

## Introduction

A literature search for information about harbours in Roman Britain is an unrewarding exercise. It soon becomes clear that there is virtually no 'hard' evidence, in the form of excavated wharves and jetties, though excavators of Roman civil and military settlements tend to be prodigal with inferred locations for harbour installations. A summary of the scanty evidence available was prepared by Fryer for the 1971 Colston Conference on marine archaeology (Fryer 1973), and it is not proposed to duplicate this survey in the present paper.

Instead, an attempt will be made to examine the likely distribution of ports and harbours in the province, based on what is known of the settlement and trade patterns, and from this to suggest the most promising lines for future investigation.

Before beginning the paper, however, it is necessary to define what is intended by the term 'harbour'. There is considerable imprecision about the use of this and related terms such as wharf, quay, port, jetty etc, which are often used indiscriminately by archaeologists. For the purpose of this study 'harbour' will be taken to apply to any installation from which goods and passengers could be transferred from ship to shore, and vice versa. This will thus encompass man-made constructions, varying in complexity from an elaborate series of stone or wooden wharves and docks down to a simple wooden jetty or revetted river bank, and natural havens-sheltered anchorages from which goods and passengers could be landed by lighters working off an open shore, or where shallow-draught vessels could be safely beached. It is the unquestioned existence of harbours of the latter type, as

evidenced by boat excavations and by the minimum requirements of many Roman boats, that makes the scanty archaeological record an unsatisfactory starting point for a survey of Roman harbours in the context of a conference on Roman shipping and trade.

## Evidence from the road system

Fryer begins his survey (1973, 261) by stating, with ample justification, that 'In contrast with what is known of the road system of Roman Britain, our knowledge of the ports of that period is somewhat limited'. However, having thus introduced the notion of the road system, he fails to profit from the opportunity that it offers for the systematic study of likely harbour locations. The Ordnance Survey *Map of Roman Britain* (3rd ed, 1956) indicates the following possible port and harbour sites, where proven roads end at coastal settlements or where settlements are located on navigable rivers of major estuaries (starting at the eastern end of the Wall and travelling clockwise round the coast, as shown in Fig 42):

- |                           |                   |
|---------------------------|-------------------|
| 1 The Tyne estuary        | 24 Hamworthy      |
| 2 Scarborough             | 25 Radipole       |
| 3 Filey                   | 26 Exeter/Topsham |
| 4 York                    | 27 Sea Mills      |
| 5 Brough-on-Humber        | 28 Gloucester     |
| 6 Winteringham            | 29 Caerwent       |
| 7 Lincoln                 | 30 Caerleon       |
| 8 Brancaster              | 31 Cardiff        |
| 9 Caister-by-Yarmouth     | 32 Neath          |
| 10 Burgh Castle           | 33 Carmarthen     |
| 11 Colchester/Fingringhoe | 34 Pennal         |
| 12 Bradwell               | 35 Caernarvon     |
| 13 London                 | 36 Caerhŷn        |
| 14 Rochester              | 37 Chester        |
| 15 Reculver               | 38 Wilderspool    |
| 16 Richborough            | 39 Ribchester     |
| 17 Dover                  | 40 Lancaster      |
| 18 Lympne                 | 41 Ravenglass     |
| 19 Hastings               | 42 Moresby        |
| 20 Pevensey               | 43 Maryport       |
| 21 Chichester/Fishbourne  | 44 Beckfoot       |
| 22 Portchester            | 45 Bowness        |
| 23 Bitterne               |                   |

The list is an impressive one and is, indeed, susceptible to enlargement: there are, for example, apparently isolated sites such as Caer Gybi on Anglesey which are not related to a road system and are thus more likely to have been supplied by sea. In its present form the list is an undifferentiated one; it needs revaluation in the light of what is known of the settlement pattern in the hinterland of these putative harbours and of their *raison d'être* (ie whether they were primarily civil or military establishments).

## Military harbours

Accepting the existence of a generalized Severn-Humber line dividing the military zone from the civil, the sites from the Tyne mouth to the Humber on the east coast and from Caerleon to Bowness on the west coast may be presumed to be military. Only at Wilderspool is there as

