Departmental investigation into the collision between the Indonesian flag bulk carrier BOGASARI DUA and the Panamanian flag bulk carrier MIDAS off Geraldton, WA on 5 March 1996

MIIU

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Contents

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Summary

On the morning of 5 March 1996, the Indonesian 33,747 tonnes deadweight geared bulk carrier Bogasari Dua and the Panamanian 38,313 tonnes deadweight geared bulk carrier Midas were both lying at anchor in Geraldton Roads, Western Australia. Midas was anchored about 1½ miles to the north of Bogasari Dua.

At about 0400, Bogasari Dua, lying to a single starboard anchor with eight shackles in 30 m of water, began to drag anchor in gale force southerly winds and was driven towards Midas. Those on the bridge of Bogasari Dua did not realise that the vessel was dragging anchor until after 0430, when they were alerted by the whistle signals of Midas. Bogasari Dua came into contact with Midas at about 0445, before either the anchor could be weighed, or the engine made ready. As soon as the two vessels moved apart, at about 0450, the Master of Bogasari Dua manoeuvred his vessel clear.

Bogasari Dua received damage to port side shell plating in way of no.5 hold, to the main deck bulwark on the port side, to the port side accommodation ladder hoist, to the port side lifeboat davit base and to the port lifeboat, which was split into three sections. Midas received indentation damage to the bulbous bow, also to shipside plating in way of nos. one and two starboard topside tanks and damage to various lengths of shipside railing.

No one was injured in the incident and no pollution occurred.

Sources of Information

Bogasari Dua - Master, Mate, Second Mate, Third Mate, Chief Engineer.

Midas - Master, Mate, Third Mate, Chief Engineer.

Harbour Master and Assistant Harbour Master, Port of Geraldton.

Bureau of Meteorology, Climate & Consultative Services, Perth.

Acknowledgement

The Inspector wishes to thank AMSA management for making available the Senior Surveyor, Fremantle to conduct the field investigation on behalf of the Unit.

Section of chart Aus 81 reproduced by permission of the Hydrographic Office, RAN.

Narrative

Bogasari Dua

The Indonesian flag, six-hold, geared bulk carrier Bogasari Dua has an overall length of 199.7 m, a beam of 26.31 m and a summer deadweight of 33,747 tonnes at a draught of 10.061 m. The vessel is equipped with two, 6½ tonne Hall stockless anchors, each attached to 11 shackles (305 m) of anchor cable.

Built at the Osaka Zosensho K K - Osaka shipyard in 1977, the vessel is powered by a 6-cylinder Sulzer engine, producing 7282 kW and driving a single fixed propeller, providing a service speed of 14.5 knots. The vessel is not fitted with bridge control of the main engine and is not, therefore, suitable for unmanned engine room operation.

Owned and operated by P T Bogasari Flour Mills of Jakarta, the vessel is manned by a crew of 34 Indonesian nationals, including four cadets.

Bogasari Dua arrived off Geraldton, in ballast from Ujung Pandang, on the morning of 4 March 1996. The vessel was brought up to a single starboard anchor at 1054, with eight shackles in 30 m of water and with Point Moore bearing 111º at 2.53 miles. The draught was 3.59 m forward and 6.18 m aft, providing a displacement of 19,949 tonnes. Normal bridge watches were maintained, but the engineer officers were released from watch keeping duties, the engine room being manned by an oiler; the engines, however, were on “immediate” readiness.

Throughout the afternoon and evening of 4 March, the wind was logged as being from the south at force 5 (17-21 knots), the sea moderate to rough. Whereas both the Second and Third Mates checked the vessel's position hourly during their watches, the Mate checked the position only once, at 2000. According to the position checks, Bogasari Dua maintained its position.

Midas

The Panamanian flag, five-hold, geared bulk carrier Midas has an overall length of 179.41 m, a beam of 29.01 m and a summer deadweight of 38,313 tonnes at a draught of 10.823 m. The vessel is equipped with two, 5.9 tonne stockless anchors, each attached to 12 shackles (330 m) of cable.

Built by Kawasaki Heavy Industries Limited of Kobe in 1984, as Sanko Sovereign, the vessel is powered by a five cylinder B&W engine of 5296 kW, driving a single fixed propeller, providing a service speed of 14 knots.

