



Report 98-214

fishing trawler *Dong Won 529*

grounding

Breaksea Islands, Stewart Island

6 October 1998

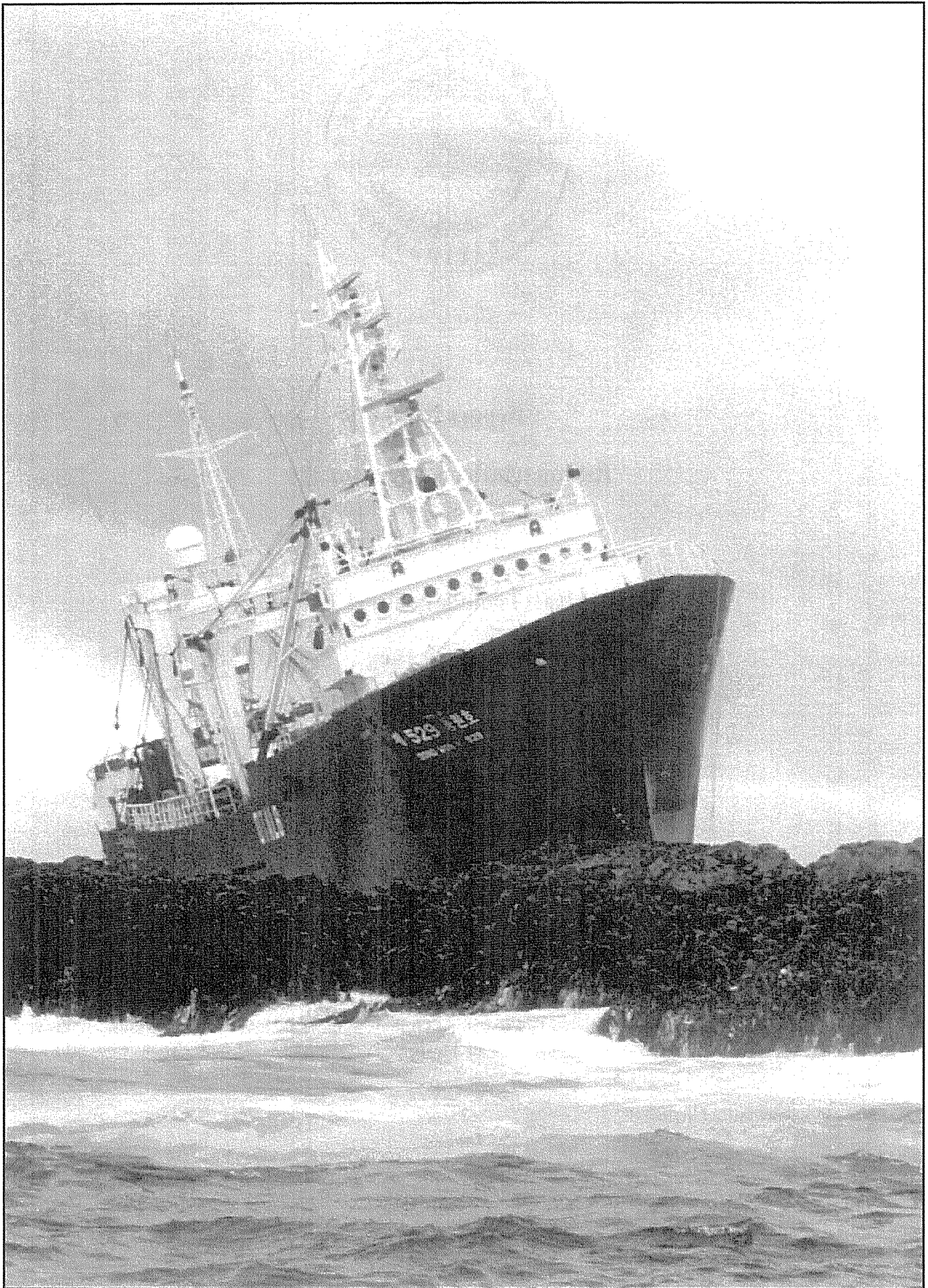
Abstract

On Tuesday, 6 October 1998, at about 0220, the Korean stern trawler *Dong Won 529* grounded on rocks at the southern end of Breaksea Islands, Stewart Island. Because of forecast bad weather, the vessel, with 39 crew on board, had been on passage from the Solander fishing grounds to more sheltered fishing grounds to the east of Stewart Island. Before the vessel could be refloated it slipped off the rocks and sank. There were no injuries.

Safety issues identified included:

- poor watchkeeping practices
- preoccupation with non-watchkeeping duties
- inadequate shipboard policy and procedures
- lack of policy and procedure requirements from shore management.

Safety recommendations were made to the Director of Dong Won Fisheries Company Limited to address the safety issues.



Dong Won 529 aground at Breaksea Islands
Photograph courtesy of Mike Squires, Stewart Island and NZ Professional Skipper magazine

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Glossary of abbreviations

| | |
|-------------|---|
| ALC | automatic location communicator |
| ARPA | automatic radar plotting aid |
| FCC | Fisheries Communication Centre |
| GPS | global positioning system |
| Inmarsat | international marine satellite organisation |
| kW | kilowatt |
| m | metres |
| MSA | Maritime Safety Authority |
| NZDT | New Zealand Daylight Time (UTC + 13 hours) |
| rpm | revolutions per minute |
| spring tide | period of highest and lowest tides in lunar cycle |
| SSMS | safe ship management system |
| UMS | unmanned machinery space |
| UTC | universal time (co-ordinated) |

Glossary of terms

| | |
|---------------|---|
| bridge | structure from where a vessel is navigated and directed |
| class | category in classification register |
| draught | depth in water at which a ship floats |
| gross tonnage | a measure of the internal capacity of a ship; enclosed spaces are measured in cubic metres and the tonnage derived by formula |
| knot | one nautical mile per hour |
| leeway | allowance applied to the course steered to counteract the effect of wind |
| list | angle of tilt caused by internal distribution of weights |
| mayday | radiotelephone distress signal requesting immediate assistance |
| nett tonnage | derived from gross tonnage by deducting spaces allowed for crew and propelling equipment |
| set | allowance applied to the course steered to counteract the effect of tide or current |
| starboard | right hand side when facing forward |

