Report on the investigation of

the collision between the

Irish registered cargo ship

Eastfern

and the Cyprus registered bulk carrier

Kinsale

about 10.6 miles south-west of Dover

on 25 September 2000

Marine Accident Investigation Branch
First Floor
Carlton House
Carlton Place
Southampton
United Kingdom
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Report No 18/2001

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

ARPA	Automatic Radar Plotting Aid
CNIS	Channel Navigation Information Service
DF	Direction finder
GPS	Global positioning system
gt	Gross tonnage
IMO	International Maritime Organization
kW	kilowatt
m	metre
mb	millibar
MAIB	Marine Accident Investigation Branch
MRCC	Maritime Rescue Co-ordination Centre
UK	United Kingdom
UTC	Universal co-ordinated time
VHF	Very high frequency (radio)
VTS	Vessel traffic service

SYNOPSIS

At about 0535 (UTC + 1) on 25 September 2000, the Cypriot-registered bulk carrier *Kinsale* collided with the Irish-registered general cargo ship *Eastfern* about 10.6 miles south-west of Dover harbour. The MAIB was informed of the accident at 0624 that day. Captain P Kavanagh and Captain A Clifton carried out the investigation.

Eastfern was on passage, in ballast, between Montrose and Plymouth where she was to be handed over to new owners. The mate was on watch with a lookout, and the operational radar with an ARPA facility was on the 6-mile range scale and in the true motion mode. At about 0300, the ship had entered the Dover Strait south-west bound traffic lane near the CS4 buoy. The mate had altered course to 230° and the ship was making good about 8 knots. The wind and seas were slight to moderate and the visibility was good.

Kinsale was on passage from Nordenham, near Bremerhaven, to Wilmington in the United States. At 0341, when the ship was near the South Falls buoy, the ship's course was altered to 230°, and after 0424 she made good a course of 232° and a speed of about 14 knots. At about 0500 (0600 ship's time) the chief officer relieved the second officer. The operational radar was gyro stabilised, on ship's head up, in relative motion and on the 6-mile range scale. The chief officer remained behind the blackout curtain to show the second officer the stores recording system on a computer. At about 0515, the second officer left the bridge and, at 0520, the lookout also left the bridge to call other crew members for day work.

The chief officer made a cup of coffee at the after end of the bridge on the port side, from where he could see forward. He then returned to the chart table to check the list of stores which the ship had received at Nordenham. He went back out to the forward part of the bridge to check the traffic and saw a ship close and fine on the port bow. He ran to the automatic helm, changed it over to manual, and put the wheel over to 20° to starboard, at which time *Kinsale*'s port bow collided with *Eastfern*'s stern.

Contributory causes of the accident were that, until shortly before the collsion, *Kinsale*'s chief officer was unaware of the approach of his ship to *Eastfern*, and *Eastfern*'s bridge team was unaware of the approach of *Kinsale*.

A recommendation is made to the manager of *Kinsale* to review operational procedures to remove the necessity for the lookout to leave the bridge to call other crew members.

PARTICULARS OF VESSELS AND ACCIDENT

Vessel details

Name of vessel	:	*Eastfern* **(Photograph 1)**	*Kinsale* **(Photograph 2)**
Registered owner	:	Mideast Marine Ltd & Fern Trading Ltd	Kinsale Shipping Co
Manager	:	-	KG Fisser & V Doornum GmbH
Port of registry	:	Arklow	Limassol
Flag	:	Irish Republic	Cyprus
Type	:	General cargo	Bulk carrier
Built	:	1981 in Holland	1976 in Japan
Classification society	:	Lloyds Register	Germanischer Lloyd
Construction	:	Steel	Steel
Length overall	:	70.59m	117.61m
Gross tonnage	:	1,171	5,306
Engine power	:	736kW	4,506kW
Service speed	:	11 knots	15 knots

Accident details

Time and date	:	O535 UTC + 1 on 25 September 2000	
Location of incident	:	Latitude 50^{o} 57.1’N and Longitude 001^{o} 13.5’E in the south-west bound traffic lane, about 10.6 miles south-west of Dover	
Persons on board	:	6	16
Injuries/fatalities	:	None	None
Damage	:	To the stern	To the port bow

Photograph 1

Eastfern alongside in Plymouth

Photograph 2

Kinsale undergoing repairs in the port of Rotterdam

SECTION 1 - FACTUAL INFORMATION

1.1 NARRATIVE

All times are UTC + 1 and all courses are true.

1.1.1 Events leading up to the collision - *Eastfern*

Eastfern was on passage in ballast between Montrose and Plymouth, where she was to be handed over to new owners. Just after midnight on 25 September 2000, when the ship was about 12 miles east of North Foreland, the master handed over the navigational watch to the mate, who was joined by a lookout.

At about 0100, when the ship was about 5 miles east of the North-East Goodwin buoy, the mate made the compulsory CALDOVREP report to Dover Coastguard (see section 1.6). At about 0300, the ship entered the Dover Strait south-west bound traffic lane near the CS4 buoy and altered course to 230° **(see chart extract opposite)**. The ship was making good a speed of about 8 knots.

The mate was sitting in a chair at the centre of the bridge with the console in front of him. It contained the engine control, two radars, only one of which was in operational use, the automatic and manual helm controls and other ancillary equipment. The operational radar had an ARPA facility and was set to the 6-mile range scale, in the true motion mode.

In addition to forward and sideways-facing windows, *Eastfern*'s bridge contained a single aft facing window on each side.

Directly behind the mate's chair was a chartroom, off which was a toilet and wash-basin. On the starboard side of the console the lookout was sitting on another chair, fixed so that it faced inboard and to port **(see photograph 3 overleaf)**.

The mate conducted the watch mainly from his chair, where he could see ahead visually and also the port radar on the console. He left his chair occasionally, and shortly after 0530 he had done so to use the wash-basin in the toilet to wash his cup. As he was moving aft to the chartroom, the lookout glanced through one of the after windows and pointed. The mate moved to the window and then on to the bridge wing and saw the sidelights of another ship at very close range astern. He then saw the port sidelight disappear, which suggested to him that the ship was altering course to port. The mate ran to the automatic helm and altered course by between 10° and 15° to starboard. After returning to the after window, the mate saw that the other ship was altering course to starboard. He returned to the console and changed the automatic helm to manual steering, and put the rudder to hard to port. Then there was a loud bang as the other ship collided with *Eastfern*'s stern.

