THE INLAND WATERWAYS OF EAST YORKSHIRE 1700-1900

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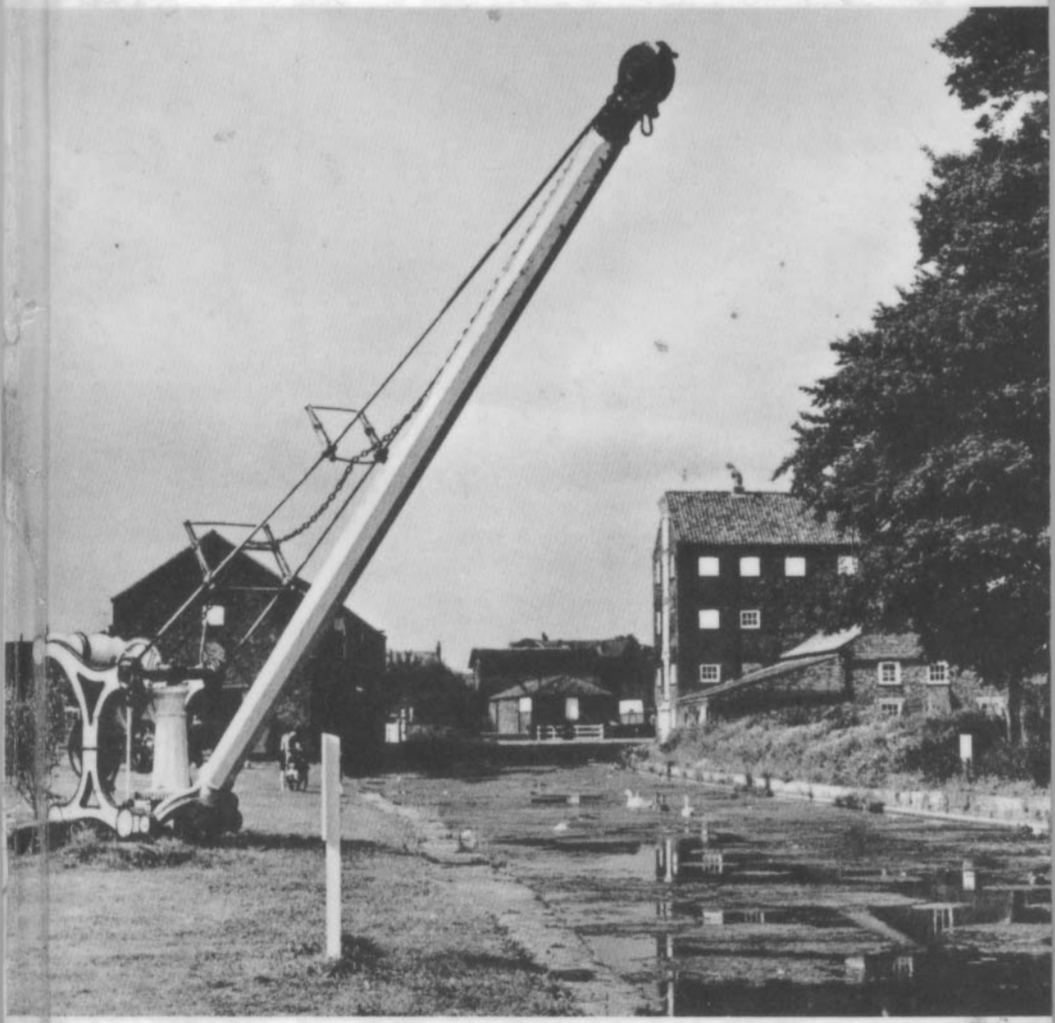

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THE INLAND WATERWAYS OF EAST YORKSHIRE 1700—1900

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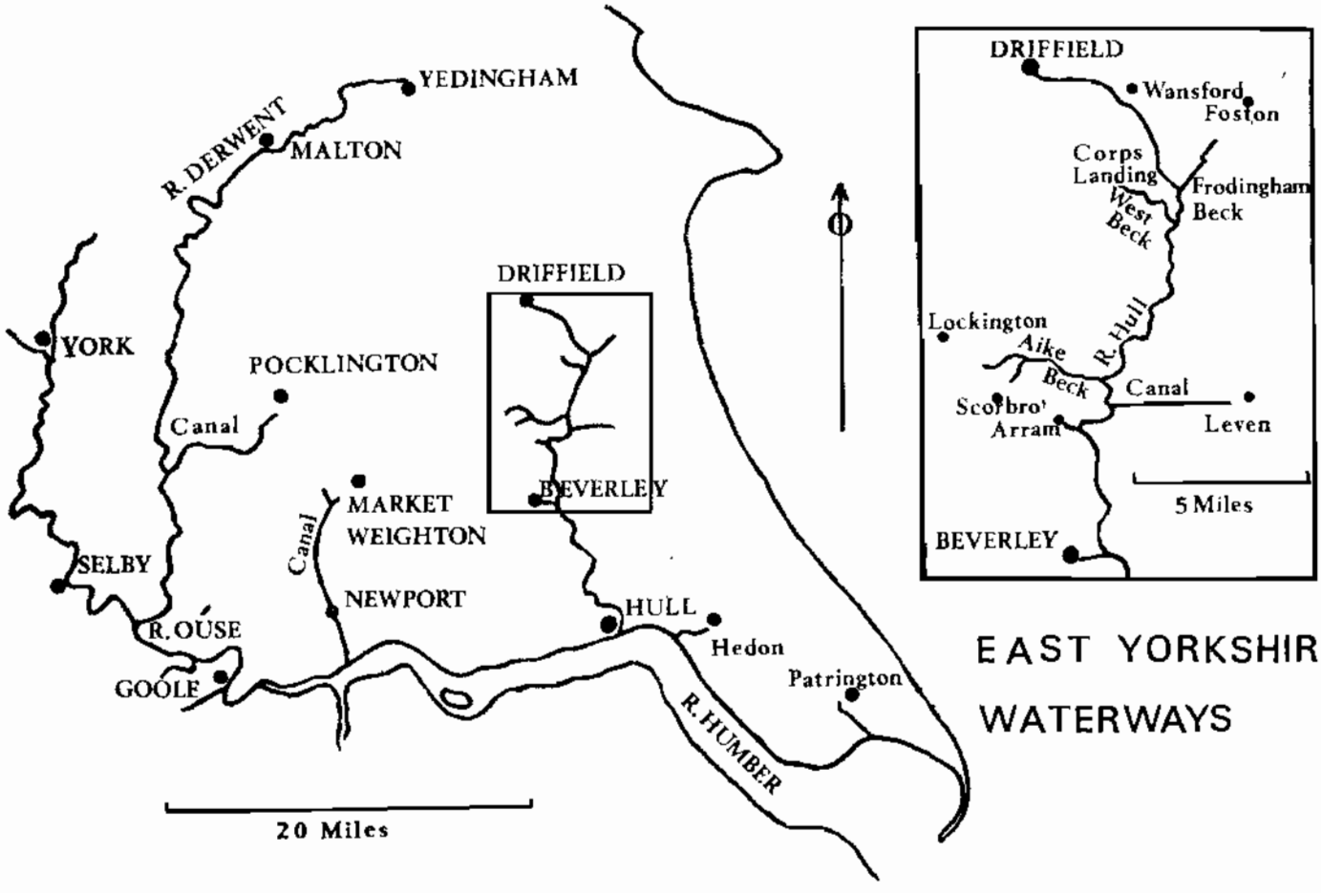
In affectionate memory
of
K. A. MacMahon
(1914–1972)

The Inland Waterways of East Yorkshire 1700-1900

East Yorkshire is not, pethaps, a tegion whose inland waterways have ever gained particular fame. The overwhelmingly agticultural emphasis of its economy and the fact that large areas were within reach of naturally navigable portions of the rivers Derwent, Ouse, Hull and Humbet, or able to make use of coastal transport, inhibited the growth of any teal network of canals. The region was nevet so land-locked that canals could make a really dramatic difference. And yet for its size the East Riding can boast a rematkable variety of waterways. Here can be found inland navigations which exhibit every identifiable phase in the history of interior water communications: the use of natural tideway, the improvement of stteam or river and, finally, the creation of man-made canals. Moreovet, there is teptesented almost every kind of administrative control and financial organisation, ftom the municipal involvement of Beverley with its Beck to the ptivate company which dug the Pocklington Canal; or from the single untestrained ownership of a navigation by one man to the legal trust where profits were under some form of limitation. Add to this the often intimate connection with drainage, especially in Holderness and Walling Fen, and it will be tealised that what East Yorkshire watetways lacked in mileage or commercial importance they amply made up in fascination.

This survey looks principally at three groups of watetways: those based on the River Hull; the Market Weighton Canal; and those of the Derwent Valley. Ideally, no doubt, the Ouse, the Humber and the tiny havens of South Holderness ought to be included. But this would be to raise issues of overseas trade and port history with which a study of merely inland waterways can hardly concern itself. Yet since canals and rivet navigations performed the important function of extending thc hinterland of a great port like Hull, it would be foolish to ignore complctely this aspect of East Yorkshire's waterways. Much or most of the trade on each of the navigations we shall describe was with or through Hull. Except for the most local ttaffic part of every voyage would be spent on the tideways of the rivets Ouse, Humber or Hull. The typical vessel using the canal or canalised river alike, the Yorkshire keel, was fitted with lee-boards to keep her on course on the blustery expanse of the Humber and she was perfectly at home making small coastal voyages. The square sails of the bluff-bowed keel, hoisted high above the towpath of the canal or river embankment, was a common sight and brought a breath of tidal water to the very heart of East Yorkshite.

The Humber and Ouse, naturally navigable up to and even beyond York, formed the parent stream and common denominator of all



EAST YORKSHIRE WATERWAYS

East Yorkshire's inland waterways. It knit what would otherwise have been uncoordinated limbs into one body. During the Middle Ages the prosperity of places as far apart as York and Hedon depended on the twice-daily tides that bore their trade. Both York and the South Holderness ports suffered from the vagaries of silting or moving sand-banks, however, and as Hull grew their own commercial significance declined. York fought hard to keep the Ouse open, waging periodic wars on fishgarths and mud banks alike and promoting Acts of Parliament for river improvement in 1657, 1727 and 1732. Eventually, in 1757, a weir was thrown across the river at Naburn with the lock on the East Riding side, and the fresh water was penned up to give a greater depth up to York than the earlier flood tides had ensured. Later, in the 19th century, the Aire & Calder Navigation acquired authority over the lower Ouse by an Act of 1884 and, by means of training walls, made the reaches below Goole into a reliable seaway. On the Humber estuary there were also struggles for existence. Hedon obtained an Act in 1774 to raise tolls on the creek known as the 'haven' and deepen it once more, while Patrington Haven, another such diminutive waterway, was actually improved under local turnpike Acts from 1761. Neither creek could be permanently kept open – the Keyingham drainage scheme and reclamation of Sunk Island brought difficulties to Patrington – but they remained useful points for shipping corn until into the second half of the 19th century.

A *rigid* distinction between inland waterways and estuarine and coastal avenues of trade is, then, hardly possible in East Yorkshire. The excuse for omitting the Ouse and the Humber creeks from this essay must be that a fair amount is already in print on those subjects, while convenience dictates a division which history and geography do not fully sanction.

I

Waterways based on the River Hull

Beverley Beck

Comparatively little is known of the navigation of either the lower reaches of the Hull or its tributary, Beverley Beck, in the early Middle Ages. Unequivocal references to the embankment of the Hull occur in the 14th century, but much embankment may well date back to the first or second generation after the Conquest. Though such works were principally aimed at producing more efficient drainage, there were also changes whose purpose it was to improve navigation. The Cistercians of Meaux busily cut new, or redirected old, watercourses. Between 1160 and 1235 the Eschdike, Skernedike, Monkdike and Forthdike were all made, largely to improve communications between the abbey or its lands and the Hull. Until the Reformation, the Church, either in the form of religious houses or through the archbishops of York, held considerable sway over navigation and in 1213, for example, the then archbishop, as lord of the town of Beverley, was confirmed in his right of free passage along the River Hull 'of the breadth of 24 feet and one grain of barley'.

Lay landlords also exercised a local authority over what was after all Beverley's way to the sea. In 1269 a determined effort was obviously made to clear the Hull of obstructions after an agreement between another archbishop, Walter Giffard (d. 1279), Joan de Sruteville and Saer de Sutton. (Joan de Stuteville exercised the privilege of lowering or raising a chain across the river from sunset to sunrise during times of civil disturbance). The attempts to remove impediments to navigation remind us of a perpetual theme in the history of all navigable rivers: the constant struggle among rival factions, each with its own particular, and often equally valid, claims on the use of a waterway. Merchants and civic representatives emphasised the role of a river as a trade route; riparian interests or the recipients of fishing grants saw a river's economic function mainly in terms of fish production; millers conceived of it as a source of power. Fishgarths, especially, were the curse of the medieval river navigator and in tidal reaches outnumbered all other hazards put together.

Further friction between mercantile and landholding groups might also arise because of the basic cleavage between the needs of navigation and drainage. As Professor Lythe has commented, with the East Yorkshire case in mind, 'the one dreads a low and the other a high water level'. The relevance of this in the Hull Valley, with its frequent carrs, need not be laboured. The river had always the difficult task of pleasing both Beverley traders and local landowners. It never fully satisfied either.

Much of Beverley's medieval prosperity, like that of York, had been bound up with a tidewater outlet. Beverley's merchants anciently used a wharf on the Hull at Grovehill, but at some stage in the Middle Ages the small creek and watercourse known as the Beck was widened, deepened and probably partially straightened to provide vessels with a closer access to the borough. Exactly when the first improvements took place is obscure. In the 12th century, as is well known, Archbishop Thurstan (d. 1140) supposedly encouraged the burgesses to scour the Beck.* Though the first references to 'Beksyde' as a distinct part of Beverley do not occur until the 14th century, there can be little doubt that the creek was regularly used long before. Beck accounts – at first mainly for scouring and cleansing – go back to a roll of 1344. Many references also occur in the corporation minutes which have been transcribed and edired by Mr. K. A. MacMahon. Some of the Beck's 17th- and 18th-century history has also been covered by Professor Willan.

* * * *

By 1700 the corporation's care of its diminutive waterway – it measured only six furlongs – was well established. The Warburton Papers include mention of a charge of some £197 for 'dressing the Beck' in 1699, while the borough records earlier mention several efforts at dredging or 'scouring' and, just as important, attempts to raise money for improvement or maintenance. In 1695, for example, lots had been drawn to select three aldermen and three burgesses for the unenviable task of collecring contributions. Doubtless the most interesting plan was that of the 1720s which was advanced by John Warburton for keeping the Beck free from the silt which plagued civic officials and mariners alike. The proposed scheme fell into three parts. First, a boat fitted with an engine like 'those used in Holland and Flanders' (probably a plough or beak-drag) was to loosen the silt and reeds; secondly, a lock or floodgate was suggested near the Great (or High) Bridge so that tidal water could be penned back and released for flushing at low water; and thirdly, a similar lock was thought necessary for cleansing the Beck between the Great and Little bridges. The total cost was estimated at aroimd £200, though it was believed that the burgesses' purses might be tapped if the names of subscribers were displayed in the Guildhall. This appeal to a nice combination of civic patriotism and self-esteem proved ineffectual, though the corporation apparently ordered a plough from Holland in January 1721.

In any case, Warburton's plan had both critics and rivals. A Mr. Lelham recommended what appears to have been a more orthodox scheme for dredging, bank trimming and 'jettying', yet conceded the use of a 'Jinn' (engine) if no other means of deepening the Beck succeeded. This would be William Lelham (or Lellam),

*The tradition regarding Thurstan's interest in the Beck may be merely a pious ascription by later writers.

who worked on harbour improvements at Bridlington, Scarborough and possibly Sunderland. His estimate, allowing for paving and with the bridging of the mill dam thrown in, eame to nearly £673. Another engineer, a 'Mr. P.' whom Willan tentatively identifies as William Palmer, also objected to Warburton's plan, contending there was not enough tidal scour to make flushing really effective. Palmer, if he it was, would no doubt be closely listened to, for he had already made extensive surveys for the proposed improvement of the Don. Later he aided the Ouse Navigation Trustees on several oceasions. (Another possible candidate for 'Mr. P.', incidentally, is John Perry (1670–1732), who also advised the Ouse trustees in 1727, though Palmer seems more likely). Whatever method was chosen by Beverley Corporation, however, was going to make financial demands which it transparently was in no position to meet. This was the immediate background of engineering hope and fiscal gloom whieh preeipitated the Act of 1727.

The petition to Parliament spoke of Beverley's trade being dependent on its warerway. The corporation had, it pointed out, expended 'great Sums of Money' cleansing the Beck, repairing the staiths and maintaining the roads leading to the River Hull – but all to little avail. Christopher Northern and John Codgell appeared before the committee to support the petition and the desired Bill, sponsored by the Beverley M.P., Sir Charles Hotham, passed without opposition, receiving the Royal Assent on 24 March. Its promotion cost the corporation almost £150, but it contained powers for the levying of a long and complicated list of dues on traffic using the Beck. Various penalties might also be exacted: £5 if a vessel's master unloaded before payment of toll; and 20s. each for false accounts of lading, preventing corporation officials from searching the boat, or throwing rubbish into the waterway. Besides the collection of tolls (additional to ones levied from at least 1704) and forfeits, the Act permitted the raising of loans.

Efforts under this measure were disappointing in their results. Long-term debts were increased – though at the fairly moderate rates of 4 and 4½ per cent – without any really permanent improvement being achievcd. Most work was carried out between 1727 and 1731, when almost £1,400 had been expended, but most of the money, some £900, had come from loans. Even a legacy from Sir Ralph Warton intended for knitting stockings was turned into the Beck account. Revenuc from tolls was low and during the 1730s barely managed to cover necessary mainrenance and the paymenr of interest. The most interesting feature of the project, to quote Professor Willan, was the juggling of short-term loans in the early stages 'between the Corporation in its ordinary capacity and the Corporation as undertaker of the Beck'. In fact, if we may jump ahead somewhat, the ready diversion of funds to and (chiefly) from the Beck account forms another quaint aspect of Beverley's corporate finance. For insrance, loans or grants from the toll reccipts or rents

were used to aid street repairs in 1765, 1774, 1786, 1788 and 1792. On some occasions it was for streets leading to the Beck (as permitted under the Acts of 1727 and 1745), but on others it may well have been for wider use. Parts of the account were also sometimes made available for the workhouse, used to pay miscellaneous corporation debts or introduced as security for a loan. But all this was only after the second Act of 1745 had reorganised the Beck's finances and made the undertaking generally profitable.

In a new petition, noted in the *Journal of the House of Commons* on 31 January 1745, the corporation painted an almost heart-rending picture of the difficulties which faced it. The tolls allowed under the Act of 1727 would 'never be sufficient to discharge the said Debt', the Beck was once more 'in very great Danger of being warped and choaked up by the Sludge and Soil brought in by the Tides', the banks were falling in and the roads and staiths were in a 'very ruinous Condition'. Part of the trouble lay in the tolls not being proportionate to the value of the goods transported, which was also a defect of the Ouse improvement Act of the same year (1727), in response to which York Corporation had successfully promoted a second measure in 1732. In his evidence before the committee William Nelson junior stated that Beverley Corporation had borrowed a total of £1,050 under the Act, most of which remained unpaid. New works to preserve the Beck would, he considered, 'amount to 3 or 400 £'. The committee evidently agreed that it made no sense to have 'the same Duty being paid for 1000 Bricks as is paid for 3 Hogsheads of Sugar' and the Bill encountered no hindrance. It was formally enacted on 19 March 1745 and provided *inter alia* for a revised schedule of tolls. The expenses of securing this statute, or some of them, were covered by borrowing from Anthony Pybus of Hotham!

In the deeades following 1745 the corporation seems to have stressed three lines of policy with respect to the Beck, none of them new in itself. There was a persistent attempt made to tighten up toll collection and stop evasions, with keels and lighters being marked and measured in accordance with the Act and a proper collector appointed; there were the usual cleansing operations, one supervised by George Savage, millwright of Hull, costing £285 in 1775; and there was the leasing of the dues, presumably to the highest bidders. The rise of this toll rent affords some indication of improved trade or at least of more efficient collection. In March 1748 the annual rent was £100; in February 1752 it was £110; by April 1770 it had reached £140; and by 1803 it stood at £315 a year. Incidentally, a much later official statement of the corporation shows that the right to dues involved not merely the Beck but also that portion of the Hull lying within the boundary of the parliamentary borough. By an Act of 1896 such privileges were restricted to the municipal borough.

