

Hua Seng Sawmill Co Bhd v QBE Insurance (Malaysia) Bhd  
[2003] SGHC 233

**Case Number** : Suit 1065/2001/S  
**Decision Date** : 09 October 2003  
**Tribunal/Court** : High Court  
**Coram** : Belinda Ang Saw Ean J  
**Counsel Name(s)** : Jainil Bhandari, John Seow and Kelly Yap (Rajah and Tann) for plaintiff; Michael Lai and Wendy Tan (Haq and Selvam) for defendant  
**Parties** : Hua Seng Sawmill Co Bhd — QBE Insurance (Malaysia) Bhd

*Civil Procedure – Trial – Submissions at trial going beyond pleaded case – Whether court will consider submissions – principles to consider*

*Insurance – Marine insurance – Insurable interest – Goods delivered to buyer before payment – Bills of lading issued in name of buyer – Whether property in goods have passed to buyer – Whether presumption in s 19(2) of the Sale of Goods Act (Cap 39, 1999 Rev Ed) of reservation of property rebutted*

*Insurance – Marine insurance – Insured peril of "washing overboard" – Alleged collapse of sidewall of cargo hold allowing goods to fall into sea – Whether loss due to insured peril – Definition of "washing overboard"*

## Introduction

1 In this action the Plaintiff, Hua Seng Sawmill Co Bhd ("Hua Seng"), claim US\$1,000,556.93 and S\$212,809.03 under a valued marine cargo policy issued by the Defendant, QBE Insurance (Malaysia) Bhd ("QBE"). The claim is in respect of loss of general cargo comprising steel plates, second-hand machinery and equipment ("the goods") allegedly arising from an insured event that occurred on or about 4 December 1999. QBE has refused to indemnify Hua Seng in respect of the loss. The agreed value of the policy is RM 4,254,056.33

2 It is said that in the early hours of 4 December 1999, the insured goods (save for seven sheets of 9.5mm steel plates and two winches) were lost overboard the barge "ET Offshore 1". At that time, the barge was under the tow of the tug "ET Ocean IV" on a voyage from Singapore to Sibul, East Malaysia.

3 The policy incorporated the 1.1.82 version of the Institute Cargo Clauses (C) ("ICC (C)"). What is relied upon here is the risk of "washing overboard" that was added to the policy. Besides having to prove that the goods were "washed overboard" within the meaning of the policy, QBE has put Hua Seng to strict proof of the following matters:

- (a) the insured goods were loaded on the barge at Singapore;
- (b) the goods were on-risk at the time of the loss; and
- (c) Hua Seng's insurable interest in the goods at the time of the loss.

4 QBE is also defending the proceedings on the bases that:

- (a) there was a material non-disclosure in that it was not advised at the time the insurance was effected that the goods on board the barge were already lost at sea;

(b) breach of express warranty that there are no claims from 30 November 1999 to before 2.30pm on 2 December 1999 and by virtue of s33(3) of the Marine Insurance Act (Cap.387) QBE is discharged from any and all liability under the policy; and

(c) the loss was not due to an insured peril, namely washing overboard. The proximate cause of the loss was improper and/or bad stowage of the goods and/or the goods were not lashed or secured properly and/or effectively or at all.

### **Background facts**

5 The barge "ET Offshore 1" and tug "ET Ocean IV" were chartered by Hua Seng pursuant to the terms of a voyage charter dated 10 November 1999 and made between Hua Seng and Hiap Shing Shipping Pte Ltd ("HSS") as owners of the tug and barge. "ET Offshore 1" is an unmanned welded steel deck cargo barge with spoon-shaped bow, straight sides and raked stern. The barge was built in 1982 and it has an overall length of 85.34m, breadth 21.3m and depth of 4.88m. The deadweight capacity of the barge is about 5,000 tons. The cargo deck is surrounded on all sides by steel sidewalls measuring approximately 8 feet (2.44m) above the deck. The starboard and port sidewalls are supported by stanchions.

6 It is common ground that the barge under tow of the tug departed from HSS's yard at Sungei Pandan, Singapore on 30 November 1999 for Sibu, East Malaysia. According to the Chief Officer's logbook, the barge was laden with approximately 4,850 mt of goods. The relevant bills of lading stated the quantity as 4,898 mt. The steel plates weighed approximately 4,192 mt with second-hand machinery and equipment making up the rest of the tonnage. The minimum freeboard at the Tropical Loadline (3.84m) is 1.04m below the upper deck. The barge was loaded to its tropical marks, with a freeboard of 1.07 m. She departed Singapore with a stern trim of 0.6m and a slight list to port.

7 Marine insurance for the goods was arranged two days later on 2 December 1999. QBE was aware of this. Nonetheless it accepted the risk subject to ICC (C) and an express warranty, namely: "Warranted that there is no claim from the period 30.11.99 to 2.12.99 before 2.30pm." The insurance included risks of jettison and washing overboard.

8 At about 0600 hours on 4 December 1999, those on board the tug discovered the deck empty of cargo except for two second-hand winches and a few pieces of steel plates wedged against the manhole covers on the port side. The port sidewall was missing. The port stanchions were sheared off at the base. So were the bollards. Some manhole covers were completely or partially ripped off and bolts sheared at the base.

9 Prior to this incident, Lau Swee Nguong ("Lau"), managing director of Hua Seng has had a long-standing business relationship of more than 20 years with Ang Er Loo ("Ang"). In his dealings with Ang, he made no distinction between Hiap Shing Company and HSS as the same people owned the Singapore entities. They had a regular business relationship and maintained a running account with frequent set offs against what was owing to each other.

### **Were the insured goods loaded on board and were they lost whilst on-risk**

10 It is Hua Seng's case that all the goods it had purchased were delivered to HSS's yard at Sungei Pandan for loading on board the barge moored alongside HSS's jetty for that purpose. The goods were loaded and stowed by the contractor, Low Teck Heng ("Low") appointed by Ang. Under the charterparty, Hua Seng was required to load the barge. I am not required to decide on the legal status of Low vis-à-vis Hua Seng and HSS.

11 On 28 November 1999, Lau boarded the barge to check on the goods. Lau candidly accepted that he would not be able to confirm that everything he saw on 28 November would be on board at the time of departure. Low testified that his workers placed on board all the steel plates and the other goods purchased by Lau. His evidence is corroborated by Hoe Peng Hock @ Sam Hoe ("Hoe"), the shipping manager of HSS. Hoe confirmed that bills of lading nos. HS/AEL/001 to 007 all dated 30 November 1999 were issued by HSS for the goods on board the barge. Each bill of lading is evidence of the receipt and shipment of the goods covered by it. On the face of each bill of lading is a typed written notation "Shipped on Board". The description of the goods stated on the bills of lading corresponded with the goods insured by QBE. I am satisfied on the evidence and I find, on a balance of probabilities, that the insured goods were on the barge "ET Offshore 1" when she departed Singapore for Sibuluan on 30 November 1999 under the tow of the tug "ET Ocean IV".

12 I now turn to the issue of the time of the loss. The determination of this one issue would simultaneously resolve several defences raised by QBE. It would determine the insurable interest of Hua Seng, decide whether the goods were lost whilst they were on-risk and in turn dispose of the issue of breach of warranty.

13 It is common ground that no one saw how and when the loss occurred. It is Hua Seng's pleaded case that the loss occurred some time during the early hours of 4 December 1999 between 0001 hours and 0600 hours.

14 The Chief Engineer of the tug, Sri Haryomo ("Haryomo"), testified that he saw the barge after sunrise on 3 December 1999. He had left the engine room for a smoke and some fresh air. He did not notice anything untoward to indicate a problem on or with the barge. The barge was laden with cargo and the sidewalls were upright. He did not notice any list to port.

15 Those on board the tug noticed the load and port sidewall missing at around 0600 hours on 4 December 1999. Haryomo noticed that the barge's port sidewall had disappeared and the barge was without deck cargo. This time he noticed that the barge had "slightly listed to port". The master in conversation said that they were returning to Singapore because of the incident. Consequently, he recorded the master's conversation with him in the engine log as an entry at 0600 hours. He could not recall exactly when he made the entry. There are also various entries in the deck logbook, engine logbook and daily fleet status report that recorded when the loss was discovered.

