

Accident Report

Grounding

Amaltal Columbia

3 September 2005

Class B



REPORT NO.: 05 3834

AMALTAL COLUMBIA – GROUNDING

At 0815 hours on 3 September 2005, ***Amaltal Columbia*** grounded about 100 metres northwest of the Town Wharf No.12 berth at Bluff. At the time of grounding, the vessel was in the process of carrying out a turn of approximately 180 degrees to port in order to berth starboard side to No. 12 berth.

The pilot vessel ***Awarua*** assisted ***Amaltal Columbia*** in manoeuvring off the mud and back into deeper water.

At 0830 hours, ***Amaltal Columbia*** was made fast alongside in position at No. 12 berth.



Amaltal Columbia

Details of Vessel, Owner & Management, Classification, Navigational Equipment, Manning & Crew:

Name of Vessel:	<i>Amatal Columbia</i>
Vessel Type:	Deep Sea Fishing Factory Freezer Trawler
Port of Registry:	Nelson
Flag:	New Zealand
IMO No.:	8913265
Built:	1992
Construction Material:	Steel
Length Overall (m):	64
Maximum Breadth (m):	13
Gross Tonnage:	1 970
Net Tonnage:	592
Propulsion:	2460kW
Safe Ship Management (SSM) Company:	Lloyds Register of Shipping
Accident Investigator:	Maritime New Zealand

Owner Details

Amatal Fishing Company based in Nelson and established in 1982, is New Zealand's third largest fishing company and is the operator of the vessel. Talley's Fisheries Limited of Motueka privately own Amatal.

SSM Certificate

The vessel holds a valid SSM Certificate issued on 13 September 2002 with an expiry date of 30 October 2007.

Skipper Details

The Skipper holds a Master Deep Sea Fishing Vessel (MDSFV). The Skipper had berthed before at Bluff and was familiar with the port. On none of these occasions had the vessel grounded. He has been with Amaltal for 12 years, of which 8 years has been on board **Amaltal Columbia**.

First Mate Details

The First Mate holds a Master Deep Sea Fishing Vessel (MDSFV) Certificate. He subsequently took over as Master on board **Amaltal Columbia**. He has been with Amaltal for 10 years and has spent all of that time on board the vessel. At the time of the grounding he had been First Mate for two years. He had called at Bluff as First Mate on two previous visits without any incident, but had not berthed the vessel before at the Town Wharf.

Both the Skipper and First Mate had received basic Bridge Resource Management (BRM) training when they completed training for their respective Certificates. However, this was not covered in as much depth as is the case with Second Mate and Master Foreign Going courses.

Pilot Details

The South Port Pilot holds a Foreign Going Master's Certificate of Competency and a full Pilot's Licence for South Port, having been employed there as a pilot for 10 years. He had completed a Bridge Resource Management (BRM) course and an Advanced Marine Pilot's Training Course. He had berthed **Amaltal Columbia** at No.12 berth twice before. He had also berthed similar sized fishing vessels on a total of five occasions since 2000, each time at No. 12 berth. On none of these occasions had any vessel grounded. These vessels usually berth starboard side to, due to the gangway arrangements.

All South Port Pilots have completed the standard BRM training course and the Advanced Marine Pilot's training course.

Pilotage in and out of South Port is compulsory for all vessels over 500 gross tonnage.

Navigational Equipment

GYRO Compass	Yes
Radar:	DECCA 2490MT ARPA & 2490MT
Depth Sounder:	SIMRAD ES380 & EQ 100-200 KHZ
GPS/Satellite Navigation:	Yes
Radio:	SKANTI TRIP 87500

All navigation equipment was switched on and operational. However, the shallow depth warning alarm was not set on the echo sounder.

Depth Contours

The ship's electronic chart plotter was switched on and this showed the depth contours on the approach to berth No. 12. These were the same as those recorded on the paper chart for the Port of Bluff, NZ 6821, which, in the approaches to berth No. 12, showed an overall maintained depth of 8.5 metres and a maintained depth of 8 metres alongside this berth (See *Figure 4 – Extract of Chart NZ 6821*).

The depth information recorded on the plotter and chart NZ 6821 was in accordance with information supplied to mariners in Notice to Mariners Edition 14 (NZ134/04) that was issued by Land Information New Zealand (LINZ) in July 2004. The information in this Notice was based on an earlier depth survey that was conducted by South Port in December 2003 (the last survey prior to this accident), which was passed on to LINZ. However, the information supplied was incorrect and the mistake was only realised after the vessel **Stolt Kikyo** touched bottom in Bluff in July 2004 (See *Sub-heading "Previous Incidents – Page 12 of the report"*).

