

REPORT OF THE PRELIMINARY INVESTIGATION
INTO THE CIRCUMSTANCES OF THE COLLISION BETWEEN
THE M.V. IRON CUMBERLAND AND THE F.V. SALTFIORD
IN APPROXIMATE POSITION 140° 06.0'S 144° 07.3'E
IN THE AREA OF PRINCESS CHARLOTTE BAY
ON 6 JULY 1985

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OUTLINE OF INCIDENT

About 2037 hours on 6 July 1985 the Hong Kong registered, Australian manned bulk carrier IRON CUMBERLAND, of 21383 gross tons, on ballast passage from Newcastle to Groote Eylandt, collided with the Australian registered fishing vessel SALTFIORD, of 31.8 gross tons, in Princess Charlotte Bay in approximate Position 14° 06.0'S 144° 07.3'E (See Attachments 2 & 3). There was no injury to any person. The SALTFIORD was slightly damaged but did not require assistance.

Having established that the SALTFIORD required no assistance the IRON CUMBERLAND resumed passage for Groote Eylandt. The SALTFIORD in due course proceeded to the port of Weipa where repairs were undertaken.

AUTHORITY TO CONDUCT INVESTIGATION.

On 23 July 1985 Captain C.W. Filor, an officer of the Federal Department of Transport, was appointed under section 377A of the Navigation Act 1912 to make a Preliminary Investigation into the circumstances of the collision between the m.v. IRON CUMBERLAND and the f.v. SALTFIORD in the vicinity of Latitude 14° 06'S Longitude 114° 07'E on 6 July 1985.

PERSONS INTERVIEWED

Between 1 August and 9 September the following persons were interviewed:-

Captain G.G.A. Herbert	Master, Iron Cumberland
Mr L. Grudenich	Third Officer, Iron Cumberland
Mr P. Mitchell	Chief Officer, Iron Cumberland
Captain E. Newstead	Queensland Coast and Torres Strait Pilot
Captain I. Steverson	Marine Superintendent, BHP
Mr R.J. Moore	Lookout, Iron Cumberland
Mr J.R. Ronan	Skipper, Saltfiord
Mr P.E. Howlett	Skipper, Marauder

Note: The interviews with Mr Moore, Mr Ronan and Mr Howlett were conducted by telephone.

The report which follows is based upon those interviews, log book and other documentary records, a report from a Departmental Marine Surveyor and material provided by the owners. All times given in the report are Eastern Standard Time (EST) and distances are in nautical miles.

DETAILS OF VESSELS

IRON CUMBERLAND

OFFICIAL NUMBER	356551
PORT OF REGISTRY	Hong Kong
OWNERS	County Shipping Co. Ltd. Hong Kong
OPERATORS	BHP Ltd. Newcastle
TYPE	Bulk carrier
CONSTRUCTION	Welded steel
BUILT	1973 Piraeus Greece
GROSS TONNAGE	21383.76
NET TONNAGE	13977.19
DEADWEIGHT	36978
REGISTERED LENGTH	186.09m
REGISTERED BREADTH	26.51m
DEPTH MOULDED	15.37m
SUMMER DRAUGHT	11.361m
PROPULSION	Single screw
MACHINERY	6 cylinder Sulzer 8827 kW
SERVICE SPEED	15 knots
CLASS	Lloyds + 100A + LMC UMS
LOADLINE	Issued by Lloyds 29/2/84. Valid until 12/4/88. Last annual inspection 5/85
SAFETY EQUIPMENT	Issued by Hong Kong Government 21/10/83. Valid until 24/9/85
SAFETY RADIO TELEGRAPHY	Issued by D.o.T Australia 11/10/84. Valid until 27/9/85.
SAFETY CONSTRUCTION	Issued by Lloyds 2/3/84. Valid until 12/4/88. Last annual inspection 5/85

The IRON CUMBERLAND is a bulk carrier, equipped with six cranes for cargo handling. These cranes are situated on the centre line 20m apart between the seven holds. The top of each crane, with the jibs stowed horizontally, is 14 metres above the deck level.

The accommodation block consists of five decks with the height of eye on the navigational bridge deck approximately 12 metres above the main deck level. The height of eye on the wheel house top is approximately 14 metres above main deck level.

Plan at Attachment 1, shows the combined wheelhouse/chartroom layout. At night the wheelhouse section is screened from the chartroom by a curtain around the chart table.

Bridge equipment consists of two radar sets; radio direction finder; standard compass; gyro compass with repeaters on each bridge wing; satellite navigator; V.H.F. radio telephone; echo sounder and a course recorder. However, the course recorder was inoperative on 6 July.

The vessel usually operates in the Unmanned Machinery Space (UMS) mode whereby the engines are controlled directly from the bridge. A duty engineer is on call at all times and can be alerted by alarms connected to his cabin, the messroom and dayrooms.

SALTFIORD

IDENTIFICATION LETTERS	HYW
PORT OF REGISTRY	Cairns
OWNERS	Ronan Holdings Ltd, Cairns
TYPE	Prawn trawler
CONSTRUCTION	Wood
BUILT	1965 at Bundaberg
GROSS TONNAGE	29.73
NET TONNAGE	14.7
REGISTERED LENGTH	15.24m
REGISTERED BREADTH	4.48m
MOULDED DEPTH	2.13m
ENGINE	Diesel
PROPULSION	Single screw
SPEED	9 knots
PERMIT TO OPERATE	Queensland Department of Harbours and Marine

The SALTFIORD is equipped with V.H.F. radio telephone, radar and magnetic compass. Visibility from the wheelhouse towards aft is restricted.

Note: This vessel is under survey of the Queensland Department of Harbours and Marine. Although not holding a valid survey certificate at the time of the collision, it had been inspected by a surveyor of the Department and issued with a Permit to Operate.

SEQUENCE OF EVENTS

It should be noted that there was a time discrepancy of some 12 minutes between the time of collision reported by the SALTFIORD and that reported by IRON CUMBERLAND. The time discrepancy is not relevant to the determination of the causes of the casualty. All times stated are based on those reported by the IRON CUMBERLAND; the times reported by the SALTFIORD being adjusted accordingly. Where times are estimated they are followed by (A).

