The role of Sir Joseph Banks, K.B., P.R.S., in the promotion and development of Lincolnshire canals and navigations

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THE ROLE OF SIR JOSEPH BANKS, K.B., P.R.S., IN THE PROMOTION
AND DEVELOPMENT OF LINCOLNSHIRE CANALS AND NAVIGATIONS.

by

WILLIAM MICHAEL HUNT. M.Phil., B.Sc. (Econ.)

A thesis submitted to the Open University for the degree of
Doctor of Philosophy and pertaining to the Arts (History)
discipline.

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CHAPTER SEVEN

THE SLEAFORD NAVIGATION.

Sleaford is a market town in the southern part of the county catering for the needs of a predominantly rural population. It is equidistantly situated from Grantham, Lincoln, Boston and Bourne and lies at the junction of the two land types of Jurassic Lincolnshire Limestone forming the escarpment of Lincoln Edge to the west and the low-lying, very fertile peat and marine silts to the east. This position, where two soil types and, therefore, two areas of differing produce, meet accounts for its regional importance both today and in the past. It is a natural route centre also, being sited at a fording place across the River Slea and utilised as such by the Roman 'King Street'. Opening out on to the site of Sleaford is the Ancaster Gap, a glacial overflow channel which provides an easy routeway westwards to Grantham and thence into the Midlands.

The River Slea rises at a height of about 80 metres on the north side of Willoughby Heath, about 2 miles south-west of Ancaster. It flows through Ancaster and Wilsford and then, about a mile west of Sleaford town it is joined by a rivulet coming from a spring known as 'Bully Wells' or 'Boiling Wells'. The river then divides into two just before it enters
SLEAFORD AND THE RIVER SLEA/KYME IN
RELATION TO THE SURROUNDING AREA

KEY:
- Waterways
- Railways
- Roads
- Settlements

50 Contours (in feet)

Haverholme Priory
and Park

<咨询内容>
the town from the west. Both streams flow through the town and come together again on the east side. Here it divides once more, the northern course being that of the main river today, known as the 'Sleaford Mill Stream', and the southern being the 'Old River'. The two join once more near Anwick and from here on the river is known as the 'Kyme Eau'. It continues through the village of South Kyme and enters the River Witham at Chapel Hill, about a mile south of the Horncastle Navigation's confluence with that waterway. The total length of river from Sleaford to the Witham confluence is about 13 miles.

The use of the Slea as a navigation is first indicated in a 1343 Act of Edward III. In that year Gilbert d'Umfravill(e) petitioned the king to be allowed to levy tolls on vessels using the river in order to pay for improvements to it. This he was allowed to do.

The records of the river fall silent from then until the middle of the 18th century when interest in making the waterway navigable was awakened and a survey for a proposed navigation was undertaken in the early 1770's by James Creasy. This was published on 12 March 1774 (1).

The plan called for the improvement of the 'Old River' and the river below Anwick. Three locks were proposed to be built along the course, all with very large rises, of 12.5, 15.5 and 17 feet. The petition to Parliament for leave to bring in a Bill was introduced but proceeded no further (2). It is quite likely that the project may just have been a test of public opinion for a navigation for, although no opposition was recorded as being presented against it, that opposition
may still have been there or, perhaps of greater significance, no great support was registered, either from landowners or merchants. An apathetic response may have indicated that the time was not yet right.

This project had been formulated by the Witham General Drainage Commissioners and there they let the matter rest although the Navigation Commissioners maintained interest. This is indicated by some handwritten expense claims made by Francis Thirkill, Clerk to the Navigation Commissioners, who attended meetings at Sleaford. It would seem that meetings were being held regularly with a view to keeping the idea alive and this was probably at the instigation of local people.

On 9 August 1781 the 'Lincolnshire, Rutland and Stamford Mercury' carried an advertisement calling a meeting for the 30th.

"... to consider the making of a Navigation from the town of Sleaford to the River Witham at Chapel Hill."

No minuted or other documentary evidence relating to this meeting is known and events did not proceed much beyond this point. It is known, however, that the engineer, John Varley, was instructed to prepare a report and this was presented (3).

Banks must have been keeping a close watch on the way the scheme was developing and had probably been approached by local Sleafordians to assist them and prominent amongst them
was Benjamin Handley, a local solicitor (4). He had come to live in Sleaford only a short time before from Newark, where his father had been mayor. Handley was acting as solicitor and clerk to the navigation supporters.

On 17 December 1782, at a meeting held at the 'George Inn', Sleaford, John Varley was instructed to prepare a second report and this was presented on 1 February 1783 (5).

In the meantime a problem had arisen between the promoters and the Witham Navigation Commissioners. The economics of the time made it imperative that the Witham tolls, then 1s 6d. a ton on cargo, be reduced if the proposed navigation were not to price itself out of the market before it was even established. By the time the Sleaford Navigation Bill entered Parliament in February 1784 the Witham Navigation Commissioners had agreed to a limited toll reduction for they realised that the increase in trade which would result from the opening of a link with Sleaford would raise their revenues also.

The Bill which was introduced into the House of Commons to make the navigation only went as far as being given leave to be presented. It was recorded as 'Not Presented' (6) and this occurred because Handley had taken it upon himself to introduce into it a variation of the agreement regarding toll reductions on the new waterway which had been reached with the Witham Navigation Commissioners.

This difficulty was resolved quite quickly and the Bill was re-presented in May 1784 (7). However, in the meantime a situation arose which was to have serious consequences in the future. Earlier that month, on 12 May, the Sleaford
supporters had met to discuss some opposition which had come from the commissioners for the Witham 2nd. District and certain landowners on Holland Fen, an area of about 20,000 acres which lies south of Kyme Eau between South Kyme and Boston. This opposition related to the proposed situation of drainage tunnels through the south bank of Kyme Eau, used for taking water onto Holland Fen for watering cattle. The navigation supporters decided to attempt to override this opposition to which the landowners responded with a petition to Parliament against the Bill (8).

The landowners' petition was based on their claim for water from Kyme Eau by means of Holland Tunnel, the main drainage tunnel onto the Fen. The Bill proposed to reduce the size of this from 21 inches square to, at most, 9 inches square. It was the reduction in the supply of water by this, together with that brought about by the erection of pens and sluices, to which they were objecting.

Sir Joseph recorded further individual's arguments against the navigation on a small scrap of paper (9) which were probably made about a meeting called by the supporters some time prior to the Bill's presentation, possibly on 12 May, but more likely on 30 March. Banks noted that Dr. Berridge (probably Rev. Dr. Basil Berridge, Rector of Algarkirk and a 2nd. District Commissioner) remarked that the sluices and locks that were intended to be made would be,

'... too small to issue the water which usually came down in winter ...'
thereby implying that the construction works would endanger the land by making flooding a possibility. A Mr. Forsyth is reported by Sir Joseph as raising four points; one about the transfer of powers from the Drainage Commissioners to the Navigation company; another that the navigation would run dry in summer as the landowners would be taking all the water, as was their right under the 1762 'Witham Act'; that the raising of the level in the river by the construction of locks would threaten the land on either side by breaches and that haling on the banks would cause additional expense for the Drainage Commissioners. All these points were presented in the landowners' petition against the Bill.

It would seem that the arguments of the petitioners were too strong in the Committee Stage of the Bill for, this time, the Bill was 'Not Reported', and so there was no navigation in 1784.

No further agitation for navigation occurred for 7 years but when it did, with a public meeting, the same driving force is there in the persons of Benjamin Handley and Sir Joseph, with the latter now taking a more prominent part in the proceedings.

The public meeting called to commence the new attempt was held at the 'George Inn', Sleaford on 11 October 1791. Sir Jenison William Gordon, owner of the estates of Haverholme Priory, which lie alongside the river's course, was in the Chair, with Banks and Handley in attendance.

This meeting appointed William Jessop and John Hudson as engineers for the survey and they were instructed to prepare plans and estimates. Their instructions are interesting in
A PLAN exhibiting the Course
of KYME EAU and the two Branches of SLEAFORD RIVER,
from the WITHAM to CASTLE CAUSEWAY,
above the Town of Sleaford in the County of LINCOLN.
and the Works proposed to be executed thereon
for making a Navigation, from the said River WITHAM, to the said Castle Causeway.

by John Hudson
17th Feb. 1792.
that they were to attend primarily to accommodating any of the adjoining estates in their requests regarding possible injuries, to prevent damage, particularly financial, to the operation of the mills which stood along the course of the Mill Stream and to use that route, in preference to the 'Old River', in their plan.

Having now come to expect opposition the promoters were not surprised when it was expressed at the meeting in the person of Francis York, an agent for some of the Holland Fen landowners. He reiterated the objections raised a decade earlier concerning the deprivation of those landowners of water and stated the position of the 2nd. District Commissioners which was against the navigation's promotion.

It will be remembered that Jessop and Hudson had been instructed to prepare their plan with due regard to financial loss by adjoining estates and this instruction may have had an effect on that gathering for Sir Joseph noted,

"... the Sleaford people were inclind to Compromise with the 2nd. district by giving them the direction of a Lock to be placed immediately below the [Holland] Tunnel & agreeing that when they did not chuse to let it be opend the Boats would unload and reload above this Lock [...] this I objectd is a measure which would give Parliamentary sanction to the Present Claim for the whole of the waters of Kyme Eau ...'" (10)

Such a proposition, Banks observed, would only raise costs
and, thereby, reduce competitiveness with other forms of transport.

In order to clarify the position some of the Witham General Drainage Commissioners present suggested that an inspection of all the drainage tunnels on the river might be worth while and 20 October was proposed as a viewing date.

Sir Joseph was elected as one member of this party and he has left a record of his day on the river and the observations which were made as to the state of Holland Tunnel (11). This had a door fitted to it which, when lifted, produced such a flow of water that,

"... when it was open the water poured thru with a great noise ..."

To emphasise the effect that this tunnel would have on the water which would be needed to operate a navigation, Banks continues,

"... it turned the whole Current of the Eau into it drawing the weeds from below ..."

The report of Jessop and Hudson was published on 25 November 1791. It advocated the use of the 'Sleaford Mill Stream' and the building of 5 locks in that section. Two additional locks were recommended for further downstream, at Anwick and at about 1.5 miles upstream from the Witham confluence. The total cost was estimated at just under
Once again opposition was recorded from the landowners and one in particular, Major John Cartwright, made his voice heard at this time. In addition to being a 2nd. District Commissioner he was a Holland Fen landowner, producing wool, cereals and woad. While Banks did not approve of Cartwright's politics the two men were on quite friendly terms. He was a supporter of public improvements generally but he was apprehensive about the fen's water supply and also the detrimental effect which a reduced water supply from Kyme Eau would have on him personally. He used the drains as a means of transporting his produce to Boston and he saw that any attempt to reduce the size of Holland Tunnel would leave him without a navigation (13). One can sense his concern in his statement,

'... You will form some judgement of my inconvenience should this Drain, for want of water, cease to be a certain navigation ...'

(14).

Sir Joseph was very sympathetic to Cartwright's arguments and he replied as hopefully as he was able but he could not see that a Sleaford Navigation could come into being without a conflict for water. Cartwright was only one opponent and over the next few weeks Banks was made aware of a rising tide of landowners' opposition.

The Petition for leave to bring a Bill into the House of Commons was presented on 1 March 1792 (15) and was given a
First Reading on 9 March (16). In London also were representatives of the landowners together with the agent for the 2nd. District Drainage Commissioners, their solicitor, Samuel Tunnard (1750-1818). He had been instructed to attend a meeting of the landowners at the St. Albans Tavern as it was the Commissioners' intention to assist the landowners in their petition against the navigation (17).

The Committee Stage on the Sleaford Navigation Bill began on 27 March (18) and to begin with events seemed to move in the favour of the navigation supporters. Petitions had also been presented for the proposed waterway and the number of signatures in favour far outnumbered those against. The early clauses of the Bill were discussed and approved by the Committee but, as proceedings continued and the discussion and examination came around to the problem of Holland Fen's water supply and the claims to it made by the landowners, the supporters must have become pessimistic as to their chances of success and this view found its way back to Lincolnshire.

By 10 May the opinion seemed to be general that the Bill would fail. Probably shortly after the business of that day, Richard Clitherow, the solicitor for the Horncastle Navigation Bill, which was passing through the House at the same time as the Sleaford, wrote to the Witham General Drainage Commissioners of his impressions of the progress in London. He was writing to let the Lincolnshire Commissioners know of the chances of having a Sleaford Navigation to call upon to help finance the 'High Bridge' scheme (see chapter 5). The Commissioners' minute notes the receipt of this letter, the relevant section of which reads,
A letter from Mr. Clitherow, solicitor to the Horncastle Navigation Bill, having been produced stating the probability that a Bill for making a navigable canal from Sleaford to the River Witham may, from the opposition made against it, be lost in the present session of Parliament ...

Banks was watching these proceedings very closely and he seems to have been one of the participants who was not expecting defeat for, as well as putting forward counter-arguments to the opposition (20) he was also planning at this time what was to be done about the opposition when the navigation became a reality, so confident was he of a successful outcome (21). Even so, there must have been an air of gloom amongst the majority of the supporters when the Committee reconvened on 15 May.

That day Jessop and Hudson were called and they countered the arguments of the landowners and the 2nd. District concerning, in particular, Holland Tunnel. Following Jessop into the Committee to give evidence came Banks himself, whose evidence was short and to the point. He had been called not as a navigation supporter but in his capacity as a General Drainage Commissioner and, therefore, his evidence must have been that of the official opinion of that body. Like Jessop and Hudson, he maintained that Holland Fen's water supply would not suffer by the suggested proposals.

The conclusion of Banks' evidence in support of the Bill
all but ended the proceedings in Committee and, on Monday 21 May, the remainder of the Bill was read and agreed and the 'Act for making ... a Navigation from Sleaford ... to the River Witham ...' obtained the Royal Assent on 11 June 1792 (22).

Once the Sleaford Navigation had become a reality in the form of an Act of Parliament Sir Joseph avoided much further involvement in it as his time was fully occupied with the navigation which obtained its Act on the same day as the Sleaford, the Horncastle. As Banks was 'President' of this navigation it was natural that his energies should be directed towards making it a success as it had a more direct bearing upon his personal estates and, therefore, interests and finances.

He took no shares in the Sleaford company but remained 'on call' should his assistance be required but he was asked to prepare a design for the Common Seal of the navigation and this he did (23).

Any associations which Sir Joseph had with the Sleaford Navigation after this time were in connection with his interests in the other waterways of south Lincolnshire and are dealt with there accordingly.
ANALYSIS.

Apart from the Witham, the Sleaford Navigation is probably the earliest example of Sir Joseph engaging in the promotion of a Lincolnshire waterway. It is an important episode also as it shows him performing a number of functions unique to this enterprise.

Between about 1790 and 1794 William Jessop was an important figure about the Lincolnshire scene. He appears as consultant engineer on the Witham, on the East, West and Wildmore Fen drainage and on the Sleaford and Horncastle Navigations. It has long been open to doubt why a, by then, very eminent and busy engineer should be found on what were, apart from the Witham, relatively insignificant rural waterways.

The earliest of the waterways' surveys known concerning Jessop was the one made by James Creassy in 1774. The Witham General Drainage Commissioners' minutes for 5 July 1774 state that Creassy, together with Jessop, attended with reports, levels and plans made by them for constructing a canal from Sleaford to the Witham. Nothing further is heard of Jessop until he was appointed, with John Hudson in October 1791, to produce the plans for the successful application for an Act. In the meantime, Jessop's reputation had grown and he must have been well-known to Sir Joseph by then if only through contacts in the Smeatonian Society.

The reason for Jessop's involvement in 1791, though based on circumstantial evidence, is now almost certainly known. At that time he was living at Newark and, in addition to his
canal interests, he held a partnership in the firm of 'Handley & Co.', a cotton mill in that town. His partner was a William Handley and, until recently there had been, again only circumstantial, evidence that this was Benjamin Handley's elder brother. In that case it would have been quite possible that Benjamin had prevailed upon his brother to induce his partner to come over to Sleaford to help them. It was known that the 'William Handley' of Newark was married to an Anne Marshall and, in a recently-discovered document, Benjamin Handley's family is listed, with a William noted as marrying an Anne Marshall (24). So, with requests from Benjamin Handley, supported by Sir Joseph, William Jessop took upon himself the survey of the Slea and, from there, the Horncastle, Witham and the Navigable Drains.

In addition to helping to bring a notable expert to make the surveys, Banks himself was appointed to a sub-committee to make an engineering survey, that of 20 October 1791, to view the Slea tunnels. He was acting as a member of a group established by the Witham General Drainage Commissioners and in a number of other instances concerned with other waterways he fulfilled a similar function.

On the personal level he was instrumental in alleviating some of the anxieties expressed by the local landowners who were concerned as to the effects of water loss on their livelihoods. This was a very understandable reaction on their part and, in the main, Sir Joseph attempted to deal with them sympathetically. In this respect more is known about his relationship with Major John Cartwright as they knew each other well socially before the navigation's promotion.
However, he was prepared to see individual interests subordinated to the general good as he saw it and this brought him into conflict with the landowners. This was inevitable in his role as a Navigation Commissioner. He had to tread a narrow path in order to discharge his duties in different capacities in what could have been awkward situations for anyone less well-suited. Major Cartwright was not the only landowner with whom he had to deal; there was also Mrs. Mary Nesbitt who owned two mills along the river.

It can be seen how he reacted to different interests in his dealings with the 2nd. Drainage District. In his capacity as a General Drainage and Navigation Commissioner, he used all the powers available to him to defeat the 2nd. District on the matter of water supply to Holland Fen. In their turn, they were prepared to oppose him all the way to a parliamentary Committee, where they eventually lost.

It was unusual for Banks to attempt to reach a compromise, rather he would try to convince the other party of the correctness of his view. With Major Cartwright the relationship remained amicable, with others it became quite bitter (see chapter 13, for example).

So concerned did he become about the possibility of failure of what he saw as a valid project that he appeared as a witness in its defence at the Committee hearings. There is no evidence that he did this for any other waterway. His opinion was for a successful outcome to the proceedings while most others thought that the parliamentary application would fail.
The fact that he appeared as a witness, lending his not inconsiderable social and scientific prestige to the enterprise must be significant. That he had talked informally with the members of the Committee and put the case for the navigation would also seem most likely. His influence behind the scenes in 1792 would have been crucial and this could well explain his optimism on 15 May.

However, probably even more significant to the outcome was the presence of William Jessop in support of the Bill. He was very well-known to parliamentary Committees, having given evidence on many applications for canal Acts. His expertise was appreciated by such Committees and they were inclined to give their consent to those projects for which he vouched.

In addition the person of the Committee chairman was crucial and here, persuasion and personal connections may have determined the successful outcome. For most of the proceedings the Chairman had been Lord Cathcart and then, for the final two days, the Duke of Ancaster and Kesteven, who had been on the Committee from the beginning, assumed this position. The Duke's estates lay immediately to the west of Sleaford and, as well as arable grain lands, contained a number of limestone quarries at Ancaster and Wilsford which supplied high-quality building and facing stone. A navigation near to this area would have been of distinct financial advantage to the Duke as it could be anticipated that it would provide quick, easy and cheap transportation for these bulk goods which would otherwise have gone by land carriage. While there is no evidence that the Duke influenced the Committee in what, today, would be termed an 'improper' way,
the feeling remains that there was manipulation of the Committee’s selection and Ancaster’s appointment to the Chair and that Banks’ hand may well be detected in that manipulation.
CHAPTER EIGHT

THE HORNCastle NAVIGATION.

At the same time as the Sleaford Navigation Bill was passing through Parliament another, sanctioning the Horncastle Navigation, was undergoing the same process and this received the Royal Assent on the same day as the Sleaford (1).

Of the individual canals and navigations with which he was concerned, the Horncastle had a special meaning for Sir Joseph for, apart from the Witham drainage and navigation, the Horncastle was his 'home' waterway running, as it did, through his lands and connecting his place of residence with the national waterway network (2).

Such was his concern for the success of the intended navigation and hope for the benefits it might bring to the town, neighbourhood and his estates personally, that he purchased twenty £100 shares in it (3). It was as a shareholder; a supporter of the navigation's Bill through Parliament; as one of the largest local landowners and, probably, because of his position in local and national society, that he was invited, and agreed, to become the company's honorary 'President'. It was in this capacity that he was closely connected with its activities from the time of
formation until its opening to traffic a decade later, when increasing ill-health prevented him playing any further significant part in the company’s affairs.

The River Bain rises in the Lincolnshire Wolds and flows to the small town of Horncastle at which place it meets the River Waring, which is little more than a brook. From here the combined waters flow southwards to Tattershall village and on to the Witham confluence at Dogdyke.

With regard to its need for a water carriage to the Witham, Horncastle was in a similar position to Sleaford; it lay at approximately the same distance from that major river, though on its other (eastern) side and the town functions were alike, both being agricultural service centres. To obtain this routeway for bulk produce the seasonally variable waterflows needed to be controlled, as on the Slea, and surveys for this were undertaken in 1791. The second report, by William Jessop (4) proposed 12 locks and the promoters agreed on the canalization of the Bain river.

To date no Banksian documents relating to this promotion period have come to light. He must have been taking an interest in these proceedings and it would seem certain that these documents, probably similar to those he kept about the promotion of the Sleaford, have been lost or destroyed. Thus, little is known of the role Banks played in the early stages of the company’s formation and it is only with the approach of the Royal Assent to the Bill that details begin to emerge.
The Horncastle Navigation

Key:
- Original course of the River Bain
- New cuts
- Locks
- Land owned by Sir Joseph Banks
- Along the line of the navigation

0 miles
A few weeks before this assent was granted, the Horncastle promoters began to consider the selection of those officers necessary for the successful operation of the undertaking on a day-to-day basis. The two posts most discussed were those of clerk and treasurer for the decision seems to have been made that a full-time Chairman would not be appointed but that routine business would be conducted by the company Clerk.

At this time Sir Joseph was in London, seeing the Horncastle and Sleaford Bills through their final stages, but he was consulted at every stage in the election procedure and candidates and other interested parties wrote to him to expound their merits or those of the candidates of their choice. Sir Joseph’s support was seen as vital for, although he would not take the final decision, it was recognised that the candidate who received his vote would be elected unanimously (5).

The first meeting of the new navigation to be held under the provisions of the Act was to be on 14 June 1792 at which time these appointments would be made. As Banks would not be able to attend he designated his servant at Revesby, Benjamin Stephenson, as his proxy (6).

A local solicitor, Richard Clitherow, was acting as Clerk to the promoters and he wrote to Banks on 24 May with a description of the reaction of the neighbourhood to Sir Joseph’s news that the Horncastle Bill had passed all its stages and only required the Royal Assent to become law (7).
The main purpose of the communication, though, was the solicitation of Sir Joseph's vote in favour of him as the choice for the posts of Clerk and Treasurer.

Banks did not reply immediately but contacted James Conington, another promoter, a local landowner and Benjamin Handley's brother-in-law, in order to discuss the matter (8). Conington had previously mentioned to Sir Joseph that a William Walker may have been a suitable candidate for the joint post and Banks had replied that if Walker was considered capable he would have his vote. Walker's qualifications are nowhere stated: he was probably local and he did have a good knowledge of mathematics. However, as Clitherow had entered the contest things were not so clear-cut (9). Sir Joseph made the interesting comment to Conington that he had many doubts whether the Clerk's position could be carried out properly by Clitherow being a 'professional man'. It is unfortunate that these doubts were not expanded upon as this situation, of a practising solicitor attaining to the Clerkship of canal and navigation companies, was becoming increasingly common and Sir Joseph's views as to their deficiencies could have been very enlightening. Despite these unstated doubts Banks assured Conington that his mind was not made up on the selection.

Sir Joseph left soon after this for a fortnight's stay at the residence of Sir John Hayward (10) on, as he put it, a 'Tour of relaxation and amusement' (11), a break he probably considered he had earned after the activities of seeing the Horncastle and Sleaford Bills through Parliament and leading one faction of the opposition to the Grantham Canal Bill (see
chapter 12). Thus, it was to Sir John's home near Faversham in Kent that Conington replied a few days later (12).

He had passed on Sir Joseph's opinions to some of the subscribers and they wished to see the posts held by separate individuals. Also, others had offered themselves as candidates. One proprietor, a Mr. Cooke Richardson, had said that an ex-bailiff of Sir Joseph's, a Mr. Hill, was considering applying for the Clerkship whilst a suitable person for a post not so far mentioned, that of surveyor to the works during their execution, was Mr. Bullivant, who had taken a survey for the navigation in 1791 (13).

So, Banks was receiving suggestions from a number of sources and he also had his own ideas as to the appropriate type of person to appoint. In an attempt to resolve the problem he approached Samuel Galton, jnr, the Chairman of the Birmingham Canal. They knew each other through the Royal Society and the Lunar Society and the advice given concerning the qualities sought for by a major canal employer in the occupants of the most important posts in the company is very illuminating.

Concerning the office of Clerk, Galton said (14) that there were great advantages in appointing a practising attorney,

'... a person of Character [,] ability and application ...'

The position of Clerk was one which he reasoned would be sought by members of that profession for,
... such an Appointment must be highly beneficial to a professional Man since it necessarily introduces him to many Gentlemen of Landed Property, independent of the immediate and necessary accession of his business from the Concerns of the Canal ...

The Treasurer, Banks was told,

... ought to be a person of opulence and punctuality ...

although they had recently,

... made the Bank our Treasurer ...

which was probably a wise course of action and one which had been adopted by the Sleaford Navigation in their appointment of Benjamin Handley, a co-partner in the Sleaford bank of "Peacock, Handley and Kirton & Co." (15). As a general rule Galton recommended that a security be taken from all officers of the company for the trusts they were to hold.

These statements, based as they were on practical experience, should have provided Sir Joseph with sufficient guidelines to make a reasoned decision regarding officer selection and, in a letter to Benjamin Stephenson, his proxy at Horncastle, he recommended that Richard Clitherow should be Clerk (16). The position of Treasurer was left to be settled later but he could see little objection to Clitherow
taking that post also.

Banks appeared anxious that William Walker should be found some position within the company as he was a man of undoubted mathematical talents and this he told Clitherow. Coincidentally, at this time Walker took it upon himself to write to Sir Joseph in order to clarify his position. James Conington had probably let him know of Banks' opinion of him but Walker did not want to be Clerk - he requested Sir Joseph's vote for the post of Collector of Tolls at Horncastle and overseer of the Navigation after it was completed. He also made a suggestion for the Treasurer's post,

'... I have not authority to say but every reason to think that Mr. Conington would be Treasurer without Fee or Reward ...'

Perhaps Conington had mentioned this desire in conversation with Walker and he was now passing it on.

Clitherow replied to Banks on 9 June concerning Walker and he was very hopeful that this candidate would be elected to both his desired posts.

Sir Joseph was not present on 14 June at the first meeting of the company held under the Act but his 'wishes' were carried out - Richard Clitherow was elected Clerk and Treasurer. William Walker was not made Collector but he was elected to the committee of management with a 'roving commission',
"... to be employed ... to make all such inquirys and transact such business as ... necessary respecting the said Navigation." (17).

1792-1794

Soon after the commencement of work on the construction of the navigation financial difficulties began to be experienced. One reason for this was the losses occasioned by the employment of an incompetent William Cawley in the position of resident engineer (see chapter 13). The resulting lack of building progress led to an additional cause for the deficiency of funds, namely, the defaulting on calls of a number of the shareholders. Clitherow foresaw that additional financial difficulties would also arise when their part-payment for the 'High Bridge' works became due in late 1794 (see chapter 5). Anticipating the problem, he stated the case to Sir Joseph, that the money could not be paid,

'... without the assistance of a friend ...'

(18).

Clitherow was probably looking to Banks as this benefactor but this he did not become.

The committee of management decided to take legal advice as to what could be done about the defaulters
and, in the meantime, to approach either Richard Ellison,

'... or some other person to undertake to advance 6 or £7,000.' (19).

