C O N T E N T S

SUMMARY

The Chinese motor bulk carrier Jin Shan Hai of 34,990 tonnes summer deadweight passed Low Isles at about 0000 Eastern Standard Time, 17 June 1991, on a course of 1520 at a speed of approximately 13 knots, while on passage from the port of Gove, Northern Territory, to Gladstone, Queensland, with a part cargo of alumina. The vessel was shaping a course for Cairns fairway buoy where the pilot of the Torres Strait and Queensland Coast Pilot Service was to be disembarked.

At the same time the Australian prawn trawler Kekenni was engaged in trawling off Batt Reef steering about 1350 at a speed of about 3 knots.

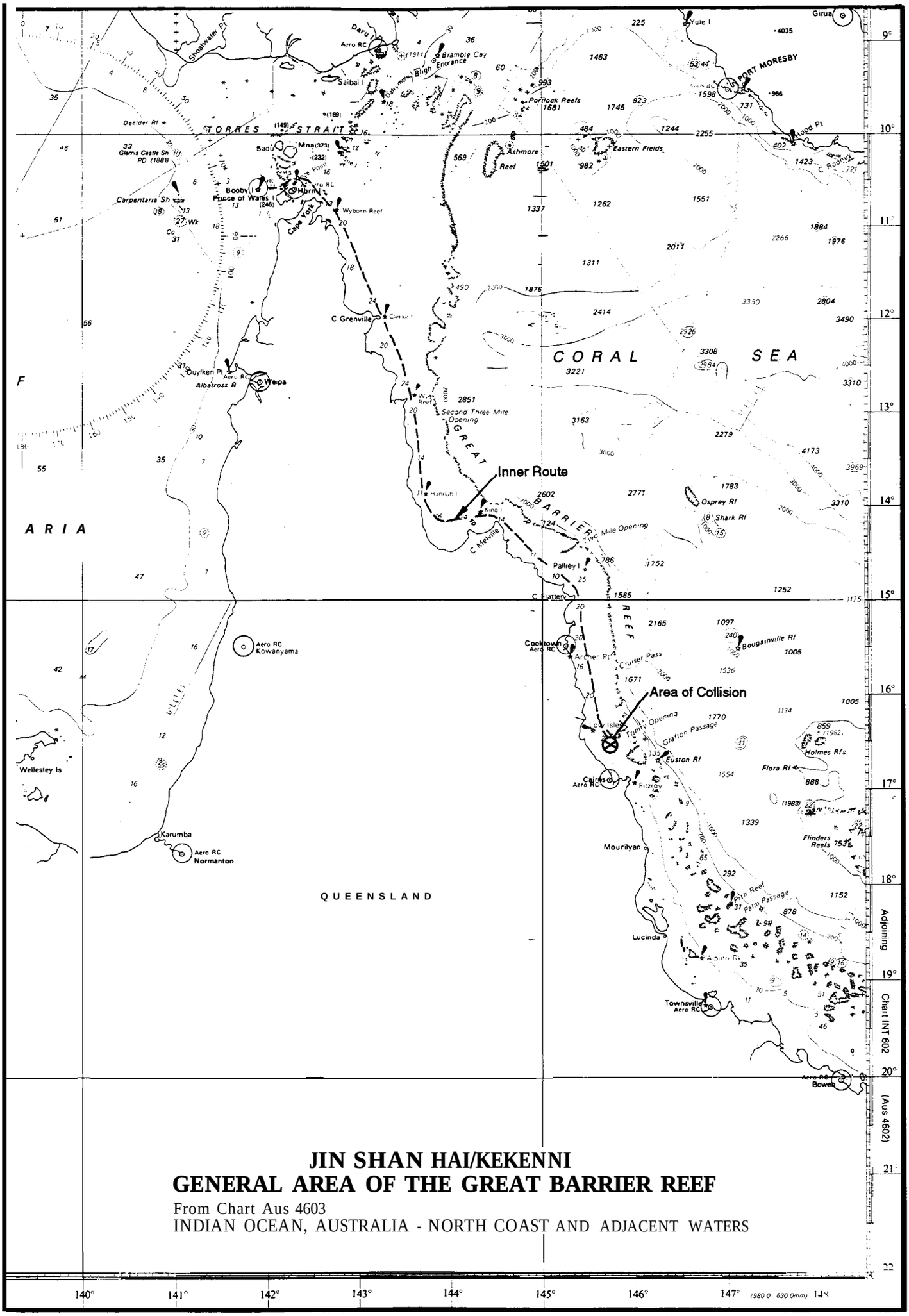
At about 0035 the two vessels collided in approximate position 160° 30.0' South 145° 40.2' East, about 26 miles north-north-west of Cairns. The visibility was clear with a calm sea and slight swell. The Kekenni subsequently sank and the three crew took to the trawler's dinghy.

At 0042 Townsville Marine Communications Station received a message from the trawler Prospector reporting the incident and confirming that the Prospector was proceeding to search for the crew.

The Master of the Jin Shan Hai was called to the bridge, and the vessel turned to render assistance.

The three crew members of the Kekenni were rescued from the dinghy by the Prospector. Apart from minor bruises and abrasions the crew of the Kekenni suffered no injury. The Prospector returned to Cairns with the crew aboard.

At 0110 the Jin Shan Hai resumed passage for Gladstone.



JIN SHAN HAI/KEKENNI
GENERAL AREA OF THE GREAT BARRIER REEF

From Chart Aus 4603

INDIAN OCEAN, AUSTRALIA - NORTH COAST AND ADJACENT WATERS

New Editions 10th March 1982
7th July 1986

DEPTHS IN METRES

Pos Original 1974

INT 603
Aus 4603

PEOPLE INTERVIEWED

From the Kekenni:-

Mr Gregory Bruce INGLIS	Skipper
Mr Guy Nigel ADAMS	Deckhand
Mr Barry OLDFIELD	Deckhand

From the Prospector:-

Mr Peter HUMPHREYS	Owner/Skipper and joint owner of the Kekenni

From the Jin Shan Hai 19 June 1991:-

Captain LIU Jian Fu	Master
Mr TIAN Lian Xi	Second Mate
Mr LI Jing Xiang	Third Mate
Mr CHEN Yuan Lun	Seaman
Mr LU Hai Lin	Seaman
Captain Reinhold K DUELBERG	Queensland Coast and Torres Strait Pilot Service

Information relating to the certification of the Kekenni and the qualifications of Mr Inglis was also supplied by the Queensland Department of Transport.

All times given are in Eastern Australian Standard Time (UTC + 10)

THE KEKENNI

The Kekenni was built of wood in 1970 in Ballina, NSW, as a single-screw trawler. The vessel was 15.2m in length, 4.87m breadth, 1.67m depth and powered by a Scania diesel of 215 kW. On 17 June 1991, the vessel was in full survey, under the Queensland Department of Transport, as a Uniform Shipping Laws Code fishing vessel, Class 3B, having carried out repairs and undergone a survey in March 1991. The vessel was owned by PJ. Humphreys and M.M. Wagner, of Sarina Beach, Queensland.