The vessel was purchased as New Sophia by Midas Maritime S.A. of Panama in 1994, renamed Midas and manned by a crew of 21. The Master and Mate on board in March 1996 were from Taiwan, the other 19 crew members all from the Peoples Republic of China.

Midas arrived off Geraldton in ballast from Tawau on the evening of 1 March 1996. The vessel was brought up to a single, starboard anchor with nine shackles on deck in 26 m of water at 1936, in the position Point Moore lighthouse bearing 140º and the distance off Point Moore 3.2 miles. Full watches were maintained, both on the bridge and in the engine room, the engine being maintained on immediate readiness.

On the afternoon of 3 March, because of the close proximity of another vessel, Handy Esperance, the Master shortened Midas' cable,

dredged clear and re-anchored in the position Point Moore lighthouse bearing 144º, distance 3.6 miles.

On the morning of 4 March, another bulk carrier arrived at the anchorage and anchored 1½ miles to the south of Midas and its echo was marked on the radar screen, the radar being in the True Motion mode. During the early afternoon the wind, blowing from the south, was logged as having increased to force 6 (22-27 knots) and in the late evening as having increased to force 7 (28-33 knots). At 2200, the engine was placed on "stand by" and the Second Engineer joined the Duty Engineer on watch.

The incident

Bogasari Dua's account

On 5 March 1996, the Second Mate stood the midnight to 0400 bridge watch, in line with normal practice. Although the vessel was yawing considerably in the strong wind and rough sea, regular checks on the vessel's position, both by radar and by visual bearings of Point Moore lighthouse and the entrance leads, indicated that position was being maintained.

The Mate arrived on the bridge at 0355 and, after checking the position and satisfying himself that all was in order, took over the watch at 0400. After handing over the watch, the Second Mate remained on the bridge, to keep the Mate company. The wind was logged as being from the south-south-west at force 6.

At about 0415, the Mate saw, out on the quarter, the lights of the vessel anchored to the north. Then, at a time he later considered to be about 0420, he heard a number of random whistle signals emanating from the other vessel. At 0430, he checked the position using the radar, which showed Point Moore bearing 140º at 3.3 miles and the

other vessel only two cables astern. The Second Mate checked the position independently and confirmed this. Checking the GPS, the Second Mate saw that the vessel's speed was indicated as being a little under three knots. The wind was noted as having increased in strength to force 7-8.

The Mate called the Second Engineer to go to the engine room, giving him one hour's notice, called the Third Mate and deck crew to forward stations and notified the Master. While he was doing this, the Second Mate made an announcement over the public address system, warning everyone of the imminent collision with another vessel. The Second Mate then stationed himself by the engine telegraph, eyes tightly closed, waiting for orders and for the collision to occur.

The Chief Engineer had followed his normal daily routine and had risen at 0420 to conduct his prayers. Hearing the announcement, he looked out of the window, located on the port side, and saw the lights of another vessel close by. He raced to the engine room in his underwear and was joined there by the Second Engineer in time to respond to the "Stand By Engines" command on the telegraph, at a time recorded as 0436.

The Third Mate dressed quickly, made his way forward and, after putting the windlass in gear, started heaving on the cable at a time recorded as 0438.

The Mate, going to the port bridgewing, watched as Bogasari Dua bore down on the bow of the other vessel, the name Midas now clearly visible. Bogasari Dua was angled across the other vessel's bow and, at a time recorded as 0445, the shipside plating in way of no.5 hold came in contact with the bow of the other vessel. The position was noted on the chart as Point Moore bearing 142º at 3.3 miles. Bogasari Dua then slewed to starboard and moved down the starboard side of Midas, again coming in contact abreast Midas' no.1

hatch. The Panama lead at the break of Midas' forecastle also came into contact with the boat deck and port lifeboat.

Before going to the bridge, the Master splashed water on his face to freshen himself up. When he arrived on the bridge, at a time he later placed at about 0442, Bogasari Dua's port quarter was already in contact with the starboard shoulder of Midas. While assessing the situation, he was informed by the Third Mate that the starboard cable was shortened to five shackles and was leading ahead. As the vessel was rolling heavily, he waited until the two vessels had moved about two metres apart before ordering Slow Ahead at 0454.

