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Summary

Shortly before 0100 on 9 September 1992, the yacht Libra, on passage from Noumea to Brisbane, was involved in a collision with a large, unidentified, north-bound ship about 44 miles east-north-east of Cape Moreton.

Libra was dismasted and suffered damage to railings, but the water-tight integrity of the hull was not impaired. When daylight arrived the skipper was able to cut free the mast and rigging, and the yacht was able to proceed, under engine power, to Brisbane.

A review of shipping movements ascertained that the Panamanian tanker Sanko Heron, on passage from Port Bonython to Japan, was close to Libra's position at the time of the collision.

Information sources

Owners of the yacht Libra

Master, Second and Third Officers, and watch seamen of the tanker Sanko Heron

Acknowledgments:

The Inspector gratefully acknowledges the assistance of the Scientific Branch of the Australian Federal Police; the Australian Maritime Safety Authority; Sanko Kisen Australia P/L; Sanko Kisen, Tokyo.

Section of chart Aus 365 reproduced by permission of the Hydrographic Office, RAN.

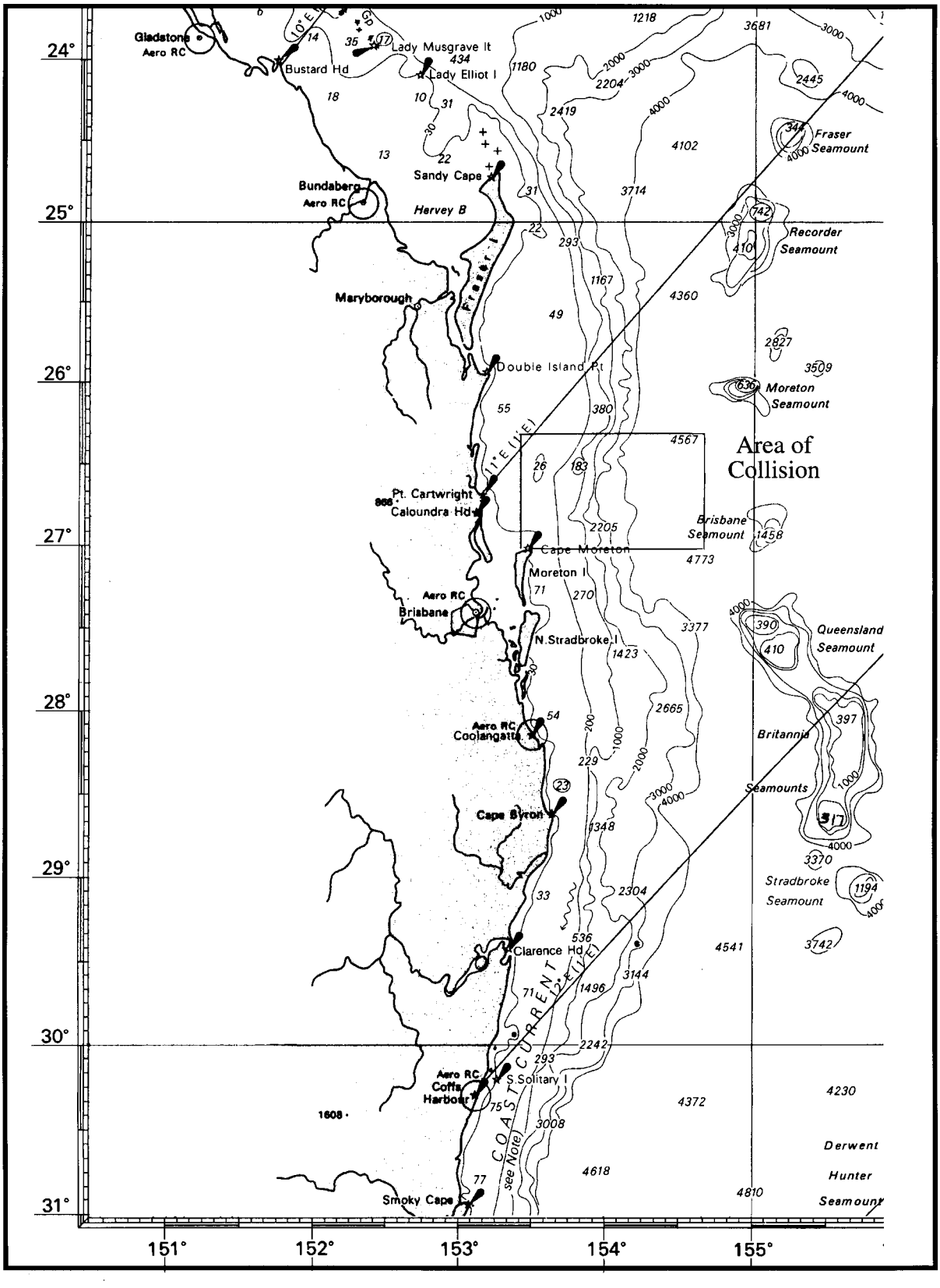


Chart showing area of collision

Sequence of events

Libra is a white, single-hulled "Sun Magic 44" fibreglass yacht, built in Japan in 1989. It is 13.3m in length, has a single, 15m mast and carries two white sails (jib and main). It is also equipped with a 50-hp auxiliary engine.

Other equipment includes a GPS satellite navigator, autohelm, VHF and SSB radios. The navigation sidelights are fitted at the bow, on the pulpit rail, the sternlight on the stern rail. In addition the yacht is fitted with a single, well-glass type white light at the masthead and two radar reflectors, one at the top of each shroud.

On 2 September 1992 the owner-skipper and his wife sailed from Noumea, bound for Brisbane. The owner held a First Class Yachting and Motor Boat certificate and had been sailing for about seven years, although this was the first ocean voyage he had undertaken.

For the first few days they experienced fine weather, their daily routine being to share the navigation watch, taking it in turns to sleep. Generally, the position, taken from the GPS, was plotted first thing in the morning, at noon and in the evening. The navigation lights, the sidelights and sternlight, were switched on at sunset, as was the white light at the masthead. Steering in the open ocean was conducted in the autohelm mode.