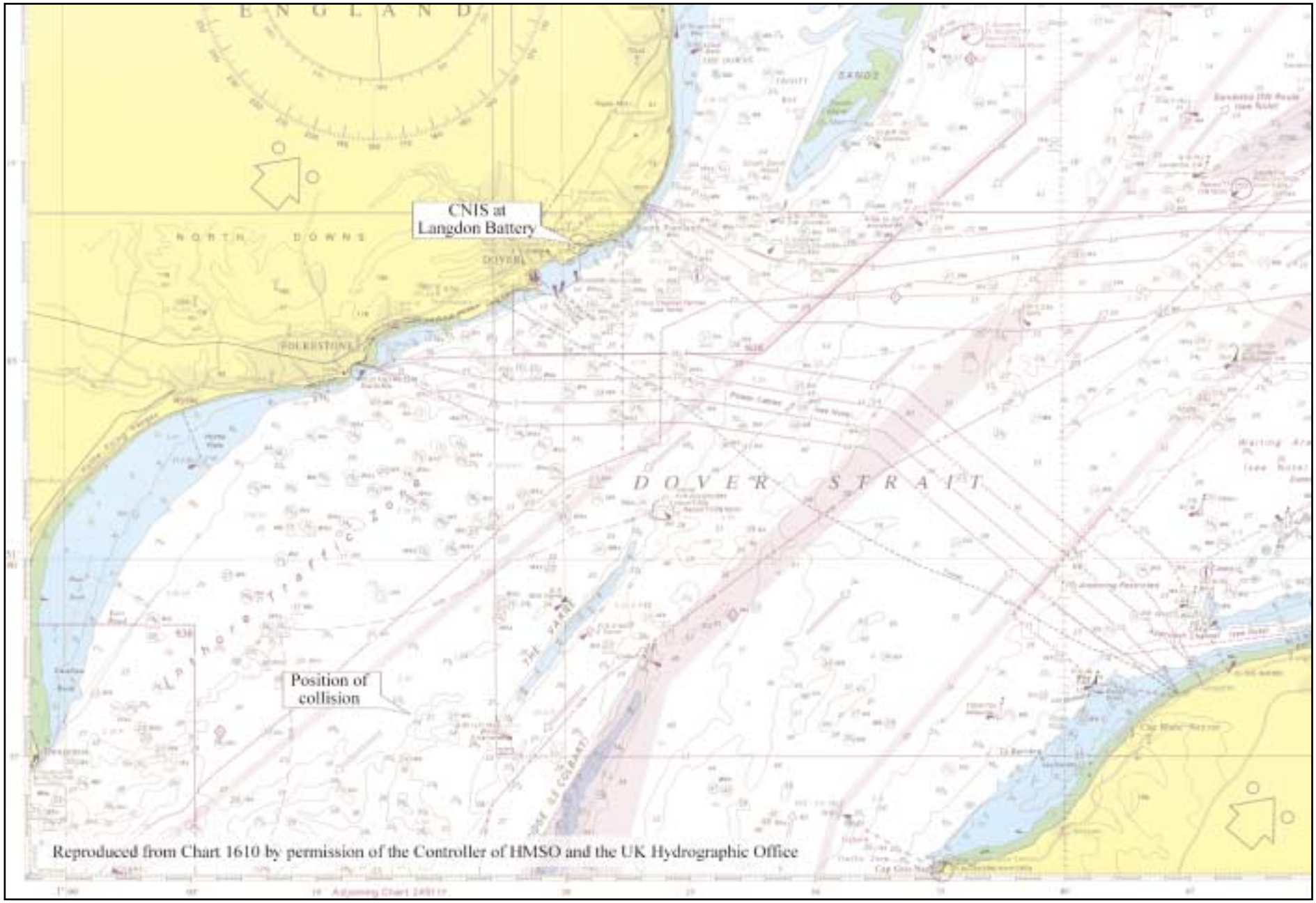


Chart extract showing Dover Strait and position of collision

Photograph 3

Eastfern's bridge

1.1.2 Events leading up to the collision - *Kinsale*

At 0000 on 24 September 2000, *Kinsale* left Nordenham, near Bremerhaven, partly loaded with 6,308 tonnes of minerals for Wilmington in the United States. At about 0100 the following day, when the ship was about 18 miles east of Ramsgate, the second officer made the compulsory CALDOVEREP report to Dover Coastguard.

At 0341, when she was near the South Falls buoy, her course was altered to 230°. At about 0500 (0600 ship's time) the chief officer relieved the second officer. During the hand-over, the second officer told the chief officer that there were ships on both bows and they were all heading in the same direction as their own ship. The radar was gyro stabilised, on ship's head up, in relative motion and on the 6-mile range scale. The ship was making good a speed of about 14 knots.

The chief officer remained behind the blackout curtain to show the second officer the stores recording system on a computer, which was mounted on the extreme port side of the chart table. At about 0515 the second officer left the bridge, followed shortly after by the lookout, who called other crew members for day work. The chief officer was left alone on the bridge.

The chief officer made a cup of coffee at the after end of the bridge on the port side, from where he could see forward. He then returned to the computer to

check the list of stores the ship had received in Nordenham. He went back out to the forward part of the bridge to check the traffic again and saw a ship close and fine on the port bow. He ran to the automatic helm, changed it over to manual, and put the wheel over to 20° to starboard. He was too late; *Kinsale*'s port bow collided with *Eastfern*'s stern.

The two ships parted as *Eastfern* went to port and *Kinsale* went to starboard. The chief officer reduced speed by placing the engine on half ahead.

1.1.3 Events after the collision

The coastguard tug *Far Sky*, which was south of Dungeness, went to the scene to stand by the vessels in case they needed assistance.

