

Report on the investigation of
the collision between
Thelisis and Our Sarah Jayne
in the
Thames Estuary
20 June 2001

Marine Accident Investigation Branch
First Floor
Carlton House
Carlton Place
Southampton
United Kingdom
SO15 2DZ

**Report No 9/2002
February 2002**

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.

CONTENTS

	Page
GLOSSARY OF ABBREVIATIONS	
SYNOPSIS	1
SECTION 1 - FACTUAL INFORMATION	2
1.1 Particular of <i>Thelisis and Our Sarah Jayne</i> and accident	2
1.2 Description of vessels	5
1.3 Background	6
1.4 Trawling	6
1.5 Manning and certification	7
1.6 The pilot	8
1.7 Environmental conditions	8
1.8 Narrative of events (all courses are true)	8
1.9 Thames VTS	10
1.10 Collision Regulations	11
1.11 Use of VHF radio in collision avoidance	14
1.12 Navigational watch on fishing vessels	15
1.13 Pilot/fisherman relationship	16
1.14 Pilot/bridge team relationship (<i>Thelisis</i>)	16
1.15 Survey of the wreck (<i>Our Sarah Jayne</i>)	17
1.16 Damage (<i>Thelisis</i>)	17
SECTION 2 - ANALYSIS	20
2.1 Aim	20
2.2 Cause of the collision	20
2.3 VTS information	20
2.4 Action by the pilot	21
2.5 Working relationship between pilots and fishermen	22
2.6 Action by the master (<i>Thelisis</i>)	22
2.7 Action by the skipper (<i>Our Sarah Jayne</i>)	22
2.8 Manning (<i>Our Sarah Jayne</i>)	23
SECTION 3 - CONCLUSIONS	24
3.1 Findings	24
3.2 Cause	25
3.3 Contributing factors	25
SECTION 4 - RECOMMENDATIONS	26
Figure 1 <i>Thelisis</i>	
Figure 2 <i>Our Sarah Jayne</i>	
Figure 3 Bridge of <i>Thelisis</i>	
Figures 4 & 5 Thames VTS radar recording	
Figures 6 & 7 Collision damage <i>Our Sarah Jayne</i>	
Figure 8 Damage <i>Thelisis</i>	
Annex 1 Thames VTS VHF radio transcript	
Annex 2 Harbourmaster's memo	

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AB	-	Able bodied seaman
ETA	-	Estimated time of arrival
GPS	-	Global positioning system
gt	-	gross tons
kW	-	kilowatt
MCA	-	Maritime and Coastguard Agency
MF	-	Medium frequency
MGN	-	Marine Guidance Note
PLA	-	Port of London Authority
Ro-Ro	-	Roll on – Roll off
UTC	-	Universal co-ordinated time
VHF	-	Very high frequency
VTS	-	Vessel traffic services

SYNOPSIS



On 20 June 2001, the 8,904gt Greek-registered ro-ro cargo vessel *Thelisis*, collided with the 14.02m UK-registered fishing vessel *Our Sarah Jayne* in the Thames Estuary. The accident was reported to the Marine Accident Investigation Branch (MAIB) that day, and an investigation began immediately.

At the time of the collision *Thelisis* was under pilotage and *Our Sarah Jayne* was engaged in fishing.

As a result of the collision, *Our Sarah Jayne* flooded then foundered. The skipper, who was operating his vessel single-handedly, was rescued by a Thames pilot cutter. There were no injuries. *Thelisis* sustained slight damage to her hull plating.

The cause of the accident was the failure by the pilot on board *Thelisis* to take avoiding action in sufficient time, and the failure of the skipper on board *Our Sarah Jayne* to keep a proper lookout in accordance with the *Collision Regulations*.

Contributing factors were:

- The pilot's reliance on the use of VHF radio for collision avoidance.
- The pilot's complacency and expectation that *Our Sarah Jayne* would alter course on his request.
- The master of *Thelisis* failing to override the pilot's instructions.
- The decision by *Our Sarah Jayne*'s skipper to sail single-handedly, thereby denying himself the ability to keep a safe navigational watch.

Recommendations have been addressed to the PLA, the owner of *Thelisis* and also to *Our Sarah Jayne*'s skipper and owner, which if implemented should reduce the risk of such an accident recurring.

SECTION 1 - FACTUAL INFORMATION

(All times are UTC + 1)

1.1 PARTICULARS OF THELISIS/OUR SARAH JAYNE AND ACCIDENT

Vessel details		<i>Thelisis</i>
Registered owner	:	Bonanza Maritime, Piraeus, Greece
Manager	:	Efthymiou Shipping, Piraeus, Greece
Port of registry	:	Piraeus
Flag	:	Greece
Type	:	Ro-ro cargo
Built	:	1979
Classification society	:	Registro Italiano Navale
Construction	:	Steel
Length overall	:	132.8m
Breadth	:	20.32m
Gross tonnage	:	8904
Engine power and type	:	5370kW Heavy oil
Service speed	:	18 knots
Accident details		
Time and date	:	0119 on 20 June 2001
Location of incident	:	Thames Estuary
People on board	:	19
Injuries/fatalities	:	None
Damage	:	Slight shell plate damage – aft starboard quarter

Vessel details*Our Sarah Jayne*

Registered owner : Mr B J Martin, Whitstable, Kent
Port of registry : Brixham
Type : Trawler
Flag : UK
Fishing Number : BM 116
Built : 1973 Appledore, Devon
Construction : Wood
Length overall : 14.02m
Registered length : 13.42m
Breadth : 4.88m
Depth : 1.68m
Gross tonnage : 20.94
Engine power and type : 130kW
Service speed : 10 knots

Accident details

Time and date : 0119 20 June 2001
Location of incident : Thames Estuary
Position of foundering : 51° 28.6' N 001° 23.9' E
People on board : 1
Injuries/fatalities : None
Damage : Total loss

Figure 1



Thelisis

Figure 2



Our Sarah Jayne

1.2 DESCRIPTION OF VESSELS

Thelisis

Thelisis, built of steel in 1979, was a conventional ro-ro cargo vessel. Her design incorporated two decks above the waterline with a stern ramp. The bridge, which ran the full width of the vessel, was positioned aft, above the superstructure and accommodation (**Figure 1**).

She was equipped with standard navigational equipment which included: GPS, two relative motion radars, gyro compass with auto-pilot, MF radio, VHF radio and echo sounder.

