Thomas Rogers and the *Judith* of Whitby; the Voyage Accounts of a Seventeenth Century Merchant Ketch

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Dans les archives du musée de Whitby se trouvent les comptes du dundée Judith*, construit en 1677, et engagé en cabotage autour de l'Angleterre et de l'Europe du nord, transportant charbon, alun et bois de charpente. Ce navire était propriété d'un consortium de huit y compris Thomas Rogers, maître à bord, qui a gardé des comptes détaillés et datés de chaque transaction faite pendant quarante sept voyages entre 1677 et 1682. Ces comptes mettent en évidence une grande partie de la vie des équipiers et du navire à cette époque de bouleversement politique et de bénéfices aléatoires, et révèlent de nombreux détails de l'entretien du navire, de l'alimentation de l'équipage et de la réalité de la vie de marin dans une flotte anglaise en croissance.*

There is often in a historic document, particularly of vernacular origin, a phrase which returns unbidden to the memory: in the voyage accounts of the ketch *Judith* of Whitby, Thomas Rogers, master, it is "whins to burn the bottom."[1] Encapsulated in those five words are two of the most unpleasant jobs imaginable, whin-cutting and bottom-graving, linking the rural hinterland and the heavily industrialised port. In summer the scent of the bright yellow gorse flowers still hangs heavily in the air over the North York Moors, while for centuries the stench of burning whin, weed and barnacles, mingled with pitch, regularly permeated Whitby's harbour area, and drifted up the river valley to the moors. It is also, however, Thomas Rogers, the man who wrote that laconic phrase, who stands out as a shadowy but powerful figure from the page of an apparently prosaic set of accounts.

Whitby and its Archives

In 1823 a group of worthy citizens of the isolated but very important port of Whitby established Whitby Literary and Philosophical Society, an organisation which still flourishes, and runs a museum, library and archive. Whitby lies on the north-east coast of England, in the North Riding of Yorkshire, one of the three shires, or Ridings,

1 Whitby Literary and Philosophical Society, various accounts in the Chapman Collection, Whitby Museum, North Yorkshire, England.

North, East and West, of Yorkshire, the largest county in England.[2] At the end of the seventeenth century the town had between 2,000 and 3,000 inhabitants. In Victorian times its population peaked around 15,000, and has since fallen again to around 13,000. It is isolated from the rest of North Yorkshire by the 800 square miles of the North York Moors National Park, for many centuries almost impenetrable for wheeled traffic, though criss-crossed by pack-horse trails and paved footpaths called trods. Because of a quirk in the coast-line the town faced the sea in a northerly direction and from earliest times used the sea as a source of food and a means of transport. For the early modern period and beyond it was one of the leading ship-owning and ship-building ports of England, wealthy, enterprising and efficient far beyond the expectations of its size and situation. It was from that wealth and enterprise that the Literary and Philosophical Society was born. Its museum collection reflects its seafaring roots, and its scientific bent, as does its library. Its archive, including a priceless collection of shipping papers, was deposited over many decades by the leading families of the port, particularly as the shipping industry shrank with the decline of the sailing fleet and the rise of large deep-water ports.

One of the most important aspects of the archive is that it contains examples of shipping documents which are unique in the UK. Much of the potential archive of details of individual vessels from the days of sail were lost during the Second World War, when the shipping company offices on the docks of major seaports were destroyed by bombing. Because Whitby had declined, largely due to her isolation and the narrowness of her harbour, most of her sailing ship companies had already deposited their papers in the museum they had founded away from the harbour, and so they survived. Even now, new collections appear from time to time, as the last descendants of the old shipping families die.

The Voyage Books

Among the archives are a number of "Voyage Books," the regular account books of individual vessels. These were important documents at a time when most vessels were owned by multiple shareholders, before marine insurance became routine. The books recorded all the purchases made on behalf of "the ship" during each voyage, including the cost of any repairs, or of "factored" cargo, or if the vessel was being chartered, of any legal documents such as "charter parties." They also included the wages bill, and the victuals for the crew, and any harbour costs such as bridge dues, or payment for the services of men to unload or "liver" the cargo. Individual ports could be very bureaucratic, especially the larger ports which were also major boroughs or cities like Newcastle upon Tyne.

At the end of each voyage there was a reconciliation in which the costs of the voyage and of the cargo, if it had been factored, were calculated, and the "stock" made up, and the resulting total then set against the receipts from the voyage.[3] This would be

2 "Riding" is a corruption of the Anglo-Saxon "Thriding" or third part.

3 The stock was a fixed sum of money which acted as ready money for payments made by the master on behalf of the vessel. He had sole responsibility for it, and it was part of the capital

either the amount received under the charter party for freight, or the amount for which the factored cargo was sold. There might be other receipts; surplus items might be sold, such as a broken mast, which could be cut down to act as a spar for a smaller vessel. Then, if the vessel was delayed in port waiting for the arrival of whatever the freight might entail, a charge called demurrage, calculated on a daily basis to compensate the crew for any loss incurred, and would be part of the vessel's income. Only after all the reconciliations for the whole year's voyages were complete and totalled were disbursements of profits made to the shareholders, calculated according to the number of shares each shareholder owned.

The books were mainly made up at the end of the voyage from receipts which were probably kept on a metal spike during the voyage and then threaded on twine and taken ashore to be written up. The master might do it himself, or as in some cases, a father retired from sea, or even a literate and numerate wife. One such bundle of receipts survives in the Museum archives. However, a substantial range of voyage books survives from 1677 until well into the nineteenth century, sometimes overlapping. It is this overlapping and spread which makes them unique.

Ralph Davis found a few such accounts in the National Archives among documents submitted as evidence in High Court of Admiralty causes.[4] Because they were to be used as evidence in litigation, the accuracy of these are suspect. The Whitby books on the other hand were all signed off locally by shareholders who lived and worked in or near the town, and who would have a keen eye for any wrongdoing. The accounts were based on trust, and as such are a valuable and reliable source for the workings of merchant shipping of their time. The continuity of the class of document over 200 years shows the method of keeping them to be constant. Thomas Rogers in the *Judith* would have been able to make complete sense of the accounts of any of the Swales family's nineteenth century vessels whose books have arrived at the Museum in the last few weeks. The later captains might have boggled at Thomas's spelling, but they would have found his seventeenth century detail perfectly accessible.

The voyage accounts for *Judith* cover the years from her building in 1677 to her sale to unknown purchasers in 1682. Throughout that period she was owned by the same shareholders, including her master, Thomas Rogers. Apart from one incomplete year of the accounts of a vessel of unknown size called *John* of Whitby, Browne Bushell, master, for 1632, which are to be found among the causes of the High Court of Admiralty in the National Archives and are therefore more suspect because they were subject to unknown litigation, those of *Judith* are the only survivors from the seventeenth century. The accounts are the first entries in a volume which contain the accounts of a second vessel,

value of the vessel. If there was insufficient money to make up the stock and the shareholders were unable to provide it, then the vessel was effectively bankrupt and could not trade unless sold. new owner had to make up the stock as well as pay for the vessel. R.R. Barker, "The Stock in Her; a maritime enigma concerning the disappearance of stock from the reckonings of Whitby's ship-owners," *Business Archives, Sources and History* 86 (November 2003): 18-126 analyses this trading practice which died out with the decline of multiple ownership.

