

M.V. 'MARITIME GARDENIA'

PRELIMINARY INVESTIGATION INTO
GROUNDING IN TORRES STRAIT
(ALERT PATCHES)
POSITION 10°29'.5 S 142°21'.1 E
ON 18 AUGUST 1985

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AUTHORITY TO CONDUCT INVESTIGATION

On 19 August 1985 Captain John Nicholson, Regional Director of the Federal Department of Transport, Queensland, was appointed under Sub-section 377A(1) of the Navigation Act 1912 to make a preliminary investigation into the circumstances of the grounding of the m.v. Maritime Gardenia in the Torres Strait on 18 August 1985, and in particular:

the factors which caused or contributed to the grounding

the adequacy of actions taken by the master and crew to protect life, property and the environment after the grounding.

INTERVIEWS

On 21 and 22 August 1985, at Thursday Island, Captain Nicholson interviewed the Master, Chief Officer and Third Officer, also the Quartermaster who was at the wheel at the time of the grounding. However, neither the Third Officer nor the Quartermaster had sufficient command of the English language to be interviewed directly and, no independent interpreter being available, the Master and Chief Officer were used to translate the questions and answers.

Captain Nicholson also examined the Certificates of Competency of the Master and the two officers interviewed and relevant ship's documents.

Other information used in compiling this report is the record of messages passed through Thursday Island Radio, the written reports of Captain D. Wood, the Queensland Coast and Torres Strait Pilot, and the acting Thursday Island Harbour master, Captain S. Pelecanos, who both boarded the ship prior to its refloating, and the report of the Federal Department of Transport Marine Surveyor who inspected the ship on 19, 20 and 21 August 1985 following a report under Section 268 of the Navigation Act 1912.

VESSEL DATA

MARITIME GARDENIA

NATIONALITY	Liberian
OFFICIAL NUMBER	5237
PORT OF REGISTRY	Monrovia
BUILT	1975
OWNER	Orwell Maritime Corporation, Liberia
OPERATOR	Kansai Steamship Co Ltd., Japan
GROSS TONNAGE	7027.00
NET TONNAGE	4653.00
DISPLACEMENT (SUMMER)	15158.00 tonnes
DEADWEIGHT	11,725.70 tonnes
LENGTH	127.80 metres
BREADTH	20.54 metres
DEPTH	10.39 metres
LOAD DRAUGHT (SUMMER)	8.05 metres
LIGHT DRAUGHT	2.06 metres
NUMBER OF HOLDS	3
MAIN ENGINE	Diesel
SERVICE SPEED	13.0 Knots
TOTAL CREW	22 (Koreans)

The Maritime Gardenia has the following certificates, which were issued by Bureau Veritas on behalf of the Republic of Liberia:-

	<u>Issued</u>	<u>Expires</u>
Cargo Ship Safety Construction	29.2.84	22.1.89
International Load Line Certificate No 31552	29.2.84	22.1.89
Cargo Ship Safety Equipment Certificate No 1122	13.3.85	3.2.87
Cargo Ship Safety Radiotelegraphy Certificate No 2001	2.1.85	8.11.85
International Oil Pollution Prevention Certificate	29.2.84	23.1.89

The vessel was last dry docked in Kobe, Japan on 23.1.84.

The Maritime Gardenia is equipped with the following navigation equipment in the wheelhouse and on the bridge wings:

Two JRC radar sets type JMA - 157 GB - maximum range 48 miles

One Tokyo Keiki gyro compass with repeaters in wheelhouse and on bridge wings

One Tokyo Keiki standard liquid magnetic compass reflected to the steering position

One Tokyo Keiki auto pilot

One echo sounder

One Tokyo Keiki course recorder

One wind direction and speed indicator

One rudder indicator

One main engine revolution and propellor indicator

It was stated by the Master, Chief Officer and Third Officer that all the above were operational at the time of the grounding, although only one radar was in use.

SEQUENCE OF EVENTS

On the evening of 18 August the Maritime Gardenia was proceeding through the Torres Strait bound for Penang in Malaysia, having departed Newcastle, New South Wales at 0200 on 13 August. The ship was carrying a full cargo of wheat and the departure draught was 8.06 metres forward and 8.20 metres aft. The ship did not have a Queensland Coast and Torres Strait Pilot on board, the Master having refused the agent's offer to engage a pilot because he felt he was capable of handling the navigation through the Great Barrier Reef without pilot assistance.