The helm position was situated centrally at the forward end of the bridge, with tiller controls on the extreme port and starboard sides. The main engine controls were strategically placed in an operating console to starboard of the helm position (**Figure 3**).

There was a chart room at the aft end of the bridge.

Figure 3



Bridge of *Thelisis*

Our Sarah Jayne

Our Sarah Jayne was built of wood in 1973. Her design incorporated one deck above the waterline. Above deck, the wheelhouse was positioned aft. A trawl winch was situated forward of the wheelhouse. Aft of the wheelhouse was a net drum mounted on a stern gantry (**Figure 2**).

Below the main deck, the accommodation was situated aft. Forward of the accommodation was the engine room, and forward of this was the fishroom. They were separated by non-watertight bulkheads.

Our Sarah Jayne was also equipped with standard navigational equipment which included: GPS, relative motion radar, magnetic compass with auto-pilot, MF radio, 2 VHF radios, echo sounder and a fish finder.

1.3 BACKGROUND

Thelisis, managed by Efthymiou Shipping of Piraeus, Greece, was engaged in the worldwide ro-ro cargo trade and was an infrequent visitor to the port of London.

Her previous port of call was Valencia, Spain, from which she sailed on 13 June 2001, bound for the port of Tilbury, with a cargo of potatoes stored on pallets and in containers.

Our Sarah Jayne had always been in the skipper's family. She operated daily from the port of Whitstable. At the time of the accident she was engaged in trawling for sole.

Fishing was conducted throughout the night with the vessel normally leaving the harbour in the late evening and returning the following morning to land her catch.

The vessel was operated single-handedly.

Normally she would have had a crew of two. However, due to commercial pressures, she had been operated single-handedly since March 2001, and at various times in the past.

1.4 TRAWLING

Trawling is a method of fishing using a bottom trawl net, which is pulled along the seabed by means of trawl wires connected to the winch on the vessel.

A slow trawling speed and high propeller torque are required to pull the trawl along the seabed.

While engaged in trawling, a fishing vessel is hampered by her fishing gear, and her manoeuvrability is restricted. During the hauling and shooting operation, trawlers are likely to make unpredictable movements.

1.5 MANNING AND CERTIFICATION

Our Sarah Jayne

The skipper was the only person on board *Our Sarah Jayne*.

Under *The Fishing Vessels (Certification of Deck Officers and Engineer Officers) Regulations 1984*, she was not required to carry any certificated persons on board.

The skipper was an experienced fisherman, having been employed as skipper for the last 15 years, 13 years of which he spent aboard *Our Sarah Jayne*.

He had completed the three mandatory training courses: first-aid, fire-fighting and basic sea survival.

There is no prescriptive requirement for manning levels on board UK fishing vessels. Provided they are seaworthy and the required number of certificated persons are carried, in accordance with the regulations, fishing vessels can operate with as few persons as the skipper/owner sees fit.

Thelisis

Thelisis carried a crew of 19: a master, seven officers, a bosun, five ABs, a cook, two mess boys, a fitter and an electrician.

Seven of the crew, including the master and chief officer, were Greek. Six, including the second and third officers were Egyptian, and the remainder were Pakistani.

The bridge team at the time of the accident consisted of the master, second officer, helmsman and pilot.

The master was the holder of a Greek unrestricted master's certificate of competency. He had over 30 years' experience on various merchant vessels and had served as master for over 2 years. He joined *Thelisis* in Houston in March 2001.

The second officer was the holder of an Egyptian chief mate's certificate of competency. He had over 13 years' experience, having been employed mainly as second officer. He had been employed on board *Thelisis* for 8 months.

The helmsman was also experienced, having served as AB for 7 years. He had steered *Thelisis* on several previous occasions.

1.6 THE PILOT

The pilot was an experienced mariner.

Before his employment with the Port of London Authority (PLA) he had spent several years at sea, first as an officer cadet, and eventually progressing to master. He had served on various vessels worldwide.

He joined the PLA in 1998 as a trainee pilot. Since then he had progressed to a class 2 pilot, and had completed over 350 acts of pilotage.

Normally working a roster system of 9 days on and 6 days off, he was called in on an overtime basis from his off-duty period to conduct the pilotage on board *Thelisis*. His previous pilotage act had been 2 days before the accident.

1.7 ENVIRONMENTAL CONDITIONS

The weather reported throughout the incident was a southerly wind of force 2 with a negligible sea swell. The visibility was very good.

The predicted time of high water at Sheerness on 19 June was 2306 with low water on 20 June at 0523. The ebb tide was flowing in a predicted direction of 067° at a rate of 1.2 knots.

1.8 NARRATIVE OF EVENTS (ALL COURSES ARE TRUE)

Thelisis arrived at the NE Spit pilot station, east of Margate Road, and dropped anchor at 1800 on 19 July 2001. The pilot was ordered for later on that evening for passage to Tilbury dock, where she was due to arrive at 0600 the following morning to discharge her cargo.

At 1900 *Our Sarah Jayne's* skipper left home and made his way to the harbour to join his vessel. He had been at home, asleep all afternoon, as he usually did when engaged in night fishing. Arriving at the vessel at 2015, he loaded some stores and made preparations for sailing. At 2045, in the company of the fishing vessels *Charlie Boy* and *Tiscino*, *Our Sarah Jayne* left Whitstable harbour bound for the fishing grounds close to Margate Road. Shortly before 2300, she arrived on the grounds, shot her gear, and began towing in a north-easterly direction.

At 2300, the pilot assigned to *Thelisis* left Gravesend by taxi, arriving an hour later in Ramsgate where he joined the pilot cutter. At approximately the same time *Our Sarah Jayne* hauled her gear; the catch was poor so the skipper decided to steam north to Queens Channel. Arriving at 0030, she once again shot her gear and this time began towing on an approximate course of 270° at a speed of about 2 knots through the water.

As the pilot boarded *Thelisis* her crew were in the process of weighing anchor. The time was 0050.

Once on board, the pilot was escorted to the bridge and introduced to the master. The second officer and a helmsman were also on the bridge. The pilot explained the passage plan to the master, had it signed, asked some questions relevant to the pilot card and then ordered half speed.

On board *Our Sarah Jayne*, the skipper was on watch sitting in the wheelhouse chair. The radar was switched off and the vessel was being steered by auto-pilot. One VHF radio was tuned to channel 12 and the other to channel 6. The skipper observed three outward bound vessels passing to the north. He was also aware of another vessel, inbound, some distance to the south-east, which he considered would pass astern.