Eastfern's master was awoken by the impact, and he got up immediately. Out of a porthole, he saw another larger, overtaking ship about 50m away on the starboard side. He went to the bridge quickly and was told by the mate that the other ship's name was *Kinsale*. The master contacted the ship but they had difficulties in understanding one another. The master then reported the collision to Dover Coastguard. Later, the master was able to verify that his ship was not holed, there were no injuries on board and assistance was not needed. After contacting his owner, they decided that the ship would carry on to Plymouth but, if it were necessary, she would put into another port en-route. The coastguard monitored *Eastfern*'s progress and she berthed in Plymouth in the early hours of 27 September 2000.

Kinsale's master was not awoken by the impact but by the internal telephone and, when he answered it, no one spoke to him. He noticed that the engine had slowed down and thought that the engineers might have had a problem. Then the chief officer knocked on his door and said they had been in collision with another ship. The chief officer had been speaking to Dover Coastguard and had reported the ship's position and that the ship's engine was on dead slow ahead, but he was unable to give details of the ship's future intentions and damage. After the master arrived on the bridge, he confirmed to Dover Coastguard that his ship had left the south-west traffic lane and had entered the inshore traffic zone to carry out checks on the damage. The master went forward to view the extent of damage, and reported to Dover Coastguard later. By 1300, *Kinsale* was returning to Rotterdam for repairs and berthed there at 0530 the next day.

1.2 ENVIRONMENTAL CONDITIONS

The wind was south-west force 4, with moderate sea and low swell. It was cloudy with good visibility, despite occasional showers. The barometric pressure was 1020mb and the air temperature was 17°C.

Predicted low water at Dover occurred at 0448 and, during the incident, the tidal stream was setting south-westerly.

It was dark at the time of the incident.

1.3 *EASTFERN*

1.3.1 The ship

The ship is a one-hold cargo ship with the accommodation/superstructure, engine room and the navigation bridge aft. She has a single conventional fixed propeller.

1.3.2 The crew

The crew complement consisted of the master (Irish), the mate (British), the engineer (Irish) and two general-purpose seamen (both British). There was also a supernumerary engineer on board who was an Irish national.

The mate, was 63 years old, and had obtained his master's foreign-going certificate of competency in 1964. Although he had been ashore for 5 years, he had had his certificate revalidated and returned to working at sea. He had been employed by Guernsey Ship Management for about 4 years and had served on *Eastfern* during this time. He had only been serving on coastal vessels in comparatively recent years, but was very familiar with United Kingdom waters. He had been serving on board *Eastfern* for nearly 3 months. He took the 0000 to 0600 and the 1200 to 1800 navigational watches at sea.

The master, who was 55 years old, had been at sea for 36 years. He had obtained his master's home-trade certificate of competency in 1974, which was upgraded in 1998 to master's unlimited for ships less than 3,000gt. He had been serving as relief master since 1980, and as master since 1996. He was employed by Guernsey Ship Management on 11 September 2000 and had joined *Eastfern* the same day. He was very familiar with United Kingdom waters. He took the 0600 to 1200 and the 1800 to 2400 navigational watches at sea.

Eastfern was being operated in compliance with the Irish Department of the Marine's safe manning certificate.

1.3.3 Navigational equipment

The vessel was equipped with the normal suite of navigational equipment; including a Kelvin Hughes radar and a Furuno daylight display radar (the latter of which was the main operational radar), and a GPS navigator.

1.3.4 Damage

There was a "V" shaped indent to the starboard side transom bulwark, extending down to just above the next deck. At the apex of the indentation, the bulwark was set in by about 1m, causing buckling of the poop deck back to the corner of the accommodation superstructure. The rails were bent at the after starboard side of the boat deck **(see photographs 4 and 5 opposite)**.

Photograph 4

A view of the damage to the stern

Photograph 5

Eastfern - A view of the damage of the starboard side of the poop deck

1.4 *KINSALE*

1.4.1 The ship

The vessel is a conventional bulk carrier with three holds forward and the engine room/accommodation superstructure and navigation bridge aft. She has one conventional fixed propeller and the engine can be controlled from the bridge.

1.4.2 The crew

The crew complement consisted of the German master and chief engineer; the chief and second officer, the second engineer, electrician, fitter and cook were Filipinos. The remainder, including the bosun, three able seamen, an ordinary seaman, a steward and two motormen, were Kiribatis.

The chief officer was 42 years old and, after spending two and a half years at college, where he obtained a Bachelor of Science degree in Maritime Transportation, went to sea in 1978. He obtained a Filipino Chief Officer's Certificate in 1992, which was endorsed in January 1999. He joined KG Fisser & Doornum GmbH in 1991 and was promoted to chief officer in 1993.

The master was 58 years old and had been at sea since 1961. He first went to sea as a deck boy, and in 1964 obtained his Able Seaman's Certificate. Between 1966 and 1968 he attended a maritime college to gain his officer's licence. In 1971 he obtained his master's licence. Between 1971 and 1984 he served as chief officer on conventional cargo ships. In 1984 he changed to palletised cargo ships, in which he served as master and had been in that rank ever since. He had served on the sister ships *Kinsale* and *Kenmare* since 1987.

The second officer took the 0000 to 0600 and the 1200 to 1600 navigational watches.

The chief officer took the 0600 to 1200 and 2000 to 2400 navigational watches.

The master took the 1600 to 2000 navigational watch.

1.4.3 Navigational equipment

The ship was equipped with the following:

a Kelvin Hughes radar, which was not in operational use;

a Racal Decca radar;

a Philips GPS Navigator;

a Gylot (TokyoKeiki) manual and automatic steering position; and

a gyro repeater on each bridge wing.

1.4.4 Damage

There was a 2m long, 30 to 40cm wide, split in the hull, just forward of the port anchor, and well above the waterline **(see photograph 6)**.

Photograph 6

A view of the repair being carried out on *Kinsale*

1.5 STATUS OF THE VESSELS WITH REGARD TO THE COLLISION REGULATIONS

Both vessels were power-driven and under way, as defined by Rule 3 of the *International Regulations for Preventing Collisions at Sea* (Collision Regulations) and, at the time of the collision, they were making way through the water.

