1.1 Broad Character: Navigation

1.1.1 Character Type: Navigation Feature

Regional Perspective: East Anglia

INTRODUCTION: DEFINING/DISTINGUISHING ATTRIBUTES

Numerous navigation channels are located in the offshore parts of the region, reflecting the ports' considerable external trade links and the high volume of shipping. In addition the estuaries form important channels and are dredged where necessary to maintain this role.

All along this stretch of coast navigation channels are influenced by the presence of numerous sandbanks and marine features, many of which shift regularly (see Navigation Hazards). As such the approach channels to all of the major ports are often buoyed to steer traffic away from these hazards.

In the north of the region an extensive series of shoals, parallel to the shore stretching from Winterton Ness to Benacre Ness, restrict the channels which form the main approaches to Great Yarmouth and Lowestoft. These channels are often locally known as 'the Roads'.

From the north, south and east, Great Yarmouth can be approached using a number of roads and channels, one of which is fraught with dangers due to frequent depth changes and only recommended to craft familiar with the area. A number of disused channels in the area include Hewett Channel and Corton Channel, now redundant due to depth changes.

Ship using Caister Road channel off Great Yarmouth

Lowestoft is also approached from the north using Holm Channel or Yarmouth Road and Corton and Lowestoft North Roads and from the south using Pakefield Road and Lowestoft South. To the east the Stanford Channel gives access to this area.

Ships using Lowestoft North Road

Further south along the Suffolk coastline, approaching Southwold harbour is tricky, and the Blyth is only navigable at the mouth; an old railway bridge 1.5 km inland prevents boats sailing any further. This suggest the Blyth had already largely or completely gone out of use for navigation when the railway bridge was built..

The Hollesley Bay and Sledway Channels (10-20 m deep) provide the approach to the Alde/Ore, Butley and Deben estuaries near Orford. The rivers are navigable to varying degrees. The Alde/Ore/Butley are used by a moderate amount of river traffic, mostly small pleasure cruisers. The Deben is also not heavily used but is navigable for small craft all the way to Woodbridge where there is a small marina and 19th-20th century wharfage. The estuary comes within the jurisdiction of Harwich Haven Authority and consequently is subject to a number of precautionary zones.

A series of approach channels are located around the Harwich Haven area. Further offshore these include Sledway and Shipway. The latter is a channel constrained by Shipwash to the east and Bawdsey Bank to the west, which leads into open sea to the north and east of Shipwash and is part of the palaeochannel of the Stour. It is mainly used by ferries, although it is also a potential exit route for deep draught vessels avoiding the southern approach to the Harwich Deep Water Channel. The area to the east of Shipwash is much more heavily used as the main route from Black Deep and consequently the Thames Estuary. Recent surveys showed

that around 9,942 vessels per annum transited the Shipway channel, to or from the Harwich Haven ports, most then bearing east (UKHO 2006, TE2A).

From Shipway traffic is funnelled into the Harwich Deep Water Channel through which all large vessels approach Harwich, Felixstowe and Ipswich. The Deep Water Channel is dredged to a uniform 14.5 m and a variety of vessel types are known to use the channel intensively including ferries, bulk and cargo ships, gas carriers and tankers. A survey at the southern end of Shipwash, showed that 16,862 vessels per annum transited the area (UKHO 2006, TE3). A smaller approach channel, the Medusa Channel is a wide shallow (c. 2.4 m deep) channel avoided by larger shipping.

The Stour and Orwell estuaries converge in Harwich Harbour. Both take considerable volumes of traffic and are subject to regular dredging and management schemes. The Orwell is navigable for 15 km to Ipswich and the Stour is accessible to Manningtree for small craft.

The Stour at Manningtree

To the very south of the area a number of channels lead in and out of Walton Backwaters and the Thames Estuary. These are also part of a series of channels and sandbanks parallel with the shore which are infamous for their treacherous nature. The Wallet channel lies parallel with, and approximately 2.5 km from the shore and is bordered to the east by Gunfleet Sands. The East Swin or 'King's Channel' is heavily used to approach both the Port of London and the Crouch Estuary in Essex. It runs parallel to Gunfleet Sands and is bordered by Sunk Sand and Sunk Head to the south-east. The channel is restricted to vessels with less than a 6 m draft and typical users include ferries, cargo ships and tankers (Jones et al 2002). The channel is particularly used by yachts entering the Crouch estuary when the Wallet becomes difficult to navigate.

Black Deep is the main deep water route into the Port of London from the north-east. Passage through Black Deep is normally restricted to vessels with a draught of over 6 m and has a minimum depth of 14 m.

HISTORICAL PROCESSES; COMPONENTS, FEATURES AND VARIABILITY

Pre-18th century accounts or maps of offshore navigation features are rare. However the coastline in this region has been important for international and national trade for centuries (see 'Navigation Activity, and, Ports and Docks'). In early periods mariners would have to be familiar with the navigation features in order to safely navigate in and out of the ports. Prior to widescale mapping such knowledge was learned and remembered, or applied by shipping taking on pilots who knew the region's waters intimately.

The only securely known early navigation channels in this region are therefore the rivers which took waterborne traffic inland. This may be marked by the discovery of a series of complete Roman pots in the water at Iken on the River Alde: these could have represented a possible shipwreck or quay dating to this period (Good and Plouviez 2007, 54).

The navigational importance of the channels in the Anglo Saxon period is clearly represented by the presence of the ship burials at Snape on the Alde and Sutton Hoo on the Deben (see Navigation Activity). In addition Ipswich, at the head of the Orwell, was a significant trading harbour in the Roman period and went on to become the country's busiest port in the Anglo-Saxon era (Wheatley 1990, 59).

