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Collision near Creech Reef in the Great Barrier Reef – 5 January 2004

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Collision between *Bunga Orkid Tiga* and *Stella VII*

At about 0400 on the 5 January 2004, the Malaysian flag bulk carrier *Bunga Orkid Tiga* and the Australian fishing vessel *Stella VII* collided near Creech Reef in the Great Barrier Reef. This was the twenty-sixth collision between a trading ship and an Australian fishing vessel since April 1994.

Neither vessel was keeping a proper visual lookout in the time leading up to the collision. This report, as do previous ATSB reports regarding collisions, emphasises the need for all vessels to maintain a proper lookout at all times.

The vessels

Bunga Orkid Tiga is a 'handy-size', geared bulk carrier of 185 m in length, with a beam of 30.5 m and a capacity of 43 189 tonnes deadweight at a draught of 11.216 m. The bridge, a combined wheelhouse/chartroom, is 152.5 m from the stem. The ship is equipped with a full range of navigational equipment.

At 1012 on 4 January a pilot was embarked for the southbound pilotage through the Great Barrier Reef using the Lads Passage and Fairway Channel, the route between the inner and outer line of Reefs extending from Wye Reef to Pipon Reef. After boarding, the pilot set up his own GPS electronic chart system in the wheelhouse. The ship was in ballast, drawing 6.25 m.

Stella VII was on passage from Port Douglas, Queensland for fishing grounds to the north of Princess Charlotte Bay, between the coast and the Great Barrier Reef off far north Queensland. The vessel is registered in Queensland, is of steel construction and is 17.53 m in length. The wheelhouse is equipped with a range of navigation equipment including radar, auto helm and an electronic charting program on a personal computer.

The crew slept in two cabins below the forecastle and the skipper in the wheelhouse. On the forecastle deck a windlass, offset to the port side, obscures the line of sight from about three degrees on the port bow to about 40 degrees. *Stella VII* engages in line fishing, undertaken from five metre long dorys, six of which are towed astern. *Stella VII*, being equipped with freezers, acts as the mother ship.

