Report on the investigation of

the grounding of

Lagik

at Port Sutton Bridge on

13 December 2000

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Report No 42/2001
December 2001

Extract from

The Merchant Shipping

(Accident Reporting and Investigation)

Regulations 1999

The fundamental purpose of investigating an accident under these Regulations is to determine its circumstances and the cause with the aim of improving the safety of life at sea and the avoidance of accidents in the future. It is not the purpose to apportion liability, nor, except so far as is necessary to achieve the fundamental purpose, to apportion blame.

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

dwt	:	deadweight tonnage
GPS	:	Global Positioning System
gt	:	gross tonnage
kW	:	kilowatt
m	:	metres
MCA	:	Maritime and Coastguard Agency
OPRC	:	Oil Pollution Preparedness, Response and Co-operation
SOSREP	:	Secretary of State’s Representative in Maritime Salvage and Intervention
UK	:	United Kingdom
UTC	:	Universal Co-ordinated Time
VHF	:	very high frequency radio

SYNOPSIS

The 24 year old, Antigua and Barbuda-registered general cargo vessel *Lagik* grounded at Port Sutton Bridge on the River Nene at 1932 UTC on 13 December 2000. The MAIB was informed the next day, and an investigation began. MAIB inspector Andrew Clifton was appointed the lead investigator.

Lagik was carrying a cargo of 2250.40 tonnes of steel products to be discharged in Port Sutton Bridge. The vessel was under pilotage in the River Nene on the last of a spring flood tide. As she entered the swinging basin at the port, to be swung prior to berthing, her bow grounded at a distance from the opposite bank equal to the ship's length. The tide quickly caught her stern and she grounded aft within a few seconds. The vessel was effectively "wedged" in position. A combination of the weight of her steel cargo and the falling tide caused her to break her back at about 2315 that day. She settled further into the river on each successive tide, and was declared a constructive total loss. She blocked the River Nene and closed the port of Wisbech for 44 days.

There is conflicting evidence with regard to the events immediately preceding the grounding, which was caused by a loss of control during the turning operation.

Contributory causes of the grounding were found to be:

- the master taking the helm from the pilot as the vessel was about to enter the swinging basin;
- differing perceptions as to who had conduct of the navigation after the master took the helm;
- inappropriate manoeuvring for the prevailing conditions;
- the master either ignoring the pilot's advice or failing to exercise his right to intervene when he became concerned about the pilot's intended manoeuvre;
- no spring line being used;
- no tug standing by ready for immediate use.

Contributory factors to the ultimate loss of the vessel were found to be:

- the master not pumping out the ballast in the forepeak immediately after the vessel had grounded;
- the master stopping the propeller immediately after the vessel had grounded;
- the restricted width of the river and the effect of the flood tide; and
- no formal written risk assessment having been made for the turning operation at Port Sutton Bridge.

Recommendations have been addressed to Fenland District Council regarding:

- detailed advance planning;
- revalidation of pilots' certificates of competency; and
- conducting a risk assessment for the use of the swinging basin.

Recommendations are also addressed to the vessel's operator regarding:

- bridge team management training; and
- reviewing its written procedures concerning detailed advance planning regarding swinging/berthing procedures, and action to be taken in the event of a grounding.

Photograph courtesy of FotoFlite

Lagik

SECTION 1 - FACTUAL INFORMATION

1.1 PARTICULARS OF *LAGIK* AND ACCIDENT

Vessel details

Registered owner	:	L & L- Shipping
Manager	:	Gido Luhrs Schiffahrts
Port of registry	:	St John’s
Flag	:	Antigua and Barbuda
Type	:	General cargo
Built	:	1976 in Hamburg
Classification society	:	Germanischer Lloyd
Construction	:	Steel
Length overall	:	92.41 metres
Gross tonnage	:	999.82
Engine type and power	:	Single screw diesel, 1066kW
Service speed	:	11.5 knots
Other relevant info	:	One bow thruster 147kW

Accident details

Time and date	:	1932 UTC 13 December 2000
Location of accident	:	Swinging basin Port Sutton Bridge
Persons on board	:	7
Injuries/fatalities	:	None
Damage	:	Constructive total loss

1.2 BACKGROUND

1.2.1 *Lagik*

Lagik was a small, 24 year old, Antigua and Barbuda-registered gearless general cargo vessel with a single hatch. She traded throughout northern Europe and occasionally went as far as Mediterranean ports. She was a single screw vessel fitted with a controllable pitch propeller, Becker rudder and a bow thruster. Her loaded draught was 4.0 metres with a summer deadweight of 2554 tonnes, and she was able to navigate up small rivers to load and discharge her cargo. *Lagik* was capable of carrying steel and grain. There is no record of her having visited Port Sutton Bridge before this accident.

At the time of the accident *Lagik* had full valid certification and was manned in accordance with her safe manning certificate.

1.2.2 Port Sutton Bridge **(see Figure 1)**

Port Sutton Bridge is owned and operated by Port Sutton Bridge Ltd. The port was opened in 1987, has a 347 metre long wharf and can accommodate between four and five vessels at one time. It has the capability to handle almost any dry cargo but normally focuses on steel, timber, bulk commodity and agricultural products.