During the afternoon of 7 September the weather deteriorated, the wind increasing to gale force, the sea becoming rough and it started raining. However, the wind decreased again on the afternoon of 8 September and the rain cleared, although it remained cloudy.

At 1730 on 8 September, the position by GPS was plotted as 26° 38.76'S 155° 09.25'E, 94 miles east-north-east of Cape Moreton. Following their normal practice for night sailing, the jib was reefed to about half and the main reduced, to the second reef point, as a precaution in case of an increase in wind strength. The wind was from the south at about 17 to 18 knots, the course being steered was 250 degrees magnetic and the speed being made good was about six knots.

At 1800, the skipper and his wife ate their evening meal, after which the skipper went to bed, sleeping until 2130, when he again took over the watch. The night was dark, with a cloudy sky, and the sea was running at about 2m.

The wife awoke at 2330, but because she was very tired, her husband told her to go back to sleep. No ships had been sighted during the evening and at 0030 on 9 September, with the horizon still clear of ships, the skipper went into the cabin to study the chart of Morecomb Bay. This would be the first time that he had sailed into Morecomb Bay, with its

shallow waters, and he wanted to study his approach.

While studying the chart he was startled by a loud crashing sound, a sound that woke his wife and caused her to jump out of her bunk. Climbing into the cockpit they were confronted by the side of a large ship, very close on the port side. Libra was then struck again, the port side of Libra scraping down the starboard side of the ship as it passed by. Libra had been swung around on to a northerly heading and the mast had come down, having snapped at the bottom. The skipper noted the time as 0055.

As soon as the ship had passed clear, the skipper tried calling it on VHF 16, but there was no response. The VHF aerial had been on the back stay, which had come down with the mast, and he thought he may not be transmitting. He then started the engine, with the thought of chasing the ship, but the propeller became fouled by a wire and he therefore had to stop the engine. The ship sailed on, eventually disappearing from sight to the north.