16 Lau testified that Ang of HSS informed him that the loss of the cargo was discovered on 4 December 1999. Hoe also testified that the master notified HSS of the loss of the goods on 4 December 1999 between 0830 hours and 0900 hours. The master did not testify at the trial. Hoe's testimony would not offend the hearsay rule. The evidence is admissible as it is intended to prove what was said and not that the statements were true. See *Saga Foodstuffs Manufacturing (Pte) Ltd v Best Food Pte Ltd* [1995] 1SLR 739.

17 Besides breach of warranty, it is QBE's case that Hua Seng was aware of the loss before buying insurance cover and had concealed this fact from the underwriter. This serious allegation of fraud must be proved with stronger evidence albeit on a balance of probabilities. See *The Grecia Express* [2002] 2 Lloyd's Rep. 88 at 99 and *The Zinovia* [1984] 2 Lloyd's Rep.264 at 272. The onus of proof is squarely on QBE.

18 Counsel for QBE, Mr. Michael Lai, in his Closing Submissions went much further than QBE's pleaded case. Mr. Lai submits that HSS and Hua Seng knew of the loss before 0954 hours on 4 December 1999 and they tried to hide that fact from QBE. He contends that "Hiap Shing and the Owners (Hiap Shing Shipping Pte Ltd) are in cahoots with [Hua Seng] in bringing this claim.." and

acting in concert, the events of 4 December 1999 were “orchestrated” by the Plaintiffs and HSS. That included ordering the tug to tow the barge back to Singapore so that they could protect the master and crew during investigations; misleading Insight, stonewalling their queries and preventing the inspection of the barge until 8 December 1999.

19 The master and chief officer left the employment of HSS some time after the incident and the master and chief officer did not testify at the trial. Mr. Lai boldly concluded that HSS and Hua Seng had wanted the master and chief officer to lie in court about the time and circumstances of the loss, but the officers were unwilling to do so. Alternatively, Hua Seng was afraid to subject the master and chief officer to cross-examination and had excluded them as witnesses. In his view, HSS as carriers have a vested interest in assisting Hua Seng to prove that the loss occurred after 1430 hours on 2 December 1999 because of their potential liability to Hua Seng. On top of that, Hua Seng has a close business relationship with HSS through Ang.

20 Mr. Bhandari labels the allegations of conspiracy as fanciful and totally unsupported by the evidence. If the conspiracy theory is to be believed, the various entries in the deck and engine logs including the fleet status report must have been tampered with and thus false. It was not suggested or put to Haryomo and Hoe that the entries in the deck and engine logs or daily fleet status report were false. As Counsel for Hua Seng, Mr. Jainil Bhandari rightly submitted, HSS had produced the original deck and engine logbooks in court but nothing was raised or said by QBE about the entries being tampered.

21 There is no evidence before the court for QBE to make good the serious allegations. Furthermore, the alleged involvement of HSS acting in concert with Hua Seng to make this fraudulent claim was not pleaded. The factual basis upon which the conspiracy is alleged must be stated with appropriate clarity. There is no plea as to the time and the making of the agreement between the alleged conspirators, the unlawful means agreed to be employed and the facts or circumstances that made them unlawful. The pleadings should also indicate what unlawful acts were performed pursuant to the alleged agreement and how those acts caused damage to QBE.

22 If properly pleaded, Hua Seng would know precisely the case it had to meet. Ang whose name was repeatedly mentioned during the trial was not called as a witness. He would have been a crucial witness because of the various telephone calls on 2 December 1999 between Ang and Lau that Mr. Lai submits must have been about the loss.

23 Consequently, I need not decide on those aspects of the unwarranted submissions that have strayed well beyond QBE’s pleadings. I shall return to this at a later stage on the question of costs as they nonetheless received some attention, but in the end proved unnecessary to decide. My findings below will bear only on the defences pleaded.

24 Hua Seng pleaded that the loss was reported via Singapore Radio on 4 December 1999. That was the pleaded case as of 22 August 2001. Since 9 December 1999, QBE had discovered that the only call made by the master to HSS via Singapore Radio during the period 1 to 4 December 1999 was on the morning of 2 December 1999. QBE did not amend its Defence until 2 August 2002 about one month before the trial. In its reply filed on 16 August 2002, Hua Seng pleaded that the loss was reported via STS relay.

25 QBE has alleged in pleadings that the only call made by the tug master to HSS via Singapore Radio was made on 2 December 1999. QBE has relied heavily on the call at 0810 hours on 2 December 1999 to prove that the loss was on 2 December 1999 when it was first reported at that time via Singapore Radio and not via STS relay. According to Insight Marine Services Pte Ltd (“Insight”) who

was investigating the claim on behalf of QBE, the master and Hoe at a meeting on 8 December 1999 had disclosed to them that the loss was reported via Singapore Radio. Captain Baharuddin Ishak of Insight made some inquiries with Maritime Radio Operation. The only call to HSS via Singapore Radio was on 2 December 1999. Insight followed up on this lead but as Andrew Lee Chong ("Lee"), the Managing Director of Insight and principal investigator for this casualty admitted, his investigations into this aspect of the case were inconclusive. His Indonesian counterpart had contacted the crew in Indonesia. Nothing new was discovered. His approaches to Satellite Imaging Department, National University of Singapore, for images of the laden barge at her approximate locations also drew a blank. Insight's investigations stopped there.

26 Hoe's evidence is that the master had called him on his mobile phone via Singapore Radio at 0810 hours on 2 December 1999 to inform him of a change in the estimated time of arrival ("ETA") at Sibul by a day because of bad weather. The fleet status report of 1 December 1999 recorded the tug's ETA Sibul as "6/12 pm". On 2 December, the tug reported her ETA as "7/12 am".

27 Mr. Lai submits that Hoe's testimony is untruthful because the barge had not encountered heavy weather. The log entries for the period 2000 hours on 30 November 1999 to 0800 hours on 2 December 1999 showed that the weather was anything but bad. In fact the weather was good throughout. At the time Hoe took the master's call at 0810 hours on 2 December 1999, winds and sea state were at force 3 and had been so for 18 hours since 1400 hours on 1 December 1999. Mr. Lai also relied on the fleet record book for 1 December 1999 and 2 December 1999. They showed no significant reduction in the tug's speed. On 1 December 1999, the tug's speed was 2.8 knots and 3 knots on 2 December 1999.

28 On any view, there are no inconsistencies in the evidence to render Hoe's testimony untruthful. The evidence is admissible as it simply proves what was said and not intended to prove the truth of the statements.

29 It is also said that the evidence of Hoe cannot be believed because the range of a single side band ("SSB") radio is long enough to reach the control room and there was no need to rely on a ship-to-ship relay in this case. Hoe's evidence in response is that the reception in the control room was not good because of interference from the booms of the overhead gantry cranes and crawler shore cranes in the yard. It was not unusual as it is a practice at HSS for communications from tug to shore to be relayed via STS.

30 Mr. Lai submits that the only explanation for the flurry of telephone calls on the morning of 2 December 1999 between Ang and Lau must be about the loss Ang had called to report. Three calls were made by HSS to Hua Seng within a space of 19 minutes from 0912 hours to 0931 hours. The calls at 0914 hours and 0931 hours were to Lau's direct line. To shore up that argument, he suggested that the fax of 4 December 1999 to record the loss as occurring on 4 December 1999 is untrue. HSS sent a fax at 0954 hours to Hua Seng. It referred to a telephone conversation in the morning and it also confirmed the loss of the goods. There was no such earlier telephone conversation. Ang's first call to Lau on 4 December 1999 was at 1002 hours after the fax was transmitted. Lau naturally denied that the telephone calls on 2 December 1999 were about the loss. Lau said that Ang was supposed to give him one-day notice of the barge's departure to enable him to arrange insurance. It would appear that Ang had tried unsuccessfully to contact Lau who was unexpectedly called away to the logging camp and had only returned to his office on 2 December 1999. Lau explained that Ang had telephoned to follow up on insurance cover as the barge had departed for Sibul as well as to ask about payment of freight. Under clause 23 of the charterparty freight is payable within 5 banking days after completion of loading. Having regard to these facts as a whole, I cannot see any reasonable suspicion of fraud. In fact, all Mr. Lai was able to muster from his

analysis of the documentary evidence, to borrow his own words, is that they “strongly suggest” that the loss occurred prior to 1430 hours on 2 December 1999.