The port is situated 2.5 miles up the River Nene. The river entrance is a further 7.5 miles from the pilot station, situated in the Wash. The Nene is one of the fastest flowing navigable rivers in the UK, with tidal speeds in excess of 6 knots during large spring tides. Neap tides rarely exceed 2 knots. The tidal range varies between 3 and 6 metres.

Vessels of up to 5000 deadweight tonnes (dwt), a maximum length of 120 metres and a maximum draught of 6 metres, can be accommodated at Port Sutton Bridge. The average size of vessels using the port is around 2000 dwt. About 500 vessels use the port annually.

All vessels in excess of 20 metres in length are required to carry a pilot. There are no pilot exemption certificates issued for Port Sutton Bridge.

Vessels can be berthed either side to, but if berthed port side alongside they are required to be swung by the use of the swinging basin **(see section 1.3)** before berthing. It is preferable for vessels to berth port side to, as they can, on completion of cargo discharge, proceed to sea in ballast when there is sufficient depth of water and not delay arriving vessels as they are already facing downriver.

Fenland District Council has responsibility for buoyage, tugs and pilotage within the river. Pilots are required to have a home trade master’s certificate and

experience as master. There are four pilots on the River Nene. The Environment Agency is responsible for the flood defences, which generally requires it to carry out bank stabilisation and surveys of the river levels. The river is artificial, being reclaimed salt marshes. Little maintenance dredging is required as the river is designed to be self-cleansing, with the velocity of tidal flow keeping any mud/silt in suspension.

Fenlander, a tug owned by Fenland District Council, is stationed at Port Sutton Bridge. It is a multi-purpose tug/workboat with twin 305 horsepower 228kW engines through Kort nozzles, producing 7-8 tonnes bollard pull.

There were no written procedures or instructions for the pilots on the River Nene and, at the time of the accident, no formal written risk assessments had been carried out by Fenland District Council with regard to navigation on the river. These are now being implemented to comply with the Port Marine Safety Code which comes into force in January 2002.

Port Sutton Bridge Ltd has terminal regulations and a quality assurance procedure for vessels using Port Sutton Bridge.

Figure 1

Port Sutton Bridge looking to the south

1.3 THE SWINGING BASIN

The swinging basin at Port Sutton Bridge was constructed in 1987 and is a V-shaped cut made into the west bank of the Nene about 240 metres upriver from No1 berth. It measures 85 metres across at the entrance, and is approximately 63 metres from the entrance to the inshore apex. The distance from the inshore apex of the basin, to the mean high water springs level of the eastern bank of the river, is 130 metres. The basin's dolphins are equipped with capstans and bollards and the access walkways, around the basin, have bollards fitted. The maximum length of vessel to have been swung in the basin is 100.7 metres; vessels between this length and 120 metres in length have to be towed in astern from sea. Very occasionally vessels are towed out to sea astern after berthing starboard side to. When the flood tide is running, vessels are normally swung on the last of the flood tide. If the ebb tide is running, vessels can be swung as soon as there is enough water.

A vessel arrives at the pilot station, or weighs anchor, about two hours before high water. She should then arrive at the port just before high water. She approaches the swinging basin slowly in the centre of the river, with an approach speed just in excess of the tide **(see Figure 2 for a diagram of a normal swinging operation)**. She is then turned to starboard with her head just into the basin, and stopped. The tide then catches the stern and the bow thruster is used to swing the head to starboard. The vessel is then turned using the combined effects of the bow thruster and tide. Helm is not normally used during the actual swinging but engine movements are sometimes used to maintain the vessel's position. If the vessel is over 90 metres in length, and does not have a bow thruster, the tug *Fenlander* is on stand-by to assist with the turn. Sometimes a spring line is sent ashore from the starboard bow. Linesmen are standing by each time a vessel is swung in case a spring is required. The pilots are, however, reluctant to use a spring if onboard communications are poor, as this can be dangerous and may compromise the operation. For vessels of less than 90 metres in length without a bow thruster, it is quite normal to swing using just a spring line, but it does depend somewhat on the weather conditions and vessel type. It is possible to swing a smaller vessel without the use of a tug, bow thruster or a spring, but this manoeuvre is not easy and requires a great deal of skill and experience.