Mr Humphreys was also owner-skipper of the trawler Prospector, which was fishing in the area off Cairns at the time of the collision.

The Kekenni was equipped with a magnetic compass, two radars, two echo sounders, auto pilot, a Codan 6801 single side-band radio and a VHF radio. The compass was adjusted in March 1991 and two deviation cards were put on board, no copy was retained by the adjuster. However the compass adjuster recalled that there was very little deviation.

The Kekenni's hull above the water line was painted a straw gold colour, with red boot topping below the water line. The housing, rigging, A frame and booms were all painted white.

The A frame, which supports the booms and trawling gear when fishing, extended approximately 6m above the deck. The radar scanner, situated on a tripod above the wheel house about 10m forward of the A frame, was about 4.5m above the deck.

The skipper of the Kekenni, Mr Brian Inglis, held a Queensland Marine Board qualification, equivalent to a Uniform Shipping Code Certificate as a Master Class 5, and a master fisherman's licence. He had been fishing since 1981, first as a deck hand and since 1989 as a skipper. He joined the Kekenni as skipper in February 199 1.

In addition to the skipper, two deck hands were carried on 17 June. Both had joined the Kekenni two weeks earlier and were on their first voyage on a fishing vessel.

According to Mr Inglis, the vessel had a total fuel capacity of about 5,500 litres, giving sufficient fuel for 14 nights fishing at 350 litres per night. The vessel had filled its fuel tanks at Cooktown on 7 and 8 June. On 17 June, Mr Inglis estimated that the Kekenni had on board about 50 litres of hydraulic oil 10 in a drum and the remainder in the hydraulic reservoir tank, and about 30 litres of lubricating oil in sealed drums with a further 18 litres in the engine. A small volume of oil would also have been present in the bilge. Given the vessel's daily consumption, about 2000 litres of diesel fuel would have remained on board.

The Kekenni was engaged in prawn trawling, a night time operation. During the daylight hours of 16 June the vessel was at anchor off Low Islets, the crew sleeping during this time.

At about 1730 on 16 June, Mr Inglis weighed anchor and proceeded to the fishing ground about five miles off Port Douglas and to the west of the normal shipping route. The routine followed by Mr Inglis was to shoot his nets and trawl back and forth in legs of 1 to 3 miles. At the end of each leg, the vessel would be turned on a reciprocal course without hauling the nets. The rate of turn was determined by the need to keep the trawl warps leading astern,

rather than allowing them to lead at a broad angle to the vessel's advance, which could lead to capsize. Therefore any alteration of course would be relatively gradual. The trawlers speed while trawling was about 3 knots.

The Kekenni began fishing at about 1830 and shot nets twice to the west of the main shipping route. Late in the evening the vessel moved to a position off Satellite Reef.

Mr Inglis and the deckhands stated that the vessel displayed the appropriate light signals for a vessel of less than SOm engaged in trawling, as proscribed by the International Regulations for Preventing Collisions at Sea, 1974:

(i) port and starboard side lights and a stern light visible for at least 2 miles: and,
(ii) two all-round lights in a vertical line the upper being green and the lower white visible for at least 2 miles.

In addition, the Kekenni had very bright after deck working lights powered by a 240 Volt generator in the engine room. The intensity of such lights is governed by the requirements of the Export Control (Fish) Orders made under the Export Control Act, administered by the Department of Primary Industry and Energy.

It was stated that the radar was working as was the echo sounder.

The visibility at that time and into the morning was clear and the sea was calm.

At about 2330 the Kekenni shot its nets for the third time, when about three miles off Satellite Reef. According to Mr Inglis, he set a course of about south-east with the vessel making good a speed of 3 knots, his stated intention being to undertake a run of one hour in each direction. Mr Inglis recalled that there were other vessels in the area – two trawlers to the west of the Kekenni due south of Low Islets, a number of trawlers close to Double Island and some others north of Low Islets.

Mr Inglis stated that he had remained at the wheel of the Kekenni from 2330, keeping a lookout forward and regularly checking the radar. The vessel remained on a steady course at its normal trawling speed of 3 knots. At no time did he observe any vessel on a possible collision course, either visually or by radar.

Soon after midnight the two deckhands went to the wheelhouse after sorting the catch from the previous trawl. They sat on the settee and slept intermittently, waiting for the next call to haul in the net.

At about 0030 on 17 June Mr Inglis considered that it was time to turn the vessel and run to the north on a reciprocal course.

He stated that he probably would have turned to the west (to starboard) and that before making any alteration he had gone to the wheelhouse door to check astern. As he looked aft he saw "one large green light very close and another white light". He went immediately to the controls, gave the engine maximum power and put the wheel hard to starboard, away from the lights. Mr Inglis estimated the Kekenni had swung through about 90 degrees when a collision occurred. He heard no whistle signal from the approaching vessel.

Mr Inglis gained the impression from the way the Kekenni reacted that the initial impact was between the ship's hull, very close to the bow, and the Kekenni's starboard trawl boom. The impact, which swung the trawler's bow round to face aft along the ship's hull, resulted in a breach in the Kekenni's hull.

The lights on the Kekenni went out immediately. Mr Inglis lifted the hatch over the engine space and saw water over the motor.

He instructed the deck hands to ready the aluminium dinghy, kept on the wheelhouse roof. He then called the Prospector on channel 17 before sending a general distress message on medium frequency 2182 kHz. All three men evacuated the Kekenni and set off a parachute flare as they took to the boat. By the time they had rowed 20m clear of the fishing vessel the wheelhouse was under water, while part of the hull remained above water. About 10 minutes after taking to the boat a further red parachute flare was set off, and later a hand-held flare was used when the Prospector was sighted.

The Prospector heard the call on channel 17 and Mr Humphreys, the skipper, alerted his crew immediately, turned on the radar and began to haul his nets. After approximately three minutes, when the radar was operational, he located the ship which he established later to be the Jin Shan Hai – by radar at 4.8 miles, in roughly a south-south-east direction.

When the trawl nets had been retrieved, Mr Humphreys called Townsville Marine Communications Station (Townsville Radio) on 4125 kHz and reported the collision. This message was logged at Townsville Radio at 0042. The Prospector then proceeded at the vessel's best speed in the general direction of the ship. At 00.55 the Prospector and the Jin Shan Hai established contact on VHF radio channel 16 and from 0058 contact was maintained on VHF channel 28.

