

INTERTIDAL ARCHAEOLOGY AT OLD PASSAGE, AUST, GLOUCESTERSHIRE: A SKETCH OF THE SURVIVING EVIDENCE

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The Old Passage, functioning until 1966, was an ancient and strategically significant but hazardous ferry that linked Aust with Beachley across narrows on the Severn Estuary. It provided a means of communication between England and Wales. The remains of four landing piers survive in the intertidal zone at the Aust end of the route. Dating in part from around the end of the first quarter of the nineteenth century, the most recent of these is an elaborate, compound, timber and stone structure which served both vehicles and foot passengers. The other three are apparently earlier but their date is otherwise uncertain. Two of these piers are also timber and stone structures which accommodated vehicles as well as foot passengers. Documentary evidence from the eighteenth century shows that vehicles could at that time be carried on the sailing boats that formed the ferry. The piers represent one of a number of essentially rural sites at which there is archaeological evidence for the network of trade and communications in the Severn Estuary and inner Bristol Channel that existed up to the middle decades of the twentieth century

INTRODUCTION

Of the several ferries across the Severn Estuary, that in south-west Gloucestershire over the narrows between Aust Cliff and the rocky peninsula of Beachley - the so-called Old Passage - is arguably the most ancient and strategically significant but also the most hazardous. For a boat-journey nominally of little more than two kilometres, it allowed direct access at Chepstow to the main route westward into southern Wales.

The passage is repeatedly referred to from the earlier twelfth century onward, together with

the frequent mishaps that beset the boats and their passengers (Herbert 1972, 54, 55; 1985, 137-141; Farr 1954, 17, 18). It was certainly forbidding and the journey uncomfortable. Daniel Defoe, travelling through Britain in the early eighteenth century, balked at the crossing (Rogers 1971, 364-5), writing 'After coasting the shore about 4 miles farther, the road being by the low salt marshes...we came to the ferry called Aust Ferry, from a little dirty village called Aust; near to which you come to take boat. When we came to Aust, the hither side of the passage, the sea was so broad, the fame of the Bore of the tide so formidable, the wind also made the water so rough, and ...the boats to carry over both man and horse...so very mean, that in short none of us cared to venture...and resolved to keep on the road to Gloucester.' This entailed a considerable detour for Defoe's party, but at least at Gloucester the Severn was bridged. W. Gilpin, who later in the century successfully made the crossing (Farr 1954, 16), remarked as follows: 'A miserable walk to the boat we had through sludge; and over shelving and slippery rocks. When we got to it we found eleven horses on board and above thirty people; and our chaise...slung into the shrouds. The boat...at length gained the channel. After beating about near two hours against the wind our voyage concluded...with another uncomfortable walk through the sludge to high water mark.' Rather more comfort and convenience was to be found by the mid twentieth-century traveller. There remained, however, cause to find the journey memorable, as Sir Cyril Fox, the distinguished archaeologist, was to record in a sketch of 1933 or soon after showing the car ferry plying between Aust and Beachley (Scott-Fox 2002, 140).

Outside of cities and towns, scant archaeological attention has been given to the