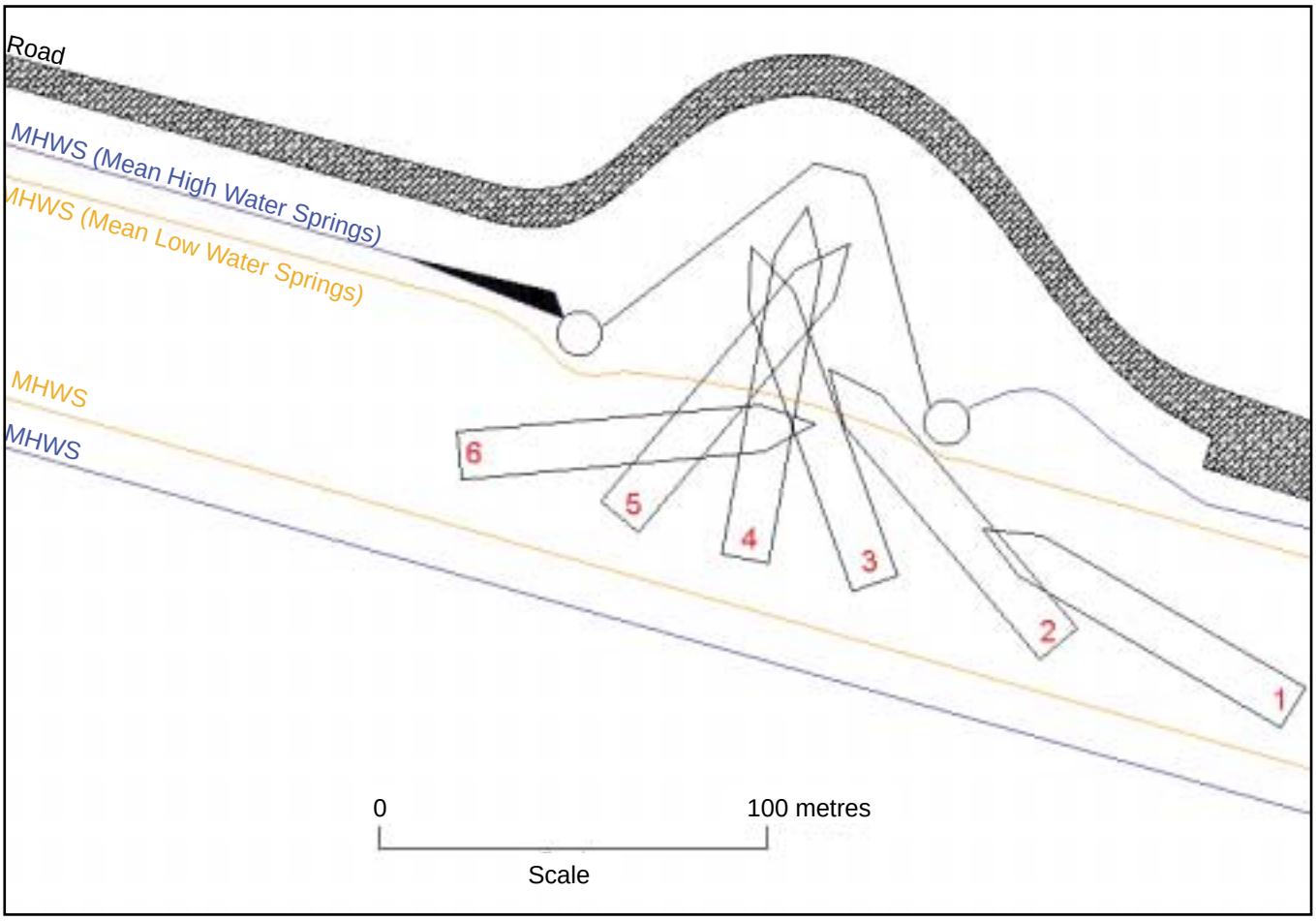
The port operator, Port Sutton Bridge Ltd, owns the swinging basin and is responsible for keeping the level of mud within the basin to an acceptable limit. The harbourmaster prefers the level to be at or below 1.5 metres above chart datum. The level of mud in the basin is controlled by the use of two flushing pumps, which are high pressure water jetting systems capable of pumping 7500 litres per minute at a pressure of 14bar. These pumps are normally run weekly, if weather conditions permit, by the port management, after consultation with the pilots and harbourmaster. If they were not run then the mud would build up by about 60 centimetres per month. The actual level of mud in the swinging basin

is determined by a visual assessment of when water runs on to the mud and observing the level on the tide readout at this time. This has proved to be quite accurate. Despite the pumping, there is always an increased level of mud around the edge of the basin giving a slight incline towards the shore.

The Environment Agency is consulted regarding any major changes to the swinging basin but, otherwise, has no involvement with it.

No formal written risk assessment had been made by any party with respect to use of the swinging basin, and it had never been subject to a full hydrographic survey. Since the accident, a hydrographic survey of the swinging basin and the immediate surrounds has been made.

Figure 2



A normal swinging operation

1.4 THE CREW/PILOT

Lagik had a crew of seven consisting of the master, mate, engineer, three seamen and a stewardess. The master was German and the remainder of the crew were Polish.

The master was 57 years old and had been at sea for 41 years. He obtained his German home trade master's certificate in 1972 and had been master for 26 years. He had been master on *Lagik* for 2½ years including periods of leave. He joined on this particular trip on 28 August 2000. He had been to Port Sutton Bridge before on a smaller vessel, but not on *Lagik*. He had also been to Wisbech, further up the Nene, on another smaller vessel.

The pilot was also the harbourmaster, and was one of four pilots employed by Fenland District Council for the River Nene. He was 52 years old and had spent 14 years at sea before becoming a pilot in Wisbech and the Nene in 1979. In 1991 he was appointed to the additional position of harbourmaster. In 1973 he had obtained his home trade master's certificate which had lapsed and required revalidation at the time of the accident. He had not been on *Lagik* before, but had been on many vessels of similar size and design.

1.5 ENVIRONMENTAL CONDITIONS

At the time of the accident there was a light south-westerly wind and the weather was fine and clear with good visibility. High water at Wisbech Cut (Port Sutton Bridge) was at 1935 UTC. The height was 7.1 metres springs, full moon having been 2 days earlier on 11 December.

The flushing pumps had last been run on 26 November 2000, 17 days before the accident. The mud height in the turning basin was last checked at 1.8 metres above chart datum the previous week.