The IRON CUMBERLAND sailed from Newcastle at 1327 hours 2 July 1985 bound for Groote Eylandt, with a crew of 34. The ship was in ballast with a maximum draught of 7.06 metres aft. At 0436 on 6 July a pilot of the Queensland Coast and Torres Strait Pilot Service was embarked for the passage between Cairns and Goods Island through the inner route of the Great Barrier Reef.

The Master, Captain Herbert, informed the pilot of the ship's draught, speed and other items relevant to the ship's condition. They discussed the estimated time of arrival at Goods Island but not any arrangements as to how the passage was to be conducted.

The passage proceeded throughout the day without incident. Drizzle, which made visibility variable during the daylight watches, had cleared by the evening. At sunset it was confirmed by the Chief Officer that the correct navigation lights were exhibited. All forward shining accommodation lights were effectively screened. A seaman lookout was posted on the wheelhouse top. The vessel was in the UMS mode with the engines controlled from the bridge.

At 1957(A) the Third Officer, Mr Grudenich, went to the bridge to take over the watch from the Chief Officer. At 1958 the Chief Officer fixed the ship's position and handed over control to the Third Officer, informing him of the IRON CUMBERLAND's course, speed, position and the presence of fishing vessels at a distance of approximately eight miles in the general direction of the ship's head. The Third Officer confirmed the course of 250°(T), checked the chart and observed the lights ahead. The weather was fine and clear, with an overcast sky and a light SE'ly wind force 3. The lookout on the wheelhouse top also changed at 2000.

At 2002, with Clack Reef bearing 005°(T) x 1.2 miles, the course was altered to 270°(T). The IRON CUMBERLAND took one to one-and-a-half minutes to settle on the new heading. The Third Officer then turned his attention back to the fishing vessels. Several vessels could be seen showing bright working lights but no navigation lights were visible at this stage. However, the Third Officer and the pilot assumed that these vessels were engaged in fishing. The Third Officer focussed his attention upon the four vessels now approximately six miles away.

These four vessels will be referred to as 'A', 'B', 'C' and 'D'. Vessels 'A' and 'B' were on the port bow and it was soon established by the Third Officer that their compass bearings were opening. Vessel 'C' was fine to starboard and 'D' was 2 points to starboard. The positions of vessels 'A' and 'B' were fixed by radar ranges and relative radar bearings, while vessels 'C' and 'D' were fixed by radar ranges, and bearings taken with the starboard bridge wing gyro repeater. The radar in use was that on the starboard side of the chart console. This radar is not azimuth stabilized. Up to 2015 (A) vessel 'C' maintained a steady bearing, while vessel 'D' opened slightly from 2 to 2.5 points.

Once clear of Clack Reef the IRON CUMBERLAND had a straight run of some fifteen miles, with relatively open and deep water on each side of the recommended two-way route, before the next alteration point west of Wharton Reef. The visibility being good and with no navigational problems expected, the pilot decided to leave the bridge and take a rest for approximately 45 minutes. The pilot told the Third Officer of his intentions and the Third Officer, affirmed that he could handle the situation regarding the fishing vessels. At some time between 2010 and 2020 the pilot left the bridge, instructing the Third Officer to call him at Wharton Reef, or before if required.

At 2015 the Third Officer fixed IRON CUMBERLAND's position with Wharton Reef bearing 264°(T) x 11.3 miles. Shortly afterwards, just before 2020, he observed vessel 'C' cross the IRON CUMBERLAND's bow; this was also noticed by the lookout. In the meantime, vessel 'D' had again closed to 2 points on the starboard bow. Both 'C' and 'D' were now about 4 miles away. The bearings of vessels 'A' and 'B' continued to open, indicating that they would pass well clear.

At 2020(A) the Master, who was in his cabin directly below the bridge, heard somebody whom he took to be the pilot, descend the stairs from the chartroom. The master then went up to the chartroom, noticing that the time was 2023. He checked the log book, compass error book, the chart and the satellite navigator, and then proceeded to write up his night orders.

At 2030 the Third Officer fixed the ship's position, with Wharton Reef bearing 258°(T) x 8.4 miles, and marked it on the chart. While at the chart table he informed the Master that he had some fishing vessels under observation. At 2032(A) the Master came from behind the chart area and went to the radar. He observed on the radar display that two vessels were close, one to port at about 2 points by two miles and one approximately 1.5 to 2 points to starboard also at two miles. Although the radar range was alternated between six and twelve miles as required, the Master was sure that the distances he observed were consistent with the radar display. He asked the Third Officer to explain the situation as regards the traffic; the Third Officer pointed out the four fishing boats. Thereafter the Master remained in the wheelhouse, outside the chart room area.

The Skipper of the SALTFIORD had slept through most of the day. The fishing vessel weighed anchor at 1830(A) and proceeded to an approximate position 14° 06'S 144° 07'E. At 1900(A) the SALTFIORD shot its prawn nets and proceeded to trawl a three mile stretch of water, described by fishermen as a 'gutter' bounded by the 30 metre depth contour running in a general direction 040°/220°(T). The initial course was approximately 040°(T). At 2000(A) the SALTFIORD turned about and commenced to trawl in a direction between 220° and 230°(T) at a speed the Skipper estimated to be 2.7 to 3 knots. The Skipper was alone in the wheelhouse while the other two crew members were asleep in the forecabin accommodation. Also about 2000 he saw a ship, later identified as the IRON CUMBERLAND, to the east of him but, as the SALTFIORD was pointing away from the ship, he did not pay much attention. He again observed the ship at 2032(A) and presumed it would pass astern. The Skipper then remained in the wheelhouse observing the radar and conversing with other fishing vessels over the VHF radiotelephone. He affirmed he altered neither course nor speed up to the time of the collision and that his navigation lights were properly displayed. He also stated that the SALTFIORD was one of four vessels within two miles of each other, putting the relative positions of the other three vessels as two ahead about one and a half miles on the port bow and one about half a mile astern.

Back on the IRON CUMBERLAND, at 2033(A) the Third Officer was told by the Master to telephone the duty engineer and instruct him to go to the engine room to check that air for the whistle was available. He took two or three minutes to get through. However, standing beside the telephone, he was still able to see the fishing vessel on the starboard bow. In the meantime, the Master operated the whistle control to sound two prolonged blasts followed by two short blasts to warn the fishing vessel on the starboard bow of his intention to overtake it down the port side. The Master then went to the auto-pilot, at 2034(A), and altered course to port from 270°(T) to 250°(T). It was about this time that the lookout, anticipating he might be called to the helm, came down from the wheelhouse top and stood by on the starboard bridge wing.

