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## THE OLD FLOCKTON COLLIERIES, c.1772 to 1893.

By John Goodchild.

The excellent-quality though thin Flockton coal seams, the so-called Flockton Thick and Thin, respectively up to 48in. (with a midway dirt parting) and as little as some 15in. in thickness, outcrop to the north of Flockton<sup>1</sup> and derive their names from that occurrence. One later seventeenth century coalmaster, Richard Carter – for some details of whom see the writer's History of Flockton Church, 1967 – had made a fortune with which, in part, he built the original Flockton Church and the almshouses there and endowed the village school; he was buried in 2.1699/1700.<sup>2</sup>

It was not, however, until the arrival of cheap transport facilities by water carriage – by inland navigation – close to the coal bearing areas of the mid Calder valley, that the Flockton coals could be opened-up to the rich coal markets which already existed in the Humber basin, and to newly-developed markets in the Upper Calder and its tributary valleys. The Act of 1758<sup>3</sup> which authorised the making navigable of the river Calder above Wakefield – where the new navigation was to make connection with the Calder branch of the Aire and Calder Navigation, opened to Wakefield in about 1702<sup>4</sup> – specifically prohibited the carriage of coals down-stream, but the subsequent Act of 1769<sup>5</sup> did not renew that prohibition, and the way was (literally) opened for enterprising capitalists to develop the local coalseams on a quite new basis. An excellent illustration of the cheapness of water as against road carriage, particularly in the Pennine foothill country in which Flockton and Shitlington lie, comes from 1728, when the cost of carrying rye (per quarter) from Hull to Wakefield, by water, was 1s.11d. and by road from Wakefield to Halifax, 3s.0d: this worked out at some 0.4d. per mile by water carriage and 2.25d. by road.<sup>6</sup>

The proprietors of the Calder and Hebble Navigation re-opened their waterway, subsequent to damages by floods and the repeal of the clause prohibiting coal passing downstream, in about 8.1769,<sup>7</sup> and the Flockton Colliery was developed immediately subsequently. At a similar period to that in which the Calder Navigation Act had been passed, the principal roads through the Flockton and Shitlington areas were placed under the control of turnpike trusts – the Wakefield and Austerlands, connecting both areas with the later Navigation at Horbury Bridge, and the Barnsley and Grange Moor connecting Flockton with the upland area lying east of the village. Both Acts passed in 1759 (32 Geo II, capa 48 & 70), and presumably road surfaces were henceforth better maintained. Of course, small-scale coal mining continued in both areas independent of the large modern colliery which was to be opened by the Milnes family, and references to coalminers occur prior to Navigation coal-carrying times in 1755 (in Shitlington) and in 1767 (in Flockton).<sup>8</sup>

The Flockton collieries were opened up for water sale by Richard Milnes of Flockton and his four sons: their pits apparently lay initially in the New Hall estate in a part of Shitlington township adjoining upon Flockton. Richard Milnes was born about 1712 and by the end of 1762 he was a timber merchant, purchasing trees on the Pilkington estate at Bradley near Huddersfield,<sup>9</sup> a trade which he and his sons were to continue

into the coalmining period, as in 1776 and again in 1779 they sold (as Richard Milnes & Co) oak to the Calder and Hebble Navigation proprietors.<sup>10</sup> Richard Milnes was also a maltster and was described as such in 1761; in 10.1764 he took a lease of a house, land, barn, mistal and “Malt Kiln and Drying Kiln” at Flockton – he was already in possession of the house – from Charles Radcliffe of York for thirty one years at £60.8s.0d. a year plus boons – two fat geese or five shillings or the keeping of a dog, at the landlord’s pleasure”. By the deed poll dividing the waste lands in Flockton among the proprietors, and dated 12.1776, Richard Milnes “Maltster” was awarded allotments (and his son James was awarded one too),<sup>12</sup> and by his will, made in 9.1775, he devised houses, cottages and lands in which he had an interest in Flockton, Shelley, Cumberworth and Skelmanthorpe.<sup>13</sup>

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Milnes had eight children by his wife Martha, who was buried in 1763; four sons and four daughters, all of whom married. The eldest son, John the later Flockton wine merchant, had been baptised in 6.1743 and the other children’s baptisms followed through to 1757; Milnes himself was buried, probably in the chapel yard at Flockton, in 5.1779, aged 67.<sup>14</sup>

The origins of the colliery interests of the Milnes family are difficult to determine. Richard Milnes junior, one of the four brother partners, in the (partly) autobiographical volume of his works “The Warning Voice of a Hermit Abroad, who has been compelled to write in his justification, and he hopes for the good of mankind, under the protecting hand of Divine Providence, (for which he can never be thankful enough,) through a long and tedious passage of the most imminent perils and dangers of being extinguished, and sent to his grave. By Richard Milnes”, printed in Wakefield in 1825, comments upon the origins of the colliery: he says that he was born at Flockton of “reputable but humble parents, who by their industry, became able and willing to give me a good education”, that he left school at sixteen or seventeen, went to London at twenty and

“when I had been there about two years, (i.e. in about 1772) my father and three brothers made a contract for the Flockton Colliery, and their other business increasing, they joined in soliciting me to leave London, and join in the colliery .... And being all ignorant and inexperienced in collieries, we soon laid out six thousand pounds in opening this colliery and laying a Newcastle waggon–way with wood, (for iron roads were not known at that time) but this was the greatest folly, because a turnpike road lay on one side of it, and being made of wood, our returns at that time, would not in any degree justify the expense of making a wooden road and repairing of it with wood. But this was done by the managing brother by his own will. Though the opening of the colliery was done by a short drain, no fire engine, such was our ignorance and folly at that time, that I do think .... I could establish the work with little more than twice six thousand shillings. And it is a very singular fact, that the master colliers in this part, have generally begun this trade in ignorance, without going apprentice, as boys do to all other trades, which is the only way I can account for so many losing money or miscarrying.”

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The first Milnes colliery was – on Richard Milnes’s evidence 15 – in a coalfield which did not belong to the family, and was probably in the New Hall estate of the Wortley family: this lay in fact in Shitlington township, close to its boundary with Flockton. The Wortley muniments, now in Sheffield City Archives, contain no documents referring to coalmining under Milnes auspices prior to 1778, when surface and minerals were let and the documents refer to “Newcastle Roads” already made: the first Wortley (New Hall estate) lease was presumably taken before that time. The Flockton Thick coal, some thirty inches in thickness, was the seam worked initially and the colliery was certainly in production by 1775, when coals were sold by Richard Milnes & Co. from the July of that year to the already-affluent Aire and Calder Navigation (in dozens and loads, at 7s.10d. per dozen);<sup>16</sup> a law case of 1857 refers to the railway having been in use for eighty years and Richard Milnes’s account of the firm’s origin indicates a commencement date of about 1772.<sup>17</sup>

The construction of the underground drainage level to which Milnes refers, and the shaft tips of which are still to be seen, together with its (ultimately two) 18 outlets into Coxley Beck, adequately drained the first group of pits worked by the partners, but they were soon faced by the perennial problem of coal masters in that theirs’ is an exhaustible product and it was necessary to provide additional coal seams if the colliery was to be continued. Further Wortley estate leases were taken in 12.1778 by the Milnes brothers, comprising coal lying to the north west of the earlier leased area (towards the outcrop and coal on the southern side of the first lease area, but above a nineteen yard fault. At the same period, the four brothers leased small surface areas which included Caphouse Farm and James Milnes himself took the lease of a 32 acre farm in Middlestown.<sup>19</sup> The area of coal to the north west and close to [98] the present Caphouse Colliery was probably that worked first: a plan of 1791 shows the area of the coal then worked, and has later areas marked upon it. In the period from 12.1789 to 9.1791 a large part of the coal had been got in this

“Colliery near Overton .... held under Lease by Mr. Jas. Milnes & Co.” including some coal got before the first-named date (a total of over 28½ acres in all) and six shafts had been opened by 10.1795, being pits numbered 11 and 13 to 17 inclusive in the whole of the worked colliery area.<sup>20</sup> There appears to be no geological break between the two areas of coal under discussion – or at least none is shown on the 6in. Geological Survey sheet (Yorkshire sheet 247), published in 1876. An attempt to link the field names of the 1778 agreements with those shown on the 1849 tithe award plan<sup>21</sup> has proved only partially successful, as the field names changed to a considerable degree during even that short period.

The other agreement of 1778<sup>22</sup> related to coal in Dial Wood and in part of Stony Cliff Wood, to the south of the earlier leased area: here two seams were specified, the upper of 30in. and the lower (the Flockton Thin, a fine quality house coal “so pure that it is largely worked”) of only 23in., and sometimes as thin as only 15in. Here again, liberty was granted to construct a railway “to join the present Newcastle road or waggon way at or near” Middlestown, but this coal was probably not worked for some time: only something under 1½ acres had been wrought by 10.1793, when a plan of the colliery’s workings was begun: this plan shows workings begun in the

northern part of the area leased and extending southwards in the form of parallel panels. The plan is entitled

“Plan of a Colliery .... held under Lease by Jas. Milnes Esqr. in the New-winning or tunnel at Uverton taken Octr. 1st. 1793”,

and like the other plan, it has no surveyor’s name.<sup>23</sup> Both plans – which are in a similar style – may have been produced by or in the office of John Curr, the famous colliery viewer, to whom the Wortley estate was making payment for coal surveying work on this New Hall estate in 1798.<sup>24</sup>

Although the coal in this last new colliery lay to the rise of the nineteen yard fault, a winding engine was erected to lift the coals to the surface from the dip of the new workings, and the remains of the engine house are still to be seen: it was stone built, about twelve feet long in the beam wall and sixteen feet in the side walls, with twenty inch thicknesses to the walls except where, up to beam level, the beam wall was thirty five inches wide. Later – presumably after 1812 – the engine house was converted into a cottage, although its integral outside-boiler chimney survives intact.