1.6 NARRATIVE (all times UTC)

Lagik loaded a cargo of 2250.40 metric tonnes of steel products in mixed bundles, coils, pallets and loose "H" bars in Mo I Rana, Norway. She anchored off the Bar Flat pilot station in the Wash at 1530 on 12 December 2000 as another vessel occupying the berth was delayed in discharging, because of rain.

Port Sutton Bridge advised the vessel during the morning of 13 December that she would be berthing later that day. At 1700, the pilots informed the vessel to start heaving her anchor and to prepare for the pilot to board. The anchor was weighed at 1800. The pilot was on an outbound vessel and left by launch and transferred to *Lagik,* boarding her at about 1810, midway between Bar Flat and No1 buoy. Her draught was 3.85 metres forward and 4.09 metres aft. In addition to her cargo of steel, she was carrying 27000 litres of diesel oil, 1600 litres of lubricating oil and 400 litres of hydraulic oil.

Once the pilot was on the bridge he remembered the master from his previous visits to the port on another vessel. He informed the master that the vessel would be swung, using the bow thruster, before berthing, at No 4 berth, the tide and weather conditions were good and that they should arrive at the swinging basin on, or close to, high water, and berth with the last of the flood. The pilot also pointed out that the wind was very slightly off the line of the river, being from the south-west. The master informed the pilot that there were no defects with any machinery or navigation equipment, and that the bow thruster was powerful. The master also stated that he thought the vessel could be swung without a bow thruster if the speed was above 2-2.5 knots, but the problem would be in slowing the vessel during the turn. The pilot again stated he intended to use a bow thruster. All information was exchanged verbally.

The pilot took over the conduct of the navigation and sat down in the chair on the port side of the bridge console. He was controlling the helm himself and giving engine orders to the master. The master sat on the starboard side chair. Nobody else was present on the bridge **(see Figure 3)**. The mate and a seaman stood by on the forecastle and two seamen stood by aft. The anchors were ready for letting go if required.

Figure 3

Lagik's bridge

The pilot discussed with the master whether or not a spring should be used during the turn. They agreed not to use one. Just before the vessel passed the berths, the pitch was tested astern. The pilot informed the master of the intended tie-up on the berth. The master informed the mate by talk back.

As the vessel passed No 1 berth she was in the middle of the river and way was reduced by astern pitch so that she was making about 2½ knots over the ground. The pilot confirmed the speed by checking the vessel's GPS.

Two linesmen were on the shore close to the turning basin ready to take a spring line if required, and they informed the pilot by hand-held radio of the tidal readout. It was 6.91 metres. The pilot knew the mud level in the basin was about 1.8 metres, and with the vessel's maximum draught of 4.09 metres this gave over a metre clearance. The linesmen had not been informed that a spring was not to be used, and they were waiting for the crew to throw a line.

The vessel was starting her turn to starboard into the swinging basin, with the pitch at zero, speed around 1.5 knots, the helm amidships and the bow thruster working to starboard, when the master took over the helm. The pilot was not sure if the master had relieved him of the conduct of the vessel. The pilot concluded that he had, whereas the master considered he had not. The master was concerned that the vessel had insufficient momentum to be able to turn successfully in the prevailing conditions.

There is conflicting evidence with respect to the advice given by the pilot, and the helm, propeller and bow thruster movements carried out during the following period. There is also conflicting evidence as to whether the master had taken over the helm without prior warning, and whether poor communications between the master and the mate had been a factor in the decision made not to use a spring line for the manoeuvre.

The turn and momentum were lost, and the vessel was out of control. She had not swung far enough into the turning basin and was lying across the river at an acute angle. The bow struck the swinging basin on the upriver side of the basin's apex; a few seconds later the tide caught the vessel's after section and the stern grounded on the opposite bank. The vessel was now effectively "wedged" at a distance between both banks which corresponded to the vessel's length. The time of the grounding was 1932; 3 minutes before high water. The time from the master taking over the helm, to the point of grounding was about one minute. The bow thruster was run maximum to starboard, and a line was sent from the starboard bow to the shore and heaved on, but the vessel did not move. A heaving line was also passed aft to no avail. The pilot wanted to try using the engine, but the master had stopped the propeller to protect it.

Both the master and pilot were well aware the tide was about to start ebbing and that the vessel was likely to become increasingly more difficult to refloat as the water level fell. The pilot was using his mobile telephone to contact *Fenlander*'s crew, which was moored close to the turning basin, when the master requested a tug. It took around 35-40 minutes for the crew to arrive and get the engines ready. She tried pushing on the bow and the stern while the line ashore was heaved and the bow thruster used, but *Lagik* would not move. No other tugs were called as the next available tugs were in Wisbech, which was 2 hours steaming away, and in Boston, which would not arrive until the following morning.

The master and the pilot then decided to shut everything down and wait for the next tide. Low water was at 0341. The emergency plan for the port was for the harbourmaster, tugs and emergency services to be informed. The pilot was also the harbourmaster and he had already called for a tug. However, he did not call the emergency services at this time.