When interviewed the Master, Captain An Yung Gun, stated that he had been on the bridge for much of the previous two and a half days but, with the ship coming to an easier area to navigate, he had left the bridge in the charge of the Chief Officer at 1950 on 18 August and gone to the rest room. (All times given are Eastern Australia Time i.e. GMT + 10 hours.)

At 2000 the Chief Officer, using radar and a visual bearing, fixed the ship's position on the chart and then handed over the watch to the Third Officer, Mr Jun Juk. The Chief Officer stated that he left the bridge about 2005, the course being 300° (T) at the time. The weather was fine, wind SE-force 4 and visibility good. All marine navigational aids in the vicinity were operating normally.

According to the information plotted on the chart the Third Officer fixed the ship's position at 2005, 2010, 2015 and 2022. He stated that the positions were obtained by compass bearings and radar distances.

According to tidal data and advice from Torres Strait Pilots the tidal-stream would have been setting in a northerly direction during this period. The predictions for Twin Island were Low Water 1905 (18th) height 0.47m; High Water 0133 (19th) height 3.10m.

About 2023 the Master returned to the bridge to find that the Third Officer had not yet plotted the 2022 position. After being reprimanded by the Master for his tardiness the Third Officer then plotted the 2022 position on the chart.

The Master stated that when he saw the plotted position he told the Quartermaster to take the helm and to transfer from automatic to hand steering. The Master then ordered the helm hard to port. However, about one and a half minutes later he felt the ship shake. He ordered "Stop engines"; the time was then about 2025.

The Master ordered the Chief Officer to go forward and let go both anchors. This was to hold the ship against a strong tidal stream running north. He also told the Chief Engineer and the Chief Officer to take soundings of the tanks and holds.

At 2035, as recorded in the deck logbook but some two hours later, at 2238, according to the time logged by Thursday Island Radio, the Master reported the ship aground and requested the assistance of a pilot.

At 2200 the sounding of the tanks and holds was completed and the following were found to be breached:

No 1 Water Ballast Tank port (WBT - P)
No 2 WBT - P
No 3 WBT - P
No 4 WBT - P
No 3 Fuel Oil Tank (FOT)
No 4 FOT
No 5 FOT

Also detected was an increasing water level in No 1 hold.

At 2350 the oil rig tender Roavensturm, which was passing through the Torres Strait escorting the drilling rig Zaparta Arctic, came alongside the Maritime Gardenia and stood by to render assistance. The Roavensturm reported an oil slick extending approximately 100 metres and about 5 to 10 metres wide in a direction 300° (T) from the Maritime Gardenia. At this stage the Maritime Gardenia was heading 120° (T) and was listing to port with deck edge submerged as she lay aground.

At 0205 on 19 August a pilot of the Queensland Coast and Torres Strait Pilot Service, Captain Wood, accompanied by the Acting Harbour Master Thursday Island, Captain Pelecanos, boarded the Maritime Gardenia.

After soundings had been taken of water depths around the ship, the Master and the pilots agreed that an attempt should be made to refloat the ship immediately, as it was then high tide. The Master decided not to use the Roavensturm, which then moved away from the ship and stood by in the vicinity. It was dismissed at 0213.

Both anchors were weighed, the engine put astern and about 0226 the ship refloated.

The Maritime Gardenia was then piloted by Captain Wood at slow speed through the Prince of Wales channel, clearing the Channel at 0404. Throughout the passage soundings were taken every 30 minutes of the tanks and No 1 hold. The water depth in No 1 hold bilge was found to be increasing at a rate of 30cm per hour. Captains Wood and Pelecanos in their reports noted that the oil slick observed by the Roavensturm was due to the ruptured fuel oil tanks being pressed up by sea water and causing oil to leak out of the air pipes onto the port side foredeck, which was awash. However, the crew sealed the airpipes and cleaned up the spillage on deck as best they could to prevent further pollution