Transport Accident Investigation Commission

Marine Accident Report 98-214

Vessel particulars:

| | |
|--------------------------------|--|
| Name: | <i>Dong Won 529</i> |
| Registered: | Busan, Korea and, as a fishing vessel under the New Zealand Fisheries Act 1983 |
| Type: | Stern trawler |
| Classification: | Korean Register of Shipping |
| Class: | Ocean-going fishing vessel |
| Limits: | Unrestricted |
| Construction: | Steel |
| Propulsion: | One 2237 kW Akasaka diesel engine driving, via a reduction gearbox, a single four-bladed propeller |
| Built: | In 1988, at Yamanishi Shipbuilding & Iron Works, Ltd. Ishinomaki, Japan |
| Owner: | Dong Won Fisheries Company Limited |
| Charterer: | Sanford South Island Limited |
| Maximum crew: | 43 |
| Length (overall): | 68.4 m |
| Breadth: | 11.0 m |
| Draught: | 6.7 m |
| Gross tonnage: | 385 t |
| Net tonnage: | 194 t |
| Maximum speed: | 15.3 knots |
| Normal operating speed: | 12.0 knots |
| Location: | Breaksea Islands, Stewart Island |
| Date and time: | 6 October 1998 at about 0220 ¹ |
| Persons on board: | Crew: 39 Passengers: nil |
| Injuries: | Nil |
| Nature of Damage: | Vessel sunk |
| Investigator-in-Charge: | Captain John Mockett |

¹ Unless otherwise stated, all times in this report are in NZDT (UTC + 13 hours) and are expressed in the 24 hour mode.

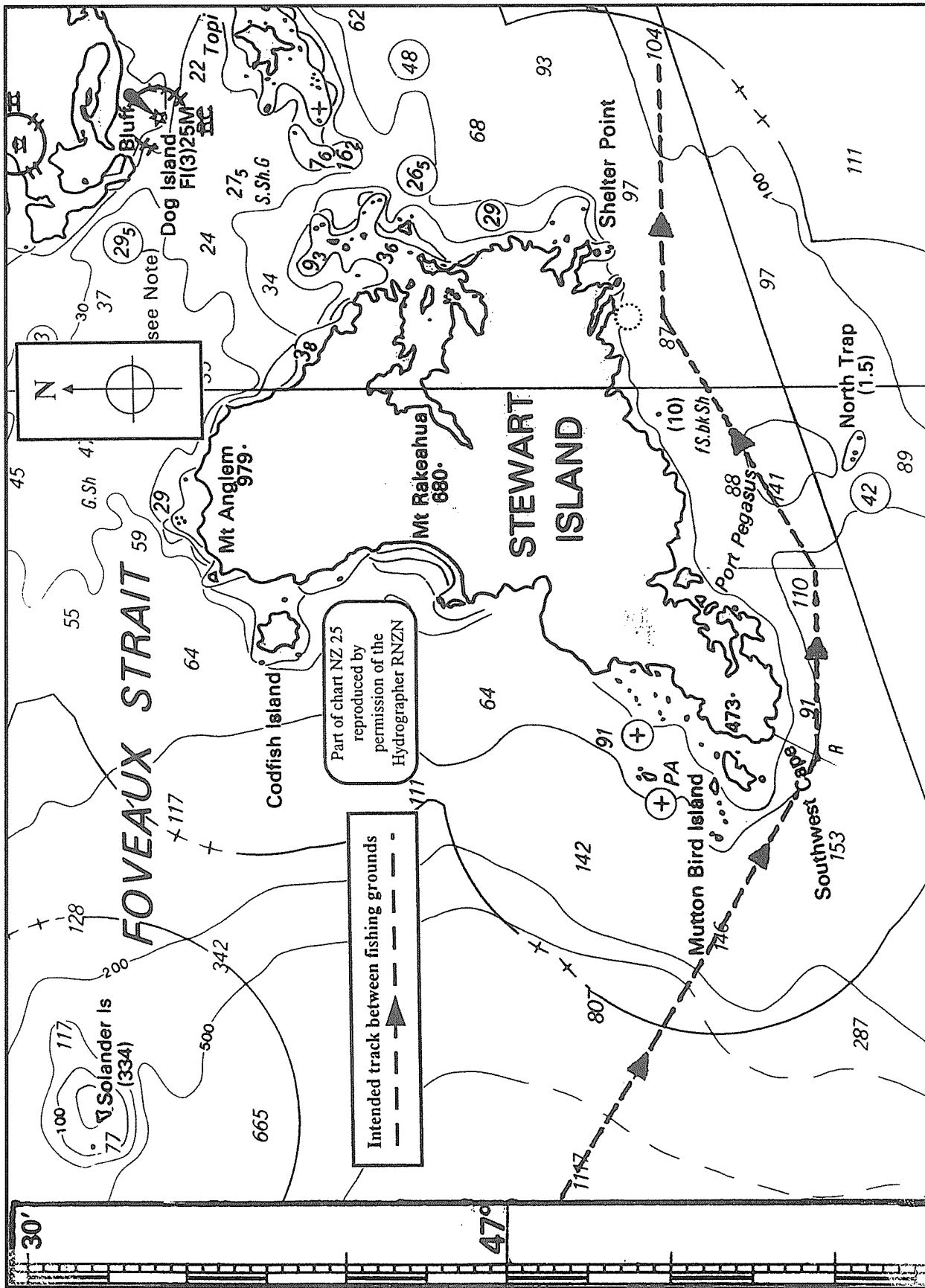


Figure 1
Part of chart NZ 25 showing intended track between fishing grounds.