The tide was ebbing and the water level falling. The combination of the cargo weight and the falling tide became too much for the vessel's hull. At around 2315 cracking noises were heard coming from the cofferdam under the accommodation. The master went on to the main deck and could see fracturing occurring in the deck plating and side shell, and it became apparent that the vessel had broken her back. The pilot then informed the emergency services, and the fire brigade arrived within a few minutes. All eight persons on board left the vessel by a ladder from the stern on to the east riverbank. No injuries were sustained in the accident. At around 0200 the pilot informed Yarmouth Coastguard by VHF from his office. The Maritime and Coastguard Agency's (MCA) oil pollution response team was also informed.

The vessel settled further into the silt on the riverbed with each succeeding tide, and subsequently broke further to become effectively bent into three separate sections. It was clear that the vessel was a constructive total loss. Some minor pollution occurred. The counter-pollution team from the MCA was mobilised on 14 December **(see Figures 4-9 for views of *Lagik* aground)**.

The Nene was now effectively blocked at this location which closed the port of Wisbech, and trapped vessels already in the port at this time. No large commercial vessels were in Wisbech, but two fishery patrol vessels, and a number of small fishing and recreation craft, were stranded in the port. The swinging basin was unable to be used, and vessels using Port Sutton Bridge had to be towed astern up or down the Nene.

Using powers of the *Merchant Shipping Act 1995* the Secretary of State's Representative in Maritime Salvage and Intervention (SOSREP) issued a direction on 18 December to the vessel's owner to agree a salvage plan for the vessel by midnight on 19 December. This order was ignored and the owner abandoned all rights to ownership of the vessel.

A joint salvage agreement was made between the MCA and Fenland District Council to appoint Smit Tak to remove the vessel. Work started in removing the fuel and cargo from the vessel on 28 December. On 12 January 2001, a floating crane was moved into place **(see Figure 10)** and work began cutting the vessel up into three pieces. On 26 January the last section of *Lagik* was removed from the river **(see Figure 11)**. Since then, further necessary repairs have been made to the piles around the edge of the turning basin which sustained damage because of the diversion of the tidal current during the 44 days when the river was blocked.

Figure 4

Lagik's aground at low water

Figure 5

Lagik's aground at high water

Figure 6

View from the east bank

Figure 7

View from the west bank

Figure 8

Aerial view from the east (note some pollution)

Figure 9

Aerial view from the south

Figure 10

Floating crane moving into position

Figure 11

Floating section of *Lagik* is removed

1.7 PILOTAGE

The vessel's master is charged with the responsibility for the safety of his vessel; pilots are engaged to assist with navigation in confined waters and to facilitate port approach, berthing and departure. The pilot is the local expert and has unique specialised knowledge and ability, but he never takes command of the vessel. He will normally advise the master as necessary and usually have full conduct of the navigation. This is, however, very different from having command of the vessel. The master has the ultimate responsibility and has the right to interfere with the pilot's actions so long as he acts reasonably and with good motive under the circumstances. He is also expected to take over the conduct of the navigation completely in the rare event of the pilot being incompetent or incapable. Good communication is essential in the master/pilot relationship especially as the pilot may be unfamiliar with the vessel, and the master unfamiliar with the port.

The system of marine pilotage in the UK is regulated by the *Pilotage Act 1987*. Port Sutton Bridge was in a compulsory pilotage area as defined in this act which required the vessel to be under the pilotage of an authorised pilot or a master or mate holding a pilotage exemption certificate.

1.8 OIL POLLUTION PREPAREDNESS, RESPONSE AND CO-OPERATION (OPRC) PLAN

In accordance with *The Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998* which came into effect on 15 May 1998, there is a requirement in the UK for ports, harbours and oil-handling facilities offering berths to ships of over 400gt, alongside, on buoys or at anchor, to prepare and submit oil spill response contingency plans to the MCA for approval.

Port Sutton Bridge was required, therefore, to have an OPRC plan at the time of the accident. The port had no such plan. The MCA had brought this to the attention of Fenland District Council shortly before the accident, and initial steps had been taken by the port to draw up a plan.

SECTION 2- ANALYSIS

2.1 AIM

The purpose of the analysis is to determine the contributory causes and circumstances of the accident as a basis for making recommendations to prevent similar accidents occurring in the future.

2.2 PORT SUTTON BRIDGE SWINGING BASIN

The swinging basin at Port Sutton Bridge had been successfully used by vessels the same size or slightly larger than *Lagik* on numerous occasions before the accident. The pilot/harbourmaster has routinely turned similar vessels many times.

It is, however, a tight turn in a restricted channel with strong tidal currents, and demands great skill and experience. A tug is placed on stand-by when turning vessels of 90 metres length or more without a bow thruster. Vessels of *Lagik*'s size can be turned by the use of the bow thruster and/or a tug, with a spring line used if considered necessary.

In this instance, the turn was made using the bow thruster only; an exercise performed many times in the past. This did, however, leave little safety margin if the bow thruster and/or power on the vessel failed. A tug standing by could make fast quickly and maintain the vessel's position under control; likewise, a spring line could be used to keep the vessel in position. *Lagik* was turned using just the bow thruster, the decision having been made not to use the spring; the tug was made fast alongside the jetty and it took some time for the crew to come down to the vessel and get her ready for use. There was, in effect, no back-up in the event of power failure or loss of the bow thruster on *Lagik*.

