

## PLA Navigational SMS

# NAVIGATIONAL ADVISORY PANEL REPORT

<b>NAP Date:</b>	21/02/2011	<b>Owner:</b>	VTS Manager	<b>NAP Ref:</b>	37	<b>NAP Title:</b>	Thames Barrier Control Zone - Review of Navigational Procedures and VTS Infrastructure
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### Panel Members:

Name	Organisation	Name	Organisation	Name	Organisation
Barry Goldman (Chair)	PLA – VTSM	Richard Flynn	PLA – PRM	Stewart Ferrier	Tarmac Marine
Kevin Gregory (Report)	PLA – DVTSM	Thomas Southall	PLA – TBNCDO	Michael Shefras	ATYC/RYA
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Terry Lawrence	PLA – DHM(U1)	Steve East	Environment Agency		

Detail / Terms of Reference	Observation/Recommendation
<p>Identify and review the implications of realigning the existing VTS sector boundary at Crayfordness with the District Harbourmaster boundary at Crossness.</p>	<p><u>Review of VTS sector boundary:</u>                      Effective traffic management around operational berths in Halfway Reach, coupled with additional VTS procedures related to the advance management of larger vessels bound to or from berths beyond Margaretness may be compromised by a VTS sector boundary realignment.</p> <p>The management of emergency scenarios within the Metropolitan Police area follows procedures specific to the London area which distinct to that employed in the Essex and Kent areas below Crayfordness. As such it is appropriate that the PLA command and control facilities are designed, managed and exercised to complement and work efficiently with local responders. The current VTS sector boundaries achieve this.</p> <p>A realignment of VTS sector boundaries would increase the current workload of the PCC River sector VTS Operator. The area between Crayfordness and Crossness is already an active area with new trades commencing which will increase the traffic management workload. This together with the additional workload on the River operator that will result from London Gateway would potentially overload this position.</p> <p><b>The current VTS sector boundary should remain at Crayfordness.</b></p>

Review the continued applicability of the TBCZ. Review all operational procedures in support of traffic management associated with the PLA's responsibilities for the safety of navigation for vessels transiting, and in the vicinity of, the Thames Barrier as they apply to the following categories of vessels:

- a. Large vessels (over 100m LOA),
- b. Other commercial vessels,
- c. Private leisure vessels.

Review of the continued applicability of the Thames Barrier Control Zone:

Options for both extending and reducing the extent of the Thames Barrier Control Zone (TBCZ) were examined. The TBCZ is necessary to ensure that all categories of vessel traffic can be managed in good time prior to arrival at the Thames Barrier thereby ensuring safety of navigation and the protection of the Thames Barrier structure. Changes in VTS and onboard technology have influenced the means available to achieve this goal but the wide diversity of traffic navigating within the TBCZ, coupled with an increasing requirement for navigation restrictions due to maintenance, necessitates a higher level of VTS oversight and traffic management. Should a future Thames Crossing be constructed within Gallions Reach and a Cable Car constructed in Bugsbys Reach it is likely that certain categories of vessel will be subject to additional management procedures within this area, such procedures may be designed to complement existing TBCZ and London City Airport reporting procedures.

**The current limits of the Thames Barrier Control Zone are appropriate to ensure timely and effective traffic management, safety of navigation and protection of the Thames Flood Barrier.**

Review of General Direction 27 – Navigation in the Thames Barrier Control Zone:

Section 1 – declaration of ETA at the Thames Barrier by Reporting Vessels:

The advance declaration of ETA's at the Thames Barrier was introduced to cater for a high density of reporting vessel movements through the Thames Barrier. The reduction in such vessel movements, coupled with an increase in VTS traffic management and surveillance technology combined with similar evolutions in onboard technology has resulted in a loss of routine compliance with this element of the General Direction due to reliance on alternate methods.

The advent of more proactive VTS traffic management procedures coupled with other mandatory VHF reporting and onboard technology such as AIS has resulted in high quality traffic information being provided on a proactive case-by-case basis.

**Remove General Direction 27(1) as relevant traffic information is now provided in an alternate and acceptable manner.**

Section 2 – Reporting in the TBCZ by vessels fitted with VHF radio:

General Direction 27(2)(a) is currently not being complied with by all vessels not intended to transit through the Thames Barrier.