In August 2004, the correct sounding information, on which the soundings shown on *Figure 5* of the report are based, was sent to LINZ. Unfortunately, due to internal upheavals, this data was not followed up by LINZ and a revised Notice to Mariners was not issued. This omission only came to light after this accident occurred.

Since this accident, extensive dredging of Bluff Harbour has occurred resulting in depths of 8.7 metres above chart datum in the approaches to the Town Wharf berths (See *Figure 7*).

In December 2005, a temporary Notice to Mariners was issued by LINZ advising mariners of the correct depths.

NARRATIVE

At approximately 0735 hours New Zealand Standard Time (NZST) on Saturday 3 September 2005, the South Port Pilot boarded the fishing vessel **Amaltal Columbia** for an inward transit to No. 12 berth at Bluff. The vessel was due to berth at 0830 hours, to discharge frozen fish product and fishmeal.

The Pilot briefing consisted of running through the arrival checklist with the Skipper and Mate and showing them the Passage Diagram (See Figure 1). The actual Passage Plan for the vessel was also shown to the Skipper and Mate. This envisaged the vessel would be berthing port side to berth No.12. However, this had to be changed by the Pilot when he was told they needed to berth starboard side to this berth (See Figure 1a). The bridge team looked at both the electronic and paper charts but there was no specific discussion regarding the charted depths in the approaches to No. 12 berth, notwithstanding the Pilot had been aware that the depths shown were incorrect since **Stolt Kikyo** had touched bottom in July 2004.

In commenting on the draft report the Pilot stated, *"Whereas I became aware at that time that the depths in the area of No14 berth were less than those charted, I was instrumental in ensuring information was forwarded to LINZ for the purpose of promulgation in the NZ Notices to Mariners. I had also written up a procedure which should have ensured the causal (sic) port user passed well clear of the area of silting. This procedure was incorporated into the Port Safety Management Manual and the South Port Entry Data booklet, which was sent to all regular port users and also posted on the South Port web site. Until the **Amaltal Columbia** incident I was personally unaware that these efforts had been for the most part rendered ineffectual by internal upheaval within LINZ."*

The wind at the time was approximately 10 knots from the northeast. The time and height of Low Water at Bluff on the morning of 3 September was predicted to be at 0746 hours and 0.8 metres above chart datum respectively.

Amaltal Columbia had a draft of 4.2 metres forward and 7.6 metres aft. The Pilot card gave a minimum static under keel clearance (UKC) of 1.7m. This was based on a minimum depth of 8.7 metres alongside the berth + a height of tide at low water of 0.6 metres, giving an overall depth of 9.3 metres and then subtracting the vessel's maximum draft of 7.6 metres.

The Skipper had control of the vessel (the con). The First Mate was at the helm.

Amaltal Columbia transited into the inner harbour in accordance with the advice given by the Pilot. The Skipper maintained the con of the vessel throughout this period.

Once in the inner harbour, the Skipper indicated to the Pilot that the First Mate would like to manoeuvre the vessel onto the berth. The Pilot agreed and the First Mate then took over the con from the Skipper. The Mate had been present at the pilot briefing, which included the berthing plan, and during the course of the inward pilotage.

When the Skipper of **Amaltal Columbia** asked if the Mate could berth the vessel the Pilot indicated visually the position where the vessel was to be berthed. He told the Skipper and Mate that the vessel should not proceed too far west of the berthing position as the bottom shelved steeply and posed a risk. *This is disputed by the Pilot. The Pilot considered that reference to the bottom shelving steeply was sufficient to forewarn the Skipper and Mate.* The evidence of the First Mate was that the Pilot told them, *"as long as we don't go past the end of the Town Wharf we will be ok, as it gets shallow from there on."* The speed of the vessel at this time was about 3-4 knots.

On approaching the berth, the vessel was required to conduct a turn to port of approximately 180 degrees that would result in the vessel berthing starboard side to No.12 berth, with her bunker point approximately adjacent to the 260 metre mark on that berth. **Amaltal Columbia** had to berth starboard side to in order to use the vessel's crane to unload.