Ellison was seen not only as a friend of the navigation but someone who, as lessee of the Fossdyke, would benefit personally from the increased trade its completion would bring. Also, he was one of their bankers, being a partner in the Lincoln bank of 'Smith, Ellison & Co.' (20). In the event nothing was achieved, probably because the requested amount was seen by the bank as being excessive for an unsecured loan. The company struggled on but, by July 1794, the funds were nearly exhausted and Clitherow was at a loss for a remedy to the situation (21). The decision was taken again to apply to Ellison's bank (22) but this time for a loan of only £1,000 '... for a few months ...' until a permanent security could be granted on the tolls for borrowing a sum adequate to the expenses of completing the works. The resident engineer, John Dyson, had estimated that he would have finished the sixth lock on the navigation, that at Haltham, about 3 miles from Horncastle, by December 1794, after which time sufficient funds in tolls should be forthcoming as this security. On this understanding the loan for £1,000 was made by the Lincoln Bank in July (23) but only after Ellison had obtained Sir Joseph's agreement to it (24) but this only relieved the cash problems temporarily (25) and, even before 30 November 1794, when the first instalment payment for the
'High Bridge' scheme became due the company knew that the money, £291, would not be available.

While Banks had been in Lincolnshire during the previous summer Clitherow had discussed the financial position with him and Banks had agreed to approach Ellison to assist again. This he did in Lincoln in August and, from what he had assumed had been said by Ellison, Sir Joseph told the Horncastle committee that Ellison's bank was willing to grant another loan. Accordingly, Clitherow wrote to Ellison on 3 November (26) to request that the £291 required by the Witham Drainage Commissioners' treasurer, Bartholomew Claypon, be forwarded to him. However, he was unprepared for the response he received. According to Ellison, Clitherow had completely mistaken what Banks had said and he declined to give the cash. Instead, he recommended that the navigation's shareholders raise a loan amongst themselves (27). According to Clitherow, this was impossible - the committee members, in particular, did not have the money to do this and there were no means whereby they could find anyone to pay the sum on the security of the tolls (28).

This may appear a trifling sum to have produced such a problem but the consternation amongst the committee was not for the £291 but for the full £1,165 which was the Horncastle's financial commitment to those works.

Sir Joseph was very distressed to hear this and, at once, enquired of Ellison the reason for the,

'... material misunderstanding [that] may [have] taken place between us ...' (29)
He was certain that Ellison had agreed to advance the money for the 'High Bridge' contribution; but if it was a security which the bank required, he was quite willing personally to guarantee the amount or have it advanced on the security of his own estate,

'... which ... I beg of you to keep a secret as I very much wish to have the matter proceeded in the exact line I expected it would have done ...' (30)

Ellison's reply was that of a careful banker. He had laid much emphasis on the time period of a 'few months' for the initial £1,000 loan. This loan had been granted in July 1794 and what was worrying his bank was that no repayment of any amount had been made by the November, by which time £800 of it had been taken up. When Ellison had spoken to Sir Joseph the bank had assumed that the loan would have been paid off before the first 'High Bridge' payment became due. As the total Horncastle share of this scheme amounted to £1,165, the banking partners were afraid that they would find that they had allowed a £2,165 loan to be made on very little security, a situation to which they would never have normally agreed. However, that could well be the case now but Sir Joseph was asking personally that this be granted and he could not refuse.

Banks related this to the Horncastle committee (31) with a suggestion to attempt to find some means of repaying at least
part of the loan. Banks suggested they should try to raise two calls of 5%, three months apart, yet while the committee was in full agreement with this they foresaw two problems. Clitherow believed that the subscribers could not find the money even if they wanted to and the committee generally could not see how the calls could be implemented,

'... 9 out of 10 of the members appear to be totally indifferent to anything relating to the business except the Int [erest] for their Money already advanced which many now begin to be anxious to see ...' (32)

Banks was certain that if they did not help themselves they would see nothing and that they ought to be able to see, '... without Spectacles ...' (33) that the only possible means of receiving interest on the capital already paid was to make further advances in order to complete the works (34).

1795-1800

At the beginning of January 1795 the amount borrowed and owed by the company amounted to £1,600, with an estimated £6,400 more needed to finish to works. Clitherow thought it was impracticable, indeed, impossible, to find this sum by asking for a loan on the original shareholders, though he
thought it worth the attempt (35). It was his contention that if sufficient could be raised by this means an effort could be made to farm out the tolls for the required remainder. To make a start, five of the committee agreed to advance £2,000 between them, provided the rest could be raised by the means already mentioned.

Banks did not think he would be able to advance any money at all,

'... the Extreme Calamity of the times now that Holland is Fallen into the hands of the French renders it very unpleasant for anyone to enter into engagements even for small sums ...' (36)

Following rapidly on this the early spring thaw brought further disaster. The winter of 1794 had been severe and when the snows melted, floods, '... the highest ever remembered here ...' (37), together with ice floes, had caused considerable damage to the existing waterway's structures. The only advantage in this that Banks could see was that the insubstantial structures made by their first resident engineer, William Cawley, would have been brought down. In fact, all his brick weirs were destroyed (38). In this criticism, however, Sir Joseph was being somewhat unfair to Cawley. The thaw of early 1795 was exceptional and it was not just on the Horncastle that structures were destroyed by the fast-flowing waters. On the Sleaford, for example, on 9 February a ten-yard section of bank gave way under the power of the flood-waters and this damage took four days to repair.
Sir Joseph could offer no further advice as to how additional money could be obtained to pay for this. Five of the proprietors themselves tried to resolve the situation by calling a general meeting of subscribers (39). The advertisement was worded by Clitherow and he emphasised the seriousness of matters as he saw them,

'... [the committee] most earnestly request your Attendance in Person, or by Proxy, as the real Existence of the Navigation depends upon the Exertions of the Company at this Meeting.' (40)

Richard Ellison agreed with the sentiment that the question was one of the existence of the company (41) though privately he doubted whether the Navigation would ever be finished even though by then about £250 a year was being realised in tolls being taken on the completed stretch of the navigation which extended from the Witham to Kirkby-on-Bain. Ellison certainly did not appreciate the wording of Clitherow's advertisement, or 'Epistle General', as he called it, which he presumed Sir Joseph has also received. He drew the analogy with,

'... some such letter as Queen Bess was favoured with from the Dutch beginning Your Majesty's forlorn and distressed Friends [. .] a more crying and lamentable Epistle I have never perused ...'

Ellison blamed the whole affair on bad management and asked
Banks whether he did not consider that a different system was necessary. To both Ellison and Clitherow the only advice Banks could give was to reiterate that the proprietors would have to advance more money if they did not wish to lose everything (42).

The general meeting was held on 3 March and was poorly attended but it was decided that a notice be sent to every subscriber informing them that it was absolutely necessary to raise £400 to meet immediate repairs and to complete the works to Dalderby, the advance to be either in the form of a further subscription or a loan (43). Provision was probably made at that meeting also for covering the remainder of the company's debt, then somewhere near £4,000. What this provision was will be mentioned later.

Ellison attended the meeting and reported to Banks that he was pleased that the flood damage was,

'... very little indeed comparative to my apprehension ...' (44)

An immediate crisis seemed to have been averted although another was probably thought soon to happen for, from Lady Day 1795 the resident engineer, John Dyson, had left and his place taken by Thomas Hudson,

'... [a] person I can Scarce call an Engineer... who assisted Dyson last year in overlooking his Iron and keeping his Books ...' (45)
This appointment illustrates the difficulties of the time in finding anyone with any competence to take on this position and, fortunately, Hudson did not prove to be the disaster which Clitherow obviously expected him to be.

Michael Pilley, the Witham Navigation’s surveyor, viewed the Horncastle in late June and gave his opinion as to the mode of completion to Dalderby. The line to the intended lock at Haltham had been laid out and bricks for it were being transported to the site. Clitherow anticipated that work on the lock at Dalderby would be begun that winter. Thus, the navigation had a certain amount of working capital and, by mid-July, Clitherow could report to Sir Joseph that he had procured £1,600 more. With this he paid off the outstanding debt to the Ellison’s bank and also had in hand the next payment on the ‘High Bridge’. The question must be asked, where had this money come from?

Some of this £1,600 must have been from Banks as he, together with Richard Ellison and the Rev. John Fretwell (a navigation proprietor) had been signing notes and bonds for large sums since May. This appears to be a direct reversal of Banks’ stated opinion at the beginning of the year (46) but it must have been prompted by the urgency of the situation as presented at the general meeting called in March. By the end of July the amount being covered by these three was £2,300. James Conington joined this group of creditors on 28 November when he met a claim of a Richard Williamson for £335 (47). By mid-December the total commitment had reached £4,035 at which time Fretwell was becoming anxious about his cash and expressed his worry to Richard Ellison,
I am very sorry to say that the aspect at present is not very favourable, insomuch that it appears ... highly necessary to consider of and adopt some plan for the more effectual indemnification of ourselves from the risque connected with that engagement ...' (48)

Clitherow had recommended that they attempt to obtain a mortgage of the tolls for their better security and he had written to Banks to request the proposition of someone to act as trustee. Sir Joseph left the choice to the others,

'... if the other Gentlemen concernd will be pleased to Chuse proper persons for the mortgage and declaration of Trust I shall be satisfied with them [...] I dare say it is better that they who are on the spot should propose than I who being at a distance cannot Consult with them ...' (49)

Thus, by the beginning of 1796 Banks and others were owed in excess of £4,000 by the company which, at that time, did not have the means of repaying anything like that sum.

It is interesting to speculate that if Banks had accepted Galton's advice and appointed a banking partner as Treasurer, the state of the company's finances might have been much better than they were. Such a procedure had been found most useful on the Sleaford.
Certain landowners in the parishes of Haltham, Broughton and Kirkby threatened legal action over the non-payment of compensation for land cut and covered during the navigation's construction and so a possible additional and unspecified expenditure loomed (50). By the end of March a further payment for the 'High Bridge' works was due and Clitherow was, again, in the position of being in difficulties over finding the money. Both Banks and Ellison were approached as to find the

'... best mode of raising a Sum to discharge these demands ...' 

At the same time, a section of waterway to Dalderby had not been completed and money was needed for this and for repairs to a lock, the damage to which was so extensive as to make it impassable (51).

Clitherow was anxious for Banks to discuss this with Ellison personally as both were in London; indeed his worry had become so great that he sought Sir Joseph's advice as to the desirability of calling another general meeting,

'... or what other means must be pursued in order to pacify those Gents who are so pressing to be paid for their Lands & whose threats I fear will intimidate some of the Gents on the Committee ...' (52)
Ellison left London for Lincolnshire on the evening of 28 March but Banks managed to catch him at home before he went and the essence of their conversation Banks passed on to Clitherow (53). Both were becoming rather distressed at the continual financial calls being made upon them and, in particular, they felt that the local people were not doing enough for themselves (54). Banks was especially annoyed to hear that no attempts had been made to repair the lock as loss of revenue was resulting directly from this deficiency. Banks recommended Clitherow to contact Ellison at his home at Sudbrooke, near Lincoln, to arrange a meeting to discuss the problems and, probably in desperation, agreed that any decisions arrived at would be acceptable to him also.

Banks was being unfair in his criticism of the Horncastle committee. The lock, called 'Jackson's', had cracked towards the end of 1795 and the committee had considered it unwise to undertake repairs when sharp winter frosts could have ruined the work put in. The winter of 1795/6 had seen a number of floods on the navigation and the committee was wary about the possibilities of more that year blowing up the lock while it was under repair. That they had arrived at the end of March and no serious flooding had been recorded could hardly be its responsibility. 'Jackson's' lock was repaired by mid-April 1796 and, by the end of May, the watercourse was completed as far as Dalderby and coals were being landed there.

Even so, the financial problems continued.
Dalderby Wharf was reached in 1796 and there the terminus remained for some years due to the poor financial state of the company. However, this improved transport link had its effects on prices and this vindicated the promoters' continued optimism as to the beneficial effects it would have on the neighbourhood. This can be illustrated by a report made by Clitherow to Banks in March 1797.

'I have pleasure to inform you that both the Town of Horncastle and the whole neighbourhood have for a month past experienced the Utility of our Canal by receiving Coals therefrom [at Dalderby wharf] 6s per chaldron lower than they have been for some years, that Wool Corn & every kind of merchandize is now carried to & from Lincoln 1/4 [i.e. one quarter] cheaper than has been accustomed ...' (55)

The aim of the Committee was to bring the waterway into Horncastle in compliance with the original Act of 1792 and so, in 1799, John Rennie was approached for his opinion as to the costs of finishing the works and making repairs to the structures downstream of Dalderby which were in a poor state, almost entirely as a consequence of the indifferent workmanship which went
into their construction (56). Rennie delegated the responsibility for the actual survey to James Murray (57) but he himself arrived at an estimated cost for completion of £8,600. Once again, Clitherow was at a loss as to how this amount was to be raised (58) and he consulted with the proprietors locally. One, Parkinson (possibly 'John', Banks' agent) had suggested

'... that proprietors of House & Lands in Horncastle shd exappropriate or sell as much Land from their Com[m]on in Wildmore Fen as would raise the money & take a Security for paymt of princl & Int from the Navn Company ...' (59)

Banks did not respond to this proposal and it was probably from him that the idea came of promoting a second Act empowering the committee to raise extra finance by the selling of additional shares.

The original Act of 1792 allowed for £15,000 to be raised by share issue. The committee had not been able to declare a dividend on the original subscriptions but, by March 1800, they came to the conclusion that they could not finish the works as detailed by Rennie and discharge the debts as matters then existed. The only solution was to issue more shares (60) but, even then, there could be no guarantee that they would be taken up as the company's past record was not one to fill any prospective investor with confidence in its future success but,
Several proprietors proposed to advance on their subscriptions on condition £8,000 could be raised by that means in order to complete the Navigation to Horncastle. (61).

To this end a Petition was prepared for submission to Parliament and sent to Sir Joseph for his opinion (62).

As an inducement to raising the money Ellison had suggested to Clitherow (63) that the 'Grimsby' method be used, that was, to give 6% interest on all new money to persons who were not already subscribers and these were to be preference shares. Old subscribers were then to receive 5% and any money remaining would be used to pay the new subscribers 4% more. If any money was still left it would be divided equally between all subscribers. Thus, Ellison's suggestion was for the removal of the 8% limitation of dividend as imposed by the 1792 Act. An incentive to the old subscribers to take up the new shares was that if they doubled their original holding they would be considered as 'new' subscribers and receive the 6% and 4% dividends (64). These proposals were presented to a general meeting of proprietors on 30 April when, with Sir Joseph in the Chair, Ellison's proposals were altered slightly so that future subscribers were to receive 6%, existing ones to have 5% and any surplus divided at 2% and 3% respectively, making an equal dividend of 8% in total. This brought the dividend back into line with that allowed for in the original Act, it being realised probably that the novel suggestions may have been difficult
to get through the House (65).

These incentives were sufficient to persuade thirty-six proprietors, including Sir Joseph, to take up £8,200-worth of shares and he was one of seven who each subscribed £500 towards that issue. The Act which empowered the raising of this additional capital received the Royal Assent on 9 July 1800 (66) and this injection of cash proved enough to complete the Navigation, which was opened officially to Horncastle on 17 September 1802.
ANALYSIS.

The events which took place during the building of the Horncastle Navigation must have been extremely disappointing for Banks as he thought he had done all he could to see that it had been established on a workmanlike basis yet, as the years went by, the project proved to be a continuing failure.

As far as he was concerned, Sir Joseph acted in a manner which tried to ensure that the Horncastle Navigation had a smooth passage from Act to completion but his scheme fell apart and, in fact, it took longer to finish the line of this waterway than any other of those constructed with which he was connected, apart from the Witham. Why was this and how far was Sir Joseph to blame for the problems encountered?

At first glance there appears to be a number of reasons for this, including the difficulty of finding a competent resident engineer to oversee the construction works and the mistakes which were made by the one they obtained were so expensive to rectify that the shareholders began to default on their subscriptions in despair of ever seeing a return on their invested capital. This monetary loss may not have occurred if, like the Sleaford, a bank had been appointed Treasurer to the company. Why this was not done is now difficult to ascertain but Banks must take a large measure of the responsibility for it.

The non-appointment of a company Chairman in itself cannot be considered unusual as many small companies had their daily business dealt with by the Clerk. Any policy matters would
have been decided by the managing committee who elected one of their number to fulfil that role. This is what happened on the Horncastle and, accordingly, the whole responsibility for routine decisions fell to the Clerk. Given how common an active Chairman was in canal companies it may be felt that Banks would have been wise to suggest that one be appointed when he found himself being increasingly called upon to find solutions to the company's problems for, in some ways, though President without powers, he was acting as Chairman (67).

After Clitherow put himself forward for both posts, Banks assured those proprietors who disliked the idea that his mind was not made up on that point. He then approached John Galton who recommended a separation of the Clerk and Treasurer roles and the appointment of a banker as Treasurer, a procedure adopted by the majority of other canal companies. Yet, for some reason, Sir Joseph supported Clitherow's candidature. There is a clue in a letter to Sir Joseph from his proxy in Horncastle, Benjamin Stephenson, written whilst this discussion was continuing. He said,

'I own I am against anymans holding more places than one tho I think in this the Clerkship and Treasurers might be united & would be some saving in the salary ...' (68)

However, the usual practice, especially in the larger companies, was to appoint a banking partner as a Treasurer without salary, it being understood that the company's balance would be used by the Treasurer himself, so this
statement by Stephenson implies that it was intended to pay the appointee a salary. However, Sir Joseph may have been persuaded not to appoint a separate Treasurer, for he wrote:

'... as we have a very good Bank at Lincoln [Richard Ellison's] the treasurer will probably never have a Balance in his hand worth Consideration [,] at least I hope he will not ...

If he foresaw that a Treasurer would not have the opportunity to acquire income from the company's account he may have decided that Clitherow may as well do both the jobs he had volunteered for. This proved to be an unwise choice but one which was accepted by the proprietors based on Sir Joseph's recommendation. Whether a better decision would have been made if he had left it to those at Horncastle is another question but not appointing a banker proved to be disastrous.

One may wonder why the company's financial problems were not relieved by Sir Joseph as he had the capital to do so but it is known from other sources that he was financially fully committed at this time and it also seems that he was wanting the company's management to exercise responsibility for the undertaking as it had to become independently commercially viable if it was to prosper. Even so, it was he who ensured that bankruptcy did not occur in 1794 when he appealed personally to Richard Ellison to extend the period of the loan granted by his bank. The personal aspect is brought out
clearly in Ellison's reply to the request,

'... This is exactly the Ground of my knowledge and action in this business but there can be no occasion on which your wishes be made known to me that I wod. not to the utmost of my power have the greatest pleasure to obey them ...' (70)

While Sir Joseph was also willing to do all he could to help the navigation as far as influence was concerned he was becoming resentful of the way in which the management continually looked to him to help in all their financial difficulties. This resentment stems from the period of promotion when,

'... in the Commencement I was always told that money would not be wanted from me but that the Proprietors would be contented if I superintended their application to Parliament ...' (71)

Yet, the economic circumstances of the time made just such a financial problem very likely. The beginnings of the Horncastle Navigation coincided with the start of the French Wars and a period of rising short term interest rates. The suggestion by Banks for two 5% calls in mid-December 1794 was rebuffed by Clitherow, with the proprietors appearing,
'... to be totally indifferent to anything relating to the business except the Int[erest] for their Money already advanced ...' (72)

Another reason for the poor financial state was the lack of swift action which was taken by the management in response to any situation. Although this was the case on all other canal committees at that time, the members were all engaged in business of one kind or another so the time they could devote to Navigation matters was limited and so such problems developed. Clitherow would have liked two or three full-time officials to deal with the routine management but these were not forthcoming. Further to the time available, the competence of the committee may well be examined. As far as is known, Clitherow, who is the only one who needs to be considered here due to his pre-eminence in the running of the company, had no experience of canal matters or of controlling a major constructional and trading enterprise. According to Galton's criteria Banks' acceptance of Clitherow as Treasurer was possibly correct in the circumstances as they existed in 1792 but, when things began to go wrong, it was certainly unwise to leave Clitherow in sole charge and here the lack of a bank's support as Treasurer was most keenly felt. The Sleaford Navigation had faced similar difficulties to the Horncastle yet was able to survive with the help of their Treasurer, Benjamin Handley, partner in the Peacock, Handley and Kirton Bank.

Thus, the management was probably not of the best but despite these failings Banks remained loyal to the team as it
was - at no time does he comment in writing directly upon Clitherow's competence. This silence may be explained by the appointment of William Cawley as resident engineer. Sir Joseph had done his best to obtain someone for that job and he possibly felt that the responsibility for Cawley's shortcomings and the resulting financial disaster was partly his.

Therefore, the circumstance of the time was such that the post which could make or break the company, that of the resident engineer, was so difficult to fill and this, combined with a poor choice of person for such a post, together with a less-than-expert management, all led to a decade of frustration for Sir Joseph.

How far was Banks' responsible? It must be concluded that at least two of his decisions were flawed. First, after obtaining Galton's advice he did not press for a separate Treasurer in the form of a bank. Second, the resident engineer, William Cawley, was a nominee of William Jessop and only obtained after Sir Joseph had 'pestered' Jessop for some time to find someone (see chapter 13 for full details). If a local man had been approached instead, and as far as is known none were, a less acrimonious relationship may have developed. Banks thought that because of his influential position he would prevail upon Jessop himself to become the engineer the works required. Having become fixed on the idea of having the country's leading consultant engineer at Horncastle, it became unthinkable for him to even contemplate employing someone local. That this had to be done eventually may well have caused Banks to question the value of his
contribution to the Navigation's financial troubles. With hindsight it would have been better if he had left the selection of the resident engineer to the Horncastle Committee and not become involved.

Even though Banks had to make another financial contribution to the company in the taking of shares in 1800 to ensure the navigation's completion, his concern for the enterprise did not end there, as it might have done with someone who had endured this experience. He was later to enter into quite lengthy communication with the King's 'Champion', Lewis Dymoke, over a land problem and he seems to have kept a paternalistic eye on the interests of this waterway for the remainder of his life.
The River Welland rises at Sibbertoft in Northamptonshire and enters Lincolnshire at Stamford. Flowing north-eastwards through Market Deeping, Crowland, Spalding and Fosdyke, it enters the Wash at Boston Deeps, a short way to the south-east of the Witham's estuary. From Peakirk, where the Welland enters the Fens proper, the river is more or less embanked all along its course to the sea, while between Crowland and Spalding these embankments are a long distance from the river, so leaving wide flood plains, known as the 'Washes'. About 5 miles (8 km.) below Spalding is the 'Reservoir', there the Welland is joined by the River Glen and then from Fosdyke, today's effective head of sea-going navigation on the Welland, there is a seven-mile channel leading to Clay Hole where the river enters Boston Deeps, as that part of the Wash is known.

In its natural state the Welland has a tidal course of about 20 miles (32 km.), with spring tides reaching Spalding and often extending as far upstream as Crowland. These tidal influences, together with the large amount of sediment which is brought down-river and the generally low hydraulic gradient, have meant that, like the other rivers of the fens,
silting has been a great hindrance to navigation and drainage from earliest times.

Responsibility for keeping the river clear devolved from the Court of Sewers onto the landowners and urban officials along the course and this gave rise to many disputes. An argument put forward by the inhabitants of Spalding in the 14th. century stated that, as the river was an arm of the sea, with two tides a day, they were under no obligation to clean it out or repair it and they did not do so. This pattern of neglect continued into the following centuries.

A navigation, which extended from Stamford to Deeping St. James, was sanctioned by 13 Eliz.1. c.1. and Letters Patent of 20 James I and granted to the Aldermen and Burgesses of Stamford to make that part of the river navigable and to collect tolls on it. The Letters Patent granted to the Corporation of Stamford a tonnage rate of 3d. at each of the twelve locks, so producing a total toll of 3 shillings per ton for the nine-mile stretch of waterway. This sum proved insufficient to maintain the river navigation but whether this was due to mismanagement or lack of trade is unclear.

In a report of the river made to the Privy Council by Sir Clement Edmunds following a view taken in August 1618, it was noted that the river was clear as far downstream as Crowland but very defective from there to Spalding and almost silted up entirely from Spalding to the Glen confluence, all due to lack of scouring. From the 'Reservoir' to Fosdyke, '... where great ships lay at anchor ...', the viewing party had to transport by cart the boats they were using, and at Spalding
MAIN DRAINS & RIVERS

AREAS EXPOSED AT LOW TIDE

MAIN EMBANKMENTS

THE SOUTH HOLLAND DISTRICT

0 1 2 3 4 5
miles

KEY

WYBERTON
KIRTON
FRAMPTON
ALGARKIRK

RESERVOIR
R. GLEN
SURFLEET
PINCHBECK

RIVER WELLS

WHEAT MERE DRAIN

WHAPLODE FEN

NEW SOUTH HOLLAND DRAIN

SOUTH HOLLAND EMBANKMENT

HOLBEACH MARSH

MOULTON MARSH

ROMAN SEA BANK

GEDNEY MARSH

BOAT MERE CREEK

BROTHERHOUSE

CROWLAND

BOSTON DEEPS

ROGER SAND

SCALP

WITHAM OUTFALL

...
the water level was seen to be only 6 inches (.15 m.), a
level at which the people of the town complained as being,

'... insufficient to serve the necessary use of
the town ...' (1)

This report had the effect of initiating a deepening of the
river from near Deeping St. James to the outfall by the
'Adventurers of Deeping Fen' (2) but, by 1634, this had not
been completed, although work was noted as being still in
progress (3). Such a spate of activity provided only a
temporary improvement to the river's condition but problems
of drainage and navigation remained.

In 1663 the navigation, with all its profits, was leased to
a Daniel Wigmore, a member of the Corporation. In time this
lease became one for eighty years at a single payment of £100
and a nominal annual rent.

In the early part of the 18th. century, Nathaniel Kinderley
proposed a scheme for a general drainage and navigation for
the 'South Holland' district, that is, the area that lies
between the Welland and the Nene, and as far east as King's
Lynn. Kinderley proposed the joining of the Welland with the
Witham and the Nene with the Great Ouse, so forming two great
rivers entering the Wash instead of the original four. He
estimated that this would safeguard more than half a million
acres from the threat of flooding and create an additional
100,000 acres of land by reclamation. However, he could find
no-one of substance willing to give the necessary financial
backing. A small cut was made below Wisbech according to his
plan in about 1721 but this was destroyed by a mob from Wisbech who believed that it would lead to flooding rather than afford protection. Later, though, this was rebuilt.

In 1768 the Deeping Fen Adventurers employed the engineer, Thomas Tolfield, to give his opinion on a scheme for improving the navigation from Spalding to the outfall and for the drainage of Deeping Fen, a proposal which had been mooted earlier by the Spalding engineer, Thomas Hoggard. Tolfield suggested that between Spalding and the Glen confluence the river should be enlarged to a width of 80 feet (24.5 m.) and he proposed that the original course from there should be abandoned and a new cut constructed to join the sea at Wyberton Roads in the Witham estuary. Therefore, this was a scheme to link the outfalls of the Welland and Witham. Locks and sluices were proposed, one at the Welland/Glen confluence and a second above Risegate Eau (4).

In 1774 Hoggard was engaged with John Grundy, jnr., another Spalding engineer to make a second survey, for the drainage of South Holland only (5). This survey marks the first references to Banks’ interest in the idea, an interest which would be natural as he owned much land in the parish of Holbeach. At meetings he was represented by his steward, Benjamin Stephenson.

The 'Welland Act' of 1774 (6) resulted from these surveys but, as following all previous plans, the waterway became blocked again, this time within the space of little more than a decade. By the beginning of the 1790’s large areas between Spalding and Wyberton were once again subject to flooding and more improvements were obviously needed urgently.
The local landowners approached and appointed George Maxwell to survey the Welland (7) and its outfall, and to this Banks contributed £1, despite his considerable misgivings about the choice of engineer (8).

A short while before George Maxwell was engaged, James Creassy had been employed to make a survey with the object of embanking about 4,000 acres of open salt marsh in South Holland extending from the sea to the area to come under Maxwell’s consideration. This was part of a larger scheme to improve the South Holland drainage, a project in which Maxwell played the dominant engineering role and one which led to conflict between himself and Banks (9).