There is no operational requirement for mandatory VHF reporting by all vessels departing a berth within the TBCZ and not intending to transit the Thames Barrier. A requirement does exist for such reports by vessels departing those berths that lie very close to the Thames Barrier where the Thames Barrier structure itself poses a visual obstruction which may impact upon a vessels ability to keep a proper lookout as required by COLREGS Rule 4. An exemption has already been issued to Thames Clipper vessels departing North Greenwich Pier on scheduled passenger services not intending to transit the Thames Barrier. It was assessed that a need remains for vessels to report on berthing/mooring or departing berths or moorings between the Woolwich Ferry Terminal and Hookness and this is consistent with other geographic restrictions within the TBCZ. The provision of mandatory VHF reporting, coupled with other surveillance technology mitigates this risk.

**Proposed new General Direction 27(2):**

**All vessels fitted with VHF radio:**

- a) Leaving berths or locks within the Thames Barrier Control Zone and intending to transit through the Thames Barrier, shall seek permission from London VTS at the TBNC to proceed as required by General Direction 13(4).
- b) Leaving a berth or other location between the Woolwich Ferry Terminal and Hookness, whether intending to transit through the Thames Barrier or not, shall contact London VTS at the TBNC and seek permission to proceed (see note)
- c) Entering the Thames Barrier Control Zone at Margaretness or Blackwall Point and intending to transit through the Thames Barrier, shall report their position and intentions to London VTS at the TBNC for allocation of a navigational span.
- d) Entering the Thames Barrier Control Zone at Margaretness or Blackwall Point and planning to berth or moor at any location

between the Woolwich Ferry Terminal and Hookness, whether intending to transit through the Thames Barrier or not, shall report their position and intentions to London VTS at the TBNC (see note).

*Note: This applies to all vessel fitted with VHF irrespective of size. On departure from berths/moorings within this area, Permission to Proceed should be requested using the procedure at GD 13(4) that is normally applicable only to reporting vessels. For reporting vessels GD 13(4) &GD 13(5) continue to apply.*

Section 3 – Overtaking and Manoeuvring Restrictions:

**The current restrictions on overtaking and manoeuvring are necessary and remain valid to ensure the safe and efficient movement of traffic within the TBCZ and for the protection of the Thames Flood Barrier structure.**

Section 4 – Navigation in Restricted Visibility:

The navigation of non Reporting Vessels through the Thames Barrier will continue to be permitted with the onus placed on the individual vessel Master to decide what action to take in restricted visibility. Masters will be guided by their own company orders and passage plan in addition to the requirements of the COLREGS (lookout, safe speed and conduct in restricted visibility). In extremis, and if the circumstances of the case admit, the TBNC Duty Officer retains the power to issue a Special Direction on behalf of the Harbourmaster prohibiting an individual transit of the Thames Barrier (VTS Instruction 6 of 2009 refers). Recent investment in weather stations at sites throughout the PLA area of responsibility has also assisted in the prediction of periods of restricted visibility. However, an inconsistency exists in that a Reporting Vessel of less than 50m can transit the barrier in visibility down to 0.25nm but cannot get underway until the visibility improves to greater than 0.5 nm; this restriction was considered by some to be unnecessary but DHMU registered concern that the restriction should remain in place to prevent additional traffic being allowed to navigate as visibility lifted above 0.25 nm but remained below 0.5 nm. A change to the GD was proposed with the option of leaving the GD unchanged.

**The limitations on navigation through the Thames Barrier during periods of restricted visibility for Reporting Vessels remain valid. It is proposed that General Direction 27(4)(c) be revised to read:**

**Vessels subject to paragraphs (4) a) or b) above shall remain at their berths, anchor in a Designated Anchorage or anchor as directed by the appropriate VTS Centre, until such time as the Harbourmaster declares the visibility to be over 0.5 nautical mile for vessels subject to paragraph (4) a) and to be over 0.25 nautical mile for vessels subject to paragraph (4) b).**

Post NAP Note: NMT reviewed this issue and agreed the proposed change.

Section 5 – Anchoring

**The current restrictions on anchoring within 100m of the Thames Barrier and between the Woolwich Ferry Terminal and Hookness are necessary and remain valid to ensure the safe and efficient movement of traffic within the TBCZ and for the protection of the Thames Flood Barrier structure.**

Section 6 – Vessels Under Sail:

**The current restrictions on vessels under sail navigating between the Woolwich Ferry Terminal and through the Thames Barrier were only recently amended. They are necessary and remain valid to ensure the safe and efficient movement of traffic within the TBCZ and for the protection of the Thames Flood Barrier structure.**

Section 7 – Small Vessels (under 13.7 metres in length):

The requirement to ensure the effective management of non VHF equipped vessels within the TBCZ remains necessary and valid and is of particular importance when Reporting Vessels are navigating through the Thames Barrier at a similar time to non Reporting Vessels (VTS Instruction 3 of 2010 refers).

