

Extract from The United Kingdom Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 – Regulation 5:

“The sole objective of the investigation of an accident under the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 shall be the prevention of future accidents through the ascertainment of its causes and circumstances. It shall not be the purpose of such an investigation to determine liability nor, except so far as is necessary to achieve its objective, to apportion blame.”

NOTE

This report is not written with litigation in mind and, pursuant to Regulation 14(14) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012, shall be inadmissible in any judicial proceedings whose purpose, or one of whose purposes is to attribute or apportion liability or blame.

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Collision between *Petunia Seaways* and *Peggotty* on the River Humber 19 May 2016

SUMMARY

At 0450 (UTC+1¹) on 19 May 2016 the Danish registered ro-ro freight ferry *Petunia Seaways* and the historic motor launch *Peggotty* collided on the River Humber while in dense fog. As a result of the collision the motor launch suffered severe structural damage and began to take on water. The crew of a local pilot launch responded to *Peggotty's* skipper's VHF² “Mayday” call and were able to reach the motor launch and rescue the skipper and the one other person on board before it sank. There were no injuries and no significant pollution.

Petunia Seaways' bridge team remained unaware that the two vessels had collided until after they had left the river, when they were informed by VTS Humber.

The MAIB investigation established that *Peggotty* was visible on both *Petunia Seaways'* and VTS Humber's radar displays, although neither acquired the target nor attempted to plot it. At the time of the accident *Petunia Seaways* had a speed over the ground of 14 knots and was not sounding a regular fog signal.

Although *Peggotty's* skipper/owner was an off-duty pilot employed on the River Humber, the short voyage from Grimsby to Hull was not being conducted in accordance with best maritime practice and *Peggotty's* seaworthiness was affected by a number of factors.

The MAIB investigation concluded that *Peggotty's* skipper became disorientated in the dense fog, resulting in him taking the motor launch into the shipping channel and subsequently into the path of the outbound ferry.

Image courtesy of shipspotting.com



Petunia Seaways

Image courtesy of Neil Fisher



Peggotty

¹ All times in this report are Universal Co-ordinated Time +1.

² VHF – very high frequency.

Associated British Ports conducted an internal investigation into the collision. This resulted in a number of actions being taken, including the suspension of both *Peggotty's* owner from his duties as a Humber pilot and *Petunia Seaways'* master's Pilotage Exemption Certificate for the Humber. A general notice providing guidance on navigation in fog and a specific notice to Vessel Traffic Services Operators aimed at clarifying their role during periods of restricted visibility were also issued.

No recommendations have been made in this report.

FACTUAL INFORMATION

Environmental conditions

On the morning of 19 May 2016 the visibility on the Humber River was very poor. VTS Humber had received a number of reports of dense fog throughout the morning with a maximum visibility of 180m. The dense fog had been forecast to last until approximately midday. There were light winds and the sea was calm.

Background

Peggotty's owner/skipper had advertised the launch for sale and the prospective buyer required a survey of the vessel be completed before the sale was agreed. Accordingly, the buyer had arranged for the launch to be lifted out of the water for survey at Hull Marina during the morning of 19 May, and the skipper had agreed to take *Peggotty* to the marina, accompanied by the buyer's representative who acted as his crew.

Narrative

At 0315 on 19 May 2016, *Peggotty's* skipper arrived with the buyer's representative at the vessel's berth in Alexandra Dock, Grimsby. Although this was the first time that the two men had met, the skipper was aware that the buyer's representative held an RYA³ Yachtmaster Ocean qualification and the buyer's representative knew that the skipper was a marine pilot employed on the River Humber. Both men were wearing personal flotation devices and the skipper carried a hand-held VHF radio.

Once on board *Peggotty*, the skipper discovered that the batteries used to start the engines were flat so he used his car battery to charge them. The skipper was then able to start *Peggotty's* twin engines. No pre-sailing checks were completed on the launch. To allow the launch to pass under a road bridge on its way to the river, *Peggotty's* mast was left stowed in its cradle on the starboard side of the main deck (**Figure 1**).