Given the circumstances of the collision, the following Rules applied to both vessels:

Rule 5 - *Look-out*

> *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 risk of collision.*

Rule 7 - *Risk of Collision*

> *(a) Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.*
>
> *(b) Proper use shall be made of radar equipment if fitted and operational, including long-range scanning to obtain early warning of risk of collision and radar plotting or equivalent systematic observation of detected objects.*

The following Rule applied to *Kinsale:*

Rule 13 - *Overtaking*

> *(a) Notwithstanding anything contained in the Rules of Part B, Sections I and II, any vessel overtaking any other vessel shall keep out of the way of the vessel being overtaken.*

The following Rule applied to *Eastfern:*

Rule 17 - *Action by stand-on vessel*

> *(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.*

Rule 34 - Manoeuvring and warning signals

(d) When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes.

1.6 CHANNEL NAVIGATION INFORMATION SERVICE (CNIS) AND VESSEL TRAFFIC SERVICES (VTS)

The IMO's resolution A.578 (14) defines VTS as:

> *Any service implemented by a competent authority designed to improve safety and efficiency of vessel traffic and the protection of the environment. The service shall have the capability to interact with marine traffic and to respond to traffic situations developing in the VTS area.*

The following are extracts from the IMO resolution A.857 (20) Guidelines for VTS:

.9.1 An information service is a service to ensure that essential information becomes available in time for on-board navigational decision-making.

.9.2 A navigational assistance service is a service to assist on-board navigational decision-making and to monitor its effects.

.9.3 A traffic organization service is a service to prevent the development of dangerous maritime traffic situations and to provide for safe and efficient movement of vessel traffic within the VTS area.

2.1 The purpose of VTS is to improve the safety and efficiency of navigation, safety of life at sea and the protection of the marine environment and/or the adjacent shore area, worksites and offshore installations from possible adverse effects of maritime traffic.

2.1.2 The type and level of service or services rendered could differ between both types of VTS; in a port or harbour VTS a navigational assistance service and/or a traffic organization service is usually provided for, while in Coastal VTS usually only an information service is rendered.

2.3.4 When the VTS is authorised to issue instructions to vessels, these instructions should be result-orientated only, leaving the details of the execution, such as course to be steered or engine manoeuvres to be executed, to the master or pilot on board the vessel. Care should be taken that VTS operations do not encroach upon the master's responsibility for safe navigation or disturb the traditional relationship between master and pilot.

As suggested in 2.1.2 above, there are two types of VTS: port/harbour and coastal, which can be found throughout the world. The former is a service provided for ships entering and leaving the confines of a port and/or transiting within harbour limits, and the latter is concerned with traffic passing through an area outside harbour limits.

The Dover Strait/Pas de Calais and its approaches are one of the busiest waterways in the world, and it poses severe safety problems to ships because of the density of traffic and the proximity of navigational hazards. In 1977 the traffic separation scheme, in the Dover Strait and adjacent waters, became compulsory **(see diagram opposite)**.

When entering the area covered by the system, all ships over 300gt report to Dover Coastguard, which deals with south-west bound traffic, or to Gris Nez Traffic (in France), which handles north-east bound traffic. The reporting system is mandatory, and the short title for the system is CALDOVEREP.

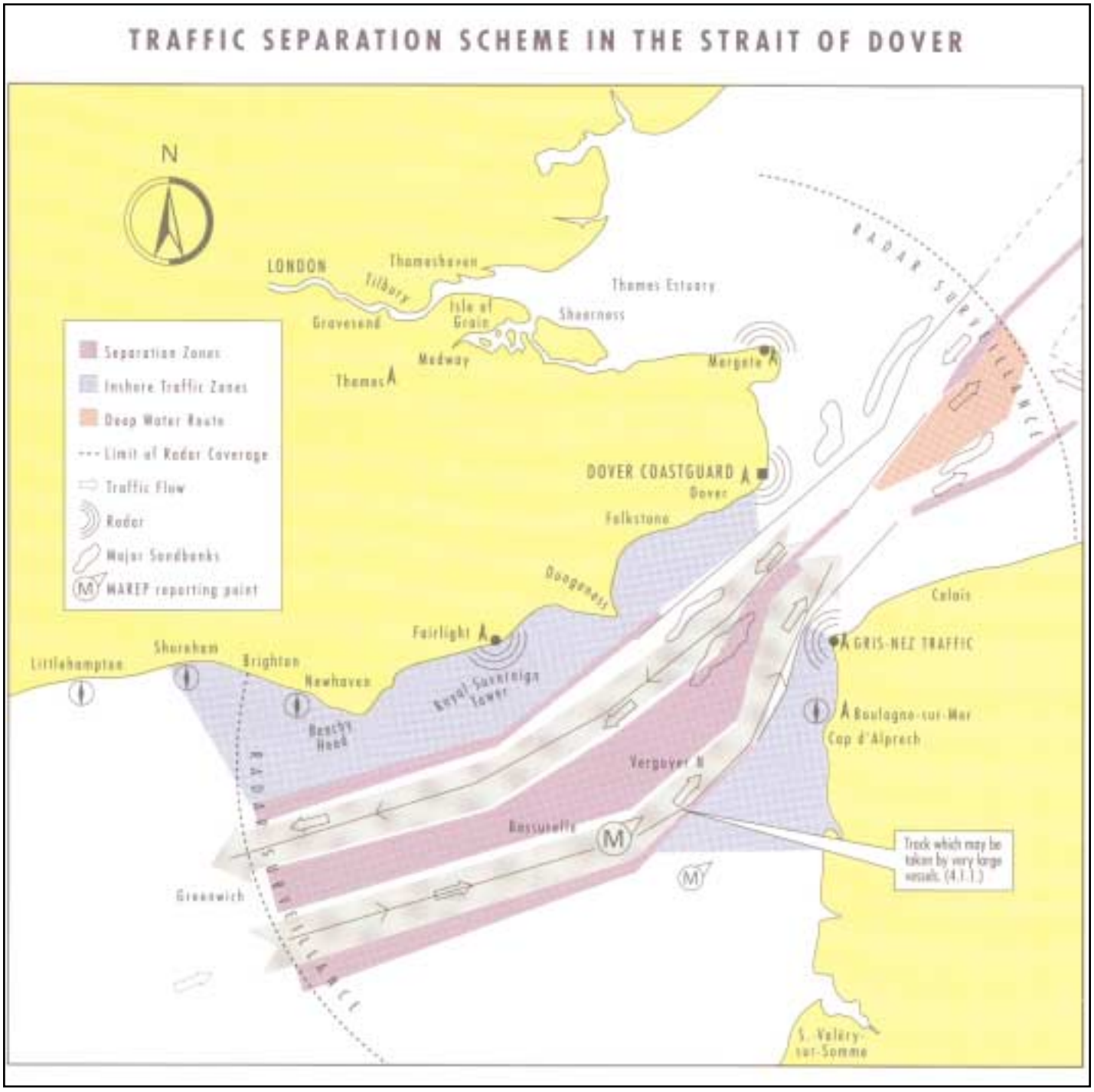
The following description is from the IMO's publication *Ship's Routeing*:

