

# Ships and port management at Liverpool before the opening of the first dock in 1715

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## I

Liverpool's first dock opened for traffic in 1715. It had been an epic project for Liverpool both in financial and engineering terms. This three acres and 1890 square yards of enclosed water space was constructed in the mouth of the Pool. Its opening to ships meant that large deep-water vessels could berth, load or discharge their cargoes in a haven that was not subject to the hazards of an anchorage in the River Mersey. It also made for quicker turn-around times and was one of the factors that aided Liverpool in its competition for the transatlantic trades with other west coast rivals such as Bristol, Lancaster and Whitehaven. Historians have recognised the opening of the dock (later known as the old dock, with the extension of the dock system) as a catalyst for the rapid growth of the port immediately after 1715.<sup>1</sup> In recent years, Power has identified the crucial steps that led to the building of the dock, from the new charter granted to the town in 1695 and the subsequent domination of the town council by a close network of local merchants<sup>2</sup> and Jarvis has considered the engineering aspects of the project.<sup>3</sup>

The port of Liverpool in the sense of a site for the exchange and taxation of goods between land and water had been

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<sup>1</sup> F. E. Hyde, *Liverpool and the Mersey: the development of a port, 1700-1970* (Newton Abbot, 1971), p. 14: 'This was the beginning of Liverpool's vast dock estate and the spur to future commercial and industrial expansion'.

<sup>2</sup> M. Power, 'Creating a port: Liverpool 1695-1715', *Transactions of the Historic Society of Lancashire and Cheshire*, 149 (2000), pp. 51-71.

<sup>3</sup> A. E. Jarvis, *The Liverpool dock engineers* (Far Thrupp and Liverpool, 1996). Jarvis does not consider it an engineering triumph but 'a rather ill-conceived design, being in bad ground with less-than-perfect foundations', *ibid.*, p. 10.

in existence at least since the granting of a royal charter in 1207. The volume of its traffic was on a very small scale and until after 1660 largely based on the coastal and Irish trades. Its history as a 'primitive port' is obscure for lack of archives and archaeological remains. Its development was not separate from that of the town and indeed the town council was directly and later indirectly responsible for its management until the establishment of the Mersey Docks and Harbour Board in 1858. Those records that have survived from before 1715 have tended to be concerned with land matters, and the minority that deal with port and shipping have been interpreted from a landward perspective. So perhaps another approach is needed, which looks at the port's history from the sea. This involves the re-analysis of existing records from this different viewpoint and comparisons with contemporary practice at other British ports and shipping over the period 1207-1715. The result could provide a picture of how the port operated before 1715.

The main sources for Liverpool's history after 1550 are the town books, which record the policy decisions of the town council and its enforcement of local laws. The port books are the other main primary source and these begin in 1565 and contain a number of gaps, most notably between 1580 and 1589 and 1642 and 1670. Port books as a source for assessing the trade of a port, especially its coastal trade, where no other data exists have been considered inconsistent and difficult to utilise. However, the work of David Hussey and his team to digitise and analyse 50,000 entries from the port books of the Bristol and related ports has demonstrated the potential of port books generally. This article, however, confines itself to the operational aspects of the port of Liverpool and not the volume of its traffic. Its port books may contain the potential for a measurable perspective on its trade if they are subjected to a similar type of scrutiny.

Before the mid sixteenth century, there are slim pickings. There are the series of royal charters, from John's letters patent onwards, which confirm and extend the rights of the burgesses. Other fragments can be gleaned from the crown and local nobles' archives. For example, Edmund, earl of Lancaster conducted an

*inquisition post mortem* in 1296 into the Mersey ferry rights.<sup>4</sup> The one surviving Liverpool court roll from 1323-24 reflected a town with very limited commerce and one akin to an agricultural community.<sup>5</sup> However, most historians agree (on the limited evidence available) that the port grew in the thirteenth and early fourteenth centuries and took a role alongside Chester as a supply base for the crown's military excursions to Ireland, Wales and Scotland. After that, it underwent something of a decline for much of the fifteenth century, to revive again in the sixteenth century, when it enjoyed a thriving trade with Ireland for long periods, although of course subject to disruption by wars, economic depressions and piracy. By the end of the sixteenth century, there were trading contacts with the near continent as well as the staple of the Irish and coastal trades and possibly some transatlantic voyages to Barbados and Virginia. Most of these enterprises were interrupted by the English civil war campaigns that engulfed Liverpool. With the restoration of the monarchy in 1660 and the expansion of the British colonies in North America and the West Indies, Liverpool was well placed to take part in these deep-sea trades and Liverpool merchants and master mariners exploited these opportunities with flair. However, the presence of an increasing number of larger, deep-draught, ocean-going ships in the port posed serious problems for the management of the port, and these were eventually addressed by the building of the old dock under an act of parliament of 1709.

In any reconsideration of the port's early history before 1715, the first step must be to consider its physical environment – this means primarily its location and hydrographic and weather regimes – and then to pass on to the types of vessels that used the port and how they developed over the period. After these, it is then possible to consider the port's facilities and how they were managed.

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<sup>4</sup> T. Baines, *History of the commerce and town of Liverpool* (London and Liverpool, 1852), p. 129.

<sup>5</sup> J. Kermodé, J. Hollinshead and M. Gratton, 'Small beginnings: Liverpool 1207-1689', in J. Belchem, ed., *Liverpool 800: culture, character and history* (Liverpool, 2006), p. 68.

## II

The Mersey estuary was and continues to be a stretch of water with many hazards for ships. It has three parts: the outer estuary of Liverpool Bay, a narrow section (starting at New Brighton and Seaforth and stretching down to a line roughly between the Dingle and New Ferry) and the inner estuary, which is three miles wide at its broadest section and is fed by the rivers Mersey and Weaver. The outer estuary is about 70 square miles and the outgoing tide exposes an intricate network of shifting channels and sand banks. There were two main deep channels before the mid nineteenth century. The Rock Channel was approached from the secure anchorage off the Wirral, the Hoyle Lake, and ran parallel with the Wirral coast to enter the Mersey at New Brighton. This was regarded as the main approach. To the north was the Formby Channel, which ran closer to the Sefton coast than the present Queen's Channel.