The buyer's representative noticed that the starboard sidelight and mast headlight were illuminated but that the port sidelight was extinguished. Seeing that the mast headlight would be of little use without the mast raised, he attempted to repair the port sidelight using the bulb from the mast headlight but, despite his best efforts, the port light remained unlit. The buyer's representative decided to accept the situation as the skipper had told him that it would soon be sunrise and that the fog would then lift.

By 0400, *Peggotty's* engines were running, her starboard sidelight was illuminated and the GPS plotter was switched on. With its scanner attached to the mast, the radar could not be used and it was not switched on. The buyer's representative had an electronic navigation application (app) on his iPad and, since this also showed AIS⁴ data, the two men decided to use this as their primary means of navigation. The skipper had opened the coach roof hatch above the helm position and, content with their preparations, they cast off. The skipper's intention was to take *Peggotty* through the lock at Royal Dock then out onto the River Humber and onwards to Hull.

³ RYA – Royal Yachting Association.

⁴ AIS – Automatic identification system.



Figure 1: *Peggotty* following the collision (note: stowed mast and deployed liferaft)

At about the same time loading operations had been completed on board the Danish registered ro-ro freight ferry *Petunia Seaways*, which was secured alongside its berth within the Outer Harbour at Immingham. The ferry operated a regular route between Immingham and Gothenburg and, although it was not scheduled to depart until 0500, it was not unusual to leave early if all the cargo was on board.

At 0408 *Petunia Seaways*' chief officer contacted VTS Humber and requested permission to sail, which was approved. The bridge team comprised the master, chief officer and a lookout. The lines were let go and, at 0411, the master began to manoeuvre the ferry away from its berth. At 0412:26, as the ferry began to gather headway, the master used the push-button to sound one long blast on the vessel's siren. The visibility was around 100m but the automatic fog signal was not switched on.

As *Petunia Seaways* headed out into the main channel, the master moved to the central starboard conning station and placed the engine control to half ahead and the steering to autopilot. He used the ECDIS⁵ and starboard radar display to monitor the vessel's progress. The chief officer took up his position at the central port station, adjacent to the master, where he was responsible for long-range traffic monitoring and VHF radio communication.

At around 0426, the vehicle carrier *Sea Cruiser 1* entered the Royal Dock lock inbound to Grimsby. *Peggotty* and the small private fishing vessel *Northern Star*, were both waiting to transit the lock outbound. At 0432:26 *Peggotty*'s skipper called VTS Humber on VHF channel 12 using his hand-held VHF radio. Although the duty VTSO⁶ replied to the skipper's call, he had misheard the vessel's name and replied using the name '*Heggotty*'; there was no response from *Peggotty*. Neither the owner nor the buyer's representative heard the VTSO's reply. At about the same time, the dock master at Grimsby ushered, first *Peggotty* and then *Northern Star* through the lock to enable them both to clear the area before the next inbound vessel, the vehicle carrier *City of Sunderland*, approached.

At 0433:11 *Petunia Seaways*' chief officer called VTS Humber on VHF channel 12 to report that the ferry was passing buoy 9 Alpha and visibility was 'zero'. The VTSO acknowledged the call. At 0433:41 *Peggotty* was clear of the lock, and the skipper called VTS Humber again. The VTSO responded, this time using the vessel's correct name but, again, his reply was not heard on board *Peggotty*.

⁵ ECDIS – electronic chart display and information system.

⁶ VTSO – vessel traffic services officer.

By 0436:55 both *Peggotty* and *Northern Star* had entered the inshore area north of Grimsby. *Peggotty* was on a north-easterly course at a speed of about 6 knots, while the fishing vessel was on an easterly course at a similar speed. Also in the vicinity were the dredger *UKD Bluefin*, which had been dredging in the river, and *City of Sunderland*, inbound for Grimsby. *Petunia Seaways* was approximately 3.5nm⁷ to the north-west on a COG⁸ of 115° and had a SOG⁹ of 11.1 knots.

At 0438:06 VTS Humber received another call from *Peggotty* that was noticeably quieter than previous transmissions. This caused the VTSO to respond '*Peggotty, VTS. You are very quiet, barely readable.*' There was no reply from *Peggotty*, which was now rapidly closing on *UKD Bluefin*.

