFC'. There were protracted negotiations with the Ashton for the lease of land and kilns in Manchester.

Special efforts were made to develop the Duke of Bridgewater's Canal as an outlet for limestone. Originally the Duke's kilns at Worsley had burned local quarried stone, but now large quantities of Peak Forest stone were consumed. In 1801 the PFC had offered up to 500 tons a week delivered at Marple aqueduct at 4s 4d. An agreement was made for 400 tons delivered at Castle Quay, an allowance being made for additional delivery charges. In 1803 the agreement was for 18,000 at 7s 8d; in 1806 for 12,000 tons at 6s 6d. In that year all but 3,100 of the 147,000 measures of lime burnt at Worsley came from Peak Forest stone.⁴²

In 1802 the PFC itself rented for three years Wright and Brown's three kilns at Disley, and also that company's property and works at Bugsworth. Highams not only quarried limestone at Dove Holes; they burned lime there and so coal was conveyed up the tramway. Altogether, according to Farey,⁴³ in 1808 about 50,000 tons of limestone were brought down to Bugsworth on the railway. About 100 tons of merchandise a week were also conveyed.

Marple Locks and the Acts of 1800 and 1805

Meanwhile the need for locks at Marple had led to further financial problems necessitating additional Parliamentary powers. In 1799 the committee wished to take power, first, to extend the canal to Norbury and Poynton quarries and second, to extend the railway from Loads Knowl to Sparrowpit, and from Whaley Bridge to or near the summit of the inclined plane. The last of these ideas was presumably designed to duplicate the facilities of Bugsworth. The plans for extending the canal were quickly abandoned but the agreement of the Duke of Devonshire to the railway extension was sought and obtained. The petition presented to Parliament on 14 February 1800⁴⁴ included the three railway extensions. Their purpose was stated to be to open a communication with many large and extensive tracts of stone and other minerals which lay under or near to the proposed railway lines, to increase trade on the canal and to supply the public with stone at an easy and cheap rate.

The Bill however fell foul of the standing orders of the House of Commons. It could not be a 'Navigation Bill' as no extension of the canal was proposed; on the other hand it did not meet the rules for Bills relating to railways or tram roads.⁴⁵ These proposals were therefore given up and the main effect of the 1800 Act⁴⁶ was to give the Company power to raise up to £150,000 in shares. This replaced the authority in the Act of 1794 to raise £90,000 in shares and £60,000 in loans. By 1800 £80,600 had been subscribed in shares and £36,540 borrowed.

In May 1801 the go-ahead for the building of Marple Locks and the Combs Brook Reservoir was given by the committee as the funds were adequate. Outram reported that it would be advantageous to make only (sic) 16 locks between the upper and lower levels with a rise of 13 feet 1 inch at each. In August it was agreed that contracts for twelve of the locks should be let in four leases for completion by Michaelmas 1802. Outram also recommended that limestone

should be conveyed from the quarries to the aqueduct at Marple without unloading the wagons by means of boats and landing stages being constructed for that purpose on the upper level.

This burst of financial optimism did not last long. The Company ran into trouble in its attempt to raise another £50,000 for the locks and the purchase of Hallsteads. Brown was ordered to stop work on the locks and to settle with the undertakers on the best possible terms. An attempt was made to collect £10 from each shareholder. The treasurers refused to advance more money without security. The land from Kirk and also that from William Bradbury which was needed for the reservoir was purchased by a group of committee members: Oldknow, Samuel Marsland, George Duckworth, James Mallalieu and George Worthington. Not until 1819 did the PFC finally purchase the whole of the Hallsteads estate; in 1805 Laurence Peel lent the Company £1,500 so that they could buy part of the estate and he bought the remainder himself.

By late 1802 the committee considered that the locks were of the greatest concern to the Company, but that the funds would not admit of their being built with dispatch. They should therefore make an offer to Samuel Oldknow, who was in the chair at the meeting when the matter was discussed, and Richard Arkwright. If they advanced the money for wages and raw materials for building the locks as fast as was wanted, they would be allowed all their tonnages on the canal and railway during the time of their loan. Also in return for providing the funds they would be allowed a share of the tolls generally according to a scale whereby as soon as £4,000 was advanced, one quarter of the tonnage dues would be paid to them and pro rata up to £16,000 when all the dues would be payable to them.

Variants of this scheme were subsequently discussed, under one of which Oldknow and Arkwright would build the locks and be paid in instalments from the tolls. The works however would still have been planned by, and executed under the supervision of, the surveyor. In August 1803 however an agreement seems to have been arrived at with Arkwright and Oldknow whereby they were given a lease of all the tolls for which they would pay a rent of £12,000 a year for four years. They were also to provide £24,000 for work on the canal. If this were not repaid in four years with interest, they were to get all the tonnages until it was repaid. It is however doubtful from subsequent developments whether this contract was ever signed.