The leases of the Wortley estate coal were consolidated into one lease in 1792;<sup>25</sup> the New Hall estate, which had belonged to the Wortleys since at least the early fourteenth century,<sup>26</sup> was from 1761 until 1794 in the hands of the Countess of Bute – a Wortley heiress who had married the third Earl in 1736 – and from 1795 in the ownership of her second son, who ultimately adopted the surnames of Stuart–Wortley–MacKenzie. He died in 1818 and his son and successor was created first Baron Wharnccliffe in 1826.<sup>27</sup> It is worthy of note that the New Hall estate contained within its boundaries small areas of land and minerals which were the property of the Savile (Thornhill), Lane Fox (Bramham) and the freeholders of Shitlington’s estates;<sup>28</sup> leases of the Savile estate survive from 1777<sup>29</sup> and land in Shitlington township was also leased from Sir George Armytage of Kirklees in 1780 by the Milnes brothers.<sup>30</sup> Until the 1780s the colliery was known as New Hall Colliery,<sup>31</sup> but by 1802 the Flockton coals were being quoted on the London Coal Exchange as such.<sup>32</sup>

A further purchase of coal was taken, by James Milnes alone, in 8.1787 from Mrs. (widow) Elizabeth Rhodes of Wentbridge and her two unmarried daughters:<sup>33</sup> this estate had descended from the Rhodes family who had inherited the property of Richard Carter the earlier Flockton coalmaster and benefactor.<sup>34</sup> The Rhodes family owned in 1790 a total of some 380 acres scattered throughout Flockton – nearly 36% of the total area – but only something under 45 acres of their coal [99] was leased in 1787 by James Milnes: a further but smaller area of coal was sold by the Rhodes ladies to Timothy Smith of Great Preston, partner in the great Fenton coal empire, in 4.1788 for eleven years and at £50 an acre;<sup>35</sup> Smith had been producing coal at Flockton in 1775.<sup>36</sup> Mrs. Rhodes probably died soon after these coal agreements were made, as the surface estates of the family were divided in 1790, a half share going to one daughter, Elizabeth junior, who in 11.1790 married Benjamin Gott, the famous Leeds cloth merchant and industrialist.<sup>37</sup> In 1798, when the second payment by James Milnes was due under the agreement of 1787, there was a dispute as to

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whether interest was owing under that agreement at simple or at compound interest, and the opinion of so eminent a Counsel as the Attorney General was sought by Gott. Writing in the June of that year to Gott, James Milnes claimed that

“my intentions are to do what is right to you and any other Person I have transactions with, according to the agreement I make”.<sup>38</sup>

The whole Rhodes/Gott estate in Flockton was sold to Sir Thomas Blackett of Bretton Hall in 2.1792 for £15,000,<sup>39</sup> although the coal payments due from Milnes and Smith were reserved to the vendors.<sup>40</sup>

The articles of agreement of 1787 between the Rhodes ladies and James Milnes provided for the payment of £1260 plus interest: this was to be paid during thirty years from 1.1789 at £42 a year, the first payment being due in 2.1788 and the next in 2.1798 unless Milnes was given six months’ notice to pay earlier. All coal seams were included, and the mines were wholly within Flockton township. Milnes was to have power to make drainage and air-ways underground and to drive a sough for up to 500 yards in the Rhodes estate to drain pits at Grange Moor; the lessors agreed not to allow any other coalmaster to make or to use soughs in their lands. Milnes could make underground waterwheel installations and surface dams for drainage or haulage. General powers of temporary use of the surface were granted, at a compensation rental to the Rhodes tenants of twenty five shillings an acre a year, plus £25 per acre to the lessors for permanent surface damages, which last sum was to be compensation for restoring the surface. The conveyance of coal had an appended note as to the suggested value, signed by Luke Noble and Elias Wright and dated 1.1787: in abstract, this was as follows:

9a.	3r.	20p.	of coal at £50	per acre	£493.	15.	0.
18	2	14	“ “ “ £30	“ “	540.	0.	0.
10	2	11	“ “ less 2a.2r.11p. with				
			“ little Cover “	at £20	160.	0.	0.
5	3	18	“ “ “ under Level “	at £10	50.	0.	0.
			other coal under level or where existence doubtful.		<u>16.</u>	<u>5.</u>	<u>0.</u>
					£1260.	0.	0. <sup>41</sup>

At a very similar period to that of the Rhodes agreement of 8.1787, James Milnes (once more alone) agreed in 1.1787 to take Sir Thomas Blackett’s coal in Flockton. Here the area was again considerable, Milnes taking all seams underlying the estates in Flockton and in Cumberworth for £2400 and Milnes putting up his own estate in the latter place as security. A further agreement was signed in 3.1792, just before Sir Thomas’s death during that same year.<sup>42</sup> Sir Thomas, described in 1821 by George Horsington of Flockton Hall, a Scot, as an “easy man”, also drew considerable coal rents from his coal – and iron – bearing estates at Bowling near Bradford.<sup>43</sup> The Blackett agreement of 1792 provided for the working of all coal seams under some 128 acres in Flockton, for the erection of “fire engines water wheels & cabins” and the liberty “to construct rails waggon & or. ways” (except in or under a field named the Ing), together with a sough or underground drainage channel up to four feet wide,

this last from Grange Moor, and power to open quarries. £40 a year was to be paid during 60 years, plus compensation for surface damages; [100] no coal was to be got within six yards of buildings (or compensation was to be paid), pits were to be fenced when in use and to be filled up and the pit hills levelled upon disuse. Blakett agreed not to allow any other coalmaster to open mines under his Flockton estate during the period of the agreement, and not to allow the use of any sough under his lands in Cumberworth to any other coalmaster.

The Rhodes and Blakett agreements were major new developments. The coalmining interests of James Milnes as a coalmaster independent (in part) of his brothers now extended into Grange Moor, into Flockton and into Cumberworth in addition to the joint working of the older New Hall Colliery. Richard Milnes writes of his brother James:

“One of the brothers being in a bad state of health, and unable to travel from home, became the manager of the colliery, and got more experience than any of us, and at the time we were near six thousand pounds out of pocket, he discovered he could dry some coal adjoining to ours, by the drains we had made, at so much expence, time, and trouble; and without our knowledge or consent, bought some coal of Sir Thomas Blakett, and began to work it by our drains, agents, workmen, tools, &c. &c. in short sacrificed the interest of the joint colliery, to the interest of his private one .... This conduct gave his partners much offence, and occasioned much complaining, to reconcile us he said, if we would surrender the lease to him for eighteen years, he would give each of us £300 a year for that term, (perhaps with a further view than the present profit to him) which we agreed to accept” ...<sup>44</sup>

The annuity of £300 is alluded to in the will of John Milnes of Flockton, one of the four brothers, dated 12.1805, in which document he refers to it as issuing from the Wortley estate's New Hall Colliery, heretofore held by the four brothers.<sup>45</sup>

The wooden railway which had been constructed in part by 1778 had upon it a number of structures of considerable technological interest. At its uppermost and as completed, at Lane End in Flockton, occurs a twenty-arch stone-built viaduct, some 180 feet in length with arches some 76 or 78 inches wide and some 122 inches between the parapets. In the absence of satisfactory map or documentary evidence, it is difficult to date this structure: the line is shown as extending towards (but not quite to) Lane End on Teesdale's map of Yorkshire, surveyed in 1827–28, but Lane End had been sunk before James Milnes's death in 1803. The date of the (again surviving) tunnel at Flockton is also difficult to place; the tunnel is some 300 feet in length and at the southern end is some 81 inches wide and at present about 91 inches in height. The north end was blocked off within the last twelve years, but within the last fifteen years wooden sleepers were to be found in its floor. The present writer's youthful ascription of it to the first years of the colliery's opening is probably inaccurate, but so probably is Dr. Lewis's suggestion that it dates from after 1800: certainly by 10.1793 a pillar of coal is shown on a plan as having been left exactly under the tunnel site – the southern end of the pillar exactly aligns with the southern end of the tunnel, and the pillar was left unworked until 1805, although the coal on each side

had been worked from 1797–98. The colliery in Dial Wood is described on the royalty plan of 1793 as the “New–winning or Tunnel”,<sup>46</sup> and additionally the railway would have been of little use to the new winnings beyond Dial Wood, negotiated for in 1787, without a continuation of the line via the tunnel’s route. Whatever its date, the tunnel must have been constructed on the cut–and–cover principle, as no part of it lies more than a yard or two below the surface. Its southern portal points towards the pits sunk in the Rhodes and Blckett royalties adjoining the Flockton to Overton road (Hardcastle Lane); the line is not shown on the surface plan of the Rhodes estate of 9.1790. Two pits are shown on this plan as lying on the Blckett estate just on the eastern side of Hardcastle Lane and are described as “Coal Pitt”s; the one away from the roadside had a short road leading from it to the highway.<sup>47</sup> It could thus be suggested that the evidence at present available suggests a possible date of 1790 to 1793 for the tunnel.

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Further north along the railway a stone–arched bridge carried Hayne Lane across the line: the bridge survives, and at floor level is about 95in. wide and 80in. high. The original gauge of the railway is unknown, but from at least 1870 it was 45in.<sup>48</sup> and in 1807 the waggons carried 48 cwts.<sup>49</sup> Close to the modern Caphouse Colliery – which is itself on the site of the pit number 17 on the mining plan of 1791 onwards – the line is enclosed within parallel stone walls, and neighbouring roadside walls are capped by old stone sleeper blocks. The original route from Middletown village down to Cockhill Mill, abandoned about 1844,<sup>50</sup> is difficult to determine on the ground at present: owing to its length, it was presumably operated as a non self–acting incline, similar to the one at Bradford described in Ree’s *Cyclopaedia*,<sup>51</sup> the waggons descending the hill being controlled by a brake while the empties were returned to the top of the hill by the use of horses.