The iPad navigation app had ceased to function shortly after *Peggotty* had exited the lock, and neither the skipper nor the buyer's representative were monitoring the launch's position or other traffic effectively. At 0440, with visibility still very poor, *Peggotty's* skipper saw *UKD Bluefin* close on his starboard side, and he altered the launch's course to port to bring it onto a north-westerly course. *Petunia Seaways* was now approaching the Sunk Spit buoy on a COG of 119° and an SOG of 12.8 knots.

Peggotty's skipper continued to steer a north-westerly course, across the southern buoy line and, at 0444:32, the launch entered the main shipping channel. Shortly afterwards *Northern Star's* skipper called VTS Humber to request permission to cross the channel. During the VHF conversation that followed, the VTSO advised the skipper that he could not see *Northern Star* on his radar display. He also stated that at that time *Petunia Seaways* was outbound with a speed at 14 knots. A screenshot of the VTSO's radar display at 0446 is at **Figure 2**.

During the VTSO's conversation with *Northern Star's* skipper, the officer on watch on the Hong Kong registered bulk carrier *Cape Star* interrupted several times, answering the VTSO and speaking over *Northern Star's* responses at times. None of these communications were heard on board *Peggotty*.

The collision

While the VTSO was speaking to *Cape Star*, *Petunia Seaways'* master noticed on his radar display what he believed to be a small, intermittent target forward of his vessel's starboard beam that he could not identify as a navigational mark. At 0447:16, following a discussion with the chief officer, who could not see the same target on his own display, the master used the push-button to sound a single long blast on the vessel's siren. He also adjusted the ferry's course by 5 degrees to port before pressing the push-button again at 0448:13. *Petunia Seaways* was now on a COG of 112° with a SOG of 14 knots. Shortly after sounding the second fog signal, the master slowly started to turn *Petunia Seaways* back onto its planned course of 120°.

On board *Peggotty* the skipper, concerned that he had not seen the channel buoys as anticipated, called out a latitude and longitude taken from the launch's GPS plotter for the buyer's representative to plot on the paper chart that was on board. With no plotting equipment, the buyer's representative had to estimate their position on the chart, but saw that the launch was in the main channel. He shouted this to the skipper, who was steering with his head up through the launch's coach roof. At the same time, *Peggotty's* skipper heard a single long blast fog horn but was unable to identify the direction from which it came. At 0449:17 the motor launch was directly ahead of *Petunia Seaways'* bow, still on a north-westerly course. Using his hand-held VHF radio, *Peggotty's* skipper again attempted to contact VTS, but the call was not received and so there was no response.

Moments later, *Peggotty's* skipper saw *Petunia Seaways'* bow looming above the launch. He attempted to manoeuvre away from the ro-ro vessel using both helm and engines, but when he saw that collision was unavoidable he stopped the engines and ducked back into the housing, shouting a warning to the buyer's representative.

⁷ nm – nautical miles.

⁸ COG – course over the ground.

⁹ SOG – speed over the ground.