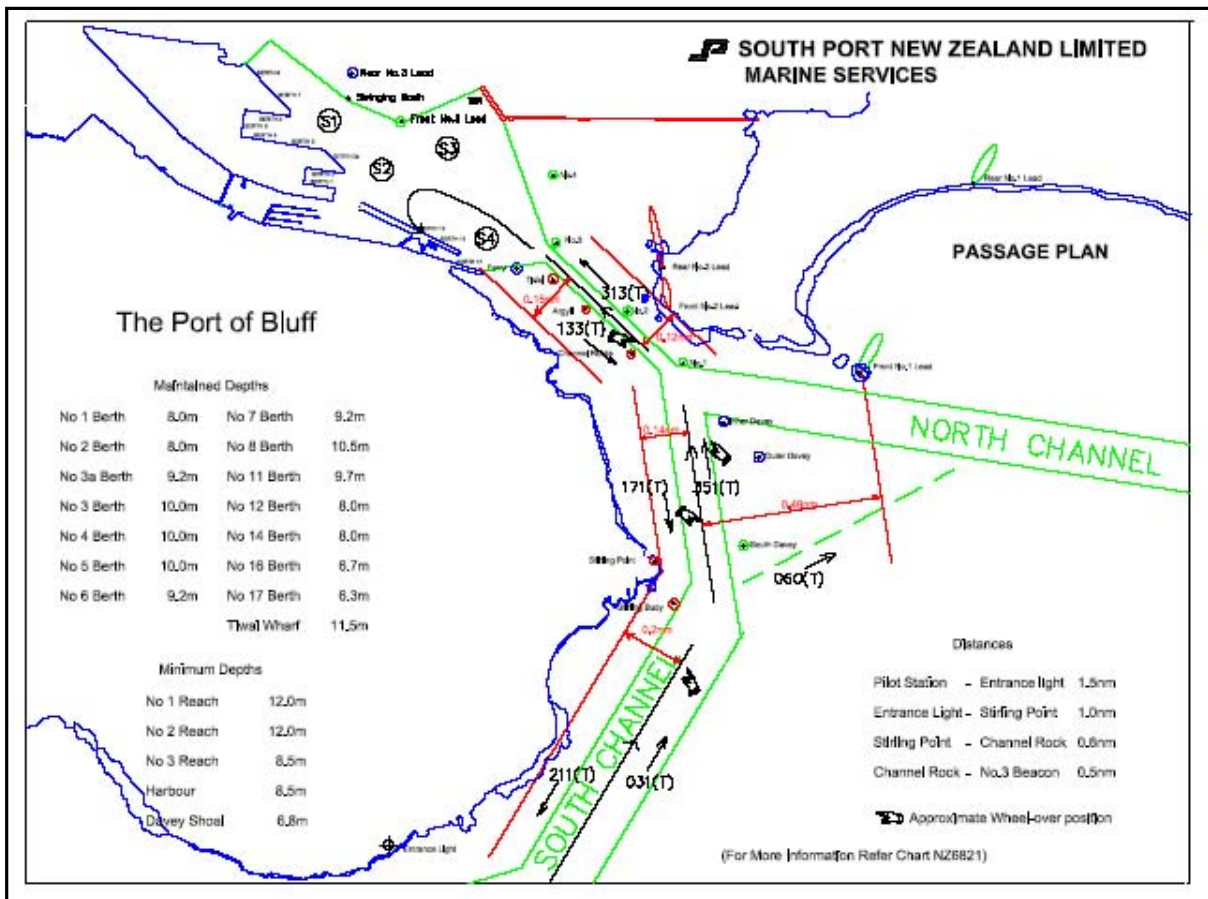


Figure 1
South Port Passage Diagram

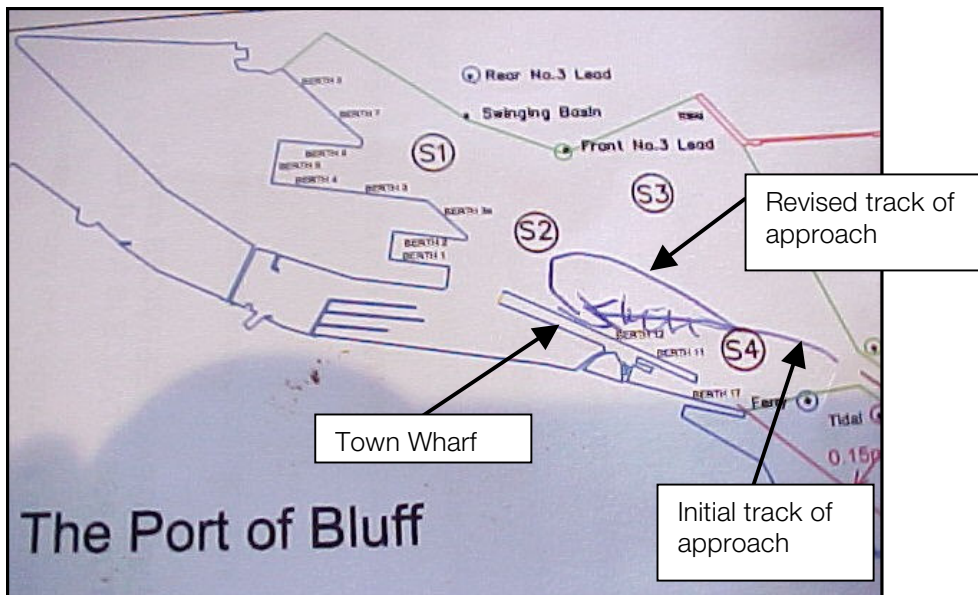


Figure 1a
Photograph of the actual Passage Plan that was presented to the Skipper of *Amaltal Columbia*. The initial track drawn by the Pilot was deleted after the he was told the vessel would be berthing starboard side to. A new approach course in the form of a loop, as shown above, was then drawn by the Pilot.