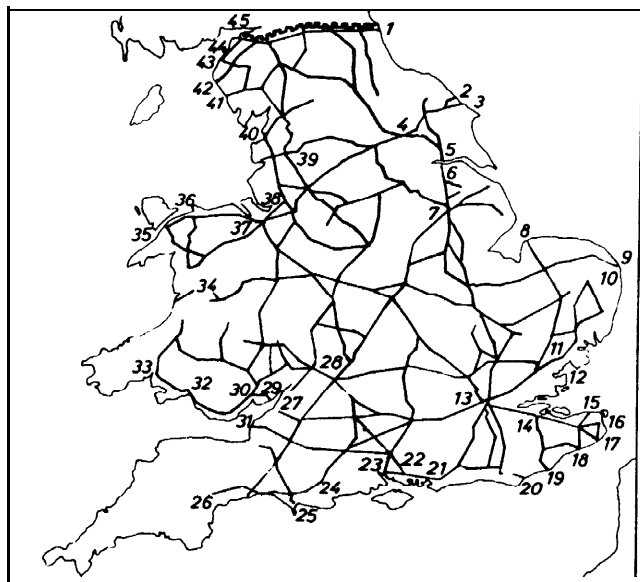


Fig 42 Possible sites of harbours in Roman Britain

yet no clear evidence of any kind of military establishment; recent excavations (Williams 1970; Spencer 1975) have given no indication that the extensive industrial establishment there was founded or run by the army, although it is tempting to see a link with the XX Legion at Chester.

To these northern sites should be added the Saxon Shore (and in some cases earlier *Classis Britannica*) forts on the south-eastern coasts, from Brancaster to Portchester.

The northern defensive system of the Wall and its associated forts and signal stations account for one group of these sites—the mouth of the Tyne and Bowness at opposite ends of the Wall, Scarborough and Filey on the east coast, and Beckfoot, Maryport, Moresby, and Ravenglass on the west. It is clear from the great granaries at South Shields (Richmond 1953) that this was a major supply base, but no harbour installations have been found. However, it now appears that this particular installation was built for a specific purpose (the Severan campaign in Scotland) and operated for only a few years, and so the permanent harbour for the Wall garrisons is probably more likely to be located at the Wallsend fort, where certain indications of wharves have come to light over the years (J P Gillam, pers comm).

The potential harbours associated with the forts along the Cumbrian coast have recently been discussed by Jarrett (1976). He concludes that the major harbour for the garrisons on this coast would have been located at Maryport. The other candidate, Moresby, is just navigable for shallow-draught vessels, but there are dangerous rock outcrops on the lee shore to the prevailing south-westerlies and so landing would have been hazardous. Beckfoot is a completely open shore and so could only have been reached by lighters plying between the fort and vessels standing offshore, and there is no suitable harbour below the magnificent site of Ravenglass.

The eastern sites associated with the Wall at Scarborough and Filey were relatively small signal stations, and the former is located on a clifftop high above the sea. However, the Filey station is situated in a good natural harbour and it is possible that it might have served as an unloading point for supplies destined for the important fort at Malton (although this fort lies equally close to York).

The group of sites between Lancaster and Gloucester has been studied by Livens (1974) in search of a hypothetical '*Litus Hibernicum*', paralleling the Saxon Shore of the south-east. Lancaster itself, at the head of the sheltered Lune estuary, is a very likely site for a substantial harbour installation; it is known from the *Notitia Dignitatum* (Occ xl) that a naval unit, the *numerus barcariorum Tigrisiensium*, was stationed at Olenacum, which has been fairly confidently identified with Lancaster (Frere 1974, 262, n 20) in the late 4th century, which presupposes berthing facilities for warships. The changing shoals of the Lune estuary may well conceal some substantial works.

Chester was, of course, the headquarters of the XX Legion, with a considerable civil settlement alongside. It is located on the Dee estuary, not perhaps the easiest waterway to navigate at the present time, but shoal conditions may have deteriorated since the Roman period. Fryer (1973, 246-7, fig 2) discusses the remains of early wharves that have come to light both at Chester and at the nearby Heronbridge settlement, and also considers the significance of finds of Flintshire lead and north

Wales slate in terms of trade. It is certain that the large military and civil settlements at Chester would have required extensive wharfing facilities.

The auxiliary forts at Caerhŷn, Caernarvon, Pennal, Carmarthen, Neath, and Cardiff (Nash-Williams rev Jarrett 1969) were all doubtless supplied with both men and matériel by sea. All lie on tidal rivers (the Conwy, Seiont, Dyfi, Neath, and Taff respectively), and there were extensive *vici* at Caernarvon and Carmarthen. The Hen Waliau (Old Walls) at Caernarvon, lying 140 m west of the fort at the edge of the slope to the river, seem to be the remains of some kind of military stores depot, reminiscent of South Shields. No harbour installations have been found at any of these forts, but there would appear to be scope for limited exploration at several of them.