Maxwell presented his report on the Welland outfall in printed form in June 1791 and in it he compared what could be the effects on that outfall with that of the Nene, improved earlier under Kinderley,

"... The Navigation from the termination of this cut is so improved that vessels of large burden are daily arriving at Wisbech where formerly even barges could not come and merchants were forced to use lighters for conveying their goods from the sea to the town as appears from a pamphlet of Mr. Kinderley’s ..." (10)

The drainage and navigation proposals contemplated by Maxwell were considered by the promoters at a meeting held at the 'White Hart', Spalding, on 24 August 1791 and were generally agreed. William Jessop and John Hudson were
proposed as surveyors to report on Maxwell's suggestions and to estimate the cost (11). Banks was one of the committee which recommended their appointment (12). Jessop was found later to be unavailable for this work and Hudson possibly acted in the company of a Thomas Thorpe.

The surveyors' recommendations must have been unsatisfactory in some respects as Maxwell and Hudson were instructed to perform a second survey. It is doubtful whether Sir Joseph was in agreement with this as he was later to criticise the decision to repeat the work, preferring instead the original proposals. Maxwell's own re-survey was conducted between 7-9 November 1791 (13) but it is known that John Hudson was busy at this time, in particular in connection with his work on the Bedford Levels (14) and it may not have been until well into 1792 that his review was undertaken.

What Hudson saw exactly is not known but the Welland outfall was found,

'... in every Respect defective ...'

and it was recommended that there could be no remedy other than drastic action and, with this, Maxwell agreed. Indeed, the original assessment probably came from him and the responsibility for the new ideas was taken by Banks as largely resting with him and not with Hudson. In addition to making improvements to the lands drained by the Welland it was proposed that a new cut be made to accommodate the main river. This cut was to begin at the 'Reservoir' and continue across the open salt marshes of Surfleet, Algarkirk and
... the public alehouse, known by the sign of the Ship ...

This meant the abandonment of the Welland's lower course and bringing it into the Witham at a point nearly opposite the outfall of today's Hobhole Drain. In fact, the recommendation was that which had been proposed by Kinderley nearly a century earlier (15). These proposals caused Sir Joseph great concern as to the effects this might have on the Witham outfall and for the state of Boston Haven in general, a state which affected directly the seaborne trade of Boston and, therefore, the prosperity of the navigation of the Witham and its adjoining navigable waterways. Maxwell further proposed that the flooding along the river downstream of Spalding could be alleviated by cleaning the channel and building sluices, dams and other structures upon it and these ideas met with the general approval of the neighbourhood but Boston Corporation, in particular, became alarmed when the provision for the linking of the Welland and Witham was announced, as it was officially, on 15 October 1792 at Spalding. Banks was asked by Boston Corporation to give his opinion of the proposed works at the outfall and this he did after viewing the site on 3 October 1792 when he travelled by pilot boat downstream from St. Nicholas' church, Skirbeck, accompanied by Alderman William Robinson and Councilman John Waite (16).

The outfall of the Witham at that time was narrow and
meandering and vessels entering or leaving Boston experienced great difficulties in navigating below Fishtoft. As a consequence of his view, Banks recommended that a cutting be made through the marshland which was accumulating there and that a general straightening of the Haven channel should be undertaken. These recommendations were not completed until almost a century later!

To add to his difficulties the wind began to rise in the marshland estuary so, when the party reached the mouth, Banks was unable to estimate with any accuracy the force of the current down the Haven. This point is called the 'Scalp', and consists of marsh and mudbanks which divide the setways of the Witham and Welland. Here it was noted that the Welland, or 'Spalding' setway, as Banks called it, was running at,

'... 4 knots at least ...' (17)

The group examined also the point where Maxwell intended the junction of the two rivers to be. Sir Joseph noted that here the ebb flow of the Witham was turned by the west, or Frampton, bank of the Haven into a south-easterly direction, so helping to keep the channel open. He was very worried about the possible effects that the introduction of another river's flow here would have on this scouring action for,

'... if that [the joining of the two rivers] is really the Case it will behove the Bostoners to have their Sands [at the Witham estuary] viewd
by a very able engineer who may judge what the effect of so great an alteration in the state of the two setways of Boston & Spalding will make [. ] the setway which is the Soul of the trade of Boston is evidently made by the Eddy between the setways of Boston running south & that of Spalding but when the alteration is made the setways will together run south & nothing will come from the west but the Faint reflux of tide water ...’

An obvious point which Banks made was whether the combined weight of the Witham and Welland waters would be sufficient to cut a navigable channel through the fluctuating sandbanks of the Scalp for the extent of this marsh would, he thought, be impossible to predict once the effects of the Welland setway had been removed. He was more certain, though, of the effects that the united waters would have on the lower reaches of the Witham for, he said, should the Scalp be cut through;

’... in the direction in which the ebb channel now flows from Frampton side along the edge of Fishtoft marsh ... let the Banks of Fishtoft point & all along Freeston [Freiston] look to themselves [. ] they may have an enemy to struggle with whom they will find difficult to oppose.’ (18)
So, Banks saw the loss of the current of the Welland as a serious setback to Boston as he anticipated the power of the combined waters would be sufficient to cut a channel in the marshes parallel with the coast until it reached the effects of the Nene outfall. On either side of the combined flow he saw silting as a likely occurrence and the sandbanks of, for example, the Scalp, the 'Roger' and the 'Middle' and 'Long Sands' would coalesce as there would be no separate Welland setway to keep the channels open. Boston Deeps, the entrance to the Haven, would silt up and the port of Boston be pushed further up-river.

Silting was the real problem. Banks remarked that the map of the outfall he was using during the view, that of Richard Mitchell, published in 1765, was seriously out-of-date (19). In particular, the 'New Channel' (see plan on p. 205) had disappeared and another developed to the south-west of it. This was due to the increased speed and volume of the Witham since about the 1760's,

'... from new works of drainage, for vast bodies of water which used to Lay upon the Land nearly the whole year, are now carried Quickly to Sea, by the Grand Sluice, the Black Sluice & Maud Foster, & these waters have ground the Channel through the town [of Boston] much deeper than formerly it was; now tho the Welland has lately receivd some increase of Current, by the widening its channel through the Town of Splading, which carries the Deeping Fen water
Faster than formerly, its increase bears no proportion to that the Welland had received within the last 30 years ..." (20)

Although the view had been taken in October 1792 and Sir Joseph had reported soon after, Robinson and Waite did not submit their written observations until 4 April 1793 (21). In this they described the position of the sandbanks at the Witham’s mouth and the channels through them and, apart from a few remarks made about the force of the flood tide, little else was commented upon as,

'... We forebear making further Remarks: Sir Jos Banks having made his Remarks from that part above the Scalp Buoy ...' (22)

Banks wrote to Maxwell on 8 November 1792 stating that he could see problems arising with the Scalp sands, particularly as a result of Maxwell’s proposal to build a sea-sluice at the mouth of the Welland. At the same time, his opinion of Maxwell’s abilities as an engineer was deteriorating and he requested that Boston Corporation obtained a second opinion as to the state of the Witham outfall.

The engineer Sir Joseph obtained was Captain Joseph Huddart, FRS., (1741-1816), and his survey was conducted some time prior to August 1793, probably during the early summer. This is evidenced by a letter received by Banks from him in early August in which the engineer conveyed to him his finding that, as far as he could judge, no harm would come to
the Boston navigation by the joining of the two rivers and that he intended to finish compiling his report during August (23). This information was passed by Banks to Maxwell and he told him that as soon as Huddart forwarded his report he would pass it on to the Mayor of Boston (then William Robinson) from whom Maxwell should be able to obtain a copy (24). In the event Huddart addressed his completed report to Banks (25) and it was presented to Boston Corporation for their consideration in late October (26). It was accepted by the Corporation at their meeting on 10 December at which time the Erection Bailiff was instructed to pay Huddart for the work carried out and a handwritten copy of the report was entered into the Corporation minutes.

The question of payment occupied Huddart's mind for a while and he communicated his thoughts to Banks probably in March 1794 for, in the following month Banks wrote to Robinson, informing him that recompense in the form of a piece of plate was required rather than cash. At the next Corporation meeting, on 16 April, it was,

'... Unanimously resolved that Mr. Fydell be requested when in Town to make Inquiry respecting a proper piece of plate to be presented to Captain Huddart ...'

Thomas Fydell was Deputy Recorder to the Corporation and he reported back on 26 June, when the Chamberlain of Boston was instructed to pay him £25,
... for a Cup intended to be presented by the Corporation to Captain Huddart for his Trouble in surveying the Outfall of this port ...'

The presentation of the cup was made and Huddart wrote to thank the Corporation some months later (28).

Thomas Thorpe, who had probably assisted Maxwell as well as Hudson, was responsible for the preparation of the 'field book' showing the course of the proposed new cut which was to run from Surfleet, through Algarkirk, Fosdyke, Kirton, Frampton to Wyberton and, although this was produced in early November 1792 (29), the plan of it was not available until near Christmas (30) and then it was Maxwell who informed Banks that it was ready. The field book had been sent by Thorpe to Francis Thirkill, Clerk to Boston Corporation, for that body's consideration and Maxwell told Sir Joseph that it could be obtained from him (31). This type of reply was becoming commonplace and reflected their mutual personal hostility but this became less so during the following year as the progress of the 'Welland Outfall Bill' was followed. For example, in May 1793 he was asking Banks for patronage for acquaintances of his, Messrs. Weston and West, to promote their invention of a dredging machine and this he agreed to do (32).

However, apart from the difference of opinion over the situation at the Welland outfall there was an additional source of controversy developing between them relating to the drainage works being undertaken by Maxwell in South Holland. While this scheme was almost entirely devoted to drainage
rather than navigation, a consideration of the cases of the
two men sheds light on their relationship as here was an
engineer who seems to have had the courage of his
convictions, was willing to be outspoken about them and was
as obstinate as Sir Joseph (33.)

In 1793 two Acts were passed for the improvement of part of
South Holland. The object of the first, and incorporated in
the 'South Holland Embankment Act' (34) was to embank about
4,000 acres of open salt marsh, extending for a distance of
about 15 miles (24 km.) from near Fosdyke Bridge to Boat Mere
Creek, some 2 miles (3.2 km.) north of the Nene estuary. The
second Act, the 'South Holland Drainage Act' (35), provided
for the better drainage of about 28,000 acres. This Act
authorised the construction of a new cut from the River Nene,
at Peter's Point, to the Wheat Mere Drain, on the eastern
side of the Welland. Previous to this the area drained
through the salt marsh but alterations had to be made as this
was now about to be embanked.

The 'Embarkment Act' was obtained after a report by James
Creasy in 1791 but this report made no mention of a drainage
scheme and was probably made before serious consideration had
taken place on the drainage works. Creasy's report was
inspected by George Maxwell, John Hudson and Edward Hare (36)
and it was their opinion that one sluice was sufficient to
discharge the drainage waters. This was in opposition to
Creasy who recommended the construction of a number. Apart
from this Creasy seems to have had Maxwell's support. In a
letter to Sir Joseph, Creasy said that his embankment scheme
was,

'... patronized and supported by Mr. Maxwell ...

Creasssy recommended that the Welland should have a 'Grand Sluice' built opposite the 'Scalp' below Wyberton Roads and that the main river should be cut along the southern edge of the salt marshes which were situated to the north of the then-present channel and which should go by way of Fosdyke. Creasssy maintained a high opinion of Maxwell,

'... whose Genius, abilities and powerful connections were necessary to bring about so great an undertaking ...' (38)

However, the 'Embankment Act' was delayed in its progress and was not ready for presentation to Parliament, by coincidence, until the 'Drainage Bill' had reached a similar stage also and, accordingly, both received the Royal Assent at the same time.

Between the salt marshes and the area to be drained (called the 'lowlands') are the South Holland 'highlands', owned by those who may or may not have had land in the salt marsh and the 'lowlands'. Banks had no property in the salt marsh but had much in the 'highlands' and 'lowlands' and he either attended in person, or received the minutes, of each of the 'Embankment Bill' business meetings, obviously to safeguard his interests. He appears to have been constantly
in favour of retaining the multiplicity of sluices recommended by Creasy and urged their retention in any 'Embankment Act' for, by this time, August 1791, the 'Drainage Bill' process had begun but there was no certainty that such an Act would be obtained which would incorporate the sluice provisions for the district (39).

It soon became obvious that the 'highlands' would be drained better by Peter's Point than by their former outlet and the constant theme of 'Embankment' meetings, with which Banks concurred, was that at the outset it be known what quantity of land would be drained to Peter's Point to enable the sluice capacities to be gauged. It was resolved to include in the 'Drainage Bill' clauses to order appointed Commissioners to take and include such 'highlands' within the drainage scheme as the proprietors of two-thirds in value should agree to be included and to pay for, provided they petitioned for such inclusion before 29 September 1793. When the Act was framed it gave to the Commissioners the power to decide the size of the sluices and in this Banks consistently objected to the decrease in the size and number of the 'embankment' sluices, which these Commissioners began to recommend should be the case when the Act was passed in 1793.

There were three Commissioners appointed for the direction of both Acts. Edward Hare, the drainage engineer, of Castor, near Peterborough, was appointed to both but, more particularly, so was George Maxwell. Here lay the root of years of bickering and animosity between Maxwell and Banks, a relationship which was unworthy of both, the details of which are discussed in chapter 13.
There were many clauses in the 'Drainage Act' which related to the navigation function which the new cut was to perform. A sea-sluice was to be built as well as a navigable lock at the outfall, and similar locks and staunches across the Welland at Vernants Drain and across the River Glen. It was incumbent on the management committee to keep the waterway open for vessels and tolls could be collected for this purpose on all vessels passing through the outfall lock. The various 'common' canal clauses, for fining for obstruction, the navigation to be free from rating, the assessment and payment for damage committed by vessels and regulations for the conduct of boats, were all included.

Concern for the day-to-day business of the Welland Navigation, as far as Banks was involved, ended at this point. With the Navigation passed into law he turned his attention to the general drainage problems in South Holland and those of East, West and Wildmore Fens.

The scheme which Maxwell put forward resulted in the Welland being improved only from the 'Reservoir' to Fosdyke Bridge, a distance of some 3 miles (5 km.). The new cut to the Witham was never made so the two outfalls remain separate today. All the powers which related to that aspect of the plan were repealed in the 'Welland Act' of 1824 (5 Geo.IV. c.96).
ANALYSIS.

The plan for improvements to the navigation of the River Welland were secondary to the requirements of a satisfactory general drainage of the area lying to the east of that river. This was the primary consideration and the attempt to carry it into effect had implications for the drainage of districts outside the Welland catchment, particularly the Witham.

In the negotiations about the drainage and navigation works Sir Joseph was not viewing the schemes from a single point of view for he was, at the same time, a combination of landowner with personal financial interests in the drainage of his own lands, a Witham General Drainage Commissioner with responsibilities for the effective drainage of that river above the Grand Sluice, and both a representative of, and 'consultant engineer' for, Boston Corporation over the drainage in the 'Haven', as represented by his Witham Outfall survey.

Banks was not a trained river engineer but he had sufficient, if probably misplaced, confidence in his own ability to undertake the Witham Outfall survey for the Corporation and produce a report based on a brief view. Why the Corporation should have asked him to lead the party is a mystery. He may have heard of the suggestion of a survey from Thomas Fydell, a fellow Witham General Drainage Commissioner, and either volunteered or been asked by them privately to participate in the expedition, the outcome of which could have great effects on the Witham's drainage above Boston. If
the suggestion for him to take part had come from the Committee of the Witham Drainage Commissioners or whether he had volunteered himself, it would have been a brave Corporation who rejected him. If this was the case it is surprising that the Corporation did not ensure that one of the more reputable local engineers accompanied him, such as Michael Pilley, William Bonner or John Hudson. One of his two companions, John Waite, was described as a 'surveyor' and so some experienced observation may have been included in Banks' report to the Corporation but, when they made their own joint-submission of recommendations, their suggestions were essentially what Sir Joseph had already said. Thus, Banks must be regarded as the prime 'surveyor' on this occasion as Waite would have needed a very strong personality to disuade him from his opinion and there is no evidence to support this conjecture. Thus, Banks' conclusions were not those of someone with the expertise to make them, and he was wrong! It is probable that he was aware of the shortcomings in his report and this led him to suggest that a second opinion be obtained.

It was unfortunate that George Maxwell was the engineer employed to make the drainage works and, later, to be appointed as a Commissioner for the 'South Holland Drainage' and 'Embankment' Acts, as he and Sir Joseph were incompatible in the business sphere and, one suspects, socially also.

The difficulties between them were most probably initiated by the anxiety Banks felt to the change in the plan which Maxwell put forward to join the two rivers and Sir Joseph's opinion that the opposition to it by Boston was justified.
The town used King's Lynn and Wisbech as precedents in those places' opposition to the effects of the drainage of the Great Bedford Levels of the 17th century. There the argument went to the Privy Council and the undertakers of the drainage were required to provide security before they began their works that they would not impair the navigation of the rivers Great Ouse and Nene. Banks would have favoured a similar arrangement here.

The situation steadily deteriorated between them, being further exacerbated by Banks' fundamental disagreement as to the number of sluices Maxwell thought to use in the drainage scheme. Other engineers who disagreed with Banks were not subjected to the same degree of hostility as that shown to Maxwell so, why should he have been treated in such a manner?

In his dealings with Maxwell over the drainage proposals of the 'South Holland Drainage' and 'Embankment' Acts, Banks allowed his position in county and national society to come into conflict with that of landowner and drainage 'expert'. It would not have been unusual for the first two roles, at least at county influence level, to be found in many parts of the United Kingdom, considering the influence the 'squirearchy' had in the direction taken by local issues. The third role would have been less common yet, the expertise which Banks professed was faulted in this case. George Maxwell's opinions were supported by Edward Hare, a very experienced local drainage engineer. He had become engineer to the Black Sluice Drainage in 1769 and was appointed Commissioner for a number of drainage districts in the two decades from 1772. Of Maxwell himself there is much evidence
of his drainage expertise and, as noted in the above text, James Creassy considered that he had '... Genius ...' in such undertakings.

It would seem, therefore, that from the evidence the hostility stemmed from his refusal to compromise in any way with Sir Joseph in matters in which he believed he had the superior knowledge. This must have ruffled Banks considerably but, as we are told by James Creassy that Maxwell had, '... powerful connections ...' (40), it was the case that he thought he could, and did, snub Banks with impunity. Banks was unable to make his opinions carry any influence as far as Maxwell was concerned and he lost all the arguments in their conflict over the drainage proposals.

Captain Joseph Huddart's was the second opinion obtained for the Witham/Welland Outfall survey and he also disagreed with Sir Joseph in his opinion that the joining of the Witham and Welland outfalls would adversely affect the Witham estuary but this did not lead to the two becoming enemies. Huddart showed more respect and tact towards Banks than Maxwell did and Sir Joseph was more amenable to his ideas, almost certainly because Banks realised that the conclusions he had reached in this own survey were open to much doubt. Banks regarded Huddart's views more highly than Maxwell's, possibly due to the more respectful way in which they were presented but also because at the time of the survey (1793) Huddart had been a foremost hydrologist for at least a decade and he was also an Elder Brother of Trinity House Corporation. He and Banks must have had a satisfactory relationship as Sir Joseph did not block his appointment as
an FRS in 1794 (41).

When the role played by Sir Joseph in this drainage and navigation is considered it must be concluded that, as in his association with the early period of the Horncastle Navigation’s existence, he over-estimated his abilities and, on the Welland, he seriously over-estimated the power of his influence. When the safety of thousands of acres of land depended upon the right course of action being taken, the advice of an expert had to be accepted when it conflicted with that given by a 'knowledgable amateur', no matter how well-meaning. It must be concluded that Sir Joseph made little direct contribution to the success of the schemes although the joining of the Welland Outfall with the Witham between Boston and the 'Scalp', which he opposed, was never made.
CHAPTER TEN

THE STAMFORD JUNCTION CANAL.

The Act of Parliament of 1793 which constituted the Union Canal (1) authorized the construction of a water communication from the Leicester Canal to the River Nene at Northampton from where a direct route to Peterborough and the sea could be obtained by way of that river. In the same year the project for forming the Grand Junction Canal was also passed by Parliament (2) and one aspect of that scheme was to link the Union Canal and the River Nene at Northampton, again, to establish a route to the sea.

The Union Canal's capital was exhausted by 1797 and it ended its line at that time at Gumley Debdale, a decision not only due to financial problems but also because it was realised that it would be difficult, if not impractical, to secure adequate amounts of water on the proposed line to Peterborough. At the same time the Grand Junction had doubts as to whether they would be able to provide sufficient water for the lockage down from their canal to Northampton and so they proposed building a tramway to take their cargoes from their main line to that town. With this situation the Union company thought it advisable not to extend their line, even when finances allowed, beyond Market Harborough which was reached in 1809.

About then the management of the Grand Junction proposed a
A LOCATION MAP FOR PLACES AND WATERWAYS RELATING TO THE PROMOTION OF THE
STAMFORD JUNCTION NAVIGATION, 1809-11

KEY
1. Grand Junction Canal
2. Leicestershire & Northamptonshire Union Canal
3. Leicester Navigation
4. Melton Mowbray Navigation
5. Oakham Canal
   a. The 'Parliamentary' line - Northampton to the Grand Junction Canal being the line of the railroad
   b. The proposed line of the Grand Union Canal

--- Approximate line of the proposed STAMFORD JUNCTION NAVIGATION

0 miles 15
deviation from their original line between Market Harborough and Northampton and to convert their tramway from the canal to Northampton into a water link (3). There were a number of advantages to be gained by this including the need for less tunnelling and a saving of about £50,000 on the estimate of the route to Northampton. This alternative had the approval of the affected landowners, the businessmen of Northampton and the Commissioners of the River Nene Navigation.

In addition to fostering speedier communications by water the proposed new waterway was seen as being beneficial to the Central Military Depot at Weedon as the new route would branch from the Grand Junction about 4 miles north of it. This name given to this proposed line was the 'Grand Union Canal'.

The Grand Union was seen as opening a direct navigation with the south of England and completing the line of canals which extended from the Thames to the Humber. The conversion of the tramway into a canal would, by using the drainage channels of south Lincolnshire and north Cambridgeshire, give a more direct route to the south for goods from Northampton, Peterborough, King's Lynn and Boston. At least, that was the hope.

The survey for the Grand Union was made in 1808-9 by Benjamin Bevan. The canal was to run from just north of Market Harborough, through Foxton and then south-west to meet the Grand Junction near the village of Buckby. The total length was to be about 25 miles and the estimated cost £203,000. By mid-1809 some £140,000 of this had been subscribed even though the
prospectus was not published in London until 1 June of that year.

As can be seen from the map, a break in this canal network existed between Stamford and the Midlands' system which could be joined either at Oakham or Market Harborough. From Stamford to the sea there was a navigation, although in a depressed condition, along the line of the River Welland, passing through Market Deeping and Spalding. The reason for this state was described as the,

'... neglect and mismanagement of the Corporation of Stamford ...' (4)

Therefore, it was to be expected that this incomplete waterway connection between the east and Midlands of England could be made and this was undertaken in 1809-10 when Hamilton Fulton (under the supervision of Thomas Telford) surveyed a route from Oakham to Stamford and Benjamin Bevan reported on a plan to take the alternative line from Market Harborough to Stamford.

The proposal of a canal from Oakham to Stamford was not new. In 1785 William Jessop had surveyed a link from Oakham to Melton Mowbray and, in December of that year, there were meetings held in Stamford to try to obtain an extension of the proposed canal (Oakham Canal) to that town. Nothing came of that promotion attempt but renewed activity later secured an Act in May 1793 but without a link with Stamford although such had been discussed. When the Oakham Canal opened in May 1803 it ran from Melton Mowbray to Oakham. (5)
The Oakham to Stamford line surveyed by Fulton, usually known as the 'Stamford Junction Canal', or 'Navigation' required the digging of a new cut to join the two towns and for the restoration of part of the Welland. The latter part of the route to the sea was to be through the town of Bourne using the existing Bourne Eau navigation and, from Aslackby, by way of the South Forty Foot Drain (the 'Black Sluice') to Boston. The problem of the water supply for the section between Stamford and Boston was not dealt with in any detail by the promoters when the scheme was first advanced and this was to be the cause of much future controversy.

The promoters praised the advantages of the project,

'... it is a fortunate circumstance in the scheme that, whilst it would be extremely useful to the country, it interferes less directly with any Navigation at present established, than any line which can be proposed, to embrace the same objects. The Stamford to Harborough Navigation [that surveyed by Bevan] if executed, will, at its junction with the Union [Canal] be within sixteen miles of the Navigation of the River Nene, and will, as it proceeds to Stamford eastwardly, gradually advance to within six miles of the Nene. But that part of the Stamford Junction Canal, which forms the junction at Stamford, with the River Soar, will rather be a feeder to, than a rival of, the trade of the
River Nene, by entering the latter at a right angle, near Peterborough ...’ (6)

The Mayor of Boston, John Hardwicke, convened a meeting requested by the town’s business community, at the Town Hall on 25 September 1809 to consider the scheme (7). However, this was not the first gathering at which interested parties had assembled for, three weeks earlier, ‘... gentlemen, merchants, manufacturers and traders of the counties of Lincoln and Rutland ...’ had come together at the 'George and Angel Inn' at Stamford (8). Yet another, and more important, meeting had been held on the 23rd., called on behalf of the owners of the lands through which the Stamford Junction was to be built. At this there were estate owners and tenants with lands along the Welland and also supporters of the rival scheme, the link from Stamford to Market Harborough. The Mayor of Stamford, Leonard Stevenson, took the Chair.

The meeting of the 23rd. came to the opinion that the most beneficial plan to the town of Spalding was the Market Harborough and not the Oakham route and while the reasons for this conclusion are nowhere mentioned it is probable that the more southerly route was seen as providing faster access to the Midlands’ and London markets.

A committee of 26 was formed to consider the Stamford to Harborough scheme in more detail and they employed Benjamin Bevan to make his survey. Discussion of the more southerly route must have reached an advanced stage by this time as subscribers to it were already pressing with their finance and a subscription book was opened that day (9).
On the following Tuesday the Boston meeting was held (10). As well as looking at the current idea it also considered a plan by a supporter of the Oakham route, Joshua Jepson Oddy, for linking Boston with Stamford. As would be expected, the town was in favour of any water link though unspecific as to which it favoured,

'... Unanimously resolved that a perfect and more direct navigation connecting the port of Boston and the town of Stamford and the canals of the Midland Counties would be attended with considerable advantages to the towns and counties in the vicinity of such navigation ...' (11)

Plans rested at this point for some months. During that time, however, the promoters of the Oakham route arranged for a second survey to be made. Although Hamilton Fulton had already performed this task he had formulated a plan for only an Oakham to Stamford line. The ideas of Oddy had gained ground in the meantime and the advantages to be achieved by extending the canal to link with the Wash ports prompted this new work. This time it was undertaken by Thomas Telford himself and he reported in July 1810 (12).

Telford adopted a 16 mile long line from Oakham to Stamford which incorporated a fall of 282.5 feet. For a route to Boston he proposed to enter the Welland just above Stamford Bridge and follow it for about 4 miles. The river here would have to be improved to accommodate traffic. From here Telford
intended to make a cut to the Car Dyke near Kate's Bridge on the River Glen, a distance of some 6 miles and then to continue along the line of the Car Dyke to the South Forty Foot Drain, via the Aslackby and Pointon Drains. There were a number of reasons why Telford chose to follow this Roman drainage channel. He thought its levels and direction were suitable and, as an established field divider, no new separations of estates' lands needed to be made, no drainage interfered with and its waters could still be directed into the South Forty Foot. Probably carrying the greatest force of argument was that it would cost less than any other route.

To link Stamford with the Nene Telford proposed a route from the Welland to Market Deeping. From here the line would continue about 2 miles past Peakirk to join the Folly river and follow this for another 2 miles and then enter the Car Dyke, which would be followed to the Nene at Peterborough.