31 QBE contends that Lau had no intentions to insure the goods. He only took out insurance after he found out about the loss. Evidence was led to show that this was the first time Lau had bought insurance after the vessel had sailed. On this occasion he was not aware that the barge and tug had sailed on 30 November until 2 December. Ordinarily, it is possible to insure cargo on a “lost or not lost” basis before the policy is concluded. Under Clause 11.2 of ICC (C), the underwriter agrees conditionally, to accept the risk from inception including claims for losses that occurred prior to the date of conclusion of contract. The acceptance is conditional upon the assured not being aware of any loss, or accident that might result in a loss, at the time he conclude the contract with the underwriter.

32 In this case, QBE did not agree to insure the goods on a “lost or not lost” basis. Clause 11.2 is of no effect as the goods were insured subject to the express warranty. Besides, the contentions are also not borne out by the evidence. QBE’s allegation is entirely speculative and based on suspicion. Why would Hua Seng, knowing that the loss happened before 1430 hours on 2 December 1999, give the warranty if Lau had intended to deceive QBE. The contention makes no sense.

33 On the evidence, I find on a balance of probabilities that the loss happened some time in the early hours of the morning of 4 December 1999. I accept the eyewitness account of the Chief Engineer that the barge was still laden with the goods on the morning of 3 December 1999. The evidence (or the lack of it) does not enable me to make a finding of fraud, namely concealment of the loss, and it follows that QBE has also not made out a case of breach of warranty.

### **Insurable Interest**

34 Clause 11.1 of ICC (C) provides:

In order to recover under this insurance the Assured must have an insurable interest in the subject-matter insured at the time of the loss.

35 Section 6 of the Marine Insurance Act states that the Assured cannot claim under the policy if no insurable interest exists at the time of loss.

36 Section 5 of the Marine Insurance Act defines insurable interest as:

(1) Subject to the provisions of this Act, every person has an insurable interest who is interested in a marine adventure.

(2) In particular a person is interested in a marine adventure where he stands in any legal or equitable relation to the adventure or to any insurable property at risk therein, in consequence of which he may benefit by the safety or due arrival of insurable property, or may be prejudiced by its loss, or by damage thereto, or by the detention thereof, or may incur liability in respect thereof.

37 Section 2 explains what a “marine adventure” is.

38 It is Hua Seng’s pleaded case that it is the owner of the goods. An owner has clearly an interest in the insured property within the meaning of section 5 and this interest continues with his title to the goods. An owner “stands in a legal or equitable relation” to the insured property “in

consequence of which he may benefit by the safety or due arrival" of the insured property "or may be prejudiced by their loss."

39 Hua Seng's insurable interest in the steel plates purchased from Bulk Trade Pte Ltd and the second-hand machinery and equipment purchased from Ritchie Bros. Auctioneers Pte Ltd are not disputed. Insofar as goods purchased from Hiap Shing Company, Ban Guan & Co, Teck Industrial Co Pte Ltd, Sin Leng Industries Pte Ltd and Leong Guan Hardware Co are concerned, it is not disputed that Hua Seng had not paid for them at the time of the loss. Mr. Lai submits that in the absence of any evidence as to the terms of sale, the general rule is that property in the goods passes to Hua Seng only upon payment.

40 The argument that the terms of sale are not in evidence must be rejected. It is clear from the unchallenged testimony of Lau that Hiap Shing Company was required to put the goods it sold to Hua Seng on the barge whilst the other suppliers were to send the goods to the yard. HSS was to receive and hold the goods for Hua Seng as purchaser who had chartered the barge and tug for carriage of the goods to Sibiu. In *The Colonial Insurance Company of New Zealand v Adelaide Marine Insurance Company* (1886) 12 App.Cas 128, the charterers of the vessel were also the purchasers of a cargo of wheat. The master of the vessel from time to time received delivery from the suppliers. It was held that such delivery was a delivery to the purchasers and it vested in them a right of possession and property. Consequently, they had an insurable interest in the wheat delivered.

41 In the present case, there is evidence of sale of various goods, delivery and receipt by HSS on behalf of the Hua Seng as purchaser of the goods. The sellers' obligation ceased after delivery. By agreement, possession was given before payment. See Section 28 Sales of Goods Act (Cap.393). Lau said that Hua Seng was obliged to make payment after the goods arrived in Sibiu. In the case of the goods purchased from Hiap Shing Company, it was taken into the running account between the parties albeit at the time of the loss there was no set off.

42 Consistent with my analysis that property in the goods had passed before payment is the fact that the goods were delivered without reservation of title. HSS issued bills of lading nos. HS/AEL/001 to 007 for all the goods. They were not issued to the order of the shippers. The shippers were the suppliers, namely Hiap Shing Company, Ban Guan & Co, Teck Industrial Co Pte Ltd, Sin Leng Industries Pte Ltd and Leong Guan Hardware Co and the named consignee on all bills was Hua Seng Group. In all seven bills of lading, the presumption in section 19(2) Sales of Goods Act has been rebutted. Lau confirmed receiving the bills some time after the barge had sailed.

43 On the evidence, I find that Hua Seng had an insurable interest in the goods at the time of the loss.

### **Proximate Cause of the loss**

44 The starting point is section 55(1) of the Marine Insurance Act. The subsection prescribes that the insurer is only liable for a loss proximately caused by an insured peril. It is also qualified by the words "unless the policy otherwise provides."

45 The ICC (C) provide that the underwriter is to pay for loss or damage 'reasonably attributable to' certain risks. The peril "washing overboard" is not one of the perils listed in Clause 1. It is an additional peril expressly included in the cover. It is arguable that the words "reasonably attributable" do not apply to this freestanding risk. Even if they did, in practical terms there is no real change, although the views in some textbooks differ. Arnould, *Marine Insurance* (vol.3) at 192 takes the view that the expression "reasonably attributable" is less stringent than the proximate cause test. All that

expression requires is reasonable evidence of a casual link between the specified peril and the loss claimed. O'May, *Marine Insurance Law and Policy* (1993) at 316 doubts if there is any measurable difference. Susan Hodges, *Law of Marine Insurance* (1999) at 167 suggests that the judges would start with the consideration that the *maxim cause proxima non remota spectatur* is to be applied, if possible.

46 In my view, the expression "reasonably attributable" does not alter the principle of causation and the court still looks for *the* cause responsible for the loss (see *The Salem* [1982] 1 Lloyd's Rep.369 at 381. Kerr LJ considered the words "may have been attributable" as "neutral words"). As Templeman, *Marine Insurance* (6<sup>th</sup> ed) at 191 observed, there is little difference between the practical effect of the two expressions "reasonably attributable to" and "proximately caused by". This is because the courts have ruled that proximate cause is to be determined by applying common sense standards to find the cause predominant in efficiency. Indeed Counsel for Hua Seng and QBE did not contend otherwise and proceeded on the "proximate cause" test.

47 If there are two concurrent and effective causes of a marine loss, and one comes within the terms of the policy and the other does not, the insurers must pay. See *Miss Jay Jay* [1987] 1 Lloyd's Rep. 32 at p 36; *Halsbury's Laws of England* (4<sup>th</sup> ed, reissue) para. 176, Vol. 25.

48 Hua Seng is relying on a specific insured peril. The burden of proof is throughout on the assured. Digby C. Jess succinctly explains the position in *The Insurance of Commercial Risks: Law and Practice* (3<sup>rd</sup> ed, 2001) para. 17-04 as follows:

"An insurer usually only contracts to indemnify the insured against loss or damage caused by the perils specified in the policy, and it is therefore essential that the loss is shown to have been brought about by an insured peril. In other words, "the insurer promises to pay in a certain event and in no other, namely, in the case of loss caused in a certain way, and the question is whether the loss was caused in that way, and whether the event occurred." *Becker, Gray & Co.v London Assurance Corp.* [1918] AC 101 at 113, per Lord Sumner, HL."

49 Lord Evershed M.R. in *Regina Fur Co. Ltd v Bossom* [1958] 2 Lloyd's Rep 425, a case concerning an alleged loss by theft of furs observed:

"I think that a defendant - whether he is an underwriter or any other kind of defendant - is entitled to say, by way of defence, 'I require this case to be strictly proved, and admit nothing.' Where such is the defence, the onus remains throughout upon the plaintiffs to establish the case they are alleging. Where such is the form of pleading, it is not only obligatory upon the defendants but it is not even permissible for them to proceed to put forward some affirmative case which they have not pleaded or alleged; and it is not therefore, right that they should, by cross-examination of the plaintiffs or otherwise, suggest such an affirmative case. The defendants are acting correctly if they follow the course adopted in this case- that is, so to challenge, at each point, and by proper evidence, where it is advisable, and by cross examination the case which the plaintiffs seek to make good." [p428]

50 If at the conclusion of the hearing, the court is left in doubt as to whether the loss was or was not so caused by an insured peril, Hua Seng would have failed to prove its case.