Where the policy might conceivably have been bettered was over

the number of years in each toll lease. In 1748 the term was four years, but in 1752 and 1770 the dues were let for eleven years each. Such terms certainly insured the corporation against years of indifferent trade, like 1772, but they also prevented advantage being taken of any boom years to come within the agreement. Of course, long leases of navigation or turnpike tolls were not unusual in the 18th century, though by the time that economic growth was becoming more obvious, lessors often insisted on shorter terms or, in the case of rivers, sometimes took full operation back into their own hands.

Besides episodic dredging the corporation also sought to regulate or encourage the water-borne trade. Goods for Beverley Fair came by water, as did occasional supplies of building stone, including material from St. Mary's Abbey, York, used for extensive repairs to the town's Minster. Imports of coal and lime were matched by the despatch of corn or flour. In 1689 the civic fathers had let the water passage to Hull to Roger Mason for five years on condition that he kept two suitable boats – one of which had to be close-decked – and provided reasonable shipment facilities. Similarly, in April 1745 two wherrymen were offered the market boats navigating the River Hull. It would seem that with the granting of tolls under the two Acts the practice of letting the corporation's ancient carriage or passage monopoly gradually died out, for to have insisted on a narrow interpretation of it would hardly have been to maximise the dues. Nonetheless the reference to the market boats must be seen as a lingering vestige of the right. The provision of cranes was probably also a matter of some antiquity, as it was at York; certainly they were fixed by the corporation under the terms of the Act of 1727 and there are several references to them afterwards. In September 1759 one of them at the Old Waste, Beckside, was said to be overstrained by ill-use. Municipal property has never commanded the respect which it deserves.

Vigilance also had to be maintained in order to ward off wider threats to navigation or trade. Drainage schemes had been closely watched ever since *ad hoc* commissions and later courts of sewers appeared in the 14th and 16th centuries respectively. Some at least of the activity, such as the clearance of river weed or the removal of the remnants of low-tide fords at Weel and Wawne in 1721, can only have benefited the river trade. Certainly such action helped spike the guns of men like the 18th-century Beverley mariner who complained to the drainage authorities that it was obstructions in the River Hull which prevented him from trading with London and 'other foreign ports'. The biggest scheme affecting the west bank of the Hull, the Beverley and Barmston Drainage, did not get under way until 1798 partially because of navigation fears that the water in the river would be seriously diminished.

Bridges over the Hull formed another subject upon which Beverley Corporation pursued a policy of safety first. In March 1772 it was

decided to petition Parliament against a proposed bridge over the Hull at Stoneferry, and indeed Beverley's opposition to this supposed hindrance to navigation helped to kill the scheme. Less excusable was the corporation's seeming intransigence to the Driffield Navigation's request to have Hull Bridge replaced or rebuilt. In 1777 the Driffield commissioners had contemplated seeking parliamentary powers to construct a swing bridge in place of the low stone structure – which clearly *was* an impediment to vessels – but the vehemence of the corporation's opposition was sufficient to deter them. Eventually, as will be noticed in the next section, the bridge was rebuilt, but only after further flurries.

Dock building at Hull and possible alterations to the River Hull's outfall into the Humber were areas where Beverley more understandably remained highly sensitive in both the 18th and 19th centuries. Thus the corporation displayed real concern over Hull's first dock Act of 1774 and proposals for a public quay in the Old Harbour (the mouth of the river). As a matter of course wrecks were removed not merely from the Beck but also from the river if a vessel's owner could not be made to act. In October 1808, for instance, £7 was voted to remove a sunken sloop whose owner had absconded, while as late as 1900 we find a payment of £17 10s. to Matthew Armstrong 'for raising and removing the recent wreck in the River'. Open navigation on the Beck was valueless without open navigation on the Hull and this was a lesson Beverley never needed to be taught.

* * * *

Ultimately Beverley's 18th-century measures to improve or even adequately to maintain the Beck cannot be judged an unqualified success. They kept the essential channels free, but little more. Silting, that remorseless enemy of all tidal rivers and creeks, could not be completely kept at bay. At the beginning of the new century the corporation decided, as York Corporation had decided before it in relation to the Ouse above Naburn, to keep the tide out altogether. It was no doubt made inevitable by the need of the Beverley & Barmston Drain to go under the Beck in a tunnel. To maintain a navigable depth, therefore, it was necessary to raise the Beck's level by about 2 ft. In addition, the building of a lock would help keep back some of the silt introduced into the waterway by spring tides. The resolution to arrest the tide at the mouth of the Beck was taken on 5 May 1802. As an idea it was not new (we hear of a 'barricade' sometimes being used across the Beck as early as 1750), but the corporation had apparently been unsure whether or not a lock, paid for by funds arising from the Acts of 1727 and 1745, would be *ultra vires*. Members were assured on 26 July by the recorder that the dues could properly be applied to the building of an entrance lock, and eventually a loan of £1,000 at 5 per cent was obtained on their security.

The corporation chose an excellent engineer as their adviser – William Chapman, who was currently engaged improving the Driffield Navigation and on the local drainage works. The actual execution of works, however, was the responsibility of Thomas Dyson, also then employed by the Driffield Navigation. (Dyson later reported on an abortive scheme for a Hull–Cottingham canal and was seemingly involved with the Keyingham drainage project). Chapman's recommendation that a lock was practicable was acted on fairly promptly. The Beck accounts book records two payments to Dyson of £244 11s. 2d. each in September and October of 1802 'on acct. of the Lock', one of £150 in January 1803, and a final settlement of £178 3s. 2d. 'in full for the Lock' on 10 February. The original estimate had been £733 13s. 6d.

Penning back the tides did not by any means eliminate the need for the periodic dredging of the Beck. But it did mean that, given normal maintenance, the possibility of the waterway becoming entirely impassable was gone. The corporation subsequently found it easier to preserve a better working depth, though there was now incurred intermittent expenditure on lock repairs. Leakages, too, were to bring recurring water shortages. Yet on the whole the wisdom of the improvements cannot for a moment be doubted.

Today one can derive only a very imperfect idea of what the Beck must have looked like before the construction of the lock. Except for the relatively short periods of the day around high water, there must always have been a fair margin of mud visible inside each bank. For much of the day the flat-bottomed keels, sloops or small brigantines would have sat firmly and safely enough, but with that almost jaunty tilt from the horizontal which one still associates with vessels in those harbours, like Bridlington, which dry out at low tide. Since 1803 Beverley's waterway has looked less like a creek or 'beck' and more like a canal.

* * * *

Coal importation 'for the supply of the interior part of the East Riding', as Edward Baines put it in 1823, had always been an important part of the trade on Beverley Beck. In the year ending 31 May 1731 some 1,465 chaldrons of coal had been landed. If these were 'Newcastle measure' – as they almost definitely were – the modern equivalent would be some 2,290 tons in avoirdupois weight. Two coal merchants are mentioned in Battle's *Hull Directory* of 1791 as having Beckside addresses, a number which had risen to at least six by 1823. In September 1807 it was in consultation with such merchants and other Beck users that the corporation proposed thrashing out new rules for the loading and unloading of vessels. And it was to the coal merchants John Webster and John Hodgson that the navigation tolls were let for six years in 1825 and (to Webster only) for another six years, beginning in 1831. Coal requirements

naturally rose as Beverley's own coal-using industries grew and as both domestic and agricultural demand increased during the 19th century. It is to the credit of the corporation and its Beck Committee that so much of this trade remained with the River Hull and the Beck. In the year ending 1 March 1847 15,517½ tons of coal were received by water. So far from declining over the long term, imports had reached 21,500 tons of coal in 1905.

Not a great deal can be said about the number of craft regularly trading to and from Beverley. The majority undoubtedly consisted of keels which relied on sail and tide for motive power wherever possible. Bow-hauling by men, boys or horses was also employed when the wind did not serve. A Hull Guildhall MS. of perhaps the first decade of the 19th century lists some eighteen vessels of a total tonnage of 774 and crews amounting to 35 persons as plying between Beverley, Hull and the West Riding. Fourteen of the craft are mentioned as navigating to Leeds; some of them also probably undertook short coastal voyages. The average size of all these vessels was roughly 43 tons. Several smaller boats must also have existed.

Receipts from dues, or the toll rents charged, showed an upward trend to mid-century. From 1813 to 1819 a rent of £325 a year was received, while from 1825 to 1837 income from the toll leases was £430 a year (plus £5 for the lock-house for some of this period). By the late 1830s even higher revenues were earned. The corporation minute books record dues of £580 for 1838 and £620 for 1839 (year ending 31 May). In 1838 the tolls had actually been let for £605, but the lease apparently fell through. On 16 January 1839 it was stated that three tenders for the dues had been received: one of only £240 and two of £505. Faced with these disappointing bids the corporation wisely decided to retain collection in its own hands. Such earnings continued to be used from time to time as a security and a corporation loan of £1,000 at 4 per cent was floated with the backing of the Beck revenue in 1838–9.

It may be noted in passing that the office of toll-collector had to become permanent once the tolls were no longer farmed out. The method of this official's remuneration is not without interest. At first, in 1837, he was paid £4 a month, but by a decision of 1 February 1841 he was granted a commission on the takings instead of a regular salary. Over the long term this appears to have proved unsatisfactory and a return was made to direct payment, this time in the form of weekly wages. In June 1883 there is a note of his pay being advanced from £1 to £1 6s. a week.

Until the dawning of the railway age there was little to disturb the quiet routine of water transport. In 1837 Thomas Hamer of the Driffield Navigation had been engaged to dredge the Beck and in 1841 new lock gates had been put in. The works cannot have achieved more than a limited success, for towards the close of 1844, on the very brink of railway promotion so far as Beverley was concerned,

the Beck Committee (eventually it was the 'Beck, Highway & Drainage Committee') received 'numerous complaints of the state of the Beck, arising from the mud and filth accumulated'. Inspection disclosed that the depths in the portions navigated varied from 6 ft. 6 ins. to only 4 ft. On 1 January 1845 it was ordered that 'a Vessel of from 20 to 25 Tons burthen' with four labourers should be used in cleansing, while in August it was announced that Thomas Hodsman had agreed to undertake scouring operations for £115. Thus did Beverley's ancient waterway prepare to meet railway competition.

Unlike the histories of most canals there was not even a token struggle on the Beck's behalf against the coming of the iron road. As occurred in the case of that other municipal trust, York's Ouse Navigation, there could be no question of the corporation opposing railways merely for the sake of the local waterway. Both York and Beverley were eager to support rail connection and neither gave over-much thought to the effect on their older forms of transport. A public meeting of Beverley's more influential inhabitants on 22 January 1845 welcomed a proposed line from Hull. The council set up a special committee to study the project of the Hull & Selby Railway to build their branch via Beverley to Bridlington, but the chief problem was merely seen as deciding how and where Flemingate might best be crossed and where the station oughr ro be situated. On 22 September, by which time the Hull & Selby had been leased by the York & North Midland Railway who wanted no rivals in Bridlington, the corporation resolved unanimously that

> the making of the said Railroad will greatly benefit the Town and Trade of this Borough and afford great accommodation to the East Riding of Yorkshire and they therefore determine to give the said project their strenuous and hearty support.

The railway was opened amid much ceremony in October 1846.

However, it would be quite wrong to suppose that the Beck (any more than York's waterway) was sacrificed to the railways. On the contrary, the municipal connection was paramount in its salvation. Had the Beck been the property of private shareholders anxious for their dividends and fearful about their principal then the story would surely have been very different: a quick sale to the railway while a reasonable price could be asked, followed by a slow painful demise similar to that suffered by both the Derwent and the Pocklington Canal. Beverley Corporation did not forget its trust and the convenience of the short water passage to and from Hull was never injured by the high tolls which railway control would inevitably have meant. The bulk trades survived in rhe end without real difficulty and after a somewhat stagnant phase toll revenue kept up very well. Moreover, the very presence of a viable alternative to rail transport helped to keep the railway rates down. Tonnage carried rose from 31,185 in 1838 to 36,227 in 1858 and almost 40,000 in 1868, despite the railway competition. Total earnings by the Beck

often exceeded £700 a year in the second half of the century and in several years, such as 1876 (£991) or 1888 (£983), they did even better. The impressive tonnage figures for the turn of the century are as follows:

	Tonnage	Receipts	Expenditure	Balance
		(*All to the nearest £*)		
1888	51,578	983	456	527
1898	56,229	780	586	194
1905	101,540	747	858	*loss* 111

Beverley Beck, like the Yorkshire Ouse, entered the new century with better trade, in terms of crude tonnage, than the greatest optimist would have forecast in 1846. Besides the buoyant coal trade, appreciable quantities of bricks, gravel and stone, leather, hides and tanning materials were also carried. By the early 20th century large amounts of various manures were sent down the Hull by Tigar's Manure Company in particular. Records kept in the so-called 'Grovehill exports book' show impressive trade for these years, not only in manures but also in consignments of flour and grain by Crathorne & Sons and even scrap iron by Cochrane Hooper.

Occasionally low water levels or the need for dredging interfered with traffic, but the corporation was generally sensitive to traders' complaints. Protests in the summer of 1863 that 'the head of the Beck . . . was filled up to the surface of the water', that some vessels had had to use tackle and purchase from the bank, and that yet others had been obliged to land a 'part of their cargo' before proceeding up the waterway, were treated very seriously, for example. The aptly-named 'mud boat' was drafted into action for several weeks. In May 1874, after repeated reports of water leakage through the lock gates, water was pumped from the lower level of Barmston Drain; and the lock-keeper was firmly instructed 'to be in constant attendance at the Lock to prevent all unnecessary waste of water'. On 13 December 1875 the Beck Committee reported that it had been found 'desirable to give directions to the Collector and Lock keeper not to admit any Vessel into the Beck of greater length than the Lock Pit is capable of containing' – a clear indication, incidentally, that both gates had sometimes been thrown open at high tide. Water shortages, too, continued to embarrass the committee and in 1898 steam pumping was introduced near the lock. In 1905 the corporation found it difficult to declare to the Royal Commission on Inland Waterways exactly what the Beck's capitalisation was in the 'ordinary sense', but stated that £3,000 had been borrowed 'to meet extraordinary expenditure'. Some of this was certainly for better pumping facilities so that the waterway could be efficiently topped up in dry weather. Despite the debt, income was still great enough in most years to yield a credit balance and to help pay off the loan by annual instalments. Nowadays it is sometimes impossible

to make the dues cover expenditure even though receipts are around £3,000 a year.

Beverley Beck is, if we exclude the Hull, the only one of East Yorkshire's waterways to survive commercially. Though the kindness of geography has been partially responsible for this – quick lighterage on the tide to and from Hull with only one lock to slow down the fairly short voyage – other factors have also played a role. None has been more important than the care of the 'Mayor, Aldermen and Burgesses of the Borough of Beverley'.

The Driffield Navigation

The River Hull provided a water outlet for several communities besides Beverley. In addition to various landings for the riverside villages south of the borough, the Hull provided navigation afrer a fashion up to Wansford. Unfortunately the passage was usually a difficult one, the river being beset by shoals and subject in its 'higher' reaches to a quickly diminishing tidal flow. Best's graphic description of 1641 of the uncertainties of a voyage above Grovehill, based on the account of Robert Bonwicke, carrier of Wansford, is well known yet worth repeating:

> They account it from [Wansford] to Hull 30 miles by water, and say that one that is not very skillful in the way may very well come to leave his boate behind him, there are so many stakes sunken downe, and here and there shallowes.

Such navigational problems could hardly but prompt schemes for improvement by the latter half of rhe 18th century.

A petition for leave to introduce the necessary Bill into Parliament was made early in 1767 in the names 'of the several Gentlemen, Freeholders, Tradesmen, and others, of the County of *York*', but considerable drive appears to have come from William Porter, corn factor and landlord of the Blue Bell inn at Driffield – a hostelry which was subsequently to see the first meeting of the commissioners. The petitioners sought authority to improve the Hull above Aike Beck mouth by means of cuts and dredging and also to effect amendments to Frodingham Beck up to Frodingham Bridge. The main line would be taken 'into or near' the town of Driffield and would, they averred, ensure that 'a more safe and expeditious Communication will be opened up and down the said Rivers, from and to the City of *London*, and the Town of *Kingston upon Hull*'. Reference to London was not uncommon in such petitions. Although much through navigation from Driffield to London can hardly have been anticipated, the very mention of the capital was often enough to enlist parliamentary support from M.P.s in the metropolitan area who were not unconscious of the need for growing purchases of foodstuffs and horse-feed from the provinces. From the engineering standpoint it was believed, perhaps with some forced oprimism, thar the scheme could be 'made effectual' for a mere £7,400.

The Bill was opposed by a counter petition of 8 February from Thomas Brown, lord of the manor of Skerne. He had, he stated, already 'been at a great Expence in beginning to cut and dig a Cut, or Cannal across his own Land' from the Hull 'to the *old Paper Mill*' at Driffield. His plan, it was pleaded, might be perfected at but a quarter of the cost estimated by the projectors themselves. This opposition was obviously taken seriously, for the promoters of the Bill went to considerable trouble to prove their contentions during the committee stage. Brown had threatened to appear either personally or through an agent, but there is no record in the *Journal of the House of Commons* of his having carried out his intention. It is more than likely that those behind the Bill settled with him privately.

A number of local meetings had been held of which at least two each had been in Driffield and Malton. The interest of the Malton district probably derived in part from that area's periodic exasperation with the Rockingham monopoly of the Derwent and the great family's refusal to extend navigation beyond New Malton. William Porter attended meetings in both towns and gave evidence before the committee on behalf of the promoters. He reported that he bought corn in Driffield and sent it by land carriage to Corps Landing, Emmotland or Frodingham Bridge and thence by lighter to Hull. He paid land transport charges of 8s. for a ton of 'Merchants goods' or for a chaldron of coal between Emmotland and Driffield and a carriage rate of 1s. 6d. on each quarter of corn going in the opposite direction. Another witness, William Coates, waterman and (like Porter) a corn factor, reminisced effectively about his having – with touching difficulty – navigared the Hull up to Emmotland for 'upwards of Twenty Years'. Apart from the many shoals which compelled transhipment of goods into smaller vessels 'in dry Seasons', the absence of a horse towpath was also, he stressed, deleterious. Use of horses, declared Coates roundly, 'would save in the Freight of each Vessel containing Thirty-five or Forty Ton, Six Shillings'.

Evidence as to the practicability of the desired improvements was presented by Isaac Milburn (variously Milbourn, Milbourne) – who had surveyed the waterways at the behest of John Conyers of Malton consequent on one of the Driffield meetings – and by the distinguished engineer John Grundy (1719–83). The expense of making the navigation from Emmotland to Driffield, and of improving Frodingham Beck from the bridge of that name down to the stream's confluence with the Hull, was put at £7,450, with an optional £350 extra for carrying the waterway 'into the Middle of the Town of Driffield'. Like most such estimates intended to demonstrate just how cheaply the public good might be purchased, it proved to be wildly unrealistic. However, subscriptions amounting to £6,650 had already been promised and the scheme must have appeared financially respectable. Finally, all were assured by Grundy that there would be no disturbance of the delicate balance of land drainage, for it was undertaken to ensure that the surface of the

navigable water would be at least 2 ft. below the surrounding land and that the 'navigable Canals' would serve as mother drains.

Grundy's reputation in land drainage must have been perfectly well known to the committee, as also the fact that he had reported on such schemes in the Hull Valley in 1763–4. His expert pleas clearly commanded respect and leave was given to bring in the Bill. It received the Royal Assent on 20 May 1767. 'Thus was floated', commented the local historian Ross in 1898, 'what may be considered the most important project in the commercial annals of the town'.