At 0455 on 19 August the Maritime Gardenia anchored in Goods Island anchorage with Quoin Point bearing 012° (T) x 0.8 miles. The pilot and acting Harbourmaster then disembarked. However, later that day, the ship dragged its anchor and again grounded. Captain Pelecanos boarded at 1110 and made an unsuccessful attempt to refloat the ship. He reboarded in the evening, when the tide was flooding and, about 1900, refloated the ship using the engine. He then shifted the ship to a position with Quoin Point bearing 044° (T) x 1.0 mile and re-anchored. Also on 19 August the Chief Engineer, at the request of Captain Pelecanos, commenced transferring fuel oil from the ruptured tanks into No 4 Fuel Oil Upper Wing Tanks. This was accomplished by connecting a portable pump and hose up to the air pipes of the ruptured tanks. By 22 August all accessible fuel in the ruptured tanks had been transferred.

During the ensuing days the damage was surveyed by surveyors from the classification society Bureau Veritas and the Salvage Association. An underwater inspection of the hull was made by divers. Apart from the damage itself the divers found several small pockets of oil trapped within the buckled plating. Being concerned that this oil would be released when the ship got under way, its owners arranged for oil dispersant to be airfreighted from the Federal Department of Transport's stockpile in Cairns. On the recommendation of the Salvage Association surveyors, the air pipes to the ruptured tanks were sealed and compressed air introduced to displace the water and thus lighten the ship to a draught acceptable to Bureau Veritas. This work was performed by members of the Australian Salvage Consortium (ASC) assisted by the ship's engineers and the crew of the salvage tug Smit Rangoon, which had arrived from Singapore on 3 September. The ASC and Smit International were engaged by Nippon Salvage, which had been appointed by Maritime Gardenia's the owners to undertake the salvage. On 7 September the Maritime Gardenia was inspected and then cleared by Bureau Veritas to proceed under tow to Singapore. On the morning of the following day the anchor was weighed and the ship proceeded under its own power to international waters, where it connected up to the Smit Rangoon and departed for Singapore under tow. The small amount of oil which escaped as the ship started to move as quickly dealt with by dispersant sprayed from the after deck of the Maritime Gardenia.

DAMAGE TO VESSEL

The ship's bottom plating was extensively damaged between No. 1 Double Bottom water Ballast Tank Port and the engine room. Only the port side of the bottom and the keel were affected.

The plating was set up in many places-and the following tanks ruptured.

- No.1 Water Ballast Tank Port
- No.2 Water Ballast Tank Port
- No.3 Water Ballast Tank Port
- No.4 Water Ballast Tank Port
- No.3 Fuel Oil Tank
- No.4 Fuel Oil Tank
- No.5 Fuel Oil Tank

A diagram showing the location of the double bottom tanks is at Attachment 3.

The bilge well to No.1 cargo hold was also breached allowing water to seep into the wheat filled hold. The rate of inflow was low and, by the time of the ship's departure on 8th September, the water had only risen to a depth of 1.2 metres on the port side and 0.3 metres on the starboard side of the hold.

CONFLICTS OF EVIDENCE AND POINTS OF INTEREST

1. Captain Pelecanos found that after the grounding and subsequent anchoring of his vessel, the Master of the Maritime Gardenia seemed to be at a loss. His attitude towards his responsibilities and duties and preparation for the salvage of his vessel was rarely positive or constructive. It was necessary for Captain Pelcanos to prompt him to notify his owners, to order surveyors and divers, to note protests, and to declare General Average.

Captain Pelecanos found the Master very slow to accept the severity of damage sustained by his vessel. This in itself was a source of considerable delay. Although advised strongly against pursuing this line, during initial communications with the owners he minimised the seriousness of the incident assuring them that the damage was only minor and that he could proceed on his voyage to Penang. As a consequence, the owners were slow to act on the advice of the surveyors and this resulted in considerable delay.