As far as water supply to the Stamford Junction and these two cuts was concerned, Telford decided on a number of sources. The Oakham to Stamford line was to be supplied from reservoirs to be built at the summit level near Oakham. With a surface area of 200 acres and depths of up to 12 feet, he estimated that they would supply 8,800 locks full of 10 feet rise. He considered that this would ensure,

'... more than sufficient for lockage, leakage and evaporation, for all the canals between Oakham and Stamford ...' (13)

The Stamford to Peterborough line was to derive its water
from the Nene but for the Stamford to Boston route he proposed a reservoir, vaguely sited,

'... in the lower part of the Wash valley ...'

(14)

Of importance to the part Banks was to play was Telford's assurance that the Welland would not suffer any serious water loss, although his scheme,

'... will require a small proportion of [the Welland's] water which has hitherto been waste and overflowed the fens ...' (15)

and so it was that, at this stage in the promotion, Sir Joseph became actively involved (16). Obviously he would have been following developments very closely, noting the effects that the various proposals might have on the area generally, on the existing navigations and, personally, on his estates in 'South Holland' and near the Welland outfall.

Up to this time Banks does not seem to have attended any of the meetings although he had received a copy of Telford's survey (17) and was critical of parts, with the most serious criticism reserved for Telford's use of the term 'waste' as applied to the water he proposed taking from the Welland to feed into the South Forty Foot Drain. Here is a recurrence of the terminology used in the promotion of the Grantham Canal for, to Banks, this water was not 'waste' but necessary to keep the Welland outfall open by means of its
scouring action.

About 150 people attended a meeting held at Spalding on 28 August 1810 held to oppose Telford’s plan for the section from the Welland to Boston and £778 was raised to finance such opposition (18). Like Sir Joseph, the group was apprehensive as to the plan’s effects on the Welland and Glen drainages and outfalls and included amongst this group was George Maxwell (an example of the two men being in agreement for once) and the 'Adventurers' of Deeping Fen. A committee of action, termed the 'Welland Committee' was elected, jointly chaired by the Revs. Maurice Johnson of Spalding and Joseph Monkhouse of Market Deeping. A spokesman for the committee, Charles Green, was requested to approach Sir Joseph in order to solicit his support (19), which was readily given. Banks stated,

‘... I entirely Coincide with them in the Propriety of opposing the projected canal and will Give Every assistance in my power towards defeating a plan so fully fraught with mischief towards existing interests & so little likely to prove advantageous to those Concerned in it ...’ (20)

As a result of the opposition which was developing towards Telford's plan, two letters were sent to the leaders of the Stamford community in November 1810 in an attempt to gain some support for it from that quarter. The supporters asked for a meeting at which the promoters could put their case for
the Oakham rather than the Market Harborough link favoured by that town. A negative reply was received and a third letter was treated likewise (21). These requests were made by the Chairman of the Stamford Junction Navigation committee, Colonel Gerard Noel Noel, who was known to Banks through their mutual concern for the improvement of the sheep stock for wool. The reason for these rejections may have been because the promotion committee had made propositions for the section of the scheme between Stamford and Deeping St. James which would give Stamford Corporation an option to complete the navigation between those two points. As Sir Joseph remarked,

"... Can persons who have no vested interest in the navigation Compell those who have to conduct this option? (22)

The Commissioners of the South Forty Foot were not so reluctant to face the committee and they met Noel, Oddy and others on 29 November at Bourne (23). This was a very strange conference. Records of it do not exist and it was said by Oddy that the discussion which ensued centred on a possible alteration to the proposed line between Aslackby and Pointon Fens and the Swaton Eau. Exactly who said what and who formulated the proposal for line deviation, whether Oddy or the Black Sluice Commissioners, is unclear and was to lead to recriminations later. There is a possibility that this meeting did not discuss the idea at all and it was fabricated by Oddy.
The Stamford Junction committee were eager to press for an Act and they met twice in London, on 18 and 22 December, to consider the best way to present their Bill (24). It was concluded that what must be emphasised in any parliamentary argument were the advantages to the movement of goods which would be facilitated by their scheme’s construction and the meetings made much of the degree of consultation they intended to have with interested parties. They stated that they were not adverse to ‘conferring’ with their rival committee on the Stamford to Market Harborough project but that they had a poor opinion of the regard Stamford Corporation had for the public good of that community, or the surrounding neighbourhood, because of the way they had neglected their trust over the Welland navigation between Stamford and Spalding. By declining to meet their committee they considered that Stamford, in the person of the Mayor and Corporation, had abrogated that trust and the committee saw it as their duty,

'... to secure by their own exertions those benefits to the Public, in which it had been their unavailing wish to have the concurrence of the Corporation of Stamford.'

The last day of 1810 saw a meeting of the opposition, the group with whose opinions Banks’ agreed. It was to this meeting that Banks’ letter of support was read and the thanks of the assembly for his assistance was noted. The discussion which followed was to be of great importance in the later
history of the Stamford Junction project because much of what took place was itself to be the subject of controversy over the following months. They made clear their opinion as to the motives of the promoters in no uncertain terms. They resolved,

'... that the Opposition ... ought not to be diverted from its purpose by Specious pretences of a Laudable desire to promote the Public Benefit, whilst it is obvious that Nothing is really meant but the private Emolument of the Projectors tho' the Consequence of such emolument - if it were possible to be obtained - would be the total Distinction of existing Trade and Navigation and of the Welfare of a most fertile Country which in the opinion of this meeting is of infinitely more value to the Community at large than any public benefit that could possibly Arise from the schemes of Mr. Oddy and his Coadjutors.' (25)

At this point in the meeting the conference held at Bourne between Noel, Oddy, members of the Stamford Junction committee and the Black Sluice Commissioners was raised, together with the suggestion of the alteration to the proposed link. Oddy had maintained the position that the Black Sluice Commissioners had suggested the change and, although the evidence upon which the following remarks were made is not known, this opposition meeting called him a
... that the suggestion ... of a proposal having been made to a Committee of which [Oddy] was one by a Deputation of the Black Sluice Commissioners is sufficient to induce an Inquiry as to the truth of such suggestion ...’

Concerning the drainage and navigation aspects of their objection, the meeting recorded works made by the Welland Commissioners who had carried out improvements by embanking the river from its confluence with the Glen to Fosdyke (under the ’South Holland Embankment Act’ of 1793). To give full effect to these improvements the meeting wanted to retain all the water which should pass down the Welland with none being diverted from it.

The adjournment was made to the following day, New Year’s Day, 1811, and to Spalding Town Hall, probably to allow the objectors in that area to voice their opinions also. The Rev. Maurice Johnson, Vicar of Spalding, took the Chair. The major part of the proceedings were devoted to a clarification of what was proposed at the Bourne meeting, and by whom. In this, the opinion expressed the previous day was supported,

’... it having been ascertained to the satisfaction of this meeting that no authority was given to any Delegation from them [the Black Sluice Commissioners] to make the pretended proposal and that in point of fact no proposal
was made by such a Delegation. Resolved that Mr. Oddy’s Suggestion has a tendency to misrepresent the proceedings of the Black Sluice Comrns. and to lower them in the opinion of the proprietors Concerned in that District ...’ (26)

With such a fundamental difference of opinion the reaction of the promoters was one of immediate attack to eliminate the opposition. They realised that this would prove difficult as there were some important members of the Establishment ranged against them. In addition to Sir Joseph were Earl FitzWilliam and the Earl of Winchilsea (which caused some surprise amongst the supporters), both of whom owned estates along the course of the Welland, together with the Earl of Lindsey, Lord Boston and Lord Eardley (27). The objectors had put their argument onto a personal level with their attack on Oddy’s truthfulness and now the promoters responded in like kind. An anonymous pamphlet (28) was circulated in the area in early 1811 in which accusations were made as to the motives of, and possible explanations for, the objectors’ actions. Taking the two Chairmen first, Johnson and Monkhouse, a similarity was made between them and other clergy who were active in the acquisition of secular power and political influence. The writer was willing consign these two,

‘... to the oblivion which is best suited to their habits and manners ...’
To the gentry in general who were favouring the opposition, including Banks, the writer could not believe that they would lend their names in support of a cause,

'... in which the investigation of evidence and the pursuit of truth are abandoned for the indolgence of impotent invective and malicious insinuation ...'

While stating that the clerics' actions were for personal advancement the author was careful not to ascribe such motives to this second group, rather, they were misguided! However, Banks received special mention by the pamphleteer,

'... That he [Banks] may be prepared to defend the injured or to relieve the oppressed I shall not be inclined to question; but that he will assume the existence of injury or oppression, without evidence, or on no other evidence than that of a clamorous and ignorant accusor, is everything but impossible; and there can be no fear that he will become the instrument of supporting, to the general injury of the country, local prejudices founded in unproductive selfishness ...'

Of the landed interest set against them, the promotion committee realised early that Banks' opposition was that
which was likely to be the most decisive to the failure of their cause and they went to some lengths to bring about a change of mind. He received immediately the resolutions of a promoters' meeting held on 4 January 1811 at which delegations from the Oakham and Melton Mowbray Canal companies attended. One resolution conveys the bitterness which was now evident of the supporters towards the opposition,

'... Resolved that such conduct, sheltered under an ignorance artfully assumed of the mode of transacting public business, is derogatory from the dignity of a public meeting held for discussion of business in which important interests of the country are implicated ...'

(29)

Sir Joseph was asked for his comments as to how far he agreed with what was said at the 31 December and 1 January meetings. He replied straight away (30) that while he was not prepared to endorse the sentiments and accusations expressed at those two meetings, as he had not attended them personally, he did,

'... entirely concur with the Spalding Committee in the propriety of opposing the intended canal which in my judgement is fraught with various injury to existing interests and little likely
to prove advantageous to those concerned in the execution of them ...

This resolve by Banks not to be won over prompted a special meeting of the supporters to try another approach. They decided that he would need to be convinced by experts whose opinion he would value and, so, they issued the resolution that,

'... application be made to him for the honour of a conference at such time and place as he shall think most convenient to be apposite by such persons of competent professional skills he may approve for the purpose of examining the justice and accuracy with which the opinion he has expressed had been formed.' (31)

Sir Joseph was quite willing to agree to this, provided Thomas Telford was there to be examined. To put his case, and to oppose Telford, Banks wanted either John Rennie or Benjamin Bevan to act as his engineering expert (32) and this arrangement was agreed by the end of January 1811, but by mid-February the confrontation had not taken place. Telford was not in London but Noel informed Banks that he would be back on Friday 22 February and suggested this date for the meeting (33). This did not suit Banks, Bevan was away and Rennie too busy to attend but, even though he would still have neither man with him, Banks suggested the following Monday. Probably realising the disadvantage that he would be operating under, the committee hastened to contact Telford
but, unfortunately for them, he had a prior engagement at the House of Commons. After some further communication between all parties the proposed meeting was postponed indefinitely.

While he was conducting these aborted negotiations in London, Banks was still in contact with his fellow objectors in Spalding. One of these was Samuel Edwards, a solicitor who, in March 1811, published a pamphlet, 'Observations on the intended Stamford Junction Canal' (34). This publication noted the main points of the opposition as they then stood. First, the cost. For the whole project from Stamford to the sea at Boston and to the Nene at Peterborough, the objectors estimated the cost at more than the £350,000 projected and that an annual income of £25,000 would be necessary for the company to remain solvent. This was not seen as being forthcoming as two sources of trade for the new waterway, the Oakham and Melton Mowbray Canals, were uncertain as far as constant water supplies were concerned. The second point noted related to landowners and here a new factor was introduced. The objectors now contended that the route chosen from Oakham to Stamford was not the shortest and involved more cuttings than were necessary. The reason stated was,

'... for the Purpose of throwing all the Inconveniences as far as possible from the residence of one Gentleman of large landed Property to the Annoyance of his Neighbours ...'

This 'one Gentleman' was Sir Gilbert Heathcote, of
Normanton, Rutland.

From the point of view of economics the objectors doubted whether the cost of coals, for example, would be any cheaper in Stamford as a result of the new water link. The town’s coals came from Oakham, a distance of 11 miles by road. The canal would be 15 miles long and, at a cost of £150,000, they thought that the toll rate that would have to be charged would raise the price of coal on Stamford market.

The existing navigation and the use of the Welland’s water were alluded to, including the loss to Stamford Corporation of the right to control navigation on the river and the loss of water to the landowners for agriculture by diverting some of it into the South Forty Foot Drain and for keeping open the Welland outfall. Further, there were corn mills on the Welland and it was feared that any water loss would damage their trade.

Of the intended improved link between the Welland and Boston it was,

"... admitted on all hands, except by the Projectors ... [to be] ... highly injurious, if not totally destructive, to the Drainage of an immense District, at present protected by the Black Sluice Acts of Parliament ..."

In conclusion, the sweeping statement was made,

"... probably the History of Canals produces no instance of so many Misnomers and Mistakes, and
of so wild and extreme a Plan for abrogating wholesome Laws and the privileged Possession of ancient Rights and Interests, including the Rights of even Majesty itself, without a probability of Advantage to those promoting ...’

Edwards’ arguments were countered swiftly by the promoters for, under a date of 21 March 1811, a rebuttal appeared of all he had put forward (35).

His pamphlet had concluded with the observation that the Stamford Junction plan abrogated existing laws and the opposition used this argument against the Stamford Junction Navigation Bill when it came before Parliament. They contended that the proceedings of the House itself were not being adhered to in that the Bill altered previous Acts, that no notice had been given of these changes and that no Act to be altered had been named in the petition to bring in the Bill. (36).

Despite these moves and his inability to win over Sir Joseph, Noel seemed confident of success. As it was clear that Banks would not support him Noel felt that he could write more freely. Still smarting from the attack on personalities which had occurred he wrote of Banks as,

’... [the] substantial manager of such opposition ...’ (37)

and all but accused him of supporting this approach on
personalities, an approach to which he considered the objectors had sunk because the,

'... opposition ... rests on such hollow foundations ...'

and this was the only means remaining of obtaining the defeat of the Bill. Even at this late stage in the business Noel could not understand Banks' opposition to him,

'... a public character to whom the world is so much indebted and who I wonder as much as I regret deeply is against me and against a great public good on the present ... occasion ...'

Banks' opinion remained unaltered. He differed,

'... intensely from you in my judgement relative to the merits of the measure. I must and hope that I shall persevere as steadily ... in opposing it as you can do in promoting its success ...' (38)

When this firm reply was received by Noel he must have realised that there was no moving him, yet he made one final attempt and counted on the presentation of new information to bring this about, together with a more conciliatory tone. In this, his final letter to Sir Joseph, Noel explained his motives for pressing for this line – or at least those
motives which he thought might persuade Banks,

'... I yield to you, Sir Joseph, completely, the victory of positiveness, and if you will take the trouble to convince me that I am wrong I will most readily relinquish all or so much of my plan as shall appear to me to have been imposed upon my understanding ...' (39)

Noel continued that the Oakham to Stamford plan and its continuation to the sea was, in fact, the Earl of Winchilsea's, which explains the astonishment of the supporters when his name had been put forward by the opposition as one of them. According to Noel, he,

'... tormented my uncle, the Earl of Gainsborough, the Earl of Harborough and Mr. Nochin, who was at that time member for the county of Leicester ...' 

This, he claimed, had been going on for a period of some 20 years before it had been decided to begin the present attempt for a canal (in fact, from the time of the promotion of the successful Oakham Canal Bill). Now these,

'... were all quiet people and the vexation that noble lord, the Earl of Winchilsea, gave the persons I have mentioned his lordship will well remember ...'
Noel then turned his attention to the economics of his line.

'... My object is the grand one of commercial communication both with the sea and with the interior saving ... in time and also conveying timber and corn to the new projected arsenal to North Flich [Weedon] and bringing ... hops especially into Rutlandshire and Leicestershire either by Royston or, which is better, by the new Cambridge Junction (40), to which probably branches from Harwich and Colchester will be made ...'

In this manner did Noel make his final appeal to Banks, but to no avail; he would not move his ground. Sir Joseph summarised their positions thus,

'... You and I, Sir, stand at present in relation to each other of persons at law each thinking he is Right, neither can alter the opinions of the other. We have found issue on the difference between us and our country must decide it ...' (41)

Their country did decide it. Parliament rejected the Bills for both the proposed lines linking Stamford with the Midlands. The projects for a route to Oakham and to Market
Harborough were dropped and never revived.
ANALYSIS.

Sir Joseph came into the discussions on this canal at a time when it had been decided by the promoters to extend the limits of the original concept and attempt a deviation via the South Forty Foot Drain in order to gain access to the port of Boston. Until this was suggested Banks appears to have been happy with the concept of linking Stamford with the Midlands' waterway network. So, it was only when Telford's proposals were made public that it was seen how they might possibly affect the Welland's water supply and outfall and the South Forty Foot Drain (Black Sluice) that Banks joined his voice to the rising opposition. It was primarily the proposed extension of the Stamford Junction to Boston and the use of the Welland's 'waste' water which drew him into the opposition camp. The Stamford to Market Harborough scheme did not concern him as it was not projected to have an extension to the Wash.

It was the adverse effects which were expected to result from this scheme on the Welland drainage that brought Banks and Maxwell together for once on the same side of an argument but they do not seem to have communicated about it, so further emphasising the animosity between them, which had reached major proportions by this time.

One outstanding feature of the history of this promotion is the part played by Joshua Jepson Oddy and what occurred at the Bourne meeting of 29 November 1810. There is so much accusation and counter-accusation as to who said and proposed what at that meeting that it may not now be possible to
determine who was telling the truth as to the originators of the line deviation. The absence of minutes of the meeting only obscures the matter further. Also, we do not have a Banksian account of the meeting as he did not attend but, as his concern was with the safety of the drainage and possible consequences for, amongst other rivers, the Witham, it is inconceivable that he would not have known of any proposals being put forward by the Black Sluice Commissioners which would have altered the drainage by the Black Sluice. Later the Commissioners themselves brought Oddy's truthfulness into question and so, unless they were acting in concert to obscure a mistake made on their part at the Bourne meeting, the conclusion must be that the deviation proposal was an invention by Oddy after the meeting and an attempt to promote the case for the canal - although how he hoped to succeed in this deception is hard to understand.

It was recognised by the promoters that Banks was the key to success and without his support they would be at a great disadvantage and so special efforts were made to win him over. Those made by Noel are especially significant. At first the attempt was by the persuasion which would be forthcoming at a face-to-face meeting between Banks and Telford and it may well have been that if Telford could have convinced Sir Joseph's appointed engineer of the validity of their drainage case he would have agreed to support the scheme. This would have been especially so if it was John Rennie who could have been persuaded to the promoters' opinion. At that time Rennie was working on the drainage of East, West and Wildmore Fens and if these and other drainage and navigation works on the
Witham and Welland would have been unaffected by the proposed canal link to Boston it would probably have gained his, and so Banks', approval. However, this discussion did not take place and the last heard of it was that Telford could not attend on the appointed day. Did the promoters ever intend that such a meeting should occur or were they using the possibility of such a confrontation as a vehicle for demonstrating their reasonableness and, thereby, achieve a softening of Sir Joseph's attitude towards them? This also raises a fundamental question of why Telford was selected in the first place to make the survey as he was not a river engineer. Why did the supporters not employ someone better qualified, such as William Jessop?

The extant evidence for the promotion of this still-born canal is rather sparse and much consists of printed case and accusations by both sides. The public stances adopted by the protagonists may be assumed to be largely the conventional posturings of supporters and opponents of such projects at that time. Yet the same charged, personal tone is found in the private correspondence and a general impression is gained of both sides becoming embroiled in personal attacks which did little to achieve the ends of either party. This was particularly the case with the promoters.

The promotion of the Stamford Junction Canal in the two years from 1809 to 1811 is characterised by confusion, misunderstanding, misrepresentation, double-dealing and probably lying. For Banks the only facts which mattered were those relating to the water supply argument and those put forward by Edwards in his pamphlet.
When it became clear that Sir Joseph was not going to join the promoters Noel became somewhat abusive but in the end wrote in a more conciliatory manner and used the argument of economics in his case but he did not counter the drainage ones.

Would this canal have worked if it had been built? If the arguments of the opposition are to be believed it would probably not have been financially viable in that the trade necessary to make it so would simply not have been there. Linking through to a Wash port may have appeared a good idea and, indeed, similar schemes were discussed in 1815 and 1828 but within a few decades trade would have begun to decline to such an extent that it would have failed like the other waterways to which it would have been related. However, at the time the drainage argument was sufficient to convince Parliament that it should not proceed.
CHAPTER ELEVEN.

THE LOUTH CANAL.

"In October 1756, I was employed to project a Navigation to the Town of Louth, in order to which I first made Views of its Situation with respect to the Sea and River Humber, and the Course of the River Ludd, which runs through it, of the several Outlets or Harbours on the Sea Coast adjoining, and also of the low Grounds and Marshes between it and the Sea; and afterwards made a Survey and Plan, and took the Levels of the Country from Louth to Tetney Haven, which falls into the River Humber ..." (1)

In this way did John Grundy, the Spalding engineer, begin a description of a survey he had taken for the construction of one of the great 'might-have-beens' of English canal history.

The Sankey Brook Act was passed in 1755 and authorised the construction of what is usually regarded as one of the first English canals (2). Most of the line of the Sankey Brook (St. Helens) Canal was opened by 1757 but it was not until 1772 that the whole course was complete. The Louth Canal, on the other hand, took only four years to finish once it had
obtained its Act in 1763 and so, if Grundy’s original survey of 1756 had been acted upon, the Louth Canal could have been ready in 1760-1 and so found a major place in history textbooks, rather than being relegated, as it so often is, to a footnote.

Louth is situated on the eastern side of the Lincolnshire Wolds, a chalk escarpment excellent for sheep rearing and, by the late 18th century, it had developed as an important market town for the sale of wool. It was the desire to extend this trade which prompted the suggestion of making a water connection with the sea some twelve miles distant. A canal would enable the wool to be exported easily to Hull and London and also abroad to the Continent. In return, much-needed coal and other bulk goods could be received. At the time the proposal was made the road links between Louth and the west were very poor and it was not until 1765 that a connection was made with the Great North Road at Bawtry Bridge (3).

Grundy’s plan was formulated only to test the practicality of a link with the sea and he proposed to use the River Lud for part of the canal, a river which passes through the town and then flows eastwards across desolate and flat outmarsh to meet the North Sea midway between the small village ports of Tetney and Saltfleet. Grundy noted that the Lud was crooked in its course and rapid in its flow but, even so, could not be used to form a navigation as there was no terminal port; far better to make use of Tetney, from where Louth was already being supplied with,
'... Coals, Deals, Groceries and other Kinds of Merchandize inwards; and to which a great part of the Corn, Wool and other Produce of the adjoining Country is convey'd by Land Carriage for Exportation ...’ (4)

However, land carriage was very difficult, the land over which the produce passed was flat, drowned marsh,

'... the Soil a strong Clay, and the Roads in Wet Seasons so deep; founderous and bad, that it is with the greatest Difficulty and at an immense Expense that this Land Carriage is effected, to the great Detriment of Trade and Commerce and to the great Hurt and Disadvantage of the Landed Interest of all the Country adjoining ...’

At the North Sea end of the canal Grundy proposed a sea sluice (5) and a fourteen foot wide lock. At this sluice the canal would begin, the cut being made westwards across Tetney Common to near Alvingham Mill. Between Alvingham and Louth Grundy proposed the erection of nine locks.

During the time that he was making his initial survey, Grundy generally resided at the home of a Mr. Chapman and Grundy seems to have had definite ideas as to the type of vessel which he saw as using his new waterway,

'... Mr. Grundy was generally at [Chapman’s]
house When he Plannd the navigation & that he always understood it was intended for Lighters only ...' (6)

These drew much less water than the larger, Humber Keels and Grundy modified his idea when he came to producing his report, advocating in it a depth for the canal of six feet. Many years after this time Sir Joseph commented that,

'.. it would seem as if a navigation for lighters was held out to the country and the admission of Humber Boats always intended by the undertakers ...' (7)

Grundy's survey report was not acted upon for nearly four years, a subscription list being opened only in January 1760 to pay for the expenses of a second survey and for the costs incurred during the passage of an enabling Act. Why the Louth supporters should have delayed for this length of time is not clear but one of the reasons may have been that they were not prepared to make the parliamentary application without the backing of an engineer whose opinion would carry weight in the Committee Stage of their Bill. While Grundy was a competent local engineer and could see the problems involved in the project quite as well as anyone else, the supporters wanted a second opinion before they were willing to subscribe and expend cash to make the canal a reality. A decision was taken to approach John Smeaton (8) in February 1760 but he did not view the proposed course until 7 August,
"... after the dryest Season that has been known in the Memory of Man ..." (9)

Smeaton concurred with Grundy's opinion in all respects as to the course the canal should take and with the choice of Tetney Haven as the outfall, it,

"... being both safest and deepest [c.f. for example, Saltfleet] and affording a Communication with the inland Navigation of Yorkshire, and the Trent for flat Bottom'd Barges, without going to Sea, which at some Seasons of the Year would be dangerous, or impracticable ..." (10)

With his report Smeaton included estimates for building the canal from Tetney Haven to four alternative termini, all within the final four miles or so of Louth; they were, Alvingham out Fenn, Keddington Old Mill, the Leather Mill and the New Bridge at Louth. He considered that the final three-quarters of a mile, from the Leather Mill to the New Bridge, would be the most expensive in proportion to the distance involved and that a great saving could be made by terminating the navigation section at Keddington Old Mill. Smeaton's estimates were:
<table>
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<th>Location</th>
<th>New Bridge, Louth</th>
<th>Leather Mill (near) Keddington</th>
<th>Old Mill.</th>
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</thead>
<tbody>
<tr>
<td>Cost</td>
<td>£15,590</td>
<td>£12,968</td>
<td>£11,098</td>
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<tr>
<td>£13,686</td>
<td>£11,241</td>
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<tr>
<td>£10,884</td>
<td>£8,931</td>
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</tr>
</tbody>
</table>

It can be seen that he also gave estimates for canals built to accommodate different sized vessels and this must refer back to Grundy’s original plan for a lighter canal and the proprietors’ idea for one which could carry Humber Keels.

Smeaton’s report was accepted by the Louth promoters and the parliamentary process began with the petition for leave to bring in a Bill being presented on 6 December 1762. The Act was obtained on 24 March 1763 (11) but it was another four years before any substantial amount of construction work was completed, the reason being that the Act stipulated that money for construction could not be raised by any means other than on the mortgage of the tolls, and this was not readily forthcoming. However, by May 1767, five miles of new cut had been made, extending from Tetney Haven to Fire Beacon Lane (see map) but it was not until 1770 that the works were made up to Louth. The canal was opened in May 1770 when the total cost of construction amounted to £27,500 (12). The canal built was a broad one with locks capable of accommodating 72 foot vessels.

The Louth Canal was managed by a Committee of
no action and Banks wrote to Chaplin demanding that repairs be put in hand immediately. Having no notice taken of him he threatened to enforce the provisions of the Louth Act in order to have the repairs made. He was reluctant to do so as,

'... nothing would give me so much Pain as to find it necessary to enforce the Act of Parliament in any ('other', deleted) way ('than that of Friendship', deleted) that might appear hostile to the Commissioners ...' (15)

This sentiment preceded him to a meeting of the Louth Committee held on 13 October 1784 where Banks talked to Chaplin personally. Chaplin promised that both the bridge and the tunnel would be reconstructed and this episode would seem to have reached a satisfactory conclusion.

SEA-BORNE COAL DUTY ON THE LOUTH CANAL

Between 1784 and 1809 Sir Joseph had little to do with the canal except for a brief time in the early 1790's when there were problems with water supplies.

In 1792 Charles Chaplin died and his son, Thomas, took over the lease and, on his death, it passed to George Chaplin. Thus, he was lessee when, just before Christmas, 1809, Sir Joseph received a letter from Charles Chaplin (1786-1859), a son of the original lessee) concerning a subject which was
causing the Louth Commissioners some anxiety (16). It would seem that for the first time sea-borne coal duty was being demanded by the Board of Customs on the cargoes being brought up to Louth. The majority of the coal barges were coming from the Yorkshire collieries and travelling via, for example, the Don Navigation or the Aire and Calder Navigations, into the Humber Estuary. From there they were making their way along the coast, past Grimsby, to Tetney Haven. On the occasion about which Chaplin was writing, a barge had been seized at Hull as it did not have coasting letters of clearance. This event had,

'... put the Town of Louth & neighbourhood into a great state of anxiety lest they should not get the ... claim given up by the Customs House ...