4 R. Davis, *The Rise of the English Shipping Industry in the Seventeenth and Eighteenth Centuries* (London: Macmillan, 1962). Davis analysed four such voyage books in his research.

Hannah from 1714-18, accounts of all the returns of a single unnamed investor in Whitby shipping for the latter part of the eighteenth century and various other accounts relating to the Stakesby Manor estate outside Whitby.[5]

Building the *Judith*

In May 1677, what we would now call a "consortium" of eight investors in alum, took delivery from Robert Page, ship-builder, probably of Shields on the Tyne, of a ketch, a two-masted, square-rigged merchant vessel, called *Judith.*[6] The total cost of the vessel was £700. Of that, £420 9s 5d (£420.47 in "new money") was paid to Mr Page for the hull, which measured at 74¾ tons. This meant a purchase price per ton of £5.63, for the hull alone, and for the ketch, completely fitted out and ready for her first voyage, £9.36 per measured ton. The hull, therefore, represented 60 percent of the total cost. The remaining 40 percent covered the fitting-out, and the master's payment for supervising the construction. It also covered the important stock.

At this time Whitby was a dependant port of the headport of Newcastle-upon-Tyne, and frequently quarrelled with her "superior" over the restrictive practices of the Company of Hostmen, who largely controlled the export of coal in the river.[7] The alum investors had gone so far as to buy their own colliery at Harraton, near Sunderland, in order to evade the Hostmen. The Company of Shipwrights of Newcastle was equally given to restrictive practices, and embroiled in a constant struggle with what the Company saw as outsiders who built ships at either North or South Shields farther down the estuary[8]. It seems, therefore, interestingly provocative that a Whitby consortium of alum investors in need of a new ketch should go to the outsiders.

The price of £700 may seem high in comparison with the £290 which, for instance, the Hudson's Bay Company paid for the second or third-hand *Nonsuch* nine years earlier. However, *Nonsuch* may have been built as early as 1650, which meant that she was eighteen years old when the Hudson's Bay speculators bought her. It is likely that she would have been subject to the usual depreciation of 4% per annum, and under the Parliamentary and Restoration navies, both somewhat strapped for cash, may not have been very well maintained.[9] In addition she had been captured by the Dutch, and later recaptured, and when she was sold to the civilian Sir William Warren, would have been stripped of anything moveable and of value, unless he was very sharp. A similar depreciation on the larger *Judith* would have reduced her value to £350 after eighteen

5 Whitby Literary and Philosophical Society, Chapman Papers**;** foliated volume.

6 J. Rushworth,and D Pybus, "Allum," in Lewis, D. B., (ed.) *The Yorkshire Coast* (Beverley:: Normandy Press, 1991), 44-59.

7 F.W. Dendy, ed., *Records of the Newcastle upon Tyne Hostmen's Company*, Surtees Society, 105 (Durham: Andrews and Company, 1901) recounts the long struggle. D. Woodward, "The Port Books of England and Wales," *Maritime History*, 1 (1971) explains the system of Exchequer ports which functioned in England from medieval times.

8 D.J. Rowe, ed., *Records of the Newcastle upon Tyne Company of Shipwrights*, Surtees Society, 181(Gateshead: Northumberland Press, 1970).

9 Davis, *The Rise of the English Shipping Industry*, 376.

years.

Nonsuch appears to have been a smaller ketch than *Judith*, even if the larger of the two figures I have found quoted for her tonnage, sixty tons, is accurate. This would have been her measured tonnage, calculated after 1640 by an approved formula: length (from stem to stern) times breadth, times half the breadth, all divided by 94.

$$\frac{\mathbf{l} \times \mathbf{b} \times (\mathbf{\frac{1}{2}b})}{\mathbf{94}}$$

We do not have *Judith*'s dimensions, but it is possible to extrapolate them by using the ratio of length to breadth in later two-masted vessels found in the shipping registers post-1786, which recorded the dimensions of many vessels which were of considerable age when they were first registered. In the eighteenth century they were more likely to have been brigs or schooners, but the difference lay more in the masting than in the shape of the hull. It is likely that her dimensions would have been thus:

Fig 1: Nonsuch *replica, coutesy Museum of Manitoba*

Probable dimensions of *Judith*

Measured tonnage of hull:	74¾ tons
Mean ratio of length to breadth in two-masted vessels:	3.4:1
Therefore, likely length from stem to stern of *Judith*:	54 feet
Likely breadth:	16 feet
Depth normally reckoned at half the breadth, therefore:	8 feet
Draught, to enable navigation to Rouen:	<9 feet

Judith would have been a fat little vessel, designed, as were all merchant vessels, to be a compromise between capacity, safety and speed. Her bottom would have been as nearly flat as was possible, given the need to have a bit of steerage way. The stem would have been just sufficiently raked to achieve that; if there was too much rake from the end of the keel to the stem, she would have plunged into the sea with each wave, and that would have slowed her down. Too little rake would have meant no progress at all, except leeway. The ratio of length to breadth was just enough to ensure that she was not 'crank' - inclined to list - when laden.

Alert is one of the earliest-built Whitby vessels to have survived into the photographic era, having been built in 1802. Like *Judith* she was somewhat tubby. *Judith* probably also had a 'tumblehome', where the sides sloped inward towards the deck, a design originally designed to thwart the Sound tolls levied by the Danes at Elsinore on vessels entering the Baltic, since it was the width of the deck which was measured.[10] When it was realised that the tumblehome gave stability, it became a standard design feature. *Judith's* relatively flat bottom meant that she could "take the ground" in mud berths or if she had to unload on the beach, or run ashore in order to be "graved."

Fig. 2: The top-sail schooner Alert *in 1888. (Frank Meadow Sutcliffe)*

She would have been painted, to preserve her timbers, and to make cleaning easier. Her hull was probably "payed" with pitch, rather than painted with normal paint, but Master Blunwell the painter's men would have been responsible for both jobs. She must have been a plain-looking ketch; no charges for either gilding or carving are listed, and as these were very specialised skills, it is safe to assume that they were not carried out. Given the harsh conditions in which she worked, such fripperies would have been regarded as unnecessary.

This, of course, brings into question the elaborate carving of the replica *Nonsuch*, now in the Museum of Manitoba in the Hudson's Bay gallery. David Wray's reflections on the replica recorded in the *Nautical Research Journal*, in 1972, point out that although *Nonsuch* had served in the Navy, she was merchant-built, and therefore she was unlikely to have been decorated. When she was bought into the Navy in 1654, it was as a very small vessel indeed, and the cash-strapped and inefficient Admiralty committee of the Commonwealth would have been very unlikely to pay up for prettifying a humble ketch. The reason that warships were carved and gilded, as they are often shown in the elegant canvases of the time, was to make an impression of wealth and power, but a tiny two-masted ketch with carved gilding would have looked faintly ridiculous in action.