At 2037(A), as the IRON CUMBERLAND came up with a fishing vessel close on the starboard bow, the Master observed it appear to sheer in towards his ship and its foredeck come into view. The Master immediately overrode the automatic steering and put the helm hard to port. He directed the Third Officer, who was still on the telephone, to the ship's side to watch the fishing vessel. As the Master saw the lights of the fishing vessel draw closer along side the ship he put the helm hard to starboard to swing the stern away from it. However, the fishing vessel came into contact with the IRON CUMBERLAND in way of hold 5 or 6. The Master then reduced speed and called the fishing vessel on V.H.F. channel 16.

In the meantime, on the SALTFIORD, the Skipper was sitting on a chair in the wheelhouse in conversation with another vessel over the V.H.F. His first indication of the collision was when he felt his vessel shuddering. He ran out on to the deck with the boat heeling to one side. At first he did not realise that the dark expanse alongside was the hull of the large ship but, when the IRON CUMBERLAND drew clear, he realised what had happened.

The Skipper of the SALTFIORD and one of the deck hands who had been asleep made an assessment of the damage. The Skipper then returned to the wheelhouse and established V.H.F. radio contact with the IRON CUMBERLAND. The Skipper exchanged information with the IRON CUMBERLAND, reporting that nobody was injured but that the trawl towing boom on his port side had been broken.

At 2045 on the IRON CUMBERLAND the pilot returned to the wheelhouse. The Master, having established that he was not required to render assistance, resumed passage for Groote Eylandt.

The SALTFIORD reported the incident through Townsville Radio stating in the text of the message that it had collided with another trawler. This message was incorrect but in explanation the Skipper stated that he was shaken and confused.

The incident had been observed by the Skipper of one of the fishing vessels in the vicinity. The Skipper of the MARAUDER had been watching the IRON CUMBERLAND and saw it pass between himself and the SALTFIORD. He also saw the radar echos of the SALTFIORD and IRON CUMBERLAND merge into one but assumed that the large ship had masked the fishing boat. After the IRON CUMBERLAND slowed at 2039, the MARAUDER passed down the IRON CUMBERLAND's port side at a distance of about 200 metres.

The MARAUDER's Skipper stated he had been fishing in company with six other vessels, including the SALTFIORD, and that there were one or two fishing vessels north of the SALTFIORD at the time of the collision. All vessels were fishing in an area 8.5 miles from the north part of Blackwood Island. The run was of 2.5 to 3 miles and one mile wide, using limiting distances of 5 and 8 miles off Clack Reef Island. Between 2015 and 2030 the MARAUDER commenced a run in an approximate 060°(T) direction, maintaining a distance of 8.5 miles from the north corner of Blackwood Island. It is not clear whether MARAUDER was the vessel referred to by the IRON CUMBERLAND as vessel 'A', 'B' or 'C', or some other vessel. The MARAUDER's Skipper confirmed that the speed of the trawlers in the area would have been between 2.5 and 3.5 knots.

On 22 July the Skipper and one crew member of the SALTFIORD made statements before a Justice of the Peace, stating that damage had been sustained to the port boom, the anchor and chain had been lost, a fairlead bent, a fuel tank damaged and the bow rail torn off.

COMMENTS ON EVIDENCE

1. The Third Officer's observation of bearings and ranges of vessel 'D' and the SALTFIORD Skipper's estimation that his vessel's speed was 2.7 to 3 knots is not consistent with SALTFIORD being vessel 'D' (see Attachment 4, figure 1).
2. The Master's observation of bearings and ranges of vessels 'C' and 'D' at 2032(A) are not consistent with a collision with either vessel at 2037. The Master's observations were clearly in error and the fishing vessels closer to the IRON CUMBERLAND than he stated. This possibly could have been brought about if the Master misread the scale settings on the radar and mistook the one mile ring on the six mile range for the two mile ring on the twelve mile range (see Attachment 4, figure 2).
3. It is probable the SALTIFORD was vessel 'C'. Vessel 'D' was on the starboard bow when the IRON CUMBERLAND altered course to 250°(T), This course at a speed of 13.25 knots has a vector component of 220°(T).at 11.4 knots. This vector component compared to vessel 'D's speed of about 3 knots shows a collision with such a vessel on the starboard bow to be impossible (see Attachment 4, figure 3).

CONCLUSIONS

Note: The rules referred to in these conclusions are from the International Regulations for Preventing Collisions at Sea 1972.

I find:

- 1) The collision was primarily caused by the failure of the IRON CUMBERLAND to keep clear of the SALTFIORD. Under Rule 18(a) a power-driven vessel is required to keep out of the way of a vessel engaged in fishing.
- 2) The actions of the Third Officer of the IRON CUMBERLAND contributed to the collision in that he:
 - a) failed to keep a proper lookout Rule 5
 - b) failed to make proper use of the radar Rule 7(b)
 - c) made assumptions on scanty information Rule 7(c)
 - d) failed to take action to avoid collision in ample time with due regard to good seamanship Rule 8
 - e) failed to take early and substantial action to keep well clear Rule 16
- 3) The actions of the Master of the IRON CUMBERLAND contributed to the collision in that he:
 - a) failed to keep a proper lookout Rule 5
 - b) made assumptions on scanty information Rule 7(c)
- 4) The Master used the whistle signal prescribed for use only by a vessel overtaking another in a narrow channel or fairway, which was not the case in this instance, rather than the appropriate sound signal and light signal to indicate his alteration to port.
- 5) At 2033(A) the bridge organization on the IRON CUMBERLAND failed, when the Master took over control of the ship without first making a proper appraisal of the situation.
- 6) The 20 degree alteration to port at 2034(A) caused the IRON CUMBERLAND to effectively attempt to cross ahead of the SALTFIORD.
- 7) The absence of a passage plan and the failure to properly interpret information on the chart were factors which contributed to the failure of the Third Officer and Master to take appropriate avoiding action.
- 8) The actions of the Skipper of the SALTFIORD contributed to the collision in that he:
 - a) failed to keep a proper lookout Rule 5
 - b) failed to establish if risk of collision existed Rule 7
 - c) failed to take avoiding action Rule 17(a)(ii),
and (b)
 - d) in showing bright working lights, impaired the visibility of the prescribed lights Rule 20(b)
- 9) No blame for the collision rests with the pilot.