A letter of 1712 from the Liverpool collector of customs to his board in London, in which he questioned their proposal to station a patrol ship at Liverpool, was a stark appraisal of the dangers of the outer estuary in the early eighteenth century:

We have maturely considered and wee are humbly of opinion that a sloop or smack will not be of service to the Revenue in this port answerable to the charge, for when there was one formerly it did not by any means answer, by reason of the dangerousness and difficulty of the harbour and the many shoals of sand which often shift in bad weather, soe that such a vessel cannot keep the sea and, when it[']s in harbour can't well get out....<sup>6</sup>

The narrows has up to 70 feet depth of water at the lowest of tides, and once had wide shallow beaches at Bootle, Seacombe and Tranmere. The latter two provided reasonably secure anchorages. The Sloyne or Slyme at Tranmere was regarded as the most secure because it was largely out of the main tidal flow.

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<sup>6</sup> R. C. Jarvis, ed., *Customs letter-books of the port of Liverpool, 1711-1813*, Chetham Society, 3<sup>rd</sup> ser. 6 (1954), p. 4, letter 12, Liverpool collector to the board of customs, London, 9 Oct. 1713.

There were also a number of large creeks, including the Pool, draining into it. The inner estuary is very shallow. It also has a large number of shifting sand banks and a main channel that is constantly on the move. At low tide, there is virtually no water and in earlier centuries it could be forded from Hale on the north bank across to Cheshire. Liverpool is located on the north bank just at the narrowest point of the narrows where the estuary is about 1,000 yards across.

The Mersey has the second biggest tidal variation of any port in the kingdom after Bristol. At its most extreme at high water springs, it can rise by as much as 30 feet. Apart from draining the inland river systems, the inner estuary also acts as a reservoir for the incoming tide. As the tide turns, the huge volume of water it contains is forced down a steep gradient into a narrow bottle neck. This has the effect of speeding up the current. So off Tranmere, it runs at four knots on a spring ebb tide and by the time it has reached the Liverpool pier head it has attained a fiercesome seven. The speed of the current also carries along with it a large number of mud and sand particles which are gradually deposited as the current weakens. They cause sand banks to accrete, which in turn divert deep channels from their existing routes.

Thus, the variable sand banks and channels, the high rise and fall of the tide and the tidal race off Liverpool all added to the problems of safely navigating this stretch of water. The local weather system also threw in a few problems as well. The prevailing winds from the west and south-west helped sailing ships make their entrance but held up their outward sailings until the introduction of steam tugs in the early nineteenth century.

The estuary has undergone many changes. Some of these were natural and some man-made. There were few of the latter before the nineteenth century. They consisted of local interventions, such as the building of fixed fish traps and the impounding of part of the shore to provide storage reservoirs for tide mills at Toxteth and on the Wallasey Pool.

The nineteenth century saw the introduction of steam dredgers and hopper barges to remove obstructions and to build training banks. The surveying of the river also became more intensive, especially after the establishment of the Mersey Docks



and Harbour Board in 1858. This organisation maintained its own team of surveyors who charted the river at regular intervals and published their own charts. On the basis of the surveyors' work, the board took decisive action to maintain stable channels and regular depths with a massive investment in dredging and building training banks, especially after 1893. This campaign continued well into the twentieth century. The result is that today the Mersey is canalised in the narrows and in the outer section as far as the bar. There is a single approach channel now, and this has been stabilised by stone training banks. Large areas of tidal foreshore have been reclaimed to build the seven miles of docks on the Liverpool side of the river. The tidal creeks of the Pool, Dingle, Otterspool, Wallasey Pool, Tranmere and Bromborough Pool have all been reclaimed from the river. The Dingle and Otterspool were blocked off by a promenade in the early twentieth century and used for an oil storage depot and a rubbish tip. Wallasey Pool formed the basis of the Birkenhead dock system from 1844, the Tranmere was reclaimed from 1902 to extend the Cammell Laird shipbuilding yard and Bromborough Pool was used for the building of Bromborough dock which opened in 1931. Other substantial areas were also reclaimed by the building of the Manchester ship canal. The result of all this reclamation was the loss of some 2,600 acres of tidal water space (nearly four square miles). The loss of the tidal creeks in the narrows in particular has meant that the tidal flow is much faster today past Liverpool than it would have been before the nineteenth century. The faster current also means that the river bed in the narrows is swept almost clear of silt and provides a less satisfactory anchorage than it would have done in the past.

The site of the original haven was not in the Pool itself but in the stretch of river running from its mouth, north as far as Chapel Street. In the sixteenth- and seventeenth-century town books this was variously referred to as the 'haven' or the 'sea lake'. This may have seemed perverse because the Pool was out of the main force of the tide and was protected by the castle, which was built on the bluff to its north side. But the haven was a relatively safe anchorage with good holding ground and a firm shore for beaching smaller vessels at low tide. To the south, it was protected

by a large sand bank, the Pluckington Bank, which narrowed and tailed off just before the pier head.

Above the underlying permo-triassic sandstone bed, there was a layer of sand and clay-rich mud which was about a metre thick on average.<sup>7</sup> The underlying sandstone formed an outcrop which ran parallel with the shore and was exposed at low tide. This provided a buffer from the main tidal force of the river. It was referred to as the 'warthe' or 'wharf'. This is not in the sense of a landing place, but the Old English for a sand bank, as for example in Mad Wharf, which is still a sand bank in the outer estuary.<sup>8</sup> The 'wharf' protecting the haven used to lie on the Strand side of the three main pier head buildings. (The sandstone can still be seen in part of the sub-basement of the Cunard Building.) Such outcrops were found at other places on the Mersey, for example at Garston and Widnes. The first evidence for its existence is contained in a copy of a plan of the town said to date from 1539 and copied by J. Butler in 1861 with the title 'An historical map of Liverpool from a very curious plan originally in the possession of Mr. Leland, antiquarian Ann. Dom. 1539 with fortifications as they appeared at the time of the siege of 1644'. Now in the Liverpool Record Office, it shows three lines of rock with gaps between them from Princes roughly down to Mann Island. At the northern end of the rocks which fronted the haven, there was a sea mark or perch. This marked the point beyond which the town's rubbish could be dumped. It also marked the northern entrance to the haven. It might seem naïve to place much credence on a map that was copied centuries after an original which has disappeared. However, the existence of such an offshore outcrop was witnessed by the survey of Fearon and Eyes of 1738. Their chart also shows an anchorage off St Nicholas's church where the old haven used to be. By 1771 and Burdett's

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<sup>7</sup> P. L. Woodworth, *A study of changes in high water levels and tides at Liverpool during the last two hundred and thirty years with some historical background*, Proudman Oceanic Laboratory Report no. 56 (Birkenhead, 1999) p. 33.