FIGURE 1:
Stella VII

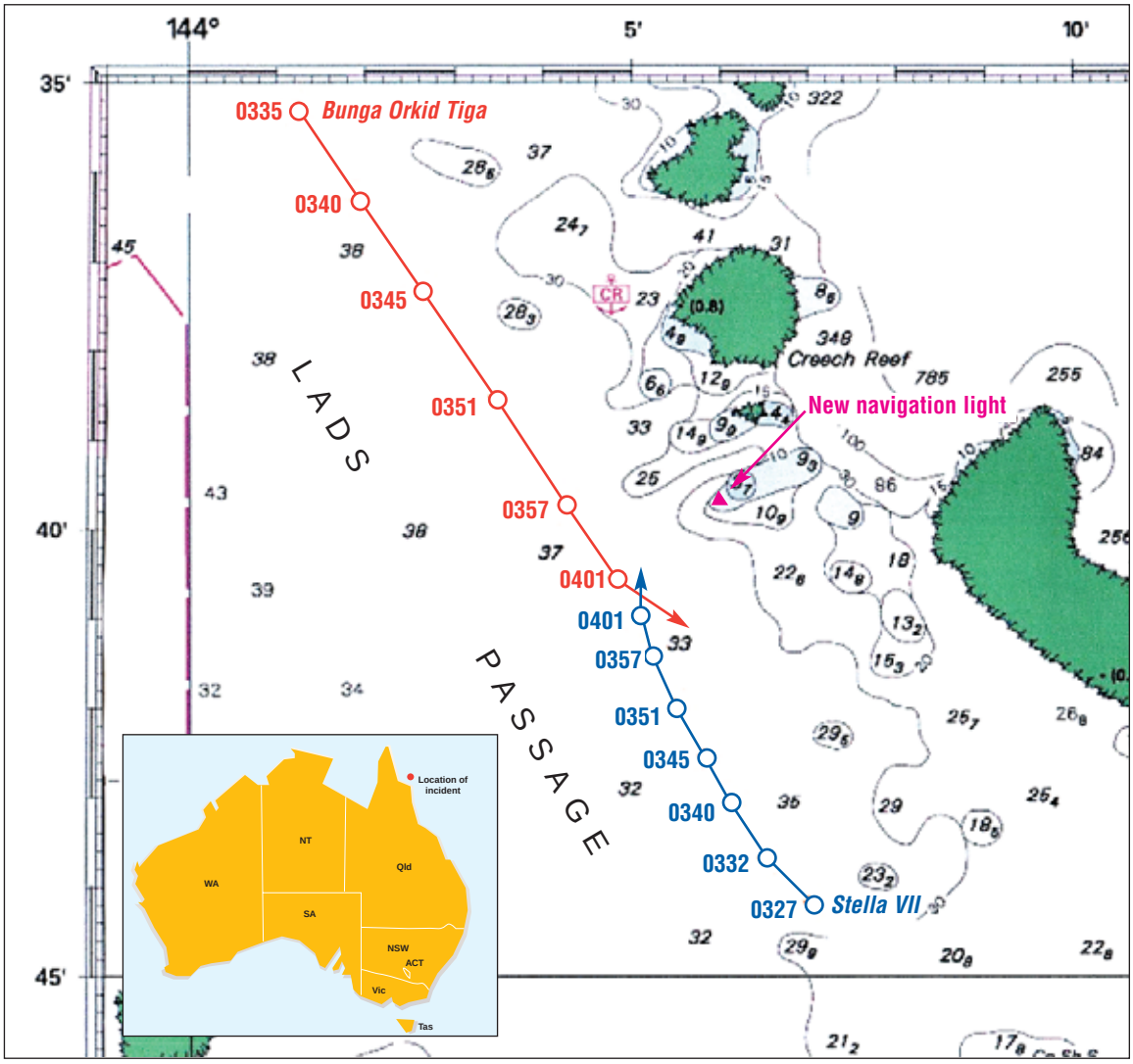
The collision

Bunga Orkid Tiga entered Lads Passage just after midnight on 5 January. The pilot left the bridge to rest at about 0215. He provided a thorough hand-over to the Officer of the Watch (OOW) concerning tidal set, an alteration of course to 137°(T) off Creech Reef and left clear instructions for calling him if, and when, required. The ship was steering 150°(T) at a speed of about 14.4 knots, the visibility was good and the sea state 'slight'.

Stella VII sailed from Port Douglas on the evening of 3 January. On sailing, the crew switched on the lights for a power driven vessel underway and also the lights (red over white) of a fishing vessel engaged in fishing, other than trawling. Whilst on board, the seven man crew maintained two-hour sea watches.

At 0327, *Stella VII* was sighted visually by the OOW and lookout on *Bunga Orkid Tiga* and was estimated to be one point (11¼°) on the

FIGURE 2:
Portion of chart Aus 833 showing position comparison for the two vessels



port bow. At about the same time, the fisherman on watch on *Stella VII* detected the bulk carrier on radar just to starboard of the heading line. *Stella VII* was seen to cross from the port bow to fine on the starboard bow, thereafter both vessels were on nearly reciprocal courses.

The relative bearing of *Stella VII* remained steady at about two degrees over the next 30 minutes or so during which time the OOW on the bulk carrier made two small course adjustments to port and, at about 0354, a small alteration to starboard. On board *Stella VII*, four or five small adjustments to starboard were made, from the time the fisherman on watch first saw the ship to just before impact.

At about 0402 the two vessels collided. At the moment of the collision, *Bunga Orkid Tiga* was under full port rudder and *Stella VII* was altering substantially to starboard. Nobody was injured as a result of the collision but *Stella VII* sustained significant damage.

Following the collision *Bunga Orkid Tiga* stood by *Stella VII* until the fishing vessel's crew had established that it could return safely to port.

Analysis

The following analysis is based on the data recovered from the electronic charts carried by the fishing vessel, and by the pilot on the ship, the statements of the watchkeepers involved and the course recorder trace from *Bunga Orkid Tiga*.

At 0327 on 5 January 2004 *Bunga Orkid Tiga* was in position 13° 33.71'S 144° 00.19'E, on a heading of 151°(T) and making good a course of 147° at a speed of 14.3 knots. *Stella VII* was in position 13° 44.21'S 144° 06.99'E, 12.3 miles to the south, two degrees on the ship's port bow, making good a course of 317°(T). The OOW's recollection that the light was one point on the bow was inaccurate.

The OOW maintained the ship's course of 151°(T) until about 0340 when *Stella VII* was about 7.8 miles ahead and had crossed the bow to be two degrees on the starboard bow. The OOW made a slight adjustment of course of about two or three degrees to port.

From that time *Stella VII* remained, for all intents and purposes, on a steady bearing between dead ahead and three degrees on the starboard bow. Rule 14 of the International Regulations for *Preventing Collisions at Sea, 1972* (Colregs) applied and each vessel should have altered course to starboard. Even if there was doubt through the inability of either vessel to make out the lights of the other, given the steady relative bearing close on the bow, the watchkeepers should have assumed that the risk did exist and should have acted accordingly.