The Act named almost 100 commissioners – local gentry and merchants – and empowered any seven to carry out most of its provisions. (The assent of nine commissioners was required if ever the tolls were let). The qualification to serve was the possession of land etc. worth £100 a year, or a personal estate or entitlement to one valued at not less than £3,000. Cuts had to be embanked 10 ft. from their edges, though they were not to be subject to commissions of sewers. The proprietors' powers of borrowing were theoretically not limited, though portions of the toll revenue had to be assigned to each of the navigation's creditors. Such assignments could be transferred rather like shares. The Act allowed horse haling-ways to be made and permitted the following (maximum) tolls up to Driffield:

Wheat, rye, beans, peas, rapeseed	6d. a qur.
Malt, oats, barley, etc.	4d. a qur.
Flour, etc.	6d. a sack
Coal, etc.	3s. 6d. a chaldron
Bricks, stone, tiles, building lime	3s. 6d. a ton
'Merchandise', etc.	4s. 0d. a ton

Certain toll exemptions were, however, permissible; for example, in the carriage of dung, lime, chalk, manures and so on for the use of agriculture.

* * * *

The commissioners first met on 17 June when they appointed their clerk and arranged for a delegation to inspect 'the State and Condition of the River Hull and Frodingham Beck' and report back. In fact the work was initially prosecuted with a fair amount of vigour. The commissioners met officially eight times in 1767, on five occasions in 1768, six in 1769 and four in 1770, not counting meetings adjourned through lack of a quorum. During this period most of the work was placed in hand and much, though not all, was completed.

John Grundy was appointed engineer-in-charge on 18 August 1767 and was required to provide plans, visit and superintend operations as often as required, and to 'contract with a proper person to attend as a Surveyor to the Works during the Execution of the same'. Isaac Milburn was the first, temporary, surveyor; and indeed

the commissioners seem to have experienced some difficulty in finding the right man. Richard Porter took on the job at £50 a year for a few months and later undertook a great deal of the carpentry work. Finally, after two advertisements in the *York Courant*, Samuel Allam, a carpenter from Spalding, was engaged for the post at £54 12s. a year. Since Grundy, too, hailed from Spalding we may well infer that this appointment probably owed not a little to his personal recommendation. It may parenthetically be observed that Grundy had numerous connections with civil engineering schemes in Yorkshire. Besides the Holderness drainage schemes already mentioned (which did not, however, materialise), he was concerned with projects to make Cod Beck and Bedale Brook navigable in 1767, he was consulted by the Hull Dock Company in the 1770s, and he produced a survey and plan for the Market Weighton Canal for at least some parts of which he appears to have been responsible.

Much information about the financial arrangements of the commissioners and details of several actual contracts have survived. They can be only somewhat briefly summarised in the space available here. Riga and Memel timber for locks and bridges was supplied initially by Benjamin Blaydes Thompson, the Hull merchant, at 46s. and 40s. a load respectively, Thompson agreeing to maintain delivery at such prices between August 1767 and 1 June 1768. Oak was being delivered by Porter from November 1767 at 3s. a cubic foot, with 2d. a foot extra allowed him 'in case the Roads and Carriage grow bad'. Carpentry, piling, etc., was let to Thomas Nalton and Richard Porter. They contracted for the timberwork of the first lock (at Snakeholme) at £73 and for the second lock (Wansford) at £57 5s., £9 7s. 6d. of which was for laying the lock's floor and applying tar and hair to it. The third and fourth locks were let out upon a more complicated formula which included 12s. 6d. a square yard for timbering the pen and 6d. to 1s. a pile depending on its nature. Brickwork was let successively for all the four locks at 18s. a rood and precise specifications for its execution and the standard of workmanship expected were laid down, the whole being subject to Grundy's or his deputy's inspection. Ironwork, let to Mathew Walker, blacksmith of Harpham, was at 4d. a pound with only the 'best Swedish Iron' to be employed.

The execution of the cuts and lock pits was undertaken from the lower end of the navigation upwards so that toll revenue could be earned on an increasing portion as quickly as possible. William Flewker of New Malton contracted for the canal 'from the North side of the Town of Brigham' at 3d. a square [*sic*] yard and for the lock pit at 5d. a square yard. He was to be helped by Francis Robinson of Barnard Castle, but as events transpired both were replaced by James Pinkerton of Cawthorne and John Dyson of Austerfield. Robinson and Pinkerton were both described as 'Yeomen'. Pinkerton's brother John, who appears also to have helped, later became contractor to many canal schemes in all parts

of England. The Driffield contract was probably his first. The price varied from 3½d. to 5d. a cubic yard – the commissioners had now got over their 'square' yards – including embanking where appropriate and the necessary drainage in the lower-lying carrs. James Pinkerton accepted a bond for £100 at 4 per cent in 1771, but later transferred his securities to others. The total length of canal dug under the Act of 1767 amounted to roughly five miles.

Many other incidental details of the construction expenditure might be quoted – like the provision of 50 wheelbarrows by Thomas Kirk, carpenter of Driffield: 'the Wheels to be bound with fluted Iron, and the Feet to be strapped with Iron and to have an Iron Spindle through the Axletree, at Eight Shillings a piece'. Mention of such minutiae may perhaps be felt to border on antiquarianism, but it should make clear the care with which the commissioners discharged their trust and throw a little light on the kind of men at the grass roots of the actual operations.

Both the Hull and Frodingham Beck were dredged in the most needful places. The delegation's original report of July 1767 had revealed wide variations in water depth – from 3 ft. 4 ins. to 9 ft. 6 ins. at Low Baswick on the Hull alone – and had noted several shoals where little more than 5 ft. of water was present. Implements for drainage had to be made, no doubt for use during the digging of the lock pits and canals, and possibly bag-and-spoons or even ploughs and drags would be constructed to help with the scouring. Few details survive; but we know that a 'Horse Engine' (presumably a gin working a pump or endless chain) and later a 'Wind Engine' were used for drainage.

The commissioners had hoped to finish the first and second locks by 2 February and the third lock by 10 October 1768. This timetable proved to be as optimistic as the original costing. In fact the third lock was not completed until about a year after its planned deadline. On 2 October 1770 Grundy was paid £100 'in part of his Bill', and the whole navigation was apparently opened in May 1770 (two years earlier than secondary sources suggest). Nonetheless, initial troubles with the lock gates and heel posts meant further work which was not completed until June 1772. Tolls for the tidal and lower portion of the waterway were levied from December 1768. At first Grundy's deputy was responsible for gathering what dues were payable, but on 28 May 1770 William Webster, a mariner of Whitby, was appointed the official toll-collector at a salary of £40. He immediately demonstrated that he knew a wrinkle or two by reporting the sailing keel *Ann and Mary* for toll evasion. Two Beverley men, Alson (or Awston) and Potts, were prosecuted for the offence. Webster remained toll-collector until replaced in August 1791 by John Mings, yeoman of Hunmanby.

The financial side of the commissioners' affairs did not prove so favourable as the rosy predictions entertained during the scheme's promotion. The first two calls, each for a 10 per cent instalment

from subscribers, had gone out in July 1767. Other calls were quickly ordered, yet by early 1769 entirely new subscribers were being invited to contribute. Details of subscriptions and the consequent toll assignments were recorded in the back of the first minute book. By 23 September 1768 £2,350 had been borrowed. The figure had risen to £9,180 at 24 October 1769 and £11,050 at 24 October 1770, and it finally reached £15,175 (£15,172 in the original list) by April 1774. This final sum can properly be regarded as the capital cost of the waterway. The money was raised virtually in its entirety by local interests and many subscriptions were in denominations of £100 or even less.

On such outlay the investors hoped to earn a safe 5 per cent. For long they must have experienced keen disappointment. The first interest payment, made in 1774, was only 1½ per cent (on which arrears of 3½ per cent were paid in 1801!) and it was this rate only that was declared in 1775 and 1777. Nothing was paid in 1776 or 1778, while only 1 per cent could be mustered in 1781. Interest was normally declared at the July general meeting and reflected the treasurer's balance as at the beginning of the previous April. Up to the obtaining of the second Act in 1801 the best balances achieved were £1,039 and £1,012, for the financial years ending 1798 and 1799 respectively. Interest at 5 per cent had by then been paid on only five occasions. The year 1801, as will have been inferred, was the first in which the commissioners attempted to catch up on arrears. They were to be unable to make a second such payment until 1819, though interest was maintained at 5 per cent for most years in between.

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The history of the undertaking until further legislative powers were sought was quiet and uneventful, unless viewed on the micro-economic scale. The tidal sections of the navigation required constant attention. Orders for 'scouring' or dredging, bank trimming and so on were the commonplaces of the commissioners' periodic meetings – much less frequent once the waterway was fully open. In November 1776 the commissioners were forced to contemplate additional borrowing, 'it being thought advisable to build a Lock at Thornham Bottom and deepen the River from Ake Beck Mouth to Emmotland'. Exactly what works were carried out is not entirely clear, but a further payment to Grundy of 100 guineas is noted in July 1778. No lock was built at Thornham Bottom, but seemingly Snakeholme Lock was converted into a staircase pair instead. In October 1777 William Webster, the toll-collector, was empowered to lay out up to £20 at a time for necessary repairs, but by the 1790s £200 or more a year was regularly being laid aside for routine scouring alone.

This unvarying need for dredging and occasional lock repairs eventually suggested that the navigation required to retain the

advisory services of an engineer or at least a surveyor. In 1786 £10 a year was offered to 'any person willing to undertake the inspecting and surveying of the Works belonging to this Navigation'. Such a man, a carpenter, had actually been engaged back in 1781, but he cannot have lasted very long. Not until Thomas Hamer was appointed surveyor of works in 1815 were the *regular* services of a man of some little knowledge acquired. Until then the commissioners did as most of their like concerned with the smaller waterways throughout England: they relied on the interest of a minority of their own number and called in professional engineers on an *ad hoc* basis when pressingly necessary.

Despite problems of silting the demands on the commissioners' time were not usually excessive once the construction phase was over. Comparatively few attended the annual meetings and these often elected a committee to handle particular problems as they arose. Regulations for safer navigation – like that of 27 September 1781 that no vessel was to enter a lock without first furling its sails – or for the protection of the precious flood banks were formulated from time to time. Contretemps with local landowners gave occasional concern, as did plans connected with land drainage. The commissioners watched the various proposals which led to the Beverley and Barmston Drainage Act (1798) like hawks. From December 1796 they began to fear that the schemes for new drains would deprive the navigation of some of its water. Though wishing for 'as much mutual accommodation as possible', the waterway's proprietors refused to be fobbed off with protecting clauses written by the drainage authority itself and fought determinedly throughout 1797 and early 1798 to safeguard their trust and insert their own security clauses. William Jessop and William Chapman (both of whom had reported on the low-lying lands to the west of the Hull in 1796) were evidently consulted during 1797. In December of that year the commissioners enlisted the support of William Wilberforce to 'take care to see the Clauses relative to the Driffield Navign. inserted in the present Drainage Bill' and also made use of their own active members, Sir Christopher Sykes of Sledmere (d. 1801) and William Thomas St. Quintin, to attend the progress of the Bill through the committee stage.

Another constant theme was formed by the commissioners' efforts to ensure that their waterway was of maximum benefit to its region. The Driffield Navigation was creared for local good, not for profit in any real sense. Actual tolls charged were normally well below the maxima, while generous concessions or drawbacks were often allowed. Some exemptions had, as we have remarked, been written into the Act, but other aid was extended where the general benefit of the community was at stake. Materials for the making or repair of highways, for instance, were carried for merely nominal lock dues in 1789–90, while in 1778 concessions had been made for coal shipments intended for lime-burning. Agricultural interests

were never forgotten. The erection or extension of warehouses and granaries was encouraged throughout the navigation's history. In 1784 three parcels of land were let at the waterway's head on building leases of 30 years and an informal committee of commissioners was instructed to 'speed' a suitable contract. Two corn warehouses were built by John Woodmansey and other accommodation was put up by the firm of William and Richard Dunn. In 1792 the decision was made to add two more warehouses 'for carrying on the business of this navigation', the contract being awarded to Edward Neaston, 'House Carpenter' of Driffield, for £224. They were to be let to the Dunns and to Jeremiah Jarratt. Yet another plot was being let for similar purposes in 1799.

The more importanr local firms also received special treatment where such was judged appropriate. From 1789 Messrs. Bainton & Boyes, texrile and carpet manufacturers at Wansford, were allowed concessionary rates for both their products and raw materials. In 1795 the firm of Sheepshanks, Porter & Company were similarly encouraged after opening their factory at Skerne. Certainly the policy was not without success, for Richard Arkwright junior (1755–1843) established a paper-mill at Driffield in 1796. (It was however not rhe first such business in the town, as Brown's petition of 1767 proves). Trade in grain downstream and manures upstream quietly prospered, as probably did rhe smaller traffic in miscellaneous goods. Battle's *Hull Directory* of 1791 alludes to two or three vessels belonging to G. Spencer as providing regular public carriage to Driffield from Hull for general merchandise (i.e. as opposed to boats chartered or run for specific cargoes). The undated Hull Guildhall MS., rcferrcd to earlier, gives a total of nine vessels connected wirh thc Driffield Navigation. Of these rhe largest was a craft of 44 tons trading to Hull and Leeds. Thc document may belong ro about 1810 and certainly postdates the opening of the New Navigation.

To a large extent it was the periodic difficulties experienced by this trade on the river bclow Snakeholme, especially on neap tides, that nurtured the desire for further improvement. In 1796 William Chapman had surveyed the works at the invitation of the commissioners. His report was considcred on 29 Decembcr but its recommendations were declared 'impracticable on Account of the very great cxpence which will attend [their] execution'. For a time the commissioners implemented an alternative plan advanced by one of their number, George Knowslcy, who had a corn-milling business at Wansford. This provided for dredging the shoals 'Betwixt the first Lock and Frodingham Beck', deepening the river rhere by a foot and making a towing path 'from Ake Beck upwards'.

Another long-standing grievance of keelmasters was Hull Bridge, near Beverley. Here the arch was so low 'that frequently every year Vessells are prevented from passing through the same to the great dctriment and loss to the trade of the Country'. At the bridge the

keels and sloops paid a pontage of 4d. to Beverley Corporation. A proposal by the Driffield Navigation to contribute £100 towards any suitable reconstruction carried out by the borough could not tempt the town's representatives who, as we have noted, had opposed the commissioners' earlier plan to replace the bridge in 1777. By 1800 the idea had re-emerged of rebuilding the bridge at the commissioners' expense and having the rights of pontage transferred to the navigation. In the van of improvement schemes were Sir Christopher Sykes, Ralph Creyke (1745–1826) and George Knowsley. They were soon in touch with Chapman once again and on 8 Seprember 1800 rhey laid a selective project before their colleagues. It can be summarised under six heads:

1. Rebuilding Hull Bridge ro raise its height
2. Making a towpath from Beverley Beck to the entrance of the Driffield Canal proper
3. Consrructing a lock between Seven Hills and Goodhall Clough
4. Straigbtening the river's course and deepening rhe canal up ro Driffield
5. Improving West Beck (or River Hull) up to Corps Landing
6. Improving Frodingham Beck between the Driffield Canal and Frodingham Bridge

Clearly a new Act was needed. The commitree presumably used some of Chapman's figures from which ro produce their own estimate of £8,491, exclusive of legal fees, and proposed that new subscriptions be requested from those currently holding toll assignments. Subscribers to old and new funds should receive no dividend greater than 6 per cent (still a little optimistic, but omitted from the Act!) and anyone refusing to contribure afresh should be enritled to benefits under the Act of 1767 alone. Finally, it was proposed to seek a revision of tolls and to take a ponrage, nor excceding 2s. 6d. a vessel, at Hull Bridge.

This time the commissioners fully accepted rhe recommendations, the non-financial aspects of which they summarised in announcements placed in the *York Courant* and *Hull Advertiser*. Again recourse was made to William Wilberforce to help smooth the Bill's way through Parliament and the commissioners' petition to the House of Commons was duly noted on 13 March 1801. It prayed in particular for powers to make new curs and render navigation 'less expensive and tedious' by laying our 'proper Towing Parhs'. The measure received the Royal Assenr on 2 July 1801. At the midsummer meeting that year a new committee was appointed for 'carring [*sic*] into execution rhe Act lately obtained for extending and improving this Navigation'. The members were Creyke, Knowsley, John Boyds and two men whose families had been closely

connected with the waterway from the very outset: Christopher Laybourn and William Drinkrow.

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The Act of 1801 inaugurated a new and somewhat curious era in the history of the undertaking: the legal division between the so-called 'Old Navigation' and the 'New Navigation'. Separate minute books were kept and the accounts were quite distinct. Although the two navigations shared the same officers for the most part, their salaries were composite sums paid out of each fund. There is little doubt that the commissioners soon found the arrangement mildly schizophrenic, for there are many entries in the parallel minutes which are purely duplications and it is often clear that the proprietors royed with the idea of uniting the two trusts in a formal manner. In 1855 they went so far as to promote a Bill, one of whose objects was 'to amalgamate the Old and New Navigation', though dissensions in their midst as well as wider concern by landowners over certain drainage matters caused the proposed measure to be withdrawn. From July 1876 the proportion of officials' salaries paid out of each fund was made to bear a definite relation to the receipts of the two undertakings. In 1882 the bank accounts were actually unified, though separate accounts had still to be presented 'so as to satisfy the requirements of the Act'.

It was the purpose of the statute of 1801 to improve the river below Snakeholme and extend more reliable navigation to what already amounted to two branches of the waterway: first, Frodingham Beck up to the bridge, and secondly, the River Hull (or West Beck) up to Corps Landing. Although the commissioners had contemplated making a cut or cuts to by-pass much of the West Beck to Corps Landing such major works were never wrought. Doubtless it was simply a question of economics for, with arrears of interest on old subscriptions, new contributions were poor. While it is true that Beverley Corporation had shown hostility to the development of Corps Landing back in 1766, its fear of shipment from that point can hardly have survived authorisation of the Driffield Navigation in the year following. In any case the commissioners were busy treating with landowners for ground for a public wharf in 1824–5 at the landing.

The other branch, to Frodingham Bridge, had previously been one of the most shoal-infested sections of the waterways based on the Hull. Improvement of the Beck was now calculated to link with a small private navigation from Frodingham Bridge up to Foston Mills, near Foston on the Wolds. This diminutive undertaking, about three-quarters of a mile in length all told, was paid for by the proprietor of the mills whose interest it was intended to serve. Eventually it was used by a small brewery as well. The scale of dues

paid on Frodingham Beck by the occupants of Foston Mills was subject to arbitration under the terms of the Act. Not much information appears to have survived which might cast further light on the history of this private branch. However, we do know that three vessels with a total tonnage of 111 were associated with the mills around 1810. That Frodingham Bridge was a fairly popular shipping point is evident by the building of a new wharf there in 1825–6. At least two craft of 85 tons aggregate are known to have traded from there regularly.

The execution of the total scheme which, it will be recalled, was to include the rebuilding of Hull Bridge and the provision of a towpath from Beverley Beck, proceeded only slowly. William Chapman (1749–1832), to whom the 'Old' minutes record payments amounting to £114 5s. 2d. in 1802, supplied the plans and viewed or directed operations from time to time. Like Grundy, he was both a distinguished engineer and the son of an engineer of the same name. The Chapmans came from Whitby and the younger William, already well known in 1801, built up a tremendous reputation in dock and harbour works as well as in the fields of canal and even waggonway engineering. Possibly his finest monument is Seaham Harbour.

In July 1803 Chapman was paid £130 2s. for work on the New Navigation, a month during which he was also asked to help with estimates for Hull Bridge. The cost of reconstructing the bridge was placed at about £500 and the commissioners must have been glad to accept an offer of assistance from Richard Bethell of Rise (1772–1864), who was concerned for his family's Leven Canal. Bethell promised to bear half the building costs of the new structure provided the commissioners agreed to exact a lower pontage on vessels than the Act allowed. This was quickly agreed on the basis of a pontage of 1s. a vessel, a sum that was first charged in April 1804. In the following July the bridge dues were let to William Robertson of Sandholme for £50 a year. The rebuilt bridge remained until replaced by the present structure, which is in the care of the East Riding County Council, in 1913.