- 10) There is a strong possibility that the SALTFIORD was the vessel that had crossed the IRON CUMBERLAND's bow just before 2020, and that it may have been obscured from the Master's view by the IRON CUMBERLAND's cranes about the time of the 2034 alteration of course to port. However, whichever of the four vessels was the SALTFIORD the IRON CUMBERLAND had the obligation to keep clear.
- 11) That the IRON CUMBERLAND was manned by persons holding appropriate qualifications, was seaworthy and properly equipped for the voyage, except that one of the radars did not conform with the standards prescribed by the first set of amendments to the Safety of Life at Sea Convention 1974. This deficiency, however, was not a contributory factor to the collision.
- 12) That the SALTFIORD was properly manned and was seaworthy.
- 13) That subsequent to the collision the Master of the IRON CUMBERLAND took appropriate measures to ascertain that the SALTFIORD was not in danger and did not require assistance.

The detailed conclusions are as follows:

The actions of the Third Officer

Although the Third Officer took compass and radar bearings and radar distances, his failure to ascertain by radar plotting the course, speed and nearest approach of the fishing vessels meant he was not in a position to determine the best course of action to avoid a close quarters situation. Notwithstanding his failure to plot, the fact that vessel 'D' maintained a nearly constant bearing was clear evidence that risk of collision existed, yet the Third Officer apparently failed to appreciate this.

The Third Officer had ample time and sea-room to make an early and substantial alteration of course and/or speed to avoid the fishing vessels.

The chart reliability diagram clearly indicates that it would have been safe to deviate from the route. Furthermore, the chart notes referring to the recommended two-way route inform mariners that the route is not a traffic separation route and that the International Regulations for Preventing Collisions at Sea apply. That is to say it is not a prescribed traffic separation scheme to which the special requirements of Rule 10 apply. Accordingly, as a power driven vessel, the IRON CUMBERLAND was not only obliged to keep clear of a vessel engaged in fishing (Rule 18(a)(iii)) but was also obliged to pass at a safe distance (Rule 8(d)) which, in the case of a fishing vessel, would need to take into account outlying fishing gear. By neither taking action prior to the Master assuming responsibility at 2033(A) nor calling the Master or pilot at an earlier stage, if in doubt, I find the Third Officer failed to discharge this obligation.

At 2033(A), when instructed to call the duty engineer, the Third Officer assumed the Master had taken charge. However, this did not relieve the Third Officer of the obligation to maintain a proper lookout. I find that by spending so long attempting to contact the duty engineer (up to 3 minutes) the Third Officer was neglectful of his over-riding duty to keep a proper lookout so as to make a full appraisal of the situation and of the risk of collision.

The actions of the Master

The Master effectively assumed responsibility for the ship at 2033(A). He did not do this in any formal manner and no verbal exchange suggested that he was taking over the watch. He thus failed to comply with 4.4.2 of Marine Orders Part 28 which states, inter alia, "The officer in charge of the watch shall continue to be responsible for the safe navigation of the ship, despite the presence of the master on the bridge, until the master informs him specifically that he has assumed that responsibility and this is mutually understood." He also failed to observe the Company Standing Orders that he should "formally take charge" and that "under normal circumstances the Master should leave the officer in charge, watching his actions".

In considering the whistle signal prescribed by Rule 34(c)(i) appropriate, the Master either did not fully appreciate the purpose of the signal or else he considered the two-way route, as marked on the chart, to be a narrow channel regardless of the depth of water and sea room available. The correct signal to indicate his alteration to port at 2034(A) would have been two short blasts (Rule 34(a)), which could have been supplemented by two flashes on a light signal (Rule 34 lb)). The same sound signal should have been made at 2037(A) when the helm was put hard to port.

The Master's decision to alter course at 2034(A) was based on scanty information. In altering to port he attempted to navigate his ship between the fishermen while remaining within the confines of the charted two-way route. A substantial alteration to starboard would have averted collision and could have been made in safety, with 3 miles of clear water to Corbett Reef.

I find the absence of a passage plan was a significant factor in the failure of the Master to take appropriate avoiding action. In this regard, 4.2.1 of Marine Orders Part 28 states, inter alia, "The intended voyage shall be planned in advance taking into consideration all pertinent information". Had a full and comprehensive passage plan been drawn up, then the limits of navigation at all parts of the passage could have been properly considered with due regard to the draught and other characteristics of the ship. Notice Number 22 of the Annual Summary of Australian Notices to Mariners advises masters and seamen on navigation in the Great Barrier Reef, and in particular states that a passage plan should be prepared following the principles of "A Guide to the Planning and Conduct of Sea Passages". However, this publication was not carried on the IRON CUMBERLAND.

The Master did not use the opportunity to place the lookout on the wheel, though he was readily available. In taking the helm himself he reduced his ability to closely watch the fishing vessels. He also assigned the Third Officer to a phone call on a matter of relatively low priority thus reducing the Third Officer's effectiveness in keeping a proper lookout.

The Master's forward vision was impaired by the cranes situated on the centre line of the ship. Although at 2033(A) he went to the whistle control (Position Y on Attachment 11, which is slightly to port of the centre line, at all other times he was either on, or to starboard of, the centre line. As a result, his view of a vessel close to port could have been obstructed by the cranes. It is therefore possible that, in altering course to port to avoid fishing vessel 'D' on the starboard bow, he brought vessel 'C' head and collided with the latter vessel. Such a scenario fits better with the stated courses and speeds of the vessels than a collision with vessel 'D' (see comments on Evidence).

The actions of the Skipper of the SALTFIORD

The Skipper was in the wheelhouse preoccupied with observing the radar and speaking to other fishing vessels on the V.H.F. Although when he saw the IRON CUMBERLAND at 2032(A) he assumed it would pass astern, this did not relieve him of his responsibility to keep a lookout. In so failing to keep a proper lookout and, being oblivious to the close proximity of the IRON CUMBERLAND and the risk of collision, he was not in a position to take avoiding action.