Mr Humphreys sighted a flare from the Kekermi and was able to steer for the position of the survivors. He estimated the Prospector reached the three men a little before 0110 and took them aboard. As Mr Inglis gained the deck of the Prospector he could see the Jin Shan Hai had turned and was heading towards them. Mr Humphreys informed Townsville Radio the crew had been rescued. The Prospector, after exchanging information with the ship, proceeded to Cairns to land the survivors.

Mr Humphrie fixed the position of the collision by satellite navigator at 16° 30' S 145° 40.5' E.

THE JIN SHAN HA1

The Jin Shan Hai is a five hatch bulk carrier of 34,990 tonnes summer deadweight and is owned by COSCO Quigda. The vessel is registered in the port of Qingdao, in the Peoples' Republic of China, and was built at Shiogama, Japan in 1983.

The Jin Shan Hai has a length of 176m overall, a breadth of 28.20m and has a moulded depth of 15.6m. The ship is powered by a B&W diesel engine developing 7,723 kW, driven by a single screw, giving a service speed of 14.25 knots. The vessel is classed with Ziamlian Chuen (Register of Shipping of the Peoples Republic of China). All statutory and other certificates were valid on 17 June 1991.

The Jin Shan Hai sailed from Gove, Northern Territory, on 13 June with a crew of 36, under the command of Captain Liu Jian-Fu, for Gladstone, Queensland, with a part load of 15,677 tonnes of alumina in bulk. The vessel's route was to take it across the Gulf of Carpentaria and through the inner route of the Great Barrier Reef.

The vessel arrived off Goods Island at 1100 on 15 June 1991 and embarked a pilot, Captain R.K. Duelberg, of the Queensland Coast and Torres Strait Pilot Service. At that time the vessel was drawing 6.3m forward and 7.7m aft, giving a mean draught of 7m and an approximate mean freeboard of 8.6m.

The passage from Goods Island to Low Islets was completed in 36.9 hours at an average speed of approximately 13 knots.

At 0000 on 17 June 1991 the Jin Shan Hai's position was fixed with Low Islets bearing 2710 true by 3.35 miles, with the ship on a course of 1.520 true at 13.2 knots. The ship's log book records the wind as southerly force 3 with clear visibility; there was no change in weather conditions for the next four hours. The chart in use was Aus 830 "Russell Island to Low Islets". At this time the Second Mate, Mr Tian took charge of the watch from the Third Mate, Mr Li. On watch with him were a seaman lookout and a seaman on the wheel, steering the ship manually. Upon arriving on the bridge the Third Mate and the Second Mate consulted the chart, noting the proximity of the reef area to port. The Third Mate also pointed out the Master's instructions written on the previous chart, Aus 831 "Low Islets to Cape Flattery", to fix the ship's position every 15 minutes, to avoid collision and to call the Master if in any doubt.

Before handing over the watch the Third Mate drew the Second Mate's attention to three vessels, which it was assumed were fishing vessels, forward of the beam on the starboard side and which could be seen on the radar. The fishing vessel closest to the ship's track was at about 5 miles and apparently on the same or similar course as the Jin Shan Hai.

The Second Mate stated that he could clearly see three fishing vessels on his starboard bow. Each vessel was showing bright working lights, however he could not make out any navigation lights or special signals. He stated that he took bearings and distances by radar of these vessels at 0005 and recalled the vessel closest to the Jin Shan Hai's line of advance as being 167° by 4.5 miles. This fishing vessel was clearly visible to both the seaman lookout and the seaman on the wheel.

At 0015, the Second Mate fured the ship's position as 2.6 miles off Satellite Reef with Low Isles light bearing 303° by 5.6 miles. He recalled that the radar was on the six-mile range. In his estimation the bearing of the nearest fishing boat had broadened to approximately 170°. The Second Mate states that he continued to observe the fishing vessels, particularly the closest one to the ship's course line.

At about 0020 the ship passed one of the trawlers to starboard at a safe distance. At about the same time he saw the A frame of the vessel, which was ahead of the ship on the starboard side. The Second Mate could see it was engaged in fishing and in his estimation it was proceeding very slowly. He did not plot the vessel by radar to establish its course and speed.

According to the Second Mate, because of the proximity of the fishing vessel he did not fix the ship's position at 0030.

The Second Mate stated that at about 0035 he was at the radar. He looked up and he saw the fishing vessel very close to the Jin Shan Hai, almost right ahead, showing a red side light. At the same time, the lookout reported the red light. The Second Mate concluded that the fishing vessel was attempting to cross ahead from starboard to port. with the fishing boat virtually right ahead, at a distance he estimated to be half a mile, he sounded the whistle and ordered full starboard rudder, in an attempt to pass under the stern of the fishing boat. He ordered the seaman lookout to the port side and went himself to the starboard side. According to the Second Mate a collision occurred between 30 seconds and two minutes later.

The quarter master stated that the Jin Shan Hai had steadied on a course between 190° and 200° and then was brought back to the original course of 152°.

The Master was called immediately to the bridge and the Second Mate told him that he thought that the ship might have hit a small fishing vessel. The Master stated that he had ordered a reduction in revolutions and for the helm be put hard to port to bring the ship to a course of about 332°. He also ordered that the Pilot, Electrician and Chief Officer be called to the bridge. As the vessel neared a course of 332°, the Master stated that he saw a red parachute flare. He ordered the electrician to clear the searchlight, the boatswain to make ready the lifeboats and sent the Chief Officer forward.