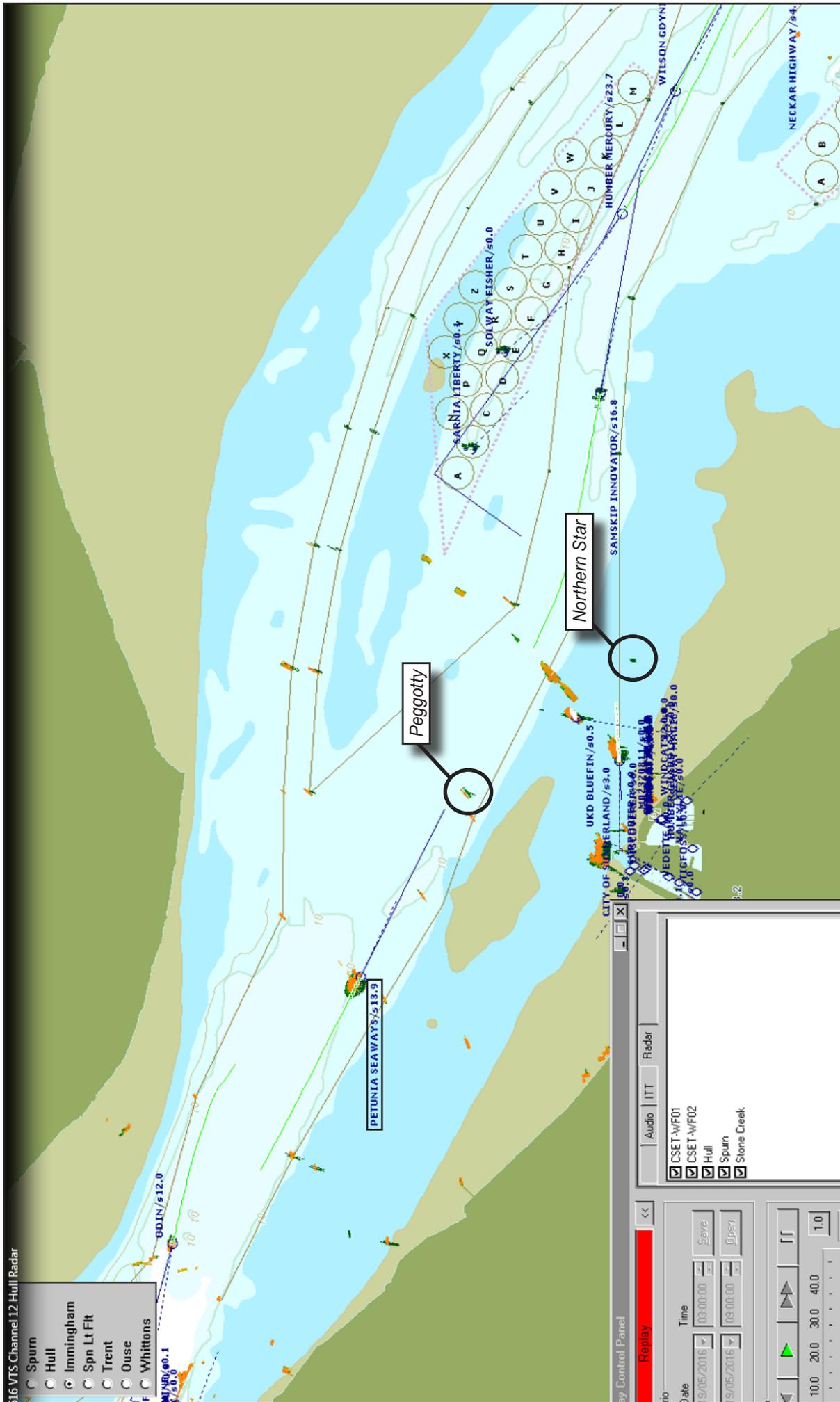


Figure 2: VTSO's radar display at 0446

At 0450 *Petunia Seaways*' port bow struck the port side of *Peggotty*'s stem, forcing its wheelhouse and side rails to starboard and spinning the launch to starboard as the ro-ro vessel's bow pushed the launch downwards. *Peggotty* then scraped down the ferry's port bow before passing clear along its port side. *Petunia Seaways*' bridge team, crew and passengers were unaware of the collision.

Events after the collision

As *Petunia Seaways* continued on its voyage, *Peggotty*'s crew were shocked but uninjured. *Peggotty*'s upper structure had been seriously damaged, and as the skipper began to gather his belongings together he saw that the forward cabin space had water seeping up through the deck. At 0454 *Peggotty*'s skipper called VTS and advised that the launch had been 'brushed by a ferry' and that *Peggotty* was taking on water and required assistance. During the resultant VHF conversation, the VTSO established that *Peggotty*'s own bilge pumps were working but not able to cope with the volume of water ingress, and that its position was just north of the Middle Burcom buoy. At 0457:38, encouraged by the buyer's representative, the skipper called a "Mayday" on his VHF as *Peggotty* began to sink by the bow.

At 0459.04, *UKD Bluefin* contacted VTS Humber and offered to respond, but was stood down by the VTSO as the VTS watch manager had decided to task the pilot launch *Venus* to assist. The watch manager had also notified Humber Coastguard of the "Mayday" and the Cleethorpes and Spurn lifeboats were tasked to attend.

