1.1.7 Broad Character: Communications

1.1.7.1 Character Type: Telecommunications
Regional Perspective: East Anglia

INTRODUCTION: DEFINING/DISTINGUISHING ATTRIBUTES

A number of submarine telecommunications cables run through the East Anglian marine area, partly as a result of the proximity of this coastline to the European continent. Most connect the UK with the Netherlands, although other routes operate.

The majority of the cables make landfall in East Anglia, principally Suffolk, although a single cable (NETHERLANDS 14) connects Winterton in Norfolk to the Netherlands. The Suffolk coastline has two main areas of landfall; near Lowestoft and in the vicinity of Thorpeness and Aldeburgh.

Cables connecting at Lowestoft include NORSEA COM 1 which connects the UK to Norway at Kårstø. Anglo-Dutch cables include PANGEA SOUTH, CIRCE NORTH and ULYSSES 2 which make landfall at Alkmaar, Zandvoort and Ijmudien respectively.

To the south CONCERTO 1 NORTH and SOUTH extend from near Thorpeness to Zandvoort in the Netherlands and Zeebruge in Belguim and FARLAND NORTH connects Aldeburgh with Domburg in the Netherlands.

A single trans-Atlantic cable (AC-1) also traverses the area before heading into Katwijk in the Netherlands.

A number of disused cables are still in place including the STRATOS cable from Sheringham, UK-GERMANY 5 from Winterton, REMBRANDT 1 from Lowestoft to the Netherlands, HERMES NORTH from Aldeburgh to Zandvoort and UK-NETHERLANDS 12 from Aldeburgh.

HISTORICAL PROCESSES; COMPONENTS, FEATURES AND VARIABILITY

The East Anglian region saw the laying of one of the first submarine telecommunications cables. This was extended from Orfordness to The Hague in the Netherlands in 1853 and was laid by the *Monarch*, a paddle steamer specially fitted for the work, assisted by *HMS Adder* on loan from the Admiralty. The cable was operated by the Electric and International Telegraph Co. and like all early cables carried telegraphy (written communication) traffic. A further three cables were laid across the route between1853 and 1855 measuring between 118 and 123 nm long. These initial cables were constructed of copper and covered by gutta percha latex, taped and covered with yarn before being armoured with iron wires. The cables were connected to telegraph equipment in Orfordness lighthouse.

Over the subsequent decades several more telecommunications cables were laid in the region, from Dunwich to Zandvoort in 1858, Lowestoft to Zandvoort

in 1862, Lowestoft to Germany in 1866 and Benacre to Zandvoort in 1884 and 1900. Submarine telegraph cables were inherited by the General Post Office (GPO) when private telegraph companied were privatised in 1870 and leased to the Submarine Telegraph Company (www.atlantic-cable.com).

Subsequent generations of submarine communication cables carried telephony (verbal communication). Further cables were installed in the 20th century from Aldeburgh to Domburg in 1926, 1937, 1972 and 1989, from Lowestoft to Schevingen in 1954 and from Winterton to Esbjerg and Borkum in 1963.

Most recently the cables have carried data communications traffic, enhanced by the development of fibre optic cables in the 1980s. All modern cables use this technology (http://en.wikipedia.org/wiki/Submarine_communications_cable). Modern cables have been installed in the region from the 1990s onwards with PANGEA the latest in 2000. Recently cables have been buried beneath the seabed in order to protect them from external threats.

VALUES AND PERCEPTIONS

Submarine telecommunications cables are mostly undetected in the marine environment. However they are a highly reliable form of transferring information and are critical to our present-day life.

They can be perceived as obstacles to certain sea users such as fishermen and dredgers and awareness charts are now produced.

RESEARCH, AMENITY AND EDUCATION

Submarine telecommunications cables are an essential amenity, connecting England and the UK as a whole to the European continent and beyond. With the advent of the wide scale use of the World Wide Web much of the population has become dependent on access to the internet for both work and domestic purposes. This is facilitated by the presence of the generally invisible cables. The proximity of East Anglia to the continent makes this a crucial region for placing cables.

There are a number of amateur enthusiasts who log the history of marine telecommunications although this is still a relatively obscure sphere of research. There is potential for a larger scale study.

The laying of cables facilitates research as it provides opportunity for investigation of the seafloor and subsea floor prior to trenching for burial of cables. This would mainly be in the form of desk based assessment and geophysical survey, however the works themselves may unearth previously unknown deposits or remains.

CONDITION AND FORCES FOR CHANGE

Increased demand for communications in our modern day life has led to the placement of numerous telecommunications cables in the marine zone. These have to be replaced and maintained regularly with the progress of technology.

Laying of cables and the associated disturbance of the seabed can disturb the existing historic environment and can be viewed as impositions of the landscape/seascape. However, their presence has become a part of the seascape in this area over many years.

RARITY AND VULNERABILITY

Telecommunications cables are not rare features in the seascape of the East Anglian region, although further development of technology may ultimately lead to their replacement. This is particularly pertinent given the rise of wireless telecommunication.

Submarine telecommunications cables have been vulnerable to various processes over their history. Most significantly cables can be broken by trawling and anchoring of boats at sea. They can also be affected by natural occurrences such as earthquakes and undersea avalanches, as well as animal activity including shark bites. As a result cables are now buried in the seabed, although some of these activities, such as trawling can penetrate their cover.

BIBLIOGRAPHY

http://atlantic-cable.com/Cables/1963AngloDanish/index.htm - pictures

http://en.wikipedia.org/wiki/Submarine_communications_cable