As the vessel moved ahead, the Third Mate reported that the anchor cable was leading out on the starboard beam, so as soon as the stern was clear of Midas' bow, the Master ordered the wheel to be put hard to starboard. Rather than take all way off the vessel and recover the anchor, the Master maintained headway on the vessel, dragging the anchor, to move clear of Midas. The vessel was rolling heavily and the midships section of the port lifeboat, broken adrift from the ends by the contact with Midas' Panama lead, was lost overboard.

The anchor was eventually weighed at 0555 and at 0636, the Master re-anchored the vessel, this time using the port anchor with eight shackles of cable, in the position Point Moore bearing 113º at a distance of 2.8 miles.

Midas' account

At 0200 on 5 March 1996, the Chief Engineer relieved the Second Engineer in the engine room, the engines still being on "stand by" because of the weather conditions. At 0340, no.2 diesel generator cut out, but no.1 diesel generator cut in within seconds and there was negligible effect on services.

The Mate took over the bridge watch from the Second Mate at 0400, after first having checked the vessel's position and the relative position of the vessel ahead, the latter being at a distance of 1.6 miles. He also noted that Midas was yawing through an arc of 60º. The wind at this time was logged as being from the south at force 7.

At 0415, the Mate received a telephone call from the Chief Engineer, who advised him to check the gyro compass, to ensure that it had not been affected by the momentary loss of power at 0340. He made a visual check of the master gyro and found that the heading was correct and that it was functioning normally.

At about 0430, the Mate became aware that the vessel anchored ahead seemed to be getting closer. He checked his own vessel's position by radar, then, looking through binoculars, realised the other vessel was dragging anchor. Not knowing the name of the other vessel, he decided against calling on VHF, instead, he waved the beam of his torch in the vessel's direction. He then sounded a very long blast on the whistle, lasting about a minute, before calling the Master at 0435.

The Master arrived on the bridge within a minute. He noted that the anemometer indicated the wind as being from right ahead at 35-40 knots (gale force 8) and that the other vessel, four cables distant by radar, was about half a point on the starboard bow, at an angle of about 45º to Midas. He sent the Mate forward, with instructions to veer the cable to 10 shackles, telling him to collect the Bosun on the way. He sounded a series of random blasts on the forward whistle and as soon as he was able to read the other vessel's name on its stern, at a distance of between two and three cables, he called "Bogasari Due (sic) you are drifting anchor" on VHF 16, but received no response.

The Third Mate arrived on the bridge at about 0440, to assist the Master, who had him call the Cook, a keen photographer with a video camera, to record the incident on videofilm. The Master continued to sound random whistle signals and to call Bogasari Dua on VHF16.

The Mate and Bosun veered the starboard cable to 10 shackles, then took up a protected position abaft the mooring platform. As Bogasari Dua closed Midas, the Mate did not see anyone on the bridge until the other vessel was about 50 m off, when a lone person appeared on the port bridge wing. He shouted to him and the person went back inside the wheelhouse. After about two minutes, three or four persons appeared on the bridgewing. He then saw another person on the Bogasari Dua, walking slowly towards the forecastle, and he called to him “fast, fast”.

From his position on the forecastle, the Mate saw the other vessel overrun Midas’ anchor cable, which became very tight, before making contact with the bulbous bow. Bogasari Dua then slewed to starboard, to parallel Midas and moved close down Midas’ starboard side. As the vessel slewed to starboard, the Mate heard the sound of an anchor cable being worked on board. Two further shocks of impact were felt before Bogasari Dua was seen to go ahead on the engine, at a time recorded as 0450.

As Bogasari Dua moved ahead, it again closed Midas, its port lifeboat making heavy contact with the Panama lead at the break of the forecastle. Bogasari Dua then crossed the bow to a position about four points and about 50 m off the port bow, where it was observed to stop its engine.

Not happy with the closeness of the other vessel, the Master went dead slow astern on the engine, but as this had little effect, he instructed the Mate to shorten cable, then dredged the vessel well clear of Bogasari Dua. The anchor was then weighed, prior to re-anchoring at 0654, in the position Point Moore lighthouse bearing 146º at 3.75 miles.

Subsequent events

After re-anchoring, both vessels assessed the damage caused by the contact.

The starboard side of Midas' bulbous bow had been pushed in by 200 mm over about a two-square metres area and the starboard side shell plating had been pushed in to a depth of about 350 mm between frames 186 and 166, from about 600 mm below main deck level, extending about 3 m downwards. Various lengths of shipside railing were also damaged.