1. Factual Information

1.1 History of the trip

- 1.1.1 The *Dong Won 529*, a trawler owned by Dong Won Fisheries Limited (the owner) and chartered by Sanford South Island Limited (the charterer), left the Solander fishing ground to the west of Stewart Island at about 1900 on Monday, 5 October 1998.
- 1.1.2 Because of forecast deteriorating weather, the master had decided to cease fishing at Solander and move to the fishing grounds to the east of Stewart Island. He expected that the lee afforded by Stewart Island and the south coast of the South Island would provide better conditions to continue fishing.
- 1.1.3 The passage was planned to pass Southwest Cape, then head east for about 12 miles before paralleling the coast on a course of about 065 degrees until about three miles off the land in the vicinity of Breaksea Islands on the south east tip of Stewart Island. Once this point was reached the intention was to either proceed to the next fishing ground on a course of about 090 degrees or, if the weather was bad, to remain in the shelter of Stewart Island. (See Figure 1)
- 1.1.4 *Dong Won 529* left the Solander fishing grounds and proceeded along the planned route. The master and first officer kept the navigation watch from 1900 to 0100 the next day. At the change of watch, when the chief officer and second officer took over, the vessel was already on the course of 065 degrees paralleling the coast. (See Figure 2)
- 1.1.5 The master instructed the oncoming officers that, when the vessel reached the next planned waypoint, a position described as 2½ to 3 miles off Breaksea Island (see Figure 2), the chief officer was to assess the weather and sea conditions, and turn towards the new fishing ground or reduce speed and stay within the lee of Stewart Island.
- 1.1.6 Prior to the change of navigational watch, the first officer observed the position of the vessel and indicated it to the chief officer and second officer, both of whom had arrived on the bridge 15 minutes before their duty time of 0100. The officers' recollections differed slightly with regard to the exact position of the vessel at 0100 on the morning of Tuesday, 6 October 1998 but they agreed that it was in the area about halfway between Seal Point and North Trap. (see Figure 2)
- 1.1.7 The master left the bridge shortly before 0100 and the first officer left at 0100, leaving the chief and second officers in charge of the watch. Both oncoming officers were satisfied that the position of the vessel was in accordance with the passage plan and both understood that the vessel was approaching a waypoint where they had to make a decision to determine the next course.
- 1.1.8 At about 0120 the chief officer reduced the speed of the vessel from about 11 knots to about 8 knots. He stated that he made the reduction to ease the motion of the vessel, although there were no reports of any damage within the vessel.
- 1.1.9 At about 0130 the chief officer left the second officer in charge of the watch and went below to make a safety inspection of the vessel and to check the fish processing room, where the catch from the previous day was still being processed and stowed.
- 1.1.10 The second officer used his time at the chart table to complete some paperwork. The forms on which he was working were the responsibility of the chief officer but the second officer was keen to learn what was required, so had volunteered to work on the forms.
- 1.1.11 The second officer had difficulty with the forms and became completely engrossed in trying to complete them correctly as he was keen to impress his senior officers.