The Managers of the IRON CUMBERLAND

Management supervision of ships and liaison with their staff appears to be properly conducted. The duties and responsibilities of masters and officers are clearly stated in standing orders which are made known to all staff. However, notwithstanding the reference in the Annual Summary of Australian Notices to Mariners, the publication "A Guide to the Planning and Conduct of Sea Passages" is not normally supplied to BHP ships. BHP Pty Ltd employs a pilot for all transits by its ships of the inner route of the Great Barrier Reef.

One of the two radars did not conform to the provisions of the first set of amendments to Safety of Life at Sea Convention 1974, in that it was not azimuth stabilized. Although the failure to plot the course and speed of the fishing vessels was a factor in the events leading to the collision, the radar's deficiency did not prevent such a plot being made and thus was not a contributory cause. The other radar was azimuth stabilised and was available for use.

The actions of the pilot

The pilot was properly licensed by the Queensland Government. The passage was proceeding routinely at the time the pilot decided to leave the bridge for a rest. The relatively open water between Clack Reef and Eden Reef was an appropriate place for the pilot to rest. I find the pilot would not have left the bridge had he any doubt as to the ability of the officer of the watch to be properly responsible for the conduct of the ship.

It is arguable that the pilot, before going below, should have pointed out to the Third Officer the safe navigable waters on each side of the two-way route. In this regard, 4.6.2 of Marine Orders Part 28 states, inter alia, "The master and the pilot shall exchange information regarding navigation, procedures, local conditions and the ship's characteristics." However, it could also be argued that the pilot would reasonably expect a qualified, experienced officer to be aware of this charted information. On balance, I find the pilot should have drawn the Third Officer's attention to the availability of sea room but his failure to do so does not make him blameworthy.