On 2 July 1805 a committee of three was established to receive Chapman's report that all contracted works had been satisfactorily completed. Some of the improvements must have been quickly executed or whittled down to essentials, for the order to advertise work on Frodingham Beck was made only in July of the previous year. Tolls were levied on the New Navigation on 13 August and Thomas Porter, yeoman, was appointed lock-keeper and collector at the new lock of Struncheon Hill at an initial salary of 14s. a week. This was now the lowest lock on the whole navigation and almost four miles below Snakeholme. The water level above Struncheon Hill became a matter of occasional friction between the commissioners and the Beverley and Barmston Drainage who, perhaps with justice, suspected that the levels prescribed in the Act were

sometimes exceeded. Apart from the lock, the biggest improvement was the cutting of a new channel for the Hull to eliminate a troublesome meander below Emmotland. The old river bed was eventually sold. If drainage authorities were apprehensive of water levels, mariners were also not too happy. Complaints in October 1805 that only 4 ft. of water had been found, where 5 ft. had been promised, were probably the prelude to the doubling of the locks at Struncheon Hill, which seems to have been done at this time. The lower lock was rebuilt in or about 1875.*

Though 1805 may be taken as the operative year, the precise date at which the New Navigation could be described as completed is a debatable matter. Comparatively little was ever done to West Beck. The commissioners were again referring to Chapman's plans for cutting it in 1808, but nothing more than dredging and bank trimming appears to have been attempted. This branch gave much concern over the years – it was being questioned in 1812 whether all the contracts had been satisfactorily carried out – and in March 1815 Thomas Dyson reported on it. His proposals evidently displeased the landowners and such improvements as were put in hand were small enough to be finished by August. Incidentally, the need to reassure the owners of estates adjacent to the navigation lay behind the placing of a marked stone in the tower of Frodingham Church on 15 September 1815 by which the correct height of the water at Frodingham Bridge could be measured.

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Any sleepless nights over improvement must have been few compared with the commissioners' restlessness over the financial position of their trust. Lack of enthusiasm by subscribers had meant that only £6,143 8s. was expended in carrying out the provisions of the second Act. There was, of course, the satisfaction of discovering that the tolls on the New Navigation yielded enough to pay both the interest and lower the principal; and by 1817 only £1,843 of the 'New' debt was still owing. But the situation of the 'Old' fund was an entirely different story. A petition of some of the creditors presented in July 1816 calculated that not only was the whole principal of £15,175 still outstanding, but that the arrears of interest amounted to no less than £8,042 15s. The chief creditors were stated to be John Lockwood, the navigation's solicitor, 'for Richard Langley' (£6,434 principal plus £3,410 arrears) and J. R. Pease,

*Or possibly as late as 1880. Its rebuilding was recommended in 1874 by Edward Welsh as likely to yield 'important and necessary advantages to both Navigation and Drainage'. It was described as long derelict.

one of the treasurers and member of the famous Hull banking family (£3,812 and £2,020 arrears). Moreover, it was urged that the existing tolls were 'wholly insufficient' to make the repayment of these debts ever very likely. The only solution, with which the commissioners readily agreed, was to seek new powers under a third Act of Parliament.

The preamble of the measure – enacted on 7 July 1817 at an expense to the commissioners of £531 – outlined the financial circumstances of the waterway, quoting the then interest arrears as £8,194 10s. A fresh toll schedule was provided by which means, it was hoped, the liquidation of debts would gradually be realised. Once the principal and interest owing to the mortgagees had been paid off (plus a special bonus for their patience), the tolls were to be lowered to a level calculated simply to maintain the navigation. The Act also directed the proceeds of the pontage at Hull Bridge to be divided equally between the 'Old' and 'New' navigation accounts. In practice the dues at the bridge continued to be farmed, reaching the maximum annual returns in the 1830s and 1840s with figures such as £94 in the years 1832–5, £131 in 1835–6 (for 13 months) and £100 in 1844–7 under 'Robert Novis' (really Norris), a Beverley publican. Norris, who kept the Blue Bell (now the Beverley Arms), was also frequently the farmer for the tolls of the White Cross—Beverley Turnpike in the period 1835–50.

Receipts for the Old Navigation under the new schedules averaged almost £1,366 during the period April 1817 to April 1823,* with peaks of £1,631, £1,683, and £1,664 in each of the financial years ending April 1824 to 1826. Stricter enforcement of toll payment had been instituted in 1818 – the toll-collector was allowed the penalty fines paid by men convicted of evasion – and tighter accounting was commenced. Yet such policies alone could not reduce indebtedness until a healthier balance in hand was achieved. Nor could the commissioners simply levy maximum tolls on every class of traffic without risking the gradual choking of their own trade. We must remember that the port of Bridlington (or Bridlington Quay as it then was known) was not far from Driffield. Goods for coastwise shipment did not derive from any very extensive hinterland, it is true, but the fact that Bridlington men had felt that the Driffield Navigation had marginally injured their trade was proof that high tolls on the canal might conceivably divert some commerce back into their hands.

At first the annual balances rose and fell disconcertingly, but after a time they settled at a level almost twice the magnitude of the years 1809–13 and were usually even superior to the previous best of £1,194 in 1814. To some extent the fluctuations of the trade cycle nationally can be seen reflected in these figures. However, local factors and the fairly random timing of maintenance bills undermine the value of any attempt to posit too close a correlation.

*But omitting the year 1819–20 from the reckoning.

BALANCES AT 5 APRIL
(*to the nearest £*)

1818	992	1829	1,029	1840	1,401
1819	1,125	1830	973	1841	1,613
1820	920	1831	1,002	1842	1,543
1821	883	1832	935	1843	1,404
1822	889	1833	1,017	1844	1,209
1823	1,377	1834	1,729	1845	878
1824	1,314	1835	1,639	1846	2,198
1825	1,334	1836	2,062	1847	1,674
1826	1,371	1837	1,706	1848	935
1827	1,125	1838	1,652	1849	931
1828	826	1839	1,462	1850	966

So improved was the position overall that payment of arrears of interest was possible in every year from 1819 to 1844, with only two exceptions; and in every year current interest was maintained at 5 per cent.

In 1825 J. B. La Manche produced his *Plan for Establishing a Sinking Fund* (printed 1826), which was extensively discussed by the commissioners. His chief idea was that whenever the yearly balance exceeded £1,200 and so allowed interest to be paid at 5 per cent plus 2½ per cent arrears, then a further ½ per cent should be devoted towards liquidation of the principal. Not until 1834 was it decided to implement a slightly modified version of this scheme, in which the surplus balance after payment of 5 per cent plus arrears of 2 to 2½ per cent was to be made available as a sinking fund. The machinery adopted for selecting which lucky subscribers were to have their assignments (or some of them) redeemed was delightfully straightforward. At each annual general meeting numbers were drawn from a bag representing toll assignments equivalent to the surplus available. The winners of this navigation bingo were then paid accordingly. In 1834 seven numbers were drawn, resulting in a total of £600 principal being liquidated. In 1846 as much as £1,546 was paid off, while by 1844 the arrears in interest were wiped off the slate completely. Repayment of principal went very smoothly, then, until the opening of the Hull & Bridlington and Driffield & Malton railway lines in 1846 and 1853 respectively. The annual balance fell from £2,198 in 1846 to £331 in 1851. Bravely though they tried, the commissioners were not quite able to discharge their debt by 1900. In evidence submitted to the Royal Commission on Canals and Waterways of 1906–9, the navigation revealed that it still had a mortgage debt of £1,119 in 1905 plus a temporary overdraft of £200. The way in which the railways had spirited away the waterway's prosperity may be graphically illustrated by the simple fact that the long-term debt outstanding in 1850 was precisely that which remained 55 years later!

The New Navigation, on the other hand, slipped out of the red with comparative ease as early as 1823. With its debts paid it could announce massive toll reductions on 1 July of that year. Coal, for instance, which had previously been charged at 1s. 9d. a chaldron now paid only ½d.; grain paid 1d. a quarter and flour merely 1d. a sack. Thus toll receipts which had been as high as £1,547 for the year ending 1 April 1823 seldom thereafter produced a third of this. As the Act had foreshadowed, only a 'maintenance income' was now sought.

Details of traffic in the two or three decades before the railways came give a glimpse of the navigation at its most useful. In 1817 6,828 chaldrons of coal passed through Struncheon Hill Lock, in addition to some 28,000 qurs. of the chief grains. Some idea of the trade may be had from the following figures for rhe 'two' navigarions. Naturally virtually all the goods passing over the Old Navigation also passed over the New. Year endings are 'April' for 1820 and 1 April for 1825 and 1830.

OLD NAVIGATION

	Coal (*chaldrons*)	Wheat (*qurs.*)	Oats (*qurs.*)	Flour (*sacks*)
1820	4,327	8,554	15,067	245
1825	6,262	20,034	13,276	1,115
1830	4,401	11,146	6,271	2,335

N.B. Plus 21,497 qurs. of barley in 1830.

NEW NAVIGATION

	Coal	Wheat	Oats	Flour
1820	6,940	9,359	18,192	1,205
1825	9,449	22,438	14,908	2,483
1830	7,233	15,125	8,586	4,031

N.B. Plus 23,569 qurs. of barley in 1830.

In these years (generally ending on 1 April) the best revenue earners were as follows. Old Navigation: coal £529 in 1819; wheat £575 in 1827; oars £329 in 1823; barley £358 in 1833. New Navigation: coal £722 in 1822; wheat £472 in 1824; oats £231 in 1818; barley £196 in 1833. Many other commodities associated chiefly with rhe needs of agriculture were carried, while appreciable amounts of rapeseed, lime, stones, bricks and general merchandise (including groceries from Hull) were water-borne. Later the pattern of traffic changed, as will be shown presently.

The generation or so before the railways intruded into the essentially quiet world of inland navigation brought no great changes to the water transport of the Hull Valley. In 1830 there was a minor struggle between the Driffield Commissioners and the Beverley &

Driffield Turnpike Trust over the possible siting of gates or bars north of Sunderlandwick; and ten years later the navigation was insisting on an unhampered passage for Driffield-bound vessels being preserved by Hull Dock Company through the River Hull's 'Old Harbour'. Not all such struggles were successful. In 1855, if we may momentarily outrun ourselves, the trustees of the Hull & Holderness Drainage put up stiff opposition to the commissioners' proposal to promote a Bill for building a new lock below Aike Beck, which the civil engineer Edward Welsh advised for better navigation. The Bill, as we saw earlier, was dropped, but its cost, including Welsh's fees, amounted to £730. The only other dispute worthy of note was a long and acrimonious altercation with James Harrison, coal, corn and wine merchant, seedsman, etc., of Driffield over unpaid tolls. This case, over which the commissioners went to law, dragged on from 1843 to 1845.

* * * *

It was in 1845–6 that the new iron roads began to alarm the Driffield Navigation Commissioners. In the main – and it is to their credit – they feared for the few subscriptions not yet paid back. Unease turned to despair in 1846 when a line from Driffield to Frodingham Bridge was mooted on top of the Hull—Driffield—Bridlington connection then nearing completion. With hurt pride as well as despondency the commissioners pointed out that

> great benefit has been done to the Country by means of a Canal having been made to Great Driffield and that it is therefore unjust that those who have advanced their money upon the faith of an Act of Parliament should be left without Security which they will virtually be if another act should be passed to sanction the formation of a line of Railroad for Private Speculation which shall be the means of withdrawing the Tolls from this Navigation before the Debt is paid.

The railway which had incurred the contempt of the commissioners as 'Private Speculation' was the proposed Malton & Driffield Junction Railway, in which the 'Railway King' George Hudson (1800–71) subscribed £40,000 on behalf of his York & North Midland Railway.

The railway company's provisional committee would, it was hoped, agree to defer the Frodingham Bridge branch until the navigation debt was entirely discharged or alternatively pay £1,000 a year into the 'Old' fund until that happy circumstance had been attained. For this latter undertaking the navigators were prepared to assign surplus revenue to the railroad men after debt liquidation, or make 'some arrangement of this nature'. Representatives of the rival transport enterprises met at Malton on 2 March 1846, but the railway's committee would at first accept none of the navigation's proposals. However, few things – even early railways – are as bad

as they seem. By July the new company (its Act had passed on 26 June) was willing to promise to transfer all 'tolls' earned from goods traffic on the line between Driffield and Frodingham Bridge to the navigation 'during the next four years'. Even more obligingly, in the event, the whole scheme for the branch rapidly went the way of so many such fantasies of the railway mania and died a natural death. Even the rail connection between Driffield and Malton was not opened for public traffic until 1 June 1853.

Yet the lines which did materialise – Hull to Bridlington via Beverley and Driffield (1846) and the one to Malton just mentioned – were sufficiently competitive to bring about just that situation which the commissioners had feared. The last bondholders apparently *chose* in 1853 to take a reduced rate of interest on their subscriptions 'in preference to having them paid off'.

Nonetheless it would be quite wrong to assume that the railways killed off canal traffic overnight. It is untrue nationally and it is also false in the case under discussion. The Driffield Navigation, though its earning powers were clipped, continued to be of very real use to the communities it had already served so long. Tolls had been lowered on the Old Navigation in 1846, only 6d. a ton being taken on coal and almost all other dues halved. The commissioners also considered letting the tolls, but seem to have thought better of the idea. (Perhaps there were few takers). From 1 January 1851, after discussions with the York & North Midland Railway, tolls on all grain were unified at only 1d. a quarter. In July 1853 a deputation was authorised to urge the Aire & Calder Navigation to reduce tolls – doubtless to try to hold on to through traffic from the West Riding – but little seems to have come of it. With lower dues the Driffield Navigation not only survived, but was instrumental, as was Beverley Beck and many another independent waterway, in keeping railway rates down.

Some water services, especially those catering for the general public, naturally died out. The famous vessels of the Randalls, mentioned in Baines's *Directory* of 1823 and Slater's *National Commercial Directory* of 1864, ceased operations in the late 'sixties or early 'seventies, but others remained or were even supplemented. The Driffield & East Riding Pure Linseed Cake Company used the waterway extensively during the second half of the 19th century and traffic in linseed, cotton-seed, rapeseed, oil, linseed cakes and the like consequently grew. In 1884 the Select Committee on the proposed amendment of the Canal Boats Act (1877) was told that 25 boats still operated on the navigation. In fact the Driffield Urban Sanitary Authority had issued as many as 170 certificates, though there were many boats registered there which 'never do and never will come to the district'.

In the year ending 1 April 1881 the quantities of goods borne by the Old Navigation were quite respectable:

Goods and Quantity	Toll Revenue (*to the nearest £*)
9,803 tons coal	245
5,085 „ linseed	42
3,331 „ cotton-seed	28
3,266 „ linseed oil, cake, locust beans	27
738 „ wheat	9
576 „ maize	7
228 „ merchandise	6
——— bricks (155,000)	6

No other commodity in that year yielded a toll revenue exceeding £5, but before we dismiss total traffic as negligible let us remember that the dues were now very low. A wharfage charge of 1d. a ton caught up some 23,240 tons of goods. Other sources of income included warehouse rents and pontage. Figures supplied to the Royal Commission of 1906–9 paint a picture of a struggling yet by no means defeated waterway:

	Tonnage	Gross receipts	Expenditure	Balance
		(*All to the nearest £*)		
*1871	35,654	735	—	—
1888	28,818	557	459	88
1898	24,117	557	954	*loss* 37
*1905	32,666	578	565	13

Whatever the financial trials after 1846 the commissioners never so lost heart that they neglected their waterway. Of course revenue was such that no great improvement could be entertained, while even mainrenance had to be modest. In the year ending 1823 receipts from the Old and New Navigations had amounted to £3,135; by the late 19th century they were often under £700 or £600. Yet work was undertaken which men of lesser interest or integrity would have ignored. In 1860 the commissioners reacted favourably to a number of Driffield inhabitants who hoped to float a company 'to work a screw steam boat', bur it is uncertain whether the project was realised. Sream did eventually come to the navigation in the form of a dredger, bought with a bank loan in 1898 or 1899 (hence the £200 overdraft in 1905). As late as 1906 one ar least of the commissioners believed further deepening might induce traders to run 'steam-propelled barges', though he appreciated that 'funds necessary for such improvemenrs could never be raised privately'. By his day the local agriculturalists had largely turned their back on the waterway and the old grain shipment, nostalgically recalled by Ross in 1898, was virtually gone. But, as Frederick Reynard of Sunderlandwick and a witness for the Royal Agricultural Society told the Royal Commission in 1906: 'if the canal were done away with our railway rates from Hull would be considerably increased'.

*The 1871 figure was given in oral evidence by Frederick Reynard, whose quotation for 1905 was only 24,378 tons.

The story beyond 1900 is mainly one of decline and, latterly, dereliction. Sailing keels continued to use the navigation, accompanied eventually by a few motorised vessels, until the early years of the Second World War. The present writer has no note of any really regular water-borne trade to Driffield after the 1950s. Nowadays the river-head warehouses, the locks, and the towpaths provide a happy hunting ground for industrial archaeologists and doubtless evoke pleasant memories among those who can recall better days. Sailing clubs use the canal at Brigham, and an amenity society now hopes to restore the entire navigation for small craft.

The Leven Canal

Besides the small branch of the Driffield Navigation to Foston Mills and its own branches to Frodingham Bridge and Corps Landing, there were other offshoots of the River Hull (omitting Beverley Beck, already mentioned). Arram Beck was occasionally used during the 19th century and, according to Frederick Reynard's testimony, became disused around 1894. It led from the west bank of the river and ran for about three-eighths of a mile to the east end of the village of Arram. Aike Beck was improved by the Hothams in the early 19th century to serve Lockington, and its tributary, Scorborough Beck, was also used for a time. The Lockington Navigation still existed in 1856.

Of more importance was the Leven Canal, which left the main river about half a mile below Aike Beck and proceeded for some three miles due east to the village of Leven. The canal is a good example of one of those small private waterways which were occasionally cut in England by the local gentry. Motivation was generally provided by the wish to increase both the capital value and rental of an estate, though such an undertaking might also be profitable in itself. In this case it was the Bethell family of Rise who provided both initiative and capital. Unfortunately the papers relating to the waterway do not appear to have come to light and it is therefore possible to give only the merest outline of its presumably rather uneventful history.

The canal was promoted by Charlotta (or Charlotte) Bethell, whose petition to the House of Commons, considered on 10 and 13 March 1801, referred to the advantages Leven would derive from better transport. It was stressed that from the engineering standpoint 'such Canal may be easily made'. Wilberforce and Henry, Viscount Lascelles, took the Bill under their wings and John Norris gave formal evidence on its behalf in committee. After some amendment it received the Royal Assent on 21 May. The measure appointed William Jessop (1745–1814) to build the canal, and James Creassy of Sussex to represent the Holderness Drainage. Clearly the sensitivity of drainage interests in the extremely low-lying carrs

demanded the advice of distinguished engineers. Indeed, John Rennie (1761–1821) was named as a kind of arbiter should the specified engineers or their nominees die or disagree. The Driffield Navigation, on which a Bethell sometimes served, gave what support it could. Already in September 1800, with the Leven project surely in mind, it had announced that it would not prevent 'any person desirous of making a private Navigation from cutting thro' the Hauling path', provided accommodation bridges were built. The chief dues allowed on the new canal may be briefly summarised:

Lime, limestone, dung, soot, rape-dust and other manures	6d. a ton
Coal, coke	9d. a ton
Grain, seed, stone, bricks, tiles, slates, and sand	1s. a ton

In the event these rates proved insufficient to place the waterway on an economic footing and a second Act had to be obtained in 1805. The preamble of this statute declared that Charlotta Bethell had completed the canal and thrown it open for use, but that 'much more Expence hath been incurred in completing the . . . Works than the same were originally estimated at'. An old problem indeed. Apparently Mrs. Bethell had also repaired roads leading to the waterway and so her plea that the existing rolls could not indemnify her outlay was sympathetically considered. The new Act empowered her to levy a wharfage due and impose penalties on captains mooring their vessels for more than 48 hours without her permission. Trade cannot in any case have been very lively. The Hull Guildhall MS. refers to only one Leven vessel, of 22 tons, though obviously other craft would visit the navigation.

The engineering side of the canal, as promised, was simple and in appearance the waterway resembles one of the larger drains of Holderness. At the juncture with the Hull a lock was constructed large enough to admit the average keel. It was equipped with sea or tidal gates in addition to the normal lock gates and the level of the canal could be regulated from the tidal river. As at Driffield a small basin was provided at Leven and here two warehouses were eventually built, one possibly in 1825. In the absence of the canal's records we can do no more than surmise that trade was similar in nature to, though more limited in extent than, that on the Driffield Navigation. For the turn of the 19th century the following figures are available:

	Tonnage	Income	Expenditure	Balance
			(*To the nearest £*)	
1888	4,242	110*	308	*loss* 198
1898	3,194½	114	31	83
1905	4,546	157	34	123

Unlike the other waterways dealt with in this booklet, the Leven Canal never had to sustain direct railway competition, though the

*Probably the product of leased tolls.