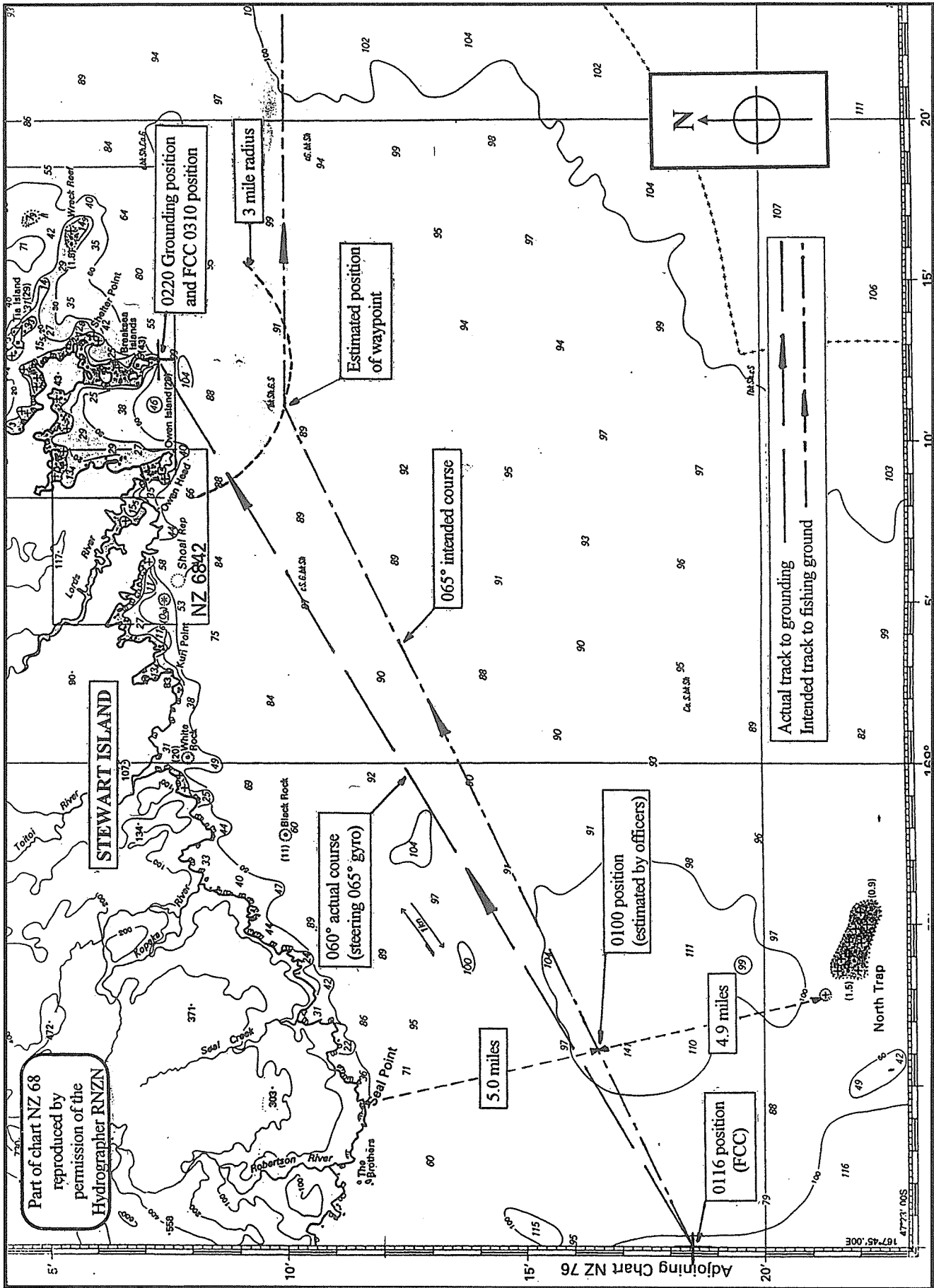


Figure 2
Part of chart NZ 68 showing planned and actual courses

- 1.1.12 From his position at the chart table, the only navigational aid immediately available to the second officer was a Global Positioning System (GPS) display. The GPS display at the chart table did not have a video plotter incorporated. (See Figure 3)
- 1.1.13 There were two radars and a GPS video plotter operating elsewhere in the wheelhouse, but to view them the second officer would have had to leave the chart table area where he was working and move to the appropriate area of the wheelhouse.
- 1.1.14 The engine-room was not run as an Unmanned Machinery Space (UMS) so there were engineers on watch in the machinery spaces. At no time during the passage were any mechanical problems reported to the bridge watchkeepers.
- 1.1.15 The second officer continued to be engrossed in his paperwork and did not monitor the progress of the vessel in any of the various ways available to him. There was no rating on the bridge to act as lookout or to monitor the navigational aids.
- 1.1.16 At about 0220 the *Dong Won 529* struck rocks to the south of the Breaksea Islands and became stuck fast by the bow, listing about 20 degrees to starboard.
- 1.1.17 The master attempted to get the vessel off the rocks immediately but was unsuccessful. The grounding had occurred close to the time of high water. The predicted time of high water at Bluff was 0227 on 6 October 1998 and it was a period of spring tides.
- 1.1.18 At 0247 the master made a Mayday call, which was received at the Marine Operations Centre, from where the operator started co-ordinating a rescue operation.
- 1.1.19 The crew were taken off the vessel at daybreak. The master and 4 officers, including 2 engineers, were ferried to another *Dong Won* vessel which was in the area. They were to wait for the salvage attempt to begin and give any assistance that they could. The remainder of the crew were taken ashore.
- 1.1.20 Subsequent attempts to refloat the vessel using tugs and other vessels were unsuccessful. The vessel was moving slightly in the continuing bad weather and on 8 October 1998 slipped partially off the rocks and fell onto its starboard side. The vessel continued to move in the swell which made salvage attempts hazardous and several days later the vessel slipped off the rocks and sank.

1.2 Routines information

- 1.2.1 Ship staff were employed by the owner and appointed to the vessel for a period of 2 years, during which no leave periods were granted. The deck officer complement had been master and 4 officers up until 5 weeks before the accident, when 1 officer was transferred to another vessel.
- 1.2.2 Six-hour bridge watches were kept with 2 officers on each watch. There was a standard practice that officers arrived on the bridge 15 minutes prior to taking over a watch. The master and first officer kept the 0700 to 1300 and the 1900 to 0100 watches, while the chief officer and second officer kept the 0100 to 0700 and the 1300 to 1900 watches.
- 1.2.3 The master required that the officers generally remained together on the bridge, although during each watch one was required to make safety rounds of the vessel and sometimes to check on other work that was going on, particularly the processing and stowing of the catch.