The Deben at Woodbridge

During the high medieval period when the coastal ports were prospering the inland ports were also significant. These included Ipswich which was situated at the heart of the great wool producing area, at the head of a sheltered and easily navigable estuary (Wren 1976, 132). Norwich conducted considerable trade via Great Yarmouth along the River Yare. Manningtree, located on the southern bank of the Stour, almost at the head of the tides, was significant as a port from the early 13th century when it appears to have been deliberately planted as such (Essex County Council nd). The port developed a successful local trade and went on to become very prosperous in the 16th century. Smaller centres existed at Snape on the River Alde, Mistley on the Stour, Pin Mill on the south bank of the Orwell and Blythburgh on the Blyth.

The Orwell at Ipswich

These remained important channels into the post medieval period when industry thrived with centres for Malting at Snape and coprolite at Waldringfield.

Offshore, our knowledge of navigation features mainly dates back to the 1800s.The Hydrographic Office was established as a sub-department of the Admiralty in 1795 and issued its first officially published Admiralty chart in November 1800 (http://www.nationalarchives.gov.uk/records/research-guides/admiralty-charts.htm). These charts were continually updated and corrected to reduce the dangers from the changing position of channels.

The dynamism of the region's navigational hazards is also reflected in the development of lighthouses along the coast. For example the Harwich High and Low lighthouses built in 1818, became redundant in 1863 due to the changing course of the channel into the port. At this time the cast iron Dovercourt lighthouses were constructed, also becoming obsolete in 1917. Similarly a small lighthouse was built in the grounds of

Pakefield Hall in 1832 to steer ships through the Barnard and Newcome sandbanks. The sandbanks had moved so much that another lighthouse was built in Kessingland in 1850 and Pakefield was obsolete by 1864 (www.suffolktourist.guide.com).

The navigation features in this region which appear to have been given greatest consideration were the channels leading into Harwich Haven and the port of London in the south of the area. This zone has always seen a high volume of traffic and is hazardous as a result of the series of parallel sandbanks which constrain the channels. Nelson is reputed to have said that in terms of navigation the Thames estuary is one of the worst areas around the UK, being "as tricky as a tiger" (Bowskill 1998, 159).

The East Swin or Kings Channel, Wallet and Shipway have long been known as significant shipping channels and are recorded on the Admiralty chart of 1855, with Sledway recorded in 1905. The importance of the Wallet channel is demonstrated by the placement of a gunboat in 1803 to protect the trading ships using it. The heavy use of the channels is illustrated by the known shipwrecks within the area. Many of the named examples were mined or torpedoed and include vessels on coastal routes such as the *Kankakee*, bound for London from Newcastle. Additionally, some of the ships were on longer routes including the *Terukuni Maru*, travelling from Tokyo to London and the *Stad Maastricht*, from London to the USA.

One of the lesser channels, the Medusa Channel, has an interesting history. The feature was named after the *Medusa*, a third rate frigate which served as Nelson's flagship in August 1801. Nelson had been given command of naval forces between Beachy Head and Orfordness, fearing a French invasion. The *Medusa* was moored off Harwich on the 10th of August, prevented from sailing by easterly winds. Nelson was keen to set sail but none of the pilots would agree to take charge. Consequently Nelson forced a local maritime surveyor into piloting the vessel. The daring voyage out to the Swin led to the naming of the area.

VALUES AND PERCEPTIONS

The navigation features discussed above are crucial to those using waterborne traffic this area. They have traditionally been particularly significant to mariners attempting to navigate the treacherous waters around the Thames Estuary. However, the channels are probably little known to the general public other than defining areas where shipping is regularly an element of the visual coastal landscape.

The exception to this may be the river channels which have been used for centuries and are still important to the area. The Stour and Orwell in the south of the region remain particularly heavily used by merchant shipping, however all the rivers are important for recreational traffic.

RESEARCH, AMENITY AND EDUCATION

Research into navigation features contributes much to our knowledge of the history of the use of sea and estuaries in this region. This is particularly significant with relation to the dynamic character of the seabed and in particular the sandbanks in this region. A thorough study of historic maps and charts may indicate when

channels were used and when they became redundant. This could contribute to the Mapping Navigational Hazards as areas of Maritime Archaeological Potential undertaken in 2007, which developed an approach to model where navigational hazards may exist. This could have a cumulative benefit for the study of the maritime landscape as a whole in terms of the use of daymarks, lighthouses etc. Records of past channel-dredging activity could similarly add to our understanding.

The navigation features are amenities to shipping by their definition but are also useful to non-professional sea users such as leisure sailors, but the resulting concentrations of shipping off particular stretches of the coastline also contribute to the distinctive sense of place pertaining to those areas..

Navigation features are also clear evidence in the seascape for the history of trade, shipping and military use of the seascape in this region.

CONDITION AND FORCES FOR CHANGE

As outlined above the character of navigation features has changed over the centuries as a result of the dynamic seabed and coast in this region. This is set to continue, with possibly dramatic changes as a result of increasing sea-level rise and increasing storminess including release of sediment from erosion of the coastline.

In addition the region is undergoing significant development including extension of the ports of Harwich, Felixstowe and Great Yarmouth. This may result in the dredging of new channels or changes in the existing regimes. This may also arise from the London Gateway Project - redevelopment of the former Shell Haven Refinery on the north side of the Thames Estuary, enhancing the volume of shipping traffic in the approach to the Thames.

RARITY AND VULNERABILITY

Navigation features are frequently lost or rendered redundant as a result of changes to the region's environments. However, in recent years the position of channels etc has been meticulously recorded on Admiralty charts and should continue to be so.

Maintenance dredging can alter both the character of these features and the seabed in which they lie. This may have effects on surviving palaeoenvironmental deposits in areas where palaeochannels are used as navigation channels as in the area around Harwich Haven.

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