Hull & Hornsea line robbed it of some hinterland trade. An agreement must clearly have been signed between the Bethells and the York & North Midland Railway antecedent to that company's Act of 1847 authorising the purchase of the canal by the railway, but the railway's powers do not appear to have been exercised. Curiously the 1906–9 Royal Commission refers to the Leven Canal (in different places) as being both independent and under railway control! It was anyhow the internal combustion engine and not the steam locomotive which was to be the cause of the waterway's demise. Navigation seems to have ceased in the 1930s and the entrance lock was eventually sealed.

11

The Market Weighton Canal

This waterway is a fascinating example of an attempt to coalesce the often conflicting interests of land drainage and reclamation on the one hand, and those of navigation on the other. Its history demonstrates how difficult it is for these objectives to be pursued in real harmony for any considerable period of time. Killing two birds with one stone is indeed a trick that has oftener been described than actually witnessed.

Walling Fen was originally a large tract of carrs which reached northwards from the Humber saltmarshes, near the confluence of Ouse and Trent, towards Holme upon Spalding Moor and Market Weighton. From the west it collected water from the River Foulney; from the east it received streams from the Wolds. Partial drainage works, effected during the Middle Ages and subsequently, allowed the fen to serve as summer pasture, but much remained to be accomplished by the mid 18th century. For any vigorous agricultural improvement to be realised there was an urgent need not simply for better drainage (an obvious *sine qua non*), but also for enclosure of the commons and for more reliable transport. The Act of 1772 authorising the construction of the Market Weighton Canal was concerned with all these aims. In this sense it was an unusual compendium measure, in strong contrast to the generally neater legislative division between drainage and navigation which we have remarked upon in the Hull Valley.

The formal petition to Parliament, the result of long debate among the local landowners from at least 1765, was officially entered in the Commons *Journal* on 25 February 1772.* It spoke first of the need for adequate drainage, lamenting the fact that some 20,000 acres were still 'subject to be overflowed with Water, for want of proper Outfalls into the River *Humber*'. The proposed provision of navigation was described as a 'still further Improvement' to the drainage works. The engineer John Smith appeared as witness before the committee and the unopposed Bill received the Royal Assent on 21 May. To achieve the complex of objectives the measure provided machinery common to enclosure Acts, and clearly distinguished between drainage and navigation accounts. Five commissioners (John Lund of York, Robert Foster and John Raines of Burton Constable, John Dunnington of Thorganby and Edward Johnson of Hull) were empowered to divide and arrange the number of acres due to each proprietor after hearing claims, and could enclose, let, or mortgage a tenth of Walling Fen Common to raise their tax assessment. Their final decisions were to be embodied in an official Award, which was to be executed once both the drainage and

*See also the section on the origins of the Pocklington Canal.

navigation were deemed complete. At this stage their responsibility would be discharged and trustees named in the Act would take over, exchanging, as it were, an earlier watching for an active brief. These trustees were mainly local landlords, though anyone advancing a subscription of £200 was qualified to act.

The drainage operations were to be paid for by a tax of 40s. an acre initially (thereafter 5s. an acre a year), but the making of the actual navigation was to be accomplished through subscriptions, upon which interest would be paid. In fact two subscriptions proved to be necessary; and even these failed to bring navigation right up to the town of Market Weighton, as originally planned. Many documents survive, including the early minutes of both commissioners and trustees, but there is room here to recount only the broad outline.

It was stated by Priestley in 1831 rhat the canal was built by Robert Whitworth.* This is quite incorrect and masks an interesting relationship between the undertaking and its engineers. The trustees clearly wanted a man of the stature of John Smearon (1724–92) or John Grundy as consultant 'occasionally to revise and correct the proceedings of the said Mr. Smith' (the engineer). Grundy's terms at first appeared too high, however, so they urged the commissioners to employ John Smith 'without the advice of any other Engineer'. Samuel Allam (whom we saw connected with the Drifficld Navigation) was appointed surveyor and the chief excavation contracts were awarded to John and James Pinkerton. But the trustees were soon unhappy about leaving the whole direction of the project in Smirh's hands. Possibly fearing for the safcty of their esrates, they decided to call in Grundy, despite the expense. By August 1772 the great Lincolnshire engineer was preparing his own survey and in the following monrh he was asked to draw up plans and estimates for rhe first lock.

Two general surveys are still extant. One, executed by Smithson Dawson under Smith's direction, is dated February 1772 and shows a canal rising 80 ft. 5 ins. from the Humber to the south side of Market Weighton by means of five locks. The other plan is by Grundy, unfortunately undated, but probably made later in 1772 as an improvement on Smith's survey. It is of a more ambitious canal than that actually built: a 'clough' or sea lock and nine other locks were designed to take navigation right up to the town. But Grundy questioned whether it was worth raising the canal some 46 ft. from Weighton Common up to the town and suggested it might be sufficient to stop near the Holme road. Certainly this was cheaper. The trustees, impressed by his report, dismissed Smith (whose reputation had been damaged by an unsuccessful scheme to improve rhe Swale) and appointed Grundy instead. Nonetheless, they continued to nurse hopes of complering the navigation to the

*The confusion probably arose from the fact that another Whitworth was in fact engaged as a minor employee.

town until lack of capital forced them to concede defeat. The last occasion on which serious discussion about extending the canal took place was in 1834.

Much of the on-the-spot organisation fell to Grundy's amanuensis, Samuel Allam. Yet Grundy, Smith and Allam were not the only engineers connected with the construction of the Market Weighton Canal. William Jessop viewed some of the work of the Pinkertons (about which the trustees felt concern) on one, possibly two, occasions, while the uppermost section of the canal was built to the plans of John Holt.* No doubt the employment of this relatively obscure figure from 1778 reflected the financial embarrassment of the undertaking. Indeed he was specifically instructed to complete the line 'upon the smallest Scale' which would serve.

The canal as built measured nine and a quarter miles, stopping some two miles to the south-west of Market Weighton. It was so arranged that the water level was no higher than within 3 ft. of the land's 'natural surfaec' (a statutory obligation) and accommodated craft drawing a maximum of 4 ft. The navigation commenced at the so-called Humber Lock near Broomfleet and proceeded by three further locks at Wholsea Grange (or Sodhouse), East Common, and a point about a third of a mile below 'River Head', the canal's terminus. The waterway had reached even this point only with great difficulty, for £2,900 had to be raised by a second subscription (called for in 1778 and raised in 1781) over and above the initial borrowing. Water supplies were takcn chiefly from Weighton Beck, the River Foulney, Beils Beck and various drains. Progress in construction was slow and in 1777 the chief contraetors (the Pinkerton brothers) were even threatened with legal action for their tardy performance of their contract.

Various financial records show that the works were paid for by 37 subscribers, who eventually advaneed a total of about £12,000 (£11,575 10s. by May 1783). The shares (against which toll assignments were made) were nominally in units of £10, an unusually small denomination for canal stock. The principal subscribers (to the nearest pound and lumping both subscriptions together) were:

The Duke of Devonshire	£1,850
William Battle	925
The Revd. Thomas Bowman	830
Lord Langdale	642
William Sotheron	642
Robert Burton	642
Thomas Preston	642
William Haggerston Maxwell-Constable	550
Philip Langdale	403

Two of the original contributors had stakes of under £50 and another five had investments of only £10. A comparison of the 'founding'

*Possibly a relation of or confusion with Luke Holt, who worked under Henry Berry on the first dock at Hull.

subscribers with a list drawn up in April 1791 shows that very little change had taken place. It had been and remained a scheme of self-help promoted by local capital.

The commissioners executed their Award in 1784, though the lowest portions of the canal had been earning some tolls from 1776. In February 1782 John Whitworth (described as a labourer of Broomficet) was appointed collector of tolls at a salary of £30 a year and a full schedule of dues was announced.* The actual tolls levied were at first on quite a moderate scale. Initially they were taken at the first lock and then at 'so much per mile'; later a usually higher sum was taken at Humber Lock but additional dues were levied only at 'so much per lock'. Selections from the tariff of February 1782 are given below:

Goods	1st Lock	Subsequently
Coal (a chaldron)	4d.	1d. a mile
Groceries (a ton)	4d.	,, ,, ,,
Stone (a ton)	2d.	½d. ,, ,,
Lime (a chaldron)	2d.	,, ,, ,,
Manure (a ton)	1d.	¼d. ,, ,,
Tiles (a 1,000)	6d.	1½d. ,, ,,
Bricks (a 1,000)	3d.	1d. ,, ,,
Timber (a ton)	6d.	1½d. ,, ,,
Deals (a 100)	1s. 6d.	4½d. ,, ,,
Wool (a pack)	3d.	½d. ,, ,,
Wheat, rye, beans, peas, lentils, rapeseed (a qur.)	3d.	½d. ,, ,,
Barley, malt, oats, hay seed (a qur.)	2d.	¼d. ,, ,,

From 1790 the trustees asked more for the use of Humber Lock (coal was then paying 1s. a ton) for all these items. The usual toll concessions were nevertheless made from time to time. An especially interesting example was the decision of 8 June 1824 that dues on manure should be reduced to only ¼d. a ton from 1 December to 20 June each year. Agriculture, quite rightly, was helped where possible. Toll receipts in the early stages were low: £76 in 1777, reaching £522 in 1783.

Yet it would be false to think of the Market Weighton Canal as enjoying a purely bucolic existence. Although there was little development at the canal head, industry grew up in and around Newport in the shape of brick- and tile-works. A considerable proportion of the canal's receipts was to be derived from the carriage of bricks and tiles which, in good years, were moved by the million. Newport's production of these building materials – so obviously in demand during the long period of urban expansion and rapidly rising population – became the *raison d'etre* of the navigation rather than the trade of Market Weighton. The local road was turnpiked

*This would appear to have made him lock-keeper and toll-collector, for he had apparently been a lock-keeper from 1776.

from Newport to near South Cave to connect with wider road improvements, though efforts to promote a turnpike through to the West Riding came to naught. Probably the existence of the water link with the Humber rendered such a proposition decreasingly attractive. By 1823 the township could boast some seven brick or tile manufacturers using the local clay. At that date annual output stood at about 1,700,000 tiles and 2,000,000 bricks. Even long after the intervention of the railways the transportation of these commodities by the canal could be on a considerable scale. As late as 1892 3,431,987 bricks and tiles were being carried.

It was rhe 'export' of such products and the requisite 'imports' of fuel which, together with the waterway's relatively low capitalisation, made possible the payment of dividends slightly better than those commonly yielded by many agricultural canals. This does not mean that the canal was an unqualified success. But the investors did enjoy a real return, even if there were several bleak years. In 1778 the trustees had agreed, as a remporary measure, to add their interest to their principal so as not to embarrass the undertaking. Their first dividend was a modest 6s. a share in 1787. Five per cent was achieved in 1791; and this or better was paid on several occasions afterwards, though there were lapses back to no interest ar all, for example in 1812–14 (terminal dates inclusive) and 1819. The best years for which records survive were 1820–4, when interest crept up from 5 to 8 per cenr. From a purely financial standpoint subscribers could undoubtedly have placed their money more advantageously, but at least they, or their heirs, saw their principal easily returned before the railways came. It was a better deal, as we shall see, than Fate extended to the promoters of the nearby Pocklington Canal. Provided maintenance expenditure was kept low, roll receipts such as the £1,058 taken in 1828–9 (ending 30 April) were sufficient to pay interest of 4½ per cent. In the case of the Pocklington Canal, with its higher capitalisation, a *surplus* of roughly this amount was needed to pay a dividend of one per cent less.

* * * *

Railway intrusion came quite early to the Market Weighton Canal. The first step was the opening of the Hull & Selby Railway on 1 July 1840, the line of which crossed the navigation quite near to the Humber. Subsequently Market Weighton was linked by rail with York in October 1847 and with Beverley and Hull in May 1865 – though rhis latter connection had little if any effect on the brick and tile traffic of the canal. A plan of August 1851 shows a proposed line leaving the Hull & Selby rails near the brick fields and following the waterway both up to Market Weighton and down to a jetty near Humber Lock. Fortunately for the canal it was never built. Yet by this date the navigation had come within the railways' direct ambit. By an Act of 1847 the York & North Midland Railway took powers

to acquire the navigation interest (as opposed to the drainage obligations) of the trustees. Since the nature of the acquisition later caused enormous friction, it is worth a few words here.

Although most secondary sources and even some Parliamentary Papers speak of the canal's *purchase* hy the railway (which of course became the North Eastern from 31 July 1854), the N.E.R. later insisted that it had in essence merely acquired the title to the navigation's profits. (The canal subscribers were bought out for £14,405 as from 1 January 1850). While it is clear that the drainage side of the trustees' affairs remained untouched, the full measure of the North Eastern's responsibilities, if any, was a subject upon which diverse opinions were held. That the railway was entitled to the balance from the navigation account after deduction of necessary expenses was not in question; whether the company owed a concommitant duty of undertaking either maintenance or capital works to preserve navigation was hotly disputed in later years. The Act of 1847 also empowered the York & North Midland to take over a small private branch of the Market Weighton Canal. This, known as Sir Edward Vavasour's Canal and possibly built about 1834, stretched almost a mile from near the top lock to the Holme to Market Weighton road. As far as the present writer has been able to determine, these powers were never exercised and the Vavasour branch was left by its owner to go derelict. Railway competition was felt mainly after 1865, when the line was completed to Beverley.

From 1850 to 1889 inclusive the railway earned net profits of roughly £19,300 from the Market Weighton Canal, averaging some £731 a year in the best years of 1860–72. Toll receipts, though fluctuating, remained respectable until the mid 1880s, after which even reductions in dues failed to stimulate trade. In 1890 and 1895 the railway allowed the drainage trustees to retain small balances, but in the years 1896–9 a loss was incurred on each year's working. Neither the railway company nor the trustees had much interest in the canal as a navigation after 1865. Nonctheless, accounts and other records show that the most pressing mainrenance works were performed. Heavy repairs, for instance, were carried out on Humber Lock in the mid 1850s and several bouts of dredging – like that accomplished in 1880 with a dredger borrowed from the Ouse Navigation – were undertaken. A curious point, in view of later disclaimers by the North Eastern, was that the railway company definitely contributed towards several bills for such works.

Yet the scale of maintenance was insufficienr to please either landowners or navigators. From the standpoint of the landed proprietors the warerway no longer had much to offer, even being a somewhat inefficient mother drain. Their investment had been redeemed and their transport requirements could be met by the railways. Nor had they ever enjoyed quite the benefits from land reclamation for which they had hoped. Many acres of Walling Fen remained 'much saturated with water' – as Edward Page had put

it in 1831 – and the Market Weighton trustees, perhaps rightly, felt they possessed no authority to open ancient drains or dig new ones. Henry M. Vavasour expressed the frustrations of the landed interest when he wrote in January 1861: 'If the attempt to combine drainage with navigation [has] failed in ordinary seasons, it has proved a monstrous evil in very wet years'.

Over the years many plans were advanced for using the canal and the Humber spring tides to raise the fen by warping, but opposition from the navigators was generally intense. J. G. Weddall had reported in June 1851 on the possibility of warping 5,076 acres at a cost of £10 an acre, but it had to be conceded that navigation would have been 'much impeded'. However, Weddall believed that if the land was once efficiently warped, all complaints over drainage would be at an end. Another project, under discussion in 1857, contemplated the creation of new cuts 'in order to free the canal' if necessary; but the wish of the landowners to see some use out of a mother drain for which they were already taxed meant that they continued to cast doleful eyes at the navigation.

Traders' complaints, on the other hand, were generally those common to most inland waterways, though the following extract from a petition of November 1855 from merchants and manufacturers around Newport is unusual enough to merit inclusion. The petitioners were outraged that their vessels were being obstructed by

> the capricious & selfish conduct of the management at the Humber Lock and can only account for it by the fact that the *Lock-keeper* or the *Lock-keeperess*, one or both of them, are *owners* of *vessels* and *have an interest* in *one* or *two* of the *Brick and Tile yards* contiguous to the Canal and consequently give the preference to their own vessels.

Landowners were, of course, more afraid that lock-keepers sometimes maintained a higher level of water than that legally prescribed – a state of affairs which their financial interest in the canal's chief traffic could well be supposed to encourage. Yet connivance at higher water levels was not prompted solely by motives of personal gain. Mud deposits in some sections gradually became a chronic evil; and the landlords who complained in May 1879, for example, did recognise that the 'three feet limit' had been violated simply to permit vessels to pass over the considerable shoals. Eventually the protests of users and landed proprietors alike became focussed not so much on particular problems as on the unsatisfactory state of the whole canal and its fragmented administration.

A memorial of brick and tile makers of 30 April 1877 deplored the waterway's condition, pointing out that only 2 ft. 6 ins. of water had been found at Sodhouse Lock. From the late 1880s the wider issues at last emerged by virtue of the government's growing

interference after the 1888 Railway and Canal Traffic Act. The revision of rail and waterway rates (and the trustees' dire financial position) soon raised the question of the North Eastern's relationship to the canal. The railway company refused to help with dredging in 1888; and in response to official circulars, G. S. Gibb on behalf of the railway had unhelpfully informed the Board of Trade on 14 April 1894: 'the North Eastern Company do not concern themselves with the working of this Navigation, and I am not in possession of any information on the subject'.

The brickmakers H. Williamson & Company were not to be put off so easily by the railway's continued denial of responsibility. Because of the accumulated mud and a grounded keel, they found themselves in 1896 unable to deliver their bricks to Market Weighton. They accordingly petitioned the railway company, the drainage trustees and the Board of Trade. Meanwhile the rank condition of the upper reaches had caused those living near the canal to complain of sore throats and a local 'stench' so disagreeable that 'in hot weather . . . they dare not open either door or window'. The health hazard quickly resulted in Pocklington R.D.C. and the Local Government Board becoming enmeshed in the affair.

An incredible situation developed in which each body denied any real responsibility in the matter. The North Eastern persisted in their attitude that 'the Company's only interest in the Navigation [was] as the representatives of the original subscribers' and could not be budged from their entirely passive residual role which admitted no place for any obligation to maintain the canal. The drainage trustees countered with their own contention 'that the Railway Coy. is liable to keep the canal clean' and asked the Local Government Board 'to compel' them to take action. The trustees assumed that they themselves had no powers left to act on navigation matters and that even if they had, they did not possess the funds necessary. Williamsons summarised the state of play when they informed the Board of Trade that the trustees *could* have acted (if only under the pretext of improving the mother drain) but that the money was not available. Yet the firm insisted that the true reason why revenue was so low was the years of neglect the navigation had suffered and which had driven trade away. They requested that pressure might be placed on the *trustees* – they had given up the railway – to dredge the canal.

The immediate outcome of the dispute was that the trustees called in William Evans of Beverley to report on Humber Lock (whose disrepair was also giving concern) and decided to approach the railway for financial assistance. The lock was patched up for £542 in 1897–8, but the deputation of trustees under Lord Herries ultimately found no accommodation from the directors of the North Eastern. The only solution appeared to be the promotion of a Bill to give the trustees authority to abandon part of the canal, revise and reappropriate the navigation tolls and unify the administration.

Clearly they would have liked to abandon the whole canal as a navigation, but opposition from the remaining manufacturers and carriers was too strong. Despite the decline of some of the local firms, the water-borne trade was not yet dead.

	Chief Shipments (tons)			
	1896	*1897*	*1898*	*1899*
Coal	2,297	2,078	2,925	1,490
Bricks, tiles	11,049	10,883	11,096	10,117
Manure	1,204	753	441	726
Timber	62	87	81	25
Gravel, stone, etc.	1,532	731	2,244	1,620
Vessels *in*	67	59	76	52
out	162	157	157	142

Grain and lime shipments, never particularly high, had now virtually vanished and the only traffic worth the name was that below Sodhouse Lock. The trustees became reasonably sympathetic to keeping this lower reach open once Williamsons had suggested making up the toll revenue to a minimum of £200 a year. (Tolls on this portion had averaged nearly £153 a year in the period 1891–9; those on the upper sections had averaged only £21). The firm did in fact contribute up to £175 a year to the navigation account for a period of about 20 years.