As was seen with this accident, the strong tide can very quickly take control of the vessel's movements. The clearing distances at each end of the vessel are small for a vessel of *Lagik*'s size using this swinging basin, and there is little room for error. A formal written risk assessment would be likely to highlight this high risk factor, and identify any control measures considered necessary. This could include a tug standing by if a spring line is not used.

2.3 MASTER/PILOT RELATIONSHIP

As stated previously, a vessel of *Lagik*'s size using the swinging basin is making a tight turn in a restricted channel with strong tidal currents. The four pilots on the River Nene possess this skill and experience through many years of working on the river. No pilotage exemption certificates are issued for the River Nene and it is normally the practice for the pilot to have the conduct of the navigation during the turning operation. On a few occasions in the past, some masters, who were frequent visitors to the port, have had the conduct themselves while swinging in the basin, but with the pilot being very proactive and the procedure having been discussed at length, well in advance of the approach to the turn.

The pilot had been on many vessels similar to *Lagik*, if not on the vessel herself. He had turned vessels over a thousand times at Port Sutton Bridge and several hundred times during spring tides. He was reasonably confident as to how she would handle, and during the 1½ hour passage from the pilot boarding area, to the swinging basin, had become familiar with the vessel's manoeuvring characteristics and helm controls, and was content with giving the pitch orders to the master, who physically adjusted the pitch himself. The approach to the swinging basin was made normally, and the pilot was content with the situation immediately before the master took over the helm.

The master has the right to take over the conduct of the navigation from the pilot if he acts reasonably and with good motive under the circumstances. He also has a duty to take over if he considers the pilot is incapable or incompetent. There was nothing in the pilot's actions, before the master took the helm, to suggest this was the case, and the master had not seen cause to make any remarks to the pilot or interfere with the pilot's handling of the vessel previously. However, the master was concerned that the vessel had insufficient momentum to be able to turn successfully in the prevailing conditions.

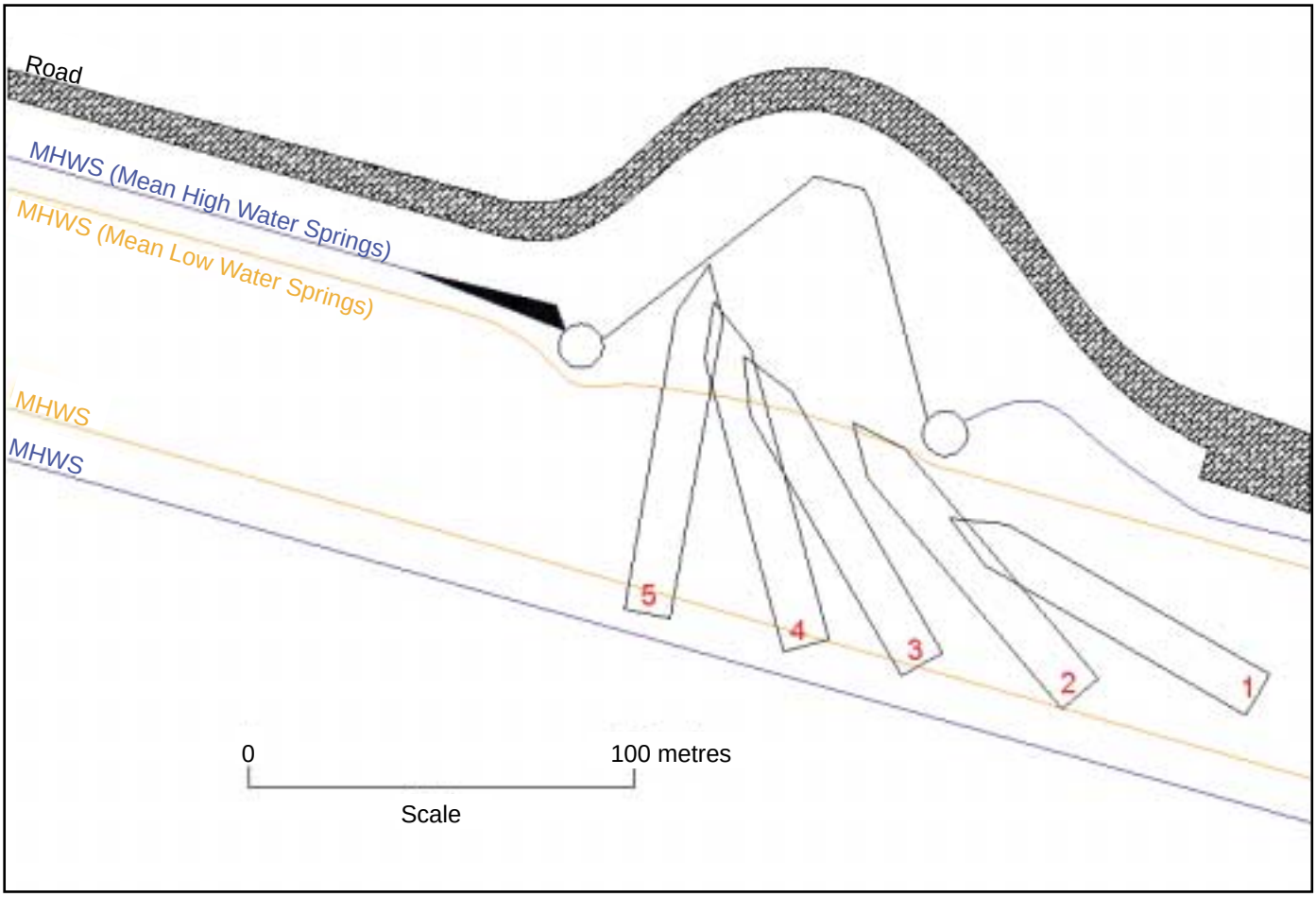
When the master took over the helm, the pilot was not sure if he had relieved him of the conduct of the vessel. The pilot concluded that he had, whereas the master considered he had not. This occurred at the worst possible moment with the vessel just entering the swinging basin.