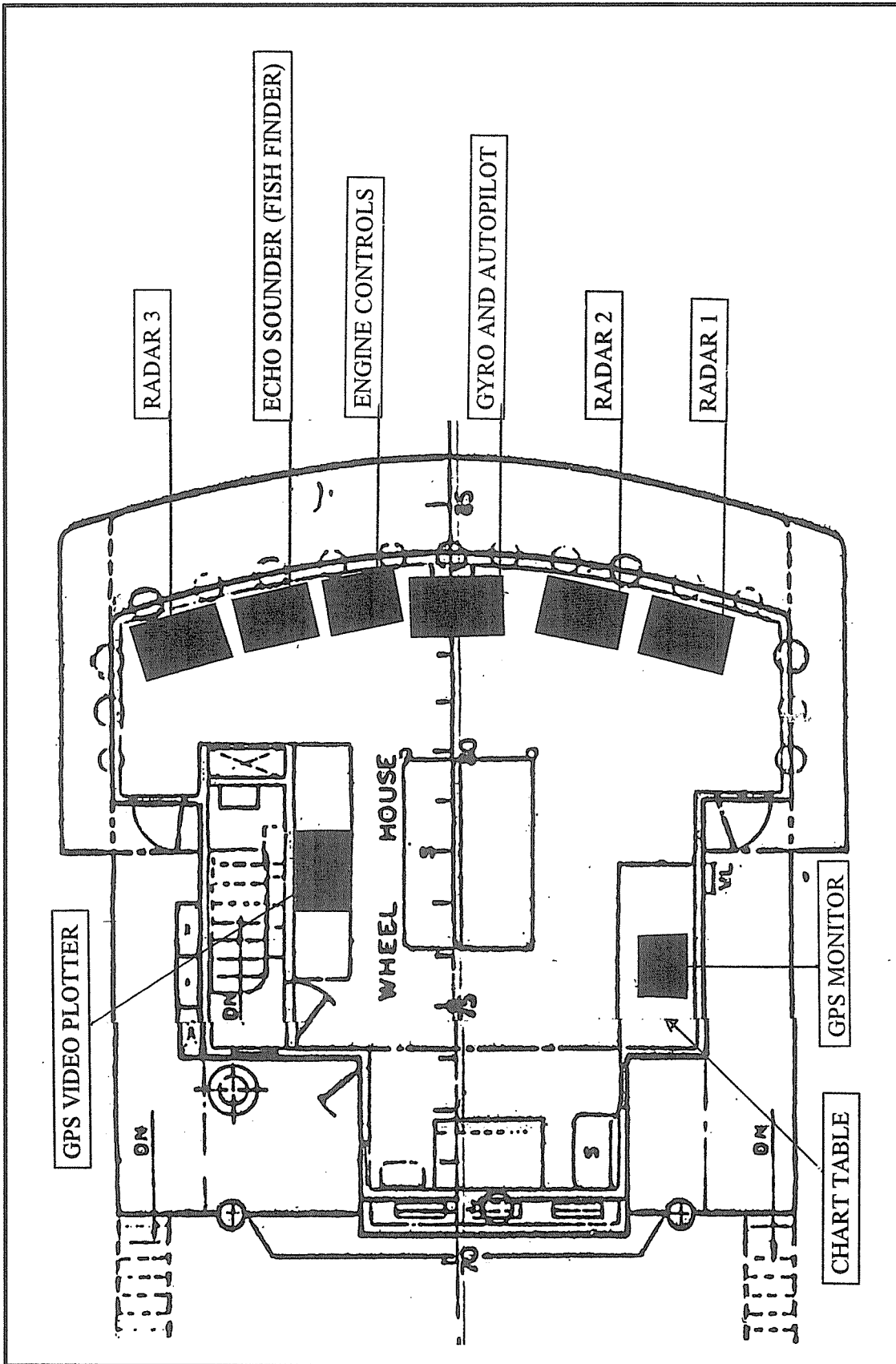


Figure 3
Plan of bridge showing approximate positions of navigational equipment

- 1.2.4 There were no documented master's standing orders or any written night orders. However, the officers had worked together for a considerable period and all apparently understood the master's usual requirements. If the master had any specific orders for the 6 hours after his own watch, he would relay them verbally to the chief officer at the change of watch.
- 1.2.5 Each of the officers had duties other than navigational tasks. Where those duties involved paperwork, the master allowed the officer to complete the papers during a bridge watch provided that the work did not detract from the safe navigation of the vessel.
- 1.2.6 On navigational passages to, from or between fishing grounds it was reportedly normal practice to lay course lines on the appropriate chart and to mark the position of the vessel at regular intervals. This was not able to be confirmed because the chart in use at the time of the accident was lost with the vessel. The officers all agreed that charts of the area were being used, but recollections differed as to whether course lines had been laid on the chart for the passage to the new fishing ground.
- 1.2.7 The GPS video plotter could be programmed with passage plans. The plotter would then monitor the actual passage by comparison with the planned passage and alert the watchkeeper when the vessel approached a planned alteration of course and to any deviation from the planned passage. This feature of the video plotter was used for the more regular passages but had not been in use on the day of the accident.
- 1.2.8 The second officer, who kept the 0100 to 0700 and 1300 to 1900 bridge watches, stated that his routine was to sleep in the morning, usually between 0730 and 1230. After his evening watch he relaxed in his cabin and then slept from about 2200 to 0030. If there was work involved in processing a large catch he sometimes volunteered to help his shipmates in the fish processing room.
- 1.2.9 The second officer said that on Saturday, 3 October and Sunday, 4 October he had not done extra off-watch work and had had his usual amount of relaxation and sleep. On Monday, 5 October he had slept between watches in the morning but had helped in the fish processing room after his evening watch until about 2140.
- 1.2.10 The chief officer, who kept the same watch hours as the second officer, stated that his routine allowed him 3 to 4 hours sleep in the morning and about 3 hours in the evening. He stated that in the 3 days before the grounding he had maintained his usual sleep pattern except that on the night before the grounding he had had 2 hours sleep only, as he had been working in the fish processing room.

1.3 Weather information

- 1.3.1 The weather conditions when the *Dong Won 529* was fishing at Solander were a south-westerly wind of about 20 knots and a south-westerly swell of 3 to 4 metres. The forecast indicated that the wind would change to the north-west and increase to 35 to 40 knots.
- 1.3.2 By the time that the vessel passed Southwest Cape the wind was from the north-west and had increased to about 30 knots and the south-west swell had increased to 4 to 5 metres. As the passage progressed, the north-west wind further increased to the predicted 35 to 40 knots but the south-west swell remained at 4 to 5 metres.