The Bill had anything but an easy passage, being initially opposed by local traders, who feared the possible revival of warping schemes; by the East Riding County Council, concerned mainly with bridge maintenance; and by the Humber Conservancy Commissioners, who objected to the trustees attempting to gain certain rights over part of the Humber foreshore. After some amendment it passed in 1900 as the Market Weighton Drainage Act. Under its provisions the canal was closed to navigation above Sodhouse Lock and the interest of the North Eastern Railway was vested in the trustees. A reserve fund could be formed for the remaining portion of the canal, the idea being ro use the money for maintenance when toll receipts proved inadequate. The rest of the measure concentrated on drainage questions, including the widening of the basis of qualification for appointment as a trustee.

Few radical changes were wrought, however, in either navigation or drainage matters until the 1930s. Toll receipts failed to improve markedly, though they did rise from £120 in 1905 to £197 in the financial year 1913–14. By the 1920s they were usually well under £100 and often below £50 a year. Commercial navigation groped on surprisingly far into the motor-car age and did not die out completely until 1958.

III

The Derwent Valley

The Derwent Navigation

The Yorkshire Derwent's improvement belonged firmly to the age of river navigation. For long there had been a desire to extend its naturally navigable, tidal, reaches for the benefit of inland trade. References to the use of the lower portions go back to the Middle Ages, when the river seems to have carried small craft at least up to Wheldrake. The second Trinity House report on the Aire & Calder promorion, drawn up in the summer of 1698, alludes to the Derwent being then used by '2 Keeles of 20 or 30 Tuns besides some few open Boates of 5 or 6 Tuns which were imploy'd in fetching & carrying to ye next Towne some 10 or 20 Miles up ye River ye Comodityes of ye Country, Corne especially'. It was shortly after the mammoth struggle of the Aire & Calder scheme had ended successfully in 1699 that we hear of moves to develop the Derwent.

The first parliamentary application, principally by 'Gentlemen, Freeholders, Mercers, Drapers, Grocers and other *Traders* within the Borough of *Malton*', was launched in February 1701 but either failed or was withdrawn. In the year following, however, a Bill prepared by 'Mr. Palmes and Sir Francis Blake' was more fortunate and received the Royal Assent on 6 May 1702. It empowered five undertakers ('Richard Darley of Buttercramb, Christopher Percehay of New Malton, Esquires; Nathaniel Harrison, Ralph Cheatham of New Malton and James Hebden of Yeasthorpe, Gentlemen') to make the river navigable from Scarborough Mills to the Ouse at Barmby. They were authorised not merely to dig cuts, trim the banks and remove obstructions, but also to prepare a towpath for 'haling . . . with Men, Horses, or otherwise'. The use of horses as a motive power, though common in the canal age, was somewhat rarer in the era of river navigation because of the difficult attitude of riparian interests or the cost of maintaining an adequate path. Horses are less sure-footed than men and river banks more susceptible to erosion than those of canals. The Act is by no means unique in making this provision from the outset, though arrangements for horse-towing were sometimes the subject of further legislation in the case of some other river navigations. Maximum tolls were 8s. a ton to Malton and a further 8s. to Scarborough Mills – a caustic comment on the contemporary cost of land carriage. A number of commissioners of whom any seven had the power to act was established to arbitrate in the always delicate matter of compulsory purchase of land for locks and cuts. The original list included West Riding as well as East Riding names.

There is ample evidence that improvement was slow and difficult, a reflection no doubt of strained finances. In 1715 the undertakers

entered into an agreement with four others in an attempt to speed the works, while five years later articles were signed between Thomas Wentworth, Malton's new lord of the manor, Mark Andrew (or Andrews), an innkeeper of Castleford, and Joshua Mitchell (or Mitchel), a carpenter of Wakefield. Mitchell's call to the scheme was clearly an attempt to provide some engineering skill. He is known to have partnered William Palmer of York in the latter's survey of the Don in 1722 and it can thus be assumed that he would understand something of the art of cutting rivers. Wentworth leased the tolls to Mitchell and Andrew between 1723 and 1724; he seems to have purchased the waterway shortly before from William Palmes, the previous owner of the Malton estate, but how the navigation had come into Palmes's hands remains obscure. (Palmes was named as a commissioner in the Act and inherited the Malton estate through his wife). Nor is it much clearer who provided the essential engineering expertise for the scheme in its earliest stages. The name of George Sorocold appears on a rough survey (*c.* 1704) and since the position of his suggested locks is virtually that finally adopted, it does not seem improper to infer that at least the design was his. Sorocold, a fascinating figure in the early history of civil and mechanical engineering, designed water-supply systems for several towns as well as building the water-wheel for Lombe's silk-throwing mill near Derby. He was also responsible for surveys of the Derbyshire Derwent in 1702.

A glimpse of some of the early difficulties is afforded by a dispute in 1722–3 over the risks of flooding which the navigation works were allegedly increasing. On 15 January 1722 'the Proprietors of Land on each Side of the River *Darwent*' petitioned Parliament. Quite apart from their complaints that they or their tenants had lost 'all their Grass and hay' through inundations, they insisted that very little attempt to improve the river had actually been made until about 1719–20. The undertakers, it was stated, had built a lock at Sutton, but done little else. They delayed vessels at the river's mouth, 'although there had been sufficient Depth of Water, at all times, for Vessels of Forty or Fifty Tons' to reach Sutton. In sum, the contention was that navigation had previously been reasonably adequate and that the powers of the undertakers – which they had been so tardy to exercise anyhow – ought to be reduced. Witnesses were brought before a Committee of the House of Commons to accuse the promoters of sins of both omission and commission: neglecting dredging and interfering with previously free water-carriage.

But men were also found who defended the improvement scheme. John Perth, a yeoman, considered that the newly provided haling ways were a great convenience. He could, he said, hale vessels '4 miles, for a Shilling [with horses]; which formerly used to be done by 4 Men, who would have 4 Shillings and a Drink'. Altogether some 50 bridges and 20 gates had been set up on these towpaths for

the protection of the farmers' interests at a cost of £150. Moreover, 'James Mitchell' (possibly a confusion with *Joshua* Mitchell) declared that he had made 'an Engine to plow up the Shoals, and deepen the River', but that bad weather had so far prevented its use. This excuse, even in England, might explain a season's inactivity, but not the slow progress of 20 years. The weather was also blamed by Thomas Wentworth for the floods which, he maintained, had been caused by 'extraordinary Rains and High Spring Tides' and not by the new lock at Sutton, without which the navigation could not be supported. Wentworth's plea that the waterway was a public good was evidently accepted, for the petition finally failed. The river was improved up to Malton.

From Thomas Wentworth ownership of the Derwent, along with the Malton estate, descended through his son and grandson – the first and second marquesscs of Rockingham – to the second Earl Fitzwilliam* (1748–1833) in 1782. Well before this the navigation had become a going concern. Additional locks were eventually built at Stamford Bridge, Buttercrambe, Howsham and Kirkham large enough to admit Yorkshire keels. The other works – at their greatest extent – consisted of drawbridges at Wheldrake and Cottingwith; swing bridges (over the cuts) at Howsham, Stamford Bridge and Sutton; lock-keepers' houses at Buttercrambe, Stamford Bridge and Sutton; and a jetty and chain-keeper's cottage at the confluence of the Derwent and the Ouse near Barmby on the Marsh. For a time during the 19th century a small quarry tramway, valued at £145 in 1855, was also among navigation property.

* * * *

When Earl Fitzwilliam inherited the Derwent Navigation in 1782 the practice of leasing the tolls was well established. The rent paid in that year was £1,300 a year; and details of earlier toll rents which survive would suggest that a modest rise in the navigation's fortunes had taken place from around mid century. A letter among the Aire & Calder records dated 1744 from Joseph Atkinson of Rawcliffe to Richard Wilson of Leeds shows that the Derwent had been considered worth about £460 a year at that time. In 1752 a Malton estate account mentions a half-yearly payment of £250 which was almost certainly a receipt from the navigation, though in 1766 the year's rent was only £342. Between 1767 and 1777 approximately £684 a year was paid until in the latter year the rent was advanced to £1,300. The lessees during the whole of this period – indeed until affairs were taken back by Fitzwilliam into his own hands in 1807 – were the Fenton family of Malton, a firm of coal and corn merchants. A memorandum drawn up by the Malton agent in 1793 for the earl's benefit gives an interesting picture of the flourishing

*This is according to the English Peerage; he was fourth earl according to the Irish Peerage.

state of the trade. It is worth quoting in full (with expanded spelling and slightly modified punctuation) because of the comparative rarity of such analyses at this date.

MALTON NAVIGATION CALCULATION LIST

1793

The Vessells Navigating this River (Darwent) up to Malton are as follows:—

Messrs Fentons	15	Mr John Walker	3	18
Mr Wilkinson	2	Mr Rd. Thomlinson	1	3
Mr Soulby	4	Mr F. Barraclough	2	6
Mrs Chancellor	4	Messrs Allans	1	5
				35

in all.

These 35 Vessells are supposed to make annually 16 Voyages each making together 560 Voyages to Leeds, Etc., for coals, and the Lock dues paid for each loading of 28 Chalder is £3 10s. amounting to	£1,960
The Corn sent down by these Vessells is supposed to amount to 50,000 Quarters annually (including Oat-Shilling) which pays /6d. per Quarter amounting to	1,250
There are besides the above Vessells several others Navigating this river which do not come up to Malton but stop at Kexby, Stamford Bridge & other Places. The Lock Dues paid by these Vessells are little less than those which come up to Malton and I think may be estimated annually at	600
Two Sloops are kept constantly employed in carrying Goods of different descriptions to Hull and returns with different Articles to Malton. These two Vessels are supposed to make 48 or 50 Voyages a Year – The Lock Dues paid on their Cargoes or Landing amount to	350
	4,160
The Rent paid by Messrs Fentons is £1,300 and they repair the Locks, Dams, Etc. which may be supposed to amount to £350 or £400 more, which with the Expense of collecting the Dues, Etc., say	2,000
Annual Profit	£2,160

Not surprisingly the rent was raised at the next renewal of the lease to £2,150 and later to £3,000. Finally, in 1807 the system of letting the tolls was ended once and for all, and the whole profits of the waterway passed to Fitzwilliam. Over the next few years these profits were indeed impressive:

PROFITS OF THE DERWENT NAVIGATION

(*To the nearest £*)

1811	4,165	1819	4,200	1827	3,500
1812	5,587	1820	5,000	1828	1,800
1813	3,055	1821	4,400	1829	3,600
1814	596	1822	4,600	1830	3,300
1815	3,069	1823	4,500	1831	3,300
1816	3,556	1824	4,600	1832	4,100
1817	3,694	1825	4,400	1833	4,200
1818	4,000	1826	4,500	1834	3,500

In a typical year gross toll receipts would be in excess of £6,500. The running costs of the navigation varied from about £1,500 to £2,500 in the normal way, though they tended to increase as the waterway became more intensively used. In 1811, for instance, salaries of officials amounted to £294, haling rents to £31, taxes to £539 and repairs and improvements to £1,561. Occasionally expenditure was much heavier. In 1814 a full-scale overhaul of the navigation cost Earl Fitzwilliam £5,200; when other expenses had been met the credit balance on that year's trading amounted to only £596.

Examination of individual payments reveals that the waterside officials on the earl's pay-roll were treared not ungenerously. In 1811 one lock-keeper earned £60 a year and another received £50, while like sums were disbursed to two carpenters and the chain-keeper at Barmby. A woman employee earned £28 12s. for attending a lock. Possibly the Malton agent's salary was a little higher, too, on account of his general oversight of the waterway, though his principal business related to the estate and, near elections, to the nomination borough.

The earls Fitzwilliam do not appear to have ever acted as common carriers – at least in any regular way. On the other hand, there is ample evidence that they maintained or hired vessels for the needs of their own estates; and payments 'for the repair of vessels' are frequently ro be found in the account books. When the third earl ultimately disposed of rhe navigation there were four vessels sold with it. That a very close interest in the waterway existed on the part of its aristocratic owners is indisputable. Their personal endorsement of accounts and the very volume of correspondence on the subject is testimony of that. Moreover, the private ownership of this essential mode of transport gave the family at once an additional measure of control over their pocket borough of Malton and a means of gratifying local inhabitants and welding them to the family interests. On occasion, and particularly if politics did not run

smoothly, the involvement of the Fitzwilliams with the river might be very close indeed.

A good example of unwanted attention is afforded by the General Election of 1807, chiefly remembered in Yorkshire, perhaps, for the bitterly fought county contest between Henry (later Viscount) Lascelles and Lord Milton, the heir to the Fitzwilliam earldom. The election also witnessed a spirited revolt of many Malton voters against the Fitzwilliam interest in the borough poll. The Derwent Navigation figured prominently in the aftermath. A brief summary of those events will not be out of place.

* * * *

The family interest in 1807 was to be served as far as Malton was concerned by Colonel Bryan Cooke (1756–1821), who had held one of the two seats from 1798, and Fitzwilliam's own nephew Robert Lawrence Dundas (1780–1844). Though there had been some slight stirrings of discontent, there was little reason to suppose the election would produce an unusual result, and the expenses of the contest for Fitzwilliam (£622) show by their modesty that no revolt was anticipated. Even after the poll had started Cooke was still assuring the earl that 'we are going on with every prospect of success'. In the event, an arrangement between Isaac Leatham (a surveyor and banker of Barton-le-Street, near New Malton), and Lord Headley (1784–1840), a young Tory 'independent', saw Cooke finish at the very bottom of the poll.

Beneath these election contrivances was a powerful revolt of elements in Malton long dissatisfied with the Fitzwilliam regime. This upsurge of hostility was led by two local attorneys, Thomas Walker and Thomas Paul, and it claimed support from a few small tradesmen or professional men. Headley presented the opportunity for them to strike a blow for borough freedom and the 'independents', as they called themselves, made the most of it. Earl Fitzwilliam and his son were accused in a letter to the *York Chronicle* of having 'long discovered a most strange and surprising ignorance of the real character and situation of this Borough [of Malton]'. It was as much – perhaps more – a question of resistance to the family and their hated agent than a pure 'Tory plot' against this distinguished Whig politician. The rebels celebrated their victory at the Bull inn, Malton, on 14 May 1807, resolving 'that the Glorious Twelfth of May, the Day on which Malton achieved its Independence, be commemorated by an Annual Dinner'.

The punishment of the offending electors took various forms – including a number of evictions – but Earl Fitzwilliam's manipulation of the dues on the River Derwent caused the greatest outcry. The tolls were in fact advanced almost immediately. The dues on coal went up from 1s. 8d. a ton to 3s., while those on corn were raised by a third. Some of Fitzwilliam's loyal supporters, like the

Fentons, were exempt, but the higher dues threatened to bear heavily on small traders, who often had had no part in the election. For example, Thomas Yeoman of Sutton wrote plaintively to the earl

> I am a Coal and Lime Dealer . . . and it is said with us, Additional Tolls are laid upon the River Derwent. You will please to pardon my boldness in asking the great favor, to let me have the Coals Etc at the old Rates. – As I have a large Family and if the new Tolls are laid upon me it will considerably injure my little and small Trade as I only sell from fifteen to twenty loadings of Lime in a year and ten or twelve loadings of Coal in the same time . . .

Firms in the Derwent Valley – such as Rotherford & Potter of Stamford Bridge Flour Mills – were also badly hit, and they pointed out that they were not 'Freeholders in the County nor Freemen of the Borough of Malton [and] as such was [*sic*] not able to Vote'. In the more important cases (as this clearly was) the earl appears to have been willing to compound with 'innocent' river users. He also realised that over in the North Riding lay the Foss Navigation to which he might marginally have lost some trade from the reaches of the Derwent between Howsham and Stamford Bridge.

Fortunately the dues did not have to remain at their new level very long. There is little evidence that Fitzwilliam was outwardly much deterred by the several protest meetings held in Malton during 1807 or by the petitions and unwelcome publicity. He was not the man to be bullied into a display of apparent weakness. Nevertheless, he did not wish permanently to alienate the town and, when a Committee of the House of Commons declared Headley's election invalid in March 1808, he was prepared to be magnanimous. Though there was again an 'independent' Tory intervention in the new election on behalf of the Headley interest at the eleventh hour by Major Robert Bower (1767–1835) of Scorton, Cooke was this time returned by a handsome majority. It is interesting to note that the river dues were not restored to their previous level until the election result was known. It was to be seen as virtue rewarded rather than the bribery of the unwilling. 'The Reduction of Tolls upon the River', Dr. John Cleaver informed Fitzwilliam, 'gives very general Satisfaction, everyone is now sensible of your power and forbearance'. The borough was once more in the earl's pocket and his subsequent purchase of additional property in Malton tended to increase his hold over it. Until 1885 one Fitzwilliam protégé or another continued to sit for Malton.

On the other hand some of the benefits of paternalism were undoubtedly reaped by Malton. Nearby Norton was charged much heavier dues than Malton so that the latter town would not lose its commerce to the then rival community. 'Without this protection', wrote the earl's agent in 1832, 'the trade of Malton would soon

change sides, at least would be greatly injured . . . and coal yards and warehouses would rise up in opposition to Malton to the ruin of many . . . '. Loyalty was not without its material rewards.

* * * *

Whatever the ups and downs of local politics there can be no doubt about the impressive increase of traffic on the river during the lifetime of the second earl. In the 1780s and 1790s toll receipts (as opposed to rents) were normally around the £4,000 mark; between the 1820s and the early 1840s they were usually in excess of £6,000, and sometimes topped £7,000. Though much of the river forms the boundary between the East and North Ridings – and Malton is, of course, in the latter riding – it does not seem improper to refer to the Derwent as East Yorkshire's most profitable waterway. The valuable corn trade both from the Malton estates and elsewhere continued and in 1808 no less than 66,850 qurs. of corn passed down the river. Mills at Stamford Bridge and Sutton processed some of it, but ultimately much must have been consumed by the industrial West Riding. Lime and coal were brought upstream, the latter commodity coming in part from the earl's own collieries in South Yorkshire. In fact, by the early 19th century the Dearne & Dove and Barnsley canals allowed the Fitzwilliams to carry coal from near their Wentworth Woodhouse estates via the Ouse to the Derwent Valley. Few great familes had their agricultural, industrial and transport interests better integrated.

The craft plying on the river were, in the main, sailing keels and sloops. Because of the river's narrowness and frequent meanders employment of sail must often have been a highly unrewarding business. For most of the upstream passage and much of the down-river voyage they must have relied on the use of horses. Since it was a 'roving' towpath (i.e. one that crossed from bank to bank) it was occasionally necessary to ferry the horses across on the vessels they were towing, a slow and sometimes quite dangerous procedure where the banks were poor or slippery. The halers themselves, as on most river navigations, were looked upon as one of the very lowest breeds of mankind, and commonly blamed for any petty theft or destruction of the banks, fences or crops. They are variously described in the documents as 'a disorderly set' and a 'Race of uncontroulable Fellows'. The Fitzwilliams did not provide the service of steam towage for the river users, though the third earl was approached about the possibility in 1846.

Few vessels larger than about 70 tons used the Derwent, and those of the Fentons (the chief traders up to Malton) are described as carrying 33 to 35 chaldrons of coal. Nine craft mentioned in the Hull Guildhall MS. (previously cited) averaged about 42 tons. Ultimately carrying capacity depended in large measure on the amount of 'fresh' in the river and in summer a lower draught had

usually to be enforced. But whatever the vessels lacked in size they evidently made up for in number. A survey taken in 1807 (in connection with the issue of raised tolls) mentions the numbers of traders from places other than Malton who used the river. Their provenance is extremely varied:

Knottingley	8	Crambe	1
Hull	6	Hemingbrough	1
Brotherton	4	Kexby	1
Cottingwith	4	'Nr Howden'	1
Long Drax	3	York	1
Stamford Bridge & Gate Helmsley	3	Castleford	3*
Barmby	1	Selby	2*
Bubwith	1	Nor known	10*
Buttercrambe	1	Elvington	1

Suceessful rrade on this scale had long suggested some extension of the navigation and powers existed under the original Acr to improve the river right up to Scarborough Mills. The second Marquess of Rockingham (d. 1782) seems to have preferred to ensure that Malton remained the head of the navigation, for in his day a sunken barge effecrively prevented any surreptitious warer trade above the family wharf.† But by the time of the second Earl Fitzwilliam the case for carrying the navigation further into the interior was difficult to resist. Owners of estates to the east of Malton often made representations about the matter. J. Heywood, for example, writing to Fitzwilliam in 1791, told him of a friend who had lately purchased a large estate between Scarborough and Malton from rhe Duke of Leeds and conceived 'it would be very advantageous ro that country and more especially to his estate to compleat rhe navigation to Scarborough according to the original plan'. The 'friend' was the brilliantly successful Joseph Denison (d. 1806), who established his family as largc landowners in both the North and East ridings. Drainage interests, too, had supported improvement above Malton, and a project of 1772–5 was revived in 1799 by Isaac Leatham. The resulting Muston Drainage Act of 1800 enabled the earl to use the drainage works for navigation in the near future.