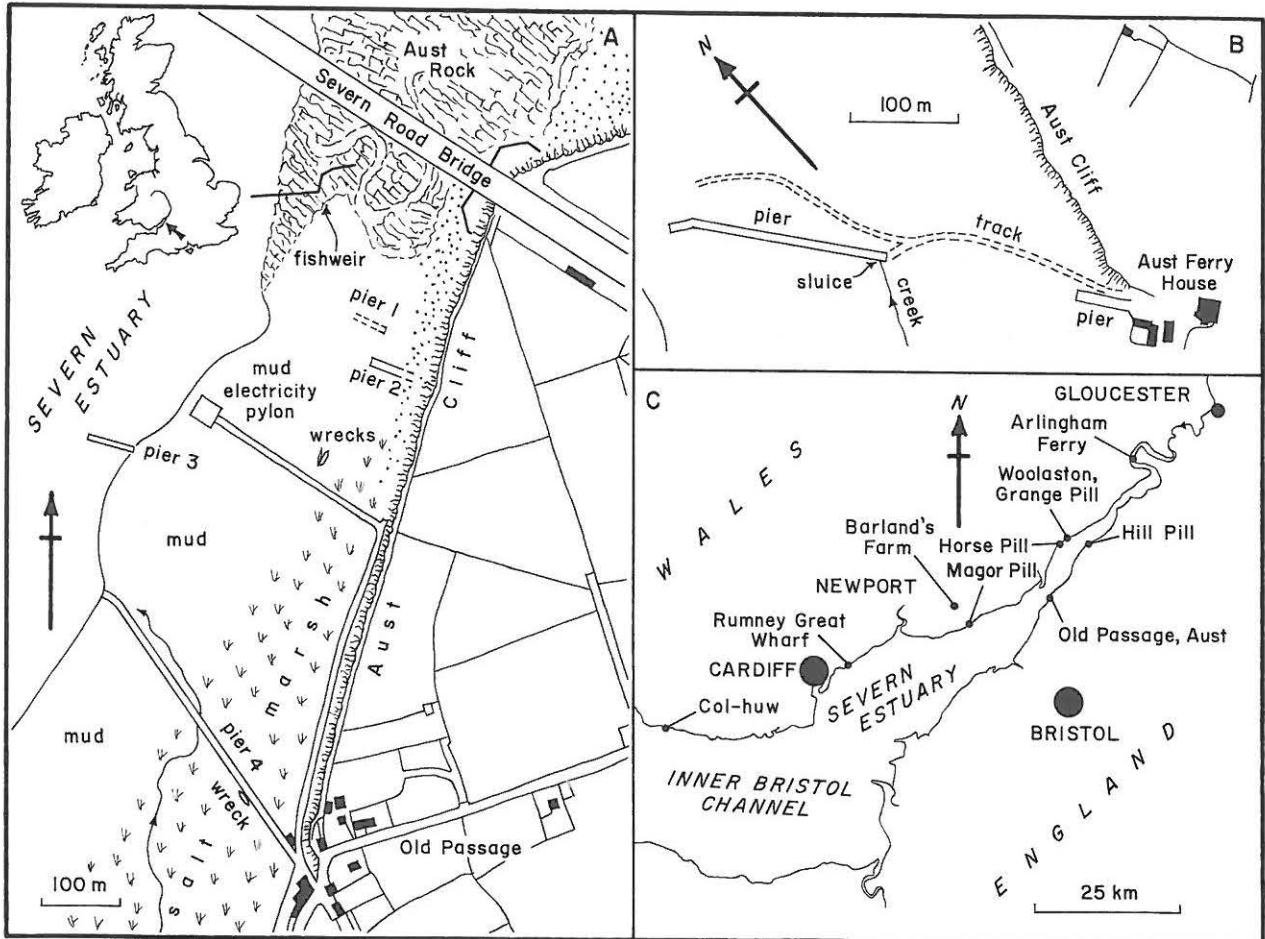


Figure 1: Rural waterfront archaeological sites. A, Intertidal sediments, fishweir, ferry landing piers and wrecks at Old Passage, Aust, compiled from maps and air photographs from 1845 onwards. B, Pier 4 at Old Passage as surveyed in 1845 (based on GRO Q/RUm 196). C, Rural sites in the Inner Bristol Channel and Severn Estuary named in the text.

physical structures which supported, and the artefact assemblages which reflect, such significant waterfront activities as the much commented-upon ferry at Aust. Because at Aust the structures linked to the passage are decaying and suffering damage, as well as being engulfed by tidal mud, this paper takes the opportunity to give a brief introduction to the surviving and accessible physical evidence relating to this strategic site. Maintenance activities ceased in 1966, when the opening of the first Severn Road Bridge saw the final demise of the Old Passage.

SETTING

Aust village lies close to the east bank of the Severn Estuary. The start of the ferry is near the hamlet called Old Passage (National Grid Reference ST 546888) at the south-south-western

end of Aust Cliff, an almost vertical eminence of open V-shaped plan more than 40 m high (Figure 1A). On the cliff, and unconformably upon the underlying Carboniferous Limestone at Aust Rock, appear slightly faulted and folded Triassic mudrocks with gypsum, capped by a thin sequence of fossiliferous mudrocks and limestones assigned to the earliest Jurassic (Whittard 1949; Welch and Trotter 1961, 118, 119).

The extreme tidal range at Aust Cliff currently approaches 15 m, creating to the south-south-west of Aust Rock an intertidal zone 200-350 m wide. As seen today, a narrow beach of muddy shingle and stone immediately below the cliff gives way westward to a mudflat and south-south-westward to mud and young, rapidly encroaching salt marsh (Northwick Formation of Allen and Rae, 1987). At times in the past, as



Figure 2: Air photograph (1969) of the area shown in Figure 1A at low tide (north to right). Ordnance Survey photograph, Crown Copyright Reserved.

suggested by the cliff-bound marsh terraces of Northwick Warth immediately to the south (Allen and Rae 1987, fig. 3, pl. 2.2), bare rock and shingle may have been much more extensive intertidally below the cliff, as Gilpin's complaints also hint (Farr 1954, 16).

Inspection of maps and air photographs dating over the last 150 years reveals a variety of artificial structures in the intertidal zone (Figure 1A). An air photograph of 1969 (OS/69/375/009) shows a zig-zag fishweir on the southern edge of Aust Rock (Figures 1, 2), now represented by a line of scattered, heavily weeded stones and decayed wooden poles. Four piers, numbered from north to south, the fourth of which is the longest, are distributed along the foot of the cliff. An earlier air photograph, of 1946 (RAF, CPE UK 1871 O4 DEC46/3200), shows about half-way between Aust Rock and Old Passage what appear to be the wrecks of two trow-like boats (Figure 3, overleaf). These are neither visible today nor seen

in the 1969 photograph and could either have been swept away or become completely engulfed in mud. The later photograph (OS/69/375/009) shows another wreck, that of a c. 15 m long boat, possibly a small trow, lodged against the southwestern side of pier 4 (Figure 2).

PIER 1

This structure lies roughly mid-way up the modern intertidal zone amongst muddy shingle grading outward to deep mud (Figure 1A). It is first shown as a degraded feature on a plan of 1845 (Gloucestershire Record Office Q/RUm 196), prepared in connection with one of a number of nineteenth-century proposals for a bridge across the Severn at Aust (Herbert 1972, 55). The surviving length as depicted is c. 30 m and the width c. 4.9 m. Ordnance Survey plans of 1881 (first edition) and 1919-20 (revision) also portray the structure (Gloucestershire Sheet LXII/7).