The break–up of the Milnes brothers’ interest in the colliery, referred–to in the quotation from Richard Milnes’s work cited above, is difficult to date: it is referred–to in John Milnes’s will of 1805 as still subsisting, which would give a date for the commencement of the 18–year surrender of the lease of no later than 1787. It was James Milnes alone who took the new leases of 1787, and he first appears in the Land Tax returns as tenant of coalmines in Flockton in 1787 and as tenant of “ye Manor house” there in the previous year.<sup>52</sup> In 1783 he purchased an interest in the coal–bearing Horsecar Wood estate in the township of Ardsley near Barnsley,<sup>53</sup> and in 1796 he is mentioned in connection with his two coal pits, fifteen feet in circumference and one hundred feet deep in Hepworth township in Kirkburton parish,<sup>54</sup> that being the year in which he also entered to the coal estate at Emroyd in Shitlington.<sup>55</sup> James Milnes married in 1792 (when he was about forty seven) with Mary Ann Bell from the vicinity of Manchester – the marriage settlement was dated 3.1792<sup>56</sup> – and he rented a pew in Thornhill Church by 1791. His brother Richard made reference to James’s suffering from ill health,<sup>57</sup> and James made his will in 3.1795,<sup>58</sup> being buried in 5.1803, when he was described in the Thornhill registers as an esquire. He was then probably approaching sixty years of age, and he died possessed of interests in estates in Flockton, Cumberworth, Snaith and Shitlington in the West Riding and



estates in Lancashire.<sup>59</sup> It is of interest to note that as early as 1780 James Milnes's predominance in the colliery co-partnership had been accepted: Richard Milnes signed in that year "I am for James Milnes &c."<sup>60</sup>

Of James Milnes's personal interests nothing is known. His portrait survives, but nothing as to his political or religious interests. It is difficult to know if he came under the influence of John Mitchell, M.A., F.R.S., the liberal Rector of Milnes's parish church of Thornhill, who held that office from 1767 to 1793, an outstanding scientist who had previously been Woodwardian Professor of Mathematics at Cambridge and who attracted to Thornhill such savants as Franklin, Priestley, Smeaton, Herschell and his own patron, Sir George Savile, MP. Mitchell was certainly a geologist of great repute. Mrs. James Milnes may have been a Unitarian by persuasion – as were Franklin, Priestly and Sir George Savile of the Thornhill Rectory group – but there are no references to this Milnes family of Flockton attending the chapel in Wakefield (or at least paying pew rents there) before James Milnes's death in 1803.<sup>61</sup> One of John Milnes's daughters married in 1793, at Thornhill Church, Thomas Johnstone the Unitarian minister at Wakefield, and James Milnes's family were certainly subsequently frequenters of the chapel there,<sup>62</sup> as will be seen later. It is significant that when Robert Smithson was laying out his New Park Colliery and its extensive railway to the Calder near Wakefield, in 1796–98, James Milnes was acting as his adviser "respecting the Mode of winning" the colliery,<sup>63</sup> so that Milnes was apparently regarded as an expert in colliery engineering.

James Milnes had left a widow, who was only about thirty six at the time of his death: she lived on to the great age of eighty nine, dying in 4.1856 and a window in the Unitarian Chapel at Wakefield commemorates her memory: [102] there were also two daughters, co-heiresses. James's brother Richard, who had been (unsuccessfully) a trans-Pennine carrier and a coalmaster on his own account,<sup>64</sup> was one of the trustees under the will: he was described by John Cryer, the Wakefield bookseller, at the time of his death in 1832, as "an eccentric but very honest good man".<sup>65</sup> Richard Milnes describes the situation which arose:

"he appointed me one of his executors to his will, with two others who had no experience in collieries, which we began to execute, but in the most disorderly and ruinous way, and I could not take upon me to dictate much to the two others, because I had been humbled and depreciated (by bankruptcy) ... One of them took the lead, and he was implicitly supported by the other and the widow in all his folly, so that it was in vain for me to attempt to control them. I saw no remedy but the following, and told my brother in what a ruinous way we were conducting our executorship, and that I saw no remedy, but we three offering to give the executors more per year than my late brother had given us, which they agreed to .... His widow had the folly to pretend to take offence at this generous act of ours, though she was not an executrix, and filed a bill in chancery against me, to turn me out of the trust, for this more than liberal offer. I contended with her several years in chancery, till the term was near worn out, and the complexion of the thing much changed, then I said to my attorney, Mr. Lee, if she will pay all expences on both sides, I will resign my trust in form, which she agreed to, and paid all, an enormous sum it must be."<sup>66</sup>

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By 1818 John Bell, then of Overton, gentleman, possibly a relative of widow Milnes's, was the "receiver & manager" of the Milnes estates, and it was presumably he who had been responsible overall for the development of the collieries since the executors had given up their control of them; he and William Stansfeld are still listed as occupiers of property in Emley in 1823.<sup>67</sup> In 10.1796 James Milnes had taken a lease of coal in Middlestown from Sir George Armytage, Bart., of Kirklees Park,<sup>68</sup> whose family had purchased the manor of Middle Shitlington (i.e. Middlestown) in 1598;<sup>69</sup> the lease was for thirty one years and included rights to make railways; two years later ironstone was leased for twenty nine years, together with a close in Middlestown, and in the following year (1799) the surface of Emroyd in Middlestown was leased too, for twenty eight years; the leases were all to terminate in 1827–28. Nine ironstone pits were opened by the time of a plan of 1801<sup>70</sup> and a furnace was built. The history of this furnace and of its products is difficult to determine, but it was apparently in operation under Milnes's executors in 1814, when the furnace debts and stock were valued at £10,119.4.0,<sup>71</sup> but in 4.1816 it was being worked by William Coe, ironfounder, who also worked the Dewsbury (in fact Thornhill Lees) Ironworks as Day and Coe; he died in 1821, aged only thirty five. The furnace was out of blast by 1825, but its ruins survived until they were removed during opencast coal working in 1958, having been previously drawn and photographed by the writer.<sup>72</sup> The Armytage Estates sales plan of 1813 shows Emroyd Common with a branch railway descending from the main waggonway at the top of the Common down to the furnace.<sup>73</sup>

Little is known of the operation of the colliery between 1803 and the early 1840s. New Hall Colliery, since Lady Bute's death in 1794 operated under her second son, was given up in 1812,<sup>74</sup> but coal continued to be worked at Emroyd and in Flockton. The latter township was described in 1838 as being "noted for its extensive and valuable collieries", and Shitlington as "a township abounding in coal"; the populations of the two adjoining townships changed somewhat differently:

[103]

	Flockton	Shitlington
1801	800	1166
1811	930	1410
1821	988	1635
1831	995	1893
1841	1096	2164
1851	1040	1959
1891	1213	2839
1901	1251	2656

In Flockton, pits were sunk on the Bretton Hall estate which had very short lives: a pit between the Manor House and Flockton Mill was at work for only six years, another (to the Flockton Thin seam) from 1.1814 to 12.1815, and so forth.<sup>75</sup> A valuation of the collieries was drawn up in 1814 which shows the then value of the Milnes estate:

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Assets	£	debts	£
crops & farming stock	6,000	total, including	
colliery debts & stock	14,157. 2. 8.	mortgages and	
wood debts & stock	8,500	purchases	19,629
furnace debts & stock	10,119. 4. 0.		
bills & cash in executors' hands	<u>852.19.10½</u>		
	<u>39,629. 6. 6½</u>		<u>19,629<sup>76</sup></u>

In 1798 James Milnes had worked £290.10.0 worth of coals (at £70 an acre) “in the New Colliery” and £158-worth in the old one at £40, all within the Wortley estate, the great John Curr,<sup>77</sup> the Sheffield viewer, engineer and author making the surveys. John Blenkinsop, the famous Middleton Colliery (near Leeds) viewer and engineer made a report on a part of the Flockton Colliery apparently in 1816, giving an estimate of working an acre of coal at James Milnes’s executors’ High Lee pit at Flockton:

expenses:	£
Hewing, hurring, settling timber, “Plating”, other underground work, gin land and horse; 1349 dozens of 37cwt. each at 4s. 3d.	286.13. 3
timber	10
assessments & damages to ground	10
ropes	10
cast iron, etc.	12
joiner & blacksmith	10
banksmen	20
contingencies	<u>8</u>
	366.13. 3
sales of 1349 dozens at 12s	(in fact £809.8.0)
profit per acre	804. 8. 0
	437.14. 9

The height of clean coal in the seam was 22in. and one tenth was to be allowed for small coal (slack).<sup>78</sup>

Some plans<sup>79</sup> survive which indicate interestingly the methods of working this large West Riding colliery from the end of the eighteenth to the end of the nineteenth centuries. The areas of coal which were leased for working were largely determined by the presence of geological faults as well as by the willingness of surface and adjacent mineral owners to have their coal exploited.

The availability of transport facilities within an economically viable distance, the availability of capital, of technical expertise, of potentially remunerative markets, of a labour force and so forth were obviously also elements in the decision to open such a colliery.

The areas which were worked by the Milnes partners and their successors were largely in the ownership of major landowners who were already used to the letting of coal, particularly when its working could occur at a distance from their own mansions. In

## THE OLD FLOCKTON COLLIERIES, c.1772 to 1893

the case of the Flockton Colliery, no difficulties appear to have been experienced in obtaining powers to work coal, apart from the obvious necessity of negotiating (primarily) the rents which were to be paid: the major land owners all resided at a distance and there were not too many of them – the latter point being of some significance, as in small-freeholder areas the legal costs of numerous agreements could be a considerable financial detriment.

At Lane End colliery, the coal seams lay as follows:

Depth in yards.	Seam.	Thickness in feet & ins.	Contemporary comments.
Surface			
42	Joan coal	1.10	
62	Flockton Thick or Top	1.6 & 0.6	Both good coals separated by bed of dirt 1.3 “highly recommended as a house coal”, “Very best quality house Coal (Soft)”
70. (81)	Flockton Thin or Low		
120	Old Hards	1.3 & 0.3	A “superior” coal, “Very best quality house coal (Hard) “inferior”, “Second quality Gas Coal or Soft Engine Coal” (perhaps at Emroyd only)
140	Green Lane or Emroyd Silkstone	1.0	“excellent”, “much worked”, “Best quality Gas Coal”, hard, free from sulphur & cokes well.
161 (160)	New Hards or Cromwell best	2.1	“Good but soft Engine Coal. Much liked at Horbury Mills”
181 (183)	Wheatley, Wheatley Lime or Lime	2.8	“excellent”, “much worked”, “Good House Coal, Soft”.
208	Blocking	1.3	

The situation at Emroyd Colliery was very similar except in regard to depth from the surface:

Depth in yards.	Seam.	Thickness in feet & ins.	Contemporary comments.
Surface	Flockton Thick	see notes above	
20	Flockton Thin		
61	Old Hards		
80	Green Lane		
104	New Hards		
129	Wheatley		
157	Blocking	1.4, with fireclay below	1.3 <sup>80</sup>

Obviously the thicknesses of the seams varied slightly from place to place, and there were areas of “bad coal” too.<sup>81</sup> The Flockton Thick was the seam which was initially worked, possibly along with the ‘Thin, although both had [105] been exhausted in the royalties worked by the collieries by the mid-1850s, the date of the earliest

surviving coal rental book.<sup>82</sup> Certainly the existence of the deeper beds had been proved by boring by 1837, the New Hards having been reached at Lane End at a depth (it was then stated) of 163 yards I ft. 9 in.<sup>83</sup>

No detailed plans of the workings of the first colliery survive – indeed, a plan of the late nineteenth century records “no plan of workings”.<sup>84</sup> The initial two areas worked were bounded by faults on three sides and by the poorer–quality coal close to the outcrop on the fourth, although they were not thus divided by any major fault. The water level which drained them by gravity ran on the low side of the coal and just within the boundary provided by the northern fault, draining down into Coxley Beck where the mouth of its adits still issuing ochreous water, may be seen.