<sup>8</sup> J. A. Twemlow, *The Liverpool town books, volume I* (Liverpool and London, 1918), p. 15 and note. In 1556, the council codified the existing bye-laws, including the prohibition of dumping ship's ballast or other rubbish in the 'lake' and on the 'warthe' with a fine of 3s 4d for each offence.

survey that anchorage had disappeared under the newly-built George's dock and its entrance basin.<sup>9</sup>

The site of the port of Liverpool is protected to some extent by the spine of hills down the centre of the Wirral and the Welsh mountains beyond; but the outer estuary has no such shelter. For example, the average annual number of hours when the wind reaches gale force is only 26 at Bidston and 106 at Southport.<sup>10</sup> If the wind veered to the north-west, it blew directly up the narrow section and if it was blowing going against the outgoing tide, it could create very unpleasant and dangerous conditions for ships either underway or at anchor. The less frequent winds from the north-east could also make the haven anchorage more hazardous. For example, in 1565 the town book recorded the loss of ships and barks and the destruction of the sea wall next to the chapel of St Mary del Quay, and in 1713 a January storm drove ashore most of the ships and wrecked several boats.<sup>11</sup> The interesting point of the latter incident is that the bigger ships, though stranded and probably damaged, were not destroyed, while the smaller open boats (presumably for fishing, lighterage or ferrying) were.

The Mersey was undoubtedly a difficult water space to enter or leave and yet it had considerable advantages over its shallow and silty neighbour, the Dee, which served Chester and as the principal hub of commerce and administration in the North West in the middle ages. The same applied to other Irish Sea rivals such as Bristol, with an even higher tidal variation, or Lancaster and Glasgow, which both had to resort to lighterage in their respective shallow rivers. The Mersey's hazards did not put off ship-owners sailing to the lowest bridged points of the Mersey at Warrington on the Mersey itself and Frodsham on the Weaver. Frodsham generated £10 in annual shipping dues for the crown in 1280 and was a loading port for the ships that delivered Cheshire cheese to London in the late seventeenth and early eighteenth

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<sup>9</sup> Copies of these plans are held in Liverpool Record Office

<sup>10</sup> E. G. Bilham, *The climate of the British Isles* (London, 1938), p. 43, quoted by J. E. Allison, *The Mersey estuary* (Liverpool, 1949), p. 3.

<sup>11</sup> Baines, *History*, p. 228 and Jarvis, *Customs letter-books*, p. 3.



centuries.<sup>12</sup> Indeed, as late as 1664, the town council feared that ships might be diverted inland by a bill to make the Mersey and Irwell navigable. They commissioned a captain Case to pursue their opposition in London.<sup>13</sup> Hazardous though it was, the Mersey's problems need to be seen in a wider perspective, and two other aspects of this are the ships that were employed before 1715 and the mariners who sailed them.

### III

The ships that used the port were wooden sailing ships. It is likely that those using the port at its foundation would have been descendants of the Viking cargo ships that traded in the Irish Sea in tenth and eleventh centuries. They would have been undecked and small enough to be rowed as well as sailed and easily beached. The later middle ages saw a gradual development in the size of ships and in particular the cog, a north German design of bulk carrier, became popular with other kingdoms. By the fourteenth century, it was partly superseded by the 'hulc' with a different design and construction, and by the mid fifteenth century the three-masted carrack was well established. This latter type was of sufficient size, with a hull form and rig, to make it capable of undertaking long-distance ocean voyages. It formed the basis of the (full-rigged) ship which became the rig of choice for large commercial and naval vessels.<sup>14</sup>

Even from the sixteenth century, when local records begin, ships owned at Liverpool were small in size and small in number. There were about twelve to 15 vessels engaged in sea crossings, as opposed to coast hugging voyages, owned in Liverpool.<sup>15</sup> Their average size was about 20 tons, but ships as

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<sup>12</sup> H. F. Starkey, *Schooner port* (Ormskirk, 1982), p. 22 quoting from *The calendar of close rolls, 1281-92*; C. F. Foster, 'Cheshire cheese: farming in the North West in the seventeenth and eighteenth centuries', *Transactions of the Historic Society of Lancashire and Cheshire*, 144 (1995), p. 7.

<sup>13</sup> M. Power, ed., *Liverpool town books, 1649-1671*, Record Society of Lancashire and Cheshire, 136 (1998), p. 166.

<sup>14</sup> For a more extended treatment of the development of medieval ships, see G. Hutchinson, *Medieval ships and shipping* (Leicester, 1994).

<sup>15</sup> J. Hollinshead, 'Chester, Liverpool and the Basque region in the sixteenth century', *Mariner's Mirror*, 85 (1999), p. 388.

small as the ten ton *Great Margaret* of Liverpool were engaged in trading to Drogheda in the 1580s.<sup>16</sup> There were also ships trading to and from Liverpool which were owned in the outlying coastal settlements. These included Formby, Wallasey, Hoylake and Hilbre.<sup>17</sup> Some of these seem to have combined cargo carrying with fishing, especially the netting of herring between September and January. Presumably some of the catch was delivered to Liverpool, where there was a fish market.

Some of these vessels were characterised as 'barks' and this term was distinct from 'ship', which referred specifically to a three-masted full-rigged ship. There were also 'boats' and 'pickards' on one occasion.<sup>18</sup> As these are usually mentioned in a hierarchy from ships to barks and down to boats, these must have been a smaller and probably undecked craft. They were probably used for fishing, ferries or lighterage. There was the occasional ship mentioned. A ship of 100 tons owned in Liverpool was recorded in 1558.<sup>19</sup> Out of the list of local ships compiled in 1565, the *Eagle* at 40 tons and the *George* at 36 tons were clearly full-rigged ships, and another ten were named as barks and another two as boats.<sup>20</sup> Just over a century later, the Irish and the coastal trades were still carried on in small barks of around 20 tons on average. For example, seven out of the ten Liverpool coasters delivering salt, earthenware and goods to Belfast in the 1680s were between 16 and 20 tons.<sup>21</sup>

The coasting bark was not the same rig as the late eighteenth- and early nineteenth-century three-masted barque rig. The term was related to the hull form. The rig might vary from a single mast with a single square sail to a two-masted one with two square sails or a ketch rig with a square main sail and a lateen mizzen. In the late seventeenth century, such coasters changed to

<sup>16</sup> Baines, *History*, p. 244, quoting the Liverpool port book, 4 May 1586.