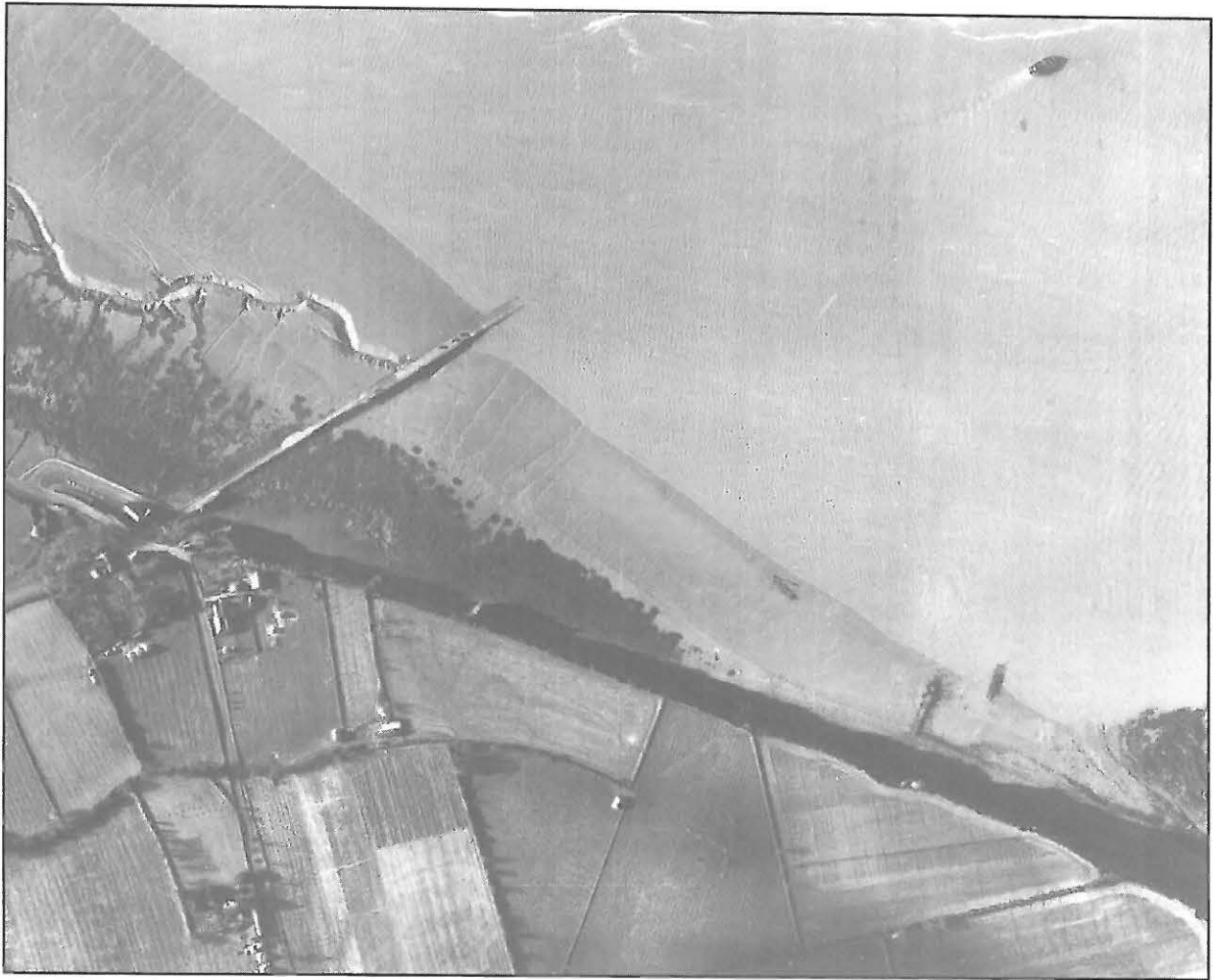


Figure 3: Air photograph (1946) of the area shown in Figure 1A at mid tide (north to right). Note the evidence for deeper water on the sheltered side of the lower part of pier 4, the vehicles waiting on the pier, and the loaded ferry sailing away from it. RAF photograph, Crown Copyright Reserved.

What can be seen today (Figure 4A) is a somewhat shorter pair of parallel, heavily weeded features of low relief with an overall width of c. 3.5 m. These features are much clearer in the photograph of 1946 (Figure 3), which also suggests the presence c. 1 m to the north of a parallel but fainter structure (RAF 04DEC46/3200). They are less evident in the photograph (Figure 2) of 1969 (OS/69/375/009). For most of their length each presently visible feature consists of a row of very large, carefully squared stone blocks (Figure 4B), with occasional snecks of platy rock, interspersed with severely eroded, upright baulks of squared timber at a variable longitudinal spacing of c. 2 m (Figure 4C). These heavy timbers lie against the outer faces of the rows of blocks, and are most evident

toward the seaward end of the structure, where the stonework is disturbed and jumbled (Figure 4D). Two additional features are evident at this location (Figure 4E). A row of lighter timber uprights lies along the inner face of each row of stonework, in which in places mortared rubble is exposed instead of dressed blocks. No artefacts were found in association with the structure.

PIER 2

Pier 2 lies higher in the tidal frame a short distance to the south of pier 1 and much closer to the cliff (Figure 1A). It is shown on the 1845 map (GRO Q/RUm 196) as a better preserved structure, c. 60 m long and c. 7 m wide, which ranges out from or close to the cliff base of the