The seams which were worked by the Flockton Collieries were essentially in two planes sloping at about one in 36 and separated by a 19 yard fault running from northwest to southeast: the seams lie higher on the south–westward side of the fault. Under the two earliest leases, the coal was worked from the bounding fault parallel to Stoney Cliff Beck up towards the valley beyond the present Caphouse Colliery where the Joan, Flockton Thick and ‘Thin seams outcrop. Not quite all the coal in this area was owned by the Bute’s Wortley family, very small parts belonging to the Saviles, the Fox’s of Bramham (2 plots) and one small area being common land.<sup>85</sup>

The surviving workings plans provide interesting – if sometimes tantalising – evidence as to the actual methods used in working the coal. The earliest surviving plan, which is dated 1791, and refers to the area leased in 1778, indicates the use of roughly panel–shaped workings into the “face” of the coal and running from its dip risewards. By 9.1791 some 28½ acres of coal had been got and the workings in this area were continued to 5.1801, although output fell off from the end of the year, ending in 10.1798. A few small pieces of coal, close to the great fault, (described on the plan as being “Throws up 17 yds”) were worked after 5.1801 – probably judging from one of their descriptive letters, until the half year beginning in about 10.1802 and ending in about 5.1803. Some further small areas were worked to the dip, especially in the northern parts of the area and around its northeast edge (near the present Reindeer inn) as well as in a part of the coalfield close to the outcrop on its northwest boundary. The coal around the present Caphouse pit, shown on the plan as pit number 17, was worked from the year beginning in 10.1795. Several small “throws” (faults) and pieces of coal “all distracted and will never be got” again occur in the western part of the area.<sup>86</sup>

The third lease, also of 1778, involved an area of coal to the southwest of the 19 yard fault and was not worked extensively for some years. Its method of working was apparently more regular and a plan shows the panels – of varying width from about 27½ yards to half of that breadth – running into the coal to its rise. In much of the area under Dial Wood no ungot areas for roof support are shown (apart from the tunnel pillar mentioned elsewhere) except in the southern section. Here, in an area worked in the colliery’s last years, in 1808–12, a wide bord was left and others were left outside the wood in an area towards Flockton which was being worked by 10.1793: the bord pillars here were worked in 1801.

Workings were then extended beyond Dial Wood and into the Beaumont estate under the lease of 1792 – the first Beaumont lease, Beaumont also now owning the area under which the coal had been sold (in part) to James Milnes by the Rhodes ladies in 1787. Here shafts were sunk by 1798 and possibly by 1794 in an area approximately between Flockton Church (where the Flockton Thick outcrops) and the Manor House. Lane End pit had been sunk – presumably the Old Square pit there – by 1803. Workings were also made in this area early in the nineteenth century in the Flockton Thin seam: a pit near Flockton School was sunk to it in 1.1814 and ceased working in the 12. of the following year having worked out only less than an acre of the coal, while another pit near Mill Lane was sunk to it in 9.1815, which again seems to have had not very extensive workings from it.

[106]

A shaft to the Flockton Thick north of the village was begun to be sunk on 18.12.1807 and was completed in 3.1808, two sinkers and four colliers being employed; another shaft in this area was begun sinking on 14.10.1808 and finished on 23.12.1808. Coals were got there in 1.1809 and until 2.2.1810 and was worked until 11.10.1811, then closing and being worked for a third period between 11.5.1812 and 10.1812. It would seem that only one day's work was involved in putting the pit back into working order.

A plan dated 1816 and carrying the name of Joseph Childe (father of the later eminent Rowland Childe of Wakefield, mining engineer) shows the workings in the Flockton Thick coal to the west of Dial Wood and across to Mill Lane, Flockton. Here a parallel series of rise bordgates were driven in a SW direction, each one occupying a pillar of unworked coal between about fourteen and twenty three yards in width, while the worked space between the pillars varied between about 111 and 123 yards. In this area very few shafts were involved, the largest part of the area by far being worked from Lane End, Painter Ing and Dial Wood shafts, the first and last of which were connected to the colliery tramway. Where a "Horse Road Bassetts out" in the outcrop of the Flockton Thick adjoining Mill Back near Flockton Mill was another entrance, and obviously horses were used for main bord transport by this period. Another plan, of workings in the "Low Bed" in the same area (Beaumont estate) and dated 1824 shows that although the workings in that seam were by then more extensive, their bords apparently ran directly underneath those of the Thick coal above, and as the distance between the seams was not great, this was probably necessary. The plans indicate that the working was carried out at this period on the Yorkshire bank or wide work system, which involved the working of large panels of coal between the bords, the bords themselves usually being ultimately of little value as coal owing to the weight imposed upon them.<sup>87</sup> By 1862 the longwall system of working was being extended in the Yorkshire coalfield<sup>88</sup> and by 1880 the Flockton Colliery was worked by longwall and by narrow banks: "Bords drawn out, cut over, and worked back."<sup>89</sup> Some interesting costings of working at the Flockton Colliery survive in John Blenkinsop's report book and show, inter alia, that horse gins were used at the pits there.

As already mentioned, an entirely new coalfield, lying alongside the waggonway, was leased by James Milnes (alone) from Sir George Armytage in 10.1796 for thirty

one years; the Tankersley ironstone there was leased in 1798 and the surface of Emroyd in 1800: all the leases were to determine in 1827–28.<sup>90</sup> The surface of Emroyd, which had certain common rights over it, was largely farmed by James Milnes – who like many colliery owners had large farming interests – and was later turned over to grass.<sup>91</sup> However, it was soon covered with coal and ironstone spoil and shafts, and was described in print in 1825 as “a piece of bad land, covered with coal pit and iron stone hills”.<sup>92</sup> At Emroyd the Flockton Thick seam occurs at or near the surface and was hence little worked; the seams dip steeply at 1 in 18 northwards down the steep slope of the common and the coal working area was bounded on the north by the outcrops of two seams and by the landowner’s boundary and on the east by a 72 yard fault. In the south and west a multitude of small faults and various larger ones, respectively, effectively provided boundaries,<sup>93</sup> together with a proliferation of ownerships.

The Emroyd pit(s) lay at the north or lower part of the common, and the section of the strata has been shown above: briefly, the Old Hards seam lay at some 61 yards and the New Hards at about 104.<sup>94</sup> Various other pits were sunk on the common, as well as a series of bell-pit type workings in the ironstone; at Emroyd top and close to the top of the self-acting incline (opened probably in the early 1840s) was the Brothers pit which reached the Old Hards at 102 yards and the New’ at 147.<sup>95</sup> In 1826 the principal pits of the colliery were those worked in association with Lane End but Emroyd was to become of approximately equal significance, presumably in part on account of the increasing significance of the coke which it produced from the New Hards coal. In 1855 a new lease commenced operation, under which Emroyd Common was exempt from the restoration of surface land to agriculture: the worked acreages at this period were:

[107]

Year	Colliery	Seams worked	Rental per acre £	Acreage worked
1855	Emroyd	New Hards	60	5
		Daw Green	35	2½
1856	Emroyd	New Hards	60	6
		Daw Green	35	2½

From 1855 further seams were worked from time to time at Emroyd: the Blocking from 1857, the Old Hards by 1863 – while the New Hards ceased to be worked there in 1864. 1865 was a year of large output, with 7½ acres of Old Hards got at Emroyd and another 7½ acres of the Blocking from the Armytage coal estate at Grange Moor. The Daw Green was worked again at Emroyd from 1869 and the Wheatley from the following year; the Old Hards commenced to be reworked there in 1872. The total major coal owners’ rents paid in the colliery’s last years, 1882–93, were as follows:

Armytage at Emroyd and Grange Moor	£5572.8.3
Wharncliffe at New Hall and Flockton	£2929
Stansfeld & Briggs at Flockton	£5012.4.3

In 1892, the last full year of working the colliery, the total coal outputs were

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Pit	seams	tons	total tons
at Lane End	New Hards	26,409	
	Old Hards	14,438	40,847
at Emroyd	Wheatley	14,216	
	Green Lane	13,463	
	Blocking	7,151	
	Old Hards	2,552	<u>37,382</u>
			<u>78,229</u>

The railway which connected the various major working pits of the colliery with the Navigation and (by a connecting road link) with the steam railway was laid (in 1856) on wooden sleepers 4' long, 6" wide and 4" deep; the dates of changeover from wooden rails to Losh & Stephenson-type rails (patented in 1816) on stone sleeper blocks and then to flat-bottomed rails are unknown at present. The railway was extended from Cockhill Mill, near the crossing of the older "main" line of Hostingley Lane, up the valley of the Smithy Brook for some three and a half miles to Lower Whitley in about 1830, with branches to serve the new pits close to its route. In 1826 it had been claimed that the winnings at Lane End were likely to last for only another six or seven years, and the extension of working into the upper Smithy Brook valley may have been in connection with that situation and with the near-completion of many others of the firm's coal leases: extension of area (including the building of the new connecting tramway) and sinking to deeper seams in the old worked areas seem to have been undertaken at about the same time. The new line to Lower Whitley is shown on the local one inch Ordnance sheet surveyed in 1838-40 but the pits there belonging to the firm had apparently ceased work by 1842 except for those close to Mugg Mill, and the upper part of the railway was lifted by the end of that decade. The firm's colliery at Cumberworth, which had no significant transport facilities but lay conveniently close to a number of textile mills, ceased

to be worked in 9.1865, and that at Grange Moor in 1889. The Grange Moor colliery of Milnes, Stansfield & Co. lay close to the Barnsley and Grange Moor turnpike road at the western end of Flockton village, and its numerous pits are shown on the 6in. Ordnance sheet of 1850-51, while some are shown on the Flockton title award plan of 1243. A section published in 1837 refers to a 38in. "Main coal", whose bottom lay nearly 59 yards below the surface, together with two intermediate seams of 26in. and 24in.: other collieries were worked in this area by other owners. The seams which were worked at the various pits of the partners, as listed in the coal rents book, include the Cromwell, the Daw Green, the Wheatley, the Blocking and [108] the Old and New Hards, all in a variety of owners' estates; various landowners also let the "Tunnel mouth Sowood" (Grange Moor colliery) at £1 a year, and various lengths of "Waggon Road" and "Middlestown Tramways".