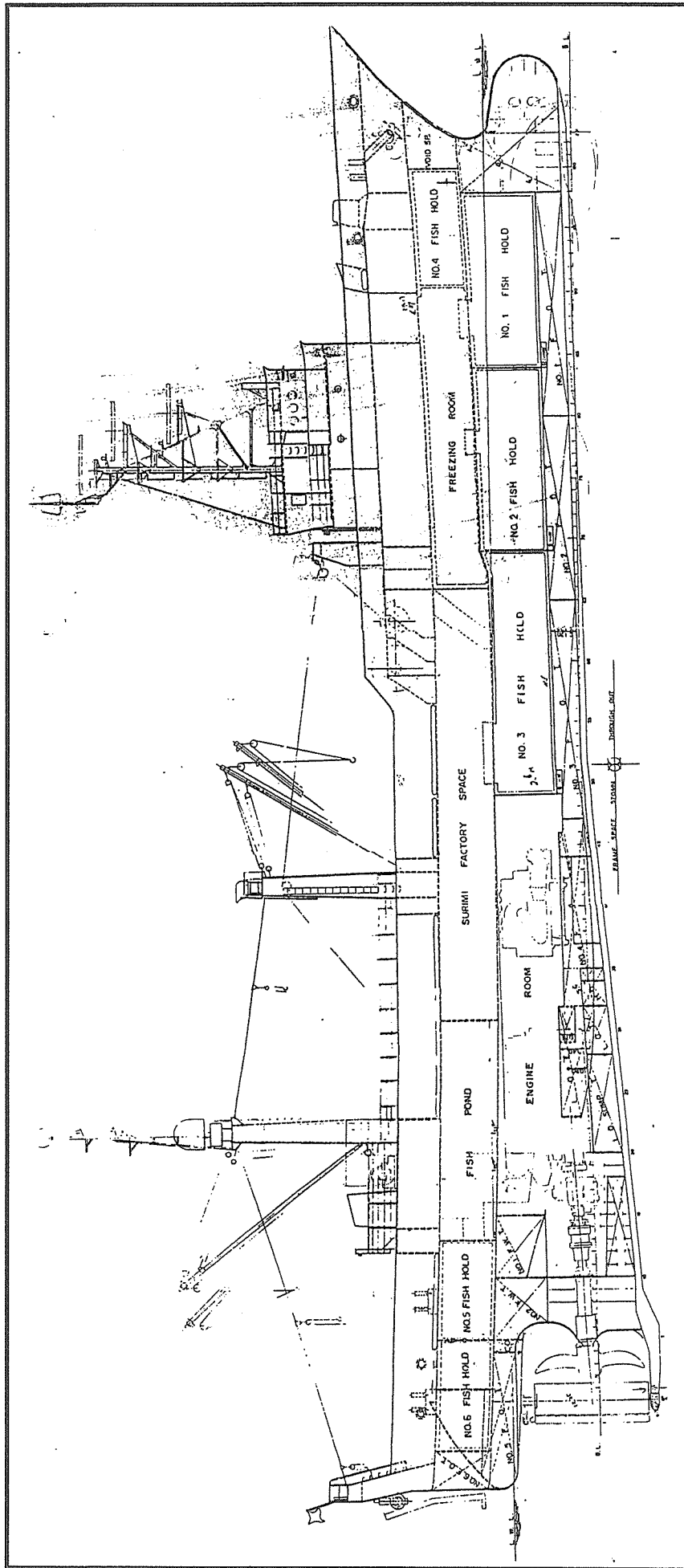


Figure 4
 Drawing showing general arrangement of *Dong Won 529*

1.4 Navigational and timing information

- 1.4.1 All shipboard navigation records were lost when the vessel sank. The master took the logbook from the vessel but there were no entries that assisted in the re-construction of the passage around Stewart Island. Times, speeds, courses and positions were recalled with slight variations by the 4 watchkeeping officers.
- 1.4.2 The officers indicated, and the logbook confirmed, that the time being kept on board was New Zealand Daylight Time (NZDT). The log for 4 October 1998 had the entry "Summer Time +1".
- 1.4.3 When operating on the New Zealand coast, vessels such as *Dong Won 529* are tracked by the Fisheries Communications Centre (FCC). To this end the vessel was fitted with an Automation Location Communicator (ALC).
- 1.4.4 Positions were derived by a GPS unit within the ALC and transmitted to the FCC via Inmarsat C/GPS Transceiver. The unit was programmed to record and transmit a position at 2-hourly intervals.
- 1.4.5 GPS works on UTC and the ALC transmitted a position at 1216 UTC on 5 October 1998 which equates to 0116 NZDT on 6 October 1998. By the time of the next scheduled transmission, at 0310 NZDT, the vessel was aground. The 0310 position coincides with the actual grounding position, thus confirming the accuracy of the ALC unit.
- 1.4.6 The line joining the 0116 position and the grounding position indicated a course made good of 060 degrees. The officers stated that the vessel had been steering 065 degrees by the gyro compass. They stated that there was an error on the compass such that it read higher than true. The recollections of the size of the error varied but the consensus was that it was about 5 degrees.
- 1.4.7 None of the officers could recall the exact position of the vessel at the 0100 change of watch on 6 October, but all indicated that it was in the area about halfway between North Trap and Seal Point. This estimated position coincided with the line joining the 0116 ALC position and the grounding, but the timing did not.
- 1.4.8 The officers agreed that the grounding occurred at about 0220 on 6 October. The master's Mayday call was received at the Marine Operations Centre at 0247. The Marine Operations Centre recorded that time in NZDT.
- 1.4.9 The distance from the 0116 position derived from the ALC to the grounding position, was 21.8 miles. In order to cover that distance by the estimated grounding time of 0220, the speed of the vessel would had to have been an average of 20.44 knots. The Mayday call was made at 0247. Even if the grounding occurred only 1 minute before that time, the average speed from the 0116 position would had to have been 14.53 knots. Under the circumstances neither speed was possible for the *Dong Won 529*.
- 1.4.10 The distance from the 0100 position estimated by the officers to the grounding position was 17.1 miles which meant that the vessel must have averaged 12.86 knots. Such a speed was feasible for the vessel but was not consistent with the recollections of the officers that the speed at 0100 was 10 to 11 knots and that the chief officer slowed the vessel to about 8 knots at 0120. The anomaly regarding the timing remained unresolved.

1.5 Vessel information

- 1.5.1 *Dong Won 529* was a 68.4 m ocean-going stern trawler built at Ishinomaki, Japan in 1988. The vessel was registered in Busan on the Korean Register of Shipping. The vessel was working off the New Zealand coast and as such was also registered in New Zealand as a fishing vessel under section 57 of the Fisheries Act 1983.
- 1.5.2 The Korean statutory certificates for the vessel were valid and had been recognised on 28 October 1997 by the Maritime Safety Authority under section 41 of the Maritime Transport Act 1994 .
- 1.5.3 *Dong Won 529* was owned by Dong Won Fisheries Limited of Seoul, Korea. The vessel was on charter to Sanford South Island Limited. The charter allocated part of Sanford's quota to the vessel. The fishing operation with regard to location, timing and species was the responsibility of Dong Won, who reported to Sanford. The port of discharge and destination of the catch were the responsibility of Sanford.
- 1.5.4 Navigational equipment fitted to *Dong Won 529* included:
- 1 JMA-850-9CAII ARPA radar
 - 1 JMA-850-9 R830011 radar
 - 1 JMA-860 R830013 radar
 - 1 Furuno GPS monitor
 - 1 Furuno GD-188 GPS video chart plotter
 - 1 echo sounder
 - 1 gyro compass with automatic pilot
 - 1 magnetic compass
- 1.5.5 All but one of the officers stated that there was an error in the gyro compass but their estimations of the size of that error varied. Two of the officers thought that the error was about 5 degrees high and the master thought it was a variable error up to 10 degrees high. None remembered actually checking the error, and no allowance was being made for any error at the time of the grounding.