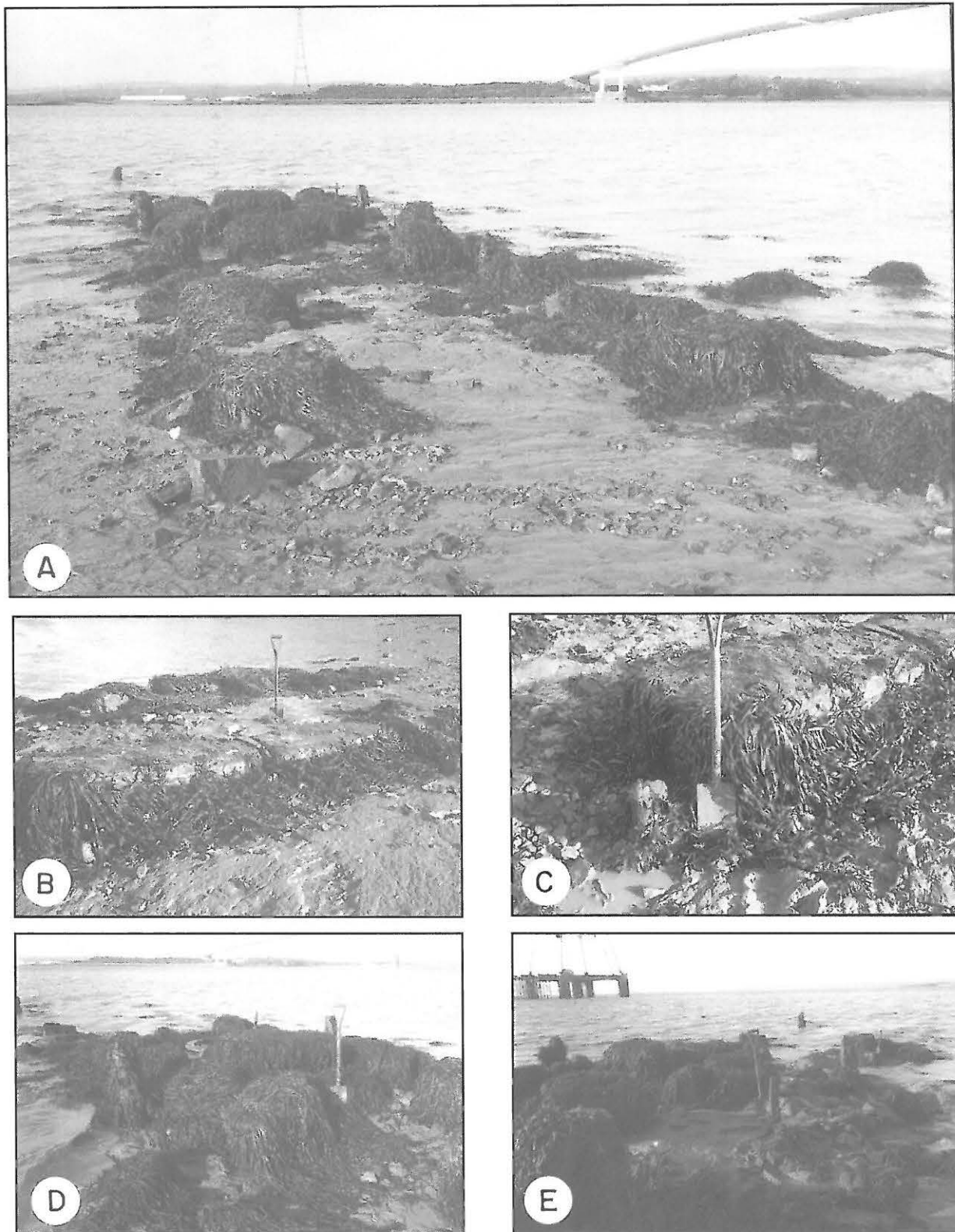


Figure 4: Pier I. A, general view from south-east. B, settings of stone blocks from the south-west (spade for scale). C, timber upright and setting of dressed stone blocks (spade for scale). D, timber uprights and displaced stone blocks at seaward end of exposed pier (spade for scale). E, displaced stone blocks and setting of rubble between double row of timber uprights, seaward end of exposed pier (spade for scale).