Meanwhile little seems to have been done towards the actual building of the locks. In January 1803 Outram was asked to reconsider his plan, particularly the number and depth of the locks. He was asked to confer with Mr Jessop 'that the Committee may have the satisfaction of their joint opinion in a matter of great importance.' In August details of an agreement for executing the locks were sent to the solicitor at the same time as the agreement with Arkwright and Oldknow. In October it was agreed that a million bricks were to be purchased. In November it was laid down that the whole of the inverted arches, side walls and counter forts from the foundations to those three feet above the upper edge of the inverted arches were to be in brick, except the square quoins, hollow posts and recesses between them and the tails of the locks which were to be of ashlar stone. In December Brown was asked to make out specifications to be the foundations of agreements with the several contractors for building the locks. In September 1804 it was agreed that the parts of the wings and tails of such locks as were not yet built were also to be made of ashlar. The locks seem to have been finished by 1805. In May 1806 the lock-keepers were provided with an upper waistcoat and badge thereon to distinguish them from other persons. In February 1807 it was agreed that the railway linking the two levels of the canal at Marple should be taken up as it was no longer used.

In 1804 and 1805 the means of financing the building of the locks were finalised. In June 1804 it was decided that the terms negotiated with Oldknow for leasing to him and Arkwright the canal, tolls, limerocks, lands and works should be referred to the next general meeting. It is possible that legal obstacles were discovered as the terms of the resolution leave little doubt that the Company's finances had not benefited from a loan such as had been agreed in 1803. In September it was decided to apply for a Bill.

This time the Bill went through relatively smoothly. William Egerton was asked to present it with Sir Robert Peel in reserve. In the Lords Lord Walsingham objected to the power to raise money by such other ways and means as the Company should from time to time think expedient for that purpose. The Lords did however approve a clause permitting the raising of money by calls on proprietors in proportion to their shares.

The Act of 1805⁴⁷ authorised the raising of a further £60,000 by creating shares and other means, over and above the £150,000 of the 1794 and 1800 Acts. A principal reason given in the Act for the large debts was the great advance in the price of labour.⁴⁸ The Act gave authority for the letting of the tolls for up to 21 years, and the purchase of land in Manchester for a wharf.

The Act having been obtained, Oldknow declined for reasons which appeared very satisfactory to the committee and honourable to himself to negotiate further the lease of the tolls. Negotiations were continued with Arkwright alone, who advanced £27,000 in all. It is not clear how quickly this was paid off, but little of the debt was outstanding in 1811 when it was decided to call in arrears from shareholders to enable the remainder of the debt to be repaid to Arkwright. In 1812 counsel's opinion was taken as to whether Arkwright or the Company was liable to property tax on the interest payable to him. The accounts were settled in March 1813.

The Quarries

In 1811 a special committee was appointed to examine the Company's limestone quarries and to report as to the most eligible mode of working and getting limestone for the ensuing year and particularly on the propriety of using or laying aside the inferior stone to get limestone of better quality. The committee reported in November 1811 that the quarries were kept in a proper manner. The inferior stone should be kept separate, but, while it was most desirable to persevere with the present site for the ensuing year, they recommended the purchase of the Duke of Devonshire's stone without further delay. If that could not be done, the stone on the south-east side of Dove Holes belonging to Gisborne, Eyre and Sir William Bagshaw should be secured.

Eyre offered a 63 year lease of his estate in Dove Holes and the liberty of getting stone therein for £78 10s for the land and £100 for the stone per annum. This was accepted. As the stone was of superior quality, it was to be sold at 2s 6d per ton which had just been agreed as the price for stone for use by iron masters and founders. The general price had been raised earlier in 1811 to 2s 3d for credit and 2s 2d for cash. Plans for an extension to the railway were agreed in January 1811, the cost of which was an additional reason for raising the price.

The area of land from which limestone was obtained was extended gradually. In 1814 a lease of land at Bowden Edge was agreed. In November 1816 Laurence Peel, Oldknow, Brown and Meadows were appointed to negotiate terms with the Duke of Devonshire's agents for getting limestone on his land. This too involved an extension of the railway, probably finished in 1817. This lease was said to afford an inexhaustible quantity and the best quality of stone. In 1819 Peel's share of the Hallsteads estate, which he purchased earlier from Kirk when the Company could not afford it, was bought by the Company.