- KEY

U TELEPHONE

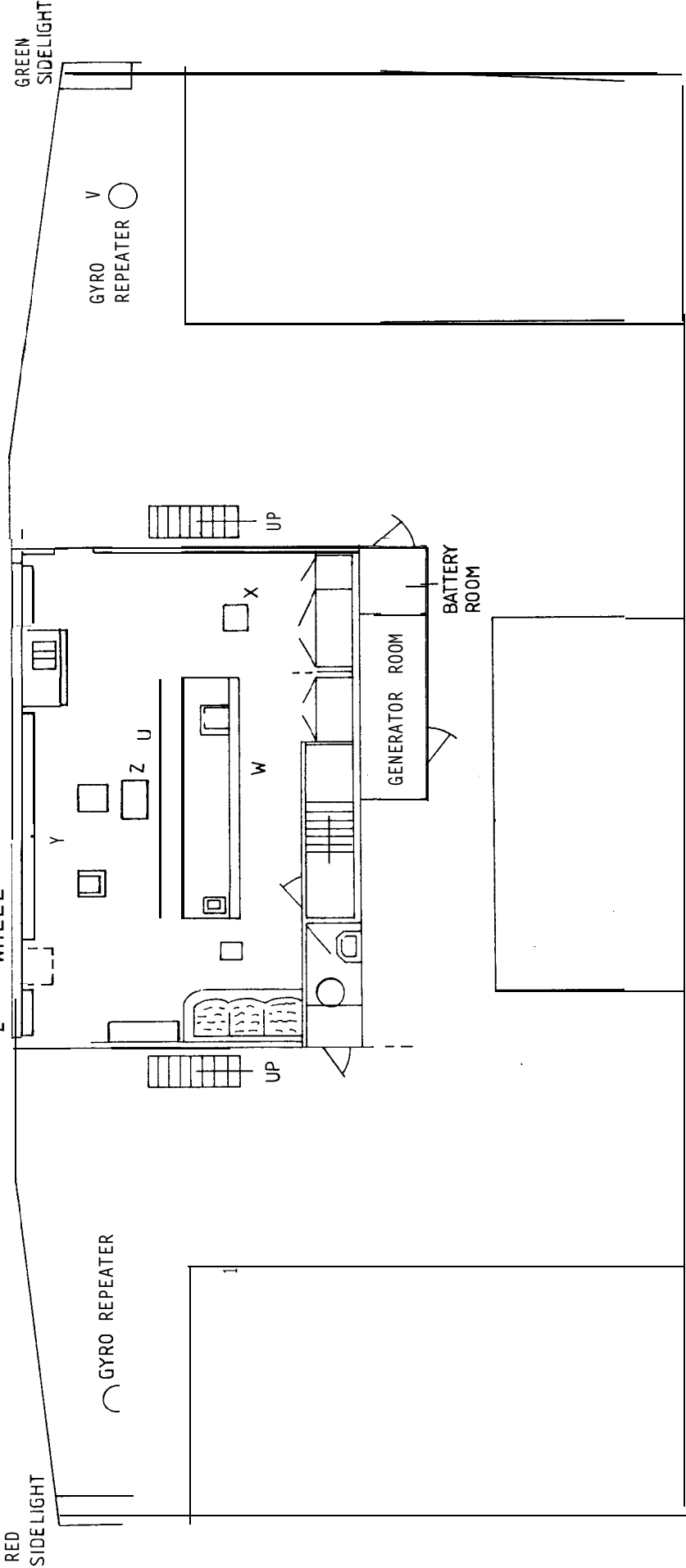
V STARBOARD GYRO COMPASS REPEATER

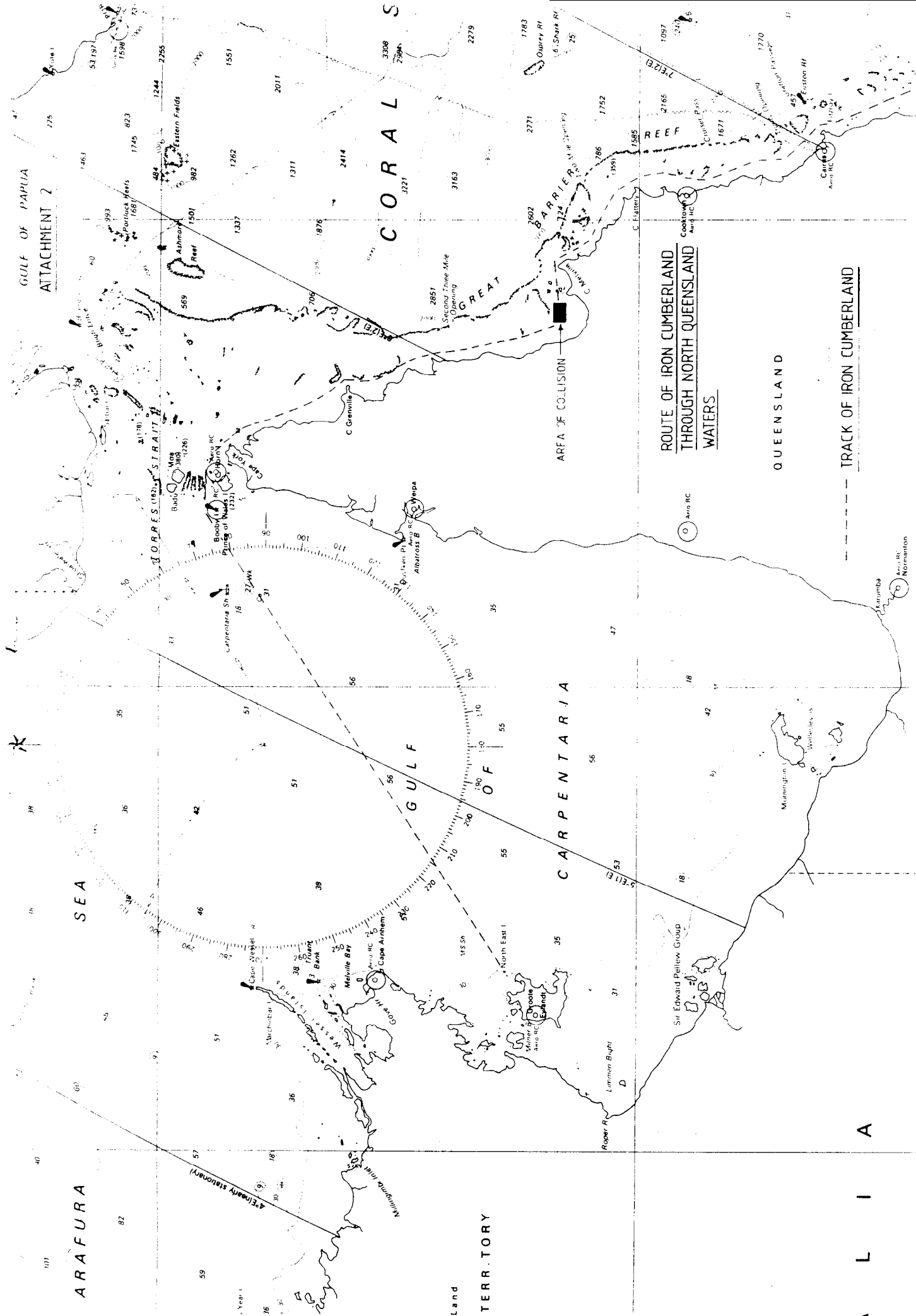
W CHART TABLE

X 161NCH RADAR

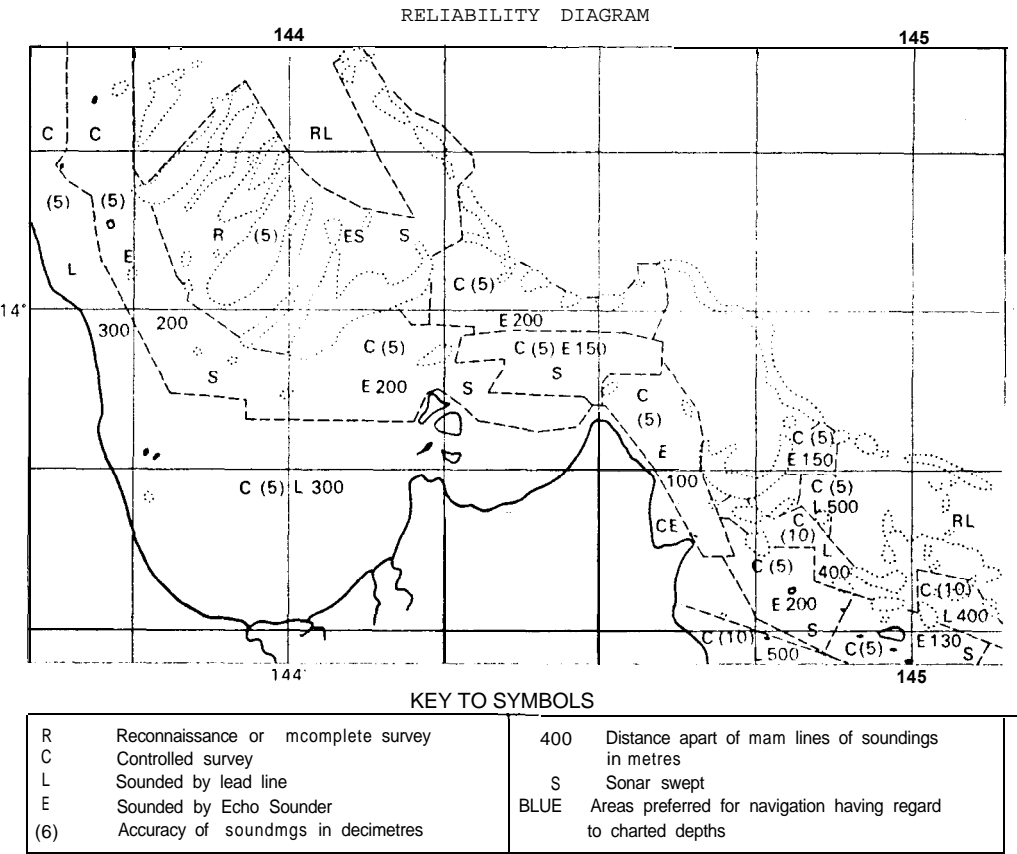
Y WHISTLE CONTROL

Z WHEEL





RELIABILITY DIAGRAM AND NOTES ON TWO WAY ROUTE
FROM AUS 833



TWO-WAY ROUTE

1. The two-way route shown on this chart indicates the best route for ships of moderate draught having regard to charted depths and dangers. The use of the two-way route is not mandatory and it is not a traffic separation route
2. The International Regulations for Preventing Collisions at Sea 1972 apply to ships using the two-way route. Ships should, as far as practicable, keep to the starboard side of the two-way route or the starboard leg where the two-way route divides.
3. Ships whose movements are restricted by their draught should display the signals specified in Rub 28. Such ships may not be able to keep to the starboard side of the route
4. Ships which are appropriately equipped should keep a continuous watch on VHF Channel 16