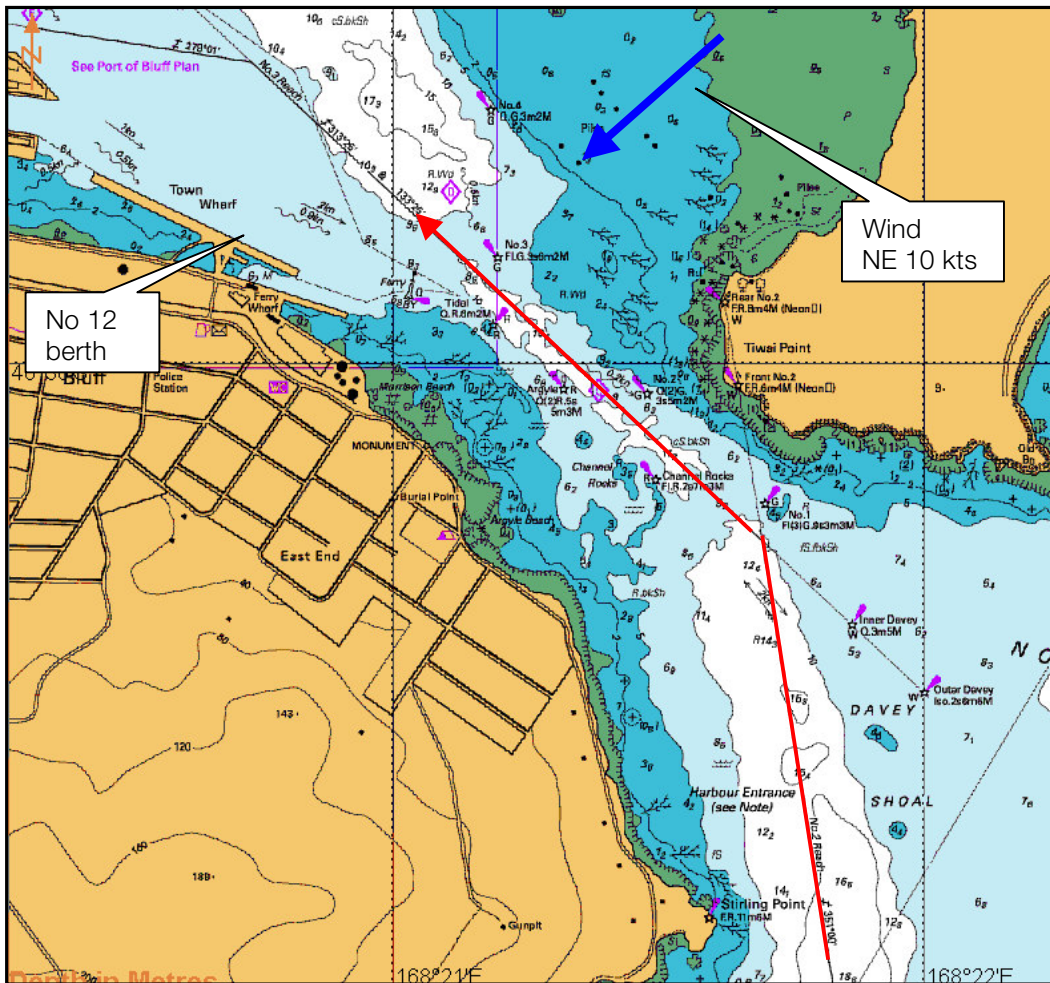


Figure 2
Chart extract from Land Information New Zealand Chart (LINZ) NZ 6821

According to the Skipper, the vessel was about 150 metres off the Town Wharf, and approaching a point perpendicular to the boundary between Nos. 12 and 14 berths (See Figures 3 & 4), when the Pilot made the comment that "we should turn about now as it gets shallow up this end". The Pilot contends that this was done well before this juncture. The Skipper checked the echo sounder at this stage and found there was about 1 metre of water under the keel. However, he was not too concerned as the First Mate had just taken action to come round to port in accordance with the Pilot's advice.