Caerleon, as headquarters of the II Legion, lies on the Usk estuary and, like Chester, would certainly have possessed extensive harbour installations. Fryer (1973, 267-8, fig 2B) describes the harbour installations excavated in 1963 (Boon 1964); the excavator estimated that the massive stone and timber wharf could have accommodated vessels of up to 5 ½ ft (1.67 m) draught at high tide.

Returning now to the east coast, there are two probable locations for military harbours, York and Brough-on-Humber. Fryer (1973, 267, fig 3A) discusses the evidence for wharves on the river Foss, which appears to have been wider in the Roman period than at present, and to have been tidal and navigable (RCHM 1962; Balmforth 1976). It is to be hoped that the excavation programme of the York Archaeological Trust will provide more evidence of Roman wharves in what was both a legionary fortress and a *colonia*, and must therefore have handled a considerable volume of waterborne trade.

The settlement at Brough-on-Humber (Wacher 1969) began in the 1st century as an auxiliary fort but was evacuated around AD 80; however, a military supply depot seems to have been maintained here, alongside a substantial civil settlement. The fort was reoccupied in the later 3rd century, perhaps as an outlier of the Saxon Shore system, to be abandoned in the last quarter of the 4th century. Brough is sited on a natural inlet of the Humber, and appears to have filled two military functions: like Brancaster on the Wash and Reculver on the Thames estuary, it guarded the approaches to an important waterway, but in periods of tranquillity it served as a port for the settled area between York and Lincoln. It was on Ermine Street and served as one terminal of a crossing matched by a small settlement at Old Winteringham (Stead 1976) on the opposite bank. Neither site has yielded evidence of harbour works: Wacher attributes this to the late Roman marine transgression, which swept away or submerged the existing structures.

The final group of military sites is the chain of forts on the south-eastern and eastern coasts. Some of these (Richborough, Lympne, Dover) appear to have been connected with the *Classis Britannica*: the recent excavations at Dover (Philp 1977) have established conclusively that there was a major Fleet establishment here in the 2nd and early 3rd centuries, and this may well have succeeded an earlier Fleet headquarters at Richborough (Cunliffe 1968, 255-60; Cleere 1977). The role of Lympne at this period is still not known, but it is hoped that the current excavations (Cunliffe 1977) will throw more light on this point. It is relevant to mention here a possible *Classis Britannica* port on the estuary of

the river Rother at Bodiam, most likely used for the shipment of iron from the Fleet-operated ironworks in the Battle and High Weald areas (Lemmon & Hill 1966; Cleere 1974).

Nothing remains of any harbour works at Richborough, because of the coastal erosion/silting sequence that has carried away a substantial part of the fortifications. The important harbour at Dover has been brilliantly reconstructed by Rigold (1969), and additional information is coming to light as a result of the work of the Kent Archaeological Rescue Unit. There is an excellent chance of learning a great deal about the harbour at Lympne from Professor Cunliffe's excavations, since this site appears not to have been scoured so devastatingly as Richborough. The Bodiam site has only been sampled: it could yield much valuable information about a small specialized naval installation if excavated comprehensively.

Of the specifically Saxon Shore forts, Brancaster might be expected to provide information from excavation: the work of the Norfolk Archaeological Unit (Edwards & Green 1977) has provided spectacular air-photographic results, which suggest that the harbour lay to the north-east of the fort, near Brancaster Staithe. Burgh Castle has been subject to landslip on its western side, but 19th century excavations revealed traces of what may be harbour works (Johnson 1976, 37). Bradwell, guarding the Blackwater estuary, has been severely slighted, but fragments of a Roman harbour have been traced as submerged masonry outlines in an adjacent marshland (Johnson 1976, 44). Reculver has lost half its surface area to the sea and any harbour works will have disappeared, although underwater searching might provide some evidence of masonry structures. Pevensey has been attacked similarly and is unlikely to yield much evidence, but the Portchester site has been protected by the Isle of Wight from the strong south-westerly currents that have so profoundly altered much of the Roman south-eastern coastline; however, here the remains of the early harbour probably lie just below the waters that wash the western defences, and so exploration would only be possible at exceptionally low tides.

To summarize, then, sizeable Roman harbours may be anticipated at the legionary fortresses (Caerleon, Chester, and York), at Wallsend (for the Wall garrison), at Maryport and Lancaster (for the north-western defensive system), and at Dover, all of these probably acting as trans-shipment and distribution points for dependent coastal and inland military establishments. It would be reasonable in these cases to expect to find installations adequate to deal with seagoing vessels of the Blackfriars type. Smaller port installations, for the use of individual garrisons, may be postulated at the Welsh coastal forts (although forts such as Caemarvon and Carmarthen may have supplied inland establishments such as Y Gaer, Tomen-y-Mur, etc). If the Saxon Shore forts were naval bases, they would have required wharfage to accommodate fighting ships and transports. If, however, they are to be seen essentially as stores depots, the harbour installations could have been more modest.