ATTACHMENT 3

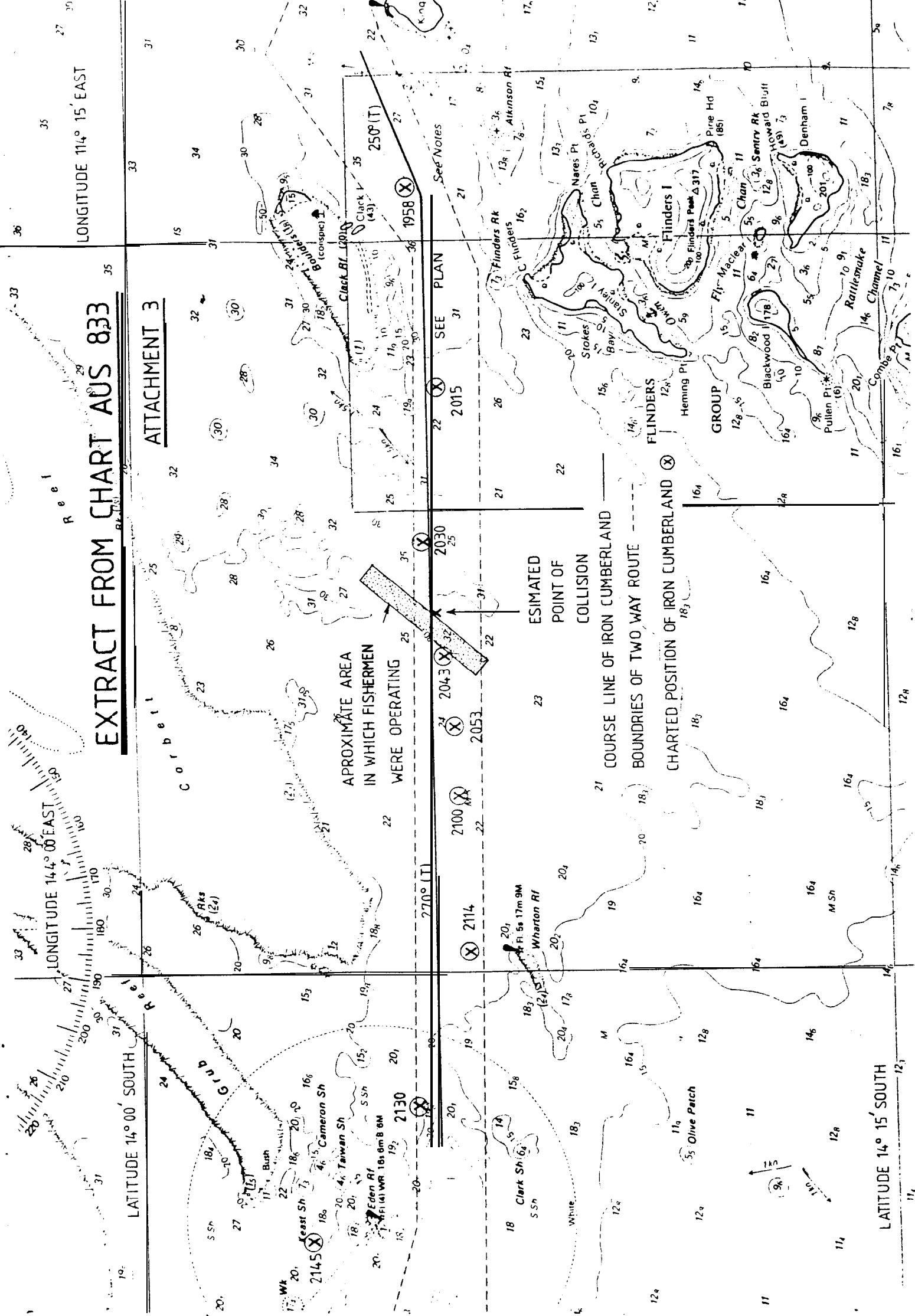


FIGURE 1 DIAGRAM OF IRON CUMBERLAND THIRD OFFICER'S OBSERVATIONS OF VESSEL 'D' AT 2004 (A) AND 2019 (A) AND OF VESSEL 'C' AT 2019