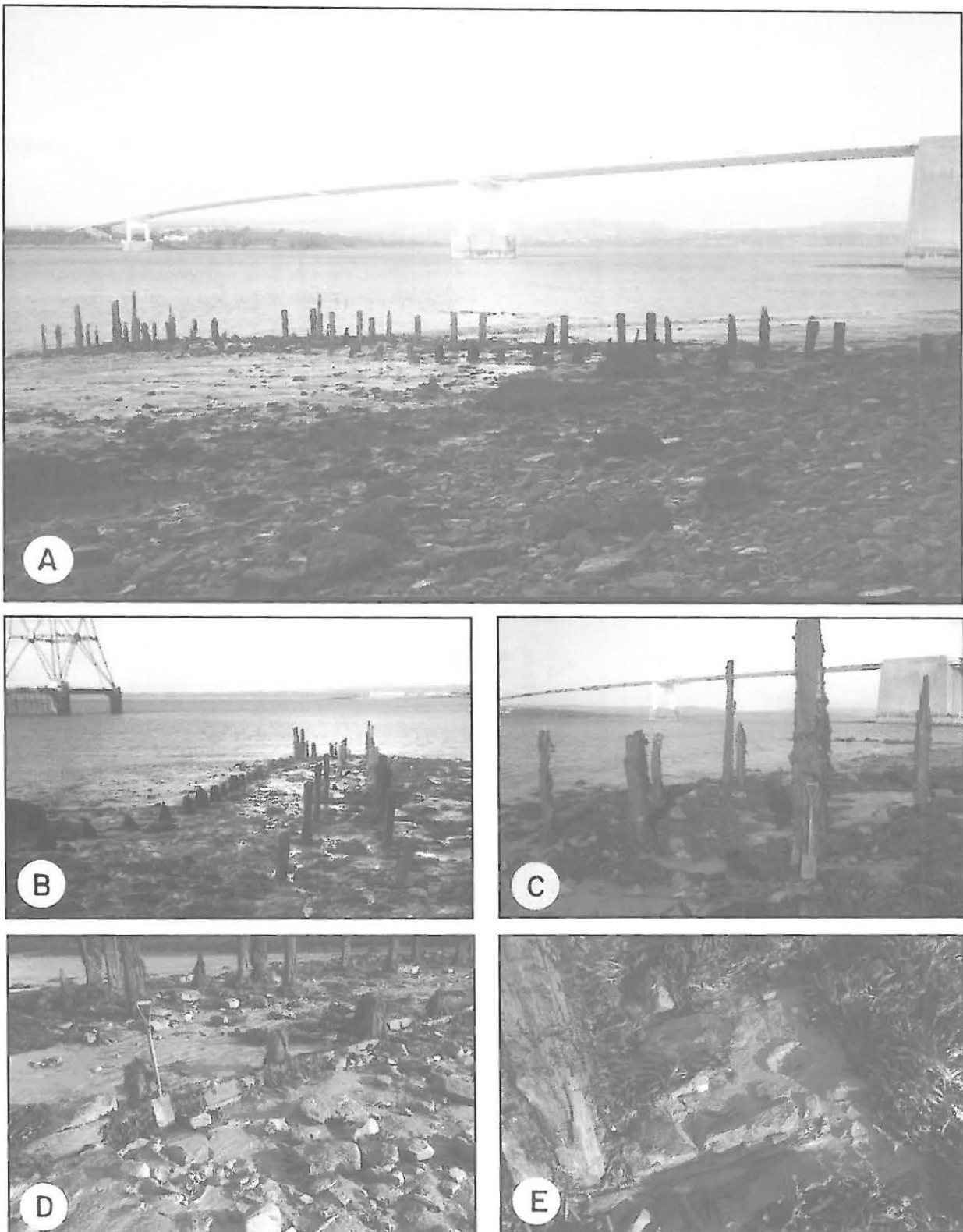


Figure 5: Pier 2. A, general view from south. B, axial view from the east-south-east. C, timber uprights at seaward end (spade for scale). D, timber uprights and facing of horizontal planks from the south-west (spade for scale). E, double row of stone settings with planking between, timber upright to left (boxed measuring tape for scale).

time. In the 1946 air photograph (Figure 3) it is seen to emerge from beneath a narrow, stony beach as two, parallel, weed-covered features which include numerous, narrow uprights as tall as perhaps 2-3 m (RAF 04DEC46/3200). These features are less clearly expressed (Figure 2) in the air photograph of 1969 (OS/69/375/009). The structure appears in outline on the Ordnance Survey plans of 1881 and 1919-20 (Gloucestershire Sheet LXII/7).

The surviving structure (Figure 5A, B) consists of three settings of much-eroded, upright baulks of squared timber and occasional roundwood poles associated with strewn and jumbled stone rubble. The spacing of the middle and northern settings is *c.* 1.5 m, but that of the middle and southern settings begins at *c.* 4 m before shrinking seaward over a short distance to *c.* 3 m. A few of the stouter timbers survive to a height of more than 2 m above beach level (Figure 5C) and preserve traces of fastenings in the form of iron square-headed bolts/screws and occasional straps. If wooden cross-bracing was present, however, it has not survived. Along the outer side of the southernmost setting, a facing of stout wooden planks can be seen at beach level to have been fixed longitudinally to the timber baulks (Figure 5D). In places the planking divides irregular blocks of stone set to a width of *c.* 0.6 m on the inner side from better dressed blocks that form the outer face (Figure 5E). Traces of a similar walling were found in association with the middle timber setting but no planking was seen. No artefacts were encountered at pier 2.

PIER 3

This structure lies at low-water mark to the west-south-west of pier 2 (Figure 1A). It is depicted on the 1845 map (GRO Q/RUm 196) as a narrow feature *c.* 40 m long but only *c.* 3 m wide. Pier 3 appears on Ordnance Survey plans of 1881 and 1919-20 (Gloucestershire Sheet LXII/7); on the 1969 air photograph (OS/69/375/009) it is a shorter, light-toned, linear structure (Figure 2). The tide at the time of the 1946 photography was too high to reveal the pier (Figure 3).

Pier 3 is currently inaccessible on foot, but may be represented by a linear, slightly weedy

zone in roughly the correct position far out within the mudflat, visible with the aid of binoculars from the cliff top.

PIER 4

Currently ranging obliquely northwestward from Old Passage for about 430 m across the whole of the intertidal zone, pier 4 is an elaborate, compound structure with a complex history of development (Figures 1A, 6A). It is represented in one form or another in all the maps and air photographs cited above, beginning with the plan of 1845 (GRO Q/RUm 196). Rising salt marsh and deepening mud are gradually engulfing the pier, and the long, wooden portion in the centre is breaking up and rotting under the action of weather, wave and tide. Roughly the landward half only of the structure is now safely accessible on foot.

The first part of the modern pier is a massive structure of very large blocks of dressed stone which extends out at about high-water level for 20 m or so across the marsh from the road at Old Passage. In 1845 (GRO Q/RUm 196), and again on the plans of 1881 and 1919-20 (Ordnance Survey, Gloucestershire Sheet XII/7), it was separated from a low-water quay by a substantial stretch of open beach/mudflat traversed by a rough track (Figure 1B). By 1946 (RAF 04DEC46/3200) a wooden toll-house had been added on the northeastern side of this short initial section (Figure 6B). On the high marsh to the south-south-west there was a substantial area of hard-standing for animals, waggons and motor vehicles.

The sloping, low-water pier (Figure 1B), some 200 m long, is not currently accessible on foot but the nearer parts of the structure can be inspected using binoculars. This structure appears in the plans of 1845 (GRO Q/RUm 196) and of 1881 and 1919-20 (Ordnance Survey, Gloucestershire Sheet LXII/7). It was built in two phases separated by a few years at the most; both parts of the structure appear to have survived substantially unchanged. The later phase of 60 yards (the plan itself shows 200 ft), added to the upper end of the first phase of 90 yards, was constructed in late 1827 or soon after, as William