As the vessel turned to port it became apparent to the Pilot that the vessel was drifting steadily to the west under the influence of the light northeast breeze. At this point the Pilot advised the First Mate to complete the turn as he considered that stopping the main engine or coming astern would only exacerbate the situation. The Pilot stated that the fact the vessel drifted down on the eastern edge of the bank where the water shoaled whilst steering a broadly southerly course bears out the logic of this advice. The Pilot attributed the drift to a greater than anticipated effect from an 8-10 knot North Easterly wind.

At about 0815 hours, when **Amaltal Columbia** was about 75% through her turn it became obvious to the bridge team that the forward momentum and swinging of the vessel had stopped and she was aground (See Figure 3).

In an attempt to refloat the vessel, the pilot vessel **Awarua** was called to push on the starboard bow whilst **Amaltal Columbia's** engine was run astern. This did not have the desired affect so **Awarua** was repositioned to push on the starboard quarter.

At 0820 hours, the vessel was refloated and making way in the direction of No. 12 berth.

At 0830 hours, *Amalal Columbia* was safely made fast alongside in position at No. 12 berth without further incident.

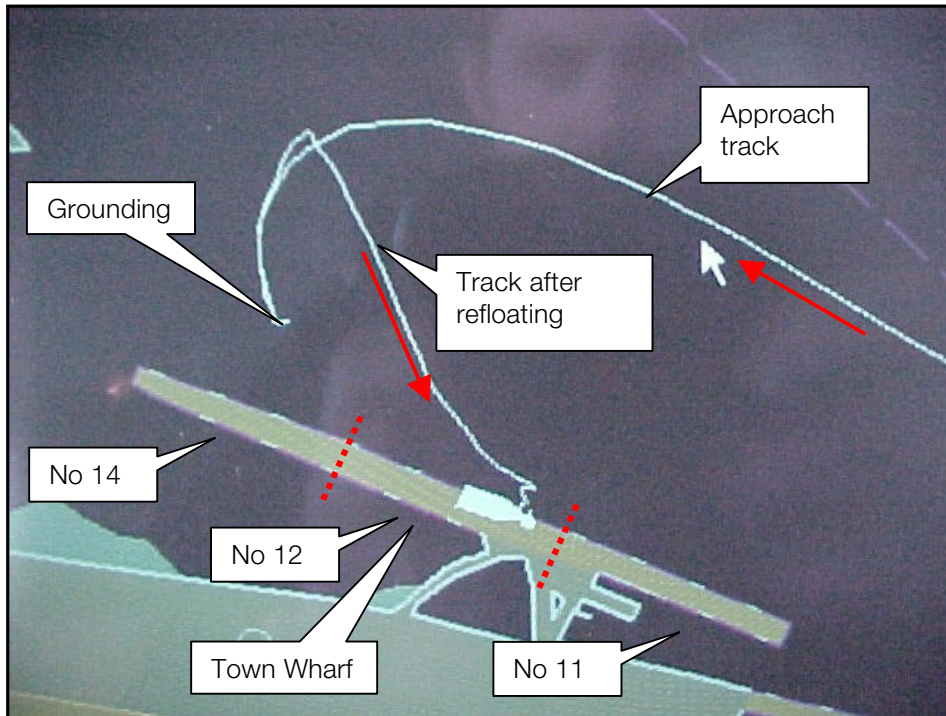


Figure 3

Digital photograph taken of Chart Plotter Display after the grounding shows the vessel's actual tracks both before and following the grounding.