Oldknow did not operate the kilns at Marple for very long, largely because they ran at a loss — £2,000 was the accumulated deficit by 1808. In 1811 he leased the kilns to the firm of Wright and Brown of Disley who already had kilns on the canal at Disley and Hyde Lane. In 1813 the canal offered to rent from Oldknow the limekilns, cottage and works at Marple on a perpetual lease of £500 per annum. Oldknow did not accept this, nor did the canal agree to his counter offer of £1,200 a year including additionally his drydock, boatyard, four boats and additional land. By the 1830's the kilns were in the hands of John Clayton and Company. Meanwhile the canal had let its kilns at Bugsworth to Messrs Highams, but in 1811 they were leased to William Hassall and Joseph Sattersfield at £100 a year, though the rent was to be significantly less if they built two kilns of their own of sufficient dimension to burn as much lime as the existing three.

Other Canals

The traffic in limestone to the Duke of Bridgewater's canal has already been mentioned. In 1801 it was agreed that friendly conferences should be held between the Ashton, Huddersfield and Peak Forest canals at the suggestion of the Ashton. Close watch was kept on other canal developments. The Rochdale attempted to put up its rates in 1805-6 but met with opposition from the PFC. But other canals could be allies. In 1802 the committee considered that the proprietors might reasonably be expected to put up £15,000 for the proposed extension of the Cromford canal to Bakewell. This did not come off, but in June 1810 the committee considered a resolution from its annual general meeting concerning a canal from the head of the PFC to Cromford. They thought well of it, but felt that it was best promoted by a meeting of its friends in London. Mr Pearson Welton was asked to convene a meeting. Meadows was asked to procure surveys for two routes: from Whaley through Combs and the valley of the Wye; and from Bugsworth through Edale and along the Derwent. At the same time sketches of the lines of different canals between London and Manchester and of the adjacent canals were to be printed and circulated to the committee.

The committee also thought that a communication was desirable between the Chesterfield canal and the proposed canal to Cromford. Nevertheless they do not seem to have regarded it as their direct responsibility since three years later when Thomas Brown claimed payment of his expenses in connection with the High Peak Junction Canal, they would pay only up to July 1810 as thereafter he had not their authority to act. Pearson Welton was similarly treated the following year. In 1813 the committee gave assurances to Messrs Remington and Wake that in their view the promoters had not abandoned the scheme.

The committee seem to have given little direct help to the proposal for the Macclesfield canal, although it had paid £150 in 1818 to help individuals with their expenses in connection with the then abortive attempt to build that canal. In 1824 when the proposal was revived the committee welcomed it. They opposed a proposal for a canal from the Duke of Bridgewater's canal at Stretford or Sale Moor to Stockport or Hope Green and empowered a delegation to attend to their interests as respects the proposed railway between Liverpool and Manchester.

The close links with the Ashton canal continued through the Meadows family. In March 1820 Thomas Meadows was appointed assistant under the entire direction of his father, James, for a salary of £25, with similar a appointment to the Ashton canal. In 1824 James Meadows retired on grounds of ill health. He was bought a piece of plate worth £100 and retained on his salary as consulting agent and general inspector of the concerns of the Company to whom the other agents should apply for information and advice and under whose superintendence they were to act. James Meadows junior was retained as assistant under the direction of his father. James Meadows senior died in 1831 when James junior was appointed principal agent.

Not surprisingly in view of the financial crises to which the canal was subject to up to and including the period of the building of the Marple Locks, it was 1811 before a dividend was declared. 2% was paid in 1811, 1813 and 1815. From 1816 to 1819 3% was paid and in 1820 3½%. In 1821 and 1822 it was down to 3% again. The late 1820's seem to have been less prosperous with payments as low as 1½% in 1826 and 2% in 1827.

At this time the committee was considering expansion. In 1825 a group was investigating different sites for getting gritstone. They agreed on several quarries which might be opened with advantage when the Cromford Railway and the Macclesfield canal were completed. Meanwhile they recommended extensive working of the Bank End quarries at Disley owned by Jodrell. The Macclesfield Canal Bill was to be supported providing certain safeguards were secured, while various railways, including the proposed Stockport Junction Railway which would have joined the Cromford Railway, the Manchester and Liverpool and the Manchester and Oldham, were opposed. Later the committee changed their minds about the Manchester and Sheffield Railway, after being told that the Duke of Norfolk favoured it.

The 1830s — Prosperity and Competition

The Macclesfield Canal and the Cromford and High Peak Railway seem to have brought about a change in fortune for the PFC which was an integral part of the routes of those new ventures. The canal was opened in 1831 as was the northern end of the railway. A reduction of the PFC's rates on the Manchester and Macclesfield traffic was agreed in April 1831 to fit in with the opening of the Macclesfield.⁴⁹ Reductions for through traffic were agreed, though in the case of the CHPR this was partly offset by the wharfage charge at Whaley. At the same time it was agreed to borrow up to £1,500 for improvements at Whaley Bridge and at the limestone quarries where the railway was to be extended once again. There were also expectations of a more distant effect. In March 1832 German Wheatcroft asked that his fly boats should pass the locks of the Nottingham Canal at all hours to enable him to promote a new trade on the High Peak railway from the PFC.