### **Hua Seng's Case on the Circumstances of the loss**

51 Hua Seng has in Closing Submissions set out its loss scenario. Briefly, they are:

(a) The steel plates were stowed flushed or almost flushed against the port and starboard sidewall of the barge leaving a minimal gap of about 1cm to 2 cm at the most from the sidewall.

(b) There was a gradual movement of the steel plates towards the port sidewall caused by the barge movements, resulting in a minimal or low impact force developing, which could not have caused the sidewall failure.

(c) The weight of the steel plates and other goods stowed on it therefore rested against the sidewall, generating static loading that spread over the stanchions supporting the sidewall.

(d) The static loading generated by the steel plates and other goods were insufficient to cause failure of the sidewall. However, the presence of water accumulated within the cargo enclosure induced a progressive heel and trim, which would have resulted in additional loading being exerted on the sidewall.

(e) Such progressive heel and trim (the freeboard in the portside would have been reduced as a consequence) would have facilitated the entry of more water into the barge.

(f) At some point, this gradual increase of static loading on the sidewall would have resulted in its failure and consequently the loss of the cargo overboard.

52 Hua Seng submits that the court may infer on a balance of probabilities from the whole of the evidence (including the condition of the barge on departure, the manner of stowage and prevailing weather conditions) that water must have entered and accumulated within the barge to have the effect contended for. The steel plates were stowed in a form of a "pseudo deck". The barge departed with a very low freeboard, and with a slight list to port and stern trim. The deck of the barge was submerged frequently during the voyage resulting in water entering the barge through gaps under the sidewalls and in the side doors. The frequency of immersion of the barge deck is evidenced by, inter alia, the fact that no.7 port tank was flooded during the voyage. The possibility of waves overtopping sidewalls could not be discounted. Moreover, water that entered the cargo enclosure could not have flowed out immediately, but would have accumulated within it. The barge at the material time was not fitted with scuppers or drainage holes. This would have increased the tendency for water to accumulate within the cargo enclosure.

53 QBE raised an alternative cause of the loss. It alleged that improper and/or bad stowage was the cause of the loss. In the Amended Defence, QBE pleaded that:

"The shifting and sliding and/or movement of the cargo created and/or induced a large force and/or momentum towards the port side of the barge shearing off and/or carrying away, inter alia, its port sidewall. With the port sidewall of the barge sheared off and/or carried away, the cargo slid and/or pitched overboard."

54 QBE said that the sidewall failure was due to impact loading whereas Hua Seng said that the sidewall failure was due to static loading. Before I consider Hua Seng's loss scenario in detail, I should identify the experts called by both sides. For Hua Seng, there is Captain Richard Gregory and Ernest Wee Keng Huat. Captain Christopher Phelan and Andrew Squire are the experts called by QBE.

55 Captain Richard Gregory ("RG") is an Extra Master and is currently employed by Noble Denton Singapore Pte Ltd as Manager, Marine Casualty Investigation. He has 20 years experience as a consultant investigating marine casualties, incidents and shipboard operations. He has 15 years experience in the Asia-Pacific region. He has attended on site in Europe and Asia for the approval of

transportations, tows and installation including float-over integrated decks. He has given expert evidence in court and arbitration proceedings on matters relating to navigation and seamanship, ship stability, towage, salvage operations, personal injury and unsafe berths/ports.

56 Ernest Wee Keng Huat ("EW") holds two Polytechnic Diplomas. One is in Naval Architecture and the other Mechanical Engineering. He is currently employed by Noble Denton Singapore Pte Ltd as Senior Principal Engineer. He has about 20 years of experience in the marine industry. He has provided consultancy services involving stability (intact and damaged) analysis/calculations for floating offshore structure, vessels and barges for load out, transportations, offloading and operations including detailed calculations of ballasting steps for load out. His work includes the use and development of software aids for various applications such as stability and structural analysis, Motions and Spectral analysis, Waveload calculation, longitudinal strength and towage (leg) analysis.

57 Captain Christopher Phelan ("CP") is a Master Mariner with 44 years of experience in the marine profession. He is a director of Navaspec Marine Consultants Pte Ltd. He is a fellow of the Royal Institute of Navigation and a fellow of the Nautical Institute. He is regularly retained to oversee the transfer and/or loading of project cargoes, heavy lifts, extraordinary loads and high value shipments onto barges for voyages within the region. His duties include the planning of and stowage of cargoes onto barges to ensure adequate stability, and the proper securing of cargo for intended voyages.

58 Andrew Squire ("AS") is a naval architect by profession. He has been in this profession for the past 21 years and is a director of London Offshore Consultants Ltd. He has a BSc (Hons) in Ship Science from Southampton University and is also a Chartered Engineer. He is a fellow of the Royal Institute of Naval Architects. He specialises in marine transportation and casualty investigation in the offshore and conventional shipping industries. As senior naval architect in London Offshore, he approves all engineering calculations relevant to the transportation and installation of major offshore facilities. He has investigated numerous ship related casualties worldwide including structural failures to tankers and bulk carriers, cargo losses and cargo securing failures. He has given expert evidence at the Royal High Court of Justice, England and at arbitration in the UK on ship strength and stability. He has also given evidence at court hearings and arbitrations in the USA, South Africa and Australia.

59 I now return to the main issue in the action and consider whether Hua Seng has proven the specific peril sued upon. I will begin by considering the foundation of Hua Seng's loss theory.

*(i) Pseudo deck or athwartship stacks*

60 Low's evidence is that when he went on board, the barge was laden with steel plates discharged from the vessel "ASTROMAR". At HSS's yard at Sungei Pandan, 300 pieces of steel plates meant for HSS were taken off the barge. Low then re-arranged and re-stowed the remaining steel plates left on the barge in the form of a "pseudo deck", i.e. longitudinal stacks were stowed from aft for one row down each side and athwartship stacks in the remaining space in the centre. The length of each longitudinal stack was stowed flushed or as close as possible to the sidewalls of the barge. There were 5 longitudinal stacks on each side of the cargo enclosure and about 16-18 athwartship stacks placed from the stern towards the bow of the barge. Lau boarded the barge on 28 November 1999 and he saw the steel plates arranged in that same configuration.

61 Some of the other goods (like steel pipes) were stowed on top of the pseudo deck and at times rising above the height of the sidewalls. Second-hand machinery and equipment occupied the space that was left in the bow section and foredeck.

62 CP explained that a pseudo deck stow was not possible to achieve in practice or was

impractical from an operational point. His opinion was premised on certain factors that have been shown to be different. He started on the premise that after leaving 300 steel plates at HSS's yard, it was necessary to "re-arrange and re-stow" the remaining 1499 plates in preparation for the voyage to Sibiu across the South China Sea during the North-East Monsoon. CP said that it was impossible to re-stow all 1,499 pieces of steel plates in the "finite area within the cargo enclosure in the barge" using the fork lifts. Low's evidence is that some of the steel plates were re-arranged and it was not necessary to re-stow all 1,499 steel plates. No forklifts were used. Low used two cranes i.e. "ET Lift 1" (with a safe working load of 40-50 tons) and 180 feet floating crane and a tractor to re-arrange the steel plates. The alleged difficulty of discharging the steel plates if they were stowed as a pseudo deck would not take the matter any further in the absence of evidence on the intended mode of discharge at Sibiu. CP had assumed a mode of discharge involving side clamps where a 15cm gap between the sidewall and the plates would be required to remove the side clamps.

63 QBE argued that the steel plates were stowed in 13 athwartship stacks and this arrangement corresponds to the markings depicted on the starboard sidewall that extended to about 60% of the length of the barge measured from aft. Captain Baharuddin was able to recall seeing more than 5 marks. According to Low, his workers did not make the marks. CP interpreted the markings as referring to steel plates that would have reached a height of 1.12m for 115 plates per stack. He said that there would have been no rationale for these markings along the starboard wall unless they referred to the stowage of the steel plates. I am not persuaded that the existence of the markings is proof that the steel plates were all stowed in athwartship stacks when the barge left Singapore on 30 November 1999.