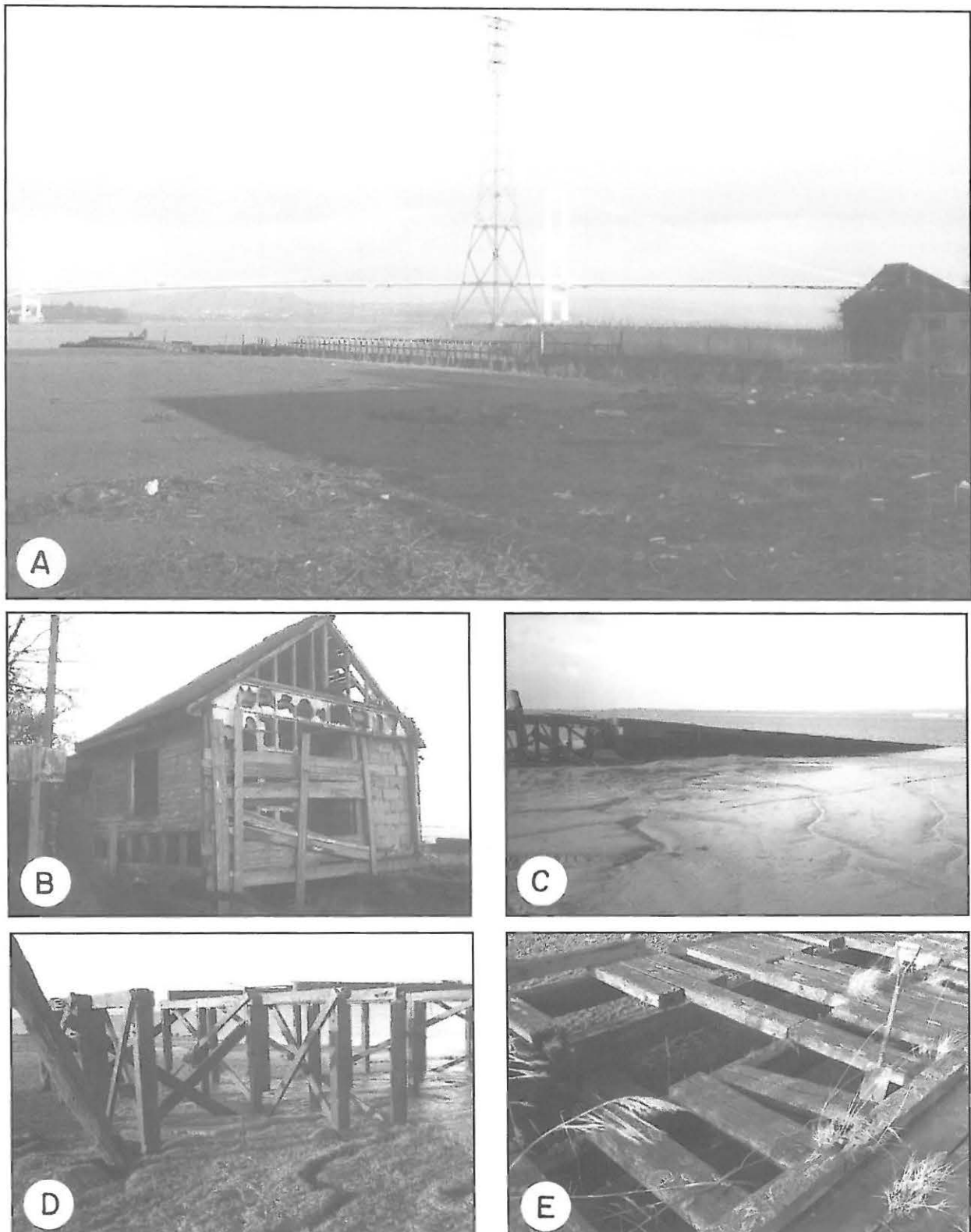


Figure 6: Pier 4. A, general view from south. B, toll-house from the north-east. C, low-water pier from the east. D, framework of timber causeway connecting high-water and low-water piers. E, longitudinal timbers and decking for vehicles and foot-passengers on timber causeway from the east (spade for scale).

Armstrong of Bristol had submitted a detailed plan and specification for it dated 23 May 1827 (GRO D1430/29). The earlier phase is said to date from 1826, a year after the formation of the Old Passage Ferry Association, for which the new plans were made (Farr 1954, 17). The first edition (1830) of the Ordnance Survey one-inch map (Sheet 35) clearly shows the route of the ferry as starting at Old Passage House (Harley *et al* 1986, 66).

The low-water-pier is an impressive, sloping stone structure (Figure 6C). The later phase was planned to begin at a width across the top of *c.* 2.6 m, expanding rapidly seaward over a short distance (see RAF 04DEC46/3200) to another constant width of *c.* 3.5 m. The height was to be up to 2.5 m above the Triassic mudrocks in which the structure was bedded. What can be seen suggests that the later phase was built quite closely to Armstrong's specification, that is, two walls of (mainly) dressed or rubble stone with a dressed-stone coping (see RAF 04DEC46/3200), between which clay, marl and stone had been packed. The use of timber was specified only near the intended road at the landward end, where a sluice was to be let into the pier to allow a tidal creek to drain northward through the structure. This creek was thereafter to be deflected seaward parallel with the pier by a curved training wall, probably representing an attempt to limit siltation against the side of the structure sheltered from wave action.

The stone high-water and low-water portions of pier 4 are today linked together by a long timber section which may be dated to 1931 (or possibly as early as 1926), when a limited company opened a car ferry at the Old Passage (Herbert 1972, 55). For example, the early air photograph (RAF 04DEC46/3200) shows the loaded ferry boat sailing away from the pier while three vehicles stationary on the low-water section await its return (Figure 3). The joining section is, however, lacking on the Ordnance Survey's 1919-20 revision of the local plan (Gloucestershire Sheet LX11/7). This section consists of an open, cross-braced framework of upright timber baulks in three settings which support longitudinal and transverse horizontal beams, together with a decking of stout, transverse planks (Figures 6C-E). Bolted iron straps and brackets connect the

beams, cross-members and uprights. On the north-east side of the decked area, a narrower, railed walkway of longitudinal planks (Figure 6E) for the convenience of foot-passengers had been mounted on a somewhat lighter, cross-braced timber framework reaching down into the mud.