<sup>17</sup> D. Woodward, 'Ships, masters and shipowners of the Wirral 1550-1660', *Mariner's Mirror*, 63 (1977), p. 240.

<sup>18</sup> Twemlow, *Liverpool town books I*, p. 348.

<sup>19</sup> Sir James A. Picton, *City of Liverpool: selections from the municipal archives and records from the 13<sup>th</sup> to the 17<sup>th</sup> century* (Liverpool, 1883), p. 89.

<sup>20</sup> Twemlow, *Liverpool town books I*, p. 280.

<sup>21</sup> Transcript from Belfast customs book, 1683-87, in the Northern Ireland Record Office taken by R. Sweetman.

the more effective fore and aft rig as seen in the first painting of Liverpool of 1680.<sup>22</sup> The exact size of these barks is a problem. Tonnage measurements in sixteenth- and seventeenth-century port books have been seen as problematic and inaccurate compared with the measurements recorded in the registers of shipping compiled from 1786 onwards. As they are the only measurement recorded for such small craft, all one can do is work with them in the hope of reasonable consistency in a given set of accounts. A ton was an English and French measurement of volume (not weight) based on the volume occupied by a Bordeaux wine cask (or tun). To ascertain the tonnage (or burden) of a vessel, the length of its keel (not its overall length) is multiplied by its maximum breadth and its depth (from the deck to the keelson and not its draft in the water) and divided by 100.<sup>23</sup> Sixteenth- and early seventeenth-century English ships tended to be built to specific proportions: a ratio of 3:1 of the length of the keel to the breadth and 2:1 of the breadth to the depth. The procedure for designing the shape of the hull, which was known as 'whole moulding', was also common practice.<sup>24</sup> Thus a 20 ton bark would have measured 33 feet along her keel, eleven feet beam and five feet six inches in depth.

The American naval architect, the late William A. Baker, went on to exploit these formulae, combined with what other information on contemporary shipbuilding techniques was available, to produce viable modern designs for the pioneer colonial vessel, the 180 ton *Mayflower*, and a 29 ton 'colonial bark'

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<sup>22</sup> Merseyside Maritime Museum, accession no. 1831.211.2. See also A. Tibbles, 'Two paintings of Liverpool in 1680: a reassessment', *Transactions of the Historic Society of Lancashire and Cheshire*, 146 (1996), pp. 189-96.

<sup>23</sup> There is some disagreement as to when this formula was first applied. Barker stated that it was not before 1582 and was inaccurate for some types of hull. He also noted that displacement and deadweight tonnages could be calculated in the late sixteenth century by reference to William Bourne's *Treasures for travellers*, published in 1578. R. Barker, 'Barrels at sea: water, stowage and ordnance on the Portuguese ocean', paper presented at the Academia de Marinha, Dec. 1992 (I Simpósio de História Marítima) and published in *As Navegações Portuguesas no Atlântico e o Descobrimento da América* (Academia de Marinha, Lisbon 1994), pp. 365-79, 431-32.

<sup>24</sup> W. A. Baker, *The Mayflower and other colonial vessels* (London, 1983), pp. 14-17.

used by the early colonists for coastal trade along the eastern seaboard of North America in the seventeenth century.<sup>25</sup> The barks trading to and from Liverpool were likely to have been similar in shape to Baker's bark of about 1640. This was carvel-built, double ended with plenty of sheer, with quite fine underwater lines at the bow and the stern and with a flat bottom. This would have made for a seaworthy craft which could withstand the gales of the Irish Sea and be beached in safety at ports like Liverpool. A contemporary illustration of the castle and haven of Carrickfergus on a map of the town dating from about 1560 shows just such a bark, along with a full rigged ship.<sup>26</sup> Carrickfergus was a garrison town that was regularly reinforced and re-supplied from Liverpool in Elizabeth I's reign. It would be nice to think that this bark came from Liverpool, as the *Spedewell* of Wallasey did in 1586, carrying 20 barrels of barley malt and twelve of wheat.<sup>27</sup>

After 1660, there were increasing numbers of full rigged ships owned in the port that were employed in the transatlantic trades to the British West Indian and North American colonies and also to more distant European destinations and to the Baltic in particular. In 1672, the port books recorded one ship on a round voyage for tobacco from Chesapeake Bay and four carrying sugar from the West Indies; by 1694, the totals had risen to ten and eleven respectively, and by 1709 to 24 and 14.<sup>28</sup> They were not necessarily particularly big ships. In 1712, for example, the collector of customs reported the arrival of the *Indian Queen* at the Hoyle Lake anchorage, a ship of only 70 tons from Antigua, and the *Susanna* and the *Virginia Merchant*, both of about 150 tons, from Nevis.<sup>29</sup> Brian Blundell, possibly the best known of the Liverpool merchant-shipowners of the late seventeenth and early eighteenth centuries, had ships of similar sizes. These included the

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<sup>25</sup> *Ibid.*, pp. 25-64. His *Mayflower* plan was used to build a replica which sailed the Atlantic in 1957.

<sup>26</sup> British Library, Cotton manuscript Augustus I, ii, 42.

<sup>27</sup> Baines, *History*, p. 243.

<sup>28</sup> P. E. Clemens, 'The rise of Liverpool, 1675-1750', *Economic History Review*, 29 (1976), pp. 211-25.

<sup>29</sup> Jarvis, *Customs letter-books*, p. 1, letter 2, Liverpool collector to the board of customs, London, 12 Sept. 1712.