Bogasari Dua's port side shell plating had been set in in way of no.5 hold, between frames 43 and 47, the port side boat deck plating buckled, the port side combination pilot ladder damaged and the port side lifeboat destroyed.

Midas made numerous calls to Bogasari Dua on VHF16, to exchange details, as required by international convention, but did not get a response until the afternoon. The Master reported the incident to the Harbour Master's office shortly after 0800.

At 0800, Bogasari Dua started to drag its anchor again, but as the rate of movement was slow, the Master was content to let it do so. The vessel was called by the Harbour Master at 0925 and the Master informed him of the collision with Midas.

When, during the afternoon, Midas' Master did make contact with Bogasari Dua the response he received was merely "Starboard anchor loosing, lifeboat missing, accommodation ladder damaged, shell plating no.5 hatch some damage". From this message, the Master was unsure whether an anchor component was loose, or whether Bogasari Dua had lost its anchor in its entirety.

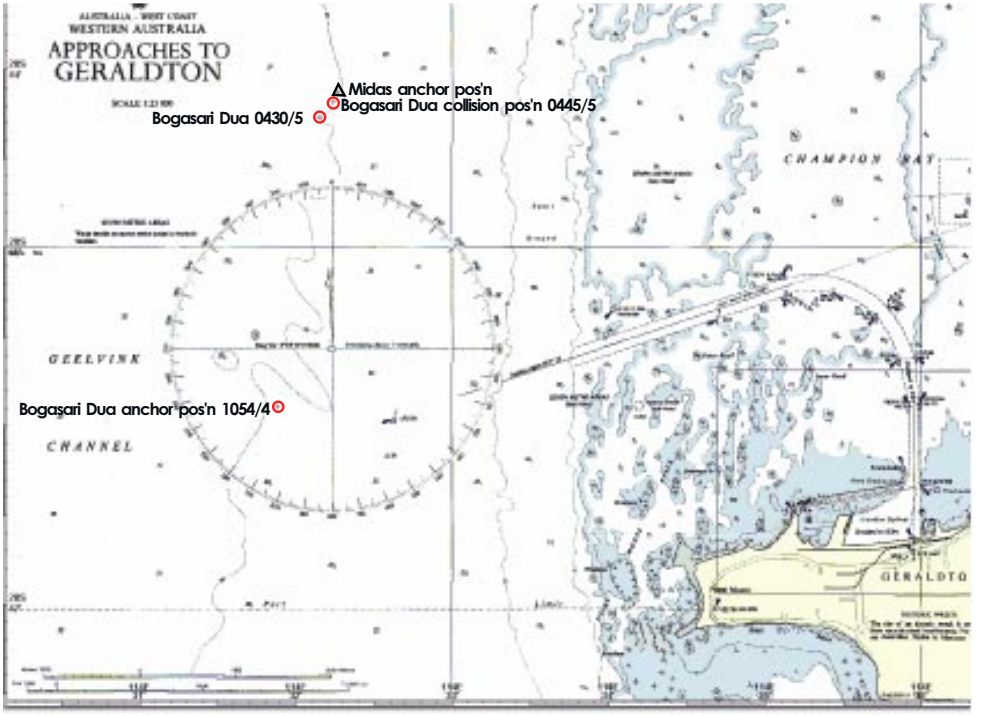
By 1730, Bogasari Dua had dragged anchor to the extent that it was again closing Midas. When the distance had closed to 2½ cables, Midas weighed anchor and moved clear, eventually re-anchoring in the position with Point Moore bearing 140º at 3.5 miles.

Bogasari Dua had also started to weigh anchor, but the cable parted at the seventh shackle. The vessel was re-anchored, to leeward of Midas, at 1926, however the anchor did not hold and it was weighed again. The vessel was eventually anchored successfully at 2320, in the position with Point Moore bearing 151º at 6.2 miles.

Following a request from the owner, Midas was berthed at no.5 berth, Geraldton harbour, at 0618 on 6 March, so that the damage could be assessed by a classification society surveyor and any necessary repairs carried out before the vessel was due to load. The surveyor determined that Midas could load her cargo without carrying out repairs, but that permanent repairs should be completed not later than 11 May 1996. The vessel moved to the loading berth on 7 March.