DISCUSSION

The physical remains of the well-engineered structures that supported the ferry at Old Passage, in a rural setting, have not hitherto been the subject of archaeological report. They add to the growing catalogue of recorded waterfront structures and artefact assemblages which, remote from towns and cities, and commonly in Holocene alluvial contexts, contribute collectively as well as individually to an understanding of the changing network of trade and communications in the wider context of the Severn Estuary and inner Bristol Channel as a whole.

Rural waterfront activity (Figure 1C) in the Roman period, for example, is indicated by artefact assemblages at Magor Pill (Allen and Rippon 1997; Allen 1998) and Horse Pill (Allen and Fulford 1987), and by the boat associated with a quay or bridge at Barland's Farm (Nayling and McGrail 1994; McGrail 2001). Davies and Williams (1991) have recorded the remains of a latest medieval quay from the intertidal zone off the mouth of the alluvial Col-huw River in Glamorgan. Artefacts of this general period, including two boats, were described from the site of a documented port - known as Abergwaitha - at the mouth of Magor Pill (Rippon 1996; Allen and Rippon 1997; Nayling 1996, 1998). Further upstream, a medieval quay was recorded from the intertidal zone at Woolaston (Fulford *et al* 1992) and also at Hill Pill on the opposite bank, where there is an association with artefacts and trade goods of this date (Allen and Fulford 1996; Allen 2003). A timber and stone setting recorded from Rumney Great Wharf may record an earliest early modern landing place, albeit for a limited period and purpose (Allen 1996). A substantial pottery assemblage points to the significance of Magor Pill as a trading site again in early modern times (Allen 1999a), and artefacts of the period are also recorded from Horse Pill (Allen 1999a), a documented landing place (Herbert 1972, 57), as well as from Hill Pill (Allen 2003). Grange Pill

was also a landing place during this period, for the presence of two sloops trading to Chepstow and Bristol was noted in the 1790s (Gloucester Library, Gloucestershire Collection, Box 8.57). It was from here that Townley (1998) briefly recorded the substantial remains of a boat of caravel construction but of uncertain age. A subsequent examination of the site showed that the boat had been buried in pale brown silts attributable to the Rumney Formation (Allen and Rae 1987), pointing to a date compatible with the documentary evidence for boats and trading. Numerous waterfront structures that survive from modern times in essentially rural settings along the Severn Estuary are now the subject of preliminary record (Green 1996; Allen 1999b; Putley 1999).

The fortunes of the Old Passage on the Estuary were changeable. Pier 4 is a compound structure. Its several surviving parts record the activities of the Old Passage Ferry Association from 1825 up to 1863, when the completion of the Bristol and South Wales Union Railway rejuvenated the New Passage further downstream (Farr 1954, 17, 18), to be followed by those of a company which resumed operations in 1926 with a motor boat and in 1931 with a vehicle ferry (Farr 1954, 18). This company ceased to function in 1966 with the eventual completion and opening of a Severn road bridge. In this final phase, the pier accommodated wheeled traffic on a wide, elevated carriageway and foot passengers on a narrower walkway on the sheltered, north-eastern side.

The recorded and surviving features of piers 1 and 2 strongly suggest that these also accommodated both wheeled and foot traffic. Their date is unknown, however, as the 1845 map (GRO Q/RUm 196) is antedated by only two others, of 1822 (GRO Q/RI 154) and 1835 (GRO D272/9/1), neither of which include any information from the intertidal zone. It is nonetheless possible that these piers date from no earlier than the seventeenth or eighteenth century, for Gilpin records in the 1780s how he and his party in making the passage saw 'our chaise (which we had intended to convert into a cabin during the voyage) slung into the shrouds' (Farr 1954, 18). Pier 3 is a much narrower structure and its physical details, together with its date, are at present unknown.

Also apparently changeable were the physical circumstances under which the Old Passage could function. The fact that pier 4 consisted in the early and middle nineteenth century of distinct high-water and low-water parts suggests that ferry boats were difficult to operate safely other than at these stages of the tide, when the water in the Estuary became comparatively still. Pier 3, lying at low water, may on these grounds be of the same date as either pier 1 or pier 2 situated higher up the beach. The wide scatter of piers between Aust Rock and the settlement of Old Passage may reflect the changeable character and distribution of the intertidal sediments (shingle, mud) and the varying location of tidal creeks, especially that of Cake Pill, which today empties well to the south-west of the houses. The piers could only be reached by vehicles if a firm beach of shingle and stone was present. The locations of piers 1 and 2 suggest that at the time they were built there was much muddy ground, and perhaps a substantial creek, close to the settlement, necessitating a lengthy journey by travellers north-north-eastward along the cliff foot. A cleaner and even rocky beach may have replaced the mud by the time pier 4 began to be built, for the erection of this massive structure would have demanded access by heavy carts and waggons from the land.

Of the other Severn ferries, that between Arlingham and Newnham (Herbert 1985; Willis 1993) far upstream on the inner Estuary is the only one with a known archaeological record. Until a few years ago, the remains of a stout wooden slipway could be seen projecting from the eroding salt-marsh cliff of grey silt to the west of the New Inn at Arlingham. Nearby, visible on the cliff at a depth of 0.98 m below the marsh surface, there occurred a laterally extensive layer of crushed stone with scattered fragments of coal and occasional brick, evidently a hard-standing for ferry traffic. The silt is assigned to the Awre Formation (Allen and Rae 1987; Allen 1990, 330) and, at the level of the hard-standing, appears to date on geochemical grounds to the earliest twentieth century.