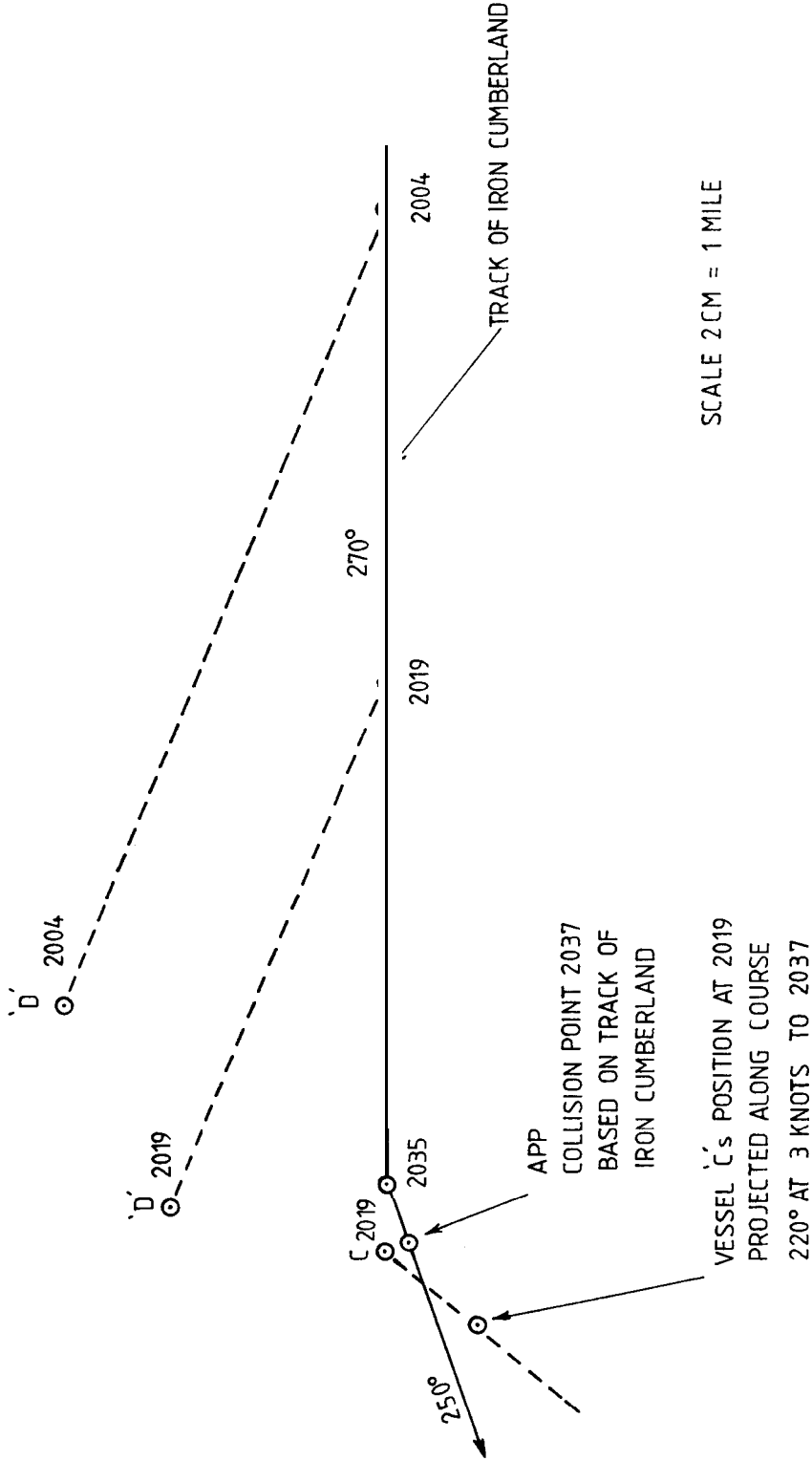


Diagram of Iron Cumberland Master's stated radar observations at 2032(A).

Fishing vessel on starboard bow about 13 to 2 points (shown as 15 points) at 2 miles.

Fishing vessel on port bow about 2 points at 2 miles.

Note: Tracks of both vessels have been projected on a course of 220° at 3 knots to 2037 (approximate time of collision).

FIGURE 2

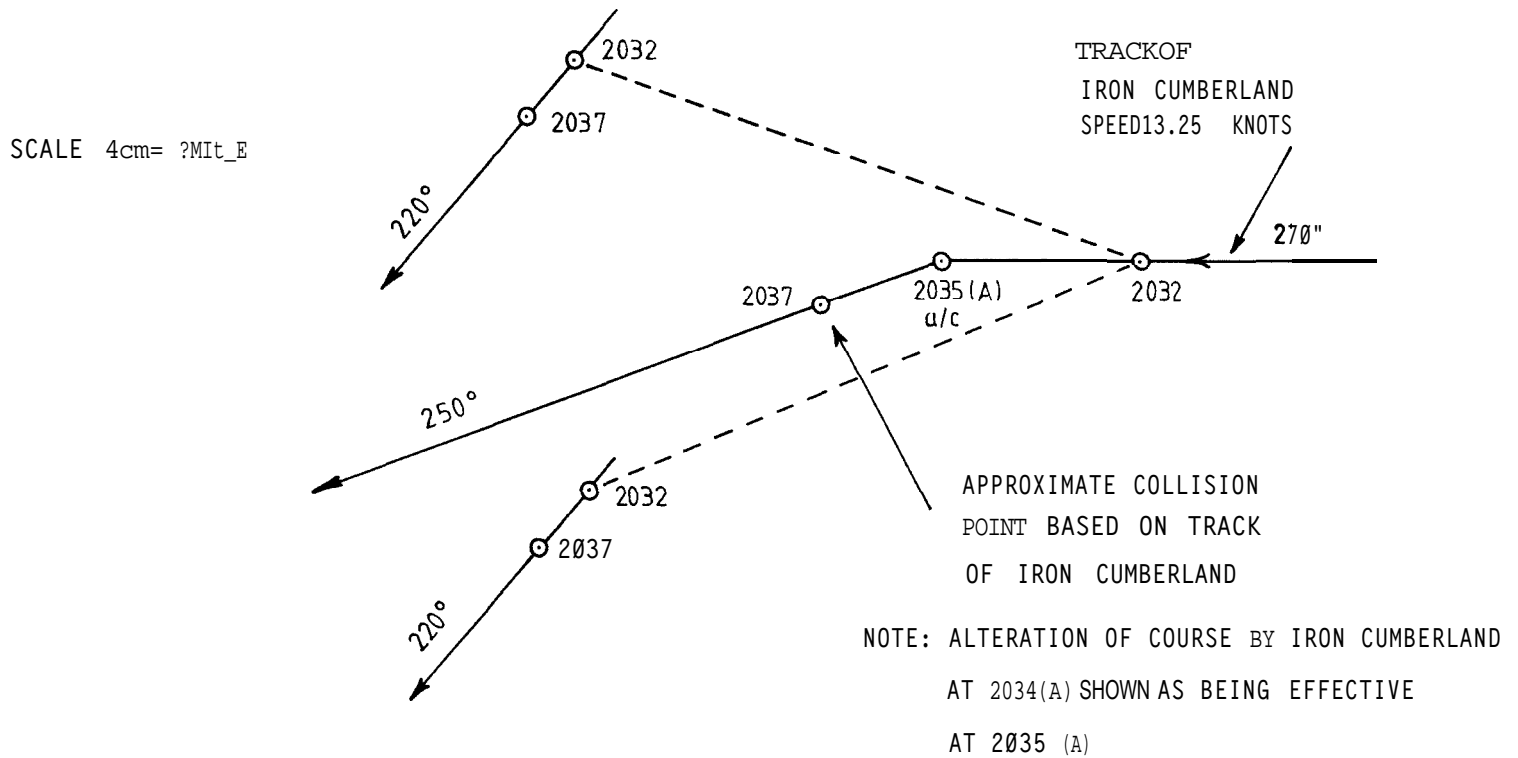


FIGURE 3