Bogasari Dua berthed on the morning of 8 March, also at the request of its owner's and also at no.5 berth. Its classification society surveyor also determined that immediate structural repairs were not needed, but stipulated that repairs had to be completed by 23 March 1996. The vessel moved to the grain loading berth on the morning of 9 March.

The Director of Marine Safety, Indonesia, authorised AMSA to permit Bogasari Dua to sail for Surabaya with the destroyed port lifeboat substituted by two 20-man inflatable liferafts.



Portion of chart Aus 81 showing positions of vessels

Comment and Analysis

This incident was the second such incident in four months, in which a vessel dragged anchor in an exposed anchorage off an Australian port and collided with another vessel.

There does seem to be a lack of appreciation, by some ship masters at least, of the limitations of the holding ability of anchors, of the risk of dragging anchor in strong adverse weather or strong tidal conditions and its consequences. Also, there is an indication of a disregard by some ships to maintain engine room watches in poor weather conditions.

According to the duty officers on board both Bogasari Dua and Midas, everything was in order at the hand-over of the watches at 0400 on 5 March. Both vessels were reportedly holding position and the Mate of Midas noted the distance of Bogasari Dua as being 1.6 miles.

Shortly before Bogasari Dua came into contact with Midas, the Second Mate noted that the GPS receiver indicated a speed of between 2½ and 3 knots. Both vessels recorded the time of the collision as 0445.

It is therefore probable that Bogasari Dua's anchor broke out shortly after 0400.

Both vessels were maintaining bridge sea watches whilst at anchor and the engines of both vessels were reportedly ready for "immediate use", although in reality, the engineers aboard Bogasari Dua would have required up to about 10 minutes to start the engine. A major factor in the collision, therefore, was the timing at which the Mate of Bogasari Dua became aware of the vessel's dragging anchor and of the developing situation.

According to the Mate, he became aware of random whistle signals at about 0420, and that when he called the Master, after plotting the vessel's position on the chart, he estimated the distance off Midas as being about two cables. The position he plotted on the chart and timed as 0430, was just
1.8 cables from Midas' anchor position. The vessel was sufficiently close to Midas, after the Second Mate had checked the position, to cause the Second Mate to close his eyes tightly in anticipation of collision. Further, the Master stated at interview that when he arrived on the bridge, the vessel was already alongside Midas.

At a drift rate of 2¾ knots, Bogasari Dua would have closed Midas at a rate of one cable (185 m) every 2.2 minutes, although this rate would have been reduced as the vessel came in contact with Midas' anchor cable.

According to the Mate of Midas, he had sounded a very prolonged blast on the whistle after 0430. It was the Master who had sounded random signals, after he had arrived on the bridge at about 0436. While the Master was assessing the situation, the radar showed the distance of Bogasari Dua as being four cables, or just over three (3.15) cables from the bow.

The Mate was on the forecastle when he saw a solitary person appear on the bridgewing of Bogasari Dua, and later another person walking up the deck, after which he heard the sound of an anchor cable being worked.

Taking all the above points into consideration, it is concluded that the Mate of Bogasari Dua was not aware that his vessel was dragging anchor until after 0436. It is further considered that when the Mate's attention was caught by the intermittent whistle signals of Midas, Bogasari Dua was already too close to the other vessel for effective avoiding action to be taken.

Weather

Shipboard records

The deck log book of Bogasari Dua records the wind for the afternoon and evening of 4 March as being southerly force 5, the sea as "r - rough" (rather rough), with the barometric pressure rising from 1012hpa to 1014.5hpa. At 0400 on 5 March, the entries were wind SSW force 6, sea rough and barometric pressure 1014hpa. The entries for the period 0400-0800 were wind SSW force 8, sea very rough, barometric pressure 1014hpa.

The deck log book of Midas also records a southerly wind for 4 March, but of force 6, increasing to force 7 at 2200. The sea condition was recorded as being rough throughout the period and the

barometric pressure recorded as rising from 1009hpa to 1011hpa. For the period 0001 to 0800 5 March, the wind was recorded as south force 7 and the barometric pressure as 1010hpa, although at the time of the incident the anemometer indicated a wind speed of 35-40 knots.