At 0510 the pilot launch *Venus* was the first vessel to arrive on scene; the coxswain had located the launch's position from the hand flare set off on board *Peggotty*. As *Venus* approached the stricken launch, which was still afloat but significantly down by its head, the crew could see that the liferaft had been deployed. *Peggotty*'s crew were able to step from the launch directly onto *Venus* and were returned to shore while the Cleethorpes lifeboat stood by the sinking launch. *Peggotty* sank approximately 30 minutes after the collision with *Petunia Seaways*. VTS did not broadcast an all ships' information bulletin informing traffic of the "Mayday" situation either during or after the rescue.

Peggotty

Built in 1944, *Peggotty* was recorded on the Historic Ships Register as one of a class of launches constructed after the Dunkirk evacuation. The skipper/owner had bought *Peggotty* in 2013 but a growing family and busy work schedule had prevented the family from making best use of the launch and the decision had been made to sell it.

The launch was built from solid oak frames and diagonal mahogany timbers, and required regular maintenance to maintain the watertight integrity of the hull. In an attempt to minimise hull degradation, the skipper had covered the lower 1 metre in fibreglass. Internally, the launch's hull was divided into three compartments each with its own bilge level monitor and automated bilge pumping arrangements.

Peggotty had a sliding coach roof and its mast could be stowed in a cradle on the starboard side of the main deck. Navigational aids carried comprised a console-mounted GPS plotter, radar, echo-sounder, autopilot and two fixed VHF radio sets. The GPS plotter was not equipped with the chart data card required to display charts for the Humber area, but its positional information was accurate. The radar's scanner was attached to the mast, so the radar could only be operated when the mast was raised. The radar had a guard-zone facility and was reported to be operational prior to the day of the accident. There was no compass on board.

Peggotty's crew

Peggotty's skipper held an STCW II/2¹⁰ unlimited master's certificate. He had been employed as a pilot on the Humber since August 2014, and was authorised to complete acts of pilotage on vessels with draughts of less than 7 metres.

¹⁰STCW – International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended.

The buyer's representative had formerly served as an engineer in the Royal Navy. He held an RYA Yachtmaster Ocean certificate, issued in 1998, and had previously worked as a safety boat skipper.

Petunia Seaways

Petunia Seaways was a ro-ro cargo ferry that operated on a regular route between Immingham, England and Gothenburg, Sweden. The vessel's bridge was located halfway along its longitudinal length, 100m aft of the bow. When loaded and carrying deck cargo, *Petunia Seaways* had a blind sector 98m ahead of its bow in which objects and vessels were not visible to those on the bridge. Therefore, when visibility was restricted to less than 200m, objects and vessels were not visible from the bridge.

Petunia Seaways' bridge team

Petunia Seaways' master was a Danish national and held an STCW II/2 unlimited master's certificate. He had been a PEC¹¹ holder for Immingham for almost 20 years and had completed over 2000 acts of pilotage at the port.

The chief officer was a Swedish national and held an STCW II/2 unlimited master's certificate. He had been a PEC holder for Immingham for 3 years. The chief officer had been with the company for 4 years and had sailed as relief master on some of the company's other ferries.

Petunia Seaways' bridge equipment

Petunia Seaways had an integrated bridge system in which the ECDIS, radars and AIS were interconnected. There were two radar displays, each capable of being switched between the X and S-band scanners, both of which were able to have ECDIS overlays on them. The two ECDIS stations were independent systems with one used for navigation and the other for planning and back-up. There was also a simplified AIS display, which was also interfaced with the radars and ECDIS.

Humber Vessel Traffic Services

VTS Humber monitored and assisted shipping traffic in the Humber Estuary. The Estuary was divided into two areas, each with its own dedicated VHF channel. Vessels approaching the Humber Estuary from seaward were required to use VHF channel 14, whereas vessels west of the Cleanness light float were directed to use VHF channel 12. The collision between *Peggotty* and *Petunia Seaways* occurred within the channel 12 area.

Vessel Traffic Services personnel training standards

The recognised international standard for training and certification of VTS personnel is V-103, developed by IALA¹². VTS personnel holding a V-103 compliant qualification are expected to have and maintain the standard of communications required to facilitate management of traffic flow within their area. This includes, inter alia, the use of standard marine vocabulary¹³, including message markers¹⁴.

¹¹PEC – pilotage exemption certificate.