**Proposed new General Direction 27(7):**

**Small Vessels**

**All small vessels, not fitted with VHF radio, including yachts, dinghies, powerboats, narrow boats, sculls, rowing boats and canoes shall navigate through the span that lies furthest to the starboard side of the channel and is marked as open to navigation and having sufficient depth of water.**

*Note: Such small vessels are advised to contact London VTS at the TBNC by telephone for allocation of a span.*

Section 8 – Navigational Spans:

Under normal circumstances the Thames Barrier navigation lights should be configured so as to only have one span open to navigation in either direction at any time. More than one span should not be open to navigation in the same direction for longer than is necessary (VTS Instruction 3 of 2010 refers).

**The current requirements for the configuration of spans open to navigation at the Thames Barrier remains necessary and valid to ensure the safe and efficient movement of traffic within the TBCZ and for the protection of the Thames Flood Barrier structure.**

Section 9 – Traffic Control Procedures:

General Direction 27(9) remains necessary but requires modification to ensure that it is aligned with previous recommendations (outlined above) and with the proposals for the discontinuation of interactive Thames Barrier Notice Boards (outlined below).

**Proposed new General Direction 27(9):**

- a) **Vessels proceeding through the Thames Barrier must use only spans indicated as being available for navigation by the traffic signals and/or allocated by London VTS.**
- b) **Upon receipt of any specific traffic management instructions, vessels are to set and maintain a listening watch on the appropriate VTS working channel. Vessels not fitted with VHF radio shall proceed as required by General Direction 27(7).**
- c) **During a Thames Barrier Closure:**
  - i. **Any vessel fitted with a VHF radio is not to pass Margaretness inward-bound or Blackwall Point outward-bound unless authorised by a Harbourmaster at London VTS**
  - ii. **Small vessels, not fitted with a VHF radio, shall comply with traffic management instructions issued by a Harbourmaster at London VTS or by a PLA Harbour Service Launch.**

*Notes:*

1. *Information regarding spans not available for navigation will be broadcast by London VTS in routine broadcasts..*
2. *Persons in charge of vessels navigating through the Thames Barrier are advised that at certain states of both flood and ebb tides, eddies caused by the presence of the structure may have an adverse effect. Effects are particularly marked for slow moving vessels including those being towed*

Section 10 – Spans Closed to Navigation

**The current requirements for the configuration of spans closed to navigation at the Thames Barrier remains necessary and valid to ensure the safe and efficient movement of traffic within the TBCZ and for the protection of the Thames Flood Barrier structure.**

Review the impact upon navigational safety and the cost effectiveness of all mitigation measures including the following VTS infrastructure resources:

- a. Thames Barrier Notice Boards,
- b. Thames Barrier Racons, Visibility Meters & Fog Lights,
- c. VTS Radar/AIS/CCTV surveillance,
- d. Thames Barrier Anemometer.

Promulgation of advice to non frequent recreational visitors to the River Thames:

The majority of local recreational users have a good knowledge of the procedures related to navigation within the TBCZ. It was considered that the provision of more narrative guidance and explanation of TBCZ procedures would be beneficial to compliment the existing regulatory provisions.

**Develop narrative guidance suitable for recreational users to be hosted on the PLA operated website 'Boating on the Thames'.**

Review of the navigational safety effectiveness of the Thames Barrier Notice Boards:

The recommendations contained within the paper 'Review of the navigational safety effectiveness of the Thames Barrier Notice Boards' were reviewed in detail. The target audience of the notice boards was identified as non Reporting Vessels who do not normally navigate on the River Thames and as such may not be fully familiar with the regulations of the TBCZ.

The notice boards need to be conspicuous, easy to read and act upon and indicate to river users that they are entering an area of navigational significance. It was considered that an interactive option was not necessary when balanced against the other risk mitigation measures in place such as good VHF communications and conspicuous navigation lights on the Thames Barrier piers coupled with the presence of other assets including two PLA Harbour Service Launches during the period immediately before and during a Thames Barrier closure.