1.6 Personnel information

- 1.6.1 The master held a Korean certificate as Third Class Deck Officer (Fishing Vessels Only). The certificate was endorsed that he was qualified to act as master only on ships under 1600 gross tonnage, as chief mate only on ships under 6000 gross tonnage and as deck officer with no size limitations. His certificate had been issued and endorsed on 12 January 1996. He had been at sea for 11 years, all of which had been with Dong Won Fisheries Limited. At the time of the grounding, he had served continuously on the *Dong Won 529* for 21 months.
- 1.6.2 The chief officer held a Korean certificate as Third Class Deck Officer (Fishing Vessels Only). The certificate was endorsed with the same limitations as those on the master's. His certificate had been issued and endorsed on 22 September 1995. He had been at sea for 5 years, all of which had been with Dong Won Fisheries Limited. At the time of the grounding, he had served continuously on *Dong Won 529* for 22 months.
- 1.6.3 The first officer did not hold any maritime qualification. He had graduated from his nautical studies and spent 3 years on the *Dong Won 522* gaining the required qualifying seetime to enable him to take his first examination. He said he had not had sufficient time between leaving *Dong Won 522* and joining *Dong Won 529* to complete the qualification process. He had been at sea for almost 4 years, all of which had been with Dong Won Fisheries Limited. At the time of the grounding, he had served continuously on *Dong Won 529* for 7 months.

1.6.4 The second officer held a Korean certificate as Fifth Class Deck Officer. The certificate was endorsed that he was qualified to act as master only on fishing vessels under 500 gross tonnage, as chief mate only on ships under 500 gross tonnage, as second mate only on ships under 1600 gross tonnage and as third mate only on ships under 6000 gross tonnage. His certificate had been issued and endorsed on 15 July 1998. He had been at sea for 6 years, all of which was on fishing vessels. At the time of the grounding, he had served continuously on *Dong Won 529* for 11 months .

1.7 Safety management information

1.7.1 *Dong Won 529* was not operating under any formal safety management system. The responsibility for provision of safety management and operation of the vessel lay with the master. Neither the master nor the owner had provided documented policy and procedures requirements.

1.7.2 As a vessel of less than 500 gross tonnage, the *Dong Won 529* was not required to have a Safety Management System under the International Safety Management Code.

1.7.3 Section 2 of New Zealand Maritime Rules Part 21 applied to the *Dong Won 529* in that:

- it was a foreign ship which was a fishing ship registered under section 57 of the Fisheries Act 1983 and
- which had certificates recognised by the Director of the Maritime Safety Authority under section 41 of the Maritime Transport Act 1994.

1.7.4 As a foreign vessel to which section 2 applied, the *Dong Won 529* was required to have been entered into a New Zealand safe ship management system (SSMS) within 24 months of the date of recognition of the certificates. The certificates for *Dong Won 529* had been recognised on 28 October 1997.

1.7.5 Recognition of the vessel's certificates was valid for 12 months or until the vessel next departed from New Zealand. The need to revalidate that recognition did not affect the requirement that the vessel be entered into a SSMS within 24 months of the first recognition.

1.7.6 The owner intended that its company vessels operating in New Zealand would be entered into a SSMS during 1999 as annual surveys became due.

1.7.7 The objectives of the New Zealand SSMS are that the owner should:

- provide for safe practices in ship operation and a safe working environment
- establish safeguards against all identified risks and
- continuously improve safety management skills of personnel ashore and aboard ships, including preparing for emergencies related to both safety and environmental protection.

2. Analysis

2.1 The accident

- 2.1.1 The master and officers of *Dong Won 529* had worked together long enough to be conversant with their respective duties and for the officers to be aware of the master's requirements with regard to the running of the vessel. Notwithstanding this awareness, it would have been appropriate for the master to have documented his standing orders.
- 2.1.2 The master discussed his orders for each specific watch period with the watchkeeping officers. Although it was good practice to discuss his requirements, it would have been prudent to have also had those orders written down to eliminate any doubts.
- 2.1.3 The watchkeeping officers worked a demanding schedule of six hours on duty and six hours off, with occasional off-watch tasks being required. The watch routine has the potential to make officers chronically tired because, allowing time taken for personal requirements and preparation for watch, the maximum sleep available at one time was only about 5 hours.
- 2.1.4 The 2 officers on watch at the time of the grounding had not had large off-watch workloads in the 3 days before the grounding. They were probably both sufficiently rested to have taken the watch at 0100 on 6 October 1998.
- 2.1.5 The master's decision to leave the Solander fishing ground and move to a more sheltered area was based on a deteriorating weather forecast and was appropriate.
- 2.1.6 The passage plan made by the master would have been adequate, had it been followed. The plan had been discussed between the officers but it was not clear whether or not the route had been marked on an appropriate chart. The course past the south-east extremity of Stewart Island was not fixed and was to depend on the weather.
- 2.1.7 The course line to the waypoint off the Breaksea Islands had been 065 degrees true. Without any gyro error, set or leeway, that course would have taken the *Dong Won 529* past any danger even if no alteration of course was made. No allowance was made for the gyro error, nor any for set or leeway, which resulted in the vessel making good a course of 060 degrees.
- 2.1.8 Neither of the bridge watchkeepers monitored the passage of the vessel. Had positions been plotted on the chart using data from radar or GPS, it would have become apparent that the vessel was setting down onto the rocks and a course adjustment could have been made.
- 2.1.9 The chief officer left the bridge to make safety rounds and to check on the fish processing operation. In poor weather the need for safety rounds increased but so too did the need for vigilant watchkeeping. If the chief officer had cause for concern with the safety of the vessel or the men working in the fish processing room, then before leaving the bridge he should have first confirmed the safe progress of the vessel and ensured the second officer's attention was directed to passage monitoring only.
- 2.1.10 The chief officer left the bridge at about 0130 and did not return until after the grounding. Having made a safety round, he remained in the fish processing room. It was unclear how long he intended to be away from the bridge but the 50 minutes that he was absent was not appropriate in view of the weather conditions and the close proximity of the vessel to land.
- 2.1.11 At the change of watch, the master had instructed the chief officer to assess the weather conditions at the intended alteration waypoint and decide whether to proceed to the fishing grounds or remain in the lee of Stewart Island. The chief officer should have returned to the bridge before the time of expected arrival at the waypoint in order to afford a proper appraisal of the situation.