After rounding Margate buoy the pilot on *Thelisis*, which was in manual steering with a dedicated helmsman, ordered a course of 290°. The second officer was manning the engine controls, and both the master and the pilot were looking out ahead.

The pilot had decided to steer a course between three vessels to the north-west of *Thelisis*, outward bound in the Princes Channel, and another three vessels to the south, from the Medway ports, who were, or shortly would be, landing pilots.

When *Thelisis* came on to a course of 290° her speed was approximately 8 to 9 knots. Both the pilot and the master then noticed a white light ahead at an approximate range of 1.5 miles. They were both unsure as to the nature of the light, so the pilot called VTS to ask if they could provide any information on it from their radar coverage. The time was 0108. VTS replied to the effect that they did not know the name of the vessel and said "He's not doing anything. He's zero".

Because of the outward bound traffic, the pilot decided to pass to the south of the vessel, although there was sufficient searoom to pass on either side. He altered course to port by a few degrees and, shortly afterwards, became aware both visually and by radar, that the other vessel was making way and on a steady bearing with the distance decreasing. The range of the other vessel was then approximately 1 mile. He tried calling her twice on VHF radio channel 12 at 0113. The only reply to the VHF radio calls came at 0117 from *Spruce*, an outward bound vessel in the Princes Channel. Initially, the pilot thought *Spruce* was the name of the fishing vessel ahead; however after a short time he realised this was not the case. He asked the second officer to sound prolonged blasts on the whistle, and to direct the searchlight to attract the other vessel's attention. Realising the imminent danger of a collision, the pilot then ordered an alteration of course hard to port. As the stern of *Thelisis* swung round to starboard, her starboard quarter collided with *Our Sarah Jayne's* port side. The time was 0119.

Our Sarah Jayne's skipper first became aware of *Thelisis* in close proximity when he noticed her wash out of a port side wheelhouse window. The next thing he recalled was being virtually thrown from the wheelhouse chair when the vessels collided. As a result of the collision *Our Sarah Jayne* was inclined to such an extent that seawater started to pour through a partly open wheelhouse window. In addition to this, alarms began to sound in the wheelhouse as seawater entered the engine room through the damaged hull.

The skipper tried to contact *Thelisis* using VHF radio channel 12, but was unsuccessful. He then tried to make contact first with VTS, and then the coastguard on the same channel, before he managed eventually to contact the pilot cutter on channel 9 and report his situation. This was followed by another call soon after; this time reporting that the main engine had stopped and the vessel was flooding rapidly. The pilot cutter relayed this information to VTS and the pilot station who, in turn, informed the coastguard.

The pilot on board *Thelisis* was unaware that the vessels had collided and continued the port manoeuvre, eventually making a full turn to port before swinging back to starboard, clearing *Our Sarah Jayne* to the south. He then heard on the VHF radio that the pilot cutter was on her way to assist the fishing vessel. On hearing this he ordered dead slow and informed the pilot cutter and VTS that he would be standing by, in case further assistance was required.

As soon as the pilot cutter arrived alongside *Our Sarah Jayne*, the skipper abandoned his vessel, which was by now heavily listed to starboard because of the floodwater. Twenty minutes later *Our Sarah Jayne* sank.

The skipper was transferred ashore at Ramsgate by the pilot cutter, and *Thelisis* continued her passage upriver.

1.9 THAMES VTS

Thames VTS provides a navigation service for vessels entering and leaving the area under the control of the Port of London Authority (PLA).

A station situated in Gravesend provides coverage for the lower region, including the Thames estuaries. It is manned 24 hours a day, monitoring and providing advice to traffic transiting the Thames. All vessels over 40m overall length are required to report to VTS at designated points with their intended movements. Vessels of more than 20m in length are required to maintain a VHF radio listening watch. Neither requirement applied to *Our Sarah Jayne*, since she was 14.02m in length.

Apart from the VTS operators, a duty port controller, who is a Thames class 1 pilot employed on a rotational basis, is responsible for the day to day operation. VTS operators have a good working relationship with the pilots. Navigational advice is given in response to requests from vessels and where safety considerations require. Generally, pilots are aware of the limitations of the advice provided.

The position of the accident is within the coverage area provided by Thames VTS. The events leading up to the accident were recorded both on radar and VHF radio channel 12 **(Figures 4 & 5) (Annex 1)**.

On 27 July 2001, the harbourmaster (Lower District) issued a memo stating that targets acquired by VTS radars to the east of Crayfordness will display track information of zero speed and zero course unless the speed is greater than approximately 2 knots over the ground **(Annex 2)**.

1.10 COLLISION REGULATIONS

Rule 5 of the *International Regulations for Preventing Collisions at Sea 1972 (Collision Regulations)* states:

Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

Rule 8, in part, states:

- (a) *Any action taken to avoid collision shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.*
- (b) *Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar; a succession of small alterations of course and/or speed should be avoided.*
- (c) *If there is sufficient sea-room, alteration of course alone may be the most effective action to avoid a close-quarters situation provided that it is made in good time, is substantial and does not result in another close quarter situation.*
- (e) *if necessary to avoid a collision or allow more time to assess the situation, a vessel shall slacken her speed or take all the way off by stopping or reversing her means of propulsion.*

Rule 13 states:

Notwithstanding anything contained in the Rules of part B, sections 1 and 2, any vessel overtaking any other vessel shall keep out of the way of the vessel being overtaken.

- (a) *A vessel shall be deemed to be overtaking when coming up with another vessel from a direction of more than 22.5 degrees abaft her beam, that is, in such a position with reference to the vessel she is overtaking, that at night she would be able to see only the sternlight of that vessel but neither of her sidelights.*