*Lever* built on the Chesapeake in 1701 with a tonnage of only 80 tons.<sup>30</sup> The increasing number of deep-sea ships entering the haven of Liverpool is also witnessed by the 1680 painting of Liverpool. This certainly seems to be accurate in details of the ships in its foreground. They include eight larger ships anchored. Two have sent their topmasts down and are clearly discharging or awaiting cargo, three are at anchor probably on the outside of the 'warthe' and another four are preparing to sail. There are also a variety of smaller coasters and a ferry boat – and in spite of the increase in the number of ships in the transatlantic trades, there were still far more smaller vessels in the coastal and Irish trades. Of the 170 ships owned in Liverpool by 1707, only 25% were involved with the Atlantic trades.<sup>31</sup>

There were also smaller craft which were designated 'boates' and probably only operated in the river. The most important were the various ferry boats. The right to ferry tolls was a valuable perquisite and the subject of grants and litigation. They were probably the most regular local traders in the centuries immediately after Liverpool's foundation as a market town. An *inquisition post mortem* conducted by Edmund, earl of Lancaster in 1296 revealed that the annual income from the Birkenhead ferry was 26s 8d.<sup>32</sup> By the early fourteenth century, ferries plied between Liverpool, Birkenhead, Seacombe, Eastham and Runcorn.<sup>33</sup> All these ferry boats had to be substantial craft, given the turbulent character of the Mersey and the wear and tear of constantly landing, and not the park lake rowing boats rowed by two figures in cowls as they have been so often depicted in later

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<sup>30</sup> H. M. Hignett, 'Bryan Blundell, shipmaster, merchant and treasurer of the Bluecoat School', *The Bulletin of the Liverpool Nautical Research Society*, 34/3 (1990), p. 50.

<sup>31</sup> D. Ascott, F. Lewis and M. Power, eds, *Liverpool 1660-1750: people, prosperity and power* (Liverpool, 2006), p. 17.

<sup>32</sup> Baines, *History*, p. 129.

<sup>33</sup> Birkenhead: confirmation of the priory's rights in 1331 in Baines, *History*, p. 146; Seacombe: sometime before 1333, see the legal dispute between the prior of Birkenhead priory and the lord of the manor of Wallasey in T. B. Maund and M. Jenkins, *Mersey ferries, volume 2: the Wallasey ferries* (Lydney, 2003), p. 9; Runcorn: probably operating in the twelfth century, see Starkey, *Schooner port*, p. 22; Eastham: operating by 1357, see J. McNeil Dodgson, *The place-names of Cheshire* (5 vols, Chester, 1970-97), IV, 188.



times.<sup>34</sup> A *quo warranto* enquiry of 1354 included the ferry rights of Birkenhead priory – the ferry charges included 2d for a horse and its rider. This shows that the Birkenhead ferry boat had to be a substantial craft to carry a horse.

The existence of large open boats implied a complexity of construction and thus the existence of a skilled shipwright or shipwrights and skilled mariners to man the boat. Such personnel would have become the nucleus of local maritime expertise that could be built on and extended as the demand arose. A large open boat needed to carry a horse and other passengers might have been between 20 and 30 feet long. This would have been small enough to be beached and launched easily, with a good cargo capacity and seaworthy enough to cope with the Mersey. It would have had multiple rowers, possibly up to six, and a sail almost certainly. It is possible that the later sailing ferries inherited the dimensions of their medieval predecessors. The constancy of dimensions and the very gradual evolution of shape are not uncommon among vernacular boats and can be seen, for example, in the Greenland yawls of the northern coast of Ireland. These owe their design and construction to Viking predecessors.<sup>35</sup> Thus the contemporary scale model of the early nineteenth-century ferry boat *Bless Us* was a clinker-built open boat with a lug sail and six oar positions. At its full size, it would have measured 24 feet long overall by seven feet beam. Its shape gave it good stability and it would certainly have been capable of carrying a horse or two.<sup>36</sup>

The other river craft which would have been of increasing importance in the later centuries were the lighters which ferried cargo from outlying places such as watermills to Liverpool or relayed freights from the shore to ships at anchor. Of the former, a good example was the small vessel with its ‘furniture’ (its sails, oars and so forth) valued at £20 in the will of Thomas Gill of Bromborough mill in 1597.<sup>37</sup> Captain Greenville Collins in his

<sup>34</sup> See, for example, the Merseytravel posters and the nineteenth-century imaginary paintings by the Herdmans.

<sup>35</sup> M. McCaughan, ‘Irish yawls’, in J. Mannering, ed., *The Chatham directory of inshore craft* (London, 1997), pp. 226-77.

<sup>36</sup> Merseyside Maritime Museum, Liverpool, accession no. MMM 1981.458.

<sup>37</sup> Woodward, ‘Ships, masters and shipowners of the Wirral’, p. 246.

directions for entering the Mersey in his *Coasting Pilot* of 1687 noted that the Hoyle Lake was used by deep sea vessels partially to discharge the cargo before making the final run into the Mersey. He also noted the increasing use of the Sloyne anchorage over on the Wirral side of the river because it was less exposed than the Liverpool haven. Both these discharging anchorages would have needed the services of sailing lighters to carry away the cargo to Liverpool. Collins's statement was confirmed by the collector of customs at Liverpool in 1711 when he sought an extra payment for his tidesmen at the Hoyle Lake who were supervising the unloading of tobacco from the *Mulberry* and *Phoenix*.<sup>38</sup> The Hoyle Lake anchorage especially would need to be served by seaworthy sailing lighters and this was doubtless the origin of the Mersey flat – the characteristic sailing lighter or barge of the Mersey, its tributaries, canals and adjacent coasts in the eighteenth and nineteenth centuries.

Barks and the bigger ships of the later seventeenth century, post-1660, may seem absurdly small and vulnerable to modern eyes. But if properly maintained, they were seaworthy and reliable within the possibilities of the time. They were not built for speed. For most of the trades, the distances were short. The Isle of Man was 68 miles away, Dublin 126 and Belfast 137, making them all within a week's sailing time or less in favourable weather. Greater time was probably spent in port loading, discharging, waiting for cargoes or possibly in winter laying up to avoid the worst of the bad storms. Ships which traded to Ireland regularly could make between six and twelve round voyages a year.<sup>39</sup> Ships in the Virginia tobacco trade would time their voyages to coincide with the curing of the tobacco leaves by the end of the year and to avoid the worst of the teredo worm infestation in July and August the following year. (Teredo worms were a huge problem before the introduction of copper sheathing for ships' hulls towards the end of the eighteenth century.<sup>40</sup>) Ships aimed to leave in November, avoiding some of the winter weather, and be fully loading before the end of June. This also meant that tobacco ships

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<sup>38</sup> Jarvis, *Customs letter-books*, p. 1, letter 1.