64 Seven pieces of steel plates were found on board after the casualty. They were oriented in an athwartship direction, and lodged against the manhole covers. According to AS, the photographs and the remaining steel plates lodged against the manhole covers in a traverse manner led him to believe that there was impact forces generated by shifting steels plates stowed athwartship in the centre moving as a mass against the sidewall and that caused the loss of the sidewall. If longitudinal stacks existed, the manhole covers would have caught them. It would, he opined, be illogical to say that the longitudinal stacks could "hop over" the manholes and pitch overboard.

65 I am not prepared to accept AS's opinion in the face of the evidence of Low and Lau. A pseudo deck stow might not have been as practical as a 13-stack athwartship stow but nonetheless it was what Low did. Low created the pseudo deck on the instructions of Ang. That bit of the evidence was not challenged. Low had been lashing contractor for HSS for many years. He had simply carried out Ang's instructions and was not loading the steel plates and second-hand machinery and equipment with IMO safety requirements and the North-East Monsoon in mind. Non-conformity with IMO guidelines would hardly make what Low said he did untrue. I have no reason to doubt the credibility of Low and I accept his evidence on the pseudo deck stow.

66 Mr. Lai in his submissions alleged that EW enlisted the help of Low to lie that he created a pseudo deck in order to support his "entrapment" theory. Mr. Bhandari took umbrage at Mr. Lai's allegation. He lambastes it as fanciful and sullyng the reputation of EW and his firm. Mr. Bhandari's objections are entirely valid.

67 Mr. Bhandari submits that if the court accepts Low's evidence on the pseudo deck arrangement, QBE's expert testimony that failure of the sidewall due to impact loading could be discounted straightaway, leaving Hua Seng's explanation the only remaining possible cause. This is because the theory is premised on the steel plates being stowed athwartship. The matter is not so simple.

68 I disagree with Mr. Bhandari's submission that by eliminating the improbable theories, one is left with the probable however least improbable it might be. This reverses the standard of proof from balance of probabilities to balance of improbabilities. I refer to and adopt the helpful passage in Templeman, *Marine Insurance*:

"where two competing theories are advanced respectively by the assured and underwriters but both are improbable, it would be contrary to commonsense for one of those theories to be held to be the proximate cause of the loss: it is the balance of probabilities that has to be considered, not the reverse balance of improbabilities." [p201]

69 Hua Seng has still to prove that the loss scenario canvassed was due to the specific peril sued upon. In *The Theodegmon* [1990] 1 Lloyd's Rep 52, Phillips J had to decide whether the grounding was due to a failure of the steering gear or pilot's negligence. He concluded in favour of the former cause. It was not necessary for him in order to reach this conclusion to ascertain the reason for the steering system failure that remained in doubt. That case is different and distinguishable. Here, the port sidewall was lost overboard. It is not enough to prove that it had collapsed. It is necessary for Hua Seng to establish on a balance of probabilities how the port sidewall collapsed and whether that event is a specific insured peril. I would say the precise mechanism by which the loss occurred is highly relevant.

(ii) Sea fastenings - Securing devices and lashings

70 Low understood his job to be the loading of the barge. Apart from being told the deadweight of the barge and weight of the goods, no one from HSS appeared to have advised him of any restrictions as to what could be loaded on the barge. He did not make any inquiries about the load line or stability features of the barge. He did not load the various goods in accordance with some pre-loading or pre-stow plan as there was none. There was no final stowage plan depicting the position of the goods on board. He knew that goods had to be secured and lashed. He was aware that the barge was sailing to Sibiu. However, he was not aware that the barge would have to undergo a sea passage across the South China Sea. He was unaware of the conditions of weather and of seas likely to be encountered on the voyage.

71 Low said angle bars were welded at various places to prevent movements of the steel plates on board the barge. Two angle bars were welded along the length of the steel plates. In the case of athwartship stacks, an angle bar would be welded at each end, but not necessary at the centre of the stacks, as this would depend on availability of gaps or space. Some angle bars were of the same height as the stacks, others were higher. Wooden blocks as chokes were fitted in the remaining gaps. No dunnage was placed under the steel plates. There would be very little friction between the steel surfaces especially when wet. In my view, the poor friction between the steel plates and steel deck surface was a factor in this casualty.

72 Lau was unable to testify whether the steel plates were secured. He, however, noticed welders working on board on 28 November 1999.

73 Low is a welder and barge builder by trade who occasionally loads barges. Low has little formal education but was sufficiently intelligent to learn from experience how to build dumb barges. That was enough knowledge for him to know not to overload the barge. However, Low approached his job quite haphazardly as compared to what was required by good seamanship. CP pointed out that when arranging securing devices and lashings consideration should be given to: (a) dimensions and physical properties of the cargo; (b) suitability of securing arrangements for the particular cargo; (c) expected weather and sea conditions; (d) expected vessel behaviour during the intended voyage and

(e) stability of the vessel. CP explained that such considerations are necessary because cargo could be subjected to forces of great magnitude, composed of longitudinal, vertical and predominately traverse motions.

74 Hua Seng's experts accepted in the Joint Memorandum that the sea fastenings that could have been applied to the steel plates might not have been very substantial owing to the size of the stanchions used and the available space. QBE's experts opine that the use of localized wooden chokes would be inadequate to provide any support for such heavy blocks of steel.

75 When Insight Marine inspected the barge on 8 December 1999, they found no traces or signs of sea fastenings. Photographs of the cargo deck taken on 7 and 8 December 1999 confirmed no residual evidence of any sea fastenings. If the cargo had been properly secured for sea there would have been ample evidence of residual sea fastenings on the starboard side together with footprints of other sea fastenings that had been welded to the deck of the barge. This evidence points to cargo having been inadequately secured for a voyage across the South China Sea. Some photographs taken in May 2000, six months after the voyage were produced. They depicted footprints of sea fastenings. These footprints observed six-months later could be from any subsequent cargo. I assign no evidential weight to the May photographs.

76 I accept the evidence of Lee who has 20-odd years of experience as surveyor and he would, as he said, be able to identify footprints or welding remnants of H-beam configuration or angle bars. He also explained that sea fastenings welded on the deck would rip the deck plate when steel plates and heavy cargo secured on deck had shifted with great force. If there were lashings secured to the deck, he would have expected to find the steel deck pieces ripped off and buckled on deck. Captain Baharuddin who accompanied Lee on his inspection also did not find any footprints of sea fastenings. He was able to corroborate Lee's testimony.

77 In my view, the absence of footprints or signs of sea fastenings is not proof that Low had lied about securing the goods. It is simply evidence that restraints such as angle bars were not properly welded to the deck. It seems to me that they were tack-welded rather than fully welded given the space constraints. It is obvious that securing devices and lashings were not scientifically positioned with regard to the forces to be absorbed by the securing equipment.

78 The second-hand machinery and equipment were secured using wire lashings to hold down the goods. As illustration, I refer to the lashing of the 3 excavators. Low said he welded 4 legs to the steel plates "below the under carriage of the excavator." He crossed four lashing wires under the carriage. CP's view is that "the lashings employed would not prevent the excavators from tipping in a seaway, moving around the fulcrum created by one end of the traverse lashing wires. Adequate lashing would also require vertical wires, outside the body of the unit, to prevent the excavators tipping. Of equal importance is the fact that the lashings were to the steel plates, which if they were not secured, would warrant all securing invalid as the steel plates would have been free to move with the excavators as one composite unit."

79 Low said the lashings were attached to securing points on the deck and sidewall stanchions and tensioned using tensioning devices like turnbuckles. Even so, that would not help where the steel wires used for lashing were worn or defective. Low said he had made use of the second-hand steel wires bought by Lau for lashing the goods. Captain Baharuddin saw remnants of old steel wires on board. He found 30% of the strands of wire broken and not fit for use. Unknown to him, Low had utilised the used steel wires Lau bought.

80 On the whole, I find that the goods were stowed without adequate or proper restraint. The

stage was set for loss of the goods as soon as they had been stowed on board without proper or adequate restraint. I accept CP's view that the inertia of heavy cargo alone would not restrain its movement during a sea passage. He said that heavy metal products, including heavy items of metal, such as plates, bars, pipes etc are particularly prone to the risk of cargo shifting if they are inadequately secured.