> *The CNIS processing and display system receives inputs from the radar and VHF DF equipment, processes the information and presents it on any or all of six displays. Each display shows processed images (tracks) from any of the three radar inputs overlaid on a synthetic map of a selected area. New targets entering radar range are automatically tagged with a unique track number. The position course and speed information of up to 300 racks is automatically updated and recorded, for each of the three radars, throughout the vessel's passage through the CNIS area, giving the CNIS a 900-track capability.*
>
> *DOVER COASTGUARD maintain a continuous watch on traffic in the Dover Strait/Pas de Calais. Operators can add vessel information to the IPRS (information processing and retrieval system) database (such as name and cargo) and can display that supporting information on a separate screen. CNIS is capable of providing an automatic alarm to identify any track, which strays into an unauthorised area. VHF DF vectors appear when a VHF radio transmits on the frequency selected on the VHF DF equipment. Recording equipment automatically stores information from all tracks which can either be replayed on the system or specific track movements can be plotted onto an A0-size sheet of paper.*

CNIS was introduced in 1972. It provides a 24-hour radio service for all shipping in the Dover Strait and is operated from the MRCC at Langdon Battery near Dover.

CNIS broadcasts on VHF radio channel 11, every 60 minutes (every 30 minutes in poor visibility), and gives warnings of navigational difficulties and unfavourable conditions likely to be encountered in the Dover Strait.

These include adverse weather conditions, exceptional tides, misplaced or defective navigational aids, and hampered vessels such as oil-rigs or deep-draught tankers. The positions, course and speed of those vessels, which are in contravention of Rule 10 of the Collision Regulations (in particular those vessels travelling in a traffic lane in the opposite direction to that of the general flow), are broadcast to all stations over the radio. The vessels are also reported to their flag-states for action to be taken in accordance with IMO Resolution A432 (XI).



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, if any, with the aim of preventing similar accidents occurring again.

This section will determine how and why *Eastfern* and *Kinsale* collided in good visibility and reasonable weather. There is also a discussion on the role of CNIS with regard to the prevention of collisions.

2.2 THE COLLISION

2.2.1 Preamble

When *Kinsale*'s chief officer took over the watch at 0500, four other vessels were within a 3-mile radius, all of which were travelling in the same direction within the south-west bound traffic lane **(see diagram opposite)**.

Dover Coastguard's printout of the radar tracks shows that at 0500:

Kinsale was, from 0424, making a course of 232° and a speed of 14.1 knots, both of which were constant throughout the incident, until the collision.

Vessel 1 was on her starboard quarter at a distance of 1.6 miles and was making a speed of 12.4 knots.

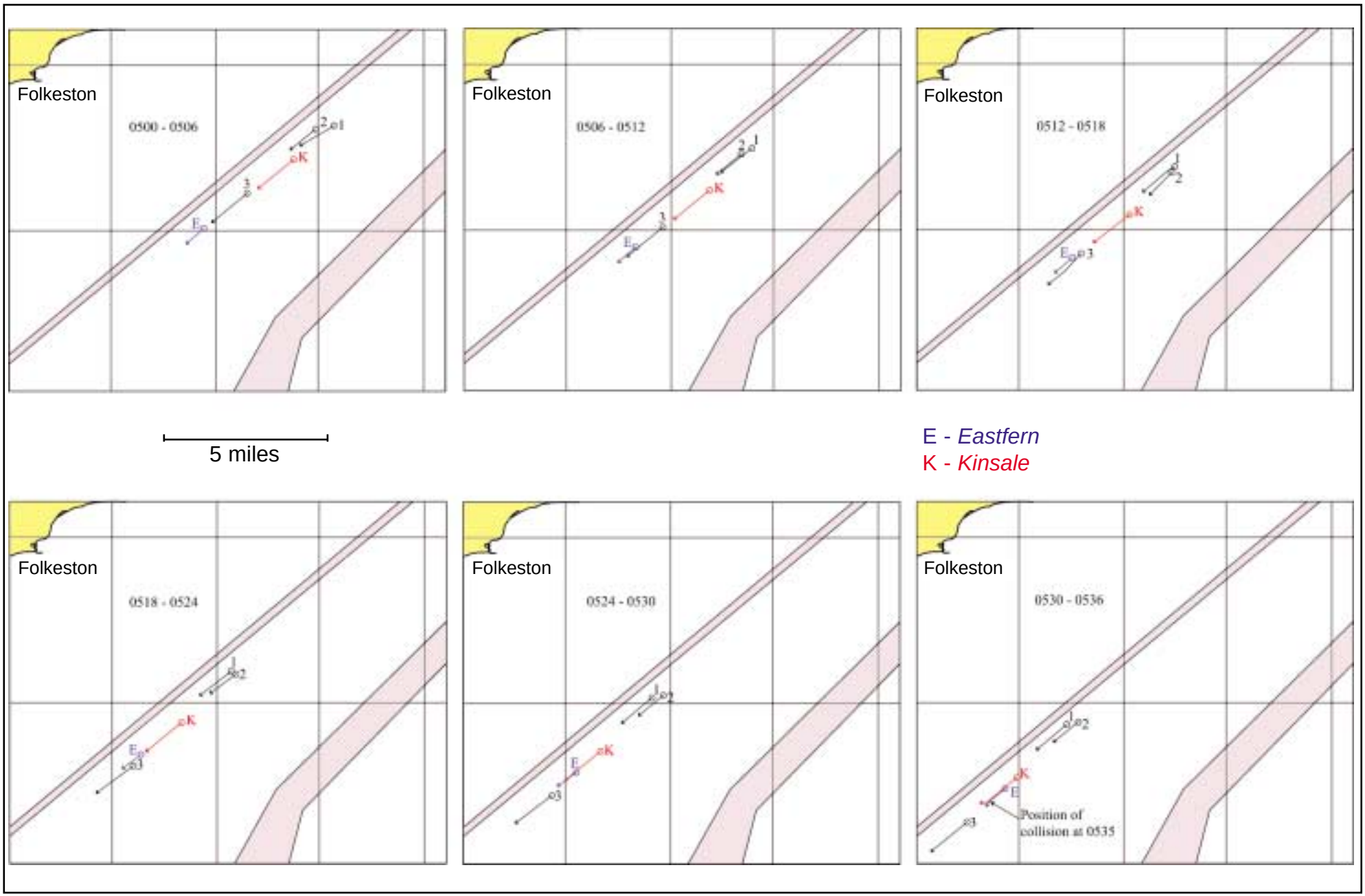
Vessel 2 was also on her starboard quarter at a distance of 1.1 miles and was making a speed of 10.2 knots.