<sup>39</sup> Hollinshead, 'Chester, Liverpool and the Basque region', p. 388.

<sup>40</sup> Hignett, 'Bryan Blundell', pp. 49-50.

made one round voyage a year. Long stays in port, provided there was no teredo, also meant added time for the overhaul of the ship's hull, sails and rigging. These wooden vessels were to a large extent self-maintained except for major repairs, with the crew skilled to a greater or lesser extent in all aspects of their maintenance. Larger ships would also carry a time-served carpenter, sailmaker and possibly a cooper. The latter would maintain casks for water and cargo storage. Many of the masters were also part owners of their vessels, which gave them an added stake in their safe navigation and maintenance.<sup>41</sup>

#### IV

The Liverpool town council claimed the governance of the whole of the Mersey estuary and as far as the Redstones at Hoylake. It was prepared to back its jurisdiction by force on occasions. On 31 May 1561, the town book recorded the forcible seizure of a foreign ship which had been salvaged by some Hoylake men and which they had brought to safety in the Sloyne anchorage. The mayor and a group of Liverpoolians went over to the Sloyne and brought the salvaged vessel across 'into the lake and as nere the Pole as was thought convenient'.<sup>42</sup> They also endeavoured to enforce the payment of their local dues from ships owned in the outlying coastal villages and on ships sailing up the estuary and not calling at Liverpool. In 1652, the Formby shipowners were charged with bringing in barrelled herring into the Alt and not paying the town custom.<sup>43</sup> In the early eighteenth century, they continued to press their estuarial rights. The chief objectors to the bill for the building of a wet dock at Liverpool were the cheesemongers of London, whose shipments from Cheshire were usually loaded upriver at Frodsham. The council elected a water bailiff to carry out their orders and levy shipping dues on an annual basis. By the late seventeenth century, with the increase in traffic, this post was turning into a full-time job with a uniform

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<sup>41</sup> Woodward, 'Ships, masters and shipowners of the Wirral', pp. 239-44.

<sup>42</sup> Twemlow, *Liverpool town books I*, p. 162.

<sup>43</sup> Power, *Liverpool town books*, p. 43.

and a silver oar as a badge of authority.<sup>44</sup> Some discharged this onerous office less conscientiously than others. In 1668, the water bailiff, Thomas Roe, was fined for failing to stop ballast and limestone being dumped in the haven.<sup>45</sup>

The siting of the port of Liverpool has already been touched upon. Some older historians have tended to assume that the main focus of activity was centred on the Pool. But this may be a misreading. The town books refer in general to the haven and make it clear that it stretched from St Nicholas's churchyard to include the mouth of the Pool but not the Pool itself. This must have been too shallow. This anchorage was often referred to as the 'sea lake'. The main focus of activity was at its northern end at Water Street. Given the evident shallowness of the Pool, the muddy character of its shore and the lack of resources to change it, the Pool was an impossible site.<sup>46</sup> The site of any port is almost inevitably a compromise, being far enough from the river entrance for safety and near enough for convenience. The siting and layout at Liverpool conforms to a pattern seen at other medieval new port towns of the twelfth and thirteenth centuries. Castles and quays were often separately sited, as can still be seen today at Conway, for example. The provision of a quay alongside accessible water was of prime importance in the commercial success of a new port town.<sup>47</sup>

Liverpool also conforms to a well-established model for the development of a British port. It had a firm beach with some shelter, with a road running inland at 90 degrees as the shortest route inland – Water Street. Even the smallest cargo ships had a greater capacity and were bigger carriers than land vehicles and so a storage building alongside the landing place was another prerequisite. This building in turn became the focus of

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<sup>44</sup> Picton, *City of Liverpool*, p. 310; Philip Harrison was elected water bailiff 'during the town's pleasure' and not annually and was allowed a coat and a part of the shipping dues as salary.

<sup>45</sup> Power, *Liverpool town books*, p. 228.

<sup>46</sup> Recent excavations on the site of the old dock have confirmed the silt-laden character of the shore of the Pool, personal communication from Dr J. Speakman, Field Archaeology Unit, National Museums of Liverpool.

<sup>47</sup> M. Beresford, *New towns of the middle ages* (2<sup>nd</sup> edition, Gloucester, 1988), p. 177.

administering charges on ships and cargoes and was also equipped with a set of scales for measuring cargo.<sup>48</sup> This does not mean that such a port, with little more than a quay and warehouse, could not operate effectively. Such basic ports functioned perfectly well up to the building of railways in the nineteenth century. The port of Cromer on the north Norfolk coast, for example, received regular cargoes of coal and timber from ships that unloaded on its beach until 1881. It even had a scale of charges for pilots, a mooring capstan and ballast.<sup>49</sup>

The next step in a port's development (and again this is well seen at Liverpool) was the extension of quays, the establishment of a conservancy management and the separation of different activities. The first evidence of an initiative to extend the quay space was the series of references in the town book for November and December 1561, when the whole community (street by street) went to the 'old Pole' and began digging 'the fondacion of a new Haven'.<sup>50</sup> This does not seem to have been a success, because they gave up after just under a month. (In the sixteenth century, and before, it was not unusual for small port towns to mobilise their own inhabitants to improve their port; for example, the good folk of Great Yarmouth turned out to dig a new harbour entrance in 1560.<sup>51</sup>) McClure, MacDonald and Macgregor's plan of Liverpool about 1670 reproduced in Thomas Baines's *History* showed a quay at the mouth of the Pool at the end of Pool Lane, with a protecting pier or sea wall. This may have been the 'new Haven' of 1561. All the same, the customs house remained at the bottom of Water Street and 'the legal quay' was still defined in 1723 as running from 'the northward of Chapel Street end called the Hole and the Shilly Patch to the end of Red Cross Street southerly'.<sup>52</sup> However, the Moore rental compiled by Sir Edward Moore in 1670 noted how he had forced

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<sup>48</sup> J. Bird, *The major ports of the United Kingdom* (London, 1963), pp. 28-29.