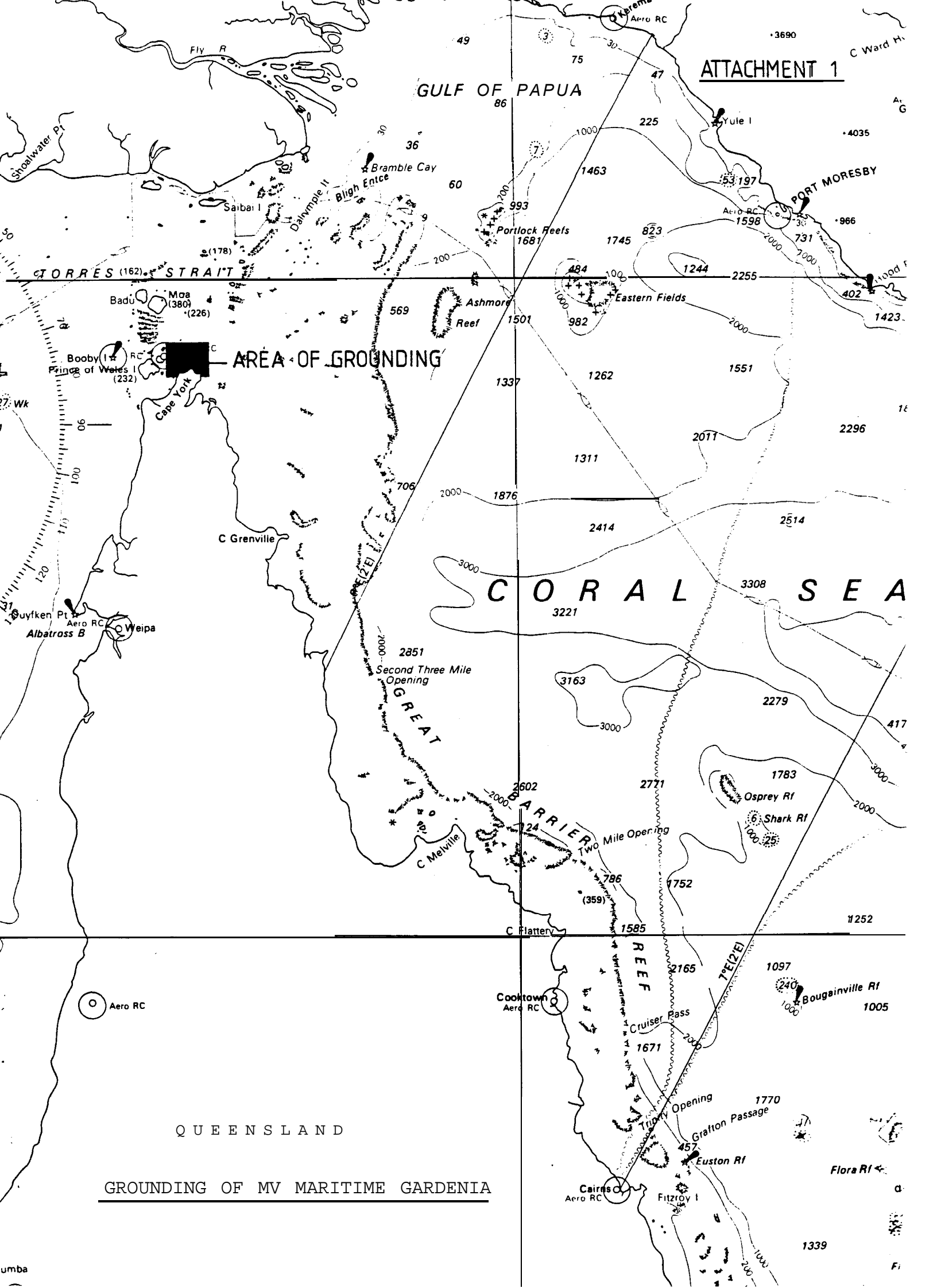
2. The vessel did not carry an official log book.
3. There was a paucity of compass errors recorded.
4. The Master claims he left the bridge at 1950, although the log book entry indicates 1940. It is also noted that the log book entry had been changed from "Master left bridge for some rest ..." to "Master left bridge for rest room.."
5. The time of Master returning to bridge is uncertain but could have been between 2021 and 2024.
6. The Master claims he changed to hand steering and put the Quartermaster to the wheel when he returned to the bridge. The Quartermaster, through the Chief Officer, claims the Third Officer put him to the wheel about 20 minutes before the grounding.
7. Third Officer's entry in log book of "2023 a/co to 270° by Master's order" has had "by Master's order" crossed out and initialled by Third Officer.
8. Log book indicates grounding was reported to Thursday Island Radio at 2035 but Thursday Island Radio records it as 2238. It was about the latter time that the first VHF message was received by the Manager of Torres Industries, who alerted Captains Wood and Pelecanos.
9. The charted positions at 2005, 2010, 2015 and 2022 are reasonably consistent, in terms of speed, with the Chief Officer's 1950 and 2000 positions i.e. about 11.3 knots.
10. If the 2022 position is correct and the vessel grounded at 2025 the speed would have been 29.6 knots which is clearly an impossibility.