The results seem to have been startling in financial terms. There was a substantial improvement in receipts from tonnage and limestone which amounted to £29,126 in 1836-7 compared with £18,414 in 1832-3. The main increase, in the early years at least, was in limestone and in general merchandise rather than in lime or coal. In 1832 a considerable extension of the railway parallel to the road to Wormhill was authorised. By the following year the PFC was unable to meet increased demand, partly because of the lack of wagons. In 1833 up to 19 October 13,782 more tons of limestone had been sold than in the previous year, 5,798 to old customers, but 7,954 to new ones, the greater part to two in Staffordshire, presumably via the Macclesfield Canal. There were 155 wagons, which on the basis of 2 tons 4 cwt a load and 5 journeys a week would have a capacity of 1,705 tons a week. They were in fact carrying 1,743 tons a week. In 1824 more boats had been loaded, 72 a week compared with 69, but 210 wagons were then in use.

More wagons were therefore ordered together with an expansion of the pens at Whaley to stock up to 3,458 tons. Todd Brook Reservoir was built shortly afterwards. In 1834 £4,000 was borrowed at 4½% for improvements to the canal and railway and in the following year £10,000, largely for the new reservoir. The canal repair bill rose and £2,000 was spent in extra repairs in 1835-6 and 1836-7. Nearly £5,000 was spent on repairs to the railway, including the purchase of a new chain. In these years £8,000 was spent on the Todd Brook Reservoir. Nevertheless the dividend, which rose to £3 15s in 1833, was raised to £4 and £5 in the following two years.

The Company's accounts were divided into a limestone trade account and a canal account. In the mid 1830s expenditure on the former was about £8,000 a year of which nearly half was 'to getting limestone and quarry rents'. A quarter was accounted for by conveyance down the railway to the canal and a sixth by the cost of 'boating limestone'. The canal account was dominated by the cost of repairs, those to the canal itself accounting for over a third of total expenditure at £5 to 6,000, and with repairs to the railway running at nearly £1,000, the total spent on repairs amounted to over half the account. Details are in Annex 1.

Loans for the development of the canal were mainly obtained from committee members. Those who in 1836 put up a total of £9,600 were Joseph Winter, Thomas Drinkwater and John Kennedy (£2,000 each), and John Grimshaw (£600). The only lender who was not a member of the Peak Forest Committee was John Bowker (£3,000). He was however a member of the Ashton Committee. The loans were carried forward and adjusted from year to year and it seems that throughout the existence of the Peak Forest Canal those already committed to its support were the source of short term capital, not the banks.

According to Farey the shares in 1802 bore a premium of 10%.⁵⁰ The fact that PFC shares were worth £88 in 1830 has been quoted.⁵¹ It has not proved possible to trace the movements in prices over a long period, but the evidence from 1827 to 1831⁵² suggests that £88 was not a typical price but a stage in a decline much sharper than that experienced by the generality of canal share prices.⁵³ In January 1827 the price was £125, but by January 1829 it was £102. £75 at the beginning of 1831, it was down to £60 by the end of that year. The dividend was cut from £4 to

£2 and back to £3 in that period.

By contrast the mid 1830s were a high water mark in the history of the canal. In 1837 the committee having viewed the canal, railway, reservoirs and quarries, said they were highly satisfied with the excellent condition of the whole and with the improvements already effected and in progress, particularly with the systematic arrangement and order that pervaded all the affairs of the Company. The possibility of providing more lime kilns at Bugsworth was examined and a meeting at Birmingham attended on the application of steam power to canals. By 1839 a dividend of £5 was paid.

But there had already been signs of the coming competition from the railways. The CHPR complemented the PFC but this was unusual. As we have already seen the PFC opposed other lines though some of the people closely associated with it on occasion took their own point of view. The Manchester and Liverpool Railway in their analysis of the probable revenue from the railway said that large quantities of limestone from the quarries of Derbyshire would be carried contributing an undetermined amount to total income.⁵⁴ The canal put up a robust defence. George Phillips, who had been a member of the Peak Forest Canal Committee, made the most provocative speech in the debate in 1825 on the Manchester and Liverpool Bill, openly disputing every claim the railway people had advanced respecting the distance by canal and the time needed for the journey. On 14 June 1830 however, when the directors made their first excursion from Liverpool to Manchester by rail they held their special meeting at the home of Mr Gilbert Winter, for a long time a member of the Peak Forest Committee who was one of Lord Stafford's directors on the Liverpool and Manchester.⁵⁵

The Peak Forest combined with Macclesfield and the Trent and Mersey to oppose successfully a projected canal, known as the Manchester and Birmingham Junction, supported by the Birmingham and Liverpool Junction, the Ellesmere and the Chester, canals which would have run from the Bridgewater Canal at Altrincham to Middlewich to join the Ellesmere and Chester there, so providing a shorter route from Manchester to the Potteries, Midlands and London than via the Macclesfield.