Measured tonnage and tonnage burthen were used somewhat arbitrarily for labelling vessels. Measured tonnage was the means by which the building price was calculated, whereas tonnage burthen was meant to imply some measure of capacity. Ralph Davis suggested that during most of the seventeenth century measured tonnage

10 R.W. Unger, *Dutch Shipbuilding before 1800* (Assen: van Gorchum, 1978), 46-47.

was generally reckoned to be greater than tonnage burthen.[11] However, the captures made in the First Dutch War, (1652-54), when almost 1,000 prizes were taken, had a revolutionary effect on English building. Used to inland waters, and on the whole less belligerent and therefore less in need of heavy scantlings to protect against gunshot, the Dutch *fluyts* and *vlijboots*, or "flyboats" as they were quickly labelled in England, were lighter. Prizes were sold into the English merchant fleet, their advantages quickly recognised, and their lighter scantlings adopted in English yards.

The two ketches, *Nonsuch* and *Judith*, neatly bracket this development. *Nonsuch*, merchant-built, but before the war of 1652-54, at which time she was bought by the Navy, would have had a lower tonnage burthen than her measured tonnage, whereas *Judith*, built in 1677, could and did easily carry 90 tons of coal or alum to her measured tonnage of 74¾ tons, and then have room for a few firkins (about eight stone each) of butter or a fother (about one ton) or two of lead in the corners.

The building accounts for the *Judith* give us some insight into the process of costing, building and fitting-out a vessel of this size. The fact that Thomas Rogers' total of £700 does not exactly balance with the reality of £702.96 is in contemporary terms neither here nor there. £700 divided neatly into eight shares, and the discrepancy could have been taken, if noticed by anyone, or not rebated by the builder, out of the first year's stock, to be squared up at the end of the year.[12]

Judith's **Building costs.**

Table 1: *1677 - An Account of Charges Paid for the Building Rigging and Fitting of the* Judith *Ketch of Whitby*

Paid Mr Robert Page for building the Hull quantity 74 tons ¾ at £5:12:6 per tun is	£420 . 09 . 05
Paid Mr Martin James his Bill for Ropes	£40 . 12 . 08
Paid Mr James Jiveys his Bill for Ditto	£62 . 08 . 11
Paid Mr Timothy Astell for Sails	£42 . 12 . 06
Paid Mr Toby Fenton for Masts	£16 . 10 . 00
Paid to Mr John Hopps the Joiner	£12 . 15 . 00
Paid to (blank) the Anchor Smith for Anchors	£16 . 13 . 00
Paid to (blank) the Blockmaker	£5 . 16 . 10
Paid for a Boat	£5 . 05 . 00
Paid Mr Blunwell for Painting	£4 . 10 . 00
Paid Mr Robert Page for 4 anchor-stocks	£1 . 16 . 00
Paid for pump-leathers Nails Iron and other Small Charges	£4 . 08 . 10
Paid Charges Carrying Down the Ropes Masts Sails and Other Provisions for the Vessel	£31 . 00 . 00
Paid Men's Wages at Rigging and Fitting the Vessel to Sea	£7 . 17 . 05
	Continued . . .

11 Davis, *The Rise of the English Shipping Industry*, 7, n 1.

12 The stock was a fixed sum of money, part of the capital value of the vessel, which was entrusted to the master to enable him to pay for supplies and running costs. See Barker, "The Stock in Her."

Paid Thomas Rogers the Master his Wages Charges and Pains at Rigging the Vessel and Fitting it to Sea	£6 . 04 . 05
Paid the Master for stock of the Vessel Which he is to be Accountable for	£24 . 00 . 00
	£700 . 00 . 00

Since Rogers' partners were all known men of substance, it is possible that much of the bill was paid for in Bills of Exchange.[13] Rogers' own share might also have been paid in this way, but banking and money-changing facilities are not thought to have existed in Whitby at this time, so he probably paid in cash. He was a man of some stature in the community, a founding trustee of the Whitby Seamen's Hospital charity founded in 1675, so he was probably fairly affluent. He is not listed in the Hearth Tax returns for 1673, which revealed Whitby to be a very prosperous town, but he may have lived in one of the outlying townships, or even, for a while, in another port. There were several other households with the same surname in Whitby. He may well have saved the cash from other seafaring ventures, or he may have obtained the money in a very usual Whitby way, by raising a mortgage on real estate. Sadly, the records of such transactions have rarely survived, being found only occasionally in probate records or among the extant deeds for property in the town.[14] Deficiencies in the parish register after the Civil War and the Commonwealth (a period lasting from 1636 to 1660) mean that Thomas's birth is not recorded, though it is likely he was the son of a stonemason. Stonemasons were amongst the elite craftsmen of this period, especially as the growing and increasingly wealthy town was undergoing considerable rebuilding.

That there were only eight shareholders is an indicator of their financial status. Outside the major entrepôts and cities, finance for ship-building was raised from small, largely local investors who might buy as little as a 1/64th share in a vessel. Indeed, all modern shipping is still by law owned in notional 64ths. This shared the risks inherent in the industry at a time when insurance was rare. A later set of accounts in the same volume as those of *Judith* show that intestacy could sub-divide even a single share among co-heirs. The smallest share found so far in Whitby documents is of 1/512nd shares held in *Lark* and *Margaret and Ann* by an unnamed investor in 1743-44. Insurance is not mentioned in any Whitby voyage accounts as a charge on the vessel until the turn of the eighteenth and nineteenth centuries. Whitby vessels were insured at Lloyds, but insurers seem to have done it on their own behalf and insured their individual proportional risks in the vessel and its cargo.

Fitting out to sea, and taking on board sufficient victuals to support the crew as far as Sunderland - a day's sail - was the first task, but then the finishing touches would be applied. A teenager customising an old car has nothing on a ship's master making his brand-new vessel fit for purpose. At Shields he bought a "reckon (a pot-hook) and tongs." These would be for the cooking facility in the forecastle, where it stood on a little

13 They included Sir Hugh Cholmley, lord of the manor of Whitby and friend of Samuel Pepys.

14 N. Vickers, ed., *A Yorkshire Town of the Eighteenth Century; The Probate Inventories of Whitby, North Yorkshire, 1700-1800* (Studley: Brewin, 1986) has several such lists of mortgages and bonds.

platform of brick or stone, to reduce the fire risk. Thus, and with 23 stone of beef for the voyage, were the inner men catered for.

Then, in Sunderland, on the next estuary south of the Tyne, possibly in the "roads" of that very dangerously barred harbour, they set about the ketch. They bought deals and spars to make a hold for the coal. The ketch's carpenter would do that. Holds were frequently rebuilt in colliers. Coal was a high-bulk, awkward cargo, tipped into the hold from vats, or down canvas chutes called port-sails. If the hold was constructed with iron nails, and many such nails were bought for the ketch, then the hold itself would become "nail-sick" if the sulphur in the cargo of coal became damp and turned into sulphuric acid which then reacted with the nails. The hull, on the other hand, would be fastened with "treenails" of wood, thus avoiding the problem of nail-sickness in the hull.