At 0350 the lookout, when he returned from calling his relief and when the two vessels were about five miles apart, reported seeing two red lights amongst the navigation lights. This may have caused some confusion in the OOW's mind. *Stella VII* was not engaged in fishing and should not have been exhibiting the red over white signal.

At about 0401, when the two vessels were half a mile apart, the OOW of *Bunga Orkid Tiga* made a large alteration to port, but by this time the collision could not be avoided. The decision, as with the previous adjustments of course, was based on scanty radar information. Making small alterations, particularly to port, when unaware of the actions of the approaching vessel, is contrary to the Colregs, particularly Rule 7 and Rule 8 and displays poor seamanship. Visibility was excellent and, given the steady bearing, it should have been obvious that a risk of collision existed.

At 0345, the OOW allowed the lookout to leave the bridge to call his relief; he did not compensate by staying in the forepart of the wheelhouse but spent some time behind the chart console. He completed the deck log book and plotted the ship's position. Neither of these activities should have taken more than two minutes. The deck log book has ten columns to complete as a matter of routine and the position was taken using the GPS. It was during this time that there was an adjustment of course to starboard of about three degrees – an adjustment towards the approaching fishing vessel.

It is not possible to state what course *Stella VII* was steering. From the electronic chart, however, the course over the ground can be plotted. At 0327, *Stella VII* was making good a course of 317°(T). Over the period from 0332 to 0400 the fisherman on watch made four or five alterations of course to starboard until, at 0400, *Stella VII* was making good a course of 344°(T). At about 0345 the fisherman could make out the lights of the approaching ship from within the wheelhouse, but could not make out its aspect. Within about four minutes, the lights of *Bunga Orkid Tiga* were screened behind the windlass on the fishing vessel's port bow and visual contact was lost or, at best, limited for some ten minutes, the time leading up to the collision.

Submissions

Copies of the draft report of the collision were sent to directly interested parties and they were invited to comment on the draft report.

The owners of the *Bunga Orkid Tiga* submitted that they consider Lads Passage to constitute a 'narrow channel' and as such, rule 9 of the

Colregs (specifically 9 (b) and 9 (c)) applied; and:

> because of the close proximity of reefs on both sides of the channel, being the circumstances of the case, a large alteration of course to starboard was unsafe.

The width of navigatable waters available to ships in all but the northern and southern extremities of Lads Passage is in excess of four nautical miles.

The waters in which the collision occurred cannot be considered as narrow (see *The En Gedi* (1986) A.M.C. 2016; *The Anna Salen* (1954) 1 Lloyd's Rep 475).

The owners further submitted that:

> the position fixing of the ship was 'challenging', due to the lack of a shore line and navigation aids.

The pilot had drawn attention to the new light in the vicinity of Creech Reef and marked it on the chart. Additionally, the pilot's written and oral instructions were clear; he should be called if the OOW was in any doubt regarding traffic or the ship's position.

Conclusions

This incident occurred in very good visibility and sea conditions. It had the potential to cause the loss of life of more than one person, as the collision occurred at night when six out of the seven crew members of the *Stella VII* were asleep (five of those six were sleeping in the two cabins below the forecastle). Had a good lookout been maintained on both vessels, it is highly unlikely that the collision would have happened.

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

1. Both vessels were power-driven, meeting on reciprocal or nearly reciprocal courses so as to involve risk of collision. Each should have altered course to starboard.
2. Neither vessel was maintaining an effective visual lookout and both remained on what was virtually a steady bearing.
3. On the *Bunga Orkid Tiga*:
   - The OOW made a series of alterations to port. These alterations were contrary to the Colregs in that they:
     - were made on scanty information
     - were to port rather than to starboard
     - were not substantial.
   - The OOW did not properly assess the risk of collision.
   - The OOW became distracted between 0345 and 0357 and did not maintain a proper visual or radar watch on the approaching vessel.
   - The OOW allowed his lookout to be absent from the bridge front during a critical watch period.
   - The OOW held a certificate of competency, a qualification that should have allowed him to take proper action in good time to avoid a collision.
4. On the *Stella VII*:
   - The fisherman on watch did not have the qualifications or training to allow him to properly assess the risk of collision and take the appropriate action to avoid collision.
   - The fisherman on watch did not compensate for lost visual contact with the bulk carrier when the forward windlass obstructed his line of sight.
   - The fisherman on watch placed an over-reliance on radar.
   - The alterations made by the fisherman on watch were also contrary to the Colregs in that they:
     - were made on scanty information
     - were not substantial.
   - *Stella VII* was not engaged in fishing operations and was showing fishing lights in contravention of the Colregs. *Stella VII*, unless actively engaged in

fishing itself with nets, lines or trawls that affect its manoeuvrability is not entitled to show any fishing signals while operating as a mother ship.