By early 1839 the PFC was concerned that the railway companies operating between Manchester and London were fixing the rates at so reduced a scale as to greatly prejudice if not entirely take away the through traffic. They considered that a reduction of the canal tonnage rates was an absolute necessity to enable the canals to compete with the railways. There were fears that the Grand Junction was using its position to force traffic to go via Middlewich and so avoid the Macclesfield Canal. The Grand Junction, Oxford and Coventry Canals were consulted. The Oxford was reluctant to take the matter seriously and was slow to form a view.

The PFC had accumulated £36,800 short term debt by 1839, almost all owed to those already associated with the canal. £6,000 to Gilbert Winter was the largest single debt. Income was down, more particularly due to the depressed state of trade. But there was a permanent decrease. Part of the Birmingham and London trade in merchandise had been taken over by the railways, and Staffordshire iron had been superseded by Scottish on the Manchester market. Therefore there were further reductions in the tariff for the London and Manchester traffic. Originally 28s 5d, it was now reduced to 21s 6d.

There was also competition from other interests in the lime trade. Five kilns at Dove Holes and one at Fernilee were providing lime to carters which had been burned with coal from Boothman's Colliery at Furness Vale and Gisborne's at Whaley. The carters generally took coal and exchanged it for lime. They were able to sell in Manchester at from 13s to 15s per ton. The canal's price was 13s 6d to 14s 2d. Meadows said that the lime carters were various. 'Some are well off such as parties who keep horses for farming purposes, use them for lime carting at such time as they are not wanted at home, but the principal carting by this class of persons is for the Cheshire farmers who meet them at High Lane. Some cannot get other work and others, which are the principal parties of those who compete with the Canal, will do no other work'. He suspected that

more weight was being passed at the toll bars than was allowed, but there was no doubt in his mind that the reduction in the price of provisions, corn and hay, had worked very favourably for the carters. He quoted a number of prices at Chapel for 1842 and 1843, all showing a reduction of 15 to 30%. His remedy was for the canal Company to become lime burners themselves at Bugsworth or to build kilns to enable some other party to do so. The trade by road was apparently fairly substantial. Each of the four Dove Holes kilns produced 3 to 4,000 tons of lime in 1840. The canal itself also sought outlets for lime. In late 1842 there was an attempt to extend the market for lime by burning 100 tons of Derbyshire lime at St Helens.

The Last Years of Independence

The canal's finances took a turn for the worse. A bill was presented to Parliament in 1841 to raise £60,000 but was withdrawn in committee.⁵⁶ Gisborne was very active in getting up an opposition. He feared that his quarries in the Harpur Hill area would be adversely affected. The loans had therefore to be renewed and some transferred. Further reductions in tariffs were made.

In the years since 1831 a series of surpluses over and above the dividend paid had been allowed to accumulate, amounting in 1840 to £6,000. This assisted the payment of dividends in the 1840's. At the end of 1842 it was possible to pay a dividend of 30s from revenue. The Chairman proposed 35s; an amendment to pay 40s was carried. The Duke of Devonshire was asked to reduce the rent. In March 1843 he agreed to a cut of $\frac{1}{2}$ d to $1\frac{1}{2}$ d per ton. The report for 1843 made it clear that reductions in tariffs had not brought sufficient compensation in revenue. The chief cause was railway competition, but the depressed state of manufacturing and the general suspension of business in August 1842 had been significant factors. The result was that although expenditure, excluding interest, had been cut from £5,830 in 1838 to £3,701, the dividend was reduced to £2 for the second half of 1842 and to £3 10s for the whole of 1843.

In these circumstances the PFC tried to protect its position in the limestone traffic by seeking to lease the CHPR which, while it brought the canal a considerable amount of traffic through the interchange at Whaley, nevertheless was increasingly important as a rival as it brought to the market stone which competed with that quarried by the PFC which gave a better return to the canal than the stone it merely transported. When the CHPR sought further Parliamentary powers early in 1843, the PFC thought that the charges which the CHPR levied on Gisborne's stone were not in conformity with the scales laid down in the CHPR Act of 1825.