Weather forecasts issued by Bureau of Meteorology

On 4 March 1996, the Bureau of Meteorology, Perth, issued a number of strong wind warnings for the Kilbarri to Jurien Bay area, in which Geraldton is situated. At 0449, the forecast was for southerly winds of 10-15 knots at first, freshening to 15-23 knots by noon and further freshening to 20-28 knots by the afternoon. Confirmatory forecasts were issued at 1130 and 1532, the latter report including a forecasted overnight wind shift to the southeast at strength 15-22 knots.

Bureau of Meteorology analysis

Analysis of weather reports and synoptic charts by the Bureau of Meteorology, Perth, indicates that off Geraldton there would have been a gradual increase in wind speed over a number of hours. At 0400 on 5 March, the wind would have been from the south at possibly 25 knots, with gusts to 35 knots.

Bogasari Dua is equipped with a dedicated weather facsimilie machine, but this was switched off, at the Master's instruction, as soon as the vessel was brought to anchor off Geraldton. As a result, the vessel did not receive the facsimilied Bureau of Meteorology forecasts issued at 1130 and 1532 on 4 March. It is also apparent that the Radio Officer did not, as a matter of routine, receive weather reports and forecasts. However, the vessel should have received the forecast issued at 0449, which warned of strong winds developing during the afternoon and evening.

Weather reports are of relevance to, and should be received by, vessels even when at anchor and in port. However, regardless of whether or not forecasts are received, it is part of a bridge watch keeping officer's duties to monitor the weather and to inform the master when conditions deteriorate.

By 2200 on the evening of 4 March 1996, the wind strength had increased to such an extent that the Master of Midas gave orders for the main engine to be placed on stand-by, yet the log book entries aboard Bogasari Dua indicated a steady wind strength of force 5.

The Third Mate's certificate had been issued on 18 September 1993, therefore, he should have had sufficient experience by 4 March 1996 to realise that the wind strength was increasing. The Second Mate also should have realised that there had been a substantial increase in wind strength when he took over the watch at midnight, so too should have the Mate, at 0400.

Anchoring

In practice, as a general rule of thumb, in sheltered anchorages and for short term periods, a ratio of cable to water depth of 4:1 is often used, with more cable being used where time and exposure demand.

The International Association of Classification Society's formula for anchoring equipment is based on an assumed current speed of 2.5 m/sec (4.86 knots), a wind speed of 25 m/sec (48.6 knots) and a ratio of cable to depth of water of between 6 and 10.

Bogasari Dua was anchored with eight shackles in 30 m of water, a ratio of 7.4:1. In good holding ground this would probably have been sufficient. However, the Admiralty Sailing Directions describe the holding ground as "moderate" and, from his own experience, the Master knew that it was not good. Also, yawing, surging, pitching and rolling will all adversely affect the holding ability of an anchor. Using

a greater length of cable helps to reduce the uplift on the anchor shank and the likelihood of the anchor breaking out, although this is less effective in deeper water.

Ballast

The majority of dry bulk carriers are capable of carrying additional, heavy weather, salt water ballast in one of the cargo holds. However, in order to avoid delays at the loading port, it is prefered to arrive with this hold not only empty, but dry. Where it is known that there is to be a delay in berthing and the waiting anchorage is exposed, the retention, or taking on of this additional ballast should be seriously considered. By increasing the draught and reducing the trim, the windage area is considerably reduced, thereby reducing the forces acting on the anchor and cable and thus the likelihood of breaking the anchor out of its holding.

Bogasari Dua had arrived with only the dedicated wing and double bottom tanks ballasted, resulting in a relatively light draught, particularly forward. With strong winds forecast, the Master would have been prudent to ballast no. 4 hold, which would have increased the vessel's displacement by some 5600 tonnes.

Consideration of actions

Mate of Bogasari Dua

The previous evening, the Mate had checked the vessel's position only once, at 2000, at the end of his watch. He stated that on the morning of
5 March, he checked the vessel's position before taking over the watch at 0400 and again after being alerted by the whistle signals of Midas. With the Second Mate remaining on the bridge to keep him company, it is apparent that he did not pay any attention to either the radar or to what was happening outside the wheelhouse.

The indications are that the Mate was in the habit of not carrying out frequent checks on the position and the relative position of other vessels while the vessel was at anchor. Had he done so, he could not have failed to have seen that the distance from Midas was not only decreasing, but decreasing quite quickly.