(17)'

This action on the part of Hull Customs had been prompted by a communication to them by William Brand (18), Customs' Officer at Boston, who claimed that Tetney was on the North Sea and not in the Humber Estuary. Chaplin claimed to Sir Joseph that this was incorrect, that Tetney was on the Humber and so was a river port, not a sea port. He justified this assertion by noting that this had been stated in the Louth Act for, when referring to the appointment of Commissioners, it said they,

'... shall be & they and their Successors to be elected in manner hereinafter mentioned and
hereby appointed Commissioners for making [the] Canal or navigable cut from the Humber at or near a Place called Tetney Haven . . ." (19)

Even before the Louth Act had been passed, John Smeaton had said,

'... That Tetney Haven is the most proper Outfall for a Navigable Canal, as being both safest and deepest; and affording a Communication with the inland Navigation of Yorkshire, and the Trent, for flat Bottom'd Barges, WITHOUT GOING TO SEA (20) which at some Seasons of the Year would be dangerous, or impracticable (21)

Chaplin asked Banks to help in countering the claims of the Customs for he knew of,

'... no Person so able to assist in procuring or dictating ... Documents in order to show that the Louth Navigation goes into the Humber not into the Sea . . .'

Sir Joseph replied immediately and related his concern on the imposition of the tax, being,

'... well ... aware [of] the destruction of the Louth Navigation which must be the consequence
of the new measure proposed for enforcing the payment of sea borne duty on coals landed there ...

'... to be an inactive Spectator of so extraordinary an alteration in the Conduct of Government but shall use every means in my power to assist the Country ...'

However, even before this reply had been penned, a memorial had been sent to the Board of Commissioners for Customs by Louth Corporation and a petition, the result of a public meeting which had been held in Louth, had been drawn up and was awaiting signatures at the office of the Town Clerk of Louth to be presented to the Lords of the Treasury, the government department which had responsibility for the Customs. The meeting could not determine who was to present the petition but the general feeling was that a John Loft should do so. This information could not have pleased Banks as he had some unpleasant encounters with this man before during his connection with the water supply problem on this canal in the 1790's. However, Loft claimed that he had the advantage of having a similar claim by the Customs taken off Grimsby. It was thought by some that Chaplin or Charles Pelham (23) should do this but as neither had attended any of the meetings held on the business others considered that
Loft's offer should not be rejected, if only to hasten the conclusion of the matter as, by then, the whole traffic of the canal had come to a standstill. It was further thought that Banks' name would be effective on the petition and he was asked to sign (24).

Meanwhile, Banks had not been idle. On the day before Christmas Eve he wrote to Chaplin to tell him that he had been to the Treasury to enquire into the background of the demand. The Customs had not been particularly helpful but he did learn that for some time the opinion of the Customs was that Tetney was not within the Humber but that they had refrained from applying the duty,

'... being in their opinion a harsh measure ...'
(25)

Why should this have been so, for surely the Customs could not discriminate in this way? Banks pondered the point and drew his conclusion. He reasoned that although coal barges passed through the Customs' jurisdiction at Hull and Grimsby, they stopped at neither. The boats were coming from inland rivers and canals where there were no Customs' officials to note the loading of coal - the coal was, therefore, travelling from the place where it was dug (Yorkshire) to a navigable canal (the Louth). Such a place of loading, Banks reasoned, was not one as mentioned by the wording of the sea-coal duty Acts, in particular that of 27 Geo III. c.32. (the development of this legal argument is considered in the ANALYSIS below). He further considered that the boats
themselves in which the coal was carried fell outside the meaning of the Acts,

'... the word vessel appearing to me as meant to apply to Brigs Schooners Billanders &c that is all smaller vessels not properly ships tho used in the Coasting Trade, but in no Case to Boats or Barges what are not used in the Coasting Trade, tho in this instance they venture 9 miles To Sea from the Humber mouth into Tetney Lock.'

(26).

He also discovered that the present situation had been brought about by an incident sometime in the past when the Hull Dock Company, hoping to be entitled to levy dock dues on vessels from Grimsby, had seized a boat from that port. In the ensuing enquiry, in which John Loft claimed to have taken a leading part, Trinity House and the Hydrographer to the Admiralty judged Grimsby to be within the mouth of the Humber and so free from sea coal duty. However, the case of Tetney had been raised in the discussion and, as Sir Joseph says,

'... it became impossible to avoid noticing it
...

Thus, the whole question became a legal one in which favour had no place and now it had been raised it could not be forgotten,
'... as no man or body of Men appeared to have the power of dispensing wt. it .....

It was at this point that Sir Joseph learnt that Loft had had very little influence on the actual decision arrived at concerning Grimsby, although how he came by this information is not recorded. The decision made for Grimsby was that as the barges coming from that port anchored in the Hawke Roads (see map), immediately west of Spurn Point, it was judged to be within the Humber,

'... Tetney on the other Hand is without or to the Seaward of the Hawke Road [...] if it is possible to convince the Sailors [Admiralty] that Tetney is within the Humber the matter will be no doubt given up [...] if not [...] I see no way of proceeding but a Trial at Law to determine whether the Sea Born duty on coals &c does or does not attach to Tetney Haven ...'

On 28 December Chaplin again wrote to Sir Joseph (27) with some items of evidence which supported the canal’s case. He had obtained a copy of a letter written from Trinity House, Hull, on 13 February 1796. While not stating the essence of the communication, he quoted part of it,

'... that House has always hitherto understood and are now of Opinion that Tetney Haven in
within the Humber and as such within the Limits of the Port of Hull ...’ (28)

He had also been talking to some old men who had been, 'common carriers of coal', ranging in age from 73 to 91 years! They told him that they had brought coals from the coast at North Coats, about a mile east of Tetney Haven, and had never been charged duty. Chaplin hoped that this information would be sufficient for the Lords of the Treasury to, at least, suspend the order for duty for a while until the question was finally settled.

In his attempts to discover the reasons for the imposition of the duty Sir Joseph tried to find out as much as he could as to the past nature of the coal trade in the area, hoping that he might find in that some facts which would be of use in pressing the opposition case. He found that before the Louth Canal had been opened the coals for the district had been landed from sea-going vessels at Saltfleet and duty had always been levied. Banks was of the opinion that these pre-1770 coals had been shipped from Newcastle, so originating in the Durham coalfield, not from Yorkshire. When the Louth opened, for some reason this levy had been dropped. Therefore, the Customs must have been aware of this in 1770. This being the case, Banks considered that it was from the Customs that the answer would have to come. Whether in favour of levying the duty or not, as they must have had all the relevant information gathered together from their former consideration, this should be available somewhere now. Alternatively, he surmised, the Louth Commissioners may have
a copy of the results of any examination on the subject which took place while the Louth Canal Act was in its parliamentary stages as he thought the matter must have been considered then and,

'... if these can be Found [they] will be the best Possible exhibits to the Treasury ...' (29)

By this time Sir Joseph was inclining towards the idea that, on examination, the duty would not be levied, a major reason being that the expenditure of the money involved in the construction of the Louth had been made on the good faith of the undemanded duty. Also, he thought, and here is a different view from that popularly taken of the late 18th century 'excise men', that the,

'... Board [has] ... at all times ... shewed itself inclinable To lighten the burthens of the Subject ...' (30)

For all the help that Sir Joseph was attempting to give the Louth he was aware that he was creating within himself a division of loyalties - on the one hand there was loyalty to the benefits of the county as a whole and, on the other, loyalty to the waterway which, after the Witham, was to him of the greatest personal concern - the Horncastle. As the towns of Horncastle and Louth are only about 10 miles apart, the coals which were brought to each by their respective waterways were sold in areas close to one another and,
according to Banks, the Louth coals were selling within 3 or 4 miles of Horncastle. The coal being brought to Horncastle from the Yorkshire pits was following inland navigations all the way and was not subject to sea-borne duty, but it was subject to the tolls of at least three other canal companies, the Trent, Fossdyke and Witham. With Louth coal then free from all duty except that imposed on the Louth Canal itself it was able to sell at a lower price than that brought up to Horncastle. Banks considered that the exemption from the sea-borne duty which the Louth enjoyed was an advantage which, in justice, ought to be done away with as the sea duty, then 6/- a chaldron, would make Louth and Horncastle coals about the same price in their common market in which they were both selling. However, despite the effect this lack of duty was having on the Horncastle’s trade, he was still prepared to do all he could for the Louth in their fight to obtain the benefits of exemption, if such were justified.

Throughout all this time Banks had been communicating with Charles Chaplin but he had been passing on Banks’ opinions to his brother, George, the Louth lessee and Banks would seem to have had some correspondence with him also, but this has not been found. On 20 February George passed on to Charles Banks’ idea that an engineer ought to be employed to ascertain the exact position of Tetney Haven in relation to Spurn Head, as this could be of some value in their case. George’s opinion of the Customs was not Banks’. He noted that the Board’s lawyers were unanimously against the Louth Commissioners but he was,
Sir Joseph had suggested to George Chaplin that an Act of Parliament securing a freedom from coal duties for Louth would be the only secure remedy to prevent further trouble, an idea which had been already made to Banks by Charles Chaplin (33). George agreed with this and he did not anticipate any difficulty in meeting the costs of such a move but, he cautioned, would not the action of applying for an Act, though probably the best thing to do, be admitting a great doubt on the part of the Commissioners as to being free of the duty?

About a week later Banks wrote to the Board of Customs in Montagu Street, London, requesting them to send him a copy of their report to the Treasury on which they would be basing their case (34). He did this, he claimed, in order to enable matters to be settled as speedily as possible. Accordingly the Customs replied (35), but only to say that they were awaiting the report from Boston and, in the meantime, all duties at Tetney were suspended. They also informed him that their solicitors had said that the duty was legally due and that they could not take into consideration any mitigating circumstances, such as the non-application of it for such a long time.

That the Customs were waiting for a report from Boston is of great significance, as is the fact that at the beginning of the business it had been William Brand, the Customs'
Officer at Boston, who had written to the Louth Commissioners telling them that they were liable for duty in addition to informing the Hull Customs. This significance became apparent to Banks when he received the report of the surveyor who was ascertaining the positions of the locations involved in the dispute. From this and other details which he had received, it was obvious the Louth Commissioners' argument had been somewhat weakened. It had been found that before 1739 the port of Boston, at least as far as the collection of duties was concerned, extended from Cross Keys (midway between Long Sutton and King's Lynn) to Clee Ness, near Grimsby. Therefore, Boston included the port of Spalding, Fosdyke, Wainfleet and as far north as Saltfleet. The port of Grimsby extended from Clee Ness to the, 'south side of the Humber', while the port of Hull extended from Hull and along the north side of the Humber Estuary. However, Grimsby was considered as part of the port of Hull for duty purposes.

When the Louth Canal was opened and Tetney became the port no duty was charged. Banks thought that the reason must have been that the coal was not, 'waterborne for the Purpose of being Shipd ...', as was stated by the Duty Acts.

From the results of the survey which had been undertaken to find the location of Tetney, Banks was told, as he could see for himself on the map, that,

'... Tetney Lock is Bonefide to the Eastward of the Spurn & therefore on the Coast & without the Humber ...' (36)
In other words, it was part of the sea as far as the Acts were concerned.

The final blow to the Louth case came with the discovery that the port limits had been changed in the past. Again, this occurred in 1739 when an Exchequer Commission defined the dividing line between the ports of Hull and Boston as a line from Spurn Head to Clee Ness (37). Before that both Tetney and Saltfleet, being north of Grainthorpe, had been in the port of Hull (38). With the Commission decision Tetney became part of the port of Boston. Thus, Banks found that there were two overwhelming arguments for the imposition of duty; that Tetney was geographically in the North Sea and that coals coming to it were, therefore, sea-borne and were being taken from 'port to port'.

With this revelation came the report of the Customs which summarised their case. Sir Joseph kept a copy of this and probably passed the original on to the Louth Commissioners. The Customs said,

'... The Navigation to Tetney was opened in the year 1769 but no question respecting any liability of duties appears to have arisen till the year 1796.

In that year the matter was first submitted to the Board by the principal officers of Boston but for some cause which they are not now enabled to ascertain, altho' special enquiries have been made for that purpose, no directions were then given on the Subject, the duties were
therefore never demanded at Tetney untill the
Recent Representations to us when the same
appearing to us to be Legaly due we directed the
Payment thereof to be Enforcd.' (39).

Significantly, this is dated 8 March 1810 and seems to show
a lack of interdepartmental communication at the Board of
Customs.

Yet, even as Banks received this document, the Louth's case
had been won. Going back a few months, a petition to the Lord
Commissioners of the Treasury against the imposition of duty
had been prepared by the Louth proprietors and signed on 14
December 1809 (40). Also, Charles Chaplin had used his
position as one of the Members for Lincoln County to gain the
ear of the Prime Minister, Spencer Percival, who directed
that a full enquiry should be made (41). This appears to have
been done but by March the decision was still in doubt. On 2
March the Board of Customs wrote to Banks saying that they
were still awaiting the report from Boston; on 3 March James
Green, the Secretary to Trinity House, wrote to the Louth
Commissioners' solicitor, William Wilson, that it had been
agreed that Tetney was within the Humber and so not subject
to duty (42). Thus, not only was the Louth Canal freed from
the payment of such coal duties but they also received back
all those which had been collected up to that time (43).

The Louth Commissioners probably could not believe their
good fortune and it is disappointing that the reasoning
behind the reversal of what seemed to be a foregone conclusion has not been preserved. This change of mind at the last moment is reminiscent of the final days of the Sleaford Navigation Bill. On that occasion Banks surely played a significant part 'behind the scenes' and perhaps here a similar thing occurred. That the Commissioners were grateful is recorded in their minutes. As an undated preamble to a copy of the petition which was presented to the Treasury Commissioners in December 1810 there appears the following. From the wording it is obvious that it was written after success had be achieved.

'... On that occasion the following petition was presented to the Right Honorable the Lords Commissioners of His Majesty's Treasury when the Right Honorable Sir Joseph Banks, Baronet, and Charles Chaplin ... by their united exertions prevailed on their Lordships to direct that his Majesty's Commissioners of the Customs should order that the duties above mentioned be forborne and the same was accordingly forborne ...' (44).
The Louth Canal was Sir Joseph’s earliest connection with canals, in an official capacity, apart from the Witham. He was appointed a Louth Commissioner at the age of 25 and this was as a consequence of his landholdings and social position and not because of any national importance he may have had, for the Australian voyage had not yet been undertaken. Even so, the canal had been in operation for some four decades before he became involved in any major way.

In the early 1790’s Banks helped to solve some problems concerning water supply on the canal and in this he worked with a John Loft. Sir Joseph did not get on well with this man then or later and in the sea coal duty controversy he continued to give Loft a cool reception.

Loft claimed to have a great knowledge of the history of the Humber estuary, its limits, boundaries and charters, and it had been thought by the people of Louth that he could be of immense value in any possible legal battles which were to come. The inhabitants of Louth and the proprietors and Commissioners of the Louth Canal could not have known of the insignificant part he was later stated to have performed in obtaining the relief of Grimsby’s coal duty - they assumed that what he could do for Grimsby he could also do for Louth. However, as has been mentioned, Banks had been informed of what was considered to be the true contribution made by Loft. He probably passed this on to the Louth people and this would
account for the reception Loft had received from the town when, expecting a warm reception from those he had come to aid, the reverse was the case. In the event,

'... Having resided here many years of my life, first by receiving a several years Classical Education in this town [Louth]; it was hardly to be supposed that the people would entirely pass me unnoticed, particularly when I had come several miles at their own solicitations to attend their meeting ...' (45)

Banks decided to convey to Loft the reason for the reception he had received. This letter reveals an interesting aspect of Loft's character, as Banks perceived it, and Banks' reaction to it. Banks is particularly forthright and this may be understandable for, with the water supply episode in mind, Loft may not have been an easy person with whom to be associated. Sir Joseph may have had a distaste for him yet the letter he wrote remains extremely civilised. Yet, in the correspondence with George Maxwell and that concerning Robert Langton Bankes, snr. similar statements are found. For that reason it is worth quoting the letter in full.

'No declaration of mine which has been Reported to you has indeed been much misrepresented. What I have always said on the subject is that I declind being joind with you as a Colleague in Soliciting Relief for the Town of Louth but that
in my individual Capacity I would neglect no effort to Serve them [.]. Whether I have been diligent in Pleading their Cause at the Treasury & the Customs House Mr Chaplin member for the County will tell anyone who chooses to enquire of him when he comes back.

The Reason why I declind acting in Concert with you on this business is because you not only assumed to yourself the whole merit of Relieving the Town of Grimsby from the Novel Demand made upon them by the Customs but also calld upon the members of the County to declare that they had no share in Obtaining the Exemption which I am of opinion was granted in Consequence of Reports given by the Trinity house of London and the [illegible] of the Admiralty & not in Consequence of any Reliance the Board placd in the Aparent Record you brought forward by you ?which industry the whole merit of which however I am most Ready to allow you [.]. I therefore concluded that if you & I acted together & the business was done that it would be likely you could have claimed a greater share of the merit than I should be inclind to allow to you for Little as I have been ?inclind to claim merit for any Public Service I should not like to see another make claim to gratitude due to myself.

having Said this much Sir in the Explicit
manner I on all occasions wish to make use of I conclude you will see that the Town of Louth need not be deprived of the assistance which your knowledge of the antiquity of the Humber may be able to afford them [.] if you sir will do them all the good you can on such points as you are best able to manage I will do all I can in anyway [.] all I require is that we act separately & not in Conjunction’ (46)

This is a difficult episode to evaluate as all the evidence against Loft is contained in Banks’ statements. We do not know independently what he claimed and whether it was true, in total or in part, or false. We do know that, having been invited by the people of Louth to help them, Sir Joseph got him sent away again. John Loft does not seem to have have any further contact with Sir Joseph after this!

In order to appreciate what was being disputed a discussion of the sea-borne coal duty legislation can be considered essential and it will illustrate what Banks and his associates at Louth were contending with legally.

The earliest duties were imposed during the reign of Elizabeth 1, when 1 Eliz.1. c.11 directed where merchandise should be landed and customs paid. The first Act specifically to deal with coal was 8 Anne c.4 in which all coals shipped, or waterborne to be shipped or laid on board any vessel to be carried by sea from any port to any port in the United Kingdom was to be taxed at 3/- a chaldron. By 9 Anne c.6,
section 6 stated that security was to be given to the Officers of Customs in the respective ports from where the coal was shipped. 9 & 10 William III. c.13., section 6, placed the duties on coastwise-carried coals under the management of the Commissioners of Customs, while section 7 stated that the duty payable to the Collector of Customs must be made before the bulk of the cargo was broken. It was one of the arguments against the Louth's case brought forward by the Board of Customs that the provisions of this Act had been repealed but the Louth Commissioners maintained that 49 Geo.III c.98. re-enacted all this Act. This is the case for, while making additional duties payable on coastwise coal traffic, this Act, 49 Geo.III. c.98, did not repeal the former one as section 5 states that all Acts relative to the revenue of Customs were to be applied in the execution of that Act where they were varied, and here there were no variations with respect to coastwise coal.

In each of these Acts the terms 'ship' and 'vessel' are used and this wording would seem to imply that only those such as were built for, and capable of, sustaining sea voyages were meant. 8 Anne c.4. uses the wording,

'... laid on board any Ship or Vessel to be carried by Sea and which shall be carried by Sea in any Ship or Vessel from any Port or place within ...'

and this would seem to confine the regulation to ships or vessels built for the sea. If barges or keels, such as
navigate rivers and canals, had been meant, the wording of
the Act would have been more likely to read,

'... Ships, Barge, Boat, Lighter, etc, or other
vessel ...'

22 Geo.11. c.37, 'An Act for better securing His Majesty's
duties arising upon Coal, Culm and Cinders exported beyond
the Sea ...' again uses the wording 'Ship' and 'Vessel',
implying sea-going vessels.

15 Geo.111. c.27. implies that on and after 5 July 1775
only those coals landed on some,

'... Staith, Wharf or other place ...'

with an intent to be reshipped on board sea-built vessels,
and actually so laid, to be carried abroad or coastwise,
should be liable for duty.

27 Geo.111. c.13., section 2 raised the duty on coal to
5/6d. a chaldron, while 27 Geo.111. c.32., section 21 noted
that doubts might arise concerning the meaning of some
passages in 27 Geo.111. c.13. This was clarified by the
statement that duties on coals brought coastwise within Great
Britain should be charged and paid on all coal which should
be shipped or waterborne in order to be shipped or laid on
board any ship or vessel to be carried by sea. From this it
would appear that barges were not meant but only sea-built
vessels, such as Newcastle colliers, which were actually
loaded for, and carried, coastwise by sea. Section 22 of this
Act authorises the importer of coal to secure the duties on it by Bond, to be paid within 16 days to the Collector. It would seem that such an allowance of Bonding would imply vessels with large cargoes and would be unlikely to be applicable to such small cargoes as were delivered from a barge which would, on the Louth, have been unlikely to exceed about 30 chaldrons.

Of greatest importance to Sir Joseph's opposition to the duty would have been 13 & 14 Geo.11. c.11 which reinforced 1 Eliz.1. c.11 by appointing Collectors of Customs to reside actually at the port of collection. Commissioners were appointed to designate the extent of the limits of every port but no Customs' officer was ever appointed to reside at Tetney or, in fact, any further north along the Lincolnshire coast than Grainthorpe Haven. In 1810 a Mr.Mails was Collector there and, at Saltfleet Haven, south of Tetney, the Collector was a Mr.Sanderson. It would seem that some commission had fixed the sea coast boundary at Grainthorpe and it was noted by William Wilson, Clerk to the Louth Canal that,

'... it is rumoured that there was a long time ago 9 Commissioners came to Saltfleet & that 5 were for Tetney haven being part of the Humber ...

(47)

This appears to have been the basis on which Sir Joseph and Charles Chaplin fought the case of the Louth Commissioners for duty removal but Banks probably realised that their case
was not a good one.

In two respects his stated position seems to fall. In the first, the attempts to arrive at a definition of the term 'vessel' were somewhat spurious for surely the term was meant to imply just what it said, any 'vessel' and trying to differentiate between different types was to embark on an erroneous course if it was not linked to the problem of defining what was the 'Sea'. This was critical to the argument and here was the second failing, as expressed by Sir Joseph himself in his letter to Charles Chaplin of 19 December 1809 (see note 26) when he stated,

'... but in no Case to Boats or Barges what are not usd in the Coasting Trade, tho in this instance THEY VENTURE 9 MILES TO SEA from the Humber mouth into Tetney Lock ...' [author's emphasis]

By making this statement Banks shows himself as realising that Tetney was not part of the Humber and that the coal barges coming to it must be classified as 'sea-going vessels'. With this perception of the argument, he probably began to operate out of the public eye and to exert his influence in having the duty removed, realising that his legal case was uncertain.

Of how much use was the influence of Banks and Chaplin? While the contribution made by each individually cannot be assessed, it must be said that it was considerable considering the poor geographical case which the Louth
Commissioners had. The result of this influence (or, rather, persuasion, as Banks was not making them do something which they did not consider was correct) can be seen in the course of events of early March 1810. On 3 March James Green, Secretary of Trinity House, wrote to the Louth Commissioners agreeing that Tetney was not in the Humber and, therefore, not liable for duty but, in the preamble to the petition written after the duties had been removed, and presented to Banks in gratitude for his help, the Louth Commissioners said,

'... the ... duties above mentioned have been FOREBORNE ...' [author's emphasis]

From this statement, an exemption, or dispensation, from paying the duties is obvious. The duties were seen by the Customs as legitimate and, while they were not abandoning their claim, they believed that in the current situation it was injudicious to pursue it.
Grantham lies on the western border of Lincolnshire with Nottinghamshire. The skyline is dominated by the spire of St. Wolfram's church located beside the old turnpike road from London to York. This church has hardly changed since Sir Joseph's day and although the town itself has grown somewhat he would probably still recognise the main street with its famous 'Angel and Royal' inn. The town lies on the banks of the Witham about 12 miles north of its source near South Witham.

In 1790 the natural drainage of the area west of the town was reasonably simple. Rising near Harlaxton and flowing north was the Mawbeck river. After about 2 miles it met a tributary coming in from the north and both turned towards the north-east to meet the Witham at Grantham 3 miles further on. The Denton Brook rises near the village of Denton (1) and follows a northerly route for 8 miles to join the Witham near Manton. One major tributary joins the Denton Brook at Sedgebrook.

Just west of Denton is the watershed of the two drainage systems of the east Midlands, the Witham to the west and the Trent to the east. The River Devon drains to the Trent, flowing northwards for about 15 miles from near Harston to Newark. Belvoir Castle, the seat of the Dukes of Rutland lies near its course.
In about 1768 an improvement to the Witham between Grantham and Lincoln to give water traffic access to the Trent via the Fossdyke Canal was suggested and this was followed in 1771 by a survey of the Witham and Brant rivers by John Grundy. Lincoln Corporation met the expenses of this survey, the intention behind which was to build a canal from Grantham to the Trent at Newark (2). The estimated cost was under £30,000 but nothing came of these proposals.

On 16 August 1791 a meeting was held in the Guildhall, Grantham, to consider making a canal from that town to the Trent (3) but this time following the general line of the Vale of Belvoir (4). A further meeting was agreed for Monday, 24 October, when the proposals could be put to the landowners, farmers and millers with premises on the streams and rivers which crossed the line of the proposed 'Grantham Canal'. The general line of this waterway was from Grantham westwards through the Vale of Belvoir to meet the Trent at Holme Pierrepoint, near Radcliffe-on-Trent. The choice of engineer to survey the line fell to William Jessop who lived locally at Newark.

In 1789 the Cromford Canal had received its Act and this coal-carrying canal linked with the Erewash Canal, which also served a coal-mining district, at Langley Mill. The Erewash met the Trent at Nottingham. There was a fear that other collieries some distance from that line would lose business as they still had to move coal by road. It was argued that these mines could be served by another canal running from Langley Mill to meet the Trent further downstream than the
Erewash. This proposed 'Nottingham Canal' had its promotion meeting on 26 October 1790 and it was the coal which the Nottingham was to carry which prompted the promotion of the Grantham. Richard Ellison informed Banks of the economies of a water-borne coal trade and its position compared with overland carriage. He said that vessels would not be navigated on a 'Grantham Canal' for less than 1d. a mile and he assessed the tolls on the intended canal at a penny-halfpenny a ton which, over the proposed 30 mile length, meant that a ton would cost 6/3d. At that time coal was costing 8/4d. a ton at Grantham and so a cost difference of 2/1d. would be produced in favour of the canal (5).

The Witham General Drainage Commissioners were interested in the Grantham Canal project as two of the rivers on the line of the proposed canal, the Mawbeck and Denton, fed into the Witham. At their meeting held on 22 September 1791 (6) the Commissioners asked Sir Joseph to act on their behalf in all matters relating to the effects of the proposed works. Their concern had been aroused as they had heard, possibly by rumour, that the Mawbeck and Denton were to be tapped to supply the canal.

In response to the Commissioners' directions Banks wrote to a close acquaintance and promoter of the canal, Lord Brownlow, of Belton House near Grantham (7) to whom he explained their anxieties. The Commissioners were concerned not to lose any of the water of these Witham feeders as they aided the scouring of the Witham at the Grand Sluice and without that remaining efficient the drained lands of the
SKETCH of the RIVER WITHAM from its source near SOUTH WITHAM to LINCOLN and of the Streams communicating therewith in its Passage 1792.
lower Witham valley would be in danger of inundation. The Navigation Commissioners were also worried about possible effects on water levels for navigation and, for a similar reason, Banks could foresee opposition coming from the Horncastle and Sleaford Navigations who were then applying for Acts. He also informed Lord Brownlow that many landowners along the Witham, who had received with their property a right to the water which ran through it were worried about the possible effects, as were the Corporations of Boston and Lincoln.