At the end of 1843 the PFC committee considered a report on the CHPR with a view to leasing it.⁵⁷ The report was largely descriptive, but pointed out that the railway's revenue surplus had dropped to £587 and there was no reason to suppose it would revive. A meeting was arranged between representatives of the canal and railway, but did not take place, though the PFC asked Meadows to enquire of William Jessop whether the leading proprietors of the railway would recommend their company to grant to the canal a lease of the railway for a long term of years at an annual rent with an option to purchase at any time during that term at a given price, what amount of rent and purchase money they would expect to receive, and whether they would be willing to apply to Parliament for the necessary powers. Neither party seems to have taken this further. Instead the canal started dealing with Gisborne separately. Perhaps they decided that their main worries would disappear if they obtained a larger share of the rewards of the Harpur Hill quarries and lime kilns. The committee suggested a treaty with Gisborne whereby Harpur Hill would be placed in the hands of the canal for twenty years. He would also retire from the limestone trade on the railway to Dove Holes. The PFC would pay £2,000 on possession of Harpur Hill and £500 per annum thereafter, and £200 a year in respect of Dove Holes. However this proposal also came to nothing. Gisborne himself and the Duke of Devonshire's agent were favourable, but the PFC apparently feared that as Gisborne did not have exclusive rights to get stone in the Newburgh estate they might be outbid by a third party.

The CHPR did make a further attempt to reduce the rates on the through traffic. There were

consultations with the Cromford Canal as well as with the PFC in an attempt to reduce the total toll over the three systems to 2s 6d, but the talks were not successful, in part because the CHPR was unwilling to reduce tolls at the inclined planes, though ready to cut their mileage rates.

1844 was a slightly better year for the PFC. Traffic picked up to the extent that it compensated for the reduction in rates. A bonus arrived in the shape of £1,000 from the sale of 120 million gallons of water to the Manchester and Salford Waterworks Co. The dividend was down to £3 in 1844. By 1845-6 total receipts were down to £31,216, well below the level reached in the mid 1830s.

Meanwhile there was a further surge in the growth of railway schemes, even if it was to be some years before any of them became a reality in the limestone heartland of the PFC's territory. First the Buxton and Manchester Railway was projected with close links with the Manchester and Birmingham, but relatively few local shareholders. Gisborne and his family were exceptions.⁵⁸ The Buxton Company was interested in acquiring the PFC. Henry Tootal, Chairman of the Manchester and Buxton, told his committee in September 1845 that he expected a renewed indication from the PFC as to what might be acceptable, but in November had to report that the negotiations had failed as the PFC had abruptly concluded the sale of the canal to the Sheffield, Ashton-under-Lyne and Manchester Railway, which planned a line via Hyde to Whaley Bridge, with a branch to Hayfield.⁵⁹ To this project a plan was added in 1847 for a branch from Bugsworth to the Peak Forest Tramway at Bradshaw Edge with a view to going on to Buxton, which explains the MSL's interest in the PFC.⁶⁰

The canal committee doubtless thought it best, when faced with a declining traffic and dividends, to opt for a reasonably safe and certain income for its shareholders. It quickly agreed in October 1845 to a perpetual lease of the canal to the Sheffield Company. This was completed on 25 March 1846 and the canal was transferred to the Sheffield Company on 27 July 1846 with £11,181 a year to be paid, £9,325 in annuities in respect of shares and £1,856 on the debt of £41,000. The Sheffield also purchased on the same basis the Ashton (for £12,903) and Macclesfield (£9,324) canals, so securing itself against competition from canals in North Derbyshire and adjacent areas. The Manchester and Buxton Railway, which by then had become the Manchester, Buxton, Matlock and Midland Junction Railway, did not oppose the takeover of the PFC on condition that the Sheffield did not oppose its line to Manchester. In the event the Manchester, Sheffield and Lincolnshire, as the Sheffield Company became, never reached Whaley Bridge because of financial difficulties and in 1850 such track as had been laid was taken up. It was the 1860's before the MBMMJ reached beyond Rowsley.

Meadows as early as 1 January 1846 was appointed clerk and secretary of the Sheffield Company, a new post. In November 1848 he was appointed the first general manager of the MLSR, but resigned before the end of that year for undisclosed reasons.

ANNEX 1 PEAK FOREST CANAL RECEIPTS AND PAYMENTS 1832-37

	Receipts (£s)				
	1832-3	1833-4	1834-5	1835-6	1836-7
Balance in hand	6,049	9,195	9,473	11,183	16,349
Tonnage and limestone	18,414	21,076	23,945	28,092	29,126
Other income(a)	774	773	623	728	1,000
Loans for improvements	1,500	4,000	9,800	7,000
Total(b)	26,739	31,046	38,014	50,707	53,478

(a) materials sold, interest received, rents, portorage in warehouse, boat hire.