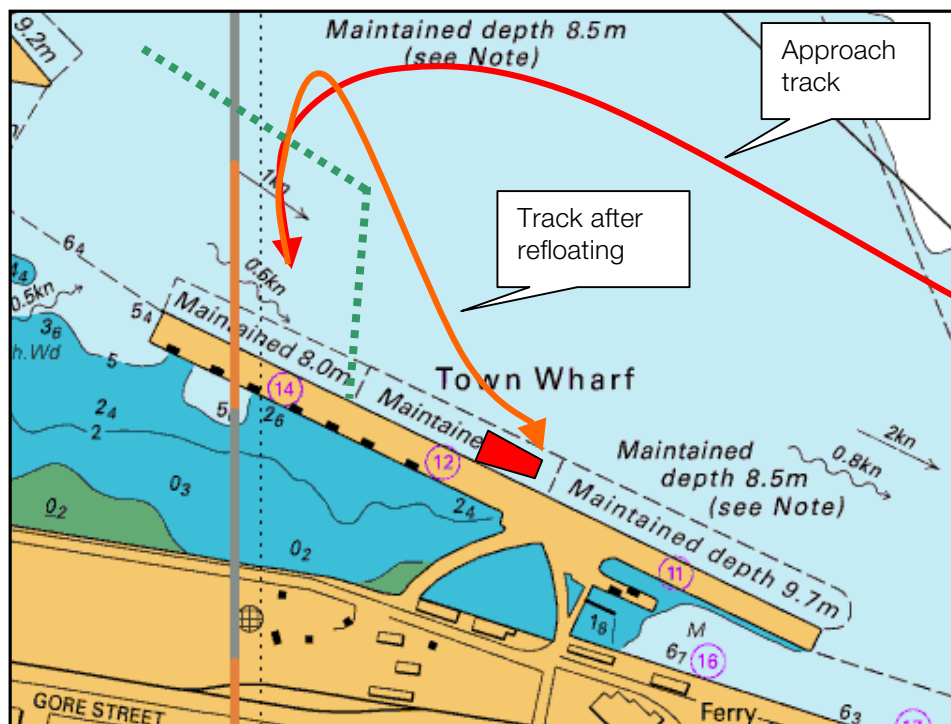


Figure 4

The tracks from the vessel's Chart Plotter have been transposed on to LINZ chart NZ 6821.

The Pilot disputes the position of grounding shown on Figures 3 and 4. It is his contention that based on the South Port sounding plan of June 2005 the vessel could not have grounded in this position. It is his opinion that the position of the grounding was further to the west and closer to the boundary of the shoal ground area.

FINDINGS

South Port's written procedures for arriving and departing No.12 berth at Bluff state as follows:

"South Port requires that any vessel with a draft greater than 7 metres arriving or departing from berth No.12 shall manoeuvre in such a manner that she does **not proceed west of berth No.12** (Maritime New Zealand emphasis) until she is at least 0.9 cables from the Town Wharf" (See Figure 5). The grounding position occurred about 90 metres or approximately 0.5 cables off the Town Wharf.

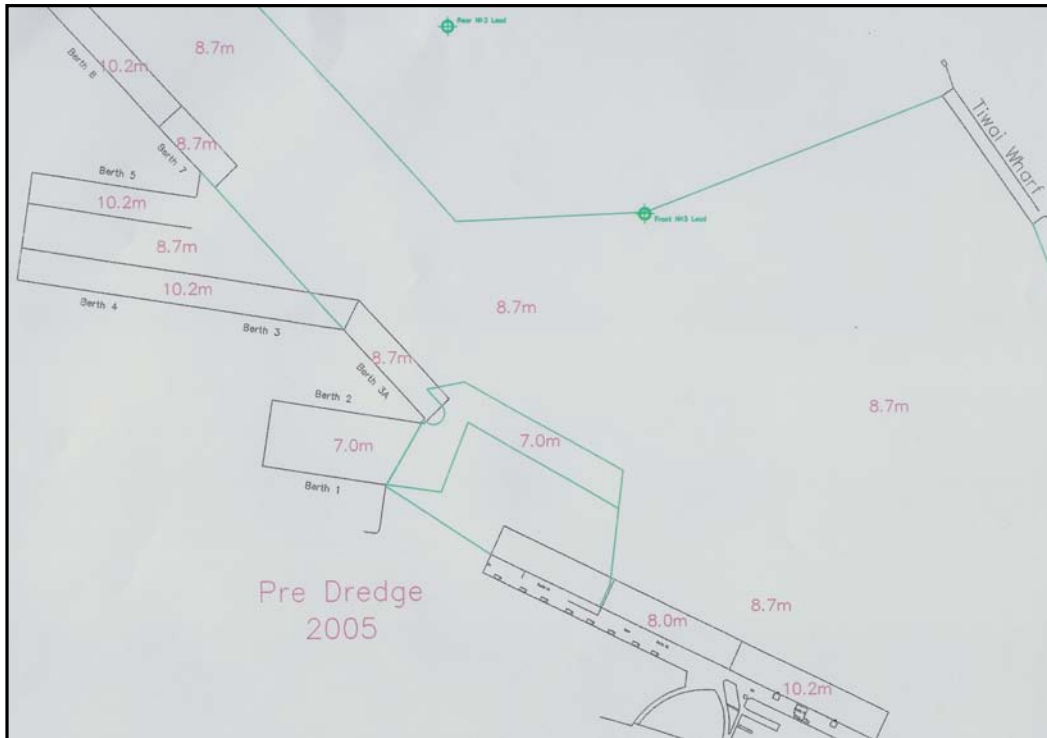


Figure 5
Pre Dredge Sounding Chart 2005 - Based on data from the December 2003 sounding survey

The photograph of the chart plotter display on board **Amaltal Columbia** (See Figures 3 & 6) shows the vessel was approaching the westerly extremity of No. 12 berth at the time the turn to port was initiated. At that stage however, she was in excess of 2 cables off the Town Wharf and hence clear of the area where the sounding of 7 metres is shown off the Town Wharf (See Figure 5 above). However, having regard to the likely advance and transfer of **Amaltal Columbia** during her turn, the Pilot should have known the vessel would inevitably enter the area where the surveyed depth of water was recorded as being 7 metres.