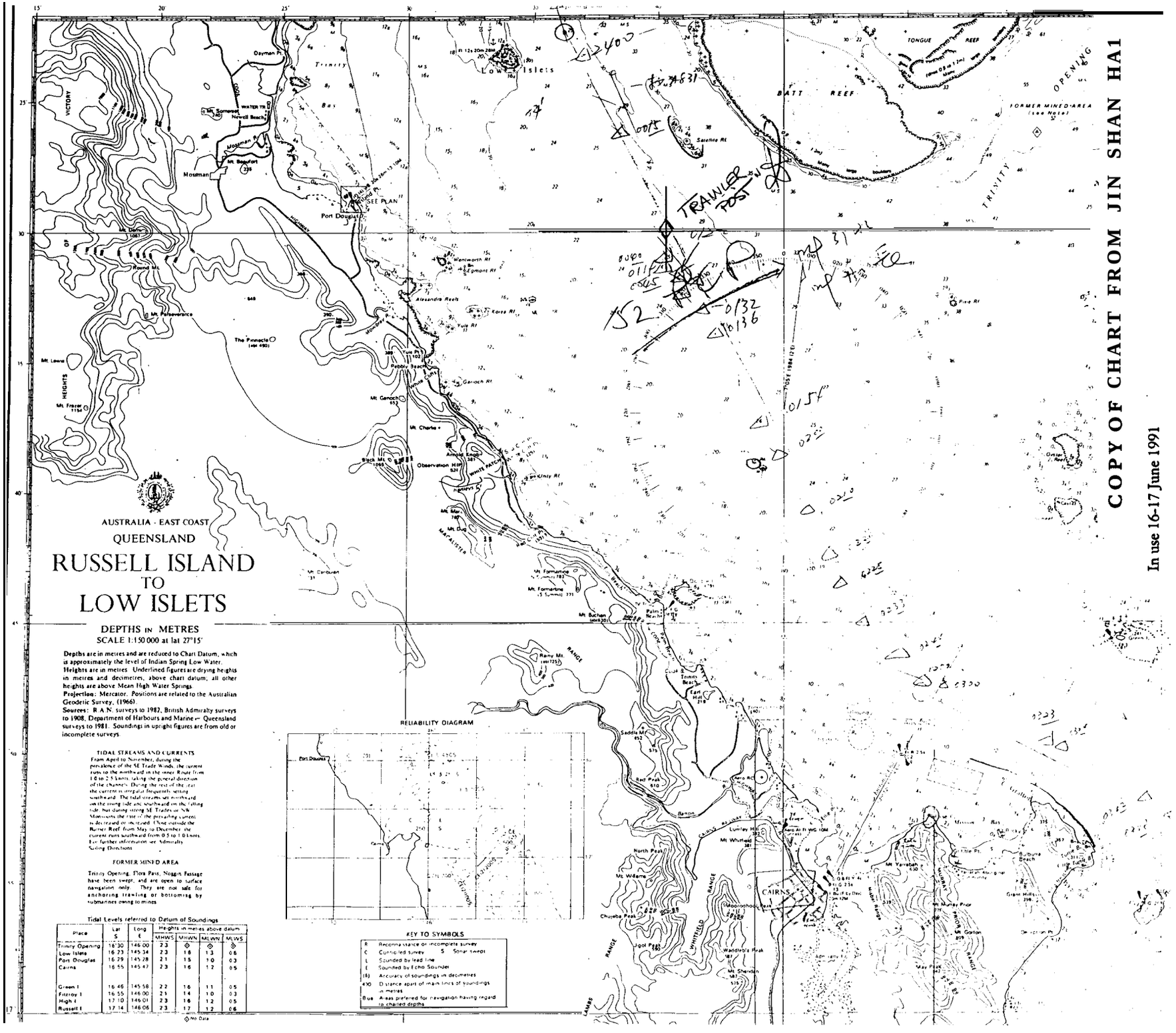
The Pilot, Captain Duelberg, stated that when he was called he instinctively looked at his watch and noted the time as 0045. He was given no reason why he had been roused and was given another call while in the bathroom, which he thought a little unusual. He estimated he was on the bridge within five minutes of first being called.

The Pilot arrived on the bridge at approximately 0050 to find the ship proceeding at slow ahead on a heading of 3300. He was informed that the Second Mate thought the ship had hit a fishing vessel. The Pilot then took over coordination of the communications and broadcast a general "SECURITE" call on VHF radio, Channel 16. This call was received by 'Townsville Radio at a time logged as 0055.

Once communications had been established between the Jin Shan Hai and the Prospector, the Pilot and Mr Humphrey's established their relative positions and a probable radar fur on the hull of the Kekenni. The Jin Shan Hai also confirmed a sighting of a flare from the Kekenni's survivors.

The Jin Shan Hai had returned close to the scene of the collision by 0100. After the rescue of the three men, the Jin Shan Hai gave details of the ship and its voyage to Mr Humphreys and confirmed the position of the sinking as 16° 30'S 145° 40.2'E

The Jin Shan Hai resumed course for Gladstone at 0111 on 17 June.



COPY OF CHART FROM JIN SHAN HA1

In use 16-17 June 1991

COMMENT

Throughout the night of 16- 17 June, the visibility was good and the sea slight, with little or no swell.

Neither the Skipper of the Kekenni, Mr Inglis, nor the two crew members, saw the Jin Shan Hai until Mr Inglis looked astern a few moments before the collision. The Jin Shan Hai was not seen on the Kekenni's radar and therefore, nobody on board was able to indicate the bearing or distance of the Jin Shan Hai relative to the fishing boat at any time. The fishing vessel's exact position at any given time was also not known.

The available evidence is that the Kekenni's radar was operational, but the Jin Shan Hai was not detected. The radar scanner was positioned about 5m above the water line, and the A frame – which extended above the height of the radar scanner – created a large shadow area extending over about 30 degrees – from right astern to about 15 degrees on each quarter – reducing the effectiveness of any echo return from astern.

The Kekenni's bright working lights were visible to the three men on the Jin Shan Hai's bridge from the time they took up duty at 0000 hours on 17 June. It was assumed that all three brightly lit vessels observed on the starboard bow at midnight were fishing boats. About 10 to 15 minutes before the collision occurred, the Second Mate was able to see the trawling warps and A frame of the fishing vessel, and was of the opinion it was fishing and proceeding very slowly. Neither he nor the others on the bridge could see any fishing signal lights or navigation lights.

As the vessel was lost it was not possible to check that the navigation lights were correctly screened. However, the Kekenni had recently completed survey and according to Mr Humphreys, new side lights had been fitted, the all round green over white trawling signal lights had been fitted to the fore side of the radar mast, the stern light had been repositioned at the stern to make the light more visible, and the working lights had been trained downwards to illuminate the working deck. All lights were stated to have been operational, and it is Mr Humphreys' contention that the only light that would have been obscured by the deck working lights was the stern light, all other lights should have been visible as required under the International regulations.

The Inspector accepts that the Kekenni's lights had been altered and adjusted as stated. However, powerful working lights do obscure or reduce the effectiveness of the relatively low intensity navigation lights by direct glare and reflection from the water surface. It is also accepted that the Kekenni was engaged in trawling from about 2 3 3 0 to the time of the incident.

Neither vessel had an operational course recorder or data log. The Jin Shan Hai was equipped with a course recorder, but this was not working at the time of the incident. Without the record of a course recorder trace and engine data print out it is not possible to reconstruct the incident with absolute accuracy. But, given the agreed position of the collision and the known speeds of the vessels involved, a fair approximation of the incident can be reconstructed.

According to Mr Humphreys, the difference between the Kekenni's compass course and the course made good can be affected by the wind, tide and the characteristics of the fishing nets which can cause a difference between the compass course and the course made good of more than 10 degrees, even in good conditions.

The Jin Shan Hai was not restricted in its ability to manoeuvre. The vessel passed 2 miles off Satellite Reef at 0020 and, throughout the time leading to the collision, had 2 miles or more clear water to the east and six miles to the west. Given the weather conditions and the fact that the Second Mate was a properly qualified deck officer there was no need for the Master to be on the bridge, unless his presence was requested.