11. The course recorder time shows that it was one hour ahead of ship's time. Allowing for the one hour difference in time, there is quite good correlation between log book and course recorder for previous alterations of course.
12. The course recorder shows (converted to ship's time) that from 1909 when the log book records the alteration to 300° (T) the vessel was consistently steering higher than 300° (T). It also shows that an alteration to 290° (T) was made at 2020 which is consistent with the evidence given by the Quartermaster through the Chief Officer. Furthermore, it shows that an alteration to 270° (T) was made at 2028 with the ship grounding at 2029 - 2030.
13. The Third Officer said he took compass bearings and radar distances to fix the ship's position. However, the absence of position lines suggests this was not so.
14. The Chief Officer initially said that he used radar distances for position finding but later said he used compass bearings as well.
15. The Master produced Standing Orders (in English) which were undated, and what appeared to be instructions to the duty officer (in Korean). He could not produce any other night orders except those for 18 August 1985. The time of writing was not indicated but they were initialled by all three watchkeeping officers.
16. The Master spent time on his return to the bridge reprimanding the Third Officer instead of taking command in a seamanlike manner.

CONCLUSIONS

Language difficulties coupled with conflicts in evidence and available data has made it very difficult in establishing beyond doubt the factors which caused or contributed to the grounding. Nevertheless it can be concluded that

1. the m.v. 'Maritime Gardenia' grounded because of human error of judgement in navigation;
2. the Master's decision not to take a pilot was ill-judged in view of the length and difficulties of the passage through the Great Barrier Reef. It is relevant to note that the Federal Department of Transport recommends that all ships take a pilot and nearly all do so. The Master failed to give proper instructions when he left the bridge and there was no preplanning for the alteration of course on to the East Strait Island leading lights;
3. the Master failed to return to the bridge in sufficient time to assess the situation in regard to the vessel's position and take command in a proper and orderly manner.
4. the Third Officer failed to use all the ship/shore navigational aids to properly determine the ship's position and alter course in sufficient time to avoid grounding.
5. no allowance appears to have been made for tidal influences and the following sea.
6. at 2020 when the Third Officer altered to 290° (T) the vessel was probably 0.4 miles east of the 2022 charted position and, at 2022, 0.2 miles north east of that charted position.
7. as late as 2025 the alteration to 270° (T) could have been made without causing the grounding which I conclude occurred about 2029-2030.
8. that the Master and crew took appropriate measures to preserve the integrity of the vessel once it had grounded.
9. the prompt and effective action by Captains Wood and Pelecanos was instrumental in successfully refloating the ship, bringing it to a safe anchorage and preventing pollution of the environment.



GROUNDING OF MV MARITIME GARDENIA

ATTACHMENT 2

2036 (SHIP AROUND)

270° (T)

290° (T)