Figures 4 and 5 reproduced courtesy of PLA

Figure 4



Thames VTS radar recording

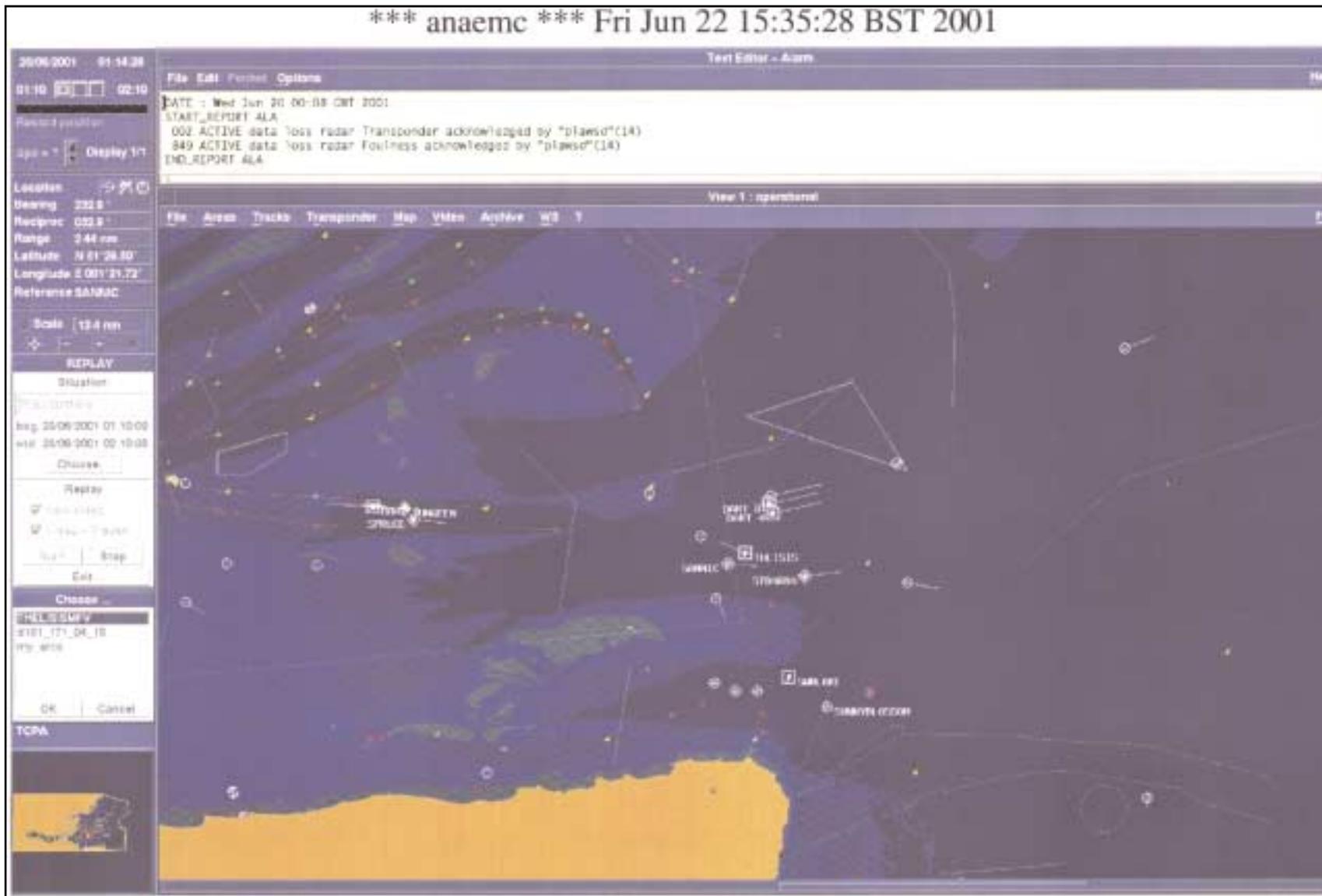


Figure 5

Thames VTS radar recording

- (b) *When a vessel is in any doubt as to whether she is overtaking another, she shall assume that this is the case and act accordingly.*
- (c) *Any subsequent alteration of the bearing between the two vessels shall not make the overtaking vessel a crossing vessel within the meaning of these Rules or relieve her of her duty of keeping clear of the overtaken vessel until she is finally past and clear.*

Rule 17 (a), in part, states:

- (a) (i) *Where one of two vessels is to keep out of the way the other shall keep her course and speed.*
- (ii) *The latter vessel may however take action to avoid collision by her manoeuvre alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.*
- (b) *When from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the give-way vessel alone, she shall take such action as will best aid to avoid collision.*
- (d) *This Rule does not relieve the give-way vessel of her obligation to keep out of the way.*

1.11 USE OF VHF RADIO IN COLLISION AVOIDANCE

Guidance and advice in the use of VHF radio for collision avoidance is given in *Marine Guidance Note MGN 167 entitled Dangers in the use of VHF Radio in Collision Avoidance*.

Paragraph 1 states:

There have been a significant number of collisions where subsequent investigation has found that at some stage before impact, one or both parties were using VHF radio in an attempt to avoid collision. The use of VHF radio in these circumstances is not always helpful and may even prove dangerous.

Paragraph 2, in part, states:

Uncertainties can arise over the identification of vessels and the interpretation of messages received. At night, in restricted visibility or when there are more than two vessels in the vicinity, the need for positive identification is essential but this can rarely be guaranteed.

Paragraph 3, in part, states:

Valuable time can be wasted whilst mariners on vessels approaching each other try to make contact on VHF radio instead of complying with the Collision Regulations.

Paragraph 5 states:

Although the practice of using VHF radio as a collision avoidance aid may be resorted to on occasion, especially in pilotage waters, the risks described in this Notice should be clearly understood and the Collision Regulations complied with.

VHF radio channel 12 is assigned for ship-ship and ship-shore communications by vessels navigating the lower reaches of the River Thames and its estuaries. As such, it is also used between pilots and other vessels for reporting their progress and advising their navigational intentions.

The PLA does not discourage the use of VHF communication between ships in circumstances where such use can help to resolve possible ambiguity or reduce risk. However, it does not condone the practice of vessels passing dangerously close to one another in violation of the Collision Regulations.

Passing situations are routinely monitored by VTS, which will intervene, when it considers it safe to do so, and will assist a situation. Any such incident observed by VTS, which is deemed to be dangerous or violate the Collision Regulations, is the subject of a formal investigation and, where warranted, formal admonishment.

1.12 NAVIGATIONAL WATCH ON FISHING VESSELS

Guidance and advice in keeping a navigational watch on fishing vessels is given in *Marine Guidance Note MGN 84 (F)* entitled *Keeping a Safe Navigational Watch on Fishing Vessels*.

Section 1 includes:

Investigations into collisions and groundings involving fishing vessels have continued to show that poor watchkeeping is a major cause. In many cases one or more of the following were important factors:

- (a) *an unqualified or inexperienced man in charge of the watch;*
- (b) *only one man on watch (regardless of whether a watch alarm was fitted);*
- (c) *a poor lookout being kept;*
- (d) *divided command, and;*
- (e) *fatigue*

A competent alert watchkeeper, keeping a proper all round look-out at all times is absolutely essential.