The hold could also be removed if a different trade was undertaken. Goods which were transported in barrels, such as alum, butter and preserved fish, or in bales like hemp, would be stored on the lower deck, and the hold probably struck down and simply packed flat out of the way. If ballast was carried it would go in the hold unless, as in 1681, when the *Judith* spent 104 days skulking in the Channel with her ballast intact probably picking up refugee Huguenots, the deals that made the hold could have been laid over the ballast to create a primitive, and probably very smelly, platform for carrying passengers, out of sight of prying eyes.

The crew caulked the upper works, probably the cabin and forecastle and all the hatch-covers, obviously to keep out the water, but also to keep out the draughts. They bought two danbuoys, essential for marking cables and anything jettisoned as lagan.[15] They bought a barrel, and a steeping tub, in which the salt beef was immersed in fresh water and relieved of as much of its salt as possible before cooking, and a pump-can or casing for the pump, which had to be made both air and water-tight. Four oars were bought, and two shillings were spent on launching the boat. This would have been a small but important ceremony, which provided a breathing space, and ale would be bought with the two shillings allocated to the occasion. Caulking was hot and hard work, particularly in awkward corners where horizontal planking met with vertical.

Provisions were bought, a davit sheave, nails, candles, and thrums. Thrums were small pieces of rope, used for weaving into sailcloth to make mats, which could be used to protect any rigging likely to become frayed, or which might even be coated with tar, pitch, rancid butter or galley-grease to make fothering mats if the ketch or her boat sprang a leak. They did not, as other newly built vessels did, buy old rope or old, and therefore soft, sailcloth for such jobs. They may have used everything new on principle, but in a society given to recycling, it is more likely that they "scrounged" from the network of small tradesmen which existed in ports, or from other vessels (especially as Thomas was a Yorkshireman), or even brought it from a previous vessel. Such bartering and borrowing did go on; in 1632 Browne Bushell, of the *John* of Whitby, borrowed dried

15 Anything dropped overboard attached to a marker buoy still belonged to the vessel from which it came. If found it was regarded as salvage and had to be reported to the Receiver of Wrecks for the area. This was an Admiralty official. he would retain the "lagan" which could then be redeemed later by the owners on payment of a fee. In practice lagan usually applied to dragged anchors or heavy goods thrown overboard to save the vessel in bad weather.

cod from his cousin Isaac Newton, to be paid back next time he was in Newcastle, "God Bless me well thither."

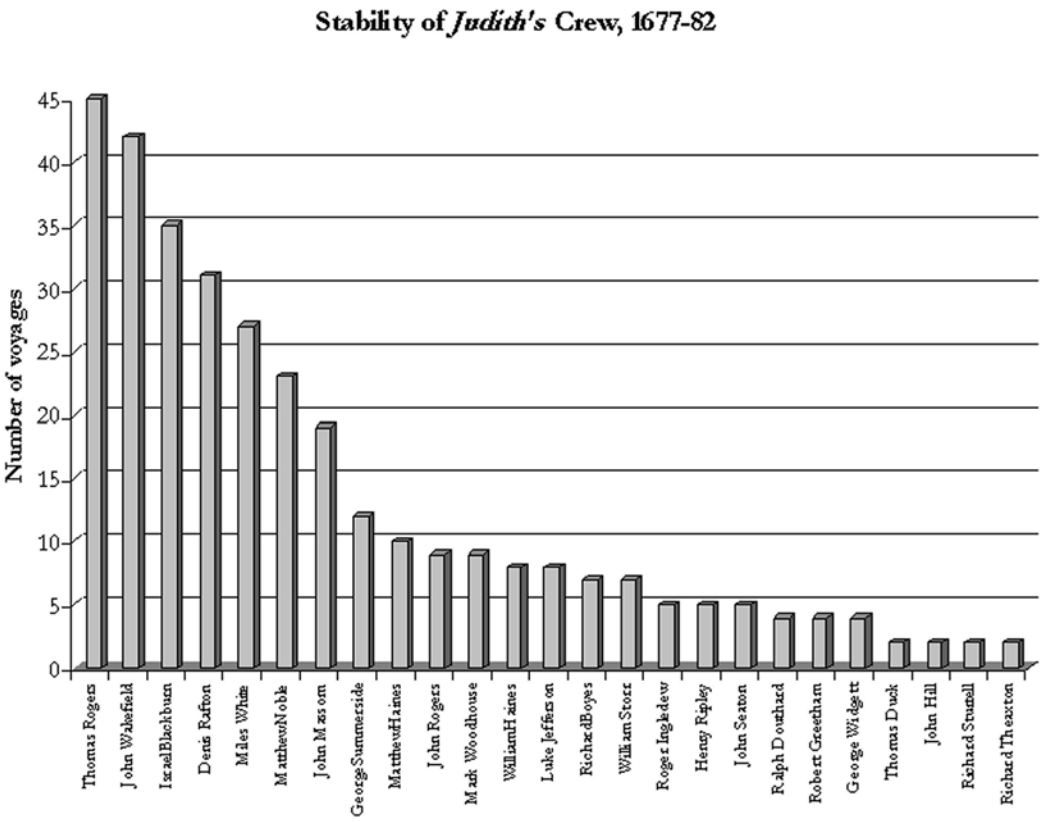
This "ketch-keeping" went on throughout the period of the accounts. Most purchases for the ketch were for consumables, or for the repairs inherent in a working life in a hostile environment. The ketch was their home, as well as their work place, and to keep it clean and in good order, and as comfortable as they could, was also to preserve their lives. That it was thought of as a home can be seen in the delightful name of one of *Judith's* contemporaries, the ketch *Traveller's Habitation*, of Whitby, Jacob Hudson, master.[16] Over the period of the accounts, she spent £128 on repairs, roughly a quarter of her expenditure on wages. This is indicative of good management, and possibly also to the skill of the carpenter. Rogers rarely needed the services of an extra carpenter in port.

Crewing the ketch

When *Judith* made her maiden voyage from Sunderland to London, she carried Thomas Rogers as master and a crew of five. Their posts on board are not recorded, but as there is a long-standing order in later crew lists, it is likely that Matthew and William Haines were respectively mate and carpenter, and probably kin. They and two other men were paid £2.25 for the notional one month trip, the equivalent of one shilling and sixpence a day. In a time-served job ashore in the construction industry they would have made about the same wage at that time, but would have had to find food and lodging out of the money.[17] Thomas himself was paid £3.50, and a solitary unnamed boy was paid 50p. Whether the boy was just that, a ship's boy, or a servant or apprentice - an *articulate* in the seventeenth century - is not stated. That was the only time that an anonymous crew member appeared. Thereafter everyone was named, an indicator of Thomas Rogers' nature as a master. This makes it possible to tabulate the crew and see how the younger ones progressed in their careers, and how long individuals stayed with Thomas. It is the sign of a good master that he had, on the whole, a regular crew. By the end of the first year, after five voyages, the crew had risen to eight, the master and seven others.