*(iii) Weather Conditions En route*

81 In the Joint Memorandum, the group of experts for both sides accepted that whilst there are limitations, they are agreed that the reports from Singapore Meteorological Services ("the Met Office") represent a reasonable basis for evaluating the most probable prevailing weather conditions at the time. The limitation referred to concerns atmospheric conditions. The Met Office would not be able to tell if there was thunderstorm or rain in a particular location. The details recorded in the deck log and the assessment of the Met Office are not at variance, except for the actual wind direction. Throughout the voyage the tug recorded winds consistently from the north, whereas the Met Office indicated that the wind was from the west and southwest quadrants.

82 The deck log recorded the wind throughout the voyage as being force 3 to 4 which on the Beaufort scale equates to wind speeds of between 7 and 17 knots, which is slightly below that assessed by the Met Office. The tug did not record any winds throughout the voyage above force 4 (maximum 16 knots), which is defined as a "moderate breeze". The probable maximum height of waves associated with this Beaufort force is 1.5m, although at time the logbook records the range 1.25 to 2.5m. At no time had the tug recorded sea conditions above 2.5m.

83 The deck logbook of the tug recorded that the weather was generally cloudy throughout the voyage, with rain in certain periods. There are no records that the tug/barge experienced any thunderstorms. RG agreed that from the deck log, rain occurred for 30% of the time (duration of the voyage) up to 0600 of 4 December 1999. In other words, for 70% of the voyage the weather over the barge was fine.

84 The weather actually experienced during the voyage was more favourable than normally expected at that time of the year. The route taken by "ET Ocean IV" was the recognised "alternative route from Singapore to Hong Kong during the North-East Monsoon period for low powered steamers." The worst weather occurred on 1 December 1999. At mid-day on 3 December, the tug altered course and proceeded on a new course tangential to its original charted route to Sibiu. The alteration would have placed the wind on the stern of the barge, and served to minimize any rolling motion of the barge. The wind was at that time force 4. The tug and barge remained on this course until the loss of the cargo. Subsequently, at the time of the loss the wind/sea had moderated to force 3.

85 Haryomo accepts that in a small tug like his any movement would be amplified in the engine room. He also accepts that he is not trained to assess the weather conditions. His descriptions do not equate with the details recorded by the master and chief mate in the deck logbook, nor do they bear any resemblance to the weather conditions recorded by the Met Office. I attach little weight to the Haryomo's evidence that there was thunderstorm activity en route. Usually shower and thunderstorm activity would give rise to strong winds locally and increase wave height. But the prevailing weather and sea states were not as he described.

*(iv) Ingress of water, Overtopping and Accumulation of water*

**(a) Low freeboard**

86 The freeboard on departure was: forward port 1.28m, forward starboard 1.48m, aft port 0.68m and aft starboard 0.88m. The barge was loaded to its tropical marks, with a free board of only 1.07m. When the barge departed Singapore, she was trimmed by the stern and with a slight list to port.

**(b) No. 7 port tank**

87 No. 7 port tank was found filled with water on her return to Singapore. It is Hua Seng's case that the tank was likely to have flooded during the voyage. If that were so, it would have the effect of progressively reducing the freeboard on the portside at the aft end of the barge by 0.5m or less. This would have a bearing on the incidence of shipping seas on deck and water overtopping the sidewalls.

88 Hua Seng's experts are of the view that it is unlikely that no.7 port tank was filled prior to departure. RG testified that a possible and likely source of leakage is water shipped on the deck of the barge after departure from Singapore with water leaking into the tank via the manhole lid, either due to perished packing or corrosion under the lid. This, he opined, would result in a progressive increase in the heel and trim of the barge, as the tank filled up during the voyage.

89 There is no evidence before me to make a finding that no.7 port tank was filled during the course of the voyage and prior to the loss of the cargo. Hua Seng led no evidence either from Haryomo or Hoe as to the condition of the manhole cover of no. 7 port tank. No evidence of the barge's maintenance programme was adduced. There is clearly no evidence of faulty seals or a faulty lid or of any gaps or holes in the lid. There was a class survey of the barge on 25 October 1999, slightly more than a month before the voyage. China Classification Society certified the barge to be in a good condition. At the same time, there was an initial survey of the barge for an Interim Cargo Ship Safety Construction Certificate in accordance with the provisions of the Merchant Shipping (Non-Convention Ships) Safety Regulations. The initial survey showed that the condition of the hull, machinery and equipment were in all respects satisfactory. An Interim Load Line Certificate was issued by China Classification Society. This would imply compliance with regulation 18 of Merchant Shipping (Load Line) Regulations, which stipulates that manholes are to be watertight.

90 It is not disputed that no. 7 port tank is not a dedicated ballast tank and has no piping or venting arrangements. It is CP's experience that tanks in such barges are not infrequently used to carry ballast so as to achieve a chosen draft and trim for a tow, with the tank being filled through the manhole in the deck. QBE's experts do not accept, and I agree with them, that the absence of a fixed ballast pumping system or air pipes could be taken as evidence that the barge was not designed to accept ballast in its tanks. The evidence is that the tank remained structurally intact and watertight throughout the voyage.

91 RG accepted in cross-examination that even if a tank is not designated as a ballast tank, the tank could nonetheless be used as a ballast tank. He also accepted that if cargo was already loaded and lashed, it is probable that the master would use an empty tank as a ballast tank to trim the vessel rather than adjust the cargo already loaded on board. He would not discount the possibility that no. 7 port tank could have been filled prior to departure. CP said that from his experience, HSS operational personnel would have likely filled the tank. I accept his evidence for two reasons: (a) the pseudo deck was created on the instructions of Ang who did not provide Low with the barge's stability information and (b) the barge would have to be trimmed after she had to take more steel plates than originally intended, a fact known to HSS. Under the charterparty, the master was to supervise the stevedores. The absence of a deck log entry of water in no. 7 port tank is neither here nor there. CP pointed out that there was a dearth of information in the deck log about the tow.

92 It seems more probable than not, and I so find, that no.7 port tank was filled before departure from Singapore. Consequently, there was no progressive reduction of the freeboard by 0.5m or at all on account of water in no. 7 port tank.

*(c) Accumulation of water*

93 As to the source of accumulation of water in the cargo enclosure, Hua Seng's experts considered ingress of water through gaps under the sidewalls and doors and overtopping waves during 3 December 1999 and during the early hours of 4 December.

94 Hua Seng argues that in the circumstances of the case, an accumulation of water was possible even though Hua Seng is unable to adduce direct evidence that there was in fact accumulation of water. Its experts accept that it is very difficult to determine and they do not know the exact quantity of water accumulated within the barge as there are simply too many unknown factors. There is uncertainty about exactly how much water would have been required to cause a failure of the sidewall. However, by deduction, the collapse of the port sidewall, so the argument runs, is indicative of a sufficient quantity of water present in the barge at the material time leading to the loss of the cargo.

95 I would mention that the quantity of water Hua Seng's experts have in mind is certainly more than a few bathtubs of water. According to EW's calculations, with steel plate and equipment shift of 0.264m, the minimum quantities of water in the cargo enclosure that would lead to stanchion failure are 575mt, 520 mt and 480 mt in sea states of 1.5m, 2.0m and 2.5 m respectively. With 2m equipment shift and 0.264m steel plate shift, the quantities of water in the cargo enclosure that would lead to stanchion failure are 420mt, 375 mt and 345 mt in sea states of 1.5m, 2.0m and 2.5m respectively. In 3m equipment shift condition, he found that the barge would encounter a stability problem before it could entrap 400mt of water.

96 EW in his report considered the loading forces on the stanchions induced by the cargo weight and barge motions in the various sea states encountered (height of seas 1.5m, 2.0m and 2.5m) and in the "Dry" and "Wet" conditions. His conclusion is that in the "Dry " state scenarios, and in view of the tight stowage of the steel plates in the form of a pseudo deck, the stanchions would not have failed. He said:

"In the "Dry State" scenarios, even assuming the worst case situation i.e. the most adverse weather condition with significant wave height of 2.5m and equipment shift of 3 metres to port, the maximum loading force is only 1392 mt (38.7mt per stanchion) from its maximum combined heel and roll angle of 14.3°. This would not be sufficient to break the stanchions. The fact that the stanchions and sideboard were sheared off completely from the portside suggests the presence of additional forces. In our view, this is attributed to the effects of water present on the barge's deck."