There is conflicting evidence regarding the advice given by the pilot after the master took over the helm, and the helm, propeller and bow thruster movements carried out during the following period which were evidently inappropriate for the prevailing conditions. In view of the conflicting evidence, it is uncertain whether the master ignored the advice of the pilot or failed to exercise his right to intervene when he became concerned about the pilot's intended manoeuvre.

The turn and momentum were lost, and the vessel was out of control. It was unfortunate that the point at which the bow struck the swinging basin and the point on the east riverbank where the stern grounded, equalled a distance of almost exactly the vessel's length. This ensured that as soon as the stern went aground, which was within seconds of the bow's impact, the vessel became wedged in position **(see Figure 12 for an interpretation of the vessel's actual movements)**.

Bridge team management training is likely to make a master and deck officer more aware of the critical relationship between the master and pilot and, in particular, the importance of communication and pre-planning.

Figure 12



Interpretation of the vessel's actual movements during the incident
(5 represents the grounding position)

2.4 POST-GROUNDING ACTIONS

Once it was realised that *Lagik* was aground and that the situation was extremely serious, bearing in mind the weight of the vessel's cargo and the falling tide, the pilot and master used a line ashore, the bow thruster, and, once she was ready, the tug, all to no avail. A heaving line was also passed aft.

It took some time for the tug's crew to be called, arrive at the tug and prepare her for use. By then the tide was ebbing and the vessel was settling more and more on to the riverbanks. Had the tug been standing by, ready for immediate use, she might have been able to free the vessel. She was not and, by the time she was ready, was unable to move the vessel.

After the vessel had grounded, the master stopped the propeller to protect it from damage. The pilot wanted to try using the engine to create a "scour" in an attempt to free the vessel. The master was correct to conclude that this would probably have damaged the propeller, but this would have been preferable to losing the vessel. It is possible the master had not realised the seriousness of the situation at that stage, and that the vessel might break her back.

The forepeak was partially full of ballast water. Had the master acted quickly and instructed the engineer to pump out this water, the bow might have become free, although the stern would have settled further into the riverbank. It was, however, an action worth considering as, with the bow afloat, the tug could have assisted in refloating the vessel.

The emergency plan for the port was for the harbourmaster, tugs and emergency services to be informed. This emergency plan was not formally written, but had been agreed upon verbally. The emergency services were not called at the time of the grounding. That meant that no one external to the grounding scene was informed, apart from the tug crew, until the vessel had broken her back. The MCA was not informed until over 2½ hours after the vessel had broken her back and 6½ hours after the grounding. It is unlikely that, in this instance, the presence of the emergency services and/or the MCA would have made any significant difference to the situation. However, if a main bunker tank had started leaking during the hours of darkness, and had not been spotted by the pilot or crew, the MCA would have needed to start its counter-pollution operations immediately.

A formally written and comprehensive contingency plan could have required the pilot to inform a predesignated person ashore, allowing him to concentrate on the task on board. This plan could have been included as part of the OPRC plan which the port was required to have at the time of the accident. Fenland District Council did not have an OPRC plan, but was taking initial steps to draw one up when the accident occurred.

2.5 THE PORT OF PORT SUTTON BRIDGE

All four pilots, including the harbourmaster, had not revalidated their master's certificates of competency. The MCA considers that sea-going holders of this certificate should fulfil the necessary requirements to maintain this certificate of competency. Fenland District Council requires pilots to have this certificate of competency upon becoming a pilot. If this standard is required for pilot entry then it is logical that the standard should be maintained and not allowed to lapse. Fenland District Council is therefore recommended to consider revalidating its pilots' certificates of competencies. However, there is no evidence to suggest that the pilot's lack of a valid certificate of competency was a causal factor in this accident.

The swinging basin's silt/mud level does not appear to have made any difference to the accident, although it was 17 days before the accident that the pumps were last run, and over a week before that the mud level was visually checked at 1.8 metres.

The lack of an OPRC plan is discussed in 2.4. At the time of the accident there were no written procedures or instructions for the pilots on the River Nene, and Fenland District Council had carried out no formal written risk assessments with

regard to navigation on the river. The Port of Wisbech bylaws are dated 1957; no other guidelines or procedures exist with regard to navigation, except for local notices to mariners. Port Sutton Bridge Ltd has terminal regulations and a quality assurance procedure with regard to vessels using Port Sutton Bridge, but these do not cover navigation issues.