Sir Joseph himself proposed to remedy the failings of the promoters' plan as he saw them by a revision of the 1768 proposal. The Witham would be improved from Grantham to Brayford Pool, Lincoln, and then use made of the Fossdyke Canal to the Trent. In this way no Witham-feeder rivers would be affected (8) but he failed to take into account the reasons why the Grantham Canal was being promoted and these Lord Brownlow pointed out in his reply,

'... The advantages you state of the River Navigation wou'd not be such as you imagine to us, for our principal Import being Coal & our Export Corn & Malt our Trafick must be to the Westward; and, as the present is an opportunity of joining with an adjacent County, wch will be wonderfully benefited by Water conveyance, I flatter myself that the Town of Grantham has done wisely to embrace it ...' (9)
The public meeting called for Monday, 24 October at Grantham's Guildhall was well attended. Lord Brownlow was there as was William King, canal engineer, and the guardians of the minor Duke of Rutland (John Henry Manners, 5th Duke, 1778-1857), one of the main landowners through whose estates the canal was to pass (10). The connection with the Nottingham Canal was there in the person of a Mr. Boswick, the agent for Lord Middleton. Sir Joseph did not attend but Richard Ellison did.

The decision was made to apply to Parliament for an enabling Bill for their chosen line, not Banks' alternative, but the fears of the Drainage Commissioners were quietened when the resolution was adopted

'... That it is not the intention of the Promoters of the said intended Navigation to intercept the River Witham, or any of the Streams communicating therewith ...'

(11)

According to William Jessop's recommendations the water supply for the canal was intended to be taken from the River Devon which flowed to the Trent, not the Witham but the owner of the Devon water stipulated that it should not be diverted into the canal in summer. Therefore, the whole supply of the canal would depend on a reservoir to be located at Knipton and to be filled by the Devon's flood water.

The meeting appointed a committee of management under the
Chairmanship of a local landowner, George de Ligne Gregory, with David Lely as Solicitor and Joseph Lawrence, a banker, as Treasurer. This committee had endorsed the resolution of not intercepting the waters of the Witham or the streams feeding into it but Banks told them that such a clause must be inserted into the proposed Bill to give this assurance legality. This was agreed and all seemed ready for a smooth and speedy passage of the Bill through Parliament.

The fine response to the canal proposal demonstrated by the meeting heartened the promoters of the Nottingham Canal who, at a public meeting held the following day, also agreed to apply for their Act. Sir Joseph wished the Grantham Canal well despite his suggestion for a different route having been disregarded for as long as the Witham's interests were safeguarded he saw that the canal could only be advantageous to the region as a whole.

The action in the business now passed to London where, on 19 March 1792, the Grantham Canal Bill was presented to Parliament (12). Two days later Sir Joseph wrote to Gregory of the Grantham committee, to see the Bill through its course. Banks had seen a copy of the Bill as presented and noted,

'... a material difference between the Printed Bill and the resolutions of the 24th. Octr. ...'

(13)

The 'difference' was that the protecting clause for the Witham and its waters was not there! (14). When they met
Gregory said that he had not seen the printed Bill and that he was surprised by the omission but he could offer no explanation for it. While they were talking Mr. Lely arrived with Mr. King, the engineer for the proposed canal, and King told Banks that the clause had been deleted during the draft Bill’s preparation by Lord Harrowby. The Harrowby lordship lay immediately east of Grantham and Lord Harrowby (Dudley Ryder, 1762-1847) was a promoter of the canal but took no shares either in it or the Nottingham Canal. He seems to have been in a similar 'sponsoring' position as Banks had been, for example, during the Sleaford’s promotion and while not a member of the Grantham committee, he was sufficiently powerfully placed to order this removal unilaterally. The reasons for Lord Harrowby’s action are obscure. Motives put forward at the time ranged from a desire to obtain enough water for the success of the proposed canal (15) to wishing to cause confusion within the Grantham constituency for political reasons (16). Whatever Lord Harrowby’s reasons, Sir Joseph was astonished by what he had done and warned that if the clause was not reinstated he would inform the other concerned interests in Lincolnshire and organise opposition to the Bill’s passage. Both King and Lely left to consult with Lord Harrowby but nothing further was heard that day.

The following day William King called at Soho Square to say that Lord Harrowby would not reinset the clause. This was the final straw for Banks,

'... I told them we must be either at Peace or war & that unless the Grantham people agreed to
join with us against Ld. Harrowby we must consider them as Enemies ..." (17)

With the Witham's interest in jeopardy Sir Joseph decided to approach Lord Harrowby direct and so called at his house. His lordship's explanation for his actions was that he did not have a high opinion of Jessop's ability as an engineer and that he did not believe that flood water alone could supply the canal. Therefore, the waters of the Denton and Mawbeck were essential. He further asserted that he was not bound by any Grantham committee protecting resolution anyway though Banks was not to learn the reason for this opinion for a little while. Now knowing his lordship's position Banks left, probably bewildered as to the reason for his last assertion and considering the possibility of mounting an effective opposition in Parliament.

Sir Joseph informed the Witham Commissioners of these events and they agreed that petitions against the Bill should be prepared for Banks to present when he thought it necessary. John Linton summarised the feeling against any possible water loss thus,

'... Whatever is worth their while to contend for must be worth ours to retain ...' (18)

At about this time the Grantham committee met in London and they sent Banks a copy of a resolution which reaffirmed their commitment not to take the waters of the Witham or its communicating streams and that they intended to admit the
protecting clause in the Committee of the House (19).

Confirmation that Lord Harrowby had acted without the knowledge of the Grantham committee came to Banks from a Lincolnshire contact, Sir John Thorold, MP for Lincoln County. Offering information which he thought might help Banks defend the Witham interest he said that he had been talking to a Mr. White, the head of the law firm which had prepared the Bill, and he had confirmed that it was Lord Harrowby who had caused the clause to be removed. He had also been told that Lord Harrowby was being supported in this opposition by the dowager Duchess of Rutland.

As there now appeared to be confusion in the promoters' camp, with the nobility pressing to take Witham feeder waters while, at the same time, the Grantham committee were reaffirming their 24 October resolution for protection, Banks decided to act on the Commissioners' instructions and began preparing the opposition case for presentation to Parliament. To gain himself some time he made efforts to have the Commons' Committee meeting considering the Grantham Canal Bill postponed until the week after Easter [Easter Day was 8 April] and his friend, Lord Sheffield, negotiated to this end on his behalf in Parliament. A postponement until Friday, 20 April was agreed.

In the additional time Banks made a direct approach to the dowager Duchess of Rutland through an acquaintance, Lt.Col. R. Manners, in order to discover why she was so in favour of the water extraction (20). Through Manners he was informed that the Duchess was firm in her opinion (21) and that Lord Harrowby's solicitor, Joseph Hill was having a great
influence over her views,

"... She seems solely actuated throughout the business with an earnest desire to promote the Duke's interest though I am sorry that to promote that she seems entirely governed by Mr. Hill's advice in whom she has the most thorough confidence ..." (22)

She believed that she had a right to the water of the feeder streams as part of their courses ran through the Rutland estates and her opinions were further hardened as her late husband (Charles, 4th Duke, 1754-1787), had been an early advocate of this plan. She refused to meet Banks personally and Colonel Manners could only account for this by her opinions being so directly opposite his and that,

"... she thinks her duty to her growing family obliges her to maintain the one she has formed ..."

When this was explained to him Sir Joseph appreciated fully her position,

"... I cannot wonder her grace is very tenacious of [her] view or feel any surprise that she refuses all communication with a Person whose interests and opinions make it necessary for him to thro[w] Obstacles in the way of her Favorite
Plan ...(23)

When further correspondence failed to win over the Duchess, Sir Joseph abandoned the attempt to change the mind of the Manners' faction.

Banks' opposition argument appeared in a printed 'Case' which discussed the general situation up to the Grantham meeting of 24 October 1791 and the passing of the protecting resolution (24). It mentioned the drawing-up of the Grantham Canal Bill and the insertion of the clause, so showing the implementation of the resolution. Before it could be read the clause was removed without, he claimed, the knowledge or consent of the Grantham committee. He was very careful not to accuse anyone directly but he had received information from Lincolnshire which permitted him to suggest another motive for this. What he had heard was that the agents of the Duke of Rutland's estates, who had an interest in the River Devon's waters, were to have undertaken to supply the canal from this stream by means of the Knipton reservoir. However, the millers on the Devon had become alarmed at their possible water loss and were to present an opposition to the Bill in Parliament. The agents had to find an alternative to the Devon to prevent this and now wanted the water from streams which fed the Witham. They were hoping that the owners of the Witham's waters, who had been lulled into a false sense of security by the 24 October resolution, could not be contacted in time to present an effective opposition in Parliament. Sir Joseph noted what he considered to be the open and honest conduct of the Grantham committee and thought that
they had nothing to do with the subterfuge.

The opponents in Lincolnshire had also been busy and had prepared six petitions for presentation (25) and Banks now judged it the right time to present that of the Witham Commissioners' and this he duly did. He felt disquiet about the way events were moving and about the insecure status of the feeder waters which he was sure would be experienced by other,

'... Creditors of the Drainage and Navigation trusts, who have, under the Faith of Parliament, invested more than 60,000L. in these Undertakings, were aware of their danger, they also would have petitioned; but, being dispersed over the whole kingdom, they are unapprised of the unhandsome attack what has been so suddenly made upon their property ...

William Jessop supported Sir Joseph against this new interest and prepared a printed paper (26) to vindicate his position, for the attack was being made as much against him and his proposals for supplying the canal solely by floodwater as against the owners of the Witham waters.

The unsatisfactory position prompted Banks to write to Gregory (27) on 19 April requesting a member of the Grantham committee be available for questioning in the Commons' Committee examination which was to begin the following day and so put on record the correct version concerning the striking-out of the protecting clause. This Commons'
Committee meeting proved to be a revelation for it seems that the Grantham group itself had blundered over the clause. While it had been agreed in principle at the 24 October meeting the actual wording was composed by a few members of the Grantham committee who did not form a quorum and, at no time after that, had a sufficient number of that committee assembled to ratify the wording. Therefore, it had been improperly inserted into the Bill and there was nothing to prevent other interests, such as Lord Harrowby, removing it. This was the reason why Lord Harrowby had asserted that he was not bound by any Grantham committee protecting clause. The whole incident also raised doubts in Sir Joseph's mind about the Grantham committee's non-complicity in the action. Due to this improper preparation the Commons' Committee directed that the Bill be withdrawn but gave leave to present another. So, the first Bill was withdrawn on 20 April (28) and re-presented on 23 April (29).

When the re-presented Bill came before the House it did so still without the protecting clause as some supporters, led by Lord Brownlow, had begun trying to arrive at a compromise with the Witham General Drainage Commissioners before the first Bill went to the Commons' Committee on 20 April. At their meeting on 19 April the Commissioners had suggested such a compromise which they immediately passed to Banks in London and he, in turn, informed Lord Brownlow. The compromise allowed,

'... the undertakers of the Grantham Canal to make reservoirs for floodwater upon the Denton
Stream and the Maw Beck provided they are supplied with a constant summer run of water equal to the median run of the summer months ...’ (30)

This compromise was made on the condition that the protecting clause remained in force in all respects.

Thus, a modification to the Bill to suit all parties seemed to have been arrived at but, hearing nothing further, Banks became anxious. The Bill was before Parliament and was due to continue its progress in a few days; in fact, the next meeting of the Commons’ Committee was set for 4 May, the final day on which petitions could be presented.

Sir Joseph saw Lord Harrowby on the morning of 4 May and some conversation of an inconclusive nature passed between them but his lordship held out some hint of hope as Banks waited at Soho Square expecting some word. None came, so he wrote a note to Lord Harrowby to the effect that as he had not received a single assurance from either of the parties supporting the Grantham Bill that the clause would be admitted, or his proposals accepted, he was personally presenting the petitions against the Bill once again to the House (31).

Although there is no documentary evidence for what actually occurred a major shift in the supporters’ position took place during the next few days for during that time Lord Harrowby’s opposition was suppressed. Both his and the Rutland influence seems to have been resisted and overcome by the committee. The acceptance of William Jessop’s assurances for a
canal fed by floodwater alone and Banks’ transmission of the Drainage Commissioners’ compromise was probably seen as the best solution to a difficult problem and one which would ensure that the Grantham Canal Bill passed. So, on 7 May the supporters suggested a new clause which provided that no water should be taken from the Denton except floodwater for filling a reservoir. This was satisfactory to Banks and the waters of the Witham seemed secure.

Then, about this time, the basis of the opposition to the Grantham Canal Bill changed. Before it had been led by the Witham General Drainage and Navigation Commissioners and the landowning interests on the lower Witham in the person of Banks. He knew that Lincoln Corporation was opposed to the Bill (32) and they were now joined by the town of Newark. These towns’ opposition was that the water supply to them would be adversely affected by Jessop’s plan being carried into effect. They favoured Banks’ original proposal for a canal along the Witham and Brant rivers and then using the Fossdyke to the Trent. Despite Jessop’s assertions that the towns would not suffer by the removal of flood water the opposition again carried the Commons’ Committee and, on 11 May, the Grantham Canal Bill was withdrawn for a second time (33).

Throughout the following summer the promoters rallied their forces, and their finances, to make another bid in Parliament. David Lely, the promoters’ solicitor, called a meeting of subscribers at the ‘George Inn’ at Grantham on 13 July 1792 (34) to settle the expenses incurred in their aborted attempt and, while the exact figure is unknown, Banks
does say that it was,

'... said to have cost them £2,400 ...' (35)

The first direct mention of an intention to make a fresh application for a Bill appears in a notice in the 'Lincolnshire, Rutland and Stamford Mercury' of 28 August which referred to a subscribers' meeting held the previous day and also noted a change in the proposed canal's line. Instead of meeting the Trent at Radcliffe (Holme Pierrepoint) Jessop had moved the exit upstream to West Bridgford (Trent Bridge) opposite the mouth of the Nottingham Canal. In this way can be seen how the promoters of the Grantham Canal saw the Nottingham as being to its advantage. Further, a collateral branch was to be built to run from Cromwell Butler to join the Grantham at Bingham (36).

A formal notification of the resolutions of the 27 August meeting to renew the application was sent to Banks (37).

George de Ligne Gregory was no longer Chairman of the promoters, the position having passed to the Rev. Philip Story. Gregory remained on the committee but he perhaps felt that having been Chairman during the passage of two unsuccessful Bills the mantle of responsibility would fit someone else better. Story wrote to Banks on 5 November to say that the renewed application was to be made on the same terms as were agreed by Sir Joseph before save only for the change of line. The promoters desired,

'... The Favor of a Line expressive of your
concurrence in this Measure directed to me ... will be considered as an additional Obligation not only by the subscribers at large but also by [me] ...’ (38)

Banks replied, stating his approval of the scheme, with the usual reservations; that no flood water was to be taken from the Witham except from the Devon stream, as before agreed. Soon after a draft copy of the protecting clause was sent to him to which he again agreed (39). He did note, however, that the acreage of the Denton reservoir had not been entered and he wanted the word 'Brook' in a reference to Denton waters substituted for 'Streams', a term which he considered carried too great an interpretation as it might imply an agreement to the diversion of other streams as well as the Denton.

There things rested over the Christmas period after which Sir Joseph returned to London where the minutes of a joint meeting of the Witham Drainage and Navigation Commissioners held on 19 February 1793 were sent to him (40). At this meeting Lincoln Corporation’s parliamentary agent, Mr. Bell, produced a clause which purported to be one to be inserted by the supporters into the new Bill which allowed the promoters to take water from the Denton, the amount to be ascertained by a survey conducted in mid-summer when the level was very low. The Commissioners were concerned about this and asked Banks to give his attention to it when it came before the House. The meeting had also resolved to prepare a petition,
'... against as much of the said Bill as infringes on the Rights of this Trust ...'

which was to be presented by Sir Joseph if and when he judged the time propitious.

The preparation of a petition implied an objection to the Bill and this Banks could not understand, for the clause respecting the Denton did not differ in any major respect from that which the two Trusts had agreed the previous year. Yet, according to the Commissioners, it did. In the previous Bill, so John Linton said, the amount of water which was to pass into Denton reservoir was to be regulated according to the average quantity of water in summer. However, the new Bill, he claimed, while still limiting the time for calculation to mid-summer, stated that if any rain occurred the view should be postponed and it was to take place only if the weather was really dry. So, the quantity of water to be calculated as 'average' was to be that of the driest part of the year – all other was to be counted as 'flood' and so could be diverted legitimately into the reservoir. Linton remarked,

'... On the whole, we are decidedly of opinion that a watchful attention should be paid to the Granthamites ...' (41)

When he replied Sir Joseph explained the difficult position in which he now found himself as a result of the
Commissioners not having read and interpreted the new Bill correctly (42). In the old Bills the average quantity of water was not to be calculated on a view taken at a time when there had been a recent fall of rain but no provision had been made against taking the average when an unusual drought may have affected it. In the new Bill an equal provision was being made against both circumstances so that a more accurate calculation of the average product of the springs feeding the Denton during the three appointed months of May, June and July could be made. Banks saw this as not materially affecting the original protecting clause which the Commissioners had considered a good compromise (43). Sir Joseph had told the Grantham proprietors that he believed that the Commissioners were satisfied with the new Bill,

'... and I feel myself in a scrape if the Commissioners chuse to oppose now what they agreed to last year ...' (44)

He just could not understand their opposition for the amounts of water they were concerning themselves about were trifling when compared with the whole flow of the Witham. This had been demonstrated by Jessop the previous year and Banks stated the fact that,

'... [if] the whole water of their reservoir, should present itself at the grand sluice all at once, [it] cod. not ... be more than five minutes passing through in flood time ... (45)
Banks assured the Commissioners (46) that the basis of their objection was unfounded and they agreed, declaring that,

'... it now ... appears not only to be unnecessary but also inexpedient to present the petitions which were sent to you ...' (47)

On 2 March the Grantham committee met to discuss Lincoln's opposition and they agreed that if Lincoln persisted in its case, they would settle the amount to be removed from the Denton at 4 locksfull a day, a figure based on a survey conducted by William King in 1791 (48). This compromise was enough for the Corporation to agree to.

Only one problem remained outstanding with which Banks had to deal and that was the wording of the draft clause in which he wanted the word 'Brook' inserted in place of 'Streams' and the area of Denton reservoir, then calculated by Jessop at 20 acres, to be written in. A number of times he had contacted the promoters to have this settled but nothing had happened. Banks contacted William King and demanded immediate action. He asked if the promoters had,

'... considered the possible consequences which from a recollection of the Conduct held last year I am justified in thinking may happen again ...' (49)
and declared that if nothing was done he would '... declare war ...' (50) and set the opposition in motion again.

King was not at home when this note was delivered but Banks heard that King, Story and Gregory were to be found at the Spring Gardens Coffee House and he went there personally, probably expecting more delay and excuses. The opposite was the case; he was told that they had already ordered the alteration in the wording and the insertion of the acreage and there, in Banks' presence, this group, who constituted a quorum of the Grantham committee, passed a resolution giving him all he wanted (51).

This was just in time for the Commons' Committee resumed their consideration of the Grantham Canal Bill two days later, on 8 March. This time the Bill had a smooth passage, Newark's opposition was defeated and the Grantham Canal Bill gained the Royal Assent on 30 April (52).

With the Act secured and the Witham waters safeguarded, Sir Joseph seems to have had no further connection with the Grantham Canal.
ANALYSIS.

The promotion of the Grantham Canal was the first time that Sir Joseph acted as an official representative of the Witham Trust in any of their business. The reason for his selection was probably that he was able to oversee the Commissions' interests in London and to supervise the parliamentary progress of the promoters' attempts to secure an Act. As far as possible he kept in touch with those in Lincolnshire but in order to carry out their instructions it was necessary for him to act on his own initiative and react swiftly to situations as they developed. For this reason the Lincolnshire parties were not always up-to-date in their understanding of what was happening in London and, so, a general oversight of the Witham Trusts' interests was Sir Joseph's first, and primary, role.

It was to achieve this objective that he suggested an alternative line for the canal when it appeared that the Denton and Mawbeck waters were under threat but he was not against the promotion of the Grantham Canal in principle in view of the benefits which it would bring to the country. Even when his suggestion was rejected he remained sympathetic to the ideals of the promoters.

Sir Joseph's second role was that of investigator on behalf of the Commissioners. After trying to protect the Denton and Mawbeck waters by insisting that a clause be put into the Grantham Bill to safeguard them, he went to great lengths to discover who had removed it and why. That there is no clear answer to these questions does not detract from Banks'
efforts to remedy the defect.

In undertaking this investigation and also in the general oversight of the Witham's interests Sir Joseph proved willing to devote much of his very limited free time. He visited the main promoters personally and entered into lengthy correspondence with them, in particular with Lords Harrowby and Brownlow and Lt.Col. Manners. Time was also required to organise the opposition to the Bill and present the Witham's petitions to the House. Organising ability and a capacity for detailed work were attributes of Banks' character and they are displayed to advantage here. Other aspects of his character were also recognised and used by the Witham Trusts. By asking him to be their representative they showed themselves willing to be guided by his judgement and discretion and this was further emphasised by their leaving to him the choice of the correct moment to present their petitions. They also recognised that in him they had a negotiator who could relate to the canal's promoters.

He performed a service of importance to the Witham Trusts when he acted as interpreter for them on the amendment introduced into the third Bill concerning the time of year when levels were to be taken on the Denton. The Witham Commissioners had failed to grasp the implications of the amendment and Banks prevented them, inadvertently perhaps, from bringing about the failure of the Grantham Bill for a third time.

Sir Joseph is seen, therefore, in a number of different roles in this canal's promotion, each of which was vital if the results he and the Commissioners desired were to be
achieved. In the circumstances which then existed it is doubtful whether the Witham Commissioners could have chosen a more suitable representative than Sir Joseph. He succeeded in the task set and he does not seem to have made any tactical mistakes in the negotiations. His handling of Lord Harrowby cannot be criticised for, even though Banks did not convince him by argument of the fallaciousness of the opinion he held, it was Sir Joseph who ensured that, by organising an effective opposition and by remaining vigilant as to the wording of the protecting clause in the various Bills, the Harrowby interest did not prevail in Parliament.

At the time Banks may not have been conscious of one historical role he was playing as far as canal history was concerned. To date no copy of Jessop’s survey plan has been found. However, on 7 November 1791 Banks wrote a ‘memo’ describing the route and what was to be constructed on the proposed canal. This information possibly came from Jessop or William King and, as such, may represent the nearest we now have to Jessop’s original report.
By reason of his position of pre-eminence at the centre of British scientific life, it was quite natural that Sir Joseph would have come into frequent contact with the exponents of canal construction - that branch of civil engineering which had brought about a transport revolution in the years which correspond approximately with the Banksian tenure of the Royal Society presidency.

During the period with which this work is concerned, Sir Joseph met, or had dealings with, many in this profession and to attempt to mention all in detail in this chapter would be a very difficult task. With many the contacts were routine and concerned with day-to-day affairs of the planning and building of the Lincolnshire navigations and these are considered in the accounts of the different waterways. However, with a few others, the relationships were more involved and they enable fresh light to be thrown on the personalities and characters of both the engineers and Sir Joseph.

Foremost amongst these was William Jessop, the premier canal engineer of his day and with whom Banks had many encounters, on the Witham, Grantham, Sleaford and Horncastle
Navigations. They seem to have worked well together and developed a good working relationship until the mid-1790's, at which time disagreements arose between them which soured this relationship. The reasons for this will be considered in depth.

Taking Jessop's place in Banks' regard was John Rennie and his subsequent career probably owed much to Sir Joseph's patronage. The origins of this are looked at also. Much of the trouble between Banks and Jessop was due to the clash of strong personalities and this side of Banks' nature is seen again in his contact with George Maxwell on the Welland Navigation. In Maxwell Sir Joseph met his match, more so than in Jessop's case.

An examination of these three instances in some detail illustrates the way in which men at the pinnacle of their respective fields of endeavour interacted with one another and viewed their respective positions professionally and socially.

BANKS, JESSOP AND RENNIE ON THE HORNCASTLE NAVIGATION.

William Jessop was the Horncastle's consultant engineer and had produced a report in 1791 upon which the waterway was to be improved. There were no plans drawn by him, rather he indicated the position of locks and cuts on a copy of the plan made by Stickney and Dickinson and published in 1792 (1). As soon as the Act of Parliament authorizing
construction was assured, the problem arose of finding a competent person to take charge of the building work on a day-to-day basis. This proved to be difficult as this was the time of 'Canal Mania', when canal engineers were in great demand and were commanding very high salaries, if they could be retained at all. Sir Joseph was consulted about this, possibly in the hope that his Royal Society contacts would produce the desired person while, at the same time, the members of the canal's Committee of Proprietors made what suggestions they could. One Committee member, James Conington, mentioned that,

'Mr. Grant [a proprietor] thought no Man more proper than Mr. Bullivant, who took the first survey ...' (2)

This, together with other ideas, was passed on to Sir Joseph. However, he realised that the qualities demanded of the person who was to fill such a responsible position were many and he would have been reminded of the importance which John Gilbert on the Bridgewater attached to the selection of a suitable candidate if problems were to be avoided during the construction period. Sir Joseph determined to obtain expert advice and this was forthcoming from William Simpson and John Houghton of the Birmingham Canal and communicated to him through Samuel Galton, jnr. (3). He was informed,

'... ENGINEER. - a person of Eminence in his profession and experience in the execution of
similar works.
The surveyor or persons appointed to attend the execution of the embankments locks Aqueducts Bridges &c. &c. should be Men of experience attention and resolution and should implicitly follow the directions given by that Engineer ...

Whether an approach was made to Bullivant is not known but by the beginning of July 1792, three weeks after the passing of the Horncastle Act, no-one had been found. Negotiations were set in motion between the Sleaford and Horncastle companies to arrange that one engineer should be employed to superintend both works - an arrangement probably seen as a means of saving one salary as the deficiency of capable engineers was being experienced by the Horncastle's neighbour also.

William Jessop's bill for his services as consultant and for his attendance in Parliamentary Committee sessions on the Horncastle Act were authorized to be paid on 7 July (5) and Richard Clitherow, the Navigation's Clerk, took the opportunity to ask him to come to Lincolnshire and stake out the line himself and supply large-scale plans and sections based upon which the works could proceed. Failing this, he was asked whether he could recommend anyone to perform this work, that is, find the Navigation an engineer.

Jessop took some time in replying, nothing being heard at Horncastle until between 24-26 July when his ideas on the subject were immediately forwarded to Banks,
'... he [Jessop] finds greater difficulty in recommending any person to mark out our Line, etc. than he shall in doing it himself but mentions Mr. Eastburn but as the proprietors have hitherto been unanimous in wishing Mr. Jessop to direct the whole Business I have by directions of the Committee requested him to send us as soon as possible every requisite necessary to enable us to Let the Works below Tattershall.'

(6)

However, despite wanting Jessop himself, it was decided to approach Henry Eastburn (1753-1821), who was then working on the Basingstoke Canal, and the proposition put to him was for him to begin on the Horncastle in the following February or March. In his reply (7) Eastburn stated that although he would attempt to be available at that time he doubted whether it would be possible and he told the Horncastle Committee to feel free to appoint someone else. Upon receiving this response the Sleaford company decided to continue their works without an engineer specifically appointed for that task. They were able to do this as the contractor for the diggings was William Bonner, the Witham Drainage Commissioners' surveyor and the work was left safely in his hands until the following year when John Jagger of Gainsborough was appointed, he having come to the works originally as contractor for the construction of the bridges.

The Sleaford decision left the Horncastle Committee with a
problem - should they begin the cutting or wait until they found their engineer? The latter course was adopted and the company's problems respecting the completion of the works and later financial difficulties stem from this decision to wait.

