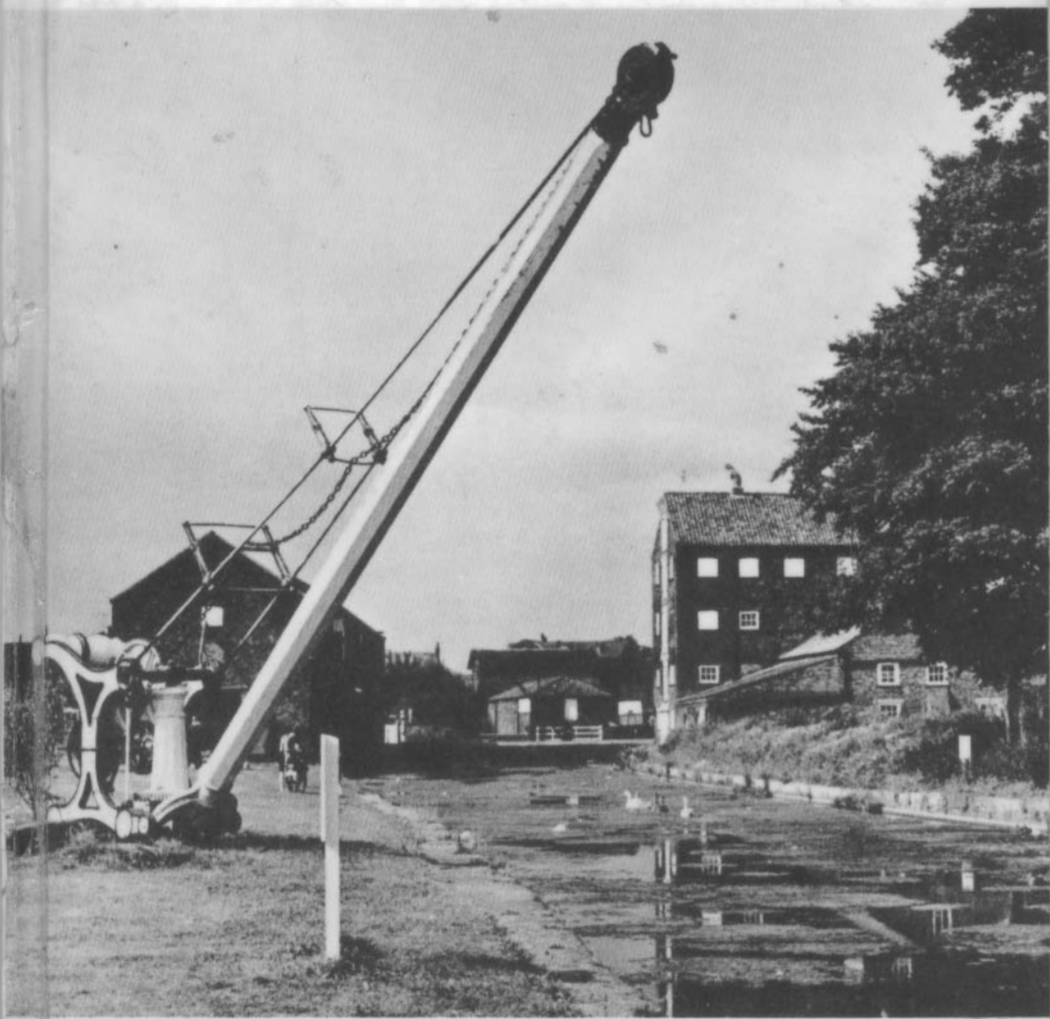


THE INLAND WATERWAYS OF EAST YORKSHIRE 1700-1900

by
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1972

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

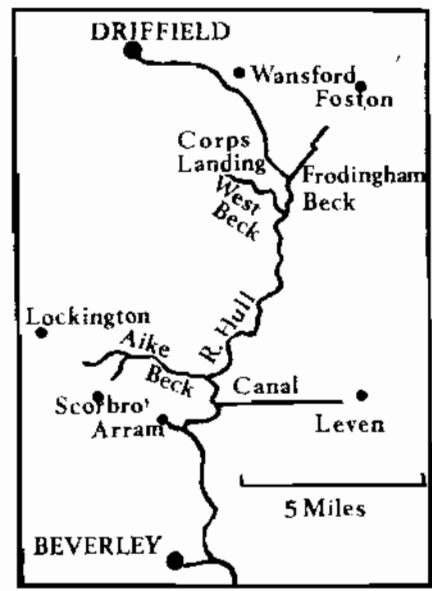
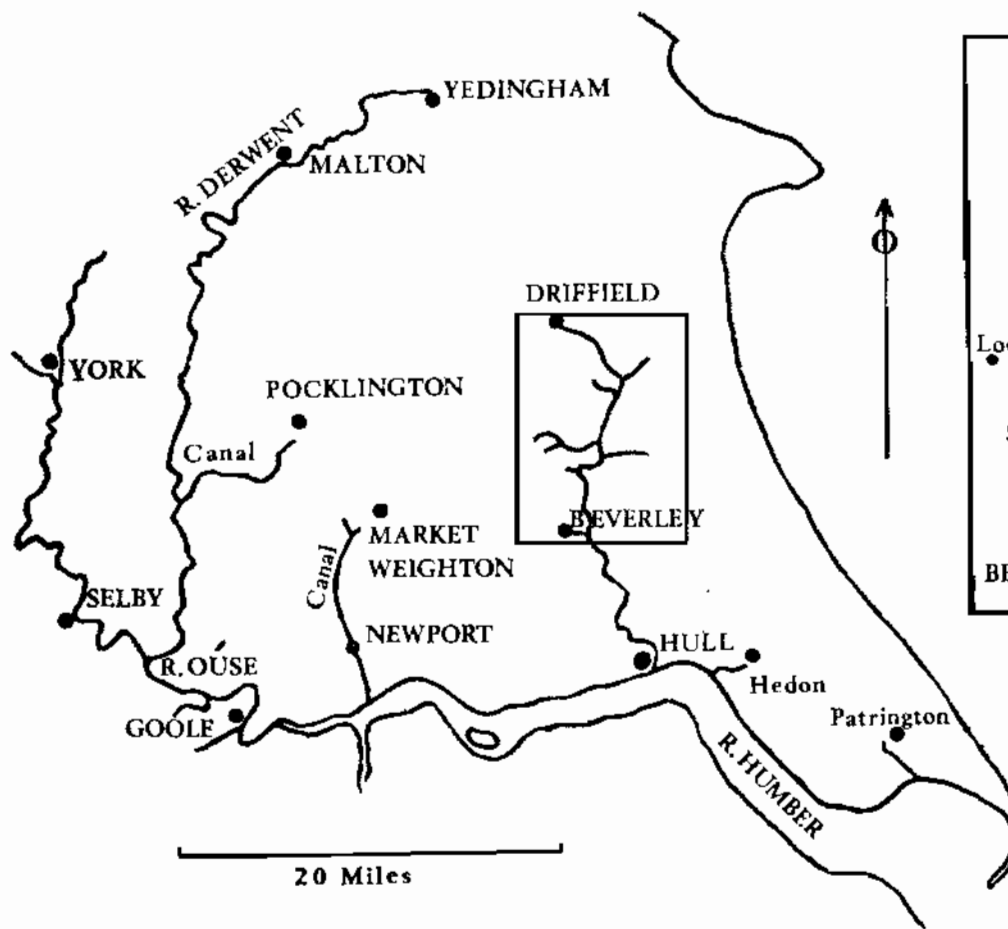
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The Inland Waterways of East Yorkshire 1700-1900