The investigation also concludes that the pilot's decision to leave the bridge was reasonable. He had briefed the OOW fully on the tides and the courses to follow. Anticipated traffic would be light, the visibility was excellent, there was adequate sea room to both east and west and the OOW was appropriately qualified.

Previous ATSB investigations

In ATSB Marine Safety Investigation Report No. 177 (published in December 2003), mention is made that the Bureau and its predecessor has published twenty-two reports on collisions between ships and fishing boats or other small vessels since 1991. With this incident, and Report No. 177, that number has risen to twenty-four. Two of these collisions resulted in the loss of the fishing vessels involved and the deaths of their skippers.

The ATSB, in an effort to highlight the ongoing dangers faced by small fishing boat operators, their crews and others in small craft, has published several safety bulletins on ships and fishing boats. These and other safety bulletins are available for downloading from the ATSB web site at:

http://www.atsb.gov.au/marine/pubs.cfm

Recommendations

The ATSB has, in previous Marine Safety Investigation Reports, made ten recommendations concerning the need to maintain a proper lookout whilst vessels, regardless of their size, are at sea and for the need to have an operational understanding of the Colregs and collision avoidance measures.

These recommendations have been made to ships' crews and management; fishing boat crews, operators and owners; and to State and Territory marine authorities, and are contained in Appendix 1 to this report.

The recommendations that arise from this incident report reiterate and reinforce these prior recommendations.

MR20040008

Shipowners, managers and masters of ships ensure that the requirements contained in the Colregs for keeping a proper lookout are understood and practised by watchkeepers.

MR20040009

Owners, operators and skippers of small fishing boats, or sailing and other small craft ensure that a proper lookout is maintained by a suitably qualified and trained person at all times when a vessel is at sea, in accordance with the Colregs. The requirement for a proper lookout exists whether or not a fishing vessel is engaged in fishing.

MR20040010

State and Territory marine authorities, through the National Marine Safety Committee, review fishing boat crew certification training arrangements to ensure that any person who is required to stand a navigation watch at sea has training in the use of radar as a collision avoidance aid and that the person be properly trained in the requirements contained in the Colregs for establishing risk of collision and collision avoidance.

MR20040011

State and Territory marine authorities, through the National Marine Safety Committee, review the availability and effectiveness of radar reflectors, with a view to increasing the early detection of small vessels by larger trading ships.

Appendix 1

Previous ATSB recommendations

Report No.	*Recommendation No.*	
155	MR20010010	The ATSB recommends that training establishments and authorities issuing certificates or competency, or boating or similar licences, place greater emphasis on training and examining candidates for full knowledge and proper understanding of the International Regulations for Preventing Collisions at Sea, 1972, as amended and in force in Australia.
155	MR20010011	The ATSB also recommends that Australian shipowners, managers, pilots and agents take note of Safety Bulletin 02….., bringing it to the attention of as many vessels as possible. The bulletin points out that the only explanation for most collisions are the lack of a proper visual lookout, or an over reliance on radar detection when the radar set has not been correctly set-up, or has not been maintained properly.
156	MR20020001	That all fishing industry bodies, together with State and Territory authorities draw the attention of fishing vessel skippers and owners to ATSB Safety Bulletin No. 01, highlighting the risks to fishing vessels from large trading ships and to the limitations of ships' radar.
156	MR20020002	That Australian ship managers, pilot services and Australian shipping agents note and distribute as widely as possible to vessels, ATSB Safety Bulletin 02….. The bulletin draws attention to the dangers of over reliance on radar, the possible short-comings of radar, and the importance of maintaining a proper visual lookout in all conditions.
177	MR20030049	Shipowners, managers and masters of ships ensure that the requirements for a proper lookout are understood and practised by bridge watchkeepers.
177	MR20030050	Owners, operators and skippers of fishing vessels or sailing or other small craft ensure that a proper lookout is maintained at all times when a vessel is at sea. The requirement for a propers lookout exists whether or not a fishing vessel is engaged in fishing.
159	MR20040001	Ship's masters and skippers of fishing vessels ensure that, in accordance with the Collision regulations, a proper lookout is maintained at all times.
159	MR20040002	Ship's masters and watchkeepers, skippers and crews of fishing vessels take note of the limitations of radar and the fact that radar detection of small wooden vessels is likely to occur at smaller ranges than for similar vessels with steel hulls.
159	MR20040003	Owners, operators and skippers of fishing vessels consider the use of appropriate equipment to improve the radar delectability of their vessels.
159	MR20040005	The National Marine Safety Committee, in conjunction with State marine authorities, consider making IMO approved types of radar reflectors mandatory on commercial fishing vessels.