Based on the times and heights of tide at Bluff from the New Zealand Nautical Almanac 2005/2206 edition, the predicted height of tide at the time of grounding was calculated by the Investigator to be 0.9 metres. Accordingly, the maximum overall depth of water at the time and position of grounding would have been about 7.9 metres. With a maximum draft aft of 7.6 metres this would have given a static under keel clearance (UKC) for **Amaltal Columbia** of 0.3 metres. As a broad rule of thumb a 'safe' minimum static under keel clearance is usually taken to be 10% of a vessel's maximum draft, which, in this case, would have been 0.79 metres, almost three times the vessel's actual UKC.

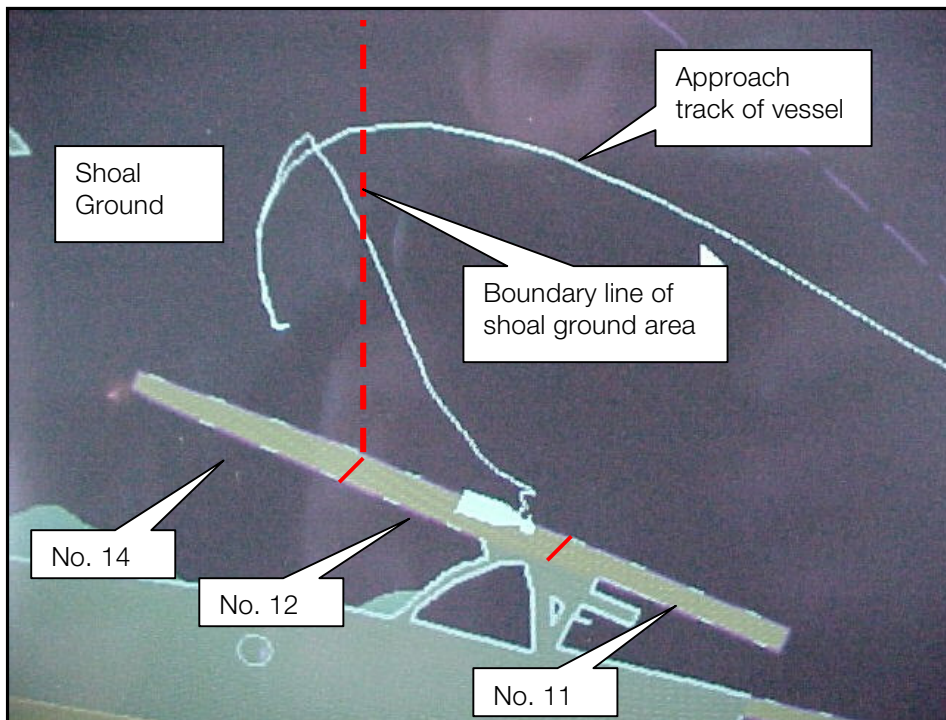


Figure 6
 The red line indicates the area west of berth No. 12 that is to be avoided by vessels' with a draft of greater than 7 metres until they are at least 0.9 cables from the Town Wharf.

Environmental Conditions

The Pilot stated the vessel was drifting faster to the west than expected and this was the cause of the vessel resting against the shoal bank. On the face of it, this is difficult to reconcile with the prevailing conditions namely, a wind speed of about 10 knots with a predicted minimal tidal flow, just after slack low water, of about 0.2/0.3 knots. The atmospheric pressure at the time of the accident was 1009hPa. It is not considered that this would have had a noticeable effect on the depth of water.

Actions of the Pilot

It can be difficult for a pilot to know when to intervene after the con of a vessel has been handed over to a master or, as in this case, a mate. However, on this occasion he was the only member of the bridge team who had the local knowledge of the correct depth contours and the extent of the shoal ground to the west of berth No.12. As such, the onus was on Pilot to ensure the vessel commenced her turn in ample time to avoid the shoal ground area. As Figures 3 and 4 show, the advice of the Pilot to start to turn was given too late and in any event did not imply a sufficient degree of urgency that the manoeuvre be conducted as soon as possible.

The known parameters of the shoal ground area and the soundings as shown on Figure 5 should have been drawn specifically to the attention of the Master and Mate at the time of the Master/Pilot briefing so that they had a shared mental model of the approaches to berth No.12 and the point at which the vessel needed to turn off the berth, having regard to the prevailing conditions, the maximum draft of the vessel and her turning circle data.