Section 2 includes:

- (a) *the wheelhouse must not be left unattended at any time;*
- (b) *...although the size of the crew and the wheelhouse may not permit a continuous two person watch, two people should always be on watch during the hours of darkness and in poor weather conditions.*

Section 4 includes:

- (4.4) *The person in charge of a navigational watch should not undertake any other duties that would interfere with the safe navigation of the vessel.*
- (4.5) *Unfortunately it is not possible to rely on every give-way vessel to keep clear. It is therefore vital to monitor the movement of ALL traffic...*

1.13 PILOT/FISHERMAN RELATIONSHIP

Isolated evidence received during the course of this investigation claims a possible opinion among fishermen operating in the vicinity of where the accident occurred that pilots expect the smaller vessel to give way, irrespective of her status; are reluctant to alter course or deviate from their track until the very last minute; are abrupt when communicating via VHF radio; and do not fully appreciate that fishing vessels are restricted even more in their manoeuvrability when trawling in concentrated areas of seabed obstructions.

Other isolated evidence claims a possible opinion among pilots that fishermen do not maintain VHF radio listening watches, are reluctant to give way in narrow channels for deep-draught vessels, and are generally unco-operative. The extent of these opinions is uncertain.

The PLA operates three geographical river users consultative fora. All have been in existence for over 20 years; fishermen and pilots have been represented on the group concerned with estuarial matters. Poor working relations and unsafe practices between pilots and fishermen have not been among the issues raised.

1.14 PILOT/BRIDGE TEAM RELATIONSHIP (*Thelisis*)

In accordance with maritime law, the master has ultimate responsibility for his vessel at all times. A pilot is employed in an advisory capacity only, and the master of any vessel can intervene and override a pilot's instructions, should the need arise.

On board *Thelisis*, the bridge team, which included the master, complied with instructions issued by the pilot, but offered no further assistance.

The pilot's instructions were accepted without question, and the master saw no need to intervene at any time.

1.15 SURVEY OF THE WRECK (*Our Sarah Jayne*)

In response to a removal order issued by the PLA, the wreck of *Our Sarah Jayne* was raised on 18 August 2001.

After being lifted from the seabed, the wreck was brought to the surface and towed alongside the lifting barge into the harbour confines of Queensborough, Isle of Sheppey. From there, the wreck was lifted completely out of the water and landed on to the barge.

An MAIB inspector, a Maritime and Coastguard Agency (MCA) surveyor, a PLA marine services officer, and a surveyor on behalf of *Our Sarah Jayne's* insurance company, carried out a survey of the wreck. All parts of the vessel were accessible.

The superstructure had been damaged during an unsuccessful attempt to raise the wreck at an earlier date.

The port side of the hull was damaged above and below the waterline, consistent with a collision (**Figures 6 & 7**); the hull planking which was carvel laid, was sprung in several places. Internally there was damage to the frames and bulkheads in the engine room and fish room.

In the wheelhouse, the main engine controls were in the ahead position, and the autopilot was set to 270°. One of the VHF radios was set to channel 9, the other set had an LCD display, which could not be read. Both volume controls were set to the midway position. The navigation and fishing lights were switched on.

Apart from floor plates and other loose equipment being displaced, the engine room, including seawater valves and pipework, appeared to be intact.

1.16 DAMAGE (*Thelisis*)

The damage to *Thelisis* was minimal. Her hull plating on the starboard quarter just above the waterline was slightly damaged where the paint had been removed (**Figure 8**).

Figure 6



Collision damage *Our Sarah Jayne*

Figure 7



Figure 8



Damage to *The Isis*

SECTION 2 - ANALYSIS

2.1 AIM

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

2.2 CAUSE OF THE COLLISION

Both the pilot and the master on *Thelisis* first identified the presence of another vessel at a range of approximately 1.5 miles. When the range had decreased to 1 mile, the pilot was aware that *Thelisis* was on a collision course with the other vessel; this was confirmed both visually and by radar. Although unsure if she was a fishing vessel, he was aware that he was overtaking, therefore making his the give-way vessel in accordance with Rule 13 of the *Collision Regulations*.

At that time there was sufficient searoom and depth of water to pass the other vessel either to the north or to the south. Alternatively, there was sufficient time to reduce speed in accordance with Rule 8 of the *Collision Regulations* to assess the situation more fully. An alteration of course by a few degrees only was totally inadequate and not in keeping with Rule 8. When the pilot did order an alteration of course it was far too late.

There is witness evidence to suggest that there might have been an undue delay in applying hard to port helm following the pilot's order. However, this is not supported by other available witness evidence, and it is the opinion of the MAIB that any short delay in applying hard to port helm, for whatever reason, should not detract from the pilot's failure to take early and substantial avoiding action in accordance with Rule 8. Even if the collision could have been avoided, the pilot's actions would still have resulted in an avoidable close quarters situation.

There are also obligations placed on the stand-on vessel, in this case *Our Sarah Jayne*, to take avoiding action to prevent a collision in accordance with Rule 17 of the *Collision Regulations*. However, the skipper was unaware of the situation until immediately before the vessels collided.

Contrary to Rule 5, the skipper was not maintaining a proper lookout.

2.3 VTS INFORMATION

The pilot's decision to alter course to port by a few degrees only was influenced by his misinterpretation of the information he received from VTS to his request as to the status of the other vessel.

At that time neither the PLA, the pilots, nor the VTS operators were aware that targets acquired by VTS radar, to the east of Crayfordness, would display track information as zero speed and course if the speed of the vessel was less than approximately 2 knots over the ground.

Therefore, the pilot did not appreciate that the other vessel was, in fact, making headway over the ground when he decided to alter course to port by a few degrees only, expecting that he would pass clear.

Advice received from VTS regarding navigation should not be relied upon implicitly, but be treated only as part of the overall information available at that particular time. Full use should be made of the vessel's navigational equipment and bridge personnel.

2.4 ACTION BY THE PILOT

With several years experience as master, and 3 years as a Thames pilot, during which time he carried out over 350 acts of pilotage, the pilot should have been fully conversant with the *Collision Regulations*.

Assuming this was the case, why did he leave it so late before substantially altering course?

VHF radio channel 12 is commonly used between pilots and other vessels for reporting their progress and advising their navigational intentions. However, in this case, the pilot relied on VHF radio communications to determine the course of action to be taken when a risk of collision already existed, thereby deferring his obligations under the *Collision Regulations* and effectively increasing the risk. This danger is highlighted in MGN167.