Two local engineers suggested themselves to the Committee as suitable candidates but Sir Joseph disagreed and the Committee bowed to his opposition. On 10 January 1793 Jessop wrote to Sir Joseph on the subject of the water supply to the Grantham Canal (8) and so Banks did not have to wait for Parliament's recall before the question of the engineer could be raised again. In fact, Jessop had not forgotten the earlier communications and had most likely been informed of Eastburn's refusal to take the post. He was not very optimistic,

'I have not yet met with any person that I can recommend to superintend the execution of the Horncastle Navigation - I thought of one of the Pinkerton's who were unfortunate in the execution of Lord Sheffield's works (9) and in a similar undertaking in Leicestershire but he was engaged as a contractor at a salary of £300 a year - his brothers I cannot recommend ...'

On 22 February 1793 Banks wrote to Richard Clitherow and laid two complaints against William Jessop - that Jessop was bound either to furnish large-scale plans or to recommend an engineer. Banks now realised that he could not expect him to come in person to the works and that the amount of
consultancy work Jessop had made this impossible.

From this letter to Clitherow the information is obtained that Jessop had called personally at Soho Square to tell Banks that he had found a suitable engineer, a William Cawley, of Mickle Trafford in Cheshire, although his name was not mentioned in the correspondence. He was demanding between £250 and £300 a year for his services, a sum which Banks considered high. Even so, he was in favour of acceptance,

'... even if his price was dearer than I have mentioned, the scarcity of engineers is all but incredible and the advance that is daily taking place in all matters relating to the construction of canals is beyond belief ... 40 [canal Bills] are now before the House, some of vast magnitude. How these are to be executed it is impossible to guess but no-one will doubt that during the continuance of this canal madness the price of engineers will rise very rapidly ...'

That an engineer had been found would have come as a great relief to the members of the Horncastle Committee and they offered Sir Joseph their heartfelt thanks for what he had so far achieved and they requested him to enter into an agreement with Cawley as soon as possible (10).

The negotiations for securing Cawley's services were left with Jessop and he informed Banks of an engagement for £300 a
year (11). In passing this news to Clitherow Banks explained why he had been prepared to agree to the higher of the two figures mentioned,

'... [in] which measure, extravagant as it may seem, I confess, I encouraged him [Jessop]. I am well aware of the rapid rise which now takes place in the emolument of engineers and that it will increase. I am aware also of the necessity of hastening our works lest the continuance of war should enhance the value of money so much as to make it distressing to our subscribers to advance their subscriptions ...' (12)

From later references in this letter it is clear that Banks was still under the impression that he was acting for both companies in this search for an engineer - the Sleaford proprietors had not told their neighbour that they had engaged John Jagger on 22 February 1793!

William Cawley was appointed, for the Horncastle only, on 5 April 1793, assisted by John Pacey.

Financial difficulties soon developed for the company. The costs of construction, as predicted by Banks, were rising quickly and the Committee was coming under great pressure to produce cash to keep the works in motion. The Horncastle Act itself was one of the problems as it allowed for calls to be made only at three-monthly intervals and there were grave doubts by May 1793 whether there would be sufficient money with the Treasurer to last until the next call date. The
diggers' and bricklayers' wages were amounting to £210 a month and Clitherow feared that,

'... when we have [the bricklayers] all employed I apprehend they must want more Cash weekly ...'
(13)

This was the first hint of the possibility of the serious financial situation which was to bedevil the operations of the Horncastle company for about the next decade.

On 18 October Cawley was dismissed from his post. The company minutes note simply that for some while various members of the Committee had not been satisfied with the way he had been performing his task and grievances were brought against him, all of which came to a head with the blowing-up of Tattershall lower lock. Sir Joseph wrote immediately to Jessop (14) and in this letter the scanty details of the minutes become a vivid accusation of incompetency,

'On my return from visit yesterday I learnt that Tattershall Lower Lock, immediately on its being filled with water, gave way, the brickwork cracking diagonally, as it is described to me, through the whole wall of one of the lower hollow posts. The water was immediately let off and the lock now stands empty in order to be repaired ...'

Having recounted the problem to Jessop, Banks then gave
details of a conversation between himself and Cawley (15).

' I met Mr. Cawley on the road and asked him what was the reason for its failure. He said he believed it to be the plan. In that case, I said, Mr. Jessop is to blame and not the mode in which his plans have been carried into execution. To this he answered that if the tail of the lock had been longer it would have stood.

I trust you will not think me such a fool as to believe that a plan of yours, which has been executed numberless times, will have failed on this occasion for any other reason than being improperly executed. I mention Mr. Cawley's answers for no other reason than to show you that his impudence is equal to his ignorance...

Having dealt with the problem of the lock failure Sir Joseph went on to relate the other failings which he himself had observed in this Jessop-recommended engineer. These included a bridge at Coningsby being poorly built and collapsing, the rebuilding at least twice, and in one instance, three times, of all his weirs and poor staunch and culvert construction. In part, at least, Banks blamed Jessop for this situation and expected him to do something to rectify matters (16).

Jessop replied on 1 November (17) and from this communication it can be deduced that he must have been to see
the workings on the Navigation for himself fairly recently (18). He agreed that at least one lock, that at Tumby, which was the only one where the counterfonts were still visible, was not constructed according to his plan and that, considering the state of the company's finances, he doubted whether there was any hope of extending the works much past that point. Rather surprisingly he suggested that Cawley be reinstated,

'... the company having already paid very dearly for his experience ... he would exert himself to the utmost to correct his errors; considering at the same time that it was hardly possible that they would find an eligible substitute ...'

Sir Joseph and the Committee were unimpressed with this and placed the direction of the works under the charge of John Pacey, Cawley's assistant, until a replacement engineer could be procured. However, this did not change the company's fortunes for Richard Clitherow soon had more bad news to convey to London (19). In early December a second lock at Tattershall fell in and this time it appeared to be due to the bad workmanship of the building contractors (20). These contractors were the firm of Jagger, Hargrave and Wass, the same John Jagger who was engaged on the Sleaford works. The difficulties were eventually resolved by William Jessop as the original contract between the builders and the Navigation allowed for him to act as arbitrator in any dispute.

Banks replied to Clitherow just before Christmas (21) and
his comments are of interest for although he was still in contact with Jessop, the younger John Rennie (he being then only 32) comes into the picture. Jessop may have recommended him to Banks but Sir Joseph had known Rennie for some time and there is a reference in this letter of an offer made by Rennie to try to obtain the services of an engineer who had been working for a number of years on the Basingstoke Canal. Banks may have thought that Henry Eastburn was being suggested again but, in fact, the reference was to William Cartwright.

The postal service between London and Horncastle was very speedy that Christmas. Banks had written the day before Christmas and Clitherow replied on the 26th. (22). Once again he had only bad news to relate. The one surveyor-of sorts they had, John Pacey, had given notice that he intended to leave the works on 24 March next,

"... The reason aside was that he found, or at least supposed, that the Committee were not satisfied with his abilities and said he had received no pleasure in executing any of the works since he came ..."

Banks agreed with the opinion Pacey thought the Committee had of him! Having obtained, through Clitherow, the Committee's agreement to continue negotiations with Rennie, Banks sent a short note to him accepting his offer of help (23). This note crossed a letter from Rennie in which he mentioned that he knew of an engineer, un-named, who was
available but who would probably be taken up by the Lancaster Canal (24). Banks appealed to Rennie that should this engineer be engaged,

"... I must beg the favour ... that you will think of me if any other proper person applies at the same time ..." (25)

His fears proved well-founded for, when Rennie wrote again (26) he had no cheer to offer. The Lancaster company had engaged this man, now named as William Cartwright, but Rennie mentioned that William's brother, Thomas, had a contract with the Birmingham and Worcester Canal which was soon to end. Rennie knew nothing of his abilities and so advised Banks to contact someone who would, their mutual acquaintance, James Watt (27).

When Watt wrote back he included a note which his partner, Matthew Boulton, had received from Benjamin Parker, the Clerk of the Birmingham and Worcester, concerning this matter,

'B. Parker returns compliments to Mr. Boulton and informs him that Mr. Cartwright is engaged with the Birmingham and Worcester Canal Co. at an annual salary and that the Committee are very well satisfied with his services and have no thought of his leaving them.' (28)

Faced with this, all Watt could do was to suggest two further names, a Mr. Wright (29), who could be contacted at
Clement's Coffee House in the Strand and a 'Stratford' (30). Banks immediately passed this information on to Rennie.

Another fortnight passed before the next communication was received. Rennie must have been giving the problem some considerable attention as he had a number of developments to report (31). He had received a letter from William Cartwright stating that his brother would definitely be free of the Birmingham and Worcester in the near future and Rennie replied requesting him to tell his brother to write to him. Also, he had written to the engineer, Dudley Clark, and a 'Mr. Green' (32) but had, as yet, no reply.

On the same day as Rennie penned this letter, 8 February 1794, William Jessop called at Soho Square. The occasion was probably one of Sir Joseph's regular morning gatherings and he took the opportunity to mention the Horncastle problem to him. Jessop told Banks that he felt that he had,

'... lost more in Point of Reputation by the Failure of his works than in any other business I had in my life engagd in which I [Banks] feel to be very true ...'

However, instead of discussing this and offering help, to Sir Joseph's dismay,

'... he seemd to treat the matter with the utmost indifference & as soon as he could changd the subject & began to talk of new improvements ...

(33)
This snub was something Sir Joseph would not forget.

Rennie contacted Sir Joseph on 11 February (34) and what he had to say would have brought a sigh of relief not only to the Horncastle Committee but also to Banks, thinking that all was now almost settled.

Rennie had received a letter from Thomas Cartwright telling him that his contract with the Birmigham and Worcester would expire on 25 March, the day after Pacey was due to leave the Horncastle. On the back of Cartwright’s letter was the following,

'Sirs, I am willing to engage with the navigation company near Cambridge as resident engineer during the execution of the works at a salary of £250 per annum, the company to pay the travelling expenses of myself and family from Birmingham to Cambridge.

[signed] Thomas Cartwright ...'

On receipt of this Banks must have thought there had been a breakdown in communications as Horncastle was not even in the same county as Cambridge! Still, this seemed only a small point and one which could be cleared up easily - the main thing was that a competent engineer was available and willing to take up employment.

Banks then drafted three letters. The first was to Clitherow at Horncastle (35) informing him of the good news
but leaving the decision of whether or not to engage Cartwright to the Committee. The second was to Cartwright (36) explaining the slight misunderstanding which had occurred and saying where Horncastle actually was, and the third was directed to Rennie (37), asking him to write to Cartwright explaining the mistake and saying who he, Sir Joseph Banks, was.

On later consideration of the matter Banks recalled a letter he had received from Clitherow on 11 January in which he told him again of John Dyson and Sir Joseph now saw an opportunity to keep the Navigation’s options open over the engineer’s appointment.

Since Dyson had first expressed interest in taking the post of Horncastle engineer in November 1792 he had been engaged as contractor for the locks on the Sleaford Navigation. That job was now coming to an end and he was probably casting around for new employment. He had been talking with one of the Horncastle’s proprietors, a Mr. Simpson, had seen the line of the works and had offered his services at £300 a year (38).

The state of the company’s finances were now becoming desperate. As so much work had to be corrected the line of completed waterway was not far advanced. The company was in debt and the Committee were looking towards either Sir Joseph or Richard Ellison to lend them between £6,000-£7,000 in order to carry on. Some proprietors were refusing to answer calls and legal advice was being sought by the Committee to force them to pay (39).

It was in this light that Sir Joseph changed his
recommendation about the acceptability of Dyson as engineer and, with such a decision made in his own mind, the following letter, when Banks received it, was not the resounding blow it might have been but both he and Rennie must have realized that they had been used and made fools of.

'Sirs, - Mr Cartwright has this morning delivered to me your favour to him of the 12th. instant and I cannot help saying I am sorry he has been treating with gentlemen for serving them under an idea of leaving the service of the Worcester and Birmingham Canal Company but the Committee, understanding he was about to leave them and being desirous he should not, agreed with him for his continuance in his present situation on his own terms, at a Committee meeting on Wednesday last ...

[signed] Benjamin Parker ...

Fortunately the Horncastle Committee had agreed with Banks' recommendation of Dyson and Clitherow informed them accordingly (41).

Sir Joseph had not kept Rennie up to date with events and so, not knowing anything about Dyson, continued to suggest engineers whom he thought might be suitable (42). It was probably only in mid-March 1794 that Banks told Rennie what had happened and expressed gratitude for his efforts on the Navigation's behalf. Banks had some scathing things to say about Thomas Cartwright,
' [who had] actually entered into a new agreement
... at an advanced salary, which he obtained
merely by using us as shoeing horns ... His
character has, in my opinion, lost as much as he
pocket can have gained by this unwise
transaction. Let him therefore enjoy his
additional salary and let me find myself wholly
quit of him ...' (43)

John Dyson was appointed resident engineer on 13 March 1794
and was joined by Thomas Hudson, a local man, their tenure
being for one year commencing 5 April, although they had been
at work since February. When their year was completed another
local man, John Hudson agreed to take the post and the
Horncastle had no further anxieties concerning the securing
of a resident engineer.

BANKS AND GEORGE MAXWELL.

George Maxwell (1743-1816) was a drainage engineer who
seems to have made his first drainage works at Titchmarsh,
Northamptonshire, in 1772. From 1783 he was land agent to
Earl Eardley and moved from Outam to Fletton, in Cambridgeshire, in 1786. In 1809 he was elected a Conservator to the Bedford Levels and he died on 21 December 1816.

As has been seen in chapter 9, Banks was in professional contact with Maxwell in matters concerning the River Welland Drainage and Navigation and the effects of the same on the Witham Outfall, beginning in 1791.

From the first the two men were not in empathy. Whether there was anything more to begin with than just a disagreement over drainage matters is not clear but their animosity grew and festered over a period of about two decades.

Banks' contacts with Maxwell over the Welland drainage and navigation began in 1791 and what took place with that is dealt with in chapter 9. However, from the first Banks was dissatisfied with Maxwell's work, being opposed to the plan put forward by him for such schemes. Banks considered them to be fundamentally incorrect,

"... Mr. Maxwell who is no Engineer fed the Country with an approbation of an impracticable scheme. I stated to the meeting in 1791 (44) the great difficulty that would occur and insisted almost singly that an experienced engineer should be appointed to his assistance ... I ought in justice to the County as well as myself to have demanded back my former subscription [promised at a meeting held on 24 August 1791] because it had been applied to a scheme wholly
different from that the Country had approved in 1791 ..." (45).

Thus, Banks did not consider that Maxwell was sufficiently qualified by experience to undertake such works but this opinion was not supported by the other promoters. The above quote is taken from an aide memoire written by Banks but his public expressions towards Maxwell were couched in less direct terms. In early correspondence to him Banks remained polite and, indeed, conciliatory but he found that he could not maintain this pretence as he saw what he considered to be the surveyor's ineptitude being compounded as the months passed. By April 1794 Maxwell was writing to Banks concerning this opinion, at that time being expressed about his abilities concerning the stability of an embankment on the Welland. With regard to one of Maxwell's letters to him Banks remarked,

'... Mr. Maxwell appeared dissatisfied with Sir Joseph & complaind of his want of confidence in his abilities as an engineer ...' (46)

This time the use of the third person was not lost on Maxwell!

Maxwell, whether deliberately or not is not known, took Banks' censure as an expression of unreliability in his profession as a whole and, although the letter to which he refers does not appear to have survived, Banks may have made such views known, as he saw Banks as,
'... implicating ..., my own conduct, in the general Censure passed upon the Characters of scientific men, as if no Credit was due to their assertions ...' (47)

It is very difficult to believe that Banks would have written in such a manner considering his position in the scientific world and there must be a major misunderstanding here. Even so, Banks' reply was immediate and arrogant. In mitigation it must be remembered that just a few weeks before the affair of the Horncastle Navigation engineer had been resolved and Banks was probably still reacting from his relationship with William Jessop and Maxwell may well have been receiving some of the backlash. Banks replied that.

'... Far from implicating your conduct in general censure of Scientific Men what I did ... was to ... refuse to admit your assertion as an engineer and to release my disinclination to admit the naked assertion of any engineer whatever ... [without] ... being able by proper explanation to comprehend its extent & validity ...' (48)

Banks justified his position to Maxwell by referring to the relative newness of civil engineering as a profession, as far as it applied to canals,

... Engineers are new advocates & must of
course expect to be called upon for evidence of the truth of their assertions ...' (49)

Maxwell attacked Banks’ remarks regarding his questioning the conclusions presented to him by a professional engineer and, in a general tirade against him, Maxwell stated,

'... and you added that you had besides made it a Rule to disbelieve [underlined in the original] everything that comes from an Engineer. Having previous Occasion to know you had expressed doubts of my Varacity or Representations of Facts, I felt myself called upon to support my Opinion by Reference to Places where the same mode had been adopted ...' (50)

His experience with Cawley may well have encouraged Banks to critically examine all that a 'professional' engineer told him but here, for the second time in his waterways' undertakings, Sir Joseph was engaged in conflict with an engineer who was not prepared to appease him by bowing to his wishes. This situation was worse than that with Jessop for Maxwell made no attempt to pay any regard to Banks' opinions and this was to become worse over later years. As to the immediate confrontation, Banks refuted the accusation,

'... I did not say disbelieve I statd I should always hesitate to believe till I had examind
This animosity between the two men did not prevent the success of an Act for the improvement of the Welland Outfall although there was controversy between them over drainage provisions in south Holland. An attempt was made to bring this particular matter to a head in 1800 (considered in chapter 9) when Maxwell took counsel's opinion on the erection of a sea sluice in the marshes.

There is then a gap of about a decade in the extant communications between these two men but when it does resume, in 1809, there is no evidence that the passage of time had made things any easier between them. Once again, Banks was complaining of a slight which Maxwell had committed,

'... I think I have the right to insist that Mr. Maxwell Shall not be delegated to attend Meetings where I am to take the lead on any account whatever ...' (53)

It is surprising that others had not attempted to mediate between the two before this: attempts may have been made about which nothing is known but, if there were any such efforts, they had failed. At this point, however, Benjamin Handley, the Sleaford solicitor and Treasurer of the Sleaford Navigation did try. He had been in contact with Maxwell who had assured him that he wanted only friendly relations with Banks. Handley accepted that these sentiments were,
'... activated by the best possible motives & the most personal respect towards yourself ...’
(54)

Yet Banks was not so easily appeased and regarded this respect as,

'... a new-born Idea ...’ (55)

and he requested some proof of its existence. None appeared to be forthcoming.

In 1795 an Act had been obtained for the maintenance of a 'Barrier Bank' along the eastern side of the Weyland from Brotherhouse to Spalding High Bridge (56). With the passing of the Act this responsibility was vested in the South Holland Drainage Trust and this was the cause of the final, and most bitter, conflict between the two.

In late February 1809 two local landowners, Robert Millington and J. Vorley, wrote separately to Banks complaining of the condition of this embankment which, according to them, was weak and broken in places (57). As far as is known it remained in this state for two years, at which time Banks wrote to Maxwell requesting that he investigate (58). This began a series of letters which Maxwell considered so important to his position vis-a-vis Sir Joseph that he had them privately published.

Maxwell wrote that the embankment was very far from being weak and was, in fact, in excellent condition and because
Banks spent much of the year away from Lincolnshire was raised by him, adding that,

'... it is a great pity that you will not either examine these matters yourself or obtain information from such persons as may be relied upon, before you act upon circumstances that have no foundation in fact ...' (59)

This was, of course, a most unfair assessment of the situation. Banks was passing on the observation of others who were in a position to know and he had requested that the responsible official look into the claim. Also, the gout was affecting Sir Joseph's movements greatly by this time and travel to make a personal observation on such a matter would have been unnecessarily onerous. However, Maxwell continued his outpourings against Banks, expressing sentiments which he must have had for nearly twenty years,

'... I by no means wish to give offence: but I cannot help remarking, that something like this has pervaded the whole of the South Holland business ... Feeling as I do that a great part of my life has been sacrificed, without fee or reward, to the concerns of South Holland (60), and that, so far from receiving approbation, I have always been censured, and, as I conceive, that without good reason ...' (61)

Banks told Maxwell that his physical condition had
prevented him from seeing the embankment personally and that he had to rely on those persons on whom he thought he could depend. Anyway,

'... The person whose information I relied upon, as to the fact the Barrier Bank being out of repair, is yourself. You informed me in February 1809, by Mr. Handley, that the bank ... was so damaged ... as to place the perfect [underlined in the original] repair beyond the resources of the South Holland Trust ...' (62)

He concluded,

'... I am not used to being charged with acting upon opinions unfounded in fact, & request you, if you intend to continue my correspondence, to abstain from such intemperate accusations ...' (63)

Thus it continued, with Maxwell claiming that he had been wronged in the interpretation Banks put upon his actions and with Sir Joseph attacking what he saw as Maxwell’s incompetence as an engineer and deviousness as a Commissioner. It is to Maxwell that the honours of perception might well be given when he said,

'... Surely, Sir, we are both arrived at a time of life when all animosities ought to be at an
but he matched that conciliatory mood with one of defiance,

'... There is nothing that I will not undergo, rather than submit to that sort of menacing conduct you now hold, so long as I am wholly unconscious of deserving it ...' (65)

That outburst was the final one of this drawn-out exchange. No further communications or references have been discovered relating to it and the two men seem to have avoided any form of further contact.
ANALYSIS.

In looking at Banks' relationship with canal engineers that with Jessop is by far the most important and it shows the contrasting nature of the character of the men - Banks, the aggressive, extrovert, gifted amateur and Jessop, the self-effacing, self-made professional. It would have been far better for the Horncastle committee to have made a local appointment for the resident engineer's post and not involved Banks but they did not have the strength of will to do this. Throughout all their dealings the committee appear as over-dependent on Sir Joseph to find the right person and they must bear a portion of the responsibility for the subsequent difficulties as they would not make an appointment without Banks' agreement. This can be seen when Richard Clitherow decided to approach Sir Joseph directly and ask whether, by virtue of his position in London, he could recommend an engineer (66). Clitherow himself had been approached by John Dyson, then builder of the locks on the Sleaford, who had indicated a willingness to undertake the role but Clitherow requested Banks' advice whether,

'... you think my Countryman is to be trusted therein ...'

Sir Joseph said that he had no concern as to Dyson's abilities but he did have doubts as to his attitude to the work he would be undertaking (67) and these doubts did prove well-founded later, but not as far as the Horncastle was
concerned (68). However, he did not consider it prudent to make a decision without the concurrence of Jessop for,

'}... [he] is pledged for the prosperity of his Plan and therefore ought to have all possible attention paid to him ...'

He did not anticipate a long wait for Jessop's answer as he knew he would be seeing Jessop, at the latest, when Parliament reconvened shortly after Christmas, when a rewritten Grantham Canal Bill would be presented.

An alternative engineer in the person of John Pacey was suggested to Sir Joseph just after the holiday season (69). It was intended that Pacey should be the resident engineer after the works were completed but Banks was not enthusiastic about giving his approval to this possibility. He had not then spoken to Jessop and he was hesitant about commencing work, fearful that costly mistakes may be made, with all the resulting inconvenience, both in time and money. He could make no decision upon the selection of Pacey as he did not know sufficient as to the extent of his knowledge of levelling and plan-making.

Banks changed his opinion dramatically when he saw that there was no alternative to a local man after Rennie failed to find a substitute. When John Dyson was seen to be available still and willing to undertake the work, Banks noted him as being,

'... exceeding able to build up the Lock that is
down & indeed I had rather him [?who] knows the state of the Finances was engaged at £300 than a Stranger was brought with his Family likely to be left upon our hands ...’ (70)

In the relationship with Jessop the turning point can be traced to the receipt of Jessop’s letter of 28 January 1793 which was a ‘job description’ for the role of a consultant engineer as he saw it. In Banks’ opinion Jessop was not fulfilling the contract he had made with the company, and he told him so (71). The working methods of John Smeaton, to whom Jessop had been apprenticed and from whom he had learnt his craft, were mentioned (72). Banks knew Smeaton (73) and he observed that when Smeaton undertook such work and produced a plan,

‘... he always considered himself engaged to see them through it by furnishing them such Plans, &c. & seeing himself to the execution of them as would prevent them from running into crises or mispending the money they had raised on the Faith of his Judgment ...’

It must be remembered that Jessop was Smeaton’s star pupil and no-one knew better than he what Smeaton’s working methods were. Jessop also had a great reverence for Smeaton, so much so that it seems that all his life Jessop refused to be paid a higher daily rate than Smeaton had charged, to avoid any feeling that he was claiming a higher place in the
engineering hierarchy than his master.

Although Sir Joseph obviously wanted Jessop to come himself, if he would not he wanted him either to recommend someone he could trust to be engineer and who could consult with Jessop when necessary or to supply large-scale plans which local men could understand so that work could proceed. All they had to work with at that moment was the copy of the Stickney and Dickinson plan with the red lines, which Jessop had drawn on it, showing where the cuts and locks should be made.

When he replied on 28 January Jessop endeavoured to make his position absolutely clear. Due to his close relationship with Smeaton, any suggestion that he was not living up to the standards set by his master would be very much resented and so he was quick to reply to this accusation. His work, he asserted, was very different from that in which John Smeaton had been engaged as it was then not difficult to find qualified men to undertake the supervision of waterways' construction. With the proliferation in the number of canals being built that situation no longer applied. The men were just not available and even Jessop's own time was insufficient to perform the task of superintending the Horncastle works. His role now was to prepare the initial survey report and estimate and see the Bill through Parliament, and nothing more. All he would promise Banks was that when he did find someone capable he would 'recommend' him to the Horncastle before any other. He had written to Henry Eastburn in an attempt to persuade him to reconsider his position but, up to the time of writing, he had been
unsuccessful (74). In the event Eastburn did not come.

This did not suit Banks at all and he wrote back in very strong terms,

'... I therefore request you seriously to consider these matters and as you certainly find it more advantageous to invent than to execute professional matters to better yourself diligently in Procuring for us a Capable man ... (75)

When Jessop succeeded in finding William Cawley Banks regarded the appointment as a very poor substitute for Jessop himself. In this context it is no wonder that Banks would be only too ready to listen to, and pass on, rumour and hearsay accusations of incompetence against Cawley in order to discredit Jessop and force him to come. So far there is no corroborating evidence for some of the things people told Banks against Cawley, which included the purchase of timber for an unagreed price, so leaving the Navigation to pay whatever the person from whom he had it chose to ask, of some of the timber being rotten, and of his being unable to measure up brickwork and timber. Banks said,

'... Now, ... after being told all this I feel myself disinclined to continue Mr. Cawley in the office of our principal surveyor or, indeed, in any office in which the building of waterworks or the expenditure of money is concerned ...
am loath to recommend [the Committee] to part with him till I have your concurrency or to keep him unless you are so good as to give me well provided that in future we shall succeed under his management better than we have done hitherto. To this I may add that he has now expended two-thirds of our money and as this is a time when money cannot be borrowed at any rate we must be particularly frugal in the expenditure of the remainder, especially as he has not yet brought us to the third lock where the first toll of any consequence will be taken ...' (76)

In addition he included a list of the accusations of incompetence made against the engineer by the Horncastle proprietors. These included, buying timber at very high prices when cheaper was available; of overstocking on materials; of not using the correct lime in the construction of weirs, which were too narrow anyway; of using different size bricks in the construction of the locks so that they would not range together and of not giving in his accounts and so being suspected of not keeping them at all. Finally, there was the blowing-up of Tattershall lock for which he blamed Cawley and here there may have been justification as Cawley himself told Banks that the fault lay in Jessop's design, which was an impossible accusation.

When Dyson was appointed Sir Joseph managed to obtain some large-scale plans of the locks for him from Jessop (77) and
Jessop’s opinion was needed again at this time as the lock contractors, Jagger, Hargrave and Wass, were in dispute with the company over a claim of bad workmanship. The Horncastle Act provided for Jessop to be arbitrator in such a dispute and the Committee wanted to stop work on the Navigation until Jessop had been able to see them but Banks was against this, rather,

'... Set a trusty Man to watch their conduct than to delay the works ...’

was his advice. His absolute disenchantment with Jessop was now seen,

'... surely evidence of their [the locks] insufficiency may be obtained quite as good as that Mr. Jessop can give can be given by Mr. Hudson or some other disinterested Engineer who will not charge an exhorbitant Sum for attending at the Assizes as Jessop no doubt will do ...’