Inspecting the yacht for damage, the skipper found the safety rails on the port side had been buckled inboard, the toe rail damaged, and that the stem had been broken and pushed to starboard. There were no holes in the hull and the yacht was not taking in water, so he considered they were in no immediate danger. He, therefore, decided to wait until daylight before trying to do anything. At a time noted as 0125, the position was fixed by GPS as 26° 49.47'S 154° 14.58'E.

At about 0300, the lights of another ship were sighted, approaching from the south, and the skipper let off an orange distress flare. The ship, a large one, altered course towards Libra and directed a searchlight at the yacht. As the ship approached, the skipper became frightened about being hit and shone a torch, in a circular motion, in the direction of the ship, which veered away and continued on its voyage without stopping.

The position was plotted at 0350 and again at 0520, indicating that the yacht was being set to the south (191 degrees at 2.67 knots).

With the arrival of daylight, a large quantity of small pieces of paint from the ship that had collided with them was found on the deck, some of which was retained. The skipper dived into the water and, using wire cutters, freed the wires from around the propeller and then cut the mast and rigging free. The mast had broken into two sections, making the latter task easier.

The clearing operation took until about 0930, after which the engine was started again and Libra continued on its way to Brisbane, anchoring in the river at 2200 that evening.

The collision was reported to the Customs and Water Police the next morning, 10 September.

Identification of the ship involved

A review of shipping movements indicated there were two northbound ships known to have been in the same general area as Libra at the time of the collision. The Masters of these two ships were requested to advise the Inspector of their ship's position between 0001 and 0200 on 9 September. From the information provided, it was ascertained that the Panamanian tanker Sanko Heron was within 2.5 miles of Libra at the relevant time.

On request, the Master of Sanko Heron provided written statements by himself and the ship's watchkeepers, photo-copies of the relevant deck log book pages, and a sample of the ship's overside paint.

Sanko Heron had sailed from Port Bonython, South Australia, on 3 September 1992, bound for Iwakuni, Japan, with a full cargo of naphtha.

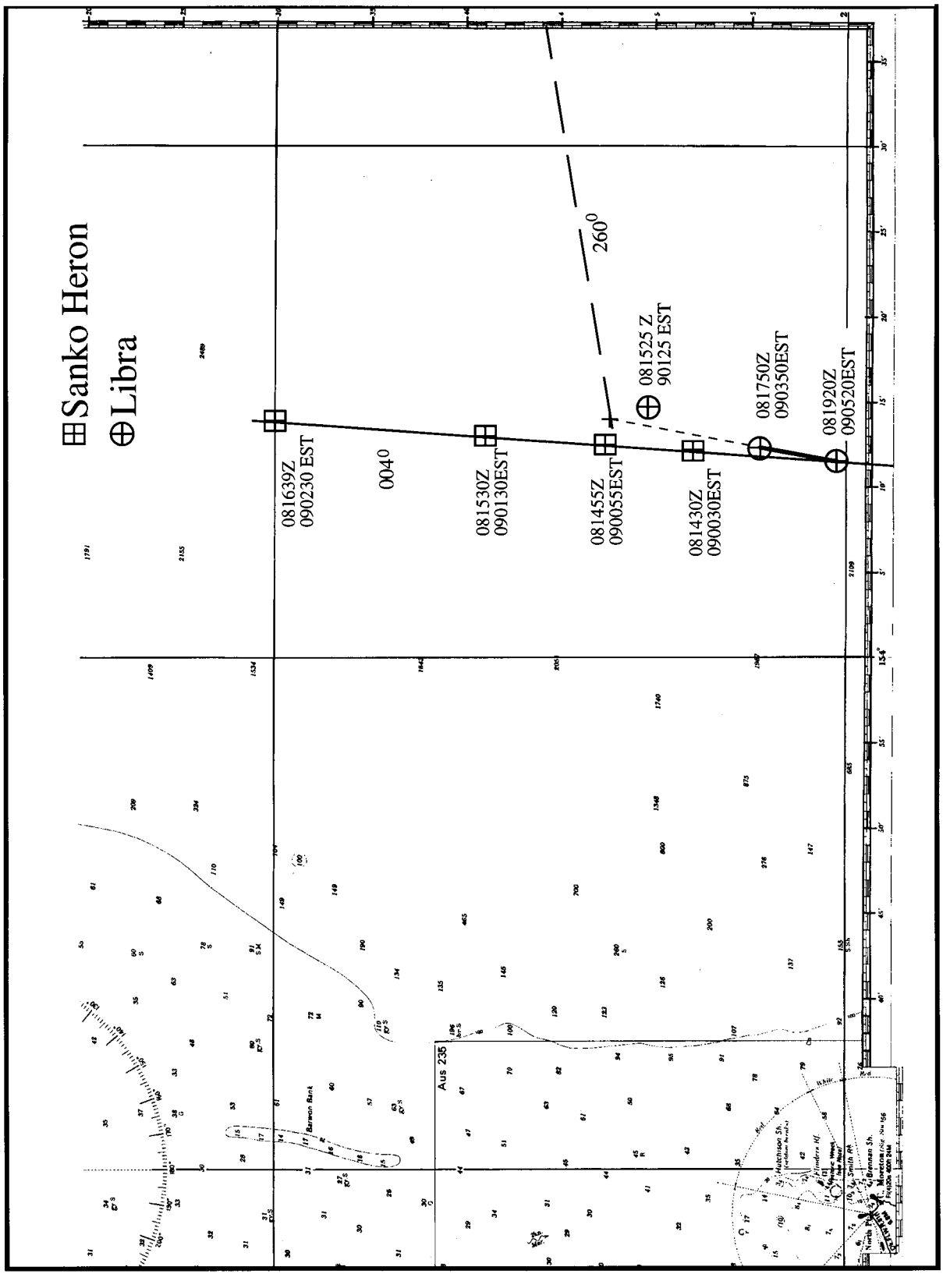
The ship's total complement of 24 included three mates and three AB's, who worked a three bridge-watch system of "four on, eight off". In open waters, steering was conducted in the automatic mode; a listening watch was maintained on VHF channel 16.