In accordance with his regular practice of relying on VHF radio for collision avoidance, the pilot attempted to contact *Our Sarah Jayne* in preference to altering course. He had become complacent, and expected that once contacted, the fishing vessel would alter course at the pilot's request, irrespective of her status.

The pilot remained optimistic that the fishing vessel would respond to the situation, until the very last minute, when he considered he had no option but to alter course; by then it was too late.

Not only is it a dangerous practice to rely on VHF radio communications for collision avoidance, but the expectation that the stand-on vessel will give way to the larger vessel makes it extremely so.

In view of the confined nature of the area and the density of passing traffic, there is a potential for this practice to become more common.

2.5 WORKING RELATIONSHIP BETWEEN PILOTS AND FISHERMEN

The extent to which any adverse working relationship between pilots and fishermen exists is uncertain. However, any suggestion of a possible adverse working relationship should not be ignored.

Pilots' reluctance to alter course or deviate from their track, and fishermen not maintaining VHF radio listening watches and not adhering to regulations in narrow channels, can only lead to more close quarter situations, and perhaps further accidents.

Both pilots and fishermen are users of the port, as identified in the Port Marine Safety Code. Consequently, the PLA has a duty to ensure that all such parties contribute to the discussion on safety issues, and that a means exists whereby concerns can be raised. This duty is effected by the river users consultative fora.

2.6 ACTION BY THE MASTER (*Thelisis*)

Both the master and the pilot were part of the bridge team during the events leading up to, and including, the collision.

The master could have intervened at any time, overriding the pilot's instructions. He was adequately stationed on the bridge to be fully aware of the situation, yet he decided to allow the pilot to continue on a collision course even though it must have become obvious that unless avoiding action was taken they would be involved, at best, in an extremely close quarters situation. However, the master accepted the pilot's instructions without question.

While it is appreciated that it is all too easy to hand responsibility to a pilot, especially on vessels which might not be frequent visitors to certain ports, masters must be fully aware that the ultimate responsibility for the safety of the vessel lies with them. Because of that, they should be prepared to override the pilot's instructions should the need arise.

Had the master intervened, the collision could have been prevented.

2.7 ACTION BY THE SKIPPER (*Our Sarah Jayne*)

Our Sarah Jayne's skipper was totally unaware of any danger until immediately before the collision.

As one of the VHF radio sets was tuned to channel 12, and its volume set midway, it is reasonable to assume that he should have been alerted by the pilot's calls. Additionally, any sound signals and searchlight from *Thelisis* should have alerted him.

Possible reasons for not being aware of any of the attempts to attract his attention were that he failed to appreciate it was his vessel that was being referred to on the VHF radio; he left the wheelhouse unattended during that time; his state of vigilance was reduced; or the engine exhaust and decklights reduced his aural and visual perception, while sitting in the wheelhouse chair. However, the skipper reported that he was on watch in the wheelhouse and awake.

In any event, he was not keeping a proper lookout or a safe navigational watch, in accordance with Rule 5 of the *Collision Regulations* and the advice contained in *MGN 84(F)*. Had he done so, he would have been aware that *Thelisis* was on a collision course, and he would have been able to take avoiding action in accordance with Rule 17.

2.8 MANNING (*Our Sarah Jayne*)

The wisdom of manning a vessel such as *Our Sarah Jayne* with only one person is questionable.

While it is appreciated that the hauling and shooting of the fishing gear on small trawlers might only require one person, in the case of an emergency, to combat fatigue and to maintain a safe navigational watch, especially during the hours of darkness, one person is considered insufficient for a vessel of her size and operational routine.

Manning any fishing vessel with minimal numbers of crew requires careful management to ensure the overall safety of the vessel and her crew is not compromised. A commonsense approach about the number and composition of the crew should be adopted at all times.

A minimum of two crew on board could have significantly reduced the risk of collision.

SECTION 3 - CONCLUSIONS

3.1 FINDINGS

Thelisis

1. Both the pilot and the master on *Thelisis* were aware they were on a collision course with another vessel at an approximate range of 1 mile. [2.2]
2. The pilot was aware that *Thelisis* was the overtaking vessel in accordance with the *Collision Regulations* [2.2]
3. At that time there was sufficient searoom and depth of water for *Thelisis* to pass the other vessel either to the north or to the south. [2.2]
4. There was also sufficient time to reduce speed, to more fully assess the situation. [2.2]
5. An alteration of course by a few degrees was totally inadequate. [2.2]
6. Had the pilot acted in accordance with Rule 13, and taken action under Rule 8 of the *Collision Regulations*, the accident could have been avoided. [2.2]
7. At the time of the accident, neither the PLA, the pilots, nor the VTS operators were aware that targets acquired by VTS radar, to the east of Crayfordness, would display track information as zero speed and course if the speed of the vessel was less than approximately 2 knots over the ground.[2.3]
8. The pilot's decision to alter course to port by a few degrees only was influenced by his misinterpretation of the information he received from VTS. [2.3]
9. There was a reliance on VHF radio for collision avoidance. [2.4]
10. The pilot expected the skipper of *Our Sarah Jayne* to alter course on receipt of his VHF radio request. [2.4]
11. Without this expectation the collision could have been avoided.[2.4]
12. A possible adverse working relationship between pilots and fishermen exists in the vicinity of where the accident occurred. [2.5]
13. The master could have intervened at any time, overriding the pilot's instructions. Had he done so, the collision could have been avoided. [2.6]
14. The master accepted the pilot's instructions without question. [2.6]

Our Sarah Jayne

15. *Our Sarah Jayne's* skipper was unaware of any danger until immediately before the collision. [2.7]
16. The skipper should have been alerted by the calls made on VHF radio, and any sound signals and searchlight from *Thelisis*. [2.7]
17. Possible reasons for not being alerted were that he failed to appreciate it was his vessel that was being referred to on the VHF radio, he left the wheelhouse unattended, the engine exhaust and decklights reduced his aural and visual perception, or his state of vigilance was reduced while sitting in the wheelhouse chair. However, the skipper reported that he was on watch in the wheelhouse and awake. [2.7]
18. The skipper of *Our Sarah Jayne* was not keeping a proper lookout in accordance with Rule 5 of the *Collision Regulations*. [2.7]
19. A crew of one is considered insufficient for a vessel the size of *Our Sarah Jayne* and her operational routine. [2.8]
20. A minimum of two crew on board could have significantly reduced the risk of collision. [2.8]

3.2 CAUSE

The cause of the collision between *Thelisis* and *Our Sarah Jayne* was the pilot on board *Thelisis* failing to take avoiding action in sufficient time, and the skipper on board *Our Sarah Jayne* failing to keep a proper lookout in accordance with the *Collision Regulations*.