¹²IALA – The International Association of Marine Aids to Navigation and Lighthouse Authorities

¹³Additional information can be found in the IMO Standard Marine Communication Phrases (IMO-SMCP) ISBN 978-92-801-42112.

¹⁴A message marker is a single word used by the operator to indicate to the officer of the vessel what the content of the following message will be. There are eight approved message markers, which are: Answer; Intention; Question; Warning; Advice; Information; Instruction; and Request.

Vessel Traffic Services Officer covering the area of the accident

The VTSO responsible for the area of the accident had previously served in a marine role at the port for 17 years, before moving into roles ashore at various ports. He had been a VTSO for the channel 12 area of the Humber since January 2016 having gained VTS qualifications and experience at another port prior to returning to the Humber.

Guidance and applicable regulations for pleasure vessels

MGN 538 (M) *Pleasure Vessels Guidance and Applicable UK Regulations*¹⁵ provides guidance and advice on both mandatory requirements and best practice for UK pleasure vessels over 13.7m in length. Relevant guidance applicable to *Peggotty* included:

- The requirement to comply with SOLAS¹⁶ V/34 Safe Navigation and the avoidance of dangerous situations.
- The requirement to fit a radar reflector, if practicable, in compliance with SOLAS V/19.
- The obligation to comply with the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS¹⁷).

ANALYSIS

The collision

Petunia Seaways and *Peggotty* collided in dense fog as neither the master of *Petunia Seaways* nor the skipper of *Peggotty* was aware of the proximity of the other vessel. *Petunia Seaways*' master had detected a small target on his radar and altered his vessel's course to take avoiding action. However, due to his lack of conviction as to the authenticity of the target, the action taken was insufficient and too late to avoid a collision. Given the poor visibility and the difference in size and material of the vessels, it is not surprising the collision went unnoticed on board *Petunia Seaways*.

Peggotty's skipper had been unable to determine the direction from which the single fog signal he had heard was approaching. He was also only just becoming aware that the launch was in the main channel when he saw *Petunia Seaways*' bow at close quarters, by which time it was not possible for him to take action that would avoid a collision.

Peggotty

Passage plan

As a pleasure vessel, *Peggotty* was not required to have a formal passage plan. However, as described in MGN 538, it would have been prudent and best practice to have developed one. A passage plan not only sets out the intended route, but it also identifies navigational hazards and operational limits, and facilitates mitigation of these through prior consideration and monitoring. A formal passage plan also enables the allocation of roles and the development of a shared understanding of intentions.

The skipper had a mental plan for *Peggotty*'s voyage to Hull, in that he intended to follow the southern buoy line towards Hull before crossing the channel in order to reach the marina in time for the lift. However, his plan relied upon his own local knowledge and being able to visually sight the buoys. He had not considered any method of position fixing for the voyage and did not re-assess his plan when it was apparent that the dense fog would make it impossible to see the buoys.

¹⁵https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/460848/MGN_538.pdf

¹⁶International Convention for the Safety of Life at Sea, 1974, as amended.

¹⁷COLREGS – The Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996 (SI 1996/75), as amended.

The skipper's own confidence in his ability was reflected by the buyer's representative, whose assessment, in the absence of a written passage plan, was based solely on the skipper's professional occupation. As a result of this misplaced confidence, the buyer's representative allowed the skipper to continue without challenge, despite his misgivings regarding both the seaworthiness of the launch and the wisdom of sailing out into the dense fog.

The apparent functionality of the iPad navigation app gave both men false confidence in their ability to navigate safely in the dense fog. However, neither man had used the system before and no back-up arrangements, such as rigging the mast to use the radar, were considered. Therefore, when the iPad lost a reliable Wi-Fi signal and the iPad app stopped working, *Peggotty* was immersed in the fog with no buoyage visible and the skipper lost his situational awareness entirely. Despite this, he continued on passage, hoping to see a channel buoy. It is possible the skipper felt some pressure to complete the voyage and make the scheduled survey or risk losing the sale. Nevertheless, it is evident that the skipper's failure to review his mental plan or delay the voyage pending better visibility resulted in the launch entering the main shipping channel, placing the skipper, the buyer's representative and the launch itself in danger.