On 8 September, the Second Mate proceeded to the bridge at 2345 and took over the watch from the Third Mate at about 2400. The ship was about 45 miles east of Cape Moreton, Queensland, on a course of 004 degrees and making good a speed of about 11.7 knots. It was recorded in the deck log book that at 2400 the wind was from the south-west, force five, the visibility was "7" (miles) and the sky "bc" (cloudy). The radar was on "standby", not being required for position fixing and the visibility was such that normal "visual lookout" was considered sufficient for ship detection.

According to the Third Mate, the moon was rather bright, and the Second Mate remembered the moon being visible, particularly as 10 September was an important "Moon Festival" in Korea. The two officers stated that no other shipping or lights were visible at the time of watch hand-over, and no ships, lights or hazards were sighted by either the Second Mate or the AB lookout throughout the 12-4 watch.

At 0400, from the deck log book, the wind was from the south-east force four, the visibility "7" and the sky "c" (clouded or overcast).

The ship was fitted with a transit satellite navigation system, and therefore, in an open ocean situation, only dead reckoning positions were available between transit fixes.



Portion of Chart Aus 365:
showing the positions of Sanko Heron and yacht Libra

The ship's estimated positions provided by the Master were:-

081430Z 090030LT
26°52'S 154°12'E

081530Z 090130LT
26°41'S 154°13'E

At the time Libra was in collision, at 090055LT (081455Z) in estimated position 26°48.5'S 154°15'E, Sanko Heron was estimated to be in position 26°47.5'S 154°12.5'E, an apparent separation distance of about 2.5 miles. This distance is reduced to one mile if the Libra's 0125 position is discounted and the set experienced between 0350 and 0520 is applied back to 0055.

Although, according to those on watch on Sanko Heron they did not collide with any vessel or strike any object, they also stated there were no other ships sighted at that time which may have been involved in the collision.

Scientific examination

The sample of paint deposited on Libra and the sample provided by the ship's Master were examined by the Scientific Branch of the Australian Federal Police. The sample fragments were broken and viewed in cross section to evaluate paint layer sequence. Various phenomenon were recorded by means of photography and hand-written notes.