3.3 CONTRIBUTING FACTORS

1. The pilot relying on VHF radio for collision avoidance.
2. The complacency and expectation of the pilot that *Our Sarah Jayne's* skipper would alter course if he requested him to do so.
3. The master of *Thelisis* failing to override the pilot's instructions.
4. The skipper of *Our Sarah Jayne's* decision to sail single-handedly, thereby denying himself the ability to keep a safe navigational watch.

SECTION 4 - RECOMMENDATIONS

The Port of London Authority (PLA) is recommended to:

1. Advise its pilots of the dangers of relying on VHF radio for collision avoidance.
2. Advise its pilots of the danger of complacency and an expectation that other vessels will alter course at their request, irrespective of their status.
3. Take into account the findings of this investigation while continuing to enhance the working relationship between fishermen and pilots in the estuary by means of its River Users Consultative Forum (Estuary).

Efthymiou Shipping is recommended to:

4. Advise its masters of the danger of accepting pilots' instructions without question.

The skipper of *Our Sarah Jayne*, Mr A Martin is recommended to:

5. Avoid sailing single-handedly, and to be fully aware of the need to maintain a proper lookout and safe navigational watch.

The owner of *Our Sarah Jayne*, Mr B J Martin, is recommended to:

6. Avoid operating his vessel single-handedly, having full regard of the need to maintain a proper lookout and safe navigational watch.

**Marine Accident Investigation Branch
February 2002**

Thames VTS VHF radio transcript

TIME	CH	SHIP/STATION	EVENT/MESSAGE/INFO
01.07.25	12	THELISIS	DO YOU HAVE A NAME FOR THE VESSEL JUST AHEAD OF ME TO THE SOUTH OF THE TONGUE SAND TOWERS
01.07.46		PCC	THAT'S THE SAINT NICHOLAS
		THELISIS	THE INBOUND ONE PLEASE
		PCC	THE INBOUND ONE STANDBY
		THELISIS	YES HE'S A SMALL TARGET, DOESN'T LOOK VERY BIG
		PCC	I GOT NO NAME OR ANYTHING HERE I'VE GOT A TARGET THERE, BUT NOT GOING VERY FAST AND NO NAME
		THELISIS	ROGER THAT DO YOU HAVE A SPEED ON HIM
		PCC	NO HE'S NOT DOING ANYTHING HE'S ZERO
		THELISIS	YES OKAY THANKS ✓
01.12.26		THELISIS	FISHING VESSEL SOUTH OF THE TONGUE SAND TOWERS THIS IS THE THELISIS
01.12.51		THELISIS	FISHING VESSEL SOUTH OF THE TONGUE SAND TOWERS THELISIS ✓
01.17.43		SPRUCE?	THELISIS THELISIS SPRUCE?
		THELISIS	YES SPRUCE THELISIS I'VE BEEN TRYING TO CALL YOU
		SPRUCE	THELISIS SPRUCE I'M AT THE SOUTH SHINGLES WERE YOU TRYING TO CALL ME
		THELISIS	YES ER, RIGHT OKAY NOW
		SPRUCE	DID YOU TRY CHANNEL 12
01.18.18		SPRUCE	THELISIS SPRUCE
01.18.30		UNKNOWN	? SOUTH OF THE TONGUE SAND TOWER (TRANSMISSION CUT OUT BY BACO LINER 2)
01.19.13		UNKNOWN	PORT CONTROL DID YOU HEAR THAT
01.19.26		SPRUCE	THELISIS THELISIS SPRUCE
01.20.29		THELISIS	STATION CALLING THELISIS
01.20.36		SPRUCE	YES THELISIS SPRUCE ARE YOU OKAY TO SPEAK THIS TIME I SEE YOU TAKING AVOIDING ACTION OR SOMETHING YES CAN WE GO TO CHANNEL ZERO FOUR PLEASE
✓		OUR SARAH JAYNE	PORT CONTROL THIS IS THE FISHING VESSEL OUR SARAH JAYNE
01.21.06		SPRUCE	THELISIS SPRUCE
01.21.31		OUR SARAH JAYNE	THAMES COASTGUARD OR PORT CONTROL THIS IS FISHING VESSEL SARAH JAYNE

GD827/LJC

TIME	CH	SHIP/STATION	EVENT/MESSAGE/INFO
01.22.13		SPRUCE	THELISIS SPRUCE
01.22.20		THELISIS	YES SPRUCE THELISIS YES CHANNEL ONE FIVE
		SPRUCE?	YES ONE FIVE
		OUR SARAH JAYNE?	SHIP JUST SOUTH OF TONGUE SAND TOWERS THIS IS THE FISHING VESSEL SARAH JAYNE
01.22.59		SARAH JAYNE	COASTGUARD FISHING VESSEL SARAH JAYNE ARE YOU RECEIVING
01.25.43		THELISIS	SPRUCE THE THELISIS
01.25.55		SPRUCE	THELISIS SPRUCE
		THELISIS	DO YOU WANT TO GO GREEN TO GREEN IS IT
		SPRUCE	GREEN TO GREEN IF THAT'S OKAY WITH YOU WE'RE YOU BOUND EAST
		THELISIS	YES THAT WOULD BE FINE JUST WATCH OUT FOR THE FISHING VESSEL JUST IN FRONT OF YOU I DON'T KNOW WHAT HIS NAME IS AND HE DOESN'T SEEM TO KNOW WHAT HE'S DOING
		SPRUCE	(GARBLED) GOING TO IT NOW ANYWAY
		ESTUARY LEADER	PORT CONTROL LONDON ESTUARY LEADER
		PCC	ESTUARY LEADER PORT CONTROL
		ESTUARY LEADER	JUST TO ADVISE YOU WE'RE ON OUR WAY TO ASSIST A CASUALTY, A FISHING BOAT THE SARAH JAYNE WHICH HAS BEEN STRUCK BY A SHIP JUST SOUTH OF THE TONGUE SAND TOWERS THE VESSEL IS TAKING WATER IN QUICKLY
		PCC	ROGER ESTUARY LEADER ALL RECEIVED THANK YOU
		ESTUARY LEADER	WE DON'T KNOW HOW MANY PEOPLE ONBOARD AT THIS MOMENT
		PCC	ROGER
		THELISIS	FISHING VESSEL THE THELISIS
		PCC	SPRUCE SPRUCE SPRUCE PORT CONTROL LONDON
		SPRUCE	PORT CONTROL SPRUCE
		PCC	DID YOU COPY THAT
		SPRUCE	ALL COPIED
		THELISIS	FISHING VESSEL SOUTH OF THE TONGUE SAND TOWERS THELISIS
01.27.42		THELISIS	PORT CONTROL THELISIS
		PCC	THELISIS PORT CONTROL
		THELISIS	YES PORT CONTROL I CAN SEE THE FISHING VESSEL HERE I'M JUST STARTED? AND I'M TRYING TO CALL HIM THERE HE SEEMS TO BE OKAY BUT I CAN'T MAKE ANY CONTACT WITH HIM
		PCC	ROGER UNDERSTOOD THANK YOU
		THELISIS	DO YOU HAVE NAME FOR HIM AS YET