East Yorkshire is not, perhaps, a region whose inland waterways have ever gained particular fame. The overwhelmingly agricultural emphasis of its economy and the fact that large areas were within reach of naturally navigable portions of the rivers Derwent, Ouse, Hull and Humber, or able to make use of coastal transport, inhibited the growth of any real network of canals. The region was never so land-locked that canals could make a really dramatic difference. And yet for its size the East Riding can boast a remarkable 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 stream or river and, finally, the creation of man-made canals. Moreover, there is represented almost every kind of administrative control and financial organisation, from the municipal involvement of Beverley with its Beck to the private company which dug the Pocklington Canal; or from the single unrestrained 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 realised that what East Yorkshire waterways lacked in mileage or commercial importance they amply made up in fascination.

This survey looks principally at three groups of waterways: 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 river navigations performed the important function of extending the hinterland of a great port like Hull, it would be foolish to ignore completely 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 traffic part of every voyage would be spent on the tideways of the rivers 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 Yorkshire.

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.

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, Monkdiike 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 Stuteville 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 edited 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 collecting 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 around £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, came 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 occasions. (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 which precipitated the Act of 1727.

The petition to Parliament spoke of Beverley's trade being dependent on its waterway. 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 Codgeff 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 achieved. 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. Revenue from tolls was low and during the 1730s barely managed to cover necessary maintenance and the payment 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 instance, loans or grants from the toll receipts 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 decades 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 wherry-men 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 Driffeld Navigation and on the local drainage works. The actual execution of works, however, was the responsibility of Thomas Dyson, also then employed by the Driffeld 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 roll-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 Flemington might best be crossed and where the station ought to 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 the 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 (All to the nearest £)	EXPENDITURE	BALANCE
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 lightering 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 after 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 the 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 optimism, that 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 - navigated the Hull up to Emmotland for 'upwards of Twenty Ycars'. Apart from the many shoals which compelled transshipment 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 halting-ways to be made and permitted the following (maximum) tolls up to Driffeld:

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.

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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 roll-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 created 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 important local firms also received special treatment where such was judged appropriate. From 1789 Messrs. Bainton & Boyes, textile 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 the 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 the 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., referred to earlier, gives a total of nine vessels connected with the Driffield Navigation. Of these the largest was a craft of 44 tons trading to Hull and Leeds. The document may belong to 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 below 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 considered on 29 December but its recommendations were declared 'impracticable on Account of the very great expence which will attend [their] execution'. For a time the commissioners implemented an alternative plan advanced by one of their number, George Knowsley, who had a corn-milling business at Wansford. This provided for dredging the shoals 'Betwixt the first Lock and Frodingham Beck', deepening the river there 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 detriment 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 Driffeld 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 September 1800 they laid a selective project before their colleagues. It can be summarised under six heads:

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

Clearly a new Act was needed. The committee presumably used some of Chapman's figures from which to 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 contribute afresh should be entitled to benefits under the Act of 1767 alone. Finally, it was proposed to seek a revision of tolls and to take a pontage, not exceeding 2s. 6d. a vessel, at Hull Bridge.

This time the commissioners fully accepted the 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 cuts and render navigation 'less expensive and tedious' by laying out 'proper Towing Parhs'. The measure received the Royal Assent on 2 July 1801. At the midsummer meeting that year a new committee was appointed for 'carring [*sic*] into execution the 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 toyed 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 Driffeld 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 Barnston 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 Driffeld. 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 Driffeld 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 ¼ 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 the 'two' navigations. 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; oats £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 the 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 maintenance 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 Driffeld inhabitants who hoped to float a company 'to work a screw steam boat', but it is uncertain whether the project was realised. Steam 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 at least of the commissioners believed further deepening might induce traders to run 'steam-propelled barges', though he appreciated that 'funds necessary for such improvements 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.