Vessel 3 was ahead at a distance of 1.7 miles and was making a speed of 14.6 knots.

Eastfern was fine on *Kinsale*'s starboard bow at a distance of 3.4 miles and was making a speed of 8.1 knots. Her course made good over the ground was 230°, which was constant throughout, until the collision.

(Note: all courses and speeds quoted above are those made good over the ground.)

Vessels 1 and 2 did not play any part in the incident. *Vessel 3* was directly astern of *Eastfern* and overtaking. By 0512, she was 2.5 cables from her. Several minutes later she altered course to port to pass down *Easfern*'s port side by a distance of about 1.5 cables. By 0518, *Vessel 3* was about 3 cables on *Eastfern*'s port bow and was steadily pulling away.



Dover Coastguard radar tracking plots showing collision sequence

2.2.2 *Eastfern*

Eastfern was the slowest of the ships in the area. All the other vessels were, therefore, overtaking her and had a responsibility to keep out of her way under Rule 13 of the Collision Regulations. Nevertheless, as a stand-on vessel, the mate still had a responsibility to determine if risk of collision existed under Rule 7 and, if so, to take action under Rule 17.

During the incident, *Vessel 3* approached to within a few cables of *Eastfern*'s stern before taking action to avoid her. By 0518, *Vessel 3* was finally passed and clear of *Eastfern*. It is possible that for some time the passing ship distracted both the mate and the lookout, because they were unaware of the approach of *Kinsale* either by radar or by sight, until just shortly before the collision.

Ships travelling at a relatively slow speed are frequently approached from astern. It therefore becomes even more crucial to keep a good visual lookout astern, despite invariably being a stand-on vessel. This is also important when considering that the radar is reported to have had a shadow sector right astern, because the scanner was sited in front of the mainmast.

The bridge team might have become less vigilant because the ship had by now passed the busiest and narrowest part of the Dover Strait (where there were crossing ferries), and the only ships left in the area were all travelling in the same direction **(see diagram opposite)**.

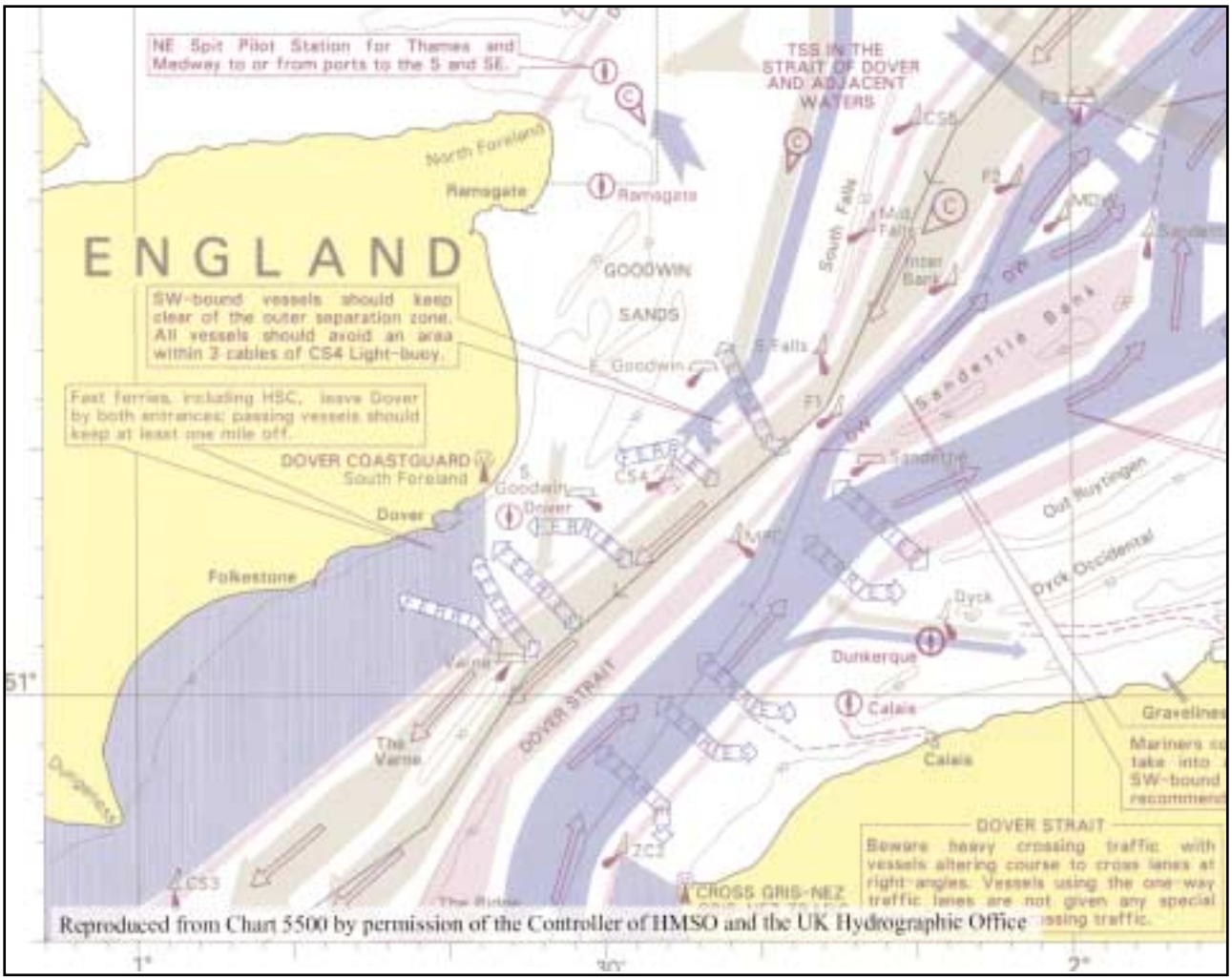
The bridge team was not keeping a proper look-out under Rule 5, nor using all available means to determine risk of collision under Rule 7. Thereby, the mate was unable to indicate his doubt as to the intentions of *Kinsale* under Rule 34, and under Rule 17 he did not take early enough action for a stand-on vessel to avoid a collision.

