

# Upgrade complete for VTS Humber

Associated British Ports, London, UK

Associated British Ports (ABP) is the UK's largest ports group, owning and operating 21 ports around the country, and handling some 25 per cent of all seaborne trade in and out of Britain. In addition to handling shoreside operations, ABP is also the designated Statutory Harbour Authority in a number of locations, including for the nation's busiest foreign-trading estuary, the Humber. The Humber contains no fewer than four of ABP's busiest ports – Hull, Goole, Grimsby and Immingham – and shipping to these ports and others is controlled by Vessel Traffic Services (VTS) Humber.

## Humber Estuary Services

VTS Humber forms part of Humber Estuary Services (HES), and is tasked with monitoring and regulating navigation, both on the Humber itself, and on those parts of the Rivers Ouse and Trent that fall within the jurisdiction of ABP's Harbour Master, Humber, Captain Phil Cowing. As well as controlling navigation, VTS also acts to gather and distribute information to all river users, and to serve as a liaison between the requirements of the various dockmasters, wharf operators and shipping agents along the estuary. The area controlled by VTS reaches 12 miles out to sea, covers the whole of the Humber Estuary, and stretches up the Ouse and the Trent as far as Goole and Keadby respectively.

The main VTS station is located at Spurn Point, at the very tip of a sandbar that extends three miles from the northern edge of the Humber Estuary. 17 VTS staff work here in shifts, with three operators being on duty at any given time. Its isolated location is ideal for controlling navigation both within the estuary and out to sea, and the only downside is that the roadway that connects the VTS centre to the mainland is sometimes rendered impassable in severe weather. But as Captain Ian Spikings, VTS Manager, explains, "Spurn Point can be accessed and re-supplied by boat, so if the land route is cut off, it doesn't tend to present too many problems. Staff rotate through the station for about a week at a time, so living quarters and food are already provided."

The other main hub for VTS is the Data Centre in the Port of Hull. This acts as the main link between VTS and the pilots of HES, and co-ordinates the delivery and recovery of pilots from vessels. Inbound ships are required to contact VTS two-and-a-half hours before arriving at Spurn Point: this early warning allows HES staff ample time to travel to Hull, board their pilot boat and travel to meet the incoming vessel as it reaches Spurn Point. As they journey up-river, they are tracked by radar scanners located at Spurn Point, Stone Creek (on the north bank, opposite the Port of Immingham), and the King George Dock at the Port of Hull.

Radar is not the only means of monitoring the Humber shipping, however, as all commercial vessels displacing more than 300 tonnes are (by law) fitted with Automatic Identification Systems (AIS). These transponder-style devices transmit VHF signals that contain an array of relevant information, including a vessel's name, call sign, position, draught depth and destination. These details are detected and decoded by VTS computers, and displayed on workstations around the estuary. Staff at Spurn Point retain control over movements, but a remote display can be also be seen on a full set of consoles within the Data Centre. In the event of any failure of the systems at Spurn Point, operational control can be switched to the Marine Response Centre at Immingham, which houses a full set of back-up equipment.



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VTS is officially recognised by the Maritime and Coastguard Agency (MCA), and incorporates two related, but separate, roles. Downstream of the Humber Bridge, VTS is a traffic organisation service, whereas upstream of the bridge, the requirement by the MCA is to provide an information service only. Throughout the area covered by VTS, 'River Broadcasts' are released every two hours, containing information on weather, sea states, tidal readings and other important navigational details. Upstream from the Humber Bridge, a number of AIS receivers are in place, including at the Port of Goole, but there are no radar scanners. This is in part due to the changed role that VTS has in this part of the Humber, Ouse and Trent, but also because the narrowing estuary makes radar imaging more prone to 'scatter' returned from land-based objects rather than ships.

## VTS upgrade

From late 2006, almost the entire system operated by VTS was given a comprehensive upgrade. "One of the problems with carrying out such extensive work," says Captain Spikings, "was that VTS, rather like an air traffic control system, is in operation 24 hours a day, and cannot be taken offline even for a short period of time. To cope with this, the work was completed in phases, and temporary 'bypass' mechanisms were used to cover equipment and software that was in the process of being replaced.



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At the control tower at Spurn Point, for instance, the operators worked from another floor while the main room was refurbished and re-equipped.” Much of the work was carried out for ABP by Kongsberg Norcontrol IT (a subsidiary of Kongsberg Defence & Aerospace), including the fitting of the latest Voc 5060 digital display consoles at Spurn Point, Hull, Goole and Immingham. The Spurn Point control room was also designed to house three consoles and operators instead of two, as had previously been the case. The Voc 5060 units have touch-sensitive flat screens, and have high levels of commonality with those used by the MCA.

Before this new equipment could be installed operationally, however, it was necessary to train VTS staff in the use of the new consoles. While this was taking place in late 2006, other upgrades were also being implemented. New Xetron VHF/AIS receivers were added along the river, and new radar transmitter/receivers supplied by Terma were installed at Hull and Spurn Point. The existing radar scanners themselves, however, were of sufficiently high standard to not need replacing – “almost of military-grade”, says Captain Spikings. The microwave links that are used to pass high volumes of information between the centres at Spurn Point, Hull and Immingham had been in place since 1997, and so were due for replacement. “Ten years may not seem a very long lifespan for mechanical equipment, but for digital or electronic systems, it was important that VTS kept up with the technological advances in this field. The new Raft microwave links provide us with the reliable wireless data transfer capability that we need”. Other less conspicuous, but equally important upgrades included the air-conditioning units for the computer mainframes, and enhanced backup power supplies for emergency use.



As part of the VTS upgrade, the latest Voc 5060 digital display consoles were fitted. They have touch-sensitive flat screens, as well as a high level of commonality with those used by the MCA.

All systems had been successfully upgraded and installed by July 2007. A brief shakedown period allowed staff to put their training into practice, and, with three staff on duty, to adapt to dividing the VTS area of responsibility into three parts rather than two. Captain Spikings concludes: “This array of upgrades enables VTS to function more efficiently at a time when traffic on the Humber is getting busier and busier. Last year, we processed over 40,000 vessel movements, and we’re confident that we can cope with projected growth over the coming years.”

#### ABOUT THE ORGANISATION

**Associated British Ports** is the UK’s leading ports business, providing innovative and high-quality port facilities and services to shippers and cargo owners. In addition to ports located all around the UK, ABP has a number of businesses offering specialist services, including a value-added services division, ABP Connect. ABP Connect adds value to supply-chain management through its warehousing, distribution, transportation and logistics services throughout the UK. Their USA based company, AMPORTS, provides port-located vehicle-processing services.

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