16 That is the correct way to designate a vessel, by name, home port and master. In an industry where there was no official registration, but where it was often necessary to identify a vessel captured, lost at sea, or involved in an incident, all three pieces of information were required, especially as many duplicate names were given to vessels from the same port, and only by all three parts of the designation could one be distinguished from another. For maritime historians to ignore this is to render much of the fine detail of their work less useful than it should be. In 1773 a detailed list of all Whitby vessels contains five *Providences*, and six *Nancys*, all of different tonnages, and distinguished from each other only by the names of their masters; in addition there are three *Johns* and eight combinations of *John* with another Christian name.

17 D. Woodard, *Men at Work; Labourers and Building Craftsmen in the Towns of Northern England, 1450-1750* (Cambridge: Cambridge University Press, 1995), 177.



The boy had acquired a name, John Wakefield. The brothers were still there, but Henry Ripley now headed the list, probably as mate, and one man had left while two others had joined. Thomas may have found that the ketch worked more efficiently with a larger crew. He may have sought a specialist of some seafaring trade, such as a sailmaker, to help him achieve the best possible rig for his vessel. However, a sliding scale of wages began to appear. Those at the lower end, apart from boy John, may have been apprentices to merchants with whom Thomas dealt, adding some sea-time to their training, especially as the number of men and boys eventually settled to six plus the master. This must have been the optimum for the efficiency of the ketch. Boys and servants progressed over the years, and can be found in later documents as fully-fledged masters. Most of them, as was the norm in Whitby, seem to have been local.

No crew member made fewer than two voyages with *Judith*, a sign of a good master. In the hectic bustle of a busy port there were always masters looking for crew, so men could vote with their feet if they were ill-treated or badly fed or paid. In any case, Whitby vessels were already feeling the pressure for good conduct which the increasing influence of the Quaker community brought to the shipping industry.[18] The number of

18 The Society of Friends was established in Whitby by George Fox himself in 1654. Many of the leading shareholders and masters in the Whitby fleet were Quakers.

crew settled to master and six quite quickly, except in odd periods when there might be an extra youngster on board, as in the last nine voyages when the crew was joined by a child, John Rogers, probably the master's ten year old son. In a close community like Whitby, every likely crew member would understand the mechanisms by which wage rates were set, and how well each master cared for his crew. What were later sometimes described as 'starve-crew' vessels would struggle to man them selves. Each vessel had a "ship's husband," often the master if he owned shares in the vessel, and he, or the master as his - or her - delegate was totally responsible for the running of the vessel. As Thomas was "responsible" for the all-important stock, he must have been the ship's husband, and he set the wages and ordered the victuals and sanctioned any repairs or adaptations which might be necessary. Browne Bushell's brief accounts in 1632 show the same pattern.[19] So do the accounts which run through the eighteenth and nineteenth century accounts.

As the ketch settled down to work, it has been possible to tabulate the crew's wages for the year 1679.

Voyages	Days at sea	Wages in old pence	Daily rate in old pence
London	21	540	25.71
London	21	516	24.57
London	13	516	39.69
Hamburg	36	720	20.00
Saltwick	10	180	18.00
Saltwick	6	180	30.00
London	17	516	30.35
London	43	516	12.00
Totals	**167**	**3684**	**22.06**
Daily wage rates for 1679 for man thought to be the carpenter.[20]			

The crew were paid at the end of each trip, a notional month long, with foreign-going trips counting as two or three months, depending on distance. This regularity was a mixed blessing. In a good year there might be ten trips. Bad weather, however, could stretch a trip from one month to almost two, with no extra pay for master or men. A trip to London, with the wind on her quarter, could take seven days. However, with a foul wind, beating round East Anglia with all the hazards of its shifting sands, might take twenty three. *Judith's* last trip of the year, a round trip to London, took so long that the daily wage was reduced to 12 pence, less than a labourer might have earned ashore.

This practice of paying by the notional month, persisted over two centuries. The level of the wages changed from time to time, as inflation might occur, or war might

19 Voyage Book of *John*, of Whitby, Browne Bushell, Master, Kew, U.K.,National Archives, records of the High Court of Admiralty [HCA] 30/638.

20 In this case, 'old' money has been used rather than the modern British decimal coinage. There were 4 farthings to a penny, 12 pence to a shilling and 20 shillings to a pound.

cause a shortage of seamen. Later voyage books show that the level of wage paid could also depend on individual masters. However, common sense suggests that masters who ran well-organised vessels with stable and steady crews probably provided the best victuals and the highest wages. As this seems to be what happened in most of the Whitby vessels whose voyage books are extant, it suggests that such masters were also better record keepers.

The concomitant apparent "drop" in wages which occurred after wars ended could and did cause resentment. Seafaring was a young man's job, and memories were short when it came to remembering the level of "peacetime" wages. However, part of the reason for avoiding the press-gang in time of war was that naval wages were much lower than those in the merchant service, especially in wartime, when masters were hard-pressed to find crews for their vessels, and had to pay very high wages.

It is the measure of Thomas Rogers as a master that when economic crisis in 1681-82 meant that the wages paid to the crew had to be cut, on the voyages to London from the north-east, then Rogers cut his own wages as well, by a greater amount than the reduction in wages for the men. To suggest that he made it up from his share of the profits as a 1/8th shareholder is to malign him. The average profit on the last 14 coal voyages was one shilling. One eighth of one shilling was 1½ pence. On several of these virtually profitless trips, Thomas Rogers cut his own wage from £3 to £2.

The Trades

Since the ketch had been bought by a group of investors all heavily involved in the alum trade, it must be assumed that the intention was that she would spend her days, carrying coals to Whitby for the alum works and exporting alum around customers. Alum shale had been discovered in the Whitby area around the start of the seventeenth century and was exploited until 1850. Alum (aluminium silicate) was vital for the textile industry and for brewing and medicinal use. In Europe it had been for centuries a papal monopoly, which Henry VIII's breach with Rome made very difficult for English manufacturers. However, while production during the seventeenth century was indeed on an industrial scale, many decades before the industrial revolution proper, it flourished by fits and starts, and during slack periods *Judith* and her crew were not allowed to be idle, especially as her master was an equal shareholder in the ketch. No vessel makes money unless she is at sea and carrying cargo.[21]

Judith joined the rest of Whitby's growing fleet in the general carrying trade. Alum required coal and urine for her industrial process, and since the main suppliers of the former were in the north-east coalfields, and the main consumer of coal was London, a great trading network already existed. Imported urine came from London, and although *Judith* never carried this somewhat indelicate cargo, there would be merchants in London who were linked by urine to the Whitby. So, *Judith* joined the coal trade, carrying coal from the Wear, where the alum investors owned the Harraton colliery, and from Cullercoats, to the coal wharves of London. Endless political rows with Newcastle, the headport for Whitby, meant that the expensive bureaucracy inherent in exporting coal

21 Rushworth and Pybus, "Allum."

from the Tyne led to a virtual boycott by many Whitby vessels in the mid-seventeenth century. Interspersed with these (on average) month-long trips were shorter ones to the alum works at Saltwick owned by Sir Hugh Cholmley, co-owner of the ketch and lord of the manor of Whitby. The evidence of these entries in the voyage accounts is confirmed in the port books for Whitby.