The Old Passage at Aust is an ancient and strategically significant crossing of the Severn Estuary between England and Wales, and the nature of the physical remains and other evidence

outlined above refers only to its more recent history, when vehicles as well as foot passengers could be accommodated. Some indication of the character and serviceability of the waterfront structures which supported the ferry has been gained from what is currently visible in the intertidal zone. A better understanding will necessitate detailed recording, excavation, direct dating, and a search for artefacts that may have been lost or discarded in the course of travel and trade. Tide, wave and weather continue to damage and erode these structures, the outlook for which is bleak. There remain many documented waterfront sites in the Severn Estuary for which archaeological evidence has not so far been either found or recorded. No doubt there are sites which have yet to be discovered in any terms.

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BIBLIOGRAPHY

- Allen, J.R.L. (1990) Late Flandrian shoreline oscillations in the Severn Estuary: change and reclamation at Arlingham, Gloucestershire. *Philosophical Transactions of the Royal Society* A330, 315-334.
- Allen, J.R.L. (1996) An early post-medieval timber setting and subrectangular diggings in late Flandrian estuarine sediments, Rumney Great Wharf, Gwent. *Archaeologia Cambrensis* 145, 152-168.
- Allen, J.R.L. (1998) Magor Pill multiperiod site: the Romano-British pottery, and status as a port. *Archaeology in the Severn Estuary* 9, 45-60.
- Allen, J.R.L. (1999a) Magor Pill (Gwent) multiperiod site: post-medieval pottery, and the shipping trade. *Archaeology in the Severn Estuary* 10, 75-97.
- Allen, J.R.L. (1999b) Two probable wooden jetties at Cone Pill, Lydney Level, Gloucestershire. *Archaeology in the Severn Estuary* 10, 132-134.
- Allen, J.R.L. (2003) A post-Roman pottery assemblage from Hills Flats, South Gloucestershire: trade and communication by water in the Severn Estuary. *Transactions of the Bristol and Gloucestershire Archaeological Society* (forthcoming).
- Allen, J.R.L. and Fulford, M.G. (1987) Romano-British settlement and industry on the wetlands of the Severn Estuary. *Antiquaries Journal* 67, 237-289.
- Allen, J.R.L. and Fulford M.G. (1996) Late Flandrian coastal change and tidal palaeochannel development at Hills Flats, Severn Estuary (SW Britain). *Journal of the Geological Society, London* 153, 151-162.
- Allen, J.R.L. and Rae, J.E. (1987) Late Flandrian shoreline oscillations in the Severn Estuary: a geomorphological and stratigraphical reconnaissance. *Philosophical Transactions of the Royal Society* B315, 185-230.
- Allen, J.R.L. and Rippon, S.J. (1997) Iron Age to early modern activity at Magor Pill and palaeochannels, Gwent: an exercise in lowland coastal-zone geoarchaeology. *Antiquaries Journal* 77, 327-370.
- Davies, P. and Williams, A.T. (1991) The enigma of the destruction of Colhuw port, Wales. *Geographical Review* 81, 257-266.
- Farr, G.E. (1954) *Chepstow Ships*. Chepstow, The Chepstow Society.
- Fulford, M.G., Rippon, S., Allen, J.R.L. and Hillam, J. (1992) The medieval quay at Woolaston Grange, Gloucestershire. *Transactions of the Bristol and Gloucestershire Archaeological Society* 110, 101-127.
- Green, C. (1996) The Forest ports of the Severn Estuary. *Archaeology in the Severn Estuary* 7, 107-113.
- Harley, J.B., Manterfield, J.B., Manterfield, B.A. D. and Fry, R. (1986) *The Old Series Ordnance Survey Maps of England and Wales*, vol IV. Lymne Castle. Harry Margary.

- Herbert, N. (1972) Tidenham including Lancout. *Victoria History of the Counties of England*, vol. X. Oxford, Oxford University Press, 50-79.
- Herbert, N. (1985) *Road Travel and Transport in Gloucestershire 1722-1822*. Stroud, Alan Sutton & Gloucestershire County Library.
- McGrail, S. (2001) The Barland's Farm boat within the Romano-Celtic tradition. *Archäologisches Korrespondenzblatt* 31, 117-132.
- Nayling, N. (1996) Further fieldwork and post-excavation: Magor Pill, Gwent Levels intertidal zone. *Archaeology in the Severn Estuary* 7, 85-93.
- Nayling N. (1998) *The Magor Pill Medieval Wreck*. York, Council for British Archaeology Research Report 115.
- Nayling, N. and McGrail, S. (1994) Barland's Farm, Magor, Gwent: a Romano-Celtic boat find. *Archaeology in the Severn Estuary* 5, 59-66.
- Putley, J. (1999) *Riverine Dean, the Maritime & Waterfront Archaeology of the Forest of Dean*. Lydney, Dean Archaeological Group.
- Rippon, S. J. (1996) *The Gwent Levels: the Evolution of a Wetland Landscape*. York, Council for British Archaeology Research Report 105.
- Rogers, P. (ed.) (1971) *Daniel Defoe. A Tour through the Whole Island of Great Britain*. Harmondsworth, Penguin Books.
- Scott-Fox, C. (2002) *Cyril Fox: Archaeologist Extraordinary*. Oxford, Oxbow Books.
- Townley, E. (1998) Fieldwork on the Forest shore: Stroat to Woolaston, Gloucestershire. *Archaeology in the Severn Estuary* 9, 82-85.
- Welch, F.B.A. and Trotter, F.M. (1961) *Geology of the Country around Monmouth and Chepstow*. London, Memoirs of the Geological Survey of Great Britain.
- Whittard, W.F. (1949) Geology of the Aust-Beachley area, Gloucestershire. *Geological Magazine* 86, 365-376.
- Willis, M. (1993) *The Ferry between Newnham and Arlingham*. Stroud, Alan Sutton.