<sup>49</sup> J. Daniel, *The shipowners' and shipmasters' directory of port charges* (London, 1856), p. 178.

<sup>50</sup> Twemlow, *Liverpool town books I*, p. 178.

<sup>51</sup> A. A. C. Hedges, *Yarmouth is an antient town* (Great Yarmouth, 1959), p. 25.

<sup>52</sup> Jarvis, *Customs letter-books*, p. 21, letter 58, Liverpool collector to the exchequer commission, 19 Sept. 1723.



a captain Fazakerley to carry his coal for shipment down Pool Lane, that is to the mouth of the Pool, to stop his carts from breaking up the paving in Water Street.<sup>53</sup> Moore also created a new street, Moore Street, running at right angles to Castle Street down to the haven. This was intended to open the vacant ground he owned for building houses. It was also intended to provide access to the haven because he went to the expense of cutting through a sandstone outcrop to provide a smooth passage for carts to the shore. He erected posts and chains so that he could control access and doubtless exact a charge from cart owners.<sup>54</sup>

The new quay which was definitely built lay to the north of Chapel Street on the Moore family's land. The name still remains today. It appears to have started as a six foot high bank to prevent erosion of Moore's land and was later reinforced with an ashlar wall. Again, Moore intended to develop the area behind it for dwellings and warehouses, and was prepared to deny access to the shore without his consent.<sup>55</sup> It is unclear what cargoes were handled at the new quay, but it lay within the boundary of the legal quay. Moore speculated on five occasions as to the possibility of the Pool being 'cut navigable', but nothing came of this until the act of 1709.

Apart from the quays and additional access to the shore, there were also regulations laid down by the council to separate activities which did not fit with the commercial traffic. The handling of limestone cargoes was a repeated problem. Limestone was brought in as rough unworked boulders in bulk, mainly from quarries in North Wales. It was used for making building mortar or as a treatment for acid soils after being calcined in a lime kiln. Ships beached on the shore would simply use their own cargo gear to unload it, not waiting to discharge into carts. The result was the creation of a hazard for other ships unless it was moved immediately. There were regular complaints and fines for leaving limestones on the shore recorded in the town books. In the end, a perch or marker was set up to the north of the new quay where limestone cargoes could be safely discharged. The same applied to

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<sup>53</sup> T. Heywood, ed., *The Moore rental*, Chetham Society, 12 (1847), p. 84.

<sup>54</sup> *Ibid.*, p. 103.

<sup>55</sup> *Ibid.*, pp. 15-17.

the dumping of ballast. Ships arriving unladen or with a part cargo would invariably have some ballast in the form of stones or sand to ensure their stability. Ballast was usually discharged before taking on a fresh cargo. Masters were casual about where they discharged it. For example, when the town council reviewed their bye-laws in 1558, they confirmed that no rubbish or ballast was to be dumped in 'the Lake or upon the Warthe', and this offence would incur a fine of 3s 4d.<sup>56</sup> This bye-law was clearly not complied with because on 24 October 1560, the water bailiff was instructed to ensure that no ballast was left in the lake or on the warthe.<sup>57</sup>

The same applied to the town's waste, which was often dumped on the shore to the hazard of shipping. The dumping problem persisted, and the ancient map reproduced in 1861 shows a perch at the northern end of the warthe to indicate that ballast and rubbish could only be deposited beyond it. However, the problem persisted. For example, on 19 September 1671, the council decreed that 'If any person after 30 August shall carry gravel, earth or rubbish down to the waterside without the licence of the mayor, he shall forfeit 12d every load', and the meeting the following week also banned the use of the lime kilns on Castle Hill.<sup>58</sup> The latter was presumably an effort to shift the whole limestone trade away from the main port. The haven bye-laws passed on 13 January 1701 included clauses on dumping 'great stones' in the harbour and heaving out ballast within the seamark. By then, the fines were 10s and £2 respectively.<sup>59</sup>

Laying-up ships and shipbuilding were two other activities which competed for space on the shore. Both activities were gradually eased out to the periphery of the port. The mouth of the Pool was probably used for laying up out-of-work vessels earlier than the late seventeenth century, but the first evidence is contained in the painting of Liverpool of 1680. On its extreme right, just below the castle, there are two large ships lying aground with their topmasts sent down and with no yards crossed. Both of

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<sup>56</sup> Twemlow, *Liverpool town books I*, p. 15.

<sup>57</sup> *Ibid.*, p. 149.

<sup>58</sup> Power, *Liverpool town books*, p. 267.

<sup>59</sup> Picton, *City of Liverpool*, pp. 309-10.

these are good indications that these vessels were laid up for the duration. Ships were sometimes laid up, repaired or built in temporary docks. In 1565, a French and a Spanish ship were both laid up in a temporary dock at 'Aterpole' (Otterspool) upstream from Liverpool. The digging of temporary docks continued, because on 11 July 1681 Richard Tarleton and William Chantrell were ordered to fill in docks that had been dug for launching two new ships by 25 July on penalty of £5. Under the bye-laws promulgated in 1701, diggers of docks were given eight days to fill them in on pain of a fine of £5. The same set of regulations also stipulated that ships for laying up or scrapping had to be placed on the south side of the Pool.<sup>60</sup> These temporary docks would have been similar to the dry docks that still exist on the Leeds and Liverpool Canal at Lathom and on the Stour Navigation at Flatford, Essex. These are simple pits with a set of blocks for the vessel to rest on, a drain to empty the dock itself and a set of horizontal stop planks to keep out the water.

The building of new ships was also carried on on the shore and, if not in a temporary dock, required no more than a firm sloping beach, a saw pit and a place to stack timber. By the late seventeenth and early eighteenth centuries, shipbuilders were located at the foot of the castle, in the area of the present James Street, and some had additional storage space for timber further inland in Cook Street.<sup>61</sup> Clearly, as the demand for new ships grew, the local shipbuilders who supplied most of the locally-owned tonnage found themselves hampered for space. As early as 1674, the shipbuilder Roger James had applied to set up a building berth on the south side of the Pool with a winch, crane and a dry dock. Others looked for additional space off Pool Lane and the north side of the Pool.<sup>62</sup> The moving of shipbuilding to the

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<sup>60</sup> *Ibid.*, pp. 89, 309.