The existing notice boards may not be sited in the optimum position but the cost of relocation versus the navigation safety benefit cannot be justified. The existing notice board sites may be converted into static fixed notice boards with symbology and text conforming with the United Nations/European Commission CEVNI code of signals for inland waterways which are conspicuous and easy to interpret.

**Discontinue the existing interactive notice boards at Barking Point and Blackwall Point and replace with unlit fixed notice boards at Barking Point, Thamesmead, Blackwall Point and Blackwall Stairs. The proposed text and symbology used on the fixed notice boards are attached.**

Thames Barrier Racons:

Racons are established on piers 4, 5, 6, 7 & 8 of the Thames Barrier and were installed after the contact between the Sand Kite and the Thames Barrier in 1997. Since the Racons were installed the requirements for navigation during periods of restricted visibility have been revised (see General Direction 27(4)) providing a greater level of risk mitigation. Therefore, the Racons are now only used by suitably equipped non Reporting Vessels or in extreme circumstances should a Reporting Vessel be overcome by restricted visibility and be compelled to transit the Thames Barrier due to the lack of any suitable abort options.

Current commercial vessels transiting the Thames Barrier in restricted visibility indicate that the Racons make a negligible contribution to their approach when compared with other information and sources such as conventional radar returns, parallel indexing, VTS information and assistance. It was noted that it would be unlikely for recreational vessels to attempt a Thames Barrier transit during restricted visibility and that recreational vessel crew may not necessarily be experienced in navigation with Racon technology.

**London VTS is to cease the routine use of Thames Barrier Racons for a period of six months after which NMT is to review their utility with a view to confirming their discontinuation.**

Thames Barrier Visibility Meters:

Visibility Meters were installed on the Thames Barrier after the contact between the Sand Kite and the Thames Barrier in 1997. Since their installation reliability and serviceability has been poor, they are currently unserviceable and awaiting repair by Environment Agency. The Thames Barrier Navigation Centre is situated immediately adjacent to the Thames Barrier with full views of Woolwich Reach and Bugsbys Reach. It is therefore common practice for a visibility assessment to be made visually by reference to fixed conspicuous marks at relevant distances.

**The Visibility Meters installed on the Thames Barrier will be withdrawn from service. The infrastructure supporting the Visibility Meters will remain in situ but will not be maintained.**

Thames Barrier Fog Lights:

High intensity fog lights are situated at each end of piers 4, 5, 6, 7 & 8 and are operated in conjunction with the 'green arrows' to mark spans open to navigation during periods of restricted visibility. The fog lights are of benefit to all vessels in varying degrees of visibility including when the procedures identified in General Direction 27(4) have not been invoked. Their assistance to non Reporting Vessels navigating in visibility conditions of less than 0.25 nautical miles is accepted.

**The retention of the Thames Barrier fog lights is necessary to ensure the safe and efficient movement of traffic within the TBCZ and for the protection of the Thames Flood Barrier structure during periods of restricted visibility.**

VTS Radar/AIS/CCTV Surveillance:

The provision of VTS surveillance sources was reviewed. VTS radar sites are located at Blackwall Stairs, Charlton, North Woolwich and Beckton. The provision of each of these radar sites is necessary to ensure the full and continuous surveillance of the TBCZ.

AIS base stations are located at Shooters Hill and the Royal Star & Garter which provide coverage of the TBCZ and its approaches.

CCTV surveillance is available from cameras located at Beckton and the TBNC Mast. There is a possibility of an additional CCTV camera being installed in the Blackwall area as a mitigation measure related to the proposed London Cable Car development. This development may impact upon the field of view of the Charlton radar.


**The retention of the current levels of VTS Radar/AIS & CCTV surveillance is necessary to ensure the safe and efficient movement of vessel traffic within the TBCZ and for the protection of the Thames Flood Barrier structure.**

Thames Barrier Anemometer:

An anemometer providing live wind speed data to London VTS at TBNC and PCC has been installed on the Thames Barrier as a recommendation of NAP 18 (navigation of larger vessels through the Thames Barrier). The anemometer is now active and is providing good quality data to TBNC.

**The retention of the Thames Barrier Anemometer is necessary to contribute to the safe and efficient movement of traffic within the TBCZ and for the protection of the Thames Flood Barrier structure.**

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Panel Chairman:	Barry Goldman – VTS Manager	Signature:		Date:	23/02/2011
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