Navigational Advisory Panel 32

Risk Assessment - Chain or Cable Ferry in Gallions Reach

Introduction

1. Attendees. NAP 32 was convened on the 4 Nov 2009 at London River House with the following attendees:

David White	Harbour Master and Senior Pilot Dart Harbour
Andy Griffiths	General Manager – London River Services
Peter Hurford	Marine Engineer – London River Services
Peter Broome	Consultant to LRS

David Phillips - **Chairman**	HMU
Richard Flynn	Pilotage Resources Manager
Julian Parkes	HM SMS
Mark Towens	Deputy HM SMS
Kevin Gregory	Deputy VTS Manager
Geoff Buckby	Marine Services Manager

Terms of Reference

2. Transport for London (TfL) are exploring options for constructing and operating a chain or cable ferry in Gallions Reach, to support and supplement the existing vessel ferry in Woolwich Reach. In an initial assessment of the potential impact of such a proposal on navigational safety, this Navigational Advisory Panel (NAP) was asked, in considering the potential (type) options for a chain or cable ferry in this location, to identify any:

- new hazards to navigation introduced by a ferry service in Gallions Reach, and any associated potential risk control measures, which would reduce any additional risk created by such a service, to ALARP levels;
- operational and/or construction/engineering requirements or limitations introduced by this proposal that may impact adversely on the safety of navigation, commercial or leisure activity or the environment, including the River regime and the foreshore;
- additional factors or issues arising from this proposal that may impact upon the PLA's role and responsibilities for the conservancy or safe use of the River; and
- Requirement for detailed construction drawings to refine the risk identified.

The NAP should report its findings and any recommendations to the PLA's Navigational Management Team by 14 December 2009.

Briefings

3. LRS Brief. The NAP opened with a briefing from LRS about their proposal for a Cable Ferry in Gallions Reach in vicinity of Margaretness, which is shown at Annex A; PLA chart 325 showing Gallions Reach is also enclosed. LRS made several points during this briefing:

- The current ships operating the Woolwich Ferry, which have been in service since 1963, will go out of service in 2018.
- Bridge and tunnel options for crossing the Thames were discarded, largely on costs grounds.
- Looking at options:
  - Simply to replace the existing service in its current location or,
  - Replace the existing service in its current location and add another service crossing Gallions Reach in vicinity of Margaretness.
- 3 options for the ferries:
  - Conventional ferry
  - Chain/cable ferry
  - Landing craft type ships with a linkspan
- Existing service transports up to about 1 million vehicles per year, each ferry may carry about 35 vehicles.
- LRS have looked at ferry services in the River Dart and at Torpoint, a chain ferry carrying over 2 million vehicles per year; both these locations have tidal ranges and streams similar to those experienced in the Thames.
- LRS expect to increase capacity for carrying traffic through operate 2 ferries at each point, Woolwich and Margaretness over the 24 hour period.
- Need to consider where ships will lie up when not in use.

4. Dart Harbour Brief. Captain David White, the Harbour Master and Senior Pilot at Dart Harbour then spoke about his experience with the new Cable Ferry, in service since Jul 2009 and the previous Chain Ferry crossing the River Dart at Kingswear, the following points regarding **cable** ferries emerged:

- A significant issue over the length of slipway necessary to cope with the tidal range, which would be exposed at low water; this in turn would likely require long cables that would swing from side to side with the tidal stream, presenting risk to people's safety that would need to be mitigated. Essentially a long and wide slipway is likely to be necessary, such as that at Torpoint.
- A ferry that can only start/stop and manoeuvre's only by pulling itself along the cable is more limited in its operation (Albeit much cheaper) than a self-propelled vessel that merely uses the cable as a guide. Should the 'start/stop' ferry, which is classed as a vessel restricted in its ability to

manoeuvre, stop in mid-stream for whatever reason it will soon be carried by the tide until brought up on the cable, putting strain on the cable.

  - NB. The River Dart ferry is fitted with side thrusters to cope with the tidal stream.

- As the ferry reaches the shore the cable rises and potentially puts other vessels at risk.
- Cable pick-up is dependant on the skill of the ferry Master, making crew training paramount.
- The harbour Authority needs to know how the cable lies on the river bed, necessitating periodic diver survey.
- Also need to know how the cable catenary varies during the ferry passage across the river so that appropriate under keel clearance for other vessels may be maintained.
- A laden ferry handles very differently to one that is light.

5. Hazards. Discussion after these briefings identified the following hazards that would need to be controlled:

- Cable break, causing ferry to break free
- Collision with other vessels
- The cable remains on the surface for a long time putting other vessels in danger of coming into contact with the cable, noting that the cable does in fact lie on the river bed for most of the passage.
- A significant risk to people and structures on the foreshore from cables swinging up and down.
- Round the clock operation through hours of darkness.
- Ferry malfunction or breakdown.
- Unique nature of ferry operations, for example it might be safer for other vessels to pass **ahead** of the ferry, which goes against standard principles of seamanship.
- Passing vessels breaking down and needing to anchor.

6. Mitigation. This was discussed at some length without any clear conclusions because of the uncertainty over the type of ferry that might be used, in outline the following risk control measures emerged:

- Exclusion zones.
- Bow thrusters.
- Device to hold the cable down.
- Detailed information/tables etc from trials data with ferries so that cable movement is known or at least may be predicted reasonably accurately.

7. Conclusion. In view of the uncertainties brought on by not knowing what ferries will be used, it was agreed that no firm conclusions could be reached at this stage and that this NAP had been informative in function rather than an executive.

8. Post Meeting Note: Kevin Gregory has provided two years worth of POLARIS data for vessel movements in the Gallions Reach area, including key dimensions (LOA, beam and draft). This is a useful a starting point to gauge traffic in the area, which includes most commercial vessels, except the Cory Environmental tugs and any tugs/barges on passage between two destinations within PLA limits. Leisure traffic also is not included. Further analysis will be possible when the new AIS tool is fully installed. In summary, the spreadsheet shows that apart from the exclusions described above 5715 vessels passed through the reach between Nov 2007 to Nov 2009.

Annex to NAP 32 Report

Diagram showing location of proposed cable ferry