97 EW's view is that water would have accumulated within the sidewall enclosure and a static heel would have developed to port. He considers it possible that small cargo shift(s) and/or flooding of no.7 port tank would have contributed further to the static heel. Once a significant static heel had developed waves overtopping would have been probable, further increasing the static heel. AS agrees that if water had accumulated within the barge this would be a source of constant loading, as it would have induced a heel in the barge.

98 AS's view is that there is no evidence of water accumulation on deck. And there could not have been an accumulation of water, as the water would flow out of the cargo enclosure. He accepts

that it is possible to speculate that some small accumulation might have occurred, but in the relatively good weather conditions that existed it is unrealistic that this could have been anywhere near the quantities required to cause sidewall failure. Moreover, he disagrees that 100 tons of water accumulation would have increased the angle of heel by 0.84°. AS's calculations using a computer programme GHS indicate that 400 tons accumulation would be required to increase the list by 1.17° and that the list would increase by 0.64° with 200 tons accumulation. Such an accumulation, even if it were assumed to have occurred, would not according to AS assist in explaining the loss.

99 It is common ground that the sidewalls are not watertight. The sidewalls were welded intermittently to the deck resulting in gaps under the sidewalls. There were also gaps in the removable sections of the side doors. It is not in dispute that water may enter and flow out under the sidewalls or the through openings in the side doors that would be closed during the voyage.

100 RG has put forward the theory that when waves washed over the side decks and against the sidewalls water would have flowed through gaps in the sidewalls and then towards the stern, where water could have flowed out through gaps until eventually they become blocked. Without drainage openings fitted on board, shipped seas would inevitably build up within the cargo enclosure. He stated:

"[G]iven the relatively low freeboard of the barge, it is very likely that seas were being shipped on the deck of the barge with the water level rising above the deck and up the sidewalls throughout 3 December 1999 and during the early hours of 4 December 1999. The sidewalls were not watertight, water could flow into the sidewall enclosure through gaps in the structure." ... "[T]he evidence supports an accumulation of water within the sidewall enclosure on the deck of the barge. As the barge was trimmed by the stern and listing slightly to port on departure from Singapore, the water would have accumulated at the aft end on the port side. As the water level increased within the barge, the draught and the amount of stern trim and heel to port would increase, thus lowering the freeboard. This would increase the frequency of seas being shipped on deck and up the sidewalls. The rate of accumulation would also increase as the barge sank into the water."

101 He said that with a low freeboard, in 1.5m, 2.0m or 2.5m significant wave heights, the shipping of green seas onto the deck of the barge is to be expected. In order to calculate the frequency of seas being shipped on the deck of the barge, RG used the Noble Denton post-processor computer programme RELMOT (RELative MOTions) to calculate the probability of points along the barge deck being immersed in water in 1.5, 2.0 and 2.5m significant wave heights. RELMOT calculates the probability of a wave exceeding the still water clearance given the motions of a vessel derived from another computer programme, VEMAS, the sea state defined by the significant wave height and the wave period.

102 He testified that his calculations showed that in a sea state of 1.5m, the barge deck would have immersed at the aft end in the order of every 30 to 40 seconds. In 2.0 and 2.5m wave heights, the frequency of immersion of the barge deck whether aft, amidships or forward is in the order of 15 to 30 seconds. RG said that from the results of the RELMOT analysis, the barge would have been shipping seas very frequently on the deck of the barge throughout 3 December and during the early hours of 4 December. Water level would also be expected to rise above the deck and up the sidewalls. Therefore, entry of seawater into the cargo enclosure through any gaps in the sidewall is likely. These calculations, he stated, support his view that it was very likely that seas were shipped very frequently on the deck of the barge in the weather conditions that were encountered.

103 The rate of flow of water into the cargo enclosure could be substantial and not a dribble. To

illustrate this, he calculated the rate of flow depending on the size of the opening and height of the water above the opening. They range from size opening of widths of 5mm, 10mm and 15mm to total lengths of 0.5m, 1 m, 1.5m and 2.0m. The results were plotted as a series of graphs to show the flow rate through the openings in cubic metres per hour. For a gap 5mm wide, with a height of water of 0.1m and total length of the gap was 0.5m, the inflow rate would be about 9 cubic metres per hour (ie. 9 tons per hour). RG said the calculations were merely illustrative to give an idea of the order of magnitude of the flow of water entering the cargo enclosure. It is however theoretical in that the calculation is based on a static column of water. RG acknowledges that everything else being constant, the amount of water ingress would be less for a passing wave than it would be for a static column of water.

104 From all the results AS has seen and the sea states encountered, his view is that for long periods of time the deck would not be immersed. He agrees that some water would have entered through the gaps, but he is of the firm opinion that there could not have been an accumulation of water. CP is of the same view. He would expect that some water would come onto the deck of the barge but only occasionally.

105 AS said that RG had calculated the frequency waves would reach the deck and not, so to speak, shipped onto the side decks of the barge. He explained that what was computed were occasions when wave crests reach or exceed a point. In reality the situation is different. His interpretation of the RELMOT analysis is that for every 15 seconds there is a wave at the deck edge and this wave would not overtop the deck edge and reach the sidewall. He explained: "Even assuming the shortest frequency of 15 seconds the side deck would be immersed only intermittently, and it is to be anticipated that for much of the time it would be free of water. The level of water relative to the barge would constantly vary with the passage of wave crests and troughs. Thus, what is computed are occasions when wave crests reach or exceed a point. During the passage of one wave cycle that reaches the deck there will be times when the deck is immersed and when it is not."

106 The same comments apply to the rate of flow of water through an aperture or gap. The results presented by RC in terms of tons per hour were made on certain assumptions. They assumed that the gap was continuously immersed to an assumed constant depth. In AS's view, deck immersion would have been intermittent and not continuous. The depth of water would vary and not remain constant.

107 In cross-examination, RG accepted that the RELMOT calculations depicted a worst-case scenario because of certain assumptions. It is not a forensic analysis of what had happened. The assumptions are: unidirectional waves. They are unidirectional in that all waves are parallel to each other and entirely in the same direction. In reality, this would not occur because in these waters there would be a spread of the waves. Another assumption is that the barge moves in one direction when in reality it would yaw and tend to veer and sheer and not move in the same direction as the tug. A further assumption is that the barge deck is not factored in. The RELMOT programme ignores the barge in its calculation. The barge in reality would distort the wave.

108 In cross-examination, RG accepted that if the bottom steel plates were flushed against the sidewall, they would act as a barrier to ingress of water through gaps underneath the sidewall.

109 RG's observations on likely seas being shipped on the deck are for the period from 3 December 1999 to early hours of 4 December. Before the tug altered course at 1200 hours on 3 December 1999, the waves were on the leeward side of the barge i.e. the barge was in south-westerly prevailing seas. At that time the barge was heading generally on an easterly heading and would therefore be approximately 45° to the sea with waves on the starboard stern quarter. After alteration in course,

the waves would have been approximately 20° from the port stern quarter.

110 At 0800 hours on 3 December 1999, the significant wave height was 2.5m for one hour but winds dropped and thereafter improved. By 0001 hours on 4 December significant wave height was 0.5-1.5m. The Chief Engineer noted that after alteration of course, the tug and barge were riding the sea much better. He said that the tug was shipping sprays and seas. The barge which was bigger, rolled and pitched slightly and at times moderately whilst still "regularly shipping spray and some seas".

111 Experts for both sides agree that if water could get in, it could drain out as well. The experts for Hua Seng however say that it is a question of rate of inflow and outflow. As outflow is lower, accumulation of water would occur. RG said that in essence water would accumulate within the barge because of the pressure of the wave outside, it would have passed through any gaps in the sidewall. Once inside the walled enclosure, it would have dissipated across the deck, but would not have flowed out at the same rate until some "head" of internal pressure had accumulated within the walled enclosure. Further, the presence of any debris inside the walled enclosure would have contributed to the accumulation by obstructing the gaps and preventing outflow. Without drainage openings fitted on board, it would be difficult for water to drain out.

112 AS maintains that water would have flowed out of the cargo enclosure at a greater rate, through a wider area, than it could have entered. AS noted that the barge was laden with cargo and water would flow around the cargo and the presence of cargo may assist the outflow. The presence of cargo would increase the depth of water and hence build up the pressure thereby assisting in outflow. He did not think that the presence of scuppers and drain holes in the barge would assist. They would allow water to go through both ways. I agree with AS that it is unlikely that a progressively worsening list proposed by Hua Seng's experts would have gone without remark by the tug if it had developed.