One caveat needs to be entered regarding the military settlements. The Roman army was traditionally self-sufficient and accustomed to live off the land, both on campaign and on garrison duty. The volume of materials that would have been brought into military establishments would not have been large: wine and oil, some pottery, glass, and metal, and certain foodstuffs for units stationed in regions unsuitable for agriculture. In

addition, there may have been some movement of troops by sea, on leave or on special assignments: at least one tombstone records the death of a legionary by shipwreck (*RIB*. I. 544). Substantial quays would not have been necessary for relatively small movements of this kind. Those forts from which naval vessels might be expected to operate—Dover, the Saxon Shore forts, Brough-on-Humber—would, however, have needed something more elaborate to accommodate the biremes, triremes, and liburnians of the Fleet, together with repair facilities, and so there is perhaps a greater likelihood of finding more substantial or extensive remains at these forts.

Archaeological evidence of harbours from military sites will for the most part come from land excavations; however, underwater exploration might yield information at certain of the Saxon Shore forts, such as Pevensey and Portchester.

### Civil ports

Reverting to the hypothetical Severn-Humber demarcation, it will be seen that there are a number of ports that may be postulated from the road map—Lincoln, Caister-by-Yarmouth, Colchester/Fingringhoe, London, Rochester, Hastings, Chichester, Fishbourne, Bitterne, Hamworthy, Radipole, Exeter/Topsham, Sea Mills, Gloucester, and Caerwent. A number—indeed, most—of these probably have military origins from the conquest period: Lincoln and Gloucester were legionary fortresses, Colchester and London were pivotal points in the early years of the conquest, and there is evidence of 1st century military use of Rochester, Fishbourne, Hamworthy, Topsham, and Sea Mills to supply the advancing legions.

However, it is proposed to examine these centres in terms of settlement and trade rather than their short-lived strategic significance. London was the pre-eminent trading centre of Roman Britain, and recent work in the City (eg Tatton-Brown 1974) has provided evidence of massive waterfront developments on either side of the presumed location of London Bridge. The Department of Urban Archaeology of the Museum of London has concentrated much of its effort on the waterfront over the past three years, and the results from the Custom House site, New Fresh Wharf, Seal House, Baynard's Castle, and Trig Lane suggest that wharves stretched continuously for more than 1 km on the north bank of the Thames (Hobley 1976). The richness of the finds from the City confirms the evidence of the waterfront and the nodal location of London in the road system of the province: London was the entrepôt for goods from the Low Countries and the Rhineland, a short sea crossing away, as well as from Spain and the Mediterranean, and would have been an equally important shipping port for exported goods, such as metals, hides, etc.

London's mercantile pre-eminence is indisputable; however, there are other towns whose central position in areas of intensive settlement and accessibility by water give them a special significance in terms of waterborne trade. Gloucester must have played a role not dissimilar to London's in the Roman west country. Fryer (1973, 262-4, fig 1) discusses the available evidence: a considerable frontage of wharves has been located in a now-silted creek protected from the heavy tides of the Severn and its famous bore. These were built in both timber and stone, implying a degree of substance and stability in trade and markets. Lincoln's role in the north-east was probably comparable. There is less evidence of harbour installations—only a 6 m stretch of dressed stone on an earlier river alignment (Fryer 1973, 264; Wachter 1974,

125)–but the Witham would have been navigable to this point, whilst in addition to the road network that radiates from Lincoln there may well have been access by water southwards via the Car Dyke, using flat-bottomed craft of the type known from London and the Netherlands.

The other port sites mentioned were less significant from the point of view of trade. Sea Mills probably served the important Mendip metal-producing region (Todd 1976, 102–4), and would, of course, have been a convenient port for shipping out its products. Topsham was the port for Exeter and Radipole may have served Dorchester, although a submerged structure a little farther west in Lyme Bay may have been the post for this area (R Holman, pers comm). Bitterne was probably the port for Winchester, although it may well have had wider connections, since pigs of Mendip lead have been found there. It also became a military centre in the 4th century, when the harbour at Portchester seems to have silted up (Johnson 1976, 141–2). Fishbourne (Cunliffe 1971) may have served Chichester, although there are a number of inlets comparable to Fishbourne Creek nearer to Chichester where the harbour for the town may have been located. Rochester would have served the rich villas on the North Downs, taking part-cargos from ships making for London, and might also have been the port from which the Kentish ragstone so favoured by Roman builders was shipped out. Fingringhoe was a natural outlet for Colchester (which it certainly served during the military occupation of the immediate post-invasion years). Caister-by-Yarmouth is the obvious entry port for the rich farmlands of East Anglia.