Seaworthiness

Peggotty was a historic launch and of sound construction when built. However, at the time of the accident the launch was over 70 years old and it had not been subjected to a structural survey for at least 20 years. It is without doubt that *Peggotty*'s wooden hull failed in the collision with *Petunia Seaways*. As no direct source of water ingress was visible, it is likely that the launch's planking failed along the upper limit of the lower hull's fibreglass coating, leading to catastrophic damage and making the loss of the launch inevitable.

Peggotty was equipped with a radar, a GPS plotter, navigational lights and a hand-held fog horn. However, it was not equipped with a radar reflector, the radar scanner was not rigged, the GPS plotter did not have the correct charts, and although there was a paper chart on board there were no plotting instruments. Furthermore, the navigational lights were faulty and the hand-held fog horn was not sounded regularly.

These shortcomings meant that when *Peggotty* departed the Grimsby Royal Dock lock it could not be considered seaworthy as it did not meet the requirements specified by SOLAS and the COLREGs. These requirements would have been well known to the skipper and it is unfortunate that he did not apply his professional competence to his personal endeavours, so as to ensure the safety of *Peggotty* and all on board.

Petunia Seaways

Procedures in Fog

Rule 19 of the COLREGs prescribes the actions and manoeuvres of ships in restricted visibility situations. Specifically, Rule 19 requires that vessels proceed at a safe speed adapted to the circumstances and conditions, show the correct navigational lights and sound the prescribed sound signals.

As part of its investigation the MAIB examined the average speed of *Petunia Seaways* during her three previous departures from Immingham and found the vessel's SOG was between 14 and 17 knots. These transits were completed in clear visibility, by the same master, under various traffic situations. When *Petunia Seaways* and *Peggotty* collided, the ro-ro vessel's SOG was 14 knots. This indicates that *Petunia Seaways* was proceeding at a speed that was similar to its usual speed in good visibility; not reduced in light of the dense fog. In any event it is clear that since *Petunia Seaways* was unable to take adequate action to avoid colliding with *Peggotty* it cannot have been proceeding at a safe speed. A significant

reduction in speed would have permitted more time to assess the situation when the unidentified target appeared on the master's radar screen, and provided more options for effective avoiding action as well as reducing the impact speed.

Petunia Seaways' master was operating a radar on S-band, which is known to be less susceptible to performance degradation due to weather conditions than X-band. The chief officer was monitoring on X-band radar, and when the master questioned the validity of a target the chief officer was, perhaps understandably, unable to see the target on his radar screen. However, the chief officer did not check the master's radar display, change scale on his radar display or switch over to see the S-band display that the master was looking at. It is possible that, had the chief officer verified the master's observation of a target, the master might have taken earlier or more substantial actions to avoid collision.

It is not known why the fog horn on *Petunia Seaways* was not set to sound automatically as the vessel departed Immingham. Had it been sounding regularly it is possible that *Peggotty's* skipper would have been alerted to the proximity of the ferry and the direction from which it was approaching, which could have prompted him to take earlier evasive action.

Vessel traffic services

The fundamental purpose of VTS is to facilitate the safe passage of all vessels within the designated area. In this case, opportunities to make effective use of the information available were missed.

Situational awareness

Given the size of the channel 12 area and the lack of information and communication from *Peggotty's* skipper prior to the collision, it is not surprising that the VTSO did not identify the small target on his radar screen as being *Peggotty*. However, following his brief to the skipper of *Northern Star* regarding the outbound *Petunia Seaways*, it is unfortunate that the VTSO did not notice the small target in the main channel directly ahead of the ro-ro vessel. Furthermore, the VTSO did not identify *Northern Star* on his screen despite having been given accurate positional information about the vessel's position. Additionally, he failed to speedily identify *Peggotty's* position post-collision, again having been given an accurate position of the vessel.

With over 4 months' experience on the channel 12 desk and 17 years of marine experience at the port, fog on the Humber was not a new experience for the VTSO and it should have prompted a high level of attention.

Radio protocol

V-103 provides standard radio protocols to enable effective communication between VTSOs and ships, including the use of message markers to highlight the nature of the transmission that is about to follow, i.e. an instruction or information broadcast.