In commenting on the draft report the Pilot stated, *"At no time did the bridge team indicate their concern at the differential between the sounder reading and the charted depth or indicate that such sounding would appear to be critical."*

Previous Incidents at Bluff

On 23 July 2004, the gas/chemical tanker **Stolt Kikyo** touched the bottom briefly off No.14 Berth while in transit to No.3a berth (See Figure 1 & 2), Bluff. There was no damage to the vessel. It was after this incident that South Port sent a letter to LINZ, dated 10 August 2004, giving the correct surveyed depths of water in the harbour.

South Port Internal Investigation

South Port carried out an internal investigation after this accident.

The accident was fully discussed at the Pilot's monthly meeting. All South Port Pilots were advised to take special care to determine their position when manoeuvring in the vicinity of the shoal area marked - and to make a larger than normal allowance for windage in that area. The impracticality of a physical marker to identify the area was also discussed.

The Swinging basin situated in the area to the north of the Front No.3 lead beacon is dredged by external contractors on a 12 to 15 year cycle. Dredging was carried out between mid November and mid December 2005 (See Figure 7).

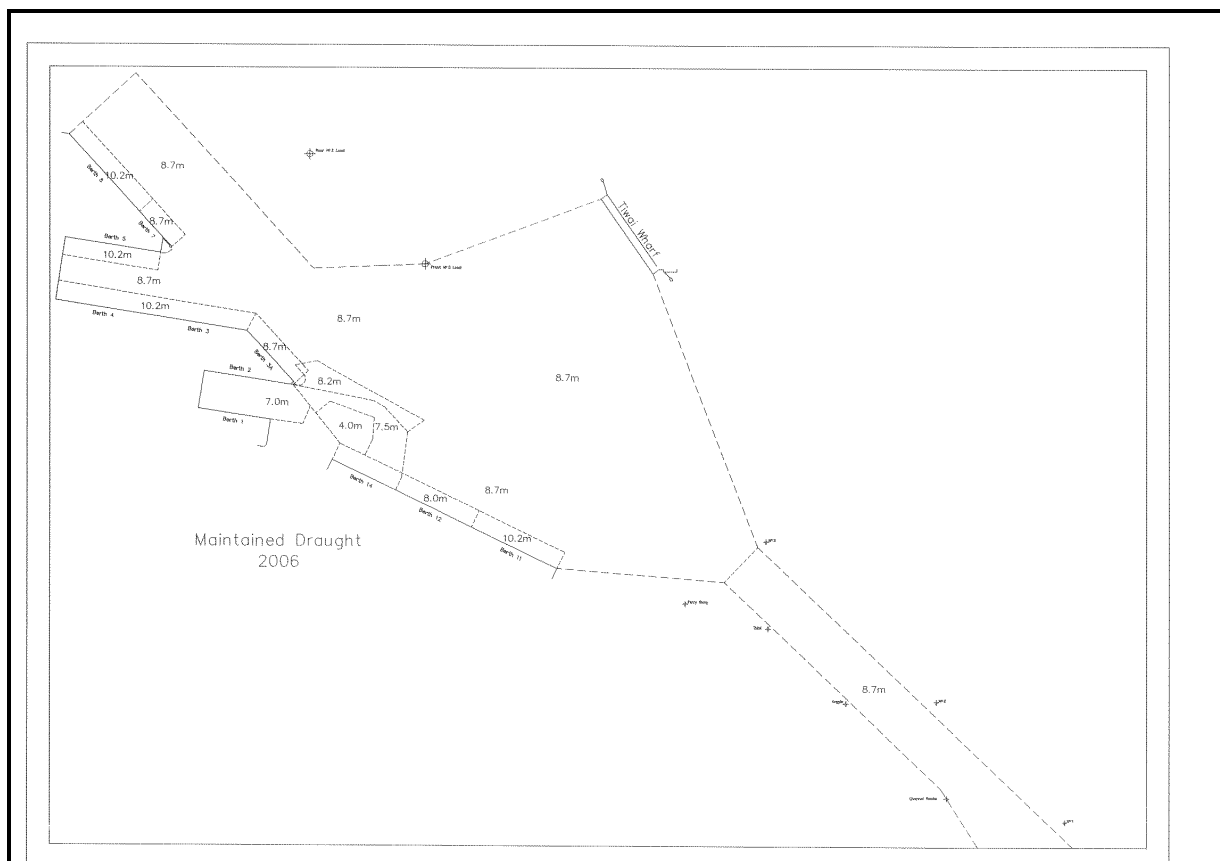


Figure 7

The above chart shows the maintained depths after dredging.

SAFETY RECOMMENDATIONS

1. It is recommended that Maritime New Zealand censure the Pilot for his failure to ensure the safe berthing of ***Amatal Columbia***.