To these sites should be added Dover, which must have possessed a substantial civil port in addition to the military installations, and Brough-on-Humber, which was in effect a civil settlement for much of its life and seems to have served as a shipping port for Derbyshire lead (Wacher 1969). The possibility of there having been a port at Hastings has often been discussed, and its location has been suggested as offshore in the Bulverhythe area. The non-urban nature of the settlement in this part of the Weald, which seems likely to have been an Imperial estate throughout the Roman period, coupled with the apparent orientation of the minor roads in the area towards the Rother estuary port of Bodiam, suggests that this is one putative port that may be disregarded.

The situation in the Bristol Channel is worthy of study. As suggested above, Gloucester was probably the main port for the region. Caerwent may have had some installations, but probably on a relatively minor scale. There remains the problem of how the iron from the Forest of Dean which, like the Weald, was probably an Imperial estate (Cleere, unpublished) was shipped out. A case can be made out for some form of port at Lydney, although the nature of the site there does not suggest that it was of commercial significance. A more likely candidate might be Woolaston (Hudson & Scott-Garrett 1938), where the extensive villa had two bath-houses and a 'light guide-line, for guiding Severn craft through the Guscar rocks to its shore' (Hart 1967, 25).

So far, none of the minor ports surveyed above has produced clear evidence of harbour installations, with the exception of Fishbourne. There is little chance of the fairly slight remains being recovered by land excavation, but it might be that underwater exploration around some of them—in Lyme and Weymouth Bays, for example—could produce interesting results.

In summary, it may be said that there was at least one major civil port in Roman Britain (London), trading widely with the Mediterranean, Gaul, and the Rhine provinces; there were probably two secondary mercantile centres (Gloucester and Lincoln), serving regions remote from London, and perhaps with a bias towards trade with the Mediterranean and Gaul and with the Low Countries and the Rhine provinces respectively. Beyond these three major ports, the remaining harbours were in all probability small, with localized markets in their immediate hinterland.

In assessing the scale of likely installations in the smaller harbours, some attention should be given to the type of trade that was being carried on—the materials likely to have been shipped through them and their volume. If it is assumed that imports, such as wine, oil, fine pottery, glass, querns, and other 'luxury' goods, would have been brought into the province through the major ports, these smaller harbours need only have been large enough to receive relatively small vessels, bearing imported goods and British products not available in the immediate region—certain foodstuffs, a little trade in timber and building materials, and metals as either semi- or fully-finished products. There would also have been some movement of local products out of these harbours. For the most part, however, *civitates* were self-sufficient, and trade would have been on a very small scale, necessitating infrequent visits by relatively small vessels: the analogy would seem to be with the trade pattern in the China Sea and South Pacific until comparatively recently—small vessels plying a coastwise or island-to-island trade.

This is an important factor to consider when attempting to evaluate the likelihood of more evidence being forthcoming from deliberate exploration. There is considerable evidence already for harbour works at London and Gloucester; at these centres and at Lincoln, further exploration in city centres will be subject to the rescue situations that arise and will require the resources of the permanent teams in existence in these three cities. Opportunities may exist for limited exploration on land and underwater at some of the smaller port sites identified in the paper, but it should be recognized that the chances of finding remains of the relatively slight structures that probably existed are not good.

## Conclusion

The pattern of Roman settlement in Britain—broadly, military in the Highland Zone north of the Severn-Humber line and civil to the south in the Lowland Zone—determines the location of harbours. The military harbours were sited with strategic considerations in mind, the civil ports for reasons connected with trade and the location of home markets. The pattern of the Roman conquest is reflected in the road system in the civil zone, with London as the major nodal centre and subsidiary centres (Lincoln and Gloucester) at former legionaries fortresses, utilizing military road communications. Other civil ports developed to supply *civitas* capitals on major trade routes or those less accessible by road from the larger ports. In the late 3rd and 4th centuries, the Saxon Shore defensive system introduced a series of purely military harbours at key strategic locations, protecting major inland waterways (Wash, Blackwater, Thames, Wantsum, Southampton Water). Of the military harbours in the Highland Zone, most were probably simple, serving individual forts; however, those at the legionary fortresses (Caerleon, Chester, York) and at Dover were probably considerably larger.

Most of the Roman harbour works are traceable only by land excavation, owing to silting of estuaries, embanking of rivers, and coastal changes. In a few cases, largely on the south and east coasts, underwater archaeology may be able to assist in the location and exploration of submerged harbour works.

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