113 The suggestion that water entering the cargo enclosure may have been progressively blocked by debris such as loose scales or remnants of previous cargo is not substantiated. In my view, there is no direct or circumstantial evidence to suggest that the gaps under the whole length of the sidewalls or any other gaps became blocked.

114 RG in his report pointed to a photograph of a blue canvas sheet that could not be pulled free by hand. He concluded that the material must have been wedged in with some force when water drained out of the cargo deck from gaps between the base of the sidewalls and the cargo deck. He regarded it as a piece of evidence supporting his view that there was an accumulation of water within the sidewall cargo enclosure. I am not persuaded that the blue canvas material is evidence of blockage. I prefer the explanation of AS, as it is plausible.

115 AS disagrees with RG's conclusion that the blue canvas must have been wedged in with some force when water drained from the cargo deck. AS agrees that in principle the blue canvas may be drawn through a gap by a flow of water and that the blue canvas drawn through a gap is consistent with a flow through the gap. I agree with AS that it is not possible, in principle, to draw any conclusion as to the manner and, in particular, the velocity of the flow by which it was drawn in, simply from an observation of the difficulty of pulling it out again. The possibility that the blue canvas might have been deliberately pushed through the gap as a means of securing it in place, prior to the departure of the tow should not be ruled out. To that extent, I agree with AS that the blue canvas wedged between the base of the sidewalls and cargo deck is not evidence of blockage. In AS's view if it could be taken as evidence of anything it is that it is not inconsistent with an outward flow of water.

116 RG's view is that with the barge trimmed by the stern, any sea water entering the cargo enclosure would flow towards the stern. His view is that accumulation would be at the stern overall on the port side. This is because of the original stern trim and slight list to port on departure from Singapore. There is no evidence that the water level in the barge increased to an extent sufficient to increase the heel to port. In theory, any accumulation of water at the stern on the port side would increase the initial port list. RG agrees in cross-examination that water accumulating on the starboard aft of vessel would not result in a port list. So an important consideration is the location of the accumulation, if any. This is not known. If at all, any accumulation could be near the blue canvas that was wedged in a gap under the starboard sidewall towards the aft of the barge, but this would not result in a port list.

117 I agree with AS that the stern trim and list to port was only slight. AS said: "if, in the very unlikely event gaps at the stern became blocked and the water level had risen, it would have moved progressively forward bringing fresh gaps through which it could flow. In any event the motions of the barge would have meant that any water flowing in through a gap would not necessarily flow continuously aft as the attitude of the deck would have been constantly varying." He concludes that in his opinion, water entering through gaps would have flowed out again. Accumulation would have been most unlikely. The points he made (which I find valid) were not countered. In the relatively good weather conditions that existed, it is unrealistic that any accumulation could have been anywhere near the quantities (in terms of hundred of tons) required to cause the stanchions to fail.

118 Turning now to water overtopping the sidewall in the weather conditions experienced, this question is dependent on there being a reduction of freeboard in the course of the voyage. RG accepts that if there was no change in the departure drafts of the barge, green seas washing over the top of the sidewalls is very unlikely and could be excluded when sea state is between 1.0m to 2.0 m. This sort of sea state was experienced according to Met. Office reports from 0600 of 1 December to 4 December except for one hour on 3 December when the significant wave height was 2.5m. Overtopping in a 2.5m significant stern quartering sea could be discounted given the limitations in the accuracy of the overtopping calculations highlighted earlier.

119 On an overall assessment of the evidence (or lack of it), the reports of Hua Seng's experts in my judgment have been successfully assailed. I am persuaded that Hua Seng has not established on a balance of probabilities that water progressively accumulated within the walled enclosure of the barge.

### **Failure of the Sidewall**

120 In October 2000, EW inspected and found the starboard sidewall well made with connecting welds in generally very good condition. EW was not cross-examined on his observations and it was argued that it is therefore unchallenged evidence that the port stanchions and their connecting welds were well made and in good condition.

121 I disagree with Mr. Bhandari's submissions that it is reasonable to assume that port sidewall and their connecting welds were of the same good order and condition. It was on this very assumption that EW's calculations on static loading were put forward. Uneven wear and tear is not unusual. RG recognized this and he said so in the context of defending his contention that no.7 manhole cover may show different signs of wear and tear than the rest of the manholes that were in good order and conditions. Hua Seng did not question Hoe or the Chief Engineer nor were any documents discovered on this aspect. The sidewalls are not part of the registered construction of the barge and not subject to regulatory survey. The sidewalls do not contribute to providing traverse restraint. No evidence was led on when the sidewalls were put up or replaced and history of previous

damage, if any. The construction drawings of the wall were not discovered. I agree with the observations of QBE's experts that there are uncertainties regarding the actual strength of the port sidewall. The precise size and condition of the welds on the port sidewall are unknown. CP testified that the welding of the stanchions are not subject to survey, and "it would be irregular to ally the strength of the steel sections of the stanchions with that of the welds connecting them to the deck." Therefore, in my judgment, the failure of the sidewall in the circumstances is not at all indicative of the presence of additional loading forces that could only be reasonably explained from the accumulation of water within the cargo enclosure.

122 QBE has raised improper stowage as a probable cause of loss against which the goods were not insured. There is no obligation on QBE to prove, even on a balance of probabilities, the truth of this alternative case. This is because the burden of proving, on a balance of probabilities, that the goods were lost by an insured peril is and remains throughout on Hua.Seng. See *The "Popi M"* [1985] 2 Lloyd's Rep. 1 at 3; *Templeman, Marine Insurance* at 200. Where the circumstances suggest that improper stowage could be a probable cause of loss, this would be enough to leave the court doubtful as to what is the real cause of the loss. To that end, it follows that Hua Seng has failed to prove its case.

123 What is proper stowage will in any particular case depend on all the circumstances, including the nature of the particular goods and the conditions of weather and of seas likely to be encountered on the voyage as something to guard against. I accept the views of QBE's experts that if the goods were properly sea fastened for the voyage, they could not have shifted in the weather conditions experienced, which was not bad for that time of the year.

124 On the evidence narrated and analysed in earlier paragraphs, I find that the steel plates and other goods were not properly or adequately restrained. The stowage was not proper and careful because Low failed to secure properly the goods so that they would not break loose and shift during barge movements.

125 In addition, steel-on-steel provides a very low level of friction especially when wet. Inadequate friction is a feature of the casualty. The failed sidewall may be identified as contributory. Improper stowage as an alternative cause of the loss is probable.

### **Washing overboard, an insured peril**

126 Even on the loss scenario advanced by Hua Seng, I am unable to agree with Mr. Bhandari that an extended meaning should be given to the peril "washing overboard". He argues that the term "washing overboard" covers Hua Seng's situation where the goods together with the water in the cargo enclosure fell over the side once the sidewall collapsed. In a sense the cargo was carried (i.e.washed) overboard by water. QBE, he contends, is taking a formalistic stand on the precise words of the specific peril sued upon, and the court ought to lean in favour of an interpretation that would not render the policy otiose.

127 The submission is misconceived. Firstly, what happened after the barge lost the sidewall and port cargo could well have been due to barge motion rather than the action of water that carried overboard the goods. AS said that whether the barge heeled immediately thereafter to starboard or port (which would cause sliding of the remaining steel plates) would depend on the motion of the barge at the relevant time. Other factors such as amount of cargo shift and any heel in the barge towards port induced by an accumulation of water, if any, would also have to be considered.

128 Secondly, the loss scenario advanced appears to fall into occurrences typified as "perils of

the sea". By way of illustration, in *The Stranna* [1938] 1 All ER 458, the vessel heeled temporarily as a result of the negligence of stevedores loading the vessel. The loss of the cargo, which shot overboard, was held to have been occasioned by "perils of the sea." The term "perils of the sea" no longer appears in the ICC (B) and (C) clauses. The occurrence covered by the words "washing overboard" is outside the following range of occurrences: (a) deck cargo that falls overboard due to breaking of lashing during heavy weather; (b) loss of cargo overboard due to violent rolling of the ship or by sudden listing of the ship and (c) damage to cargo caused by shifting in heavy seas.

129 Susan Hodges, *Law of Marine Insurance* stated:

"The fundamental distinction between "jettison" and