The Jin Shan Hai's charted positions show that from 2350 the vessel had made good a course of approximately 1.53 degrees and its speed over the ground was 13.2 knots, or marginally faster. Inspection of the ship's gyro compass showed no significant gyro compass error.

It is accepted, therefore, that from the time the Second Officer assumed the watch at midnight the vessel was proceeding at 13.2 knots (6.79m/sec, 407m/min), on a course of 153° true compass. The Jin Shan Hai travelled its own length of 176m in 26 seconds.

The ship's position was recorded at 2400 and 0015, these two positions are consistent with the speed of 13.2 knots.

The Jin Shan Hai's, Second Mate recalled a number of bearings he had taken of the fishing vessel, together with one specific distance at 0005.

The Jin Shan Hai was overtaking the fishing vessel, which was on a converging course on the Jin Shan Hai's starboard side.

The evidence is that neither the crew of the Kekenni nor the Second Mate had consumed alcohol in the hours before taking up their duties. Mr Inglis is an experienced fishing skipper and used to the routine of rest and duty. The Second Mate had slept before taking up duty. It is considered therefore that acute fatigue was not a factor in the judgment and actions of Mr Inglis and the Second Mate.

There are a number of possible scenarios which should be considered.

1. The distance and bearing of 0005 and the bearing taken at 0015, as recalled by the Jin Shan Hai's Second Mate, were accurate.

2. The distance and bearings in 1 above were accurate, and the Kekenni was trawling at a speed of 3 knots.

3. The distance and bearings taken by the Second Mate were not accurate and the Kekenni commenced trawling about 3 miles from satellite reef at a speed of 3 knots.

4. One or both vessels altered course when they would otherwise have passed clear.

PLOT OF THE VESSELS' RELATIVE POSITIONS BASED ON EVIDENCE OF SECOND MATE JIN SHAN HAI

JSH JIN SHAN HAI

K KEKENNI

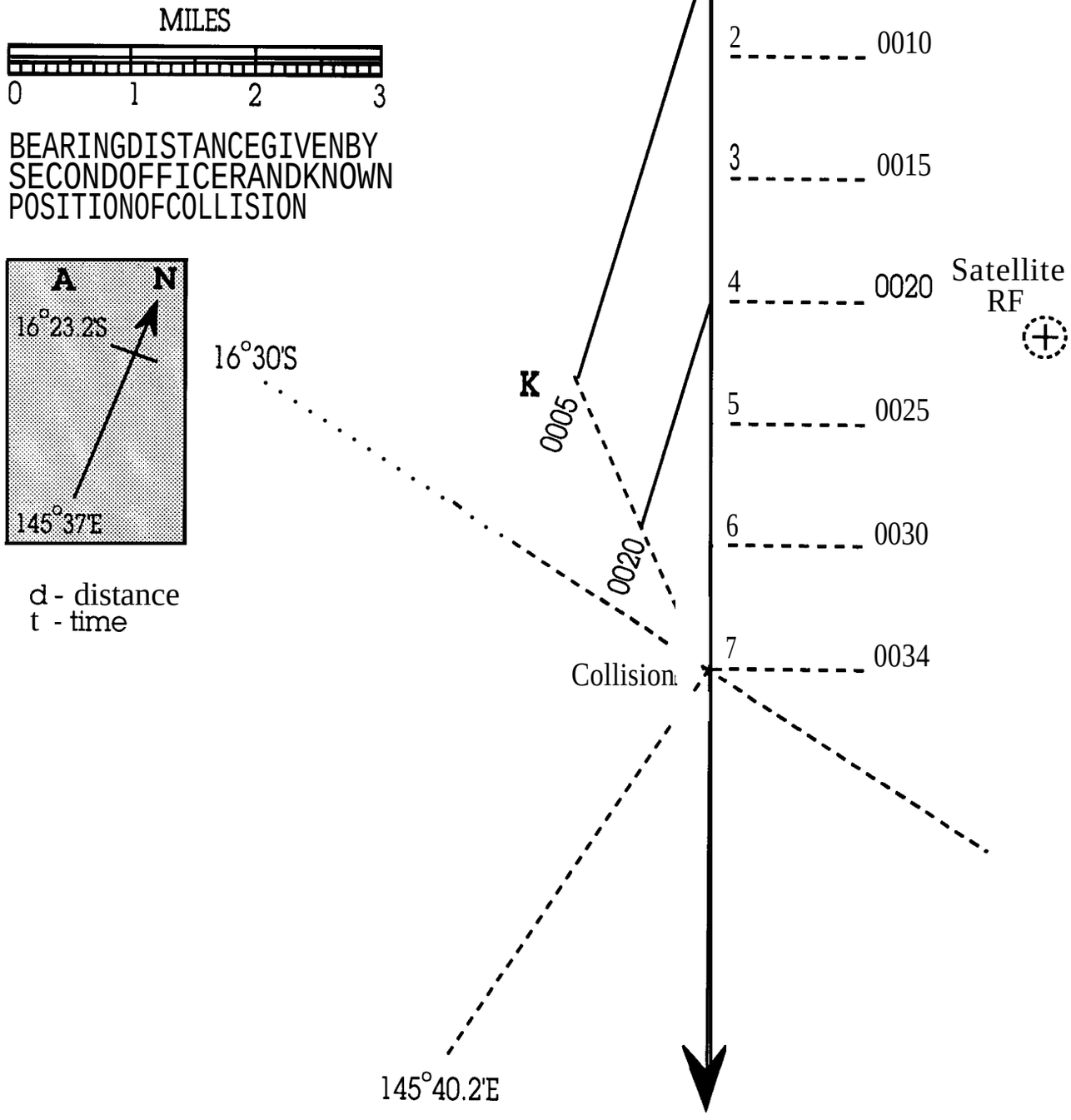


DIAGRAM 1

1. The distance and bearings recalled by the Jin Shan Hai's Second Mate were accurate.

If the two bearings of 167° and 170° and the distance of 4.5 miles recalled by the Second Mate were correct and it is accepted that the collision occurred in position 16° 30.00'S 145° 40.2'E, then the Kekenni must have been steering a course of about 123° at about 4.9 knots.

On advice from those experienced in the prawn trawling industry a trawler's speed while fishing is between 2 and 4 knots. In the case of the Kekermi 3knots was the most efficient speed for trawling. This would give the Kekenni a speed over the ground of 1.54 m/sec or 92m/min.

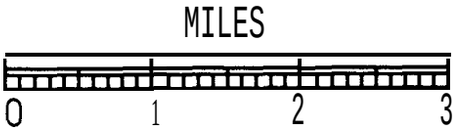
It is considered unlikely that the Kekenni was making 4.9 knots. It is therefore probable that at 0005 the Kekenni was at a greater distance from the Jin Shan Hai than the 4.5 miles recalled by the Second Mate, and the bearings were approximate only.