(b) shillings and pence omitted, so totals do not add precisely

Payments (£s)

1 Limestone trade account

Getting limestone and quarry rents	2,127	2,681	3,691	3,806	3,870
Conveyance down railway to canal	1,193	1,847	2,340	2,029	2,502
Boating limestone	1,265	1,200	1,313	1,391	1,866(c)
Tonnage on other canals	311	149	188	167	192
Salaries	360	361	310	321	367
Incidentals	144	136	159	176	188
Total (1)	5,402	6,378	8,004	7,992	8,987

(c) includes 4 new boats

2 Canal Accounts

Repairs of canal	1,104	1,866	1,820	2,256	2,154
Repairs of buildings	...	86	36	160	67
Repairs of railway	661	879	59	942	997
Salaries	434	446	456	486	539
Rents and compensation for land	248	244	245	313	793
Taxes and levies	132	114	128	125	117
Rent of wharf at Manchester	458	458	458	458	...
Lock-keepers wages	149	191	258	296	284
Miscellaneous (d)	520	608	685	747	1,392
Total (2)	3,710	4,898	5,062	5,849	6,350

3 Improvements 1,230 1,935 4,198 11,035 7,299

4 Dividends 7,200 8,360 9,564 9,504 11,979

5 Balance end year 9,195 9,473 11,183 16,349 18,861

Total (1 to 5) 26,739 31,046 38,014 50,707 53,478

(d) includes expenses of general and committee meetings, solicitors fees, stationery, interest, assurance, surveying fees and incidentals. The steep rise in 1836-7 is due to an increase in interest payments from £213 to £782.

ANNEX 2

PEAK FOREST CANAL SHARE PRICES 1827-31 (£s)

	1827	1828	1829	1830	1831
January	125	110	102	88	75
February	123	110	97	88	75
March	120	110	95	88	75
April	116	112	97	na	75
May	110	112	97	na	65
June	110	112	97	na	63
July	112	113	97	78	58
August	112	111	97	77	60
September	112	111	97	77	60
October	112	111	90	76	56
November	112	111	96	76	56
December	112	101	88	75	50

Source: Gentleman's Magazines

REFERENCES

- 1 Today the canal has been restored and is again in use for 14½ miles — though the main line is to Whaley Bridge and the Bugsworth arm stops well short of the former terminal basin which itself is the subject of extensive restoration.
- 2 This article is largely based on the records of the Peak Forest Canal, now to be found in the Public Record Office: British Transport Historical Records, Rail 856.
- 3 P. K. Boden, 'Limestone Quarrying Industry of North Derbyshire' *Journal of the Royal Geographical Society*, (1960), 14.
- 4 W. B. Bunting, *Chapel-en-le-Frith, its History and People*, (Bunting) (1940), 297.
- 5 J. Aiken, *Description of the Country from Twenty to Thirty Miles Round Manchester*, (Aiken), (1793), 493.
- 6 Aiken, 472-3.
- 7 32 Geo III c 53.
- 8 C. Hadfield and G. Biddle, *The Canals of North West England* (Hadfield) (1970), 306.
- 9 *Commons Journal* (C.J.), 1794, 22.
- 10 John Bower Jodrell, born John Bower, married Francis Jodrell, 1775, who had succeeded to the Jodrell estates at Taxal and Yeardsley. He took the name of Jodrell. He inherited the manor of Taxal and Shallcross from his brother Foster Bower in 1795. J. P. Earwaker, *East Cheshire, Past and Present*, (Earwaker) (1880), II, 532 and 536.
- 11 C.J. 1794, 105. Jodrell's evidence was confirmed by Samuel Greatrix, John Lees and Thomas Brown.
- 12 C.J., 309 and 388.
- 13 34, Geo III c 26.
- 14 This section was difficult to build. Farey comments on the large number of embankments necessary 'attended with more difficulties than I have anywhere else seen in the same space and the perfect execution of the canal in this part does great credit to the engineers concerned'. John Farey, *General View of the Agriculture of Derbyshire*, (Farey) (1815), III, 407.
- 15 House of Lords Record Office (HLRO), Peak Forest Canal Bill, Estimate of Expense.
- 16 HLRO, Subscribers List.
- 17 34 Geo III, c 53.
- 18 Firth and Gaskell were asked to meetings again in 1796 as recommended by the Annual General meeting, but were to qualify themselves by proving proper transfers of shares.
- 19 See George Unwin (ed), *Samuel Oldknow and the Arkwrights*, (1924). The part he played in the Peak Forest Canal and his complicated relationships with it have been described in more detail in D. J. Hodgkins, 'Samuel Oldknow and the Peak Forest Canal' *Derbyshire Archaeological Journal*, XCVII (1977), 27-35.
- 20 *Earwaker*, I, 184.
- 21 A member of the family of Legh of Lyme, he died in 1797, aged 44.
- 22 High Sheriff of Cheshire in 1790.
- 23 Astley's second wife was Sir William Dukinfield's widow, through whom he succeeded to the Dukinfield estates — *Earwaker*, II, 17 and 23.
- 24 *Earwaker*, 17 and 43.
- 25 Aiken, 451.
- 26 The engineer, Thomas Brown was appointed Survey Superintendent, Book-keeper and Manager under the Engineer's directions.
- 27 R. Fulton, *A Treatise on the Improvement of Canal Navigation; exhibiting the numerous advantages to be derived from small canals and boats of two to five feet wide, containing from 2 to 5 tons burthen*, (1796).
- 28 Bowlby's index of agricultural money wages rose from 115 in 1794 to 127 in 1795 and 138 in 1796.
- 29 Francis Bower Jodrell died at Bath, 4 November, 1796 — *Earwaker*, III, 532.
- 30 George Borrow, *Wild Wales* (World Classics edition, 1951), 36.
- 31 J. Phillips, *A General History of Inland Navigation*, (4th edition, 1803), 592.
- 32 The Hallsteads occupied practically the whole site of the village of Dove Holes. Before 1715 the greater part of the estate had been acquired by Arnold Kirk. On the death of his son Henry, the estate passed to his nephew Richard who lived at Groesylt, Denbighshire — *Bunting*, 149 and 155.