TIME	CH	SHIP/STATION	EVENT/MESSAGE/INFO
		PCC	NEGATIVE
01.28.23		THELISIS	PILOT CUTTER THE THELISIS
01.28.48		ESTUARY LEADER	THELISIS THE PILOT CUTTER ON CHANNEL 12 ARE YOU GOING OVER TO THIS FISHING VESSEL NOW YES WE ARE (GARBLED) THELISIS PILOT CUTTER ON CHANNEL 12 OVER
		THELISIS	YES ARE YOU GOING OVER TO THIS FISHING VESSEL JUST NORTH OF ME NOW
		ESTUARY LEADER	YES WE'RE COMING TO IT NOW SIR
		THELISIS	ROGER OKAY I'LL JUST SLOW DOWN MY ENGINE HANGING AROUND HERE IF YOU NEED ANY ASSISTANCE
		ESTUARY LEADER	OKAY PILOT
01.35.22		THELISIS	SPIT PILOT CUTTER THELISIS
01.36.26		PCC	ESTUARY LEADER ESTUARY LEADER PORT CONTROL LONDON ESTUARY LEADER WHEN YOU'VE GOT A MOMENT CHANNEL 18 PLEASE
		THELISIS	JUST (TO ESTUARY LEADER) WONDERING WHAT THE SITUATION WAS WITH THE FISHING VESSEL
		ESTUARY LEADER	YES SIR WE'VE GOT THE CHAP OFF THE BOAT AND WE'RE GOING TO GET A PILOT OUT AND THEN WE'LL BE GOING BACK TO THE BOAT
		PCC	ROGER THANK YOU
		PCC	ESTUARY LEADER PORT CONTROL IS THE BOAT IN A SINKING CONDITION WHAT IS SITUATION
		ESTUARY LEADER	THELISIS LEADER
		THELISIS	CAN WE GO ZERO NINE
		ESTUARY LEADER	CHANNEL 9
		THELISIS	PORT CONTROL LONDON THELISIS
		PCC	THELISIS PORT CONTROL
		THELISIS	CAN WE GO TO TWO ZERO PLEASE
01.38.16		PCC	CHANNEL 18 PLEASE PCC ESTUARY LEADER PORT CONTROL 18
01.39.01		ESTUARY LEADER	(GARBLED) PORT SIDE AND TAKING IN WATER
		THELISIS?	? ANY ONBOARD
		ESTUARY LEADER	WE GOT HIM ONBOARD HERE NOW
		?	GARBLED
		ESTUARY LEADER	JUST ONE
01.38.34	18	PCC	THELISIS PORT CONTROL
		THELISIS	PORT CONTROL THELISIS I HAD A CONTACT WITH A FISHING BOAT JUST OUT OF THE TONGUE SAND TOWERS I BELIEVE THE PILOT CUTTERS CHECKED HIM OUT I'M JUST WONDERING DO YOU WANT ME

TIME	CH	SHIP/STATION	EVENT/MESSAGE/INFO
			TO STAY HERE OR PROCEED
		PCC	WE'RE ONLY GETTING BITS OF YOUR STORY, PERHAPS YOU CAN FILL US IN YOU'VE HAD CONTACT WITH A FISHING VESSEL DO WE HAVE A NAME OF THIS FISHING VESSEL
		THELISIS	NEGATIVE I DON'T KNOW THE NAME I DIDN'T GET IT FROM THE CUTTER AS YET WE DO GO HARD TO PORT AND I BELIEVE WE CAME VERY CLOSE YES
		PCC	HOW MANY PEOPLE WERE ON THE FISHING BOAT DO YOU KNOW
		THELISIS	NEGATIVE I THINK YOU'LL GET MORE INFORMATION FROM THE CUTTER BECAUSE HE WENT ACROSS TO THE VESSEL AND NOW HE'S GOING BACK TO GET A PILOT
		PCC	ROGER UNDERSTOOD THERE'S NOBODY LEFT ON THE FISHING VESSEL CORRECT?
		THELISIS	I DO NOT KNOW I AM NOT SURE OF THAT
		PCC	OKAY JUST STANDBY A MINUTE
		THELISIS	PORT CONTROL THELISIS
		PCC	THELISIS PORT CONTROL GO AHEAD
		THELISIS	I BELIEVE THERE WAS ONE PERSON ONBOARD AND HE IS NOW ONBOARD THE PILOT CUTTER
		PCC	ROGER AND THE FISHING VESSEL WAS TAKING WATER CORRECT
		THELISIS	THAT IS CORRECT
		PCC	DID YOU GET THE NAME OF THE FISHING VESSEL
		THELISIS	NOT YET NO
		PCC	OKAY THANKS VERY MUCH
			END OF TRANSCRIPT

Harbourmaster's memo

MEMORANDUM FROM HARBOUR MASTER (LOWER DISTRICT)

VTSO's, DO's & DPC's

REF: GD855/STR

DATE: 27th July 2001

RADAR TARGET VECTOR DISPLAY - LOWER LIMIT

1. It has recently been established that for technical reasons a target acquired by radars to the east of Crayfordness will display track information of ZERO SPEED AND ZERO COURSE unless its speed is greater than approximately 2 knots over the ground, at which it's 'vector' becomes accurate. The figure is 1 knot for radars from Crayfordness westwards.
2. Should information be required on a target which is apparently stopped, an indication of its actual movement may be gained by observing its afterglow at close range.
3. The trajectory will also show any previous movement regardless of track information.
4. Sofrelog are looking at ways in which to resolve the problem. However, reduction of the track information threshold speed could exacerbate other potential problems.

GORDON DICKINS
HARBOUR MASTER (LOWER DISTRICT)

c.c. NSE
DHM (VTS)