However, the coal-trade did not always entirely fill the ketch, so she carried other products: salt herrings in barrels, probably caught and processed in Whitby itself; fothers of lead from the Pennine lead mines; and butter. Butter was the universal grease in the seventeenth century; fresh, it was eaten, rancid, it was used for lubricating anything that needed to be greased. Like all vessels, *Judith* bought butter "for the ship." Whitby butter, from the largely pastoral hinterland, was particularly prized for its flavour. Consider for a moment the other goods that might be carried in a Whitby ketch and consider whence the flavour may have emanated. Several of them regularly carried barrels of urine. All of them at one time or another carried barrelled herring. Add the perpetual aroma of tar and bilge-water and marvel at human tastes.

Such network trading brought her in contact with other trades, and blue-water voyages. In her first year she sailed to Hamburg for timber, much of it "wreck" timber, each piece carefully enumerated for the owners' information. She sold it all at Whitby. Recycling was a virtue in the seventeenth century, and Whitby's shipbuilders recycled timber. Two years later *Judith* her crew took coals to Hamburg, having espied a market, returning with more timber. They still carried alum whenever there was a cargo available, and often abroad. They made several alum voyages to Rouen, a difficult navigation up the River Seine in France which demanded great skill from her master, and took their alum, ironically, into the heart of Catholic France, although through the enterprise of the great Huguenot merchant Thomas Legendre.

They sailed to Rotterdam, handling the exchange of currency, and the accounting, with confidence. And then in 1680 they made their most distant voyage, through the Baltic and into the Gulf of Finland to the port of Narva, under charter, taking exactly four weeks. Even a century later, with technologically advanced and larger vessels, that was a speedy trip for a vessel through the Baltic. They spent four weeks in Narva, and another four returning to London with their cargo of hemp. After dense and heavy cargo such as coal and alum, the baled hemp, for which they needed 'help to stow', must have required great skill as they adjusted the behaviour of the ketch in a difficult navigation back down the Gulf and through the Baltic.

The London coal trade proved a mixed blessing. In the aftermath of the great fire of London in 1666, when the huge rebuilding of churches and public buildings was pressing hard on the city, a former Lord Mayor, Sir William Turner, came up with the idea of charging an impost of three shillings on every chaldron of coal imported to the City. It was a very heavy tax, which bore no relation to the value of the cargo. A London chaldron was about twenty-seven hundredweight, and the price per chaldron Rogers could obtain varied between fourteen and nineteen shillings. The amount he paid for a Newcastle chaldron of fifty-four hundredweight also varied, between eight and nine shillings, or sixteen to eighteen shillings when converted to London chaldrons. When that was taxed at three shillings per London chaldron, it is no wonder that there was a slump

in profits in the coal trade. Admiralty Court causes reflect this, one in particular: for example, there is a 'cause' in the Whitby Admiralty Court in which the husband of the owner of a single share in a ketch sued the ship's managing owner for profits from the coal and alum trade which he had been assured, when he married the widow, would be forthcoming[22]. The plaintiff's suit failed, because there *were* no profits, a fact which is confirmed by the fourteen disastrous voyages of *Judith.*[23] The effect of the disappointment on marital harmony is not disclosed.

Sir William Turner was first cousin to Sir Hugh Cholmley, one of *Judith's* owners, but alas, *Judith* paid, like every other vessel. Fourteen voyages to London produced an average profit of costs over earnings of exactly one shilling per voyage; 14 months at sea for a total profit of 14 shillings. Many of the smaller Essex ports like Harwich and Wivenhoe became very busy with trans-shipment cargoes from tax-avoiding masters. Thomas, who used Wivenhoe, on the River Colne, was one of them. Wivenhoe is close to the place where *Nonsuch* herself was built. The price for the coal was less, but at least the trip was shorter, and the money did not go to tax!

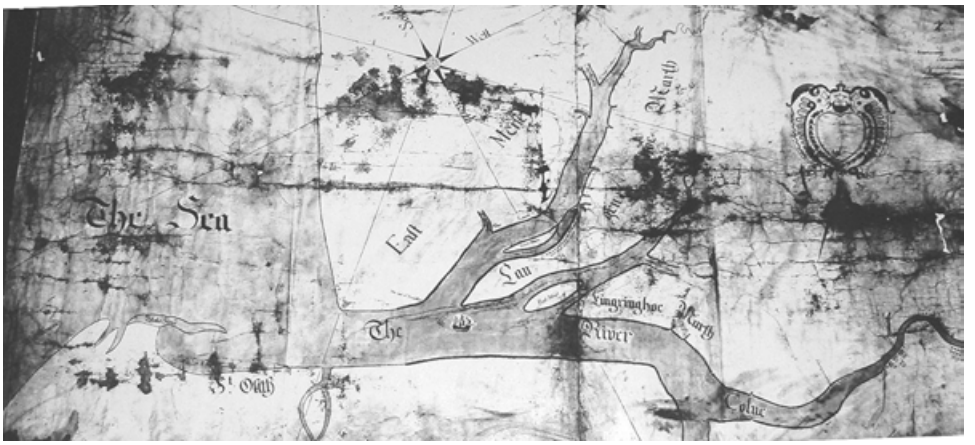


Fig 3: Eighteenth century chart of the River Colne, in Essex. (Essex Record Office)

Fourteen of *Judith's* voyages were under charter, but for the others, Thomas factored his own cargo, and sold it at his destination. This was common practice throughout the early modern period, certainly in Whitby vessels. It reflects the huge importance of trust between owners and masters. Of course there were bad eggs, even in Whitby. Ralph Davis records complaints from London investors that a 64-share vessel might well have far more than 64 "investors," each confident that he owned a 1/64th share. Some masters took vessel, stock and cargo and vanished, untraceable in an age when there was no official registration. One Bartholomew Gill of Whitby, contemporary

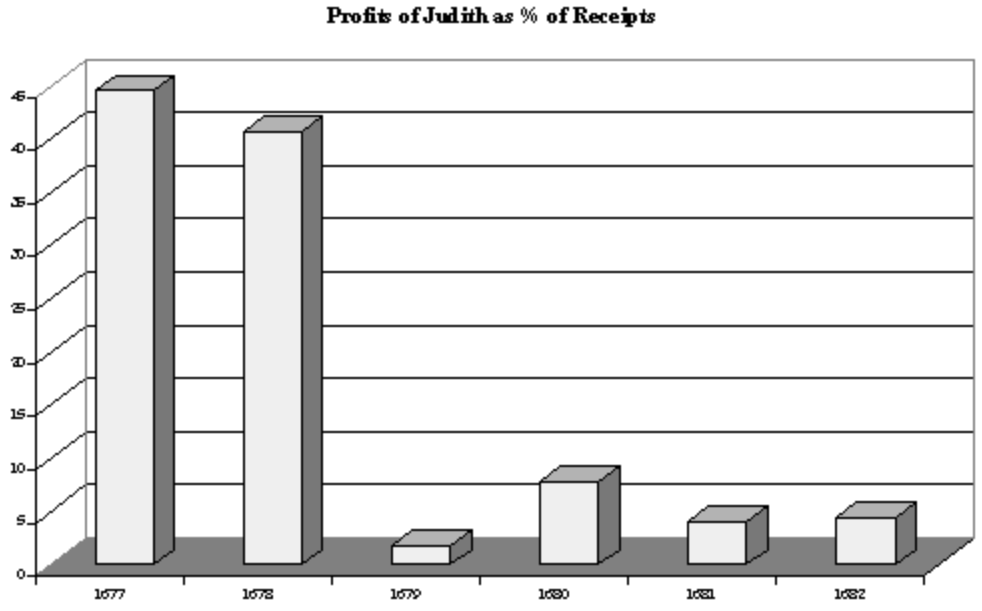
22 Admiralty Cause Papers, 1675-7, re the *Sarah* of Whitby, Borthwick Institute, York University.