Once aware of the situation, the Mate acted quickly, calling the Second Engineer, the Master and, the crew to stations. However, his giving the Second Engineer "One Hour's Notice" lacked any sense of urgency, as probably did his calling of the Master. During the field investigation, the Investigating Officer formed the impression that the Mate did not fully appreciate either the seriousness of the situation Bogasari Dua had been in, or his own responsibilities, as a qualified officer, regarding the safety of the vessel.

Master of Bogasari Dua

According to the Master, Bogasari Dua had already come into contact with Midas by the time he arrived on the bridge, thus all he could do was wait for the opportunity to manoeuvre clear. The fact that he took time to go to the bathroom and splash water over his face would indicate that he did not appreciate any urgency in the Mate's summoning him to the bridge.

The Master had made a number of previous visits to Geraldton, as master of Bogasari Dua and Bogasari Empat. On four occasions, the most recent in 1995, his vessel had dragged anchor in strong winds. Despite his earlier experiences, he did not give any specific directions or warnings to the deck officers to be on their guard, or instructions for the engineers to maintain watches. Nor did he, knowing there were to be a few days at anchor before berthing, consider using more anchor cable to improve the holding capability of the anchor, or taking on more ballast to reduce the windage area.

Given his previous experience, it would have been reasonable for the Master to have weighed anchor and put out to sea until the weather improved, such action, under the circumstances, being normal and prudent. However, this option does not appear to have occurred to him, not even when Bogasari Dua started to drag anchor a second time, after the collision with Midas.

The Master's practice of switching off the dedicated weather facsimilie machine and apparently not requiring the radio officer to receive local weather forecasts while the vessel was at anchor meant the vessel did not receive the strong wind warnings issued by the Bureau of Meteorology.

After the collision, although called numerous times by Midas on VHF channel 16, the Master did not make contact with Midas, to exchange details as required by international convention, until the afternoon of 5 March. Also, he only reported the incident to the local authority after he had been called by the Assistant Harbour Master.

Mate of Midas

Although the Mate's attention had been directed to checking the master gyro compass after the telephone call from the Chief Engineer at 0415, this would have been only of short duration. However, it was only at about 0430 that he became aware that Bogasari Dua seemed to be getting closer. Although he then checked Midas' position by radar, he did not use the radar to check the distance of Bogasari Dua, instead, he studied that vessel through binoculars.

According to the Master, when Bogasari Dua arrived its position had been marked on the radar screen. However, the mark would appear to have been erased at some stage prior to the Mate taking over the watch at 0400. Had the Mate used the radar to full advantage, by re-marking the echo of Bogasari Dua, he would have had immediate, at a

glance indication that Bogasari Dua was closing. Even without the position of the echo being marked, a frequent study of the radar screen would have revealed that the range of Bogasari Dua was decreasing.

It is considered that the Mate did not maintain an adequate lookout, in that he did not frequently check the relative positions of other vessels in the anchorage. As a result of this, when he did eventually realise that Bogasari Dua was closing, there was insufficient time for Midas to weigh anchor and manoeuvre clear.

Master of Midas

The Master had reacted to the increase in wind speed during the evening of 4 March by putting the engine on stand-by and he responded quickly to the summons to the bridge at 0435 on 5 March.

The closeness of Bogasari Dua, three cables from the bow and closing rapidly, precluded the option of weighing anchor, or even shortening cable so as to be able to dredge clear. The only option considered to have been open to the Master to avoid the collision was to slip the cable and then manoeuvre astern. This would have required a knowledge, on the part of the Mate and crew, on the securing and method of release of the cable's bitter end, to ensure swift accomplishment.

However, the Master does not appear to have considered this option, believing it to be too costly to the owner, in either losing the anchor altogether or in recovering the anchor later, and also contrary to the requirement to have two anchors.

Although it is no longer customary to buoy anchors as a matter of course, it is good practice to keep a small buoy and light line in the forecastle store, in case it is necessary to slip a cable for some reason.

However, with most vessels now being equipped with accurate means of determining a vessel's position, such as GPS, recovery of lost or slipped anchors is no longer quite the problem it once was.

Conclusions

These conclusions identify the different factors contributing to the incident and should not be read as apportioning blame or liability to any particular organisation or individual.

It is considered that:

- Bogasari Dua's anchor broke out shortly after 0400.
- The Mate of Bogasari Dua was not aware that his vessel was dragging anchor until after 0436.
- When the Mate's attention was caught by the intermittent whistle signals of Midas, Bogasari Dua was already too close to the other vessel for effective avoiding action to be taken.