Infra-red absorbency spectra of the outer green layers and complete fragments was conducted to discriminate at the molecular level between organic materials with similar appearance.

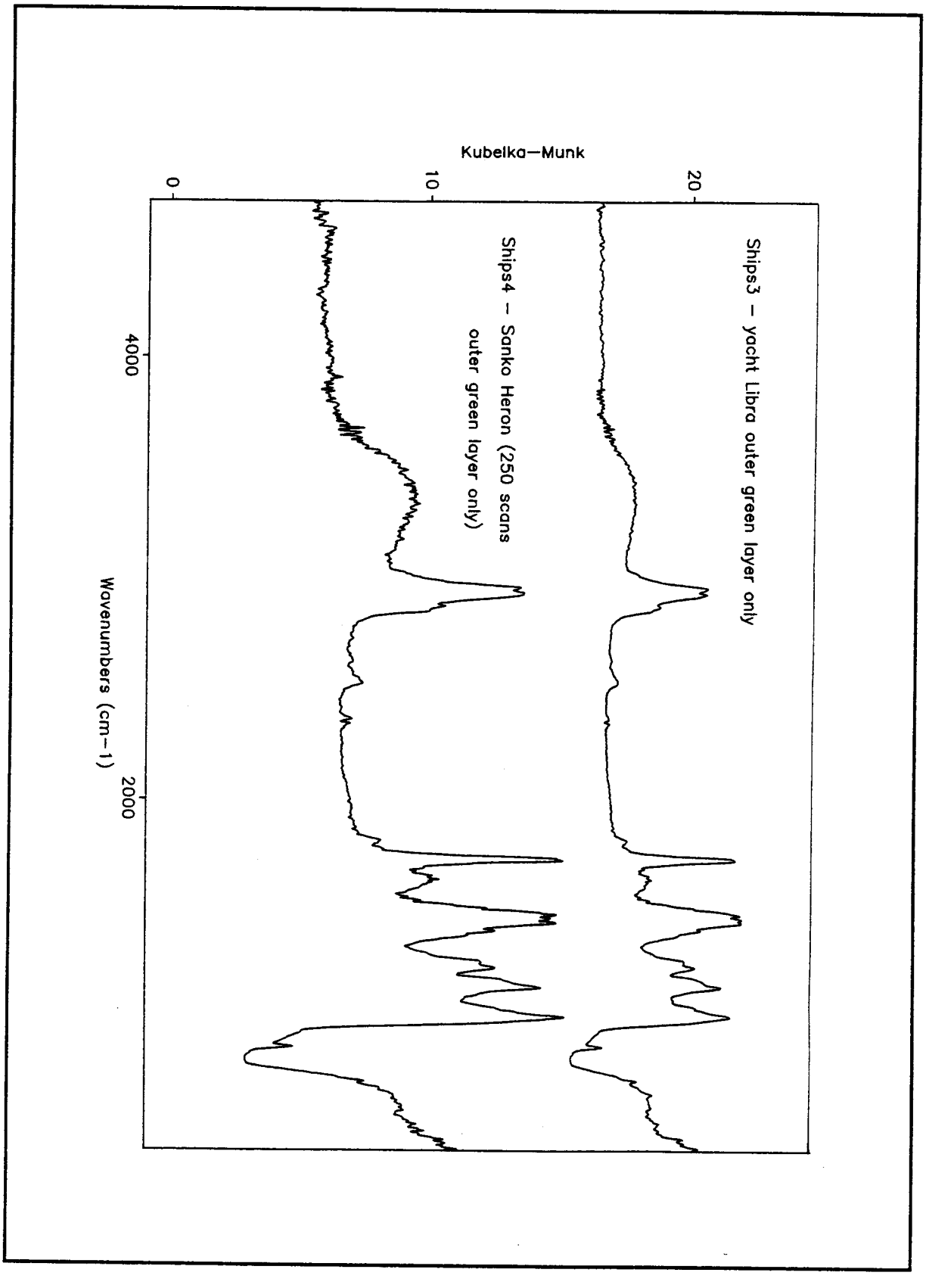
The microscopic paint-layer profile of both samples appeared similar, the layer sequence being green : brown : metallic grey : brown : green : metallic grey : brown : amorphous.