23 Records of the Vice-Admiralty Court for Whitby, 1670-90, Borthwick Institute.

with Thomas Rogers, did just that.[24] However, such was the "smallness" of this trading world in which they all sailed, that reports came home that Gill had been seen variously in Hamburg and Antwerp. Whether the law caught up with him eventually is not recorded.

On the whole, shipping was a profitable business over a long time-span, but the profits could vary a great deal over one or even two sailing years. It required not only fixed investment capital, in the purchase and fitting out of the vessel and provision of the stock, but also working capital to cover wages, repairs, bureaucracy and factoring costs, as well as exchange rate fluctuations. The effect of the impost for rebuilding London shows just how vulnerable shipping could be. And in late seventeenth century England there was little marine insurance available, so that the only way of mitigating disaster was to share the risk was by multiple share-holding. *Judith*'s were taking a greater risk than did most investors. However, despite all, she made a profit.

One must wonder whether she was bought to take advantage of an expected boom in shipping profits, and was sold at the end when the boom declined into rather more disappointing returns. If so, then her shareholders certainly prospered for her first two years with an average of 43 per cent profits over receipts. It must be remembered, however, that at no time was the capital cost of the ketch taken into account when calculating profit. It is not till the early nineteenth century that capital comes into the calculation of profit and loss.



24 Admiralty Cause Papers, 1675, Abel Grant's cause for the loss of his cargo, Borthwick Institute.

Law and the Sea

On the other hand, the Law of the Sea, based on the late twelfth century Laws of Oléron, was well-ingrained into most seafarers. It is a great pity that the term "sea-lawyer" has become pejorative, for the law of the sea is the earliest system of industrial law which protects both the owners or employers, and the workforce. *The Black Book of the Admiralty*, available in the Rolls Series, gives all the changing manifestations of the Laws over the centuries. A transcript of the Laws[25] by Sir Frederick Twiss, is available on the internet, and makes not just interesting, but somewhat entertaining reading. Its very protection makes it less likely that the ordinary, hard-working and conscientious master would be tempted to go astray. So important was the concept of law at sea that even pirates had their own codes, albeit they did little to protect the innocent!

Of course there were rogue masters, whose treatment of their crews was appalling, and rogue owners who tried to interfere with rights such as the right to carry personal freight, but on the whole the industry functioned well, particularly for an island nation dependant on overseas trade for survival.

There were other manifestations of the law in the *Judith's* accounts. In 1675 Whitby's shipping interests felt sufficiently confident in the stability of the port and its fleet to establish a Seamen's Hospital Charity, to care for decayed and distressed seamen and their families[26]. Dues were paid by crews on Whitby vessels for its upkeep, and it fulfilled the precepts of the Laws of Oléron, caring for the sick, and refunding a master's expenses if a seaman or boy was injured and became sick far from home, *provided* he could prove that the injury or illness was not due to neglect or ill-treatment.

Even the provision of a hot meal every day was stipulated - hence *Judith*'s "reckon and tongs" for her cooking. The diet on offer would be simple, but clearly adequate. Storage of food was always a problem before refrigeration, but *Judith* was rarely far from port. Fresh meat and fish were bought, and occasional vegetables - cabbage, turnip and "ciblings," or onions. They would have been aware of scurvy, but we, in these medically sophisticated times, forget that they would have had a far better knowledge of simple anti-scorbutic herbs than does any modern seafarer. When Captain James Cook, with a crew succumbing to scurvy, headed for an island to find wild cabbage, wild celery and scurvy grass, he would have been putting into practice the learning of his Whitby apprenticeship, when he would have seen all three growing on Whitby's cliffs.[27]

In 1632, Browne Bushell, in Amsterdam, bought his crew figs to eat. Thomas did nothing so exotic, but the salt beef and pork, peas, and fish caught over the side, or bought from fishing boats, supported by hard cheese and ship's bread or biscuit, would

25 www.mcallen.lib.tx.us/books/mari_law/law_oler.htm.

26 R. Weatherill, *The Ancient Port of Whitby and its Shipping* (Whitby: Home and Son, 1908), 393-99.

27 R. Barker, "Cook's Nursery; Whitby's Eighteenth Century Merchant Fleet," in G. Williams, ed., *Captain Cook; Explorations and Reassessments* (Woodbridge: Boydell Press, 2004), 7-20.

have kept them well-filled, and fit for the extremely heavy work on board the ketch.[28] Suffolk cheese was frequently bought for shipping (and for the army). It was so hard that it was said that if the wheel of a market cart broke, it could be temporarily replaced with the cheese which was being carried to the market. On arrival the cheese would be undamaged!

Detailed purchases for a later collier brig suggest that each seaman consumed something like 6,000 calories a day in this extremely strenuous occupation.[29] If the combination of a 74½ ton ketch with a ninety ton cargo amounted to around 160 tons, then each man and boy had to "work" over twenty tons. Sailing ships may appear to be propelled by wind and current, but they are in reality driven by the human muscle which harnesses those elements, often in appalling weather. Had they been in the Navy, their load would have been around three to four tons per man. Merchant vessels could not afford the populous crews required to sail and fight a ship simultaneously.

Judith seems to have been a relatively abstemious ketch. To drink there was beer, or water. Later vessels might carry brandy, gin or other spirits, enough for what would have then been deemed medicinal purposes, or for warmth in bitter weather, but not *Judith*. She did venture to try some cider once, but the usual drink was beer. Water did not taste very good after storage in barrels, though Thomas had all the water barrels "sweetened." Such tasks were part of the constant maintenance on board.

