



Brian Kay

HMS *Illustrious* is more than 15 miles from the Port of London Authority's outer limits. She's coming in from the North Sea at 16 knots (18 mph). It's not fast for a family hatchback but, for 209 metres of aircraft carrier and weaponry that displaces a total of 22,000 tonnes, it's an impressive speed.

On her bridge, port authority pilot Cerwyn Phillips, who's guiding the vessel into the Thames, can't see the land or the mouth of the river.

Visibility's moderate at three nautical miles. But he knows the warship is being watched...

Nearly 60 miles from the fighting ship's position, PLA Vessel Traffic Services officer Wayne Whitehead is tracking its approach at Port Control.

A virtual river, from Crossness (off Erith) to the North Sea, sprawls across seven computer screens in front of him. It details every marker buoy, every channel, every shoal and mud bank.

Radar, satellite, and radio information overlays this electronic Thames, painting a real-time picture of vessel movements this grey November morning.

All around Wayne and his fellow officers, Ian Cosgrave and Colin Lock, the air

crackles with the disembodied voices of skippers and masters that echo through the river's 14 VHF base stations.

The warship's PLA pilot, Cerwyn, is among them...

Like all approaching ships, *Illustrious* makes first contact with Vessel Traffic Services before she enters Port waters.

Wayne says: "The ship lets us know she's in good working order, gives us an estimated arrival time, and confirms she has a passage plan – that she's expected on the river. This is crucial because, if a ship has nowhere to go, she can't just double-park or sit in the middle of the Thames until a berth becomes available."

To the naked eye, the Estuary is a vast sweep of open sea but, in reality, it's an underwater road network of channels, junctions and crossing points.

It's governed by rules as strict as any highway code. They detail where ships must give way, where they can anchor, and when they have to give progress reports.

And it's Vessel Traffic Services' responsibility to police these regulations.

Ian Cosgrave says: "Unlike air traffic control, we don't dictate every movement a vessel makes. If one wants to overtake the other, it's for the masters – the officers in charge of each of those ships –

Moving Mountains



Tom Southall

Sea Pilot Cerwyn Phillips

to agree between themselves over the radio.

“We monitor what they’re planning, and only intervene when we think they’ve misjudged the situation, or if they can’t agree a course of action between themselves.

“We can also see the bigger picture. We know when ships are scheduled to slip their moorings and head out – something the crew of an incoming vessel might not appreciate when they’re making navigation plans.”

The channels running through the Estuary have light traffic when *Illustrious* powers through them. The ship has clear water at the junction of Black Deep and Fishermans Gat, and there are no other vessels at a potential bottle-neck in the Knock John Channel.

“We’re clear today,” says Wayne. “But if I thought it was likely to get congested out there, I’d slow some of the vessels down so that they didn’t all arrive at the same point at the same time.”

Illustrious is carrying a port authority pilot, but not every ship on the river does. Some are exempt because their masters have a good working knowledge of the river; others may be too small to require one.



Colin Lock

Colin Lock says: “Despite these exemptions, we can stop a ship from entering our waters without a pilot if we feel they’ll compromise safety.

“It’s rare we have to do this. In a normal day, Vessel Traffic Services provides information to shipping – details of tides, locations of river or diving operations – that sort of thing.

“And, we also organise traffic – we warn vessels or close the river where congestion, navigation or an incident could prove hazardous to shipping.

“In extreme cases – in particularly bad weather, for instance – we can recommend

a course of action to the ship’s master. This would normally be done by our Duty Port Controller who, in addition to being a fully qualified VTS supervisor, is also a master mariner and Class 1 Thames pilot.”

As the warship enters Sea Reach, a channel that runs between Southend and the Isle of Grain, the VTS officers are checking departure times for vessels leaving port.

Bulk carriers, gas and oil tankers, tugs and tows, all use terminals and jetties which line the river from here inwards.

Some ships heading out to sea need to ‘swing’ – do a three-point turn across the Thames – when they leave dock. This causes a potential ‘road-block’ for other vessels.

In fact, Ian Cosgrave sees very little of *Illustrious* when she slides past Port Control’s window at Gravesend, because he’s stopping a container ship from quitting its berth ahead of the carrier.

“If I let her ‘swing’ now,” he says “The container vessel will be lying across the channel on a blind bend at the very moment *Illustrious* arrives.

“I’ve asked her to wait five minutes until the warship has passed.”

London VTS is split into two districts and, upriver of Erith, the warship moves out of Port Control’s waters and into the Thames Barrier Navigation Centre’s sector.

As its name suggests, TBNC sits in the shadow of the Environment Agency’s 520 metre concrete and steel flood defence.

Duty officer Brian Kay and VTS officer Tom Southall are watching vessel movements between Crossness and Teddington when *Illustrious* appears on their screens.

Their section of river, which winds through central London, is dotted with commuter vessels, ferries, bulk carriers, tourist boats and pleasure craft.

TBNC tracks them using AIS – a system that logs the details and positions of individual vessels by intercepting the radio signals they send out automatically.

This is crucial because, upstream of Greenwich, the alternative – radar – doesn’t work.

“Radar just bounces off the bridges and buildings and we can’t get a clear picture,” says Tom.

“Traditionally we’ve had to rely on CCTV, radio, and river patrols to know what’s going on. But the introduction of the Automatic

Identification System, or AIS, has transformed the way we work and increased river safety as a result.

“Not only can I see vessels moving on my screen, I know at a glance who they are, what they’re carrying and where they’re going.”

The Thames Barrier itself is operated by the Environment Agency, but it’s Vessel Traffic Services’ job to ensure ships get through safely.

Illustrious is doing eight and a half knots when she enters Woolwich Reach and lines-up on the Barrier’s ‘Echo’ span, between piers five and six in the centre of the river.

Brian says: “The tide is running in the same direction as the ship. So *Illustrious* has to move faster than the current. If she doesn’t, if she just lets the water carry her, her crew won’t be able to steer or control the vessel.”

The span is just 61 metres wide, *Illustrious* is 36. River pilots Dave Hocking and John Sheridan, who joined the ship as it passed Gravesend, have little more than 12 metres clearance on either side.

The manoeuvre is complicated further because, unlike conventional ships, aircraft carriers have their bridges off-centre to accommodate their

flight decks.

This makes it difficult for a single pilot on the bridge to judge distances. So the port authority pilots post themselves on either side of the ship and guide the vessel from there.

From TBNC on the south side of the river, it looks like a tight fit as *Illustrious* closes on the piers, but the warship sails through without incident.

The aircraft carrier’s last major manoeuvre on its inward journey comes just a mile further on, off the lock entrance to West India Quay.

Tom warns all vessels that this stretch of the Thames, Blackwall Reach, will be blocked as the straddling warship turns.

Powered by her four gas turbine Olympus engines, and helped by Svitzer tugs *Cecilia*, *Mercia*, *Lacey* and *Anglia*, the ship swings through the tide and eases backwards to her mooring.

Just six and a half hours after she made first contact with London Vessel Traffic Services, the warship comes to rest at Greenwich.

Each year, the Port of London Authority oversees the safety of between 25,000 and 30,000 commercial and military ship movements.

Pilots Dave Hocking and John Sheridan with DPC Gordon Price

Wayne Whitehead