The Port Marine Safety Code, which comes into force in January 2002, heralds a new approach to the management of safety in ports and introduces a national standard for every aspect of port marine safety. It aims to improve safety for those who use, or work in ports, and their ships, passengers and cargoes, and the environment. It establishes a measure by which harbour authorities can be accountable for the legal powers and duties with which they can run their harbours safely. The code applies to port marine operations, the well-established principles of risk assessment and safety management systems. As a result of implementation of the code, Port Sutton Bridge will be required to have risk assessments and written procedures in place.

SECTION 3 - CONCLUSIONS

3.1 FINDINGS

1. *Lagik* grounded in the River Nene at 1932 UTC on 13 December 2000. She blocked the river for 44 days. [1.6]

2. *Lagik* had full valid certification and was manned in accordance with her safe manning certificate at the time of the grounding. [1.2.1]

3. At the time of the grounding *Lagik* was carrying a cargo of 2250.4 tonnes of steel products together with 27000 litres of diesel oil, 1600 litres of lubricating oils and 400 litres of hydraulic oils. [1.6]

4. Pilotage is compulsory for vessels in excess of 20 metres in length calling at Port Sutton Bridge. [1.2.2]

5. All four pilots at Port Sutton Bridge had not revalidated their certificates of competency. [1.4, 2.5]

6. The River Nene is one of the fastest navigable rivers in the UK, with tidal speeds in excess of 6 knots on large spring tides. [1.2.2]

7. There were no written procedures or instructions for the pilots on the River Nene and no formal written risk assessments had been carried out with regard to navigation. [1.2.2]

8. Vessels using Port Sutton Bridge are turned using the swinging basin or are towed in/out astern by a tug. [1.3]

9. Mud/silt levels in the swinging basin are reduced by the use of flushing pumps. [1.3]

10. The pilot, who was also the harbourmaster, had turned vessels over a thousand times in Port Sutton Bridge's swinging basin. [2.3]

11. The pilot had not been on *Lagik* before, but had turned many similar vessels in Port Sutton Bridge's swinging basin.

12. The master had not been to Port Sutton Bridge on *Lagik* before.

13. The pilot boarded at about 1810 on 13 December 2000. [1.6]

14. As the vessel passed the berths, pitch was tested astern. Crew were stationed fore and aft. [1.6]

15. It was agreed that a spring would not be used during the turning operation. [1.6, 2.2]

16. The master took over the helm from the pilot as the vessel was about to enter the swinging basin. [1.6, 2.3]

17. There is conflicting evidence with respect to the advice given by the pilot after the master took over the helm, and the helm, propeller and bow thruster movements carried out during the following period. [2.3]

18. The vessel's bow grounded at a distance from the opposite bank equal to the ship's length. [1.6, 2.3]

19. The time from the master taking over the helm, until the grounding was about one minute. [1.6]

20. The master stopped the propeller after the grounding to protect it. [1.6, 2.4]

21. The tug's crew were ashore, and it took over 30 minutes for them to arrive at the tug and make her ready for use. [1.6, 2.4]

22. Unsuccessful attempts were made to refloat the vessel using the bow thruster, a line and, once ready, the tug. [1.6, 2.4]

23. The master did not pump out the ballast in the forepeak immediately after the vessel had grounded. [2.4]

24. Fenland District Council was required to have an OPRC plan for the port but did not have one. [1.8, 2.4]

25. The vessel broke her back at around 2315 on the same day. [1.6]

26. The MCA was not informed until around 0200. [1.6, 2.4]

27. *Lagik* was declared a constructive total loss and was cut up in situ, the last section being removed from the river on 26 January 2001. [1.6]

28. No injuries were sustained as a result of this accident. [1.6]

3.2 CAUSE

The cause of the grounding was a loss of control during the swinging operation. [1.6, 2.3]

3.2.1 Contributory causes of the grounding:

1. The master taking the helm from the pilot as the vessel was about to enter the swinging basin. [1.6, 2.3]

2. Differing perceptions as to who had conduct of the navigation after the master took the helm. [1.6,2.3]

3. Inappropriate manoeuvring for the prevailing conditions. [2.3]

4. The master either ignoring the pilot's advice or failing to exercise his right to intervene when he became concerned about the pilot's intended manoeuvre. [2.3]

5. No spring line was used. [2.2]

6. No tug was standing by ready for immediate use. [2.2]

3.2.2 Contributory factors to the ultimate loss of the vessel

1. The master did not pump out the ballast in the forepeak immediately after the vessel had grounded. [2.4]

2. The master stopped the propeller immediately the vessel had grounded. [1.6, 2.4]

3. The restricted width of the river and the effect of the flood tide. [1.6, 2.2, 2.3]

4. No formal written risk assessment had been made for the turning operation at Port Sutton Bridge. [1.2.2, 2.2]

SECTION 4 - RECOMMENDATIONS

Fenland District Council is recommended to:

1. Conduct a formal written risk assessment for operations involving vessels using the swinging basin at Port Sutton Bridge, and implement any identified control measures in the form of written procedures, including a comprehensive contingency plan.

2. Ensure detailed advance planning concerning the whole swinging/berthing operation is made as soon as possible after the pilot boards.

3. Consider revalidating the certificates of competency of the River Nene pilots.

Gido Luhrs Schiffahrts is recommended to:

4. Send its deck officers on bridge team management training courses.

5. Review its written procedures concerning detailed advance planning regarding swinging/berthing operations and action to be taken in the event of grounding.

Marine Accident Investigation Branch
December 2001