Bureaucracy

Although the term "bureaucracy" did not become current until the mid-nineteenth century, the concept would have been very recognisable to Thomas Rogers. Much of the official infrastructure, from the "headport" system to the revenue service, to the crown monopoly over certain trades like alum, and even to the lightage and buoyage dues whose rights were allocated by the Crown, functioned nationally. On top of that was an increasingly expensive local bureaucracy. These particular posts seem to have belonged to the communities on the banks of the estuary. Thomas Rogers had a great deal to do with bureaucracy. He had to account for it to his owners, and keep on the right side of it to enable his ketch to function efficiently. Everyone had his due – the harbour-master of the port from which he left; the soldiers who guarded foreign ports; the money-changers; the revenue service; the owners of mooring posts in the Seine, the pilots and all the ship-brokers and ballast-providers in every voyage. Even the Seamen's Hospital of which Thomas was a trustee had to be paid, and the bridge-master at Whitby and the coble owners that "helped" *Judith* in and out of Whitby. And then there were the bribes, to ensure hasty attention to the vessel's needs; drinks for carpenters, collations for keel-men. Each is carefully recorded, paid for out of the stock.

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28 Suffolk cheese was frequently bought for shipping and for the army. It was so hard that it was said that if the wheel of a market cart broke, it could be temporarily replaced with a cheese being carried to the market. On arrival the cheese would be undamaged.

29 Whitby Literary and Philosophical Society has a remarkable archive of detailed Voyage Accounts and Logs, from 1677-1840.

Chandlery, repairs and maintenance

Every time *Judith* entered, or sat outside, a port, she went shopping. Usually on these occasions she bought food, fresh if possible. It is likely, though unstated in *Judith's* book, that the boys were sent to do the shopping, as is recorded in later voyage accounts. It was part of their training, to practise the essential skill of networking on the shrewd tradesmen and tradeswomen of the port. Besides, a boy took up less space on a boat and could man the tiller while a seaman rowed. Every action was calculated to ensure efficiency.

Of particular interest is the expenditure on chandlery and repairs. Small consumables like candles, nails and tow were frequent purchases, as were handspikes, the universal levers used to turn the windlass, to stop barrels rolling on the deck or to prize open containers. Oakum, to caulk the seams of the ketch, was a frequent purchase. It would have been bought from the local House of Correction, where vagrants would be set to unpick old tar-covered rope to make oakum. Twine and marlin and spun-yarn were much used for tying and for binding rigging. Cable for the anchors and tow-line for if the ketch was disabled – or indeed called upon to help another vessel – were also subject to wear. Bits of deal and other timber to replace items damaged by heavy weather were also bought, and the stress caused by storms can be seen in the number of masts and yards and sails which were replaced in seven years at sea. Even the mainmast gave out in the end and had to be replaced. Three bowsprits were replaced, one damaged by another vessel. Bowsprits, sticking so far out over the stem, had a far greater arc than the rest of the vessel, if it was inefficiently anchored so that the vessel could swing about, and bowsprits often damaged standing rigging on neighbours' bowsprits, and even on occasion killed their crew. Collision damage in port was not uncommon; in Rouen in July 1678, Thomas himself had to pay three *livres* and ten *sous* for damage caused to two Frenchmen, and eighteen months later *Judith* managed to do three shillings' worth of damage to a boat on a rare visit to Newcastle.

Barrels, and their "cousins" non-buoys and can-buoys, often required new hoops and other repairs. Even so, they could be "stove" in bad weather and have to be replaced. The chemical action of pine framing on lead glazing bars weakened the cabin windows, so that following seas broke the window glass. The sea, washing over the deck in a storm, damaged the binnacle and wrecked the compass, which then had to be "touched." The binnacle protected the compass from the effect of the vessel's ironwork on the magnetic field. The pump, an essential piece of equipment in heavy weather, required a fair amount of maintenance. Leather was bought for that. The half minute, half hour, hour and two-hour glasses by which the day was timed were regularly replaced. *Judith* was a collier for much of her life, so the port-sail had to be maintained, including the hoop which held open its mouth as coal was heaved in. And. of course, there was a considerable turnover of shovels. Bad weather lifted the lead in the scuppers, so scupper nails were bought. Logs from later vessels record "the people working about the ship." There was no time for idleness – or boredom. Sails were mended, ropes spliced, and accommodation swept and scrubbed – a clean ketch had a healthy crew.

Every vessel carried at least one boat, and these were at times damaged in bad weather, or stove in when being man-handled over the side. Their oars broke, or were

washed away, and had to be replaced. With the boat they might survive shipwreck; without it they would drown. It was a vital piece of equipment and carefully tended.

Indicative of the strains of seafaring life at a politically unstable time is the purchase of four new muskets, and the associated powder and shot. Whether these were intended to augment an existing stock of "old" muskets is not known. Crew-men with experience might well have brought their own armaments on board, possibly even cross-bows, which survived right through to the end of the eighteenth century. Britain was going through the Exclusion Crisis which tried to ban James, Duke of York from succeeding his brother Charles II as King, because he was Catholic. This made English shipping vulnerable to privateers, particularly from Catholic Dunkirk. Barbary corsairs from the north African coast also patrolled the Channel and round the Kent and Essex sandbanks which colliers had to thread to reach London.

And, of course, there is the regular purchase of "whins" or "whinkids" to grave the bottom of the hull, pulled over on a "hard" at low tide, surrounded by a fierce bonfire of whin, or gorse, and then scraped free of weed and marine organisms. It was an essential exercise, since the drag caused by a curtain of weed could drastically reduce speed. However, it could also save their lives. The weed could hide a rotting plank, which could literally fall out so that the ketch foundered. One entry in the accounts records the payment of a carpenter to put a new "plank in our bottom." Such a discovery would have sent a shudder through every man in the crew.

Summary

Little is know of Thomas Rogers' life outside time as master of *Judith*. This is not surprising. He appears in other Whitby documents, as a Trustee of the Seamen's Hospital charity, and in the port books as carrying his cargoes of coal or alum. He was found guilty of taking up "lagan" on one earlier occasion, but paid up his fine. He took his small son to sea at the age of ten, probably to act as a cabin boy for the shadowy passengers he seems to have picked up in the Channel Islands. Perhaps the boy's mother had died, or perhaps Thomas felt he might be useful, however small and unlikely to be able to pull his "weight" in the handling of the ketch. But he also paid him an appropriate wage for his small endeavours.

Thomas Rogers' carefully compiled account book, with its minutiae of ship-board purchases, its regular musters, its careful dating of arrival and departure and its reconciliations to establish profit or loss, give a unique insight into the lives of the many thousands of men and boys who plied their harsh trade in the seas of northern Europe. As far as can be seen, this was a healthy, contented ketch. With few exceptions her crew reported back for duty after the winter lay-up. Whitby had a hundred such vessels. There were plenty of ketches to sail in, but Thomas, described by an experienced modern master `mariner who studied the transcript of the voyage accounts, as a very competent, organised master, very careful of his crew, and an excellent navigator, kept a regular crew.[30] In the days before longitude could be safely calculated, and with few seamarks to

30 I am indebted to Captain Peter Roberts, sometime harbour master at Whitby, for his comments on the voyage accounts.

guide him, or available charts, Thomas sailed successfully up the Seine to Rouen and into the Gulf of Finland, and to the major ports of northern Europe. He could keep accounts in all the currencies he met, and manage the exchange rates. He could negotiate with the aristocratic Thomas Legendre and deal in clandestine work for the Earl of Mulgrave. Above all, he could keep his ketch afloat, his crew alive and loyal and his owners happy.

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