The lack of appropriate radio protocol by the VTSO permitted the inbound *Cape Star* to dominate VHF channel 12 for almost 5 minutes at what, in retrospect, turned out to be a critical time. Had the VTSO instructed *Cape Star* to 'standby' while he concluded his communication with *Northern Star*, he would have maintained greater control over the channel.

Despite receiving accurate positional information from *Peggotty's* skipper immediately following the reported 'brush with a ferry', the VTSO took a reactive stance, answering queries and offers to provide assistance from vessels who were listening to the VHF channel. Given the information available to him, the fact that *Peggotty* was visible on his radar screen at the position given, and the poor visibility, it would have been prudent for the VTSO to broadcast an all ships "information" or "advice" bulletin, advising traffic to proceed with caution within the vicinity of the accident.

CONCLUSIONS

- *Peggotty* was not seaworthy as it did not meet the requirements specified by SOLAS and the COLREGs.
- *Peggotty*'s skipper did not reassess his mental passage plan when it was apparent that the fog would make visual navigation impossible.
- The action taken by *Petunia Seaways*' master was insufficient and too late to avoid a collision.
- A reduction in *Petunia Seaways*' speed would have allowed the master more time to assess the radar target ahead of him.
- Had *Petunia Seaways*' fog horn been sounding regularly, *Peggotty*'s skipper might have been alerted to his situation.
- The VTSO did not monitor small vessels effectively to deconflict traffic.
- The VHF conversation between the VTSO and *Cape Star* was a distraction during a critical time.
- It would have been prudent for the VTSO to advise traffic to proceed with caution within the vicinity of the accident.

ACTION TAKEN

Actions taken by other organisations

Associated British Ports has:

Completed an investigation into the collision and has subsequently implemented the following actions:

- Suspended *Petunia Seaways*' master's PEC for the Humber.
- Suspended *Peggotty*'s owner from his duties as a Humber pilot.
- Completed an extensive survey in an attempt to locate the wreck of *Peggotty*.
- Issued a general notice to pilots, PEC holders and launch crew that provides both general guidance and, with reference to MGN 369 Navigation in Restricted Visibility and the COLREGS, guidance in navigation in fog.
- Issued a general notice to VTSOs aimed at clarifying the role and responsibility of VTS when vessels are navigating in fog on the Humber.
- Conducted a review of refresher training needs for all VTSOs.
- Reviewed the effectiveness of guidance provided to recreational craft operating within the Humber Estuary for navigation in restricted visibility.
- Continued to complete its information sessions at yacht clubs and other organisations that utilise the River Humber highlighting ABP's findings on this incident.
- Introduced a small craft database to promulgate the locations of small craft departing or expected at ABP locations on the Humber.

RECOMMENDATIONS

In view of the actions already taken, no recommendations have been made.

SHIP PARTICULARS

Vessel's name	<i>Petunia Seaways</i>	<i>Peggotty</i>
Flag	Denmark	United Kingdom
Classification society	Lloyds Register	n/a
IMO number	9259501	n/a
Type	Ro-Ro Cargo	Motor launch
Registered owner	DFDS A/S	Privately owned
Manager(s)	DFDS A/S	n/a
Construction	Steel	Wood
Year of build	2003	1944
Length overall	199.80m	15.69
Registered length	n/a	n/a
Gross tonnage	32289	23
Minimum safe manning	11	n/a
Authorised cargo	Freight	n/a

VOYAGE PARTICULARS

Port of departure	Immingham, UK	Grimsby, UK
Port of arrival	Gothenburg, Sweden	Hull, UK
Type of voyage	Short international	Internal waters
Cargo information	Loaded	n/a
Manning	17	2

MARINE CASUALTY INFORMATION

Date and time	19 May 2016 0450 (UTC+1)	
Type of marine casualty or incident	Very Serious Marine Casualty	
Location of incident	River Humber	
Place on board	Ship	Ship
Injuries/fatalities	None	None
Damage/environmental impact	Slight scratches to hull paintwork on port bow	Vessel lost. No significant pollution
Ship operation	On passage	On passage
Voyage segment	Departure	Mid-water
External & internal environment	Visibility: Dense Fog Wind: Light airs Sea: Calm Sunrise: 0452 HW at Hull: 0522 4.6m HW at Grimsby: 0511 6.3m	
Persons on board	21	2