- 33 Part of the Hallsteads estate had passed to the Gisbornes in 1742 on the death of Arnold Kirk — *Bunting*, 154.
The Reverend Thomas Gisborne lived from 1758 to 1848. His son Thomas, born in 1794, eventually had much closer connections with the North Derbyshire lime trade with a lime dealing business in Manchester and, as will be seen, kilns at Harpur Hill.
- 34 Principally by D. Ripley, *The Peak Forest Tramway*, (Ripley) (no date), Locomotion Papers, no 38.
- 35 Four horses were used at length to bring down 20 trams linked together containing 45 tons of limestone — *Farey*, III, 427.
- 36 *Farey*, III, 404 — wire rope was only used from the 1870's — Ripley, 19.
- 37 *Ripley*, 3-4, quoting a letter from Mrs Bennett.
- 38 *Hadfield*, 308.
- 39 First engaged by the Peak Forest Canal in November 1794, Wheatcroft carried out a number of progressively important jobs. Eventually he became an independent carrier on the canal and later on the Cromford and High Peak Railway, for which see D. J. Hodgkins, 'Origins and Independent Years of the Cromford and High Peak Railway', *Journal of Transport History*, (1963), VI, 48.
- 40 Formerly of the Staffordshire and Worcestershire Canal. Dismissed by the PFC in 1801.
- 41 *Farey*, II, 426-7.
- 42 F. C. Mather, *After the Canal Duke*, (1970), xvii and xviii.
- 43 *Farey*, III, 406.
- 44 *C.J.* (1800), 184.
- 45 *C.J.* (1800), 190 and 209.
- 46 39 and 40 Geo III c 38.
- 47 45 Geo III c 12.
- 48 Bowlby's index of agriculture money wages rose from 115 in 1794 to 177 in 1804 and 188 in 1805.
- 49 Actually opened on 9 November 1831.
- 50 *Farey*, III, 409.
- 51 *Hadfield*, *British Canals* (4th ed. 1969), 178.
- 52 Compiled from the Gentleman's Magazine — see Annex 2.
- 53 According to Geyer, Rostow and Schwartz, *The Growth and Fluctuation of the British Economy*, (1953) I, 370 canal share prices were more or less stable from 1827 to early 1830, but in the second half of the latter year dipped by about a sixth and remained at roughly the same level until the end of 1831.
- 54 Robert E. Carlson, *The Liverpool and Manchester Railway Project, 1821-3* (Carlson) (1969), 181-2.
- 55 *Carlson*, 110 and 229.
- 56 The Bill received a second reading but was abandoned in Committee *C.J.* (1842) 82.
- 57 The episode of the abortive lease of the CHPR is described in more detail in D. J. Hodgkins, 'The Cromford and High Peak Railway in 1843', *Journal of the Railway and Canal Historical Society*, XXIV (1978), 26-31.
- 58 PRO RAIL 459/1, Minutes of meeting of 20 June, and list of shareholders dated 13 July 1844.
- 59 PRO RAIL 459/2, Minutes of meetings on 8 September and 1 November 1845.
- 60 George Dow, *Great Central*, I, 1959, 121.