Henry Eastburn, who worked on rhe Lancaster Canal and London docks under Rennie, made several surveys at Earl Fitzwilliam's requcst, reporting in 1794 that an extension to meet a proposed canal from Scarborough was 'practicable, and to be attained without much difficulty'. Nothing so grandiose materialised, yet by 1813 the Derwent Navigation was extended as far as Yedingham Bridge. The eleven miles or so of this extension were, however, so designed that

*Not regular traders; two of the Hull traders are also described as 'not regular'.

†There is, however, clear evidence of small craft sometimes navigating above Malton by the 1790s.

Malton should remain the effective head of the river. The scale of the upper navigation and its working depth were less accommodating than its dimensions below Malton with the result that transhipment was necessary for goods proceeding upriver and advisable for those being sent down. This was again an example of a political patron looking after the interests of his borough. In any case, little traffic appears to have developed on this higher section of the navigation and ceased altogether around 1846.

* * * *

If the second earl had seen the river trade expand markedly, it was left to the third earl (1786–1857), who succeeded on 8 February 1833, to witness its decline and finally to sever the family connection with it. As an important coalowner he was, like his father, necessarily interested in transport. But his succession to the earldom was on the very threshold of the railway age and the new earl was not slow to recognise the significance of the new mode of transport. In fact he was 'progressive' in many directions: he favoured Free Trade to the extent of confounding some of his fellow landowners by his opposition to the Corn Laws; and he took a keen interest in his Yorkshire coal. His railway interests were to include the Rotherham, Bawtry & Gainsborough Junction line and the South Yorkshire Railway, of which he was a sometime chairman. Despite his involvement in railway promotion, the third earl was prepared to maintain an interest in the Derwent as long as it remained a profitable undertaking or at least continued to serve the needs of the estate and borough of Malton. In the late 1830s a fairly extensive programme of dredging and improvement was embarked upon so that the river would be more able to meet eventual railway competition. Between 1837 and 1838 Earl Fitzwilliam borrowed the new steam dredger recently acquired by the Ouse Navigation Trustees and ran up a bill for all the operations of £1,128. Thomas Rhodes, a discovery of Telford who had helped the Ouse trustees in 1834–6, was called in to advise on bank trimming and other improvements. His bill of £262 10s. for conducting a survey was considered excessive by Fitzwilliam and was paid only after it had been queried. Although the earl was one of the wealthiest landowners in Britain, he is known to have lived up to his income and was anyhow too shrewd a businessman to be cheated easily.

Railway competition, when it arrived, came from two lines: from the Hull & Selby Railway (1840), but more particularly from the York & Scarborough Railway, which actually ran through Malton. The latter line opened on 5 July 1845 and this date may be taken to mark the beginning of the Derwent's decline. Somewhat ironically, much of the sand and gravel used in the construction of the former railway was actually carried by the river. In December 1845 Earl Fitzwilliam and the Aire & Calder Navigation agreed to lower tolls

jointly, but it was ultimately in vain as far as the Derwent was concerned. For a time the coal due was lowered to as little as 4d. a ton, though it was subsequently set at 10d. The net profits of the navigation from the opening of the York & the North Eastern may be summarised as follows:

	(*To the nearest £*)		
1845	4,145	1850	726
1846	1,408	1851	583
1847	1,212	1852	632
1848	455	1853	764
1849	—	1854	600

During this time the tolls and associated receipts fell from £6,018 in 1845 to £1,582 in 1849, though there was some recovery to £2,297 in 1854.

It was in 1854 that the earl decided to dispose of the navigation. Technically it was conveyed to the North Eastern's manager, engineer and solicitor (to avoid legislation regarding railway purchase of waterways), who then leased it to the company. The purchase price of £40,000 was by no means a bad bargain for the earl at that particular date. The valuation list of stores belonging to the undertaking amounted to only £1,135 10s. It included four vessels, two of 45 tons each and two of 12 tons apiece. One of the larger ones, the *Reform*, 'built of English Oak exceeding strong', recalled in its name the stirring events of parliamentary Whiggery some 22 years earlier.

In assessing the nature and significance of the Fitzwilliam connection with the Derwent Navigation one must not exaggerate the entrepreneurial side of the relationship. The tolls were leased for many years, as has been shown, and thus the routine administration of the waterway and its exploitation were for long left substantially in the hands of the Fentons. The Fitzwilliam interest cannot be compared, for example, with that of the third Duke of Bridgewater in the Worsley Canal. The earls inherited their inland navigation and their creative activity was limited to the extension to Yedingham. Nonetheless, they proved to be careful managers after 1807 and did not shirk the minutiae of administrative detail with which their agents sometimes had to trouble them. Apart from the affair of 1807 there is little evidence that most traders in the Derwent Valley ever felt themselves exploited by the one-man ownership of the waterway. It was *after* the Derwent had been sold by the third earl that the cries of despair began.

* * * *

In the hands of the North Eastern Railway Company the demise of the navigation was slow but steady. In 1854 a total of 43,764 tons of goods was still conveyed on the river, the main items being coal (24,853 tons) and corn (5,543 tons). On 1 November of the following

year, however, the North Eastern raised the tolls decisively. Coal dues went up from 10d. to 2s. 8d., for example, while 5s. became payable for 16 cubic feet of groceries or the like. W. C. Copperthwaite, Fitzwilliam's Malton agent who had carried through the negotiations for the waterway's sale, became a director of the railway company from February 1859. Interest in the navigation waned.

Under the burden of heavier tolls and rather infrequent dredging, the river lost its once busy appearance. Whereas 146 vessels had passed Barmby chain in May 1805 and 93 in May 1847, only 38 are recorded for the same month in 1862. Local carriers fought back as well as they could and contrived ro keep some river trade alive up to Malton until the early 20th century. In the 1870s the North Eastern lowered the dues, after protests by the river users, but in the vexed and confused situation which arose after the passing of the Railway and Canal Traffic Act of 1888 the coal tolls were in 1892 put up to 3s. 8d. Local fury in Malton knew few bounds and after inquiry by a Board of Trade commissioner the dues in question were eventually fixed at 1s. 4d. (of which the railway in practice took only 1s. 3d.). But since the railway's own rates were lowered at the same time, the Derwent derived no real benefit.

In any case, government intervention had come much too late to save the navigation. A. E. B. Soulby, who gave evidence before the Royal Commission in 1906, told a woeful story of the railway's neglect of river maintenance, of the unreasonable stoppages imposed for what repairs were undertaken, or of long delays in raising wrecks. Although the North Eastern defended itself against such charges, it is clear that the waterway would have done much better under independent management. Whether it could have withstood not only the age of steam but the more recent age of the motor vehicle is another question. By 1905 traffic scarcely exceeded 6,000 tons, of which 2,000 tons represented almost the last of the once heavy coal trade. A mere 8 tons of flour were carried in that year. The whole situation is epitomised in the following statistics:

	Tonnage	Receipts	Expenditure	Loss
			(*All to the nearest £*)	
1888	11,799	580	1,105	525
1898	8,583	184	1,263	1,079
1905	6,076	131	414	283

Naturally, by 1905 it was open to the railway to point out that more was spent on maintenance than the navigation earned; and in fact the river's *total* earnings from 1886 to 1903 were only £6,053. It was also held that most farmers in the valley had little time for water transport. 'Those interested in agriculture', declared Kaye Butterworth the North Eastern's general manager, 'are promoting a light railway parallel. To my mind that indicates that those who know their business, perhaps better than I do, think a light railway will answer their purpose better than the existing navigation'. No doubt he was technically correct, though according to Soulby local

agriculturalists had no genuine option. The last years of water carriage up to Malton as described by him make touching reading:

> For many years there was only one vessel coming up to Malton, and that ceased abour five years ago, because the caprain had to retire on account of old age, and no one else would take his place, as only a man who knew every yard of the river could get his boat safely through . . . Very little if any dredging appears to be done, and there are several dangerous shoals in the river. Trees overhang in many places, and the water is overgrown with weeds.

Navigation up to Cottingwith, associated with the Pocklington Canal, survived until the 1930s and that to Sutton a little longer. But for all practical purposes the mortal blow had fallen in October 1855 when the conveyance to the North Eastern was completed. The years after were simply a long-drawn-out death agony. In 1972, however, as a first step towards restoring the waterway for pleasure craft, the lock at Sutton was reconstructed and boats are now able to go up to Stamford Bridge.

The Pocklington Canal

Joseph Priestley's remark that one peculiarity of the Pocklington Canal worthy of notice was that its engineer, George Leather, 'completed it for a less sum than the original estimate' has become well known; and indeed this was a feature shared by all too few man-made waterways. In other ways the famous caraloguer of inland navigations was less kind to the canal, for in his description of it he lopped a good half mile off its length and demoted its number of locks from nine ro four. The Pocklington Canal has an additional interest not mentioned by Priestley: it is one of those warerways which might very well have been cut over a quite different route. In fact its origins can conveniently be seen in two ways: as the struggle of the town of Pocklington to connect itself with tidewater and as the almost natural offshoot of the Derwent Navigation. The former interpretation most nearly accords with the facts, but there was historically just enough truth in the latter to determine the actual route the canal took.

The earliest plans for a canal arose when the Market Weighton scheme was being promoted in 1767. Indeed the scheme for a time was even referred to as rhe Pocklington and Weighton Navigation. Nothing came of the approaches, apparently because the support of the great landowners, especially Lord Egremont, was not secured. Pocklington men must have viewed the Market Weighton Canal – which could so easily have had a branch for their own accommodation – with jealous eyes. Yet only in 1801 do really serious plans seem to have been laid for the desired navigation.

In that year several meetings of East Riding landowners and Pocklington merchants took place in an effort to promote an

independent undertaking. A gathering at the town's Black Bull on 5 October 1801 was attended by two of the Vavasours, who held land at Melbourne among other places, Robert Denison of Kilnwick Percy, Thomas Bagley, Thomas Lee and others. Their chief hope was for a water connection not with the Derwent, but straight to the Ouse near Howden. It was proposed that Henry Eastburn should take levels and a committee was formed to take further action. At a later meeting on 16 November 'it was Unanimously Resolved That a NAVIGABLE CANAL towards the Town of POCKLINGTON, would be of great public Utility'. Thirty-four people subscribed some 87 guineas towards the expense of the survey and the committee of eleven was empowered to call a general meeting once the engineer's report was to hand. Matters clearly seemed to be progressing favourably.

As events transpired William Chapman, then advising the Driffield Navigation, was the man entrusted with the initial surveys. His report, dated 7 August 1802, looked at three possible lines for Pocklington's water outlet to the wider world. The first was the obvious route to join the Derwent at East Cottingwith opposite the Ferry House; the second had a lower junction with the same river at Bubwith; and the third was a longer route proceeding roughly southerly and entering the Ouse near Howden Dyke.

The first possibility Chapman did not like. Such a canal, he declared, 'must labour under the Inconveniences arising from the Shoals above Bubwith'. The second project would shorten the amount of river navigation necessary and at the same time draw in a greater 'Quantity of Country', but Chapman heartily recommended the third choice as superior. Additional subscriptions from Howden might be anticipated for a route direct to the Ouse tideway and of course such a line would by-pass the Derwent entirely. Chapman appreciated, too, the advantage of navigation being taken right into Pocklington and not terminated some distance away, as had been the case at Market Weighton. 'No Canals can be complete in their Appendages', he wisely wrote,

> or so productive as they might be, if they have not Storehouses at or near their Heads, from which cause, as well as many others, it becomes eligible, wherever Circumstances admit it, that Canals should be brought up to considerable Towns; where, should the existing Granaries or Warehouses be not sufficiently convenient, they will answer every immediate purpose; and the Inhabitants will progressively construct new ones, as they become requisite . . .

The reasons for such a seemingly enthusiastic promotion not coming to fruition are not entirely clear. Certainly no Bill was actually introduced, for there is no reference to any attempt to seek parliamentary powers to cut the canal in either the *Journals of the House of Commons* or the *Journals of the House of Lords*. Not until the closing year of the French Wars was both landed and financial

support sufficient to merit an application to Parliament. Presumably Fitzwilliam opposition to any scheme designed to by-pass the Derwent was crucial and the promoters were perhaps given clear signs that their hopes of an Act without the blessing of the earl were remote. Later, the project for a canal to the Derwent was revived on behalf of Earl Fitzwilliam in 1812. Both he and his agent S. H. Copperthwaite corresponded with the Bradford (later Leeds) engineer George Leather junior and by 7 September 1812 an estimate had been prepared for the earl's perusal. For a canal of eight miles and as many locks the young engineer allowed £950 a mile excavating costs and £2,250 for each lock. With land, accommodation bridges, culverts, towing path and so on, the total outlay necessary was put at £43,630, or £51,887 if the canal were taken right into Pocklington. Such an extension would have involved moving up to the 100 ft. contour line. As regards potential traffic, Leather supposed that the area ought to generate sufficient demand and supply to ensure the undertaking a toll revenue of about £1,246 10s. a year.

Meetings of a more popular nature were accordingly resumed and a number of promoters heard a public report from Leather on 26 July 1814. At a later meeting on 22 September, chaired by Denison, a committee and officers were appointed. Notes of other gatherings reveal something of the initial subscriptions. By 25 August 1814 £20,500 had been promised, while at a meeting of subscribers on 20 October under Ralph Creyke's chairmanship it was declared that £29,000 out of a requested £32,032 was accounted for. At the former date Denison had subscribed £3,000, Earl Fitzwilliam (by Copperthwaite) £2,000, Marmaduke Constable-Maxwell (1760–1819) £1,600, and General Sir H. M. M. Vavasour (1768–1838), Hannah Tate, Mary Dewsberry and Lord Muncaster each £1,000. By 20 October Fitzwilliam had allowed himself to be put down for another £1,000 and Denison had contributed a further £500.

The petition to Parliament spoke of the support of the landowners between the Derwent and Pocklington for the proposed measure and the Bill passed with only minor amendments on 25 May 1815. Despite the somewhat unpropitious time of the post-Napoleonic Wars depression there was no delay in executing the Act – whose powers were to lapse if the works were not completed within six years. The statute – a more sophisticated one than those establishing the Driffield and Market Weighton navigations – set up a company with a common seal and named the 60-odd proprietors. The capital was to consist of £32,000 in £100 shares; fractional shares were permissible, but conferred no voting rights. Subscribers were granted one vote for each share possessed up to ten and were directed to hold a 'General Assembly' once a year (quorum 30 shares). A Committee of Management of thirteen (quorum five) was to be elected for three years at a time. To this body wide powers were

extended over such matters as appointment of officers, the making of contracts for land purchase, calling up shares and so forth. Should the total share capital prove insufficient to perfect the canal, a further £10,000 might be raised within the company, each share so subscribed conferring an extra vote in the undertaking's affairs.

The chief subscribers, as enrolled in the company's financial records, included Robert Denison, £3,750; Earl Fitzwilliam, £3,000; Hannah Tate, £2,000; Marmaduke Constable-Maxwell, £1,600; Sir H. M. M. Vavasour, £1,450; and Lord Muncaster, Ralph Creyke and J. W. Clough with £1,000 each. S. H. Copperthwaite contributed £800 in his own name and the engineer, George Leather, took up three shares. The social distribution is interesting. The titled, landed, 'gentlemen' and 'esquires' formed the biggest group by far – as one would expect – but there was a fair sprinkling of local tradesmen and others, subscribing usually for a single share each. One druggist, who obviously entertained a high opinion of Pocklington's economic future, was in for £600! A parson and three clerks can be distinguished rubbing (financial) shoulders with four innkeepers, two brewers, four 'merchants' (always a vague description, this), three joiners, four widows or spinsters and one apiece of tallow chandlers, ironmongers, sadlers, blacksmiths, grocers, millers, confectioners, tanners and gardeners. Possibly the most interesting category is provided by three 'bricklayers', though probably they were what we should call jobbing builders. Smaller-scale agriculture was represented by fourteen investors who were described, perhaps a little ambiguously, as yeomen.

* * * *

The first seventeen months from June 1815 to 9 November 1816 saw fourteen committee meetings, the first General Assembly and a special general meeting, all at the Feathers inn, under the 'able & impartial chairmanship' of General Sir Henry Vavasour. Under Vavasour's lead a vigorous start was made, though already trouble with tardy subscribers began to cause the directors concern. By 7 July 1815 subscription undertakings equivalent to Leather's full estimate were complete, enabling the committee to put the work in hand. Swann, Clough & Company, bankers of York, were appointed treasurers and the solicitors Holmes & Powell were made clerks, £40 a year being appropriated for the salary of whoever performed the duty.

As expected, Leather was officially engaged as engineer. His reputation as builder of the Knottingley–Goole Canal, for which he became wholly responsible on Rennie's death in 1821, and the early docks at Goole still lay in the future. Indeed, it was to be the successful completion of the Pocklington Canal which marked a definite upward step in his career. (His work won him a contract to survey the line of a canal from Portrack on the Tees to Evenwood Bridge,

County Durham, in 1817–18, one of the schemes antecedent to the promotion of the Stockton & Darlington Railway and geographically a precursor of the Clarence Railway). By 27 October 1815 the first call had been made on shareholders, contracts had been invited for carpentry, masonry and the digging of the Cottingwith–Hagg Bridge –Walbut Lock sections of the canal, and the chairman had been authorised to draw up to £3,000.

But only too soon those financial difficulties experienced by agricultural communities after the long French Wars started to irritate. Already in December 1815 the clerks had been instructed to threaten legal proceedings against defaulters on the first call. By April of the following year the offending subscribers were being told to pay two calls 'within one month' and on 18 June action was actually put in hand against the property of the Reverend Thomas Shield in pursuance of a court order. This was by no means the last the directors heard of shares in arrears, though on the whole they managed to pull in their capital with admirable firmness. (Ultimately 15¼ shares became forfeit). At least labour prices remained fairly low for sufficiently long to enable most of the canal's works to be built within the contracts. The committee was also careful to encourage competitive tenders wherever possible. In January 1816, for example, they decreed that no more timber was to be purchased except after advertisement in the *Hull Advertiser*.

The contract for the excavation of the first section went to Thomas Hamer who, it will be remembered, had been made surveyor of works to the Driffield Navigation in 1815. (In July 1816 he became the older waterway's toll-collector). Payments to him by the Pocklington Canal directors include £350 in February 1816, £187 10s. ordered on 9 April, and £30 a week 'for the following month' – which suggests he had only a modest amount of labour under his direction. The contract rates, as noted in a letter of 8 December 1815 from Leather to Copperthwaite, were: excavation at 3s. for 400 cubic ft. and puddling at 4d. a cubic yard. Other men undertook the detailed work: William Massey of Sutton agreed to do the carpentry, George Brittain of Walling Fen the brickwork, and John Glover of York the ironwork at 35s. 6d. a cwt. After Hamer, William Marley is noted as being the (or *a*) contractor.

Besides speeding operations on the main line the committee arranged for short branches to be cut where necessary. The first to be ordered was a short one, with a public wharf at its head, leading to the village of Melbourne. Later a branch was made 'towards the Beck dividing Thornton from Beilby near to Beilby Bridge'; but in this case the township furnished both land and money.

Those who attended the first General Assembly on 5 August 1816 were thus able to hear of a tolerably good start. Details of income and expenditure incurred were also laid before them.

STATEMENT OF 5 AUGUST 1816

	£	s.	d.
1. Cost of Act, etc.	1,365	19	1
2. Land purchased, Cottingwith to Walbut Road, including conveyances, etc.	4,515	14	3
3. Contract fot wotks	14,071	17	0
– actually paid	9,113	18	8½
– balance	4,957	18	3½
4. General contingencies	64	13	4
5. Land purchased for public wharves or warehouse leases	228	1	6
Money paid in to treasurers	13,059	0	0
Artears on 4 instalments	1,070	0	0
	14,129	0	0

The accounts revealed a balance of some £431 to the credit of the company, but it was anticipated that a further £5,518 would be requited to take the navigation up to Walbut Road. No doubt some of the proprietors had grumbled about the share calls coming just as quickly as the Act allowed, but the committee was backed by the meeting. Indeed members looked forward with happy anticipation to receiving 'a moderate rate of Interest' as soon as traffic on the lower portions of the canal could be admitted. A 'moderate rate' indeed was all they were ever to earn.