The Stansfelds had in 1863 taken over the Sowood drift and the colliery of Hemath Fell at Lower Whitley, which adjoined upon their own Grange Moor workings; Fell's was a small colliery, leased in 1860 and working pillar left free more major workings of sixty years earlier - conceivably those of Timothy Smith - and employing only six



men. A Queen's Bench case of 1862, in which the Stansfelds claimed trespass by Fell upon their own lease coal, led to the sale, although Fell was to be allowed to continue to work out some three quarters of an acre of New Hard coal and to continue work in the Wheatley Lime bed, as well as continuing his tenancy (under Lord Dartmouth) of farm. Upon Fell's giving up the colliery to Stansfeld, they were to pay him the value of his plant and of his tramway.

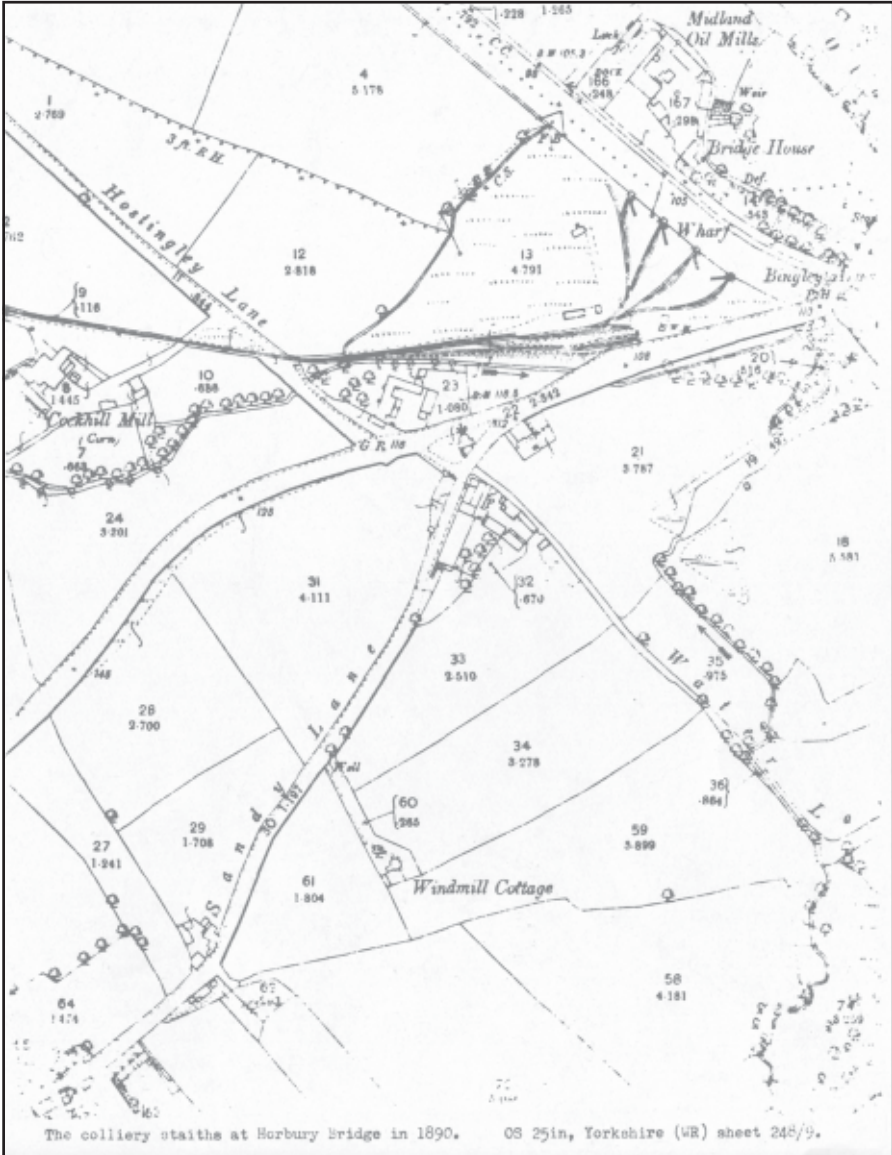
The methods of working the colliery railway are known from the 1850s, when detachments of waggons, 6, 8 or 10 in number were sent down from Emroyd bottom to the staiths between about 7a.m. and 5p.m. In 1807 the "Milnes Waggon" contents was calculated at 48 cwt., but by 1895 the waggons carried only 30 cwt on their 3' 9" gauge line.<sup>96</sup> Where rails survived until recently at the crossing of the line with Lady Mill Lane they were flat bottom (3"), 4" high and with a running surface some 1¾" wide.

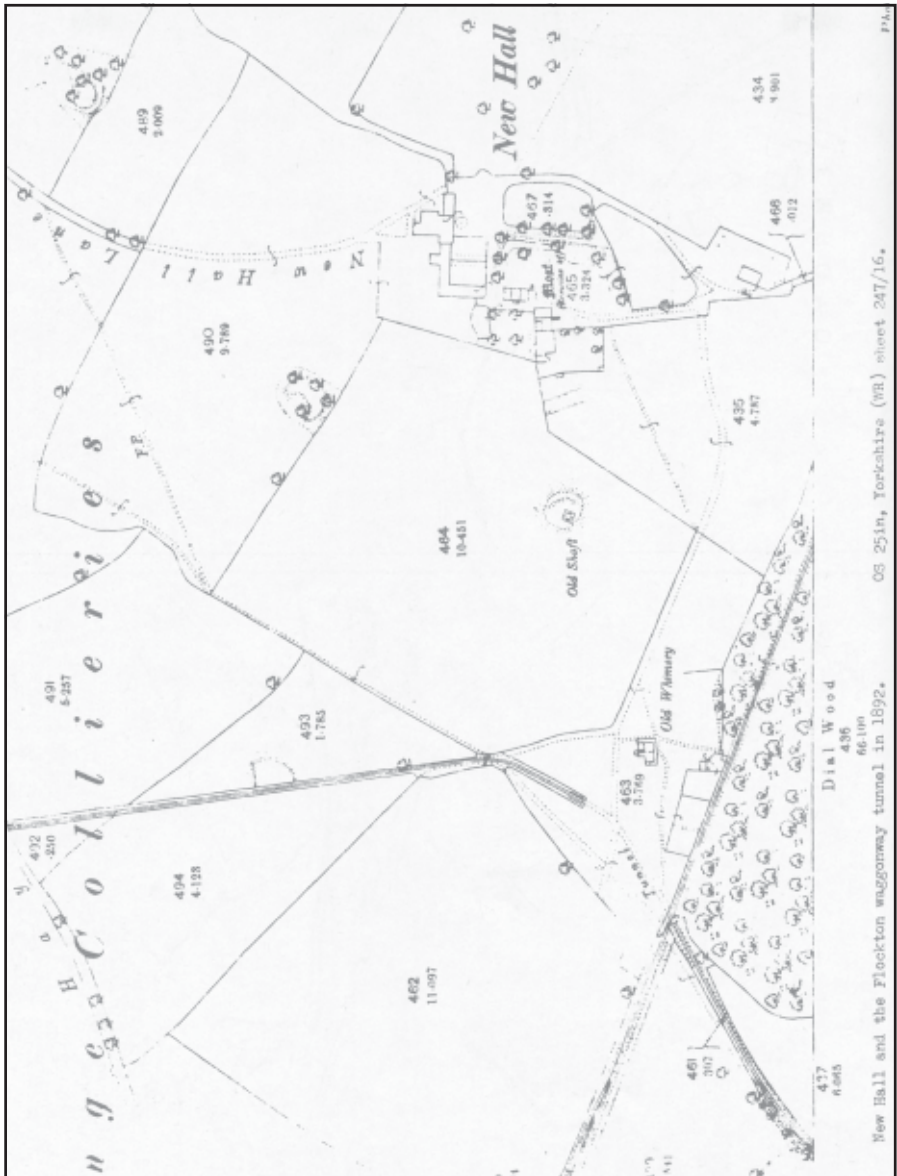
The Navigation attempted to keep the colliery supplied with improved facilities at its end of the transport system. In 1797 the Navigation ordered the building of a



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branch canal from Horbury Dam to near the bottom of Hostingley Lane, which would have cut a few hundred yards from the length of the railway. The branch was never built and in the following year it was agreed to pay £50 to James Milnes towards making a coal staith at Horbury Bridge. In 1831 Stansfeld & Briggs urged the deepening of the Navigation from Wake field to Horbury Bridge and their Engineer was to reply that he had all possible men on the work.<sup>97</sup> Until the opening of the Navigation's new canal the railway terminated on a navigable backwater at the back of what is now the Bingley





Arms inn and where four staithe are shown on a plan of 1833.<sup>98</sup> When the new canal was opened in 1838 four new staithe were provided, together with a widened section of the new canal to accommodate boats waiting to load.

The pumping engine at Lane End, of which the beam wall survives, pumped in its later years from the New Hards (at some 160 yards) to a water lodge in the Flockton

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Thick seam (at some 62 yards); in its later years the lowest of the three sets of spears was taken out and replaced by a Cameron pump, the engine subsequently pumping from the Old Hards (at about 120 yards). It worked in a stone engine house without a roof and was a condensing engine with 4' cylinder and 5'6" stroke, running at five strokes a minute in winter and three in summer and lifting some 90 gallons a minute to the water level in the Flockton Thick, which in the colliery's last years was itself in a poor condition. The pumping pit was 9' in diameter, the Cupola pit (with which the ventilation furnace connected; the brick cupola stood until recently) was also a 9' shaft and the New Hards drawing shaft was 10' across. The Cameron pump produced a similar amount of water but made some 25 strokes to the minute. One winding engine at Lane End was housed in a stone and flagged building and was a vertical engine with a 20" cylinder and 4' stroke working a drum 9ft. in diameter and 5'6" wide. Its battery of three egg-ended boilers worked at 30lbs. pressure and the chimney was 80' high. The other winder at Lane End was horizontal and high pressure, with two cylinders 18" by 36", working a drum 9'6" by 5'6", having one egg-ended and one Lancashire boiler, each working at 30lbs., and a 50' stack. The pumping engine worked from two egg-enders at 10lbs. pressure. There was also a steam compressor, with steam and air cylinders of 20" by 40".