2.2.3 *Kinsale*

The difference in speed between *Eastfern* and *Kinsale* was about 6 knots, and the distance between them at 0500 was 3.4 miles. This gave about 34 minutes for *Kinsale* to catch up with *Eastfern*.

At 0500, *Eastfern* and *Kinsale* were on slightly different but converging courses. On board *Kinsale*, the computer and the coffee making equipment were on the port side of the bridge. It is possible that on the occasions the chief officer looked forward from the port side, the forward cargo masts obscured *Eastfern*, which was very fine on his starboard bow **(see photograph 7 opposite)**. However, *Eastfern* was crossing slowly from *Kinsale*'s starboard to port bow.

At about 0524, *Eastfern* was right ahead of *Kinsale*. When the chief officer emerged from behind the curtain he saw *Eastfern* which, from his perspective on the port side of the bridge, had emerged from behind the mast on to the port bow. He tried to avoid the collision, but it was too late.



Photograph 7

A view forward from *Kinsale*'s bridge

The operational radar was located on the extreme starboard side of the chart table, and it appears that it was not referred to throughout the incident. The GPS set was close by the operational radar, but after 0500 no position was plotted on the chart until 0540. The hand-over between the chief and second officers did not specifically alert the former they were overtaking another ship ahead of them. However, at the time of the hand-over, *Eastfern* might have been visually obscured from *Kinsale* by *Vessel 3*, which was directly between the two vessels. Nevertheless, the radar, if it had been referred to, should have shown *Eastfern*'s echo.

The chief officer preoccupied himself with checking a list of stores on a computer, making a cup of coffee, and occasionally looking forward. He did not look at his radar and, when left on his own, did not move around the bridge to ensure that an all-round lookout was maintained. A possible contributory factor was his reduced vigilance because the vessel had by then passed through the busiest and narrowest part of the Dover Strait, and also because the traffic was travelling in the same direction.

The chief officer was unable to meet his obligations under Rules 5 and 7 of the Collision Regulations, and thereby was unable to meet the requirements of Rule 13.

2.3 THE ROLE OF CNIS

One of the principles of seafaring is the *freedom* to navigate not only on the high seas but also in territorial waters and narrow channels of other states. The concept of freedom of navigation originates from the belief that shipmasters know best how to navigate safely. This is very different from airline captains, who have to submit flight plans before departure and can be told by air traffic control what to do and when to do it.

The CNIS regards the Dover Strait as having freedom of navigation for vessels of all nations, and it is the shipmaster's responsibility to navigate his vessel according to international regulations, which in this case are the *International Regulations for Preventing Collisions at Sea*. As described in **section 1.6**, if the master does not obey the Collision Regulations and the transgression is observed by CNIS, then he will be reported. If that vessel enters a UK port he could be prosecuted, but, in any case, a report will be sent to the ship's flag state to carry out any such action as it sees fit under the IMO agreements.

Nevertheless, collisions do occur in the radar surveillance area of the CNIS, and it has been questioned as to whether CNIS has, or should have, a role of intervention to prevent them.

1. Vessel control

A difference between a coastal VTS (CNIS) and a port/harbour VTS is in the amount of control of shipping **(see .9.1, .9.2, .9.3 in section 1.6)**. A port/harbour VTS can, for example, direct a ship to leave an anchorage at a certain time, to slow her speed down or to enter a certain channel: this is not the remit of CNIS. A port/harbour VTS could have about 10 ship movements at any one time, whereas CNIS can, typically, have 250 echoes on its radar screens. Therefore, it would be difficult for CNIS to have the degree of control enjoyed by a port/harbour VTS, with that amount of traffic.

In the case of all types of VTS, giving execution details, such as specific helm and engine orders, is unacceptable because they could be inappropriate, given the limited knowledge of the prevailing circumstances and the particulars of the vessels involved and could result in legal action against the VTS. This view is supported by section 2.3.4 of IMO resolution A.857(20) **(in section 1.6 of this report)** *instructions should be result-orientated only*.

2. Limits of control

Despite CNIS being able to attach track numbers and other data to radar echoes, there are some limitations with radar surveillance. It must be remembered that radar is based on the transmission and reception of radio waves, and is subject to interference from atmospherics. In raw radar the echo is dragged out by the rotation of the scanner, and the size of echo reflects the size of the vessel. In raw radar presentation, the operator can adjust the set for gain and for sea and rain clutter. However, the CNIS radar echo returns are processed such that all echoes appear to be the same size, and the operator cannot alter the sea and rain clutter automatic control. The system discriminates between a real echo from background noise. If it finds an echo of an object, it will update its decision every six sweeps of the scanner (every 30 seconds) and will automatically assign a track number and display a vector. However, in the case of a small echo moving up and down in a seaway, the system may drop the data it has assigned for it and, at a later time, give it new data when it has been reacquired.