Very few canals, however, were built without some agonizing delays. Though the Pocklington Canal was more fortunate than many, it too underwent its tribulations. In September 1816 a superintendent of works, Henry Hanson, had to be discharged because of neglect and there were fears that the product of the instalments then called upon had become inadequate. Possibly some proprietors wished to censure Leather himself, or at least breathe heavily down his neck. At a special meeting called at the Feathers on 9 November a resolution was passed by 144 to 27 'that there is not at present any necessity to appoint an Architect'. In point of fact the subscribers had decided in August that 'a skilful architect' should inspect the works before the engineer's responsibility could be deemed discharged, but there was of course no question of the canal being nearly complete in November. It must be assumed that one, admittedly small, faction was dissatisfied with either the pace or the cost of operations and perhaps with Leather's conduct of affairs.

One positive result of the meeting was a tightening np of financial control by the committee. Payments were now ro be made by Holmes & Powell drawing chequcs on the treasurer, the chairman regulating the sums from meeting to meeting. Vouchers and statements were

also to be produced in future each time the committee convened. It is interesting, too, to note that tenders for the section between 'the boundary of the Township of Thornton' and Street Bridge were to be invited not only in the York papers, but in those of Leeds and Doncaster as well. In December 1816 further requests for punctuality on calls were sent out.

Bad weather also conspired to delay the work. In August 1817 the second General Assembly learnt that expenditure had reached £23,258 and that another £10,767 would be required for completion. While contracts were supposed to be fulfilled by 1 January 1818, the directors feared the 'unseasonable Weather for Brickmaking' would prolong the execution. On the other hand they were able to report that the lower portion of the navigation had been opened and £239 collected in dues. This, and the news that the canal would probably be finished within Leather's estimate, compensated for all the delays.

In December 1817 the committee decided to seek an advance of £4,000 on security of tolls from their treasurers (now Raper, Swann & Co.) in order to pay for the final work. No serious problems arose and the third General Assembly of 3 August 1818 presided over a completed, functioning canal. A lock-keeper/toll-collector was appointed at £50 a year, tenders were put out for the building of granaries or warehouses at 'the Head' and a generous tribute was paid to George Leather. The directors noted particularly 'their sense of the ability he has displayed in forming an Estimate so accurate as to have covered all the expenses, save and except only those incurred by the erection of additional accommodation Bridges [etc.]'.

£32,716 had in fact been expended, with the prospect of about £2,495 still to pay. Of course, the navigation had not been taken right into Pocklington, but then the decision to stop at Street Bridge on the York—Hull turnpike was one the subscribers had taken before their Act had passed. They had no authority to proceed further and never sought additional powers. Their canal, which drew its main water supplies from the Pocklington and Warter becks, had nine locks big enough to receive the average Humber keel, and was meant to ensure a working depth of about 6 ft. 6 ins. over top-gate cills.

The rejoicing over, there remained the hard work of encouraging and regulating trade. At 'Canal Head' Thomas Johnson of Pocklington was allowed to provide the public wharf and warehouse, with the promise that if his buildings proved 'sufficient for the trade' no others would be permitted for fourteen years. Not until 1834 was any substantial addition to such accommodation made at the 'Head', when Robert Denison himself took land for a coal yard and warehouse on a 99-year lease at a rent of £5 a year. It is ample proof

of no very great expansion in the bulk trades during the years in between. In August 1820 subscribers were asked to pay an extra £12 a share to liquidate capital debts left over from the period of construction and which could not be met out of income.

Regular 'liner' services for general merchandise (as opposed to the shipment of whole loads of bulk commodities for specific firms or individuals) do not appear to have begun until around 1821. A packet – which can probably be identified with the *Union Packet* mentioned by Baines in 1823 – was purchased on a fractional share basis by a number of Pocklington men. It sailed to Tummon's and Smithson's wharf in Hull each week and returned the next, carrying, if fully laden, some 50 tons of goods. In 1822 it was competing with three regular carriers' wagons on the Pocklington—Hull road. Its inception had caused the land carriers to reduce their freights from £1 to 15s. a ton for the journey, but the packet owners complained that they themselves were making no profit at all at 10s. a ton – a charge which covered tolls on both the canal and the Derwent of about 4s. a ton. The goods alluded to as forming their trade were groceries, timber, seeds, manure, bone dust and sand and gravel for road maintenance. Coal was obviously handled by other water carriers as required.

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Financially the Pocklington Canal was not a success. Yet it needs emphasising that its record was by no means uniquely bad for a purely agricultural canal. At least *some* dividends were paid from 1830 (a few such canals never paid any), though the magic figure of 5 per cent was not to be attained. The early 1820s remained difficult years. By agreements under the Act, and as the price of Fitzwilliam support anyhow, vessels entering the Derwent from the canal or leaving that river for destinations up to Pocklington were supposed to pay river tolls as though they had navigated the Derwent alone. After 1823 the canal company made Earl Fitzwilliam an agreed payment in lieu of his supposed toll losses. It was stated on 26 March 1822 that the earl was really due to £300, but that because of indifferent trade he had consented to take only £200 for the year. The company made use of such concessions to lower their own tolls where appropriate in an endeavour to encourage more traffic. In that very March, for example, they awarded handsome drawbacks on corn brought up the canal for milling and sent back down as flour or shelling. Nonetheless, the directors found it useful to borrow £3,185 at 4 per cent on a mortgage of tolls from Jonathan Harrison of North Frodingham, a later chairman of the committee. The purpose seems to have been to pay off their debts to landowners, bankers, etc., and he left with a tidier arrangement with one individual.

With the upturn of the trade cycle matters slowly began to ease. By 1829 Harrison had been paid back £2,100 of his loan, while toll receipts had begun to look much healthier.

TOLL RECEIPTS AS DECLARED EACH AUGUST

(To the nearest £)

1818–19	695	1833–4	1,480
1819–20	656	1834–5	1,416
1820–1	623	1835–6	1,416
1821–2	849	1836–7	1,495
1822–3	1,073	1837–8	1,420
1823–4	1,023	1838–9	1,753
1824–5	1,281	1839–40	1,240
1825–6	1,416	1840–1	1,260
1826–7	1,150	1841–2	1,428
1827–8	1,093	1842–3	1,480
1828–9	1,241	1843–4	1,402
1829–30	1,391	1844–5	1,374
1830–1	1,159	1845–6	1,162
1831–2	1,346	1846–7	1,615
1832–3	1,288	1847–8	1,067

One cannot legitimately read too much into the pattern of toll revenue of one navigation, but it is interesting to see the boom of 1825 and the similarly high economic activity of 1834–6 reflected in the figures. On the other hand, the severe depression of the early 1840s produced rather less of a setback than might have been imagined. Possibly the high receipts for 1838–9 bear some relation to increased corn imports after the indifferent harvest of 1837 and the exceedingly bad one of 1838. They can hardly have represented corn shipments outward.

Despite the improved trading position from the mid 1820s, shareholders reaped only meagre rewards from their investments. Not until 1830 was the undertaking able to pay a dividend and then only at the rate of 3 per cent. Never in the history of the canal was more than 3½ per cent paid; indeed, the maintenance of even such modest dividends as these entailed the company's working with very little expenditure on routine repairs. This can easily be understood if it is realised that approximately £1,067 surplus was required to declare a dividend of 3½ per cent. By 1848 an investor who had purchased a £100 share in 1815 would have seen a return of only £55 3s. 6d. Even in Consols he would have fared much better.

DIVIDENDS DECLARED AT AUGUST MEETINGS

(*per cent*)

1831	2	1840	2½
1832	3	1841	2½
1833	2½	1842	3
1834	3½	1843	3½
1835	3	1844	3½
1836	3	1845	3½
1837	3½	1846	3
1838	3	1847	3½
1839	3½	1848	3½*

*Plus an additional dividend of 3s. 6d. a share.

Of course, no waterway should be judged solely by financial criteria. In the days when railways still appeared merely as the answer to the quite local peculiar problems of colliery proprietors, the building of the Pocklington Canal was based on rational motives. Assuredly the unrewarding nature of the investment was part of the real costs of transport, viewed in aggregate; but happy was he who had not been overcome by wishful thinking or excesses of local patriotism and had subscribed little or nothing to the enterprise. Importers of coal, turnpike trusts or parish highway surveyors, millers and corn factors, timber merchants and jobbing builders, a few hundred farmers and inhabitants of Pocklington or Melbourne – these were the real beneficiaries. Even some of the smaller shareholders, whose businesses gained from improved transport, were probably not too unhappy that they had advanced some of the capital. They had their consolation in proportion as they had been 'interested' and not simply speculative investors. But none had much reason for loyalty to the leisurely form of transport he had helped to create and when the iron horse was finally unleashed there must have been few who considered any course of action other than a quick deal with the relevant railway company.

In 1845 the critical day came within sight. At the August meeting proprietors were told that the provisional committee of the York, Hull and East & West Yorkshire Junction Railway had proposed offering navigation shareholders £18,000 in railway stock or cash, at the discretion of the canal company. It was not a wildly generous offer compared with some others in the railway mania, being little more than half of the par value of the undertaking. But little better could be hoped for.

The railway line in question, a protégé of the Hull & Selby Railway, was planned to run through Pocklington and Market Weighton. It was a line, however, which George Hudson and the York & North Midland Railway were determined to stop, control or at least keep out of the hands of the Hull & Selby. In July 1845 Hudson's expedient of leasing the Hull & Selby meant that the Pocklington Canal's directors had now to deal with the York &

North Midland. Not surprisingly the Y. & N. M. R. renewed the purchase offer for the waterway on the same terms; and it was this company, in which Robert Denison himself was actively involved, with which the ultimate agreement was made.

On 6 October 1845 the Y. & N. M. R. confirmed the basis of the settlement through Denison, conditional upon their obtaining powers to build the line in question. It was suggested the canal should be given up as soon as the branch was actually opened and this was accepred by the waterway's shareholders. In 1847 the railway company obtained an Act authorising purchase of not only the Pocklington Canal but also the Market Weighron Canal and the Leven Canal. The railway was opened between York and Market Weighton in October of thar year. Under Denison's chairmanship the special meeting of the canal's shareholders, convened on 26 November 1847 ar the Feathers, passed a motion declaring sale ro the Y. & N. M. R. to be 'hereby approved and authorised'. Three trustees, Denison, Thomas Johnston and Jonathan Harrison, were appointed to see the transaction through. In May 1848 there is a note in the undertaking's records of the receipt of the £18,000 purchase money and the paymenr of £3 13s. 6d. a share, leaving a balance of only 13s. 10½d.! Earl Fitzwilliam received an assurance from the railway company that his rent in lieu of dues would continue ro be paid, though from 1849 the Y. & N. M. R. suggested that it should make reparation only in a certain proportion to the (now diminished) earnings of the canal. In 1854 the rent received by rhe earl amounted to £161 10s. 5d.

* * * *

The subsequent decline of the canal very closely parallels the eclipse of the Derwent Navigation. After 1854 the North Eastern Railway Company treared the two waterways as essentially one unir – though the accounrs remained distinct – and pursued a policy of raising tolls to drive traffic to thcir rails. This was all too successful. In 1858 only 5,721 tons of goods were carried for an income of £617, while ten years later the figures were merely 3,101 rons and £290. By the turn of the century water-borne traffic and its receipts had fallen to negligible proportions:

	Tonnage	Receipts (£)	Expenditure (£)	Loss (£)
1888	1,001	31	217	188
1898	2,073	72	344	272
1905	1,076	49	581	532

In 1905 322 tons of road stone formed the largest item shipped; and the total tolls (£24) were actually £1 less than other sources of income. Witnesses before the Royal Commission complained of the canal's virtually derelict state and of the railway company's unfor-

tunate attitude. The North Eastern naturally denied charges of wilful neglect, pointing out that much more was ordinarily spent on maintenance than the canal earned. As Kaye Butterworth, the railway company's general manager, put it, the revenue from the waterway was merely 'a bagatelle'. 'You could not', he asserted, 'keep a pond going for the money'. To a company with a gross revenue of almost £9,500,000 the £49 receipts of the Pocklington Canal in 1905 were indeed a flea bite.

While it is true that the railway company did incur some expenses maintaining the canal – they paid £35 for winter dredging in 1863, for example – the policy of high dues in the key years shortly after purchase was a very important reason for the low revenue! However virtuous railways might wish to appear in the years of government intervention and investigation, the damage had already been done. Increasing dereliction, noted by de Salis in 1903, effectively closed the canal to remaining commercial traffic in or about 1932 and to pleasure craft two years later. Not that the canal would finally have prospered even if the railway had been scrupulously correct or if the shareholders had never sold out. The last keelmaster sold his vessel and bought a lorry!

And yet a happy ending may be vouchsafed after all. The canal's rich potential for leisure activities had often been commented on and in 1969 the Pocklington Canal Amenity Society was formed. This extremely active and enthusiastic body has already begun some of the hard work of restoration which, it estimates, would cost about £44,000 for all the planned items of the programme. Here is an East Riding venture aimed at preserving something of the heritage of the past, improving the present and assuring the future. May it prosper.

Conclusion

East Yorkshire's waterways, we have seen, fell largely into the category of agricultural navigations. The men who built or improved them thought chiefly in terms of wider markets for the produce of their own land, or cheaper sources of those materials calculated to increase agrarian efficiency and render more tolerable the life based upon it. And where local industrial ventures benefited, they were, likely as not, breweries, flour mills, manure works – manufactories intimately connected with a rural economy. Isaac Leatham, writing in 1794, commented approvingly on the complementary nature of the trade between the agricultural East and the industrial West ridings made possible by the waterways. No one nursed illusions about transforming Market Weighton into a Manchester, or Driffield

and Pocklington into budding Birminghams. Motivation for transport improvement was both more modest and more realistic. York certainly, and Beverley possibly, dreamt of vying with the trading prosperity of Hull or the manufacturing growth of the West Yorkshire towns. But dreams are not actuality; and both these ancient centres had anyhow to settle for a more limited economic expansion in canal and railway age alike.

The search for dividends, too, played only a comparatively minor part in either the creation or extension of the riding's waterways. Even the Derwent is not wholly an exception, for estate interest and political expediency might well restrict a crude maximisation of profits on the part of the Rockinghams and Fitzwilliams. River and canal investment in East Yorkshire was influenced more by local patriotism, the assertion of status by the traditional rural leaders and by a stake in better transport than by a desire for direct *rentier* profits. Doubtless some investors sought to provide a widow's nest egg or looked for a safe return. But very few can have believed that they would make more from the local waterway than from alternative outlets for their money.

Much of this was not unique to the region. But the record is honourable and the riding was spared the floatation of a 'mania' canal. Until the railways cast their iron tentacles across the county's broad acres the inland navigations answered a real purpose fairly well. Their ultimate collapse was a relative failure before superior modes of transportation and more subtle business techniques. Only perhaps in terms of civil engineering do the waterways of East Yorkshire fall short of those of several other districts. The low-lying nature of the country penetrated and the proportion of river mileage called for no majestic flights of locks climbing to water-scarce summits or airy aqueducts hung over sylvan chasms. Yet the cuts and locks were built by capable engineers and still proclaim their own quiet dignity. As in economic growth, so in technical innovation: the most spectacular developments were not in East Yorkshire.

How vital the riding's waterways were as avenues of trade and commerce cannot be summarised in a nutshell. Recent American studies have made one chary of speaking about the unique contribution of particular forms of transport. Yet the Ouse and the Hull were clearly of enormous significance to York and Beverley until the age of railway connection. Land values alongside waterways usually appreciated and the 'export' of agricultural products, particularly bacon, butter and potatoes, was directed not merely to the West Riding but also to London. This benefited Hull, as the great transhipment centre for coasral/inland trade, as well as the farms around Driffield or Pocklington. Perhaps Leatham's 'so happy a combination' of the markets of the West Riding, Hull and beyond is one of the principal reasons why these waterways were more fortunate than some others of their kind.

A NOTE ON SOURCES

1. The chief manuscript sources are: the minutes, accounts and associated records of the Driffield Navigation (DDX/40)* and the surveys and miscellaneous papers of the Market Weighton Navigation (DDMW series) in the East Riding County Record Office, Beverley; the minutes and papers of the Pocklington Canal (POC series) and the Derwent Papers (DER series) in the British Transport Historical Records, York; the early minutes of the commissioners and trustees of the Market Weighton Navigation (together with the Award and some financial records) in the care of the Clerk of the Market Weighton Drainage Board, Pocklington; the Wentworth Woodhouse muniments (WWM) at Sheffield Central Library; and the minutes of Beverley Corporation, Town Clerk's Department, Beverley. In print I have also used K. A. MacMahon (ed.), *Beverley Corporation Minute Books 1707–1835* (Y.A.S. Record Ser. cxxii, 1958). I have in addition referred to Hull Guildhall MSS., M.445.

2. Many Parliamentary Papers have proved useful, particularly the *Journals of the House of Commons* and *Journals of the House of Lords* and the reports and evidence of the Royal Commission on Canals and Waterways (1905–9). It is a pity that some of the other Parliamentary Papers (e.g. 1870 (184) lvi and 1883 (252) xiii) have only meagre references to East Yorkshire waterways.

3. A large number of secondary works, directories, etc., contain some mention of the region's waterways. The older local histories are too well known to need listing here. The following books and articles are, however, of obvious relevance:

THE AGRICULTURAL BACKGROUND: the Reports to the Board of Agriculture by Isaac Leatham in 1794 and H. E. Strickland in 1812; W. Marshall, *Rural Economy of Yorkshire*, 2 vols. (1788); George Legard, 'Farming in the East Riding of Yorkshire', *Journal of the Royal Agricultural Society*, ix (1848); Olga Wilkinson, *The Agricultural Revolution in the East Riding of Yorkshire* (E. Yorks. Local History Ser. v, 1956).

NAVIGATION: Baron F. Duckham, *The Yorkshire Ouse: the History of a River Navigation* (1967) and 'The Fitzwilliams and the Navigation of the Yorkshire Derwent', *Northern History*, ii (1967); K. A. MacMahon, 'Beverley and its Beck: Borough Finance and a Town Navigation 1700–1835', *Transport History*, iv (1971); T. S. Willan, *River Navigation in England* (1936) and 'Yorkshire River Navigation, 1600–1750', *Geography*, xxii (1937) – both pioneering works of continuing value.

*Since this booklet was written further records of this navigation, mostly for the years after 1894, have been deposited (DDX/237).

DRAINAGE, ETC.: S. G. E. Lythe, 'Drainage and Reclamation in Holderness and the River Hull Valley 1760–1880', *Geography*, xxiii (1938) and the same author's 'The Court of Sewers for the East Parts of the East Riding' and 'The Organisation of Drainage in Mediaeval Holderness', *Journal* of the Yorkshire Archaeological Society, xxxiv, parts 133, 135 (1938, 1939); P. Saltmarshe, 'The River Banks of Howdenshire, their Construction and Maintenance in Ancient Days' and 'Ancient Drainage in Howdenshire', *Transactions of East Riding Antiquarian Society*, xxiii (1920); June A. Sheppard, *The Draining of the Hull Valley* and *The Draining of the Marshlands of South Holderness and the Vale of York* (E. Yorks. Local History Ser. viii, 1958, xx, 1966). A useful paper about the practice of warping is Ralph Creyke, 'Some Account of the Process of Warping', *Journal of the Royal Agricultural Society*, v (1845).

RAILWAYS: The two best sources for this area are: K. A. MacMahon, *The Beginnings of the East Yorkshire Railways* (E. Yorks. Local History Ser. iii, 1953) and that great classic, W. W. Tomlinson, *The North Eastern Railway; its Rise and Development* (1914).

ROADS: A masterly survey is contained in K. A. MacMahon, *Roads and Turnpike Trusts in Eastern Yorkshire* (E. Yorks. Local History Ser. xviii, 1964); while a useful earlier reference is T. Sheppard, 'Early Means of Transport in the East Riding', *Transactions of East Riding Antiquarian Society*, xxiv (1921).

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