At the Brothers Pit at the top of Emroyd there was a Guibal steam-powered fan, 18' by 6', worked by a pair of horizontal high pressure fan engines 12" by 24"; a small donkey pump worked a 6" ram and both were fed by one egg-ender and served by a 40' chimney. The air seems to have been pulled underground to [109] the Slack Pit which adjoined the Brothers from the Emroyd pit in part-metal and part-pot pipes – or perhaps these pipes carried compressed air. At Emroyd pit itself were a horizontal h.p. engine with a single 12" by 24" cylinder and a 40' stack, possibly to work a pug mill; a pair of Cameron pumps and boilers working at between 10 and 40lbs. The Emroyd pumping engine was of the Cornish vertical and condensing type, 40 or 42" by 60 or 72" (the accounts differ), with 120 yards of pumps (another account states four lifts of spears totalling 155 yards). A further horizontal h.p. engine (18" by 36") worked a drum 9' by 6', a small engine 6" by 12" may have worked the waggon hoist, and a pair of engines 12" by 24" worked a drum 6' by 6'; another engine worked a pug mill (14" by 28") and there were some three chimneys on the site – 40, 50 and 60ft. high. Various other buildings and weigh houses occurred at Emroyd Pit, together with the ranges of 68 beehive coke ovens, 9'6" to 10' in diameter. The Emroyd headgears were some 25' and 24' high, each possessing two pulley wheels, of 12' and 8' diameter respectively.

The catalogue of the loose plant at "Flockton Old Collieries", for sale by auction on 15 and 16.5.1895, shows that there were 45 coal waggons for the colliery railway at Lane End Pit, each to carry 30cwts. on a gauge of 3'9", plus 91 (surface?) trams on the 17" and 42 on the 20" gauge, with a total of 335 wooden (295) and steel pit corves on similar gauges and carrying 3 or 4cwts. At Emroyd the corves ran on 18, 21, 22, 24 and 26" gauges and were of wood, wrought iron or steel: there were 232 of them, 166 being wooden ones and weights of 4 and 5cwts. were catered for. For the colliery railway there were 104 30cwts. coal waggons at Emroyd with end doors and 2 with bottom doors and 17 coke waggons, plus 5 coal waggons of which the

dimensions were given – 10' 2" by 5' and 2' 9" deep. The railway also possessed a box bogie, a rail bogie, a wrought iron water tank on railway wheels and the Manning, Wardle & Co. locomotive with its 4 wheels, 10" cylinders and 4' 9" wheelbase. Parts of a gasmaking plant were scattered about the premises and at Flockton Green the colliery workshops were well equipped, the materials there including a portable winding engine with a fly wheel (10½" x 24") and with a winding drum 2' 6" by 2' 10". Seven mainline railway waggons belonged to the colliery. Wooden air pipes were in store together with a large number of larch pit props.<sup>99</sup>

The Flockton Collieries were, by the standards of the mid nineteenth century, large; in the 1840s, when “large” collieries in Yorkshire were classified as employing between 20 and 700 persons and upwards, the Flockton colliery employed about 500 men and boys,<sup>100</sup> and some 600 were employed in 1893.<sup>101</sup>

Labour relations at these collieries are difficult to document. Certainly there were prosecutions for trades unionism in 1819,<sup>102</sup> a strike occurred for an advance of wages in 9.1853 and there were labour disputes in 1883 and again in '85;<sup>103</sup> in the earlier 1880s there was no official Union branch in connection with the collieries but branches known as Flockton and Middlestown appear in the lists of union branches of the Yorkshire Miners' Association in 1889 and subsequently.<sup>104</sup> General and special rules to be observed by the owner, agent, under-viewer, deputies and workpeople of the firm's Flockton, Emroyd and Grange Moor collieries were printed in 1856 and 1861, and special byelaws and regulations were also printed as an independent leaflet. In 1861 a Flockton collier, a hurrier at Lane End, was summonsed for refusing to obey the command of John Wood, the manager; at that time it was necessary for workmen to sign a contract embodying the bye-laws, while a new form of contract was being considered at this period, the opinion of eminent counsel being taken on the matter when the prosecution of the Flockton collier failed owing to the masters not having signed the contract on their part. Another engrossed (but unexecuted) contract of 1861 survives, whereby two men residing in Emroyd were to agree to get and deliver to the pit bottom the Cromwell coal in a part of the Brothers Pit workings at Emroyd, setting props, laying tramways and working the area “in a clean and workmanlike way” during at least five days in each week and being paid stated sums based on output, under penalties. The only other contracts which survive in the papers are one of 1880 in regard to the leading and tipping of coal and coke between the Navigation and the main- [112] line railway at Horbury Bridge and another of 1861 relating to the sale of ironstone in and on the pithills at Lane End, Brothers and Emroyd pits to a colliery owner near Sheffield.<sup>105</sup> In fact the abolition of female and younger boys' employment in coal mines under the Act of 1842 had the effect of throwing many women in the employment of the colliery out of work:

“They were dismissed when the Act passed. It is alleged, that the demoralization which usually accompanied that practice elsewhere, did not exist here, in consequence of the care and precautions observed. Some of these females have got places in domestic service; three in Mr. Stansfeld's family. Nearly all the rest, who were of a proper age have found. other permanent employment....”

An account of the effect upon the household affairs of one Flockton collier's family is contained in the following statement: W. Watson stated:—

“Before the Act passed, I was receiving 14s. a week for the labour of my children in the pits, namely: for a daughter, 6s., eldest boy, 5s., youngest, 3s. The daughter was not allowed to go below ground any more; I lost therefore 6s., for her, and 3s. for the youngest boy, who was under 10 years of age. He staid out of the pit a year, till he was of the proper age. He did not go to day-school during that time because T could not afford to pay for him; I had then a wife and seven children. I was earning 3s. a day for six days in the week; my eldest boy was earning 5s. a-week, making 23s. From this was to be deducted lamp-oil 10d., sharpening picks, 3d., corf oil, 2d., (1s. 3d.) leaving me clear 21s. 9d. per week. My daughter got into employ in a few weeks after she was dismissed from the pit at 6d. a day; so that, after those few weeks, I had again 24s. 9d. a week clear. Nevertheless, I repeat what I said before, that I could not with those earnings afford to send my youngest child to day-school. The payments for the day-school would have been 2d. per week. I have a cottage with three rooms, and a garden of 20 rods; the rent of both together is 1s. 5d. per week. I get a good deal of produce out of my garden.”<sup>106</sup>

In 1872, after James Milnes Stansfeld had left the partnership, the Wakefield Express newspaper reported that females were engaged at these collieries and that the truck system of payment still continued there.<sup>107</sup> The old tradition of close labour and employer contact and sympathy seems by that period to have largely died; in 1841 the conditions of the colliers had been reported as being even further improved as against the usual situation in the West Riding in that Stansfeld & Briggs used horse haulage underground (along with the neighbouring Inghams of the Thornhill collieries). This was reported as being exceptional in thin seam pits:<sup>108</sup> it involved of course, the construction of higher (and hence more costly) roadways underground than were absolutely essential.

Mrs. (widow) Margaret Stansfeld purchased the Manor House at Flockton and its estate of some 164½ acres from W.B. Beaumont in 1852 for £8000, immediately mortgaging it for a similar sum.<sup>109</sup> James Milnes had lived in the house from at least the 1780s, and it was essentially a substantial farmhouse, enlarged in the later nineteenth century. In 1893 it was referred to as having been enlarged especially during the regime of its then late owner, H.W. Stansfeld,<sup>110</sup> who owned it from 1865 when his elder brother J.M. sold his half share in it”. It seems likely that the house was altered on its south face between 1865 and 1882, tall bays being added and possibly the whole frontage being brought forwards.<sup>112</sup> Little is known of the day-to-day life of the family at the Manor House; Henry Stansfeld had married in 1858 and James in 1862, but the very dates at which its theatre, recreation ground and Unitarian chapel ceased to function are unknown. The elder brother, who had lived there in 1859, was residing at Rammerscales in Dumfriesshire in 1865 and at his death in 1882 at Milan; in 1875 he lived at Graythwaite Hall in Lancashire.<sup>113</sup>



The extent to which the partners used road transport is difficult to determine in the face of the absence of the minute books of the Wakefield & Austerlands and the Barnsley & Grange Moor turnpike trusts, although the few surviving papers of the latter trust show that in 1811 James Milnes's executors were contracting for the repair of the portion of that road in Flockton township – presumably because it acted as a feeder for their Flockton and Grange Moor coals passing down in carts to the heads of their railway – and in the years 1827 and 1831 “Mr. Stansfeld” was paying a composition for tolls in regard to his use of the same road.<sup>114</sup> Certainly the sister (and rival) Denby Grange Colliery which was owned by Timothy Smith and was much later enlarged by Sir J.L.L. Kaye in 1827–29, used the Wakefield & Austerlands turnpike both down to the Navigation at Horbury Bridge and in the opposite (Huddersfield) direction. This latter use of the turnpike continued until the opening of that colliery's own extensive and ambitious railway down to the river and the newly-opened railway at Calder Grove in the mid 1850s, a new transport system which was reputed to have cost over £30,000.<sup>115</sup>

The significance of mainline railway transport to the success of the Flockton Colliery was becoming evident as early as the 1840s, when, despite the opening of improved canal facilities with the completion of the new cut at Horbury Bridge, opened in 1838, the Flockton Colliery found itself cut off from the new Manchester & Leeds Railway, opened down the Calder valley in 1840, by the physical and commercial barriers of the new cut, the river Calder itself and the old cut too. Projects for a Manchester & Leeds branch into the valley below Emroyd and for a line direct from Horbury Bridge to the Calder at Sandal, by-passing the Calder & Hebble Navigation altogether, were considered but came to naught. The Navigation indeed suffered a decline in income as a result of railway competition, and its coal toll receipts declined from £7937 in 1840 to £4281 in 1864:<sup>116</sup> the case of Ingham's Thornhill Collieries and their owners' difficulties in persuading the Navigation to allow railway access bridges across the waterway to connect with the main line<sup>117</sup> indicates the Navigation's willingness to fight to retain colliery outputs for its own route wherever possible.