<sup>61</sup> H. Peet, *Liverpool in the reign of Queen Anne* (Liverpool, 1908), pp. 89, 105, transcript of the rate assessment of 1708. This document also shows that the majority of warehouses were sited in the streets to the north and east of Water Street and not around the mouth of the Pool.

<sup>62</sup> R. Stewart-Brown, *Liverpool ships in the eighteenth century* (Liverpool, 1932), pp. 9-10.

margins of a port was not unique to Liverpool but common to most late seventeenth- and eighteenth-century ports.<sup>63</sup>

The town council took responsibility for the maintenance of the main quay, the main landward approach down Water Street and the haven. In addition, it tried to make the approach safer by the installation of seamarks and to regulate the haven to try and ensure vessels did not collide or were otherwise damaged. The precise nature of the quay is unclear. Presumably there was a walled section where more shallow draft vessels could tie up and a slipway where carts could gain access to the shore at low tide. On 3 November 1577, as the quay was in 'sore decay', all shipowners were instructed to pay 4d towards its repair.<sup>64</sup> It is possible that the quay was built of stone, because the entry for 10 March 1666 recorded that the quay was 'to be made with stones as formerly'.<sup>65</sup>

While the quay was relatively easy to repair, the maintenance of the haven was more intractable. The Mersey carries large quantities of silt in suspension from its upper reaches and this gets deposited not only in Liverpool Bay but also at a varying number of places in the estuary itself. From time to time, the council would call for silt clearing along the frontage of the quay. On 23 October 1572, it instructed that 'every local ship, pickard or boat shall cause one loode of gravel to be carried out of the sea lake along by the kayegh of this towne'. The instruction was repeated the following January and this seems to have been a regular occurrence. The annually elected water bailiffs did not seem on occasions to have discharged their duties very well.<sup>66</sup> On 25 March and again on 23 November 1635, a more ambitious scheme was agreed for building a bridge and set of sluices across the Pool. This would allow the water in the Pool to be penned up and released at low tide to flush away silt and thus provide a deep

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<sup>63</sup> M. K. Stammers, 'Slipways and steamchests: the archaeology of 18<sup>th</sup> and 19<sup>th</sup> century wooden shipyards in the United Kingdom', *The International Journal of Nautical Archaeology*, 28 (1999), pp. 253-64.

<sup>64</sup> J. A. Twemlow, *The Liverpool town books, volume II* (Liverpool, 1935), p. 273.

<sup>65</sup> Power, *Liverpool town books*, p. 199.

<sup>66</sup> Twemlow, *Liverpool town books II*, pp. 63, 84.

water quay and harbour in the mouth of the Pool.<sup>67</sup> Chandler and others assumed that this set of sluices was built. However, the operative words in the record are 'a key and harbor may be made'. There is no later evidence in the town books that the sluices (and certainly not the bridge, which was deferred) were ever built. If they had been, one expects later entries to record the cost of repairs, as wooden sluices could not have been left without maintenance. In 1670, Sir Edward Moore mentioned the need to build dams and sluices if the Pool ever became navigable, otherwise it would 'quickly wrack up'.<sup>68</sup> This implied that there were no sluices existing in the Pool in 1670.

The council also concerned itself with the safe approach to the haven via the Rock Channel by placing a perch or seamark on the Black Rock, off what later became New Brighton. This perch would have been a substantial structure to make it visible at a distance. It was probably similar to the wooden seamark that still stands off Formby. The importance of the Black Rock perch was such that when it was swept away in 1683, another perch stationed at Crosby was ordered to be moved across the river to replace it.<sup>69</sup> That was the limit of signing the approaches of the port. Shipmasters relied on other landmarks, such as the spire of Sefton church and the watermill on the shore at Bootle, until the mid eighteenth century, when buoys, lighthouses, seamarks and compulsory pilotage began to be introduced. From the town books, there seems to be little evidence of a large number of wrecks. A wreck and a derelict hulk near the Pool, both of which were dangerous to navigation, were ordered to be broken up and disposed of at meetings held on 21 and 23 January 1655.<sup>70</sup>

While the port was involved in just the coastal trade and the number of ships handled was small, the council had not encountered any problems of congestion in the haven.<sup>71</sup> However,

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<sup>67</sup> G. Chandler and E. Wilson, *Liverpool under Charles I* (Liverpool, 1965), p. 203.

<sup>68</sup> Heywood, *The Moore rental*, p. 62.

<sup>69</sup> Picton, *City of Liverpool*, p. 308.

<sup>70</sup> Power, *Liverpool town books*, pp. 78, 82.

<sup>71</sup> In 1587-88, Liverpool had fewer arrivals and sailings than the small Norfolk port of Blakeney, see B. Cozens-Hardy, 'The maritime trade of Blakeney, 1587-90', *The Norfolk Record Society*, 8 (1936).



it is evident that by the start of the eighteenth century congestion in the anchorage was reaching crisis point. The painting of Liverpool in 1680 shows just how crowded the haven had become and the regulations promulgated on 13 January 1701 were clearly a reaction to a growing problem. The council had been petitioned by several local masters because of the damage their ships had sustained through the careless mooring of other vessels. The new regulations stipulated that ships within the 'bancke' (referred to earlier as the 'warthe') and below the mouth of the Pool should be moored by three anchors. They were to be laid up and down the haven with one towards the centre of the river. Non-compliance and fouling other ships' anchors were all subject to fines.<sup>72</sup>

The building of a wet dock, while a financially bold venture for the council, was nevertheless an essential addition to the port if it was to consolidate its hold on the transatlantic and West Indian trades. Before and even after 1660, the council had managed the port and its limited facilities not always perhaps as successfully as it might have done. This was because it had to work through an elected water bailiff, who was sometimes dilatory in his duties. Nevertheless, the port functioned, for, as Jackson put it, 'ports do not require a huge and expensive infrastructure if their water-site is adequate for cost-effective vessels to carry on their trade', and that exactly sums up Liverpool as a port before the onset of congestion and on the eve of the building of its first dock.<sup>73</sup>

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<sup>72</sup> Picton, *City of Liverpool*, p. 308.

<sup>73</sup> G. Jackson, 'The significance of unimportant ports', *The International Journal of Maritime History*, 13 (2001), p. 16.