Sometimes two echoes merge into one, and it appears to an observer that the two vessels might have collided. However, radar frequency length is such that it cannot discern that the two ships are, in fact, separate and are passing at close range to one other. In the restricted waters of the Dover Strait, the passing distances for vessels is far less than would be expected in open seas. When two echoes merge, the radar system drops one set of data. However, when the echoes separate the system will, after 30 seconds, automatically attribute a new track number to one of the echoes.

In this way, the track numbers are sometimes swapped, which can confuse the radar operator.

There were two other near-misses during this incident: *Vessels 2 and 3* came close to one another, as did *Eastfern* and *Vessel 3*, and yet action was taken to avoid collision. Even if a CNIS operator was to give warning by radio of an impending collision, the time taken for ships' officers to respond to the radio, which itself could cause confusion due to possible language differences and radio interference, could make matters worse rather than improve the situation. Many vessels which pass through the area, at one time or another, come on to collision courses with other vessels. However, collisions are averted routinely either by navigational alterations of course, or by deliberate avoiding actions under the Collision Regulations. Because of the high traffic density in the Dover Strait, the number of times which vessels are on collision courses is too frequent for CNIS operators to give warnings, given CNIS' current available resources. Even when two vessels are on a collision course, the timing and type of avoiding action can be dictated by circumstances which the operator may not appreciate.

In conclusion (from the discussion above), it is not the role of CNIS to intervene to prevent collisions between vessels, because of limitations of the radar surveillance system; the impracticalities and dangers of giving warnings and direct instructions, and the desire to maintain the principle of the freedom of navigation, and its available current resources.

SECTION 3 - CONCLUSIONS

3.1 FINDINGS

3.1.1 *Eastfern*

1. The mate was on the navigational watch throughout the incident. [1.1.1]

2. A lookout was on watch with the mate. They were both sitting on chairs on the starboard side and at the centre of the console respectively. [1.1.1]

3. The helm was in automatic, the ship was making good a course of 230° and a speed of about 8 knots. [1.1.1]

4. *Eastfern* was the slowest of the ships in the south-west bound traffic lane at the time. [2.2.1]

5. During the incident a vessel which was ahead of *Kinsale* overtook *Eastfern*, and was finally passed and clear by 0518. [2.2.1]

6. It is possible that for some time the passing ship, *Vessel 3*, distracted both the mate and the lookout. [2.2.2]

7. The approach of *Kinsale* was not observed on the radar, and she was not seen visually until shortly before the collision. [1.1.1, 2.2.2]

8. The mate tried to avoid the collision but his action was unsuccessful. [1.1.1]

9. The bridge team might have become less vigilant because the ship had passed the busiest and narrowest part of the Dover Strait (where there were crossing ferries), and the only ships in the area were all travelling in the same direction and overtaking *Eastfern*. [2.2.2]

10. The bridge team was not keeping a proper lookout under Rule 5 of the Collision Regulations, particularly astern; from which direction most ships were approaching. [2.2.2]

3.1.2 *Kinsale*

1. The chief officer took over the navigational watch from the second officer at 0500. [1.1.2]

2. The hand-over between the chief and second officers did not specifically alert the former that *Kinsale* was overtaking another ship almost directly ahead of her. [2.2.2]

3. After the hand-over, the second officer remained on the bridge to be shown the computer system, which was on the chart table and behind a blackout curtain. [1.1.2]

4. The second officer left the bridge, followed shortly afterwards by the lookout, who went to call some of the crew members. [1.1.2]

5. On taking over the watch the chief officer preoccupied himself in making coffee and with the computer which was behind a curtain, both were on the port side of the bridge. [1.1.2]

6. *Eastfern* and *Kinsale* were on slightly different but converging courses. [2.2.1]

7. The chief officer looked forward occasionally but he did not see *Eastfern*. [1.1.2, 2.2.3]

8. It is possible that the forward cargo masts obscured *Eastfern*, which was very fine on *Kinsale*'s starboard bow. [2.2.3]

9. When the chief officer emerged from behind the curtain, he saw *Eastfern*, which, from his perspective on the port side of the bridge, had appeared from behind the mast. [2.2.3]

10. After he saw *Eastfern*, the chief officer tried to avoid the impending collision, but it was too late. [2.2.3]

11. Given its current status, it is not the role of CNIS to intervene to prevent collisions between vessels. [2.3]

3.2 CAUSE

The cause of the collision was that neither *Kinsale* nor *Eastfern* altered course or speed in sufficient time when a close quarters situation was developing.

3.3 CONTRIBUTORY CAUSES

3.3.1 *Eastfern*

1. The bridge team was unaware of the approach of *Kinsale* until shortly before the collision and took avoiding action too late to prevent a collision. [2.2.2]

2. A proper lookout astern was not being kept. [2.2.2]

3. It was reported that the operational radar had a shadow sector astern. [2.2.2]

4. The bridge team might have been distracted by the passing of V*essel 3.* [2.2.2]

5. The bridge team might have become less vigilant after passing Dover Strait and because the traffic was travelling in the same direction. [2.2.2]

3.3.2 *Kinsale*

1. The chief officer was unaware of the approach of his ship to *Eastfern* until shortly before the collision and took avoiding action too late to prevent a collision. [2.2.3]

2. As sole watchkeeper, the chief officer did not keep a proper lookout. He did not see and then monitor a vessel he was overtaking. [2.2.3]

3. The hand-over of the navigational watch did not specifically alert the chief officer that *Kinsale* was overtaking a ship nearly right ahead. [2.2.3]

4. The lookout was absent from the bridge. [2.2.3]

5. The forward masts visually impeded the chief officer's line of sight of *Eastfern*. [2.2.3]

6. The chief officer might have become less vigilant because the vessel had by now passed through the busiest and narrowest part of the Dover Strait, and because the traffic was travelling in the same direction. [2.2.3]

SECTION 4 - RECOMMENDATION

KG Fisser & V Doornum GmbH is recommended to:

1. Review operational procedures to remove the necessity for the lookout to leave the bridge to call other crew members on vessels it manages or owns.

Marine Accident Investigation Branch
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