However, various other possible railway outlets were offered to the Flockton Colliery the later nineteenth century in the form of railways proposed to be built along the valley of the Flockton beck: from 1879 until 1894 a variety of such lines were proposed in connection with the new Hull and Barnsley Railway Company”, running a line from Cudworth to Huddersfield and Halifax survives in the form of a printed prospectus. Most of these proposed railways were intended to provide connections with the South Yorkshire coalfield generally and with Flockton Colliery specifically; the 1871 proposals refer to its purpose (inter alia) of providing “access to the Flockton and other portions of the South Yorkshire Coal Fields, and opening up a large tract of country, rich in Coals, now undeveloped for want of means of Railway transit”. The proposals were given much attention by the partners in both the Flockton and the Denby Grange collieries, as shown by the Flockton manager's private copy letter book, 1880–94, which mirrors three aspects of his proprietor's views: first, a desire to obtain suitable siding arrangements; second, a wish to keep Miss Lister Kaye (the Denby Grange owner) off the proposed railways; third, an intent to keep the intended railways off the colliery property itself, if at all possible. In the event, nothing came

of any of the schemes although one was sanctioned by Act, and John Wood, the Stansfelds' long-time colliery manager (he was there from at least 1861 until closure in 1893 and beyond) had to turn his attention once more to the Lancashire and Yorkshire's line down the Calder valley. In 12.1892 Captain Stansfeld had mentioned "the urgency of obtaining an outlet for our Collieries by sidings to the L & Y Company's line near Horbury Station" and in 1.1893 Wood was asking that railway company to pay for such a branch itself – the branch necessarily involving three waterway bridges and a line across an already built-up area. The railway company was in 3.1893 sending an engineer to report upon the life of the colliery, and 5.1893 Wood wrote that the colliery would be closed unless access to the railway were provided. In fact the colliery closed during the great strike of 1893 and [114] remained closed; Wood's projected re-opening and with non-Stansfeld backing was unsuccessful, one of its causes being this same and continued inability to obtain "some form of access to railway". Some idea of the financial implications of the physical divorce between colliery tramway and mainline railway may be obtained from a draft agreement of 1884 for carrying coals between the staiths and the railway and from details of 1803 as to carrying cost between these points – 6d per ton for coal and 7d for coke.<sup>118</sup>

In 3.1893 there was a proposal on the part of the Earl of Wharnccliffe's agent that the Flockton collieries' agent might approach Miss Lister Kaye "for her assistance" in the form of the use of her Denby Grange railway; the agent had "no doubt" that Wharnccliffe had powers to duplicate (i.e. to double) Miss Kaye's railway within the confines of his own estate, but what of the doubling of the line outside those limits? He was equally sure that Miss Kaye and her agents would say that their railway "will not accommodate any traffic than their own", and nothing further was heard of that scheme.<sup>119</sup> Curiously, had the colliery been able to survive for a few years longer this difficulty would have passed away when the new West Riding Lines of the Midland Railway, crossing the site of the tramway sidings at Horbury Bridge on a high viaduct, were opened in 11.1905 under Acts passed from 1898.

Details of the market served by the Flockton Colliery coals are, before the 1880s, difficult to determine, although judging from the picture of market areas provided by a surviving ledger of the adjoining Denby Grange Colliery, which worked similar seams and whose markets of the 1820s and '30s are described in a surviving ledger, they were presumably in the Humber basin; in 1826 the largest Flockton Coal sales were by water carriage, the land sales being described as "trifling".<sup>120</sup> In 1837 the firm had a coalyard at Aspley Basin, Huddersfield,<sup>121</sup> and a dispute with a bankrupt Hedon (near Hull) dealer in coals shews that in 1839–41 coal to the value of £172.5.9 was delivered to him in boatloads of between 54 and 57 tons, and in 3.1885 coal was being offered to dealers in a similar locality, at Beverley and at Leven.<sup>122</sup> The quotation of Flockton coals on the London coal markets in 1802 is particularly interesting. Coal and slack was being supplied for lime-burning at and lime purchased from Brotherton from 1815, the account being generally balanced as between coal supplied and lime purchases,<sup>123</sup> while coal was supplied to the Knottingley lime-burning area in 1813.<sup>124</sup> The firm had lime kilns at Horbury Bridge in 1833<sup>125</sup> and at Emroyd top in the mid-century, while at the latter period there were also coke kilns at Emroyd



bottom – and 68 such kilns there in 1895.<sup>126</sup> The coal was usually well received – although part of a delivery in 1777 received the comment “very bad measure & worse Coals”.<sup>127</sup> The upper part of the Flockton Thick seam was a cannel coal (giving no soiling to the hands) much used for gas enrichment when gas was used directly as an illuminant.<sup>128</sup>

At the end of the collieries’ lives, during the period for which the manager’s letter book survives, the marketing situation is much more clear. By the 1880s, the Emroyd pits were largely supplying gas coals, and negotiations were in hand in regard to the supply of the companies, municipal corporations and local boards which owned such gasworks as those at Clayton, Cleckheaton, Dewsbury, Elland, Halifax, Holmfirth, Huddersfield, Meltham, Selby and Sowerby Bridge – all, it will be noted, with the exception of Selby, in the valleys upstream of Flockton. The Lane End coals gave “practically” no gas, and were used principally as a house coal: “a first class House Coal – fetch a high price, comparatively speaking, and are therefore worked with proportionate Care to produce a definite appearance”, wrote Wood. The coal dipped at about 1 in 36, and was worked on the longwall system, with narrow banks; blasting powder was only used for making roadways which were not in the coal, or in getting non-coal roofs down, and there had been no accidents from the use of powder during the previous two decades. The firm had 170 Davy-type safety lamps (no Stephenson’s or Clanny’s) at one place, and in 1880 the output at Lane End alone had risen to some 1400 tons a week, which it was later suggested (hopefully, one imagines) could be more than doubled. An agent was employed to sell the coal, and a railway pass was being negotiated on one occasion; Mr. Wood himself was in Antwerp in 1880, selling the Lane End coals for the first time abroad: [115] he was to supply thirty tons of the coal, “Milnes’ Old Flockton Hards .... one of the best – if not the best of the English house coals .... specially used for open fires in rooms used by the wealthier Classes. Who can appreciate a good Coal and pay for it – a suitable price”. Poor Wood seems to have lost grammatical consciousness in his enthusiasm for his coal, but he goes on to write that its qualities lie principally in its intensity of heat, its duration and its cleanliness. A canal boat took 70 or 80 tons from the colliery’s staiths to Hull docks, and the Old Hards coals were sold (in 1881) at eleven shillings per ton of 21 cwts.; Miss Kaye of Denby Grange allowed 22 cwts. to the nominal ton. House coal was supplied from Flockton (inter alia) to Beverley, Leven, Hull and Colne, and coke went to Sheffield (in 1884) and to Rochdale (in 1890 – 200 tons of best blast furnace coke); all these places could be reached by water transport. Occasionally a customer would receive a small *douceur*: in 2.1885 an official at the Cleckheaton Local Board’s gasworks was sent “a box of Cigars as a small token of our respect and thanks for having remembered us in your recent want of Gas Coal”.

The financial results of the colliery were becoming slowly less satisfactory during the 1880s: in 1888 “the Emroyd seams .... (are) now practically exhausted”, and total productions was dropping:

THE OLD FLOCKTON COLLIERIES, c.1772 to 1893

	total output	sent by rail (all to nearest 100 tons)
1889	123,600	27,600
1890	84,600	18,600
1891	81,900	15,900
1892	78,200	– (none?)

The sales in the three years 2.1889 to 2.1892, after deducting expenses and depreciations, averaged £1,466 a year, which was probably a return of just over 4½ on the capital invested – a reasonable if not. notable return at that period; obviously Wood had steered the barque through the storms of the depression which began in 1874, and the evidence of the surviving pit tips shews that he had modernised production by introducing the washed coals which the markets were requiring from the 1880s, but the lack of railway outlets, of adequate capital and even of adequate reserves ultimately overcame his efforts. Significantly, the surviving documentation shews no attempts being made to overcome these difficulties by (for example) going public or by negotiating for coal seams outside the area of the already-existing collieries.<sup>129</sup>

Captain (inactive) H.W. Stansfeld, J.P. (also inactive), D.L. (recently appointed) and County Councillor (active), died in 1.1893, quite suddenly, at the age of sixty four; unlike his predecessors, who were Liberals and Unitarians, he was a churchman and a Tory and was buried in the church yard at Flockton where his wife had laid the foundation stone of a rebuilt church in 5.1867 and where he had himself played the organ since that time, and been a churchwarden. The collieries then employed some 600 men and boys, 130 and they now came into the ownership of Mrs Stansfeld, who was herself in bad health. Stansfeld left household goods valued at £1,410.6.0d and farming stock worth £1,456.13.6d. The only son (of three) who lived at home was Harold Sinclair Stansfeld, who had assisted his father in the colliery's management, but the responsibility for overall management continued in his mother's and in John Wood's hands. The collieries were not in fact to continue for much longer; specific problems were in the ways of capital availability, the continuing railway-access problem, and the necessity of negotiating a new lease from Wharnccliffe, and a new problem arise when in 8.1893 the colliers came out on strike during the great Yorkshire, Lancashire and Midlands coal strike of that year. It is said that Mrs. Stansfeld gave notice to her colliers that if they joined the strikers the pits would not re-open, but in fact tenders were made to various gasworks during the early period of the strike regionally, the Flockton and Emroyd colliers coming "out" in the August and coal ceasing to be worked again. The pumping of water from the workings and general maintenance did, of course, continue, as was necessary if the collieries were to be re-opened; the firm asked for a six months' postponement in the negotiations [116] for the new Wharnccliffe lease early in 12.1893, but in 1.1894 Mrs. Stansfeld renounced her claim to the Wharnccliffe tenancy under her husband's will, and it lapsed.<sup>131</sup> Presumably the other leases were terminated by negotiation, but no papers are available.

John Wood, the colliery manager, now looked round for financial backers to continue the colliery under non-Stansfeld auspices, as "Mrs. Stansfeld does not feel disposed

to carry it on herself". "I beg to say", wrote Wood to G.A.B. Leatham, one of the sons of W.H. Leatham, the local banker, Quaker and sometime J.P. in 1.1894, "I am endeavouring to form a Company to carry on the firm of Milnes, Stansfeld & Co." and a few days later he wrote that he was "Getting promises from substantial firms to assist in opening out these Collieries". The problem of access across the Navigation and the river at Horbury Bridge remained however a major obstacle to the new promotion and Wood had an (ultimately unsuccessful) interview with the Calder & Hebble Navigation committee on the matter. In one of his letters of this for him traumatic time, Wood commented to Henry Tinker of Huddersfield on his colliery's costs:

	2-6.1892 incl.	2-6.1893 incl. to nearest £10.
	£	£
wages	8,770	7,200
freights	1,330	1,000
tramming & ponies in pits	790	730
coke filling	<u>0</u>	<u>30</u>
	<u>10,890</u>	<u>8,960</u>

Wood's copy letter book ends in the early part of 1894, its later pages unused;<sup>32</sup> he lived on until 10.1910 when he died at the Holmes, Flockton, at the age of 73 or 74. He had come to Flockton as assistant manager to Joseph Childe and had taken an active part in local government – in the Flockton Local Board (established in 1863) and in its successor the Urban District Council – and as a Guardian. He left an estate valued at £1456.13.6. He had been a keen musician and an artist; like Stansfeld he was a churchman and a Tory.<sup>133</sup>