The outer-layer colours of green and red in both samples appeared visually similar. A microscopic examination of the green layers revealed thin red ovoid bodies in both samples.

An instrumental analysis of the outer-layer colouring using a microspectrophotometer, revealed similar absorption spectra.

An instrumental analysis using Fourier Transform Infra Red (F.T.I.R.) spectroscopy was conducted to differentiate between the samples at molecular level. Infra-red absorption spectra were recorded for the outer green layers and for all layers and a very close correlation was observed.

The examination revealed a number of macroscopic and microscopic similarities and no significant dissimilarities. The instrumental analysis of colour and polymer character did not reveal any significant differences. On this basis



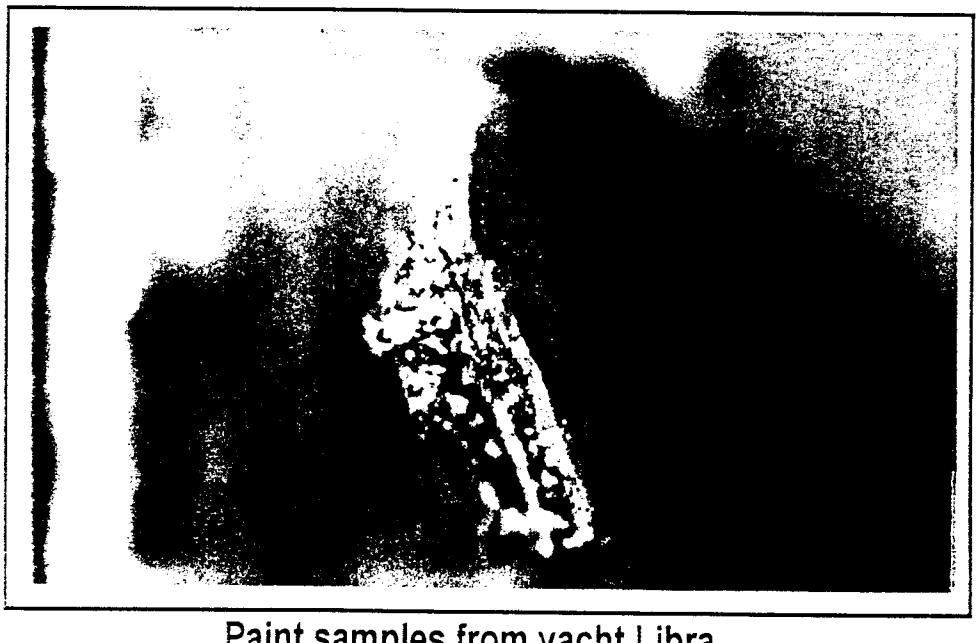
Infra-red spectra of outer green layer

the opinion was that it appears highly probable that the samples shared a common origin.

Summation

Although there was an apparent 2.5 miles separation of the two vessels at the time of the incident, no other ships were claimed by Sanko Heron to have been within visible range and the results of the forensic tests indicate it was highly probable that the paint deposited on Libra came from the Sanko Heron. On the balance of probabilities, it is considered Sanko Heron was the ship that collided with Libra.

Paint sample from Sanko Heron



Paint samples from yacht Libra

Comment

Under the provisions of the International Regulations for Preventing Collisions at Sea (COLREGS), the sidelights of Libra are required to be visible at a minimum distance of two miles. With the wind on the port side, Libra was heeled slightly to starboard and, therefore, the port side light should have been readily visible to any vessel approaching from the south. In addition, although contrary to the COLREGS, Libra was said to be exhibiting the white, all-round, anchor light at the masthead, which should have enhanced its visibility to other vessels.

From the GPS fix obtained at 081730, Libra was making good a course of 260 degrees at a speed of 6.85 knots and would, therefore, have been about 25 degrees on the starboard bow of Sanko Heron.