(78)

While he did not think that Jessop was even worth his fee, this was not the opinion Banks had formed about John Rennie. After this time Jessop did no more work on the Witham for either the Drainage or Navigation Commissioners or on any other Lincolnshire waterway in which Banks had a voice in the selection of an engineer. Rennie was the man he now turned to and it was he who was entrusted with the major project of the
draining of East, West and Wildmore Fens. Certainly Rennie was the younger man and these works could be expected to take many years but Banks’ experience with Jessop on the question of the Horncastle engineer must have been decisive. The key statement to this change appears in Banks’ last letter to Rennie on the Horncastle business,

’... I am sensible, in a very high degree, of the value of your friendly exertions made, as they have been, for me with vigour and alacrity and shall always consider myself as under an obligation to you of weight and value ...’ (79)

To Jessop the Horncastle was a very small project and the finding of a resident engineer a trouble with which he did not wish to be bothered. He had far more important schemes under way which occupied his attention. However, Rennie was beginning in the profession and he probably realised the advancement which, if not the patronage at least the recommendation, of Sir Joseph could bring. This favour is seen in that John Rennie was made an FRS, William Jessop was never so honoured. If Banks did prevent Jessop from gaining FRS status he was acting in a very small-minded way and deserves the severest censure for his actions.

In his dealings with Banks, George Maxwell did not have a tranquil passage for here is an example of an extreme reaction on the part of Banks which is an extension of that shown towards Jessop. He shows himself as exceedingly intolerant of opposition in those things in which he
considers himself qualified to judge and seems to have taken such opposition personally. Indeed, the impression received is that there was a strong personal dislike between the two men.

In these negotiations Banks shows himself to be contradictory in his attitude towards his own knowledge of drainage and navigation matters. At one moment he confessed that his knowledge of engineering,

'... is very liable to lead me into Errors & loath to involve any other person in the consequences of my Blunders I have prevailed upon the Corporation of Boston to employ a regular surveyor to give his opinion ...' (80)

while, eighteen months later, he wrote to Maxwell,

'... In truth sir I hope I may without presumption believe myself capable of examining points of civil engineering & I certainly have seen enough in the House of Commons to know that such examination in some cases proved extremely useful ...' (81)

Banks' opinion is also in opposition to the regard that Maxwell enjoyed within his profession. While Banks claimed that,

'... Mr. Maxwell ... is no Engineer ...' (82)
James Creasy called him a 'Genius' (83) and Capt. Joseph Huddart had to agree that his proposals for a Witham/Welland outfall link would not endanger the navigation of the Witham 'Haven' despite Banks' opinion to the contrary (see chapter 9).

From the study of this aspect of Banks' role in canal and navigation development in Lincolnshire it must be concluded that his intervention in the technical aspects of the works was not always to the benefit of the schemes. His personality, attitudes and ideas did not lend themselves to accepting violent contradiction - it had to be given gracefully. The professionals' response which he received to his amateur's opinion was not always so tactfully given and, in the case of the Horncastle, the project suffered many years delay because of his reaction to the style of approach made to him.
CHAPTER FOURTEEN

CONCLUSION

When Sir Joseph Banks died in 1820 the main part of the waterways network in south Lincolnshire had been completed. The construction of the drainage schemes of the fens east of Boston and of 'South Holland' continued into the next century and the navigation of the Witham estuary remained difficult until the 1880's. Yet those canals and navigations with which Sir Joseph was concerned were built (apart from the Stamford Junction) and were beginning to make profits for the first time. This prosperity was to continue until the arrival of the railways, which was quite late in Lincolnshire, and the effects of the new means of transport did not make an impact upon water carriage until probably the late 1840's at the earliest. Therefore, Banks' last years were ones in which he could look back and attempt to assess the value of his contribution over the previous half century to this blossoming success. What he saw may have pleased him but how satisfied he was is difficult to ascertain. With the dispersion of his papers after his death and the lack of a family memory of his role in this minor aspect of his life's work, any attempt to assess his real contribution to the promotion and development of the Lincolnshire canals and navigations has not been possible before now.

This thesis had its origins in this author's M.Phil thesis concerning the history of the Sleaford Navigation. In this
waterway's promotion Sir Joseph seemed to play a very important part and the question posed itself as to whether his contribution was as significant to those other projects being brought to fruition at about the same time. The details of his work have been discussed in the preceding chapters of this work and an assessment by individual waterways should enable some conclusion to be reached, especially with regard to the fundamental question of whether the same results for the waterways would have come about without his participation.

As this thesis was developed from an original idea concerning the Sleaford Navigation, that is probably an appropriate waterway with which to begin.

SLEAFORD NAVIGATION.

Banks was present from the commencement of the meaningful applications to Parliament for a Sleaford Navigation Act in 1782. He is known to have convinced landowners, by his direct action, of the advantages of the Navigation's case, prepared argument, given evidence in its favour in Parliament and generally lent his name to the cause of promotion. He could well have been involved with the securing of William Jessop as consultant engineer, although much of the credit for this must probably go to Benjamin Handley.

It is almost certain that Sir Joseph used his persuasion in Parliament to secure the successful passage of the Sleaford Navigation Bill, as evidenced by the dramatic change in the Bill's fortunes over a very few days from likely rejection to absolute acceptance. That he was perceived at the time as
being of great value to achieving the success can be demonstrated by two votes of thanks presented to him, one by the Navigation proprietors and another by the people of Sleaford.

RIVER WITHAM.

The Witham Act was passed in 1762 and so Banks played no part in the promotion of the scheme apart from attending a promotion meeting at Sleaford in November 1761. He took no active role until about 1790.

The success of the Witham drainage and navigation was of great importance to him as the continued financial stability of his estates to the east of the river depended heavily on it. That, together with the fact that this river was the heart of the south Lincolnshire waterways and drainage network and as such its improvement would bring about an improvement for the country in general, were Sir Joseph's motivating forces.

His contribution as a Commissioner and to both Trusts was important as was his knowledge of waterways matters and his advice was often sought and freely given. In this he was very conscientious and was probably able to participate more practically than many other Commissioners. However, much of his time was spent in London and away from immediate contact with the daily operation of the scheme.

Banks' appointment to sub-committees of the Commissions seems to have been successful and this was clearly shown in the promotion of, for example, the Grantham Canal, during which he was willing to devote much
Resolved unanimously, That the Thanks of the Company of Proprietors be given to Dr. Joseph Wadonk, for the essential Services received from his Support of the Scheme of Navigation and of the Bill through Parliaments, and also for the Honour of the very suitable Device which at their request he has formed for the Common Seal of the Company. And That, this Resolution be transmitted to Dr. Joseph Wadonk as the first Act of the Company under their said Common Seal.
The Inhabitants of the Town and neighbourhooe of Meaford highly sensible of the distinguished support afforded to the Meaford navigation bill by Sir Joseph Banks Bart. and that his personal attendance and extensive Information on the subject at the several meetings held in the Country and during the Progress of the Bill thro' Parliament very essentially promoted its success.

Resolved unanimously that their sincere thanks be given to Sir Joseph Banks for the honor of his services on that occasion and that their acknowledgments are also particularly due to him for the support which all measures that promise public utility in the County of Lincoln owe from his zeal and abilities.
time to the Trusts' interests and for this his residence in London was invaluable.

Sir Joseph was also willing to contribute to help alleviate the financial burden of the Witham Trust. When additional money needed to be raised he readily responded but, while this action must have been useful it was not decisive to the success of the venture.

His disenchantment with William Jessop appears to have led him to veto Jessop's further employment on the Witham after about 1793 and instead to have favoured John Rennie. If Banks had not used his influence to bring this about Jessop would probably have continued on the Witham and achieved much the same successful result as did Rennie.

How vital was Banks' contribution to the Witham works? On the surface it would seem that it was not. However, the value of his 'influence' both within and outside Lincolnshire cannot be underestimated, but neither can it be measured. He was only one of a number of Commissioners and the importance of the works rose above one man's contribution to them. Though he aided the progress of the scheme it would have prospered none the less without him.

HORNCastle NAVIGATION.

On the Horncastle Sir Joseph made mistake after mistake and his presence must, in general, be seen as being disadvantageous to the project.

The promoters of the navigation viewed Sir Joseph as a major landowner with a reputation and influence locally and in London which could only be to the
company's advantage to make use of. This trust proved to be misplaced, due to Banks' personality and the response made to it by the Horncastle committee.

He made mistakes. He was wrong in not following Galton's advice about taking the bank as a Treasurer, in not suggesting to the company the appointment of a Chairman and in allowing Clitherow to assume so much responsibility alone. He was wrong in allowing the Horncastle committee to rely on him so much and not take responsibility upon themselves. He was also wrong in his dealings with William Jessop and in the process of selecting a resident engineer.

After the initial promotion period, about which little is known but during which Banks probably used his influence to a similar extent as on the Sleaford, his contribution was not helpful to the company. The success of the Sleaford Navigation over the first decade after its Act, in which Banks played no part, can be contrasted with the failure of the Horncastle over the same period in which Sir Joseph was the leading figure.

LOUTH CANAL.

Sir Joseph was little involved on the Louth before 1809. After that his main contribution was in persuading the Board of Customs to remove the sea-borne coal duty. In this he acted with Charles Chaplin and therein lies the problem, for the relative value of each man's contribution is not known although the Louth Commissioners vote of thanks recognises that Banks' assistance was significant. However, the duty was only removed after the Prime Minister, Spencer Percival,
became involved and that occurred only after an approach by Chaplin, not Banks.

The most that can be said with certainty is that Sir Joseph had a part to play in ensuring the continuation of the canal but it is possible that Chaplin could have achieved this by himself.

GRANTHAM CANAL.

Banks was concerned with this canal after being appointed by the Witham General Drainage Commissioners to look after their interests during its promotion. He was not concerned with the promotion itself but he wished the canal success, if it could be established on acceptable terms to the Commissioners, as it would boost the trading capacity of the region.

He kept himself well informed of the canal promoters' efforts to obtain water supplies from the River Witham. When the Grantham Canal Bill was passed it contained the clause which the Witham Commissioners wanted and so it can be stated with certainty that Banks' contribution here, to the ends for which he had been appointed, was major. He was the right person for the Commissioners to use - he had persuasive powers, was capable of negotiating upon a basis of social equality with promoters from the nobility and gentry, and was based in London, where most of the vital activity was taking place.

STAMFORD JUNCTION CANAL.

In the promotion of this canal Sir Joseph was not a declared supporter of either of the two rival schemes, both
of which had similar objectives in securing access for Stamford to the Midland’s canal system. His interest, and concern, was with the effect that the water extraction from the Welland might have upon his landholdings in South Holland and on the area of the Black Sluice drainage which could be detrimental to the Witham’s interests. His support for the Stamford to Oakham scheme was seen as being so vital that the supporters did all they could to gain it. In his opposition to this proposal Banks probably had John Rennie’s guidance. One’s judgement of the feasibility of the project on engineering grounds can only rest with the opinion concerning water supply one believes, Banks/Rennie or Telford. Parliament chose to support the Banksian argument and reject Telford.

It can be concluded that Banks was extremely influential in protecting the Welland water and that the canal supporters were right in attempting to win him over to their plan if they were to have any hope of success.

EAST, WEST & WILDMORE FEN.

This was a Banks’ family scheme and had been from the time of Joseph Banks II, Sir Joseph’s grandfather. From the enclosure and drainage of these areas Banks could increase the value of his land on the fens and the amount of agricultural produce being grown. He was therefore, greatly in favour of schemes to bring this about and also saw the value of the secondary navigation function which the drainage courses would take on.

In this undertaking he was of immense importance as he led
much of the promotional organisation, a position which he assumed naturally, and personally rebuffed opponents of the scheme as he saw it.

However, was Sir Joseph vital to the success of the enclosure and drainage or was there anyone else who could have fulfilled his role? The only possible alternative was John Linton but he probably did not have the social position in county society to be as successful as Banks. Yet the pressure of economics of the late 18th. century and early 19th. could well have forced the enclosure and drainage anyway, even if Banks had not become involved. Conversely, these were marginal lands and even in the most auspicious economic conditions this type of land is last to be improved, if it ever is. These were the last fluvial marshes to be reclaimed in south Lincolnshire and it could have been that without Banks' drive they would not have been saved.

Of immense significance is that Sir Joseph brought John Rennie to work on these fens for the landscape seen today is a monument to his genius. Thus, one of Banks' main contributions here must be as a catalyst. He found the correct man and brought him to the right place at the propitious moment.

RIVER WELLAND & SOUTH HOLLAND.

The main scheme of waterways construction involved here was the proposed linkage of the Witham and Welland outfalls. George Maxwell suggested it and Banks opposed it on the grounds of silting. Sir Joseph, having made an amateur survey for Boston Corporation, then suggested that a professional
one be undertaken. This was done by Capt. Joseph Huddart and his conclusions supported Maxwell, not Banks. So, although the link was never constructed, on the engineering grounds on which Banks opposed Maxwell, he was incorrect.

The negotiations over this link and the later 'South Holland Drainage' were marred by argument and disagreement with Maxwell which descended to the personal level and this probably coloured Banks' judgement of Maxwell's abilities.

In general we must be concluded that Banks' contribution was not helpful to the project.

In order to summarise the significance of the contribution Banks made, the various waterways projects can now be assessed as to whether he helped or hindered their promotion and/or development. In this it must be remembered that Banks' meaningful involvement with non-drainage projects, apart from the Stamford Junction Canal, effectively finished about 1805 and so covered a span of about 15 years, encompassing the periods of 'Canal Mania'.

It is only with the Sleaford Navigation that it can be said that he definitely benefited the promotion. This was probably true also of the Horncastle but, as very few Banksian documents of the promotion of this Navigation have so far come to light, it is difficult to be certain.

In the development stage he was probably very useful in ensuring the continuation of the Louth Canal as a viable financial concern.

With two schemes, the Grantham Canal and the Stamford
Junction Canal, Sir Joseph was very successful in achieving the ends which had been set, to secure the Witham's and Welland's waters respectively. In the case of the Grantham the canal was constructed, the Stamford Junction plan was abandoned.

The plans for East, West and Wildmore Fens would almost certainly have not gone through when they did had Banks not been there as landowner and promoter and thousands of acres of productive, drained land exist because of his actions.

This leaves two enterprises where his role was insignificant or was not essential to their success. The Witham works would have gone ahead whether he was there or not and the Welland drainage, without a Witham/Welland link, did achieve its ends without his playing a major part.

Finally there is the one disaster - that of the Horncastle Navigation. Much of the blame must be attributed to Banks' character. He was so confident and sure of his own abilities that he engaged in argument with William Jessop, because he persisted in demanding that Jessop find the Horncastle a resident engineer. This persistence, or perseverance, was a dominant trait in Banks' character and one which he himself recognised. In a letter to the Chairman of the promoters of the Stamford Junction Canal on 28 March 1811, Banks said,

'... nature ... has endowed me with as much of that valuable quality than it generally falls to the share of an individual ...'

It proved to be his 'Achilles' Heel' on the one project he
probably most wanted to succeed.

One question which this study has raised is why did Banks have such violent disagreements with canal engineers over methods of canal construction and problems of water supply? Some possible reasons for this have been mentioned in chapter 13, such as personal animosity, but this is not a satisfactory explanation. Banks held the opinion that he was a qualified judge in the matters after the "training" he had received (discussed in chapter 3) and the disregarding by these engineers of his amateur opinion was something to which he took offence. This controversy surrounds all his dealings with George Maxwell and with William Jessop after 1793. However, he seems to have made no enemy of Capt. Huddart even though he did not agree with Banks' ideas on the Witham/Welland outfall link and no hint of a break-down in relations is found between Banks and John Rennie.

A possible reason for this has been noted in the way in which engineers criticised Banks' opinions but perhaps the true answer lies beyond this. It may be that an abrupt dismissal of Sir Joseph's views went against all his scientific training. Banks was a botanical taxonomist, a branch of science which required exceedingly careful, detailed and precise study and discussion. In his contacts with some engineers this may not have been appreciated and, while his Royal Society status and social position was recognised by them, they failed to treat him as a 'scientist' in the same way as they regarded themselves as such. Could it
be that the essence of the controversy which surrounded his election as President of the Royal Society, concerning the relative standing of the 'mathematicians' and the 'natural scientists', was to continue with him in his canal and navigation work? Those engineers who took the time, and had the incentive, to explain their ideas in detail to him retained his favour even if they disagreed with him; those who did not fell in his estimation. It may have been that in this Rennie and Huddart were more perceptive than Jessop and Maxwell and were rewarded accordingly.

This Banksian trait was not confined to waterways' engineers. During his early years as President of the Royal Society there were Fellows who expressed the view that Sir Joseph often acted in a way which took scant regard of the susceptibilities of others, yet at all times he expected to be treated with respect and consideration and have his demands on others always met. Towards the end of his life this accusation was repeated, notably by Sir Humphry Davy, who was outspoken in his dislike of what he saw as Banks' despotic tendencies. An echo of the type of correspondence Banks sent to Jessop when the engineer refused to accede to Sir Joseph's demands on the Horncastle can be heard in the letters to William Hooker (1785-1865). Hooker had refused a Banksian directive to join a botanical expedition to Java in 1813 and he suffered the presidential displeasure. Unlike Jessop, though, Hooker found favour again later. Another example of this can be seen in the case of William Marrat, a native of Sibsey, near Boston, who was one of the first people to attempt a comprehensive history of Lincolnshire. Banks had promised him the use of his papers in compiling
this work and then, because of a supposed presumption on Marrat's part, all assistance was withdrawn and Marrat was bankrupted.

Sir Joseph Banks was one of the 18th century's outstanding personalities. In his work can be found all aspects of the life of the times which was taking Britain from a pre-industrial society to one based on mechanical production. He was, by virtue of his public position, a catalyst, he did not innovate but, rather, drew the activists together and promoted interaction between them. He was in constant demand from the time he attained the Presidency of the Royal Society and an astonishing aspect of his character was the volume of work he was capable of performing, his capacious energy for correspondence and the breadth and richness of his range of activities and interests. It is to be wondered at that he could find this energy, and time, to devote to the provincial problems of his local county waterways. That he made mistakes is hardly surprising when the many other things which must have been occupying his mind at the same time are taken into account. We must, therefore, conclude that Sir Joseph's involvement in the promotion and development of Lincolnshire waterways made little difference to the final result but much more to the speed with which successes were brought about. This was in itself valuable.
A letter from William Jessop to Sir Joseph Banks in which he set forward the role specifications of his job as a consultant engineer. References in the letter are made to the circumstances under which it was written, namely, that Sir Joseph expected Jessop to find a resident engineer for the Horncastle Navigation. The original spacings and punctuation have been retained.

'Sir,

having been from Home I take the first Opportunity of acknowledging the receipt of your Letter of the 12th.

As you have entertained a very different Idea from mine of the nature of my engagement on the Horncastle Navigation and under that impression I may have suffered in your Opinion, I thank you for giving me an Opportunity of explaining.

When Mr. Smeaton was actively concerned in Business similar to what I have been employed in; Public Projects which now crowd one upon another much to the disadvantage of the whole, were then comparatively few, there was no difficulty in finding men of every description to direct and Execute; when his Avocations multiplied I never knew that he attended more to the Minuties of Business than I have done and feel myself disposed to do, in the case of the Horncastle Navigation, he recommended Persons for that Purpose because he could find Persons to recommend.

The alteration of times and Circumstances have more by
accident than intention of mine cast me into a mode of employment somewhat different from Mr. Smeatons, I have been from scarcity of men in my Profession pressed into a multiplicity of engagements in spite of every endeavour to keep myself disentangled, I have therefore for some years past never further engaged in any undertaking at the outset ['outset' underlined] of it than to investigate the Practicability, and to attend the Bill thro' Parliament: In Ten Bills now bringing forward I shall stand exactly in this predicament:—I am frequently asked by the Counsel for Opposition—do you not expect to be employed in this work?—I chuse to have it in my power to say I am under no such engagement, I am not interested in the Question:—If when an Act is obtained the Parties chuse to consult me further I shall be at their Service so far as I can consistent with Prior engagements.

When the Horncastle Bill passed I was desired to give my assistance toward the Execution, I made designs for the principal Works sufficient for the information of any man qualified to superintend the Execution—such a Man ought to be able to use a spirit Level; and having the general Plan before him to shew him what Ground he was authorised to take, nothing is more simple than to mark out from Lock to Lock, the line for cutting—

But I am expected to find this Man: I have endeavoured to find me, and have not yet succeeded; thus far I conceive myself in Honour and fairness pledged, that when I can succeed in finding a Proper Person for such a business, I shall recommend him to the Horncastle Navigation in
preference to any other that I may be concerned in or have been concerned in Posterior to that Business.

The Pinkerton that I thought of recommending, if he had not been engaged, is not unqualified for such a Purpose, he failed in his engagements because he had undertaken work for less money than he could possibly Execute, and this happened partly from mismanagement - but more from the uncommon badness of the Seasons, and the advance in the price of Labour.

I have again wrote to Mr. Eastburn but have not yet had his answer.

I am Sir,

Your very humble Servant

W. Jessop.

Newark - Jany 28. 1793.-
APPENDIX B


Estimate of the Expense of improving the present Navigable Communication between the Fossdike and Witham Navigations through the High Bridge at Lincoln.

£

Making alterations in the Staunch at Stamp end ... 80
Making a New Cut for Sincil Dike to discharge below the Staunch ............... 200
Taking down and rebuilding the Wall through the Town ...................... 460
Lowering the Floor of the High Bridge .................. 40

£

Widening and deepening Sincil Dike 800 Yards in length .120
Making a new cut 400 Yards in length cross to the Witham .. ......................... 200
Widening and deepening the Witham to Brayford Meer ..... .......................... 50
3 Bridges ......................... 360
Flood lock ...................... 500
Widening and deepening the River ................. 120
Purchase of land ...... 300  Purchase of land ......... 300
Contingencies at 10 Per Ce nt ............................ 120
Contingencies at 10 Per

1320 1683

[This handwritten document is found in the Sutro Colln.
S(F2:9)]
APPENDIX C

Banks was twice asked to prepare a design to be used as the Common Seal for a Navigation. The requests came from the Horncastle and Sleaford companies and both occurred in June 1792, just before the Royal Assents were given to the Acts.

HORNCastle NAVIGATION.

The Horncastle’s request was made by Richard Clitherow in anticipation of a formal approach by the committee. On 9 June Sir Joseph was asked to,

‘... think of some proper emblematical device and order one where you think it would be well Executed ...’ (1)

Clitherow suggested that it should be about the size of a half-crown and oval in form. He let Banks know that he had a friend who would also be submitting a design, this friend having,

‘... a tolerable good Notion of Heraldry ...’ (2)

This request had taken place when Sir Joseph was engaged in helping to form the management of the Horncastle company. He was being consulted on the matter of the election of the Clerk and Treasurer and on the appointment of an engineer.
These points were referred to Samuel Galton jnr. Chairman of the Birmingham Canal, and he had included mention of the request for a seal design.

Banks had suggested a design (see fig.1) and thought that a suitable motto would be 'dum defluat Amnis' - 'As long as the stream flows' (3). This sketch he had submitted to Galton who had shown it to a fellow Lunar Society member and FRS, Dr. Erasmus Darwin, of Elston, who recommend as an alternative motto, 'mutata suos requierunt Flumina cursus' - 'Brooks, arrested, pause in their downward course' (4).

In a letter to Clitherow on 22 June Banks had stated that he was waiting for a seal design and would consider its merits when it arrived. Whether he was here referring to that of Clitherow's friend or another coming from Galton is not clear although the second speculation is probably the correct on.

In the meantime Clitherow's friend had been busy and a finished article was delivered. Clitherow's own words amply convey his feelings about it,

'... You will be kind enough to excuse my long silence, occasioned by my not being able to procure the above sketch for a Seal before last night, which I fear has cost my friend (if I may judge from the time he has taken) more trouble than its merit is adequate to - Indeed, I am much disappointed ...' (5)

(Fig.2 is the finished seal made from the 'sketch' referred to here).
FIG. 1

FIG. 2

FIG. 3
This did not matter to Sir Joseph and it is of interest to find his attitude towards such devices made clear to Clitherow,

'... As I can have no other design for a seal against which to compare your friends but my own ... I have resolved to send your friends to the Engraver forthwith [...] it is indeed a matter of no real importance what the seal of a company is being a matter seldom likely to be either commendd or disapprovd ...' (6)

Not much is known of what actually took place between this time, June 1792, and the end of 1794 in the matter of the design. For want of a better one the committee had decided to make use of a temporary seal, almost certainly to the pattern of fig.2 (7).

By December 1794 some of the Navigation’s proprietors were pressing for the securities on the amounts they had subscribed and these had to be given under the Common Seal of the company. By this time Sir Joseph had arranged for a new design (fig.3) to be sent to the engraver although whether he had personally devised the motif, or Galton, or someone known to him is not likely now to be ascertained. When the committee heard of this development Clitherow reported that they would not think of making use of,

'... the Present one ...' (8)
Meanwhile, Sir Joseph had reconsidered the motto and now suggested, "auspicium melioris aevi" - 'Omen of a better age'. (9) and when this was found acceptable by the committee and Banks put the matter in hand at once. The engraver chosen for the work was a John Gale and the steel die for the seal was prepared by 10 March 1795 at a cost of 12 guineas (11).

SLEAFORD NAVIGATION.

The day before the Royal Assent was obtained for the Sleaford Navigation Act, i.e. 10 June 1792, Benjamin Handley, the Treasurer, wrote to Sir Joseph (12) in reply to a communication received from him. Sir Joseph's letter has not survived but is was probably one of congratulation on the success achieved. Handley had been instructed by the proprietors to thank him for his letter and also to acknowledge the great support he had given the Bill, both in Lincolnshire and in London during its passage through Parliament. They had one further request to ask of him - that he would suggest a design for the Common Seal which Handley could show to the first General Meeting of the subscribers to be held the following Friday.

This Sir Joseph agreed to do and there exist two draft designs and a finished drawing (13). Neither draft is the actual one which was used yet they both contain features in common with the finished design. They both have a supporter on either side of the shield, a farmworker and a coalworker, symbolic of the main types of goods which the Navigation
intended to carry. In both a boat is shown in the upper one-third of the shield, with the remainder being occupied with various other devices.

Possibilities as to additional symbols to include are mentioned below the design and although they are difficult to decipher accurately due to Banks' poor writing they probably read,

'a coal pit has a square top without walling'

and

'a well = a round one with a wall'.

There is also a suggestion for a motto - 'Leve quod bene fertur opus'. This Latin was slightly incorrect and the version actually used by the company was 'Leve fit quod bene fertur opus' - 'The burden which is rightly carried becomes light' (14).

The design and motto were accepted by the Sleaford Navigation committee at their meeting on 22 June 1792.
References for Appendix C

1. BS 18/9. R.Clitherow to SJB, 9 June 1792. Formal request to Clitherow to provide a seal is noted in a Horncastle Navigation Committee minute for 14 June.

2. BS 18/9. R.Clitherow to SJB, 16 June 1792.

3. BS 18/9. S.Galton jnr. to SJB, 22 June 1792.


5. BS 18/9. R.Clitherow to SJB, 8 July 1792.

6. BS 18/9. SJB to R.Clitherow, 13 July 1792. For reference to his own coat-of-arms, see W.R.D. 46.

7. BS 18/1. A bill from a John Gale to SJB reads,
   '... 1794. April 19th. Steel Arms Ivory handle
   £2.2.0
   May 23rd. Gold Seal Arms Quatd.
   £5.5.0 ...'

8. BS 18/10. R.Clitherow to SJB, 19 December 1794.

9. BS 18/10. SJB to R.Clitherow, undated, but replying to Clitherow’s letter of 10 December 1794.
10. BS 18/1. R. Clitherow to SJB, 31 December 1794.

11. BS 18/1. SJB paid a total of £24.5.8d. for all work done by Gale on 11 March 1795.

12. BS 14/1/5.

13. Ibid.