There were other projects for re-opening various of the Stansfeld collieries, as when in about 1900 J.W. Taylor and one Robinson came forward as prospective lessees, wanting to re-open Lane End; much later a drift was in fact put down there and the coal again worked for a period.<sup>134</sup> The old colliery was however quite finished by 1900: pumping ceased at both Lane End and Emroyd about 6.1894 and for about a year the plant at both pits lay idle until it was put up for sale, piecemeal and by auction, in 5.1895. The Manor House estate was also put up for sale and the Stansfeld family left the neighbourhood – the Manor House was described as being unoccupied in 1896 – thus severing a connection of well over a century with Flockton village. In 1882 Wood had written that "the interests (sic) of Flockton is so bound up with the Colliery .... as it is the only industry in the village". The firm went into liquidation: in 1894 there were believed to be 89 creditors and their claims to amount to £56,968.17.8 as against assets of only £34,668.17.8. A meeting of the creditors to declare a dividend was being held as late as 3.1897.<sup>135</sup>

Probably the most significant factor in relation to the Flockton Collieries was the unusual – indeed, unique – social system which was operated there for many years. The 1842 Report on the employment of women and children in mines and a subsequent Report both chose the "Flockton system" for particular detail and comment: here were not only good cottages, a day and Sunday schools and wage rates above those

of other day labourers, but such extra-ordinary facilities as allotment gardens, a Cottagers' Horticultural Society, a library, concerts, a singing class, sports and gymnastic grounds, a temperance society, a savings fund and even a theatre. A Sunday School had been established about the beginning of the century, but by 1841 a new schoolroom had been erected in Flockton for it while Henry Briggs, still a partner, was building a day- and Sunday school nearby at Overton. Details of the organisation of both types of school are given, along with accounts of the weekday reading, games and dis- [117] cussion meetings and the evening classes – in all of which the coalmasters themselves took an active personal part. The 1842 Report concludes that a “very unusual attachment . . . is because the family themselves are the teachers and in great measure the companions of the workpeople” and it continues with the flowery (but no doubt true) suggestion that “The Flockton system has given the flattest practical contradiction to the asserted inaccessibility of the poor to kindly and civilizing influences; and equally so the doctrine that refinements and labour are incompatible.”

The politico-religious views of the masters were enshrined in the variety of social facilities which they provided for their workpeople, and perhaps poignantly by their support of the chapel of the Church of England in the village of Flockton while using Mrs. Barbauld's hymns in the Sunday School and while the girls sewed for the Unitarian City Mission in St. Giles (“which they most gladly and willingly did”).<sup>136</sup> The masters were active members of the Unitarian congregation at Westgate Chapel, Wakefield, and apparently paid pew-rent there for such of their workmen as might chose to attend there<sup>137</sup> while J.M. Stansfeld was announced as intending at the end of the 1850s to open a Unitarian chapel in Flockton. The date of the collapse of the “Flockton system” is difficult to determine, but it was almost certainly occasioned by the removal of the Liberal/Unitarian J.M. Stansfeld from Flockton and the succession of his Tory/Churchman brother there.

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#### REFERENCES

1. A.H. Green et al., *Geology of the Yorkshire Coalfield*, 1878. D.A. Wray et al., *The Geology of the Country around Huddersfield and Halifax*, 1930. W. Edwards et al., *Geology of the Country around Wakefield*, 1940. Geological Survey, Yorkshire sheet 217, 1875.
2. See also City of Wakefield MD Archives, Goodchild Loan MSS (hereafter cited as WAG), Milnes, Stansfeld & Co MSS (hereafter cited as M).
3. 31 George II, c.72.
4. C. Hadfield, *Canals of Yorkshire and N.E. England*, Vol.I, 1972.
5. 9 George III, c.71.

6. John Goodchild, *The Coal Kings of Yorkshire*, 1978.
7. C. Hadfield, *op. cit.*, Vol.1, 1972.
8. West Yorkshire R.O. (hereafter cited as WY), West Riding Quarter Sessions Records, Sessions Rolls.
9. City of Wakefield MD Archives, Pilkington MSS. Richard Milnes subscribed £12 to the rebuilding of Flockton Chapel (of Ease) in 1762, (WAG, M).
10. PRO, Calder and Hebble Navigation MSS. The Executors of James Milnes also sold poles to the Duke of Leeds in 1807 (WAG, Misc. Coal MSS) and Richard Milnes sold timber for the rebuilding of Flockton Chapel in 1759 (WAG, M).
11. NCB, Barnsley Area HQ MSS.
12. WY, Registry of Deeds enrolments.
13. Yorkshire Parish Register Society, Thornhill Parish Registers, 3 vols., 1907–15. WY, Registry of Deeds Memorials.
14. R. Milnes, *The Warning Voice*, 1825.
15. R. Milnes, *op. cit.*
16. WAG, G Ramsden Aire & Calder Navigation transcripts (hereafter cited as GR).
17. R. Milnes, *op. cit.*
18. NCB, Caphouse Colliery plans.
19. Sheffield City Archives, Wharncliffe Muniments.
20. WAG, M.
21. WAG, M.
22. Sheffield City Archives, Wharncliffe Muniments.
23. WAG, M.
24. Sheffield City Archives, Wharncliffe Muniments.
25. WAG, M.
26. Dodsworth's Yorkshire Notes, Wapentake of Agbrigg (reprinted from YAJ), 1884.
27. *vide* the various "Peerages".
28. WAG, M.
29. NRA, Report on Lord Savile's MSS.
30. A Catalogue of the Muniments at Kirklees, 1900.
31. WAG, GR.

[119]

32. *The Agricultural Magazine*, Vol.6, 1802.
33. WAG, Gott MSS.
34. Bretton Hall College, Wakefield, Allendale MSS.
35. Bretton Hall College, Wakefield, Allendale MSS.
36. WAG, GR.
37. Bretton Hall College, Wakefield, Allendale MSS.
38. WAG, Gott MSS.
39. Bretton Hall College, Wakefield, Allendale MSS.
40. WAG, Gott MSS.
41. WAG, Gott MSS.
42. WAG, M.
43. WAG, Bowling Coal MSS.
44. R. Milnes, *op. cit.*
45. WAG, Johnstone MSS.

46. WAG, M.
47. Bretton Hall College, Wakefield, Allendale MSS.
48. Birmingham Loco Club, Industrial Railways of Yorkshire (East-West Ridings), 1954.
49. WAG, GR.
50. WAG, Armytage Estates MSS.
51. Article Canal.
52. WY, West Riding Land Tax Returns. WAG, Lower Agbrigg Land Tax Returns.
53. WAG, M.
54. WY, West Riding Quarter Sessions Records, Indictment Books.
55. A Catalogue, op. cit.
56. WAG, M.
57. R. Milnes, op. cit.
58. WAG, M.
59. WAG, M.
60. WAG, GR.
61. WAG, Westgate Chapel, Wakefield, Pew Rent Registers.
62. WAG, Westgate Chapel, Wakefield, Pew Rent Registers.
63. WAG, Smithson MSS.
64. WAG, R. Milnes MSS.
65. City of Wakefield MD Library HQ, Cryer MSS.
66. R. Milnes, op. cit.
67. WAG, Lower Agbrigg Land Tax Returns.
68. A Catalogue, op. cit.
69. WAG, Armytage Estates MSS.
70. Mines Department, Catalogue of Plans of Abandoned Mines, Vol, 3, 1929.
71. WAG, M.
72. WAG, John Goodchild's notes on Emroyd Furnace.

[120]

73. WAG, Armytage Estates MSS.
74. WAG, M.
75. NCB, Caphouse Colliery plans.
76. WAG, M.
77. Sheffield City Archives, Wharncliffe Muniments.
78. WAG, John Blenkinsop's Report Book (photocopy).
79. NCB, Caphouse Colliery plans.
80. Largely based on WAG, M, with comments from the same; on: the Geological Survey's publications, cited above; and on: Trans. Leeds Phil. & Lit. Soc., Vol.I, 1837.
81. WAG, M
82. WAG, M.
83. Trans. Leeds Phil. & Lit. Soc., vol.I, 1837.
84. WAG, Wharncliffe Mineral Estates MSS.
85. WAG, M.
86. WAG, M. NCB., Caphouse Colliery plans.
87. W. Hopton, Conversation on Mines, &c., 9th ed. 1891. P. Jeffcock, On the Coal and Iron Mining of South Yorkshire, in Proc. Inst. M.E.s, 1862.
88. P. Jeffcock, op. cit.

89. WAG, M.
90. A Catalogue, op. cit.
91. WAG, M.
92. R. Milnes, op. cit.
93. Geological Survey sheets, various.
94. WAG, M.
95. WAG, M.
96. WAG, M.
97. WAG, GR.
98. WY, deposited plan and book of reference, Calder and Hebble Navigation, 1833.
99. WAG, M.
100. IUP, British Parliamentary Papers, Mining Districts, Vol. I, 1971.
101. Wakefield Express, 28.1.1893.
102. WAG, Misc. Coal MSS.
103. WAG, M.
104. WAG, YHA Balance Sheets (printed)
105. WAG, M.
106. IUP, British Parliamentary Papers, Mining Districts, Vol. 1, 1971.
107. Wakefield Express, 27.4.1872.
108. IUP, British Parliamentary Papers, Industrial Revolution, Children's Employment Commission, Vol. 7, 1968.
109. WAG, M.
110. Wakefield Express, 28.1.1893.

[121]

111. WAG, M.
112. WAG, M.
113. WAG, M.
114. WAG, Barnsley and Grange Moor Turnpike Trust MSS.
115. vide below.
116. WAG, W. Aldam MSS.
117. WAG, Ingham MSS.
118. WAG, M.
119. WAG, M.
120. WAG, M.
121. W. White, History, Gazetteer and Directory of the West Riding, Vol.1,1837.
122. WAG, M.
123. WAG, Haxby MSS.
124. WAG, Misc. Lime MSS.
125. WY, deposited plan and book of reference, Calder and Hebble Navigation, 1833.
126. WAG, M.
127. WAG, GR.
128. D.A. Wray, et al., op. cit.
129. WAG, M.
130. Wakefield Express, 28.1.1893.
131. WAG, M. and WAG, Wharcliffe Mineral Estates MSS.

THE OLD FLOCKTON COLLIERIES, c.1772 to 1893

132. WAG, M.
133. WAG, Flockton Area newspaper cuttings volume.
134. WAG, Wharnccliffe Mineral Estates MSS.
135. WAG, M.
136. IUP, British Parliamentary Papers, Industrial Revolution, Children's Employment Commission, Vol.7, 1968.
137. WAG, Westgate Chapel, Wakefield, Pew Rent Registers.

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