- 2.1.12 In view of the short time between taking over the watch and the expected arrival at the waypoint, it would have been appropriate for the chief officer to have delayed his rounds until the vessel was past the waypoint and safely settled on the next course, whatever that may have been.
- 2.1.13 Once the chief officer left the bridge, the second officer had sole charge of the watch and he did not have a lookout posted. He was aware of his watchkeeping responsibilities and should have been monitoring the progress of the vessel, being particularly vigilant because of the poor weather and the close proximity to land.
- 2.1.14 The master allowed his officers to complete paperwork when on a bridge watch but limited that permission to times of quiet watches, when the vessel was away from the land and in good weather. Clarification of his requirements in this and other regards should have been contained in documented standing orders.
- 2.1.15 On the morning of 6 October the *Dong Won 529* was on a coastal passage in poor weather. It was not appropriate that the second officer used his watchkeeping time to complete paperwork.
- 2.1.16 The second officer was the most junior officer and appeared keen to learn the tasks that he would one day have to undertake, thereby impressing his superiors and possibly improving his prospects for promotion. The paperwork on which he worked was not his own responsibility but he had volunteered to complete the forms for the chief officer.
- 2.1.17 Because he was not familiar with the completion of the forms, he had difficulty with them and made mistakes. He then apparently became engrossed in correcting his mistakes paying no attention to his watchkeeping duties despite the fact that the vessel was approaching an alteration of course.
- 2.1.18 The planned passage had not been programmed into the GPS video plotter so there was no alarm to alert the watchkeeper to the impending arrival at the waypoint.
- 2.1.19 While the second officer was engrossed in non-watchkeeping tasks and the chief officer absent from the bridge, the vessel made good a course of 060 degrees rather than the intended 065 degrees. The course made good took the vessel onto the rocks at the south end of the Breaksea Islands.
- 2.1.20 The actions of the watchkeeping officers indicated that they gave greater priority to fishing-related tasks than to navigational duties. All the officers on board had spent their sea-going careers on only fishing vessels and their certificates were fishing oriented.
- 2.1.21 Navigational passages to, from or between fishing grounds were an integral part of the operation and should have been undertaken with as much care as any other part.
- 2.1.22 The discrepancies of timing between ship's staff and the Fisheries Communication Centre remain unexplained but do not materially affect the analysis of the grounding. The positions, either observed or estimated, and the final course of the vessel are not disputed.

2.2 Safe Ship Management

- 2.2.1 Had a safe ship management system been in place, and its objectives and principles adhered to, the risks associated with coastal navigation, operations in bad weather and bridge watchkeeping practices should have been identified and safeguards against those risks established. Had they been, the grounding would have been avoided.
- 2.2.2 Under New Zealand Maritime Rules, Part 21, it was not a requirement that *Dong Won 529* operate under safe ship management at the time of the grounding. The owner operated several other vessels on the New Zealand coast and acknowledged that each of those vessels must be entered into a safe ship management system by the second anniversary of the recognition of its certificates.

- 2.2.3 Implementing safe ship management will enable the owner to provide appropriate guidance, advice and instructions to masters on it's required procedures and practices. Together with sea staff, the owner will be able to identify areas of risk and put into place constructive guidance to minimise those risks and maximise defences against them.

3. Findings

Findings and safety recommendations are listed in order of development and not in order of priority

- 3.1 The required Korean flag state statutory certificates for the *Dong Won 529* were valid .
- 3.2 The *Dong Won 529* was registered in New Zealand as a fishing vessel under section 57 of the Fisheries Act 1983 and met the requirements of that Act.
- 3.3 The manning of *Dong Won 529* met legislative requirements and the master and bridge watchkeeping officers held qualifications required for their respective positions.
- 3.4 At the time of the grounding, there was no requirement that the *Dong Won 529* be entered into a safe ship management system
- 3.5 There were no documented standing orders relating to the operation of the vessel produced by either the owner or the master.
- 3.6 The master left no written orders to cover those times when he was not on watch himself.
- 3.7 The decision by the master to leave the Solander fishing ground and proceed to the east of Stewart Island was an appropriate response to a deteriorating weather forecast.
- 3.8 It would have been prudent for the chief officer to have delayed his inspection of the vessel until the *Dong Won 529* was safely past the next planned waypoint.
- 3.9 In the prevailing weather it would have been prudent for the chief officer to have posted a lookout.
- 3.10 When left in sole charge of a coastal navigational watch it was not appropriate that the second officer spent his time on paperwork at the chart table.
- 3.11 The gyro compass had an error which was known to the officers but no allowance was made for it.
- 3.12 Had the intended course been properly maintained, *Dong Won 529* would have passed clear of the charted dangers, but the course made good led it to ground on rocks to the south of Breaksea Islands.
- 3.13 There was no mechanical failure which contributed to the grounding.
- 3.14 The *Dong Won 529* grounded at a time when no lookout had been posted and the progress of the vessel was not being appropriately monitored.
- 3.15 The *Dong Won 529* grounded as a result of poor passage planning and poor watchkeeping.
- 3.16 The application of the principles of good safe ship management could have avoided the grounding.

4. Safety Recommendations

4.1 On 21 May 1999 it was recommended to the Director of Dong Won Fisheries Company Limited, New Zealand that he:

4.1.1 formulate and implement an operations policy and procedures manual for company vessels operating in New Zealand waters. The manual should include procedures and practices for critical operations such as passage planning and navigation in coastal waters. The manual should be implemented as soon as practicable, irrespective of the date of compulsory entry into a New Zealand safe ship management system. (019/99)

4.1.2 instruct masters of company vessels to compile and use documented standing orders which reflect their own operational requirements and those of the company. (020/99)

4.1.3 instruct masters of company vessels to introduce a system to document their orders relating to specific daily operational requirements. (021/99)

4.2 On 31 May 1999 the South Island Manager, Sanford Timaru responded on behalf of Dong Won Fisheries Company Limited as follows:

4.2.1 **019/99**
Dong Won Fisheries Company Ltd intend to adopt this recommendation. We are assisting Dong Won vessels with this work now from our experience with Safe Ship Management Systems on our own vessels. We would hope to have this completed by 31 August 1999.

4.2.2 **020/99**
Dong Won Fisheries Company Ltd intend to adopt this recommendation. This will be included in the policy/procedures manuals being developed.

4.2.3 **021/99**
Dong Won Fisheries Company Ltd intend to adopt this recommendation. Again this will be included in the policy procedures that are currently being developed.

Approved for publication, 26 May 1999

Hon. W P Jeffries
Chief Commissioner