It must be stressed that the above plot is based on the two observations recalled by the Second Mate only and their accuracy is open to question. Given the relative speeds of the vessels, a relatively small variation in time, bearing or distance, would make a significant difference to the plot. The Second Mate did have time and the opportunity to undertake a proper plot, at practical time intervals, to establish the fishing vessel's course, speed and possibility of a close quarter situation.

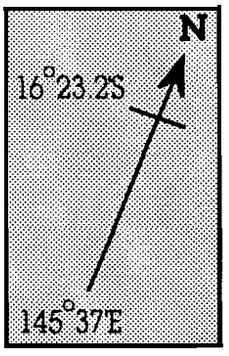
RELATIVE POSITION OF VESSELS

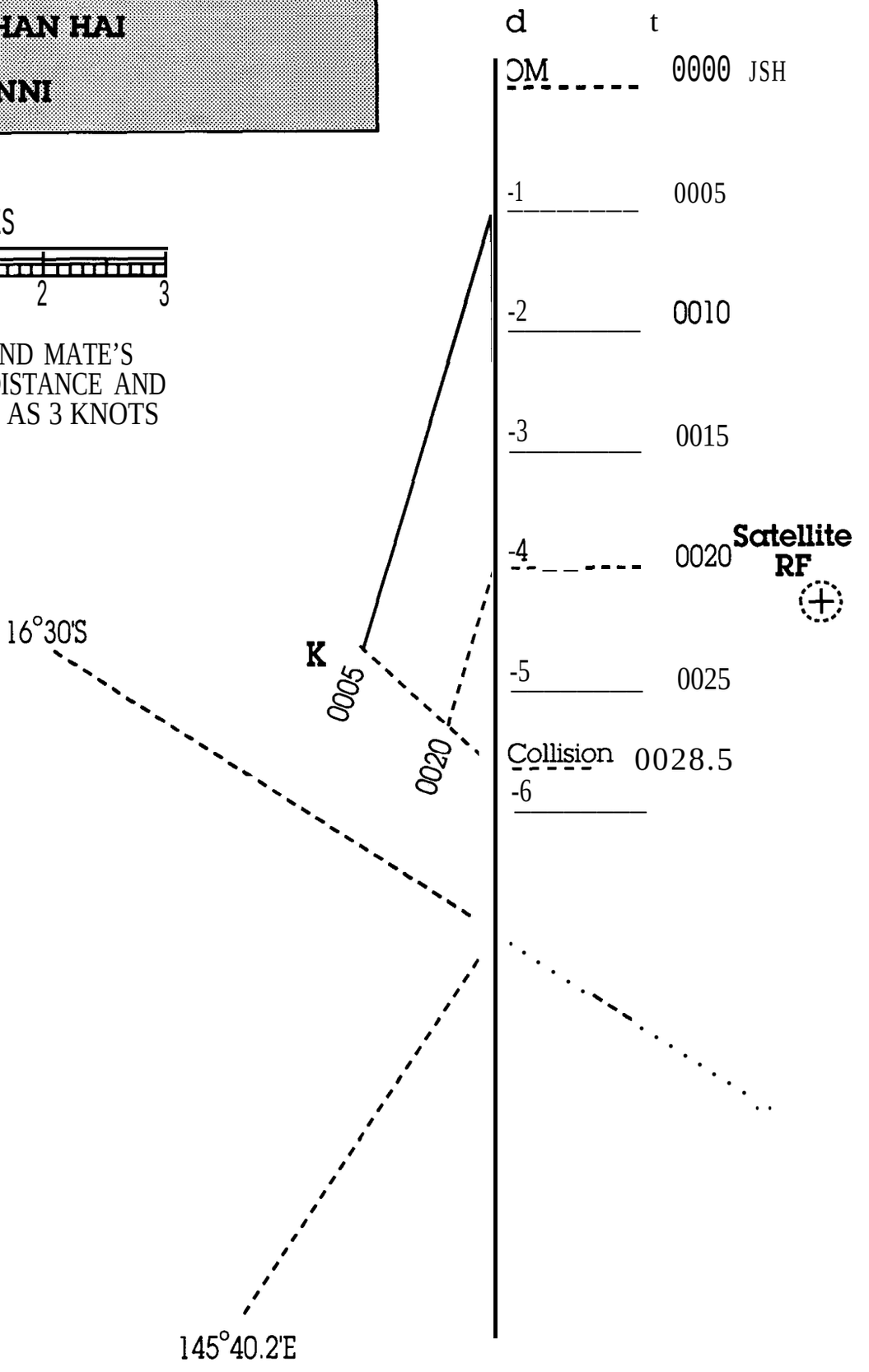
JSH JIN SHAN HAI

K KEKENNI



ASSUMING SECOND MATE'S BEARING AND DISTANCE AND **KEKENNI'S** SPEED AS 3 KNOTS





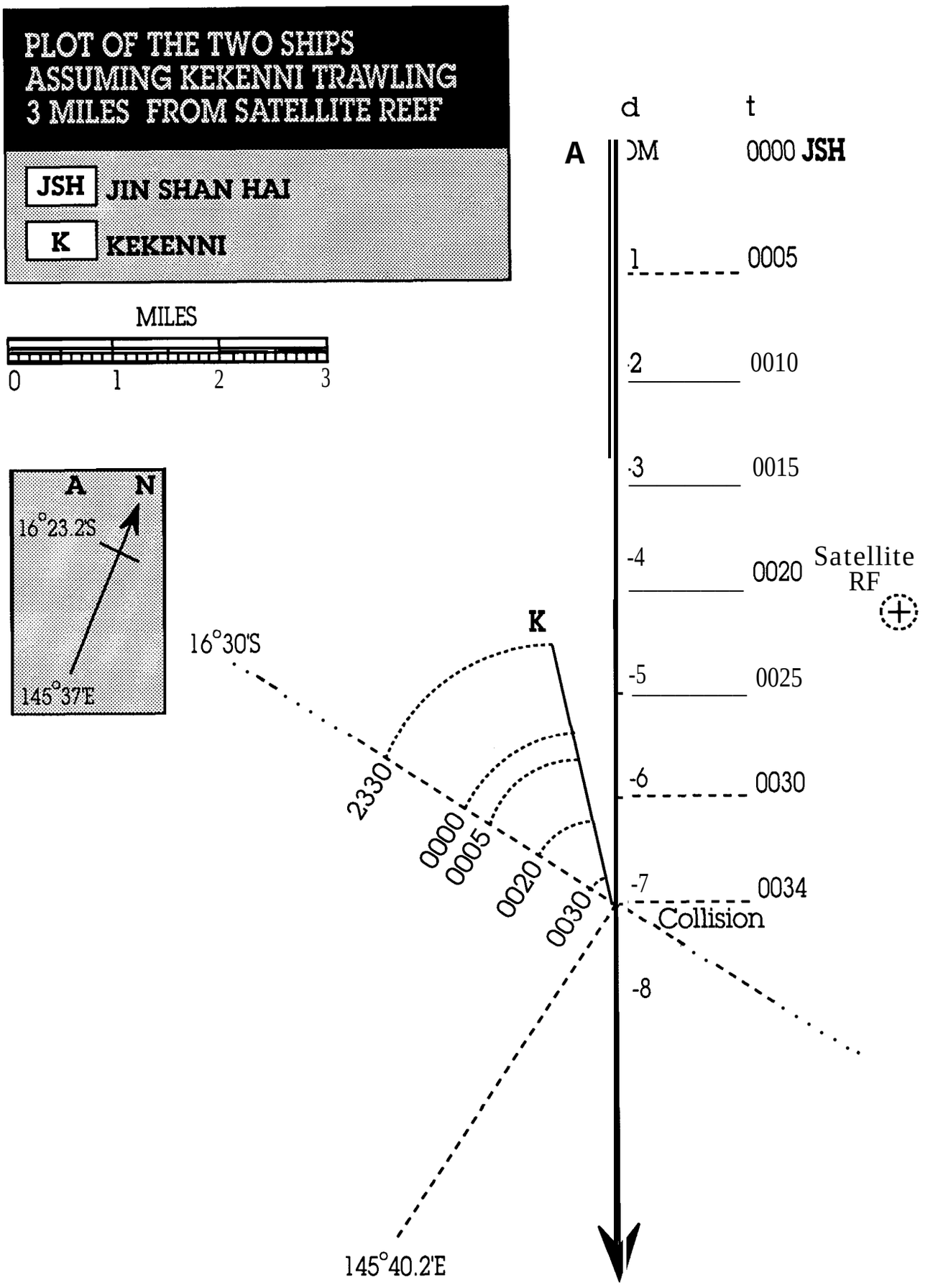
DIAGRA

2. The distance and bearings in 1 were accurate, and the Kekenni was trawling at a speed of 3 knots.

If the distance at 0005 and both bearings of the Kekenni, as recalled by the Second Mate, are accurate and the fishing vessel's speed was restricted to 3 knots, the collision would have occurred at or just before 0028.5 in position 16° 29.1'S 145° 39.9'E

Had this been the case, the Kekenni would have been on a converging course of approximately 106 degrees. On such a course the fishing vessels port side light should have been visible to the Second Mate when using binoculars to examine the fishing vessel at about 0020. Under this scenario the two vessels would have been 1.55 miles apart at this time.

Given all the information available, the position of the fishing boat as recalled by the Second Mate is not consistent with the known speed of the Jin Shan Hai or the probable course and speed of the Kekenni.


PLOT OF THE TWO SHIPS
ASSUMING KEKENNI TRAWLING
3 MILES FROM SATELLITE REEF
JSH JIN SHAN HAI
K KEKENNI
MILES
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A N