2020

2022

2020

2015

2010

2005

2000

○ OBSERVED POSITIONS AS SHOWN ON SHIPS CHART

⊗ POSITIONS AS ESTIMATED BY INVESTIGATING OFFICER

INVESTIGATING OFFICER'S ESTIMATION OF COURSE MADE GOOD IMMEDIATELY PRIOR TO GROUNDING

COURSE LINE AS SHOWN ON SHIPS CHART

TUESDAY ISLETS

BOURNE RA

SHOALS RA

EDWARDS RA

REEVES SH

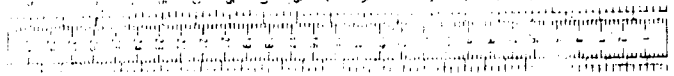
WATERWAY

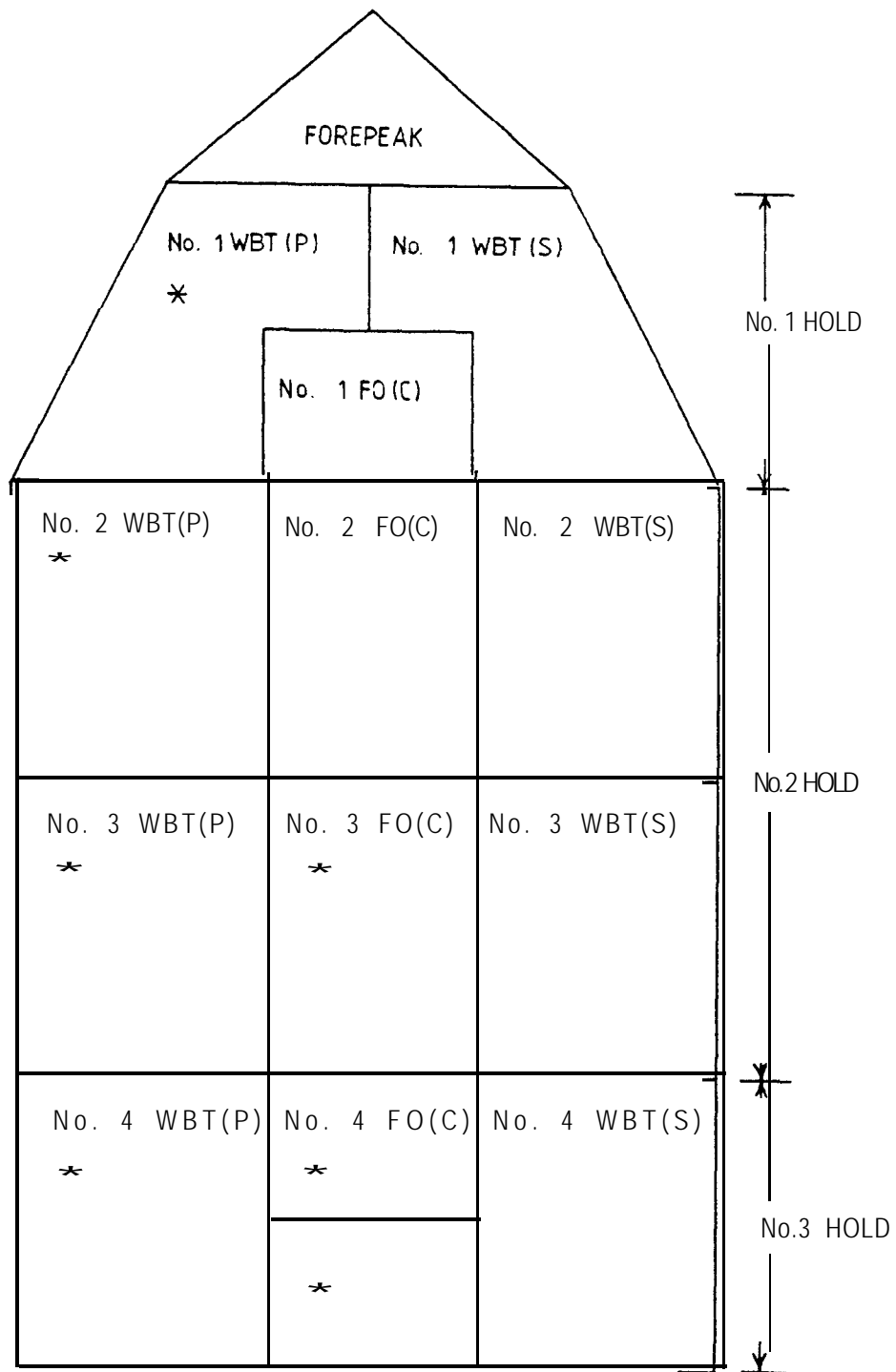
ROUTE

PORTION OF CHART AYS 293

Increasing about 1 annually

MAG VAR. 5.35° E (1984)





* TANKS BREACHED DURING GROUNDING