The following factors are considered to have contributed the collision:

1. The Master of Bogasari Dua had switched off the weather facsimile machine, denying the vessel access to local weather forecasts and the strong wind warnings.
2. Despite his earlier experiences of dragging anchor off Geraldton, the Master of Bogasari Dua did not give any specific directions or warnings to the deck officers to be on their guard, or give instructions for the engineers to maintain watches.
3. The watch keeping officers aboard Bogasari Dua did not properly monitor the weather conditions and so did not inform the Master of the increasing wind strength.

4. The Mate of Bogasari Dua did not monitor the vessel's position or keep a lookout.

5. Knowing there was to be a lengthy time at anchor before berthing and knowing the exposed nature of the anchorage, the Master of Bogasari Dua did not consider using more anchor cable to improve the holding capability of the anchor, or consider ballasting the vessel down to reduce its windage area.

6. The Master of Bogasari Dua did not consider the option of weighing anchor and standing off the port when the wind increased during the evening of 4 March.

7. The Mate of Midas did not keep a proper lookout in that he did not make sufficiently frequent checks on the relative position of Bogasari Dua.

8. The Master of Midas did not consider the slipping of his anchor cable as an option open to him.

Submissions

Under sub-regulation 16(3) of the Navigation (Marine Casualty) Regulations, if a report, or part of a report, relates to a person's affairs to a material extent, the Inspector must, if it is reasonable to do so, give that person a copy of the report or the relevant part of the report. Sub-regulation 16(4) provides that such a person may provide written comments or information relating to the report.

The final draft of the report was sent to the following:

Master and Mate of Bogasari Dua;

Master and Mate of Midas.

Written submissions were received from the Masters of the two vessels.

The Master of Midas submitted:

> *"When Bogasari Dua was contacting to our anchor's chain and they were getting close to our ship bow rapidly, immediately I ordered the Chief Mate to slip out chain cable and started engine to go astern for reducing heavy collision and make vessel slewing to port side to clear both vessel's rolling/pitching contact to avoid causing big damage at rough sea.*
>
> *Bogasari Dua was dragging anchor and followed the strong wind going down rapidly that we had no time to shorten cable to dredge clear and method of release of the cable's bitter end."*

The Master of Bogasari Dua submitted:

> *"... After completed anchor at 10.35 hrs Mrch 4th 1996, I was usually inform to the officers, when they came together on the bridge to remind them how important to watch the vessel position because the sea bed is not convenient for anchor in bad weather or in strong current.*
>
> *I wrote down in bridge order book the same as standing order and signed by the officers and reminded them to take any action to safe the vessel before I arrived on bridge.*
>
> *Never ordered switch off the weather facsimile which located in radio room, but I orally instructed to deck officers to pay good attention and lookout the changing weather condition and warning me earlier.*
>
> *These comments (are) not only for simply and solely to dismiss the responsibility, however that may be my responsibility as master."*

Details of Bogasari Dua

IMO No.	7613985
Flag	Indonesia
Classification Society	Bureau Veritas
Ship type	Geared bulk carrier
Owner	P. T. Bogasari Flour Mills, Jakarta, Indonesia
Year of build	1977
Builder	Osaka Zosensho K.K. - Osaka
Gross tonnage	21,021
Net tonnage	14,592
Summer deadweight	33,747 tonnes
Length overall	199.7 m
Breadth extreme	26.31 m
Draught (summer)	10.061 m
Engine	Sulzer 2SA 6 cylinder
Engine power	7282kW
Crew	34 Indonesian

Details of Midas

Previous name	New Sophia
IMO No.	8307143
Flag	Panama
Classification Society	Nippon Kaiji Kyokai
Ship type	Geared bulk carrier
Owner	Midas Maritime S A, Panama
Year of build	1984
Builder	Kawasaki Heavy Ind. Ltd. Kobe
Gross tonnage	22,361
Net tonnage	12,680
Summer deadweight	38,313 tonnes
Length overall	179.41 m
Breadth extreme	29.01 m
Draught (summer)	10.823 m
Engine	B&W 2SA 5 cylinder
Engine power	5296 kW
Crew	21 (2 Taiwanese, 19 PRC)