Sanko Heron was on a track more than 40 miles off the coast and the visibility was considered to be good, so therefore, there was no necessity for the radar to be in use. The fact that it was on "standby", ready for immediate use should it be needed, was in accordance with good operational procedures. There were two people on the bridge keeping a lookout, the officer of the watch and a seaman, which was in compliance with regulations.

The moon phase on the night of 8/9 September was 11 days (about a three-quarter moon), full moon being on 11 September. At the time of the collision, the moon would have been in the west at an altitude of about 40 degrees. Any glare, or reflected light on the sea surface would have been out on the port beam of Sanko Heron. However, the sky was cloudy, at least 50 per cent cover, and therefore, the moon would have been visible only intermittently.

Both the Second Mate and the seaman lookout claimed they were keeping a lookout, did not see any lights and were unaware of any collision. Why neither of them saw the lights shown by Libra is not known.

Shipping encountered on the route towards Frederick Reef is only light, and therefore, the lookout may have been purely perfunctory, an occasional cursory glance around the horizon. It is considered that in this instance the lookout aboard Sanko Heron was inadequate, in that the lights of Libra and the collision were undetected.

Although the skipper of Libra had seven years' experience in sailing, he was inexperienced in ocean sailing and was unaware of the ocean shipping routes around Australia. He was unaware that at the time he went to check the charts of Moreton Bay, he was about to cross the main shipping route from southern Australian ports up to Frederick Reef, in the Coral Sea, en route to Japan. He did not anticipate meeting

shipping until he was much closer to the coast.

In leaving the cockpit, to go into the cabin to study the chart, the skipper failed to keep a lookout, as required by Rule 5 of the COLREGS. By his staying away from the cockpit for such a prolonged period, Sanko Heron was able to approach from a distance of more than 6 miles without detection.

It is accepted that the Master of Sanko Heron had no knowledge of the collision and, therefore, could not be expected to have offered assistance to Libra.

Conclusions

It is considered that:-

1 Although there was an apparent 2.5 miles difference in the positions of the two vessels, on the balance of probabilities, Sanko Heron was the ship that collided with Libra.

2 The collision was due to failure in lookout in that:-

a The skipper of Libra failed to keep a lookout as required under Rule 5 of the COLREGS.

b The lookout aboard Sanko Heron was inadequate, in that the lights shown by Libra and the collision were undetected.

3 The skipper of the yacht was unaware that he was crossing a major shipping lane.

4. The Master of Sanko Heron had no knowledge of the collision and, therefore, could not be expected to have offered assistance to Libra.

Submissions

Submissions under regulation 16(4) of the Navigation (Marine Casualty) Regulations.

In accordance with regulation 16(3) of the Navigation (Marine Casualty) Regulations, copies of the report were provided to the Master and Second Mate of Sanko Heron and to the owners of Libra, for their comment.

The owners of Libra indicated their satisfaction with and acceptance of the report.

The Master and Second Mate of Sanko Heron provided no comment.

Attachment 1

Details of yacht Libra

Type	Sun Magic 44, single hulled yacht
Construction	fibreglass
Colour	white
Length	13.4m
Width	4.2m
Masts	1
Height	15m
Sails	2 - main and jib
Colour	white

Attachment 2

Details of Sanko Heron

Ship type	Tanker
IMO No	8025305
Port of Registry	Panama
Owner	Heron Tankship Ltd, Panama
Parent Company	Sanko Kisen, Tokyo, Japan.
Year of build	1982
Builder	Onomichi Zosen KK, Japan
Length over-all	235.8m
Beam	32.24m
Moulded depth	19.4m
Summer draught	12.228m
Gross tonnage	34020
Nett tonnage	24590
Summer deadweight	61540 tonnes
Main engine	B&W 6 cylinder 9636 kW
Speed	14.5 knots
Crew nationality	Korean
Classification Society	Nippon Kaiji Kyokai

Corrigendum

Incident at Sea, Report No

54

"Departmental investigation
into the collision between
yacht **LIBRA**
and
MV SANKO HERON
off Cape Moreton
9 September 1992

released on 6 October 1993

Page 5: two references to **"Morecomb Bay"**
should read **"Moreton Bay"**