MAIB

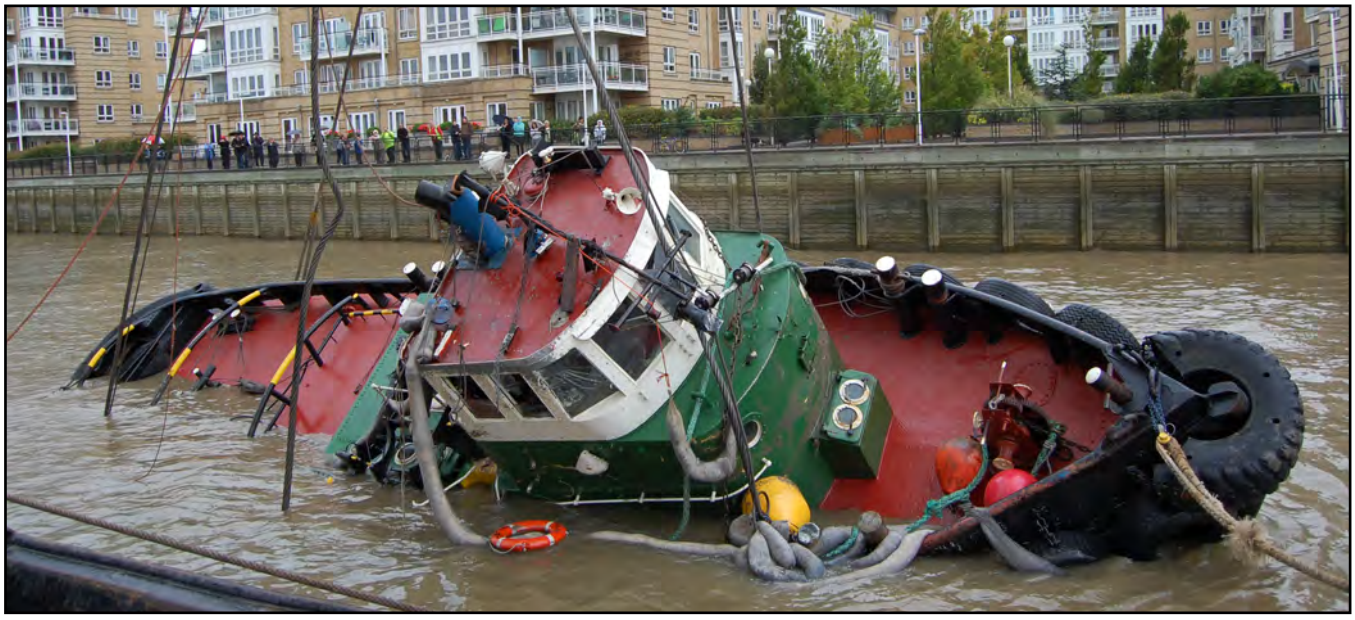
MARINE ACCIDENT INVESTIGATION BRANCH

FLYER TO TUG OPERATORS AND PORTS INDUSTRY

Fatal Accident - the risks associated with the combined push/pull towage configuration

On 12 August 2011, the tugs *Steven B* and *Chiefton* were connected to a 60m crane barge in a combined push/pull configuration. *Steven B* was secured aft with a combination of wires and ropes, making the tug and barge a composite unit. The distance between *Chiefton,* which was pulling, and the barge was 8.4 metres. There were two pilots positioned on the crane as the tow was navigated from St George Wharf towards Gravesend on the River Thames.

Chiefton's and *Steven B*'s engine powers were set at 95% and 70-75% respectively as the tow approached the eastern buoys of Greenwich Ship Tier, where it was set to the south by the flooding tidal stream. Port helm was applied by *Chiefton*'s skipper in an attempt to prevent the barge making contact with the northernmost buoy. The pilot then instructed him to pull to port and ordered starboard helm on *Steven B* in an unsuccessful attempt to "lift" the barge to port. The barge turned to starboard, hit the buoy and then collided with *Chiefton*, overrunning her and causing her to capsize and founder. The skipper and mate were rescued from the river but the engineer/deckhand, who was a non-swimmer and was not wearing a lifejacket, sadly drowned.



All those involved had wide experience of tug operations on the River Thames. However, virtually no one engaged in either the planning or execution of the tow had experience in the specific combined push/pull configuration used on the day, with pilots involved, downriver of Tower Bridge. No one had been formally nominated to be in overall charge. The towage plan focused on the difficult bridge transit phases and did not cover in detail the downriver tow.

Safety Lessons

Late and inappropriate action, coupled with *Chiefton*'s insufficient reserve of power and short tow ropes, made collision with the barge inevitable. This was largely due to inexperience of the tug configuration used. The following safety lessons should be carefully considered by harbour authorities and tug owners/operators for non-standard towage operations:

1. Planning should take into account the need for a contractor's method statement setting out the various contracted stages and responsibilities, a full passage plan, **relevant** experience and the need for a person to be in charge.

2. Tow-specific risk assessments should cross refer to those undertaken by the tug operators, harbour authorities (under the requirements of the Port Marine Safety Code) and contractors, and should be seamless.

3. The risk of the leading tug being overrun, in the push/pull configuration, in the event of propulsion or steering failures needs to be fully assessed. Where appropriate, consideration should be given to lengthening the tow to reduce the risk.

4. The tugs selected need to be fit for the task intended. Bollard pull should be appropriate for the **whole** operation and sufficient to provide a suitable reserve of power for emergency purposes.

5. Combined push/pull and craft towage should be included in a pilot's training.

6. Tug watertight integrity needs to be maintained to prevent downflooding leading to capsize.

This flyer and the MAIB's investigation report are posted on our website:
www.maib.gov.uk

For all other enquiries:

Marine Accident Investigation Branch
Mountbatten House
Grosvenor Square
Southampton
SO15 2JU

Tel: 023 8039 5500
Fax: 023 8023 2459
Email: maib@dft.gsi.gov.uk

Marine Accident Investigation Branch
23 May 2012