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2 0010
3 0015
4 0020
5 0025
6 0030
7 0034
8
Satellite RF
Collision

DIAGRAM 3

3. The Kekenni began trawling about 3 miles from Satellite Reef at a speed of 3 knots.

There are no records of the Kekenni's course and speed. But Mr Inglis stated that his approximate course was south-east at about 3 knots. He also recalled that at the start of his third run he was approximately 3 miles off Satellite Reef.

It is therefore probable that, given the initial approximate position and the position of the collision, the fishing vessel's course was south-east as stated.

From all the information available, given the known normal operating speeds of prawn trawlers and their mode of operation, the Inspector concluded that the information given by the fishing vessel relating to its course and speed is more reliable than the bearings and distance given by the Second Mate of the Jin Shan Hai. This is not to say that the Second Mate in any way attempted to deceive the investigation. As previously stated, given the relative speeds and positions of the vessels involved, any minor error in time or bearing would have a significant effect on any plot.

It is more likely that at 0005 the fishing vessel's bearing from the Jin Shan Hai was about 157° at 5.4 miles, and there was little subsequent change in the bearing over the next 28 minutes.

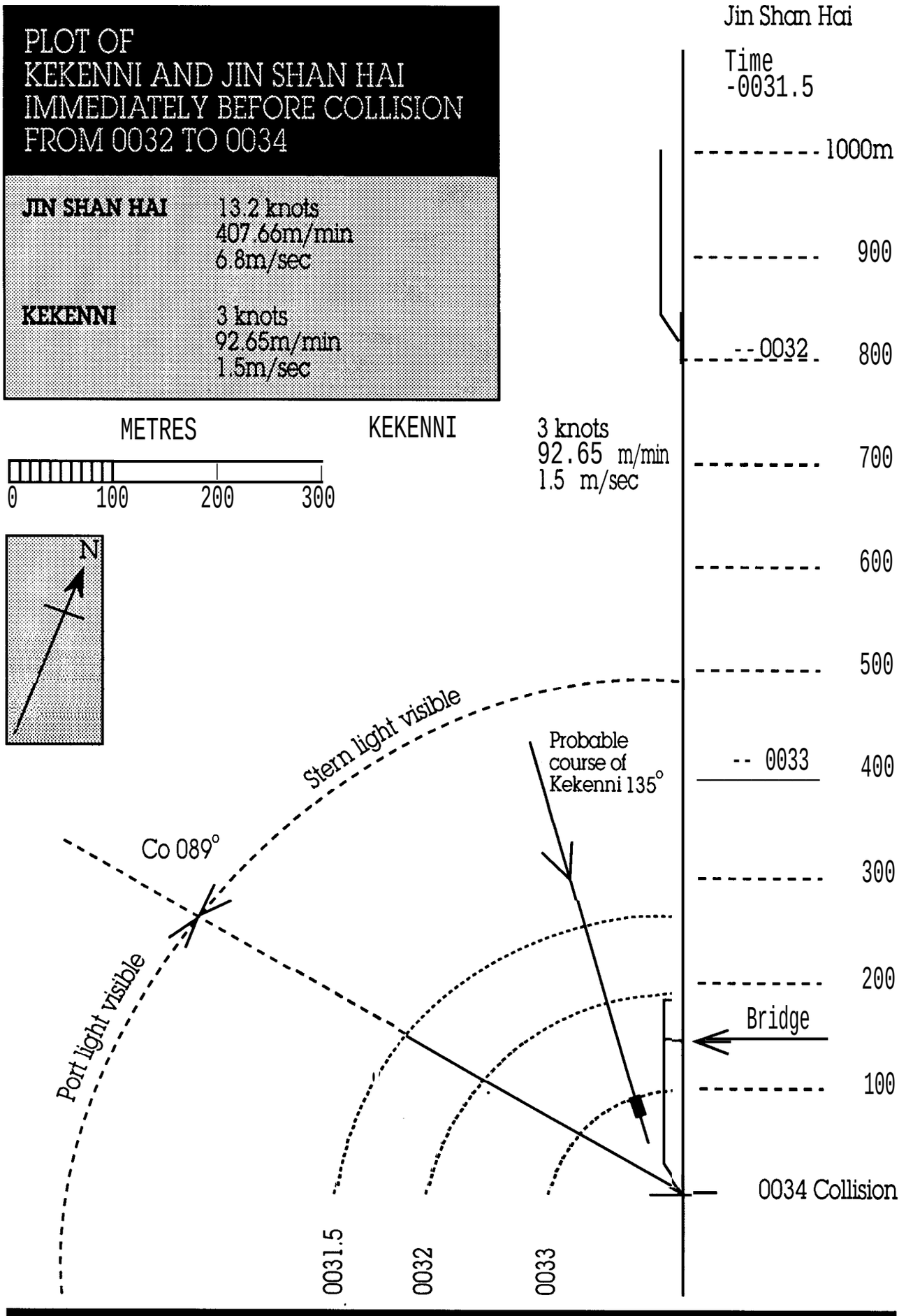
PLOT OF
KEKENNI AND JIN SHAN HAI
IMMEDIATELY BEFORE COLLISION
FROM 0032 TO 0034
JIN SHAN HAI
13.2 knots
407.66m/min
6.8m/sec
KEKENNI
3 knots
92.65m/min
1.5m/sec
METRES
0
100
200
300
N
KEKENNI
3 knots
92.65 m/min
1.5 m/sec
Jin Shan Hai
Time
-0031.5
1000m
900
0032
800
700
600
500
0033
400
300
200
Bridge
100
0034 Collision
Stern light visible
Probable
course of
Kekenni 135°
Co 089°
Port light visible
0031.5
0032
0033

DIAGRAM 4

4. One or both vessels altered course when they would otherwise have passed clear.

The Jin Shan Hai was on a course of 152° or 153°, which is the course from the ship's position off Low Isles to Cairns fairway buoy. There was no reason for the Jin Shan Hai to alter course other than to avoid collision.

The three men on the Jin Shan Hai's bridge stated that the ship's rudder was put hard to starboard and the ship responded at a time put as 30 seconds to two minutes before the collision. The Second Mate gave the appropriate whistle signal for a ship altering course to starboard.

The Quarter Master and Lookout both reported seeing the Kekenni's red port side light at an estimated 30 seconds before the impact and assumed that the fishing vessel had altered course and was attempting to cross ahead. The order for the alteration of course was given by the Second Mate immediately after they saw the port side light.

The Second Mate variously estimated the time between seeing the red light and altering course as 30 seconds to two minutes.

Mr Inglis, on the other hand, stated he had not altered course, but was preparing to do so when he went outside to check that all was clear astern.

It is probable that both vessels were converging on steady courses until such time as collision was inevitable.

In which case, notwithstanding whether or not the fishing vessel altered course a short- time before the collision, its relative bearing as observed at 0015 must have remained virtually constant as the Jin Shan Hai overtook the Kekenni.

At 0030 the Second Mate was obliged to disregard the Master's orders to fix the ship's position every 15 minutes, because of the proximity of fishing vessels. Mr Inglis stated that while there were other trawlers in the area, they were some miles apart from one another and it was apparent that at this time the nearest fishing boat to the Kekenni was the Prospector, approximately 3 miles to the north. At 0030 the Jin Shan Hai was less than a mile from the collision point, which would mean that the Second Mate's decision to postpone taking a position was because of the proximity of the Kekenni rather than any other vessel.

The fishing boat's relative bearing on the bow two minutes before the collision at 0032, could not have exceeded 15 degrees and was most probably less than 10 degrees, at a distance of about 0.4 of a mile. The Kekenni at that time would have been within 170m of Jin Shan Hai's line of advance.

Under the provisions of the International Regulations for Preventing Collisions at Sea 1972, a vessel's side light should not be visible more than 22.5 degrees abaft the beam. If the Kekenni had maintained a steady course the vessel's side lights should not have been visible to those on the bridge of the Jin Shan Hai until the two vessels were level with one another. For the side lights to be visible to the Jih Shan Hai at 0033 the Kekenni, on a bearing of 157°, had to have altered to a heading of 89.5° or less.

It is possible that any deviation of course by the Kekenni was due to interaction between the two vessels, causing the Kekenni's bow to swing in towards the larger vessel. But, for that to occur in open waters, the vessels would have to have been very close. If the estimation of the time between the sighting of the red light and the collision with the fore part of the Jin Shan Hai of 2 minutes is correct, then the vessels would have been 200m apart, probably too far apart to cause interaction. If the vessels were much closer, interaction could have taken place. If the red light was seen 30 seconds before the collision the vessels would have been approximately 45m apart.

In the absence of objective data and given the unreliability of the times recalled by the Second Mate it is not possible to establish the relative angle of impact, or the heading of either vessels at the time of the collision.

CONCLUSION

The Inspector concludes that :

1. The Jin Shan Hai was give way vessel and had a duty to keep clear of the Kekenni as required under Rule 18 (a)(iv) of the International Regulations for Preventing Collisions at Sea, 1974 (Colregs).

2. The collision between the Jin Shan Hai and the Kekenni was caused by the failure of the officer of the watch, the Second Mate, of the Jin Shan Hai to take early and substantial action to avoid a close quarter situation.

3. The Second Mate failed to keep a proper look-out as defined by Rule 5 of the Colregs and failed to establish the risk of collision as required under Rule 7.

4. The Master of the Jin Shan Hai was not informed of the developing situation and only became aware of the incident after the collision. After the collision the Master acted correctly in returning to render assistance and exchange details of the vessels involved.

5. The Kekenni was engaged in trawling and was a vessel engaged in fishing as defined by Rule 3(d) of the Colregs.

6. The Skipper of the Kekermi failed to keep a proper lookout as defined by Rule 5 of the Colregs, in that he failed to maintain a lookout astern by either sight, sound or radar.

7. The Kekenni's A frame probably caused a radar shadow area over an angle of about 15° on either quarter.

8. The Kekenni's working lights were of such intensity as to obliterate the all round lights and stern light required by Rule 26 (b)(i) and (iii) respectively; and were exhibited contrary to Rule 20(b).

9. Neither the use of alcohol or drugs were a contributory factor.

10. Both those involved on the Jin Shan Hai and the Kekenni had maintained a normal daily routine. There is no evidence of any increased fatigue factor outside the normal working parameters.

11. There was no reason why the Queensland Coast and Torres Strait Pilot should have been on the bridge. Navigation in the area would not have been enhanced by local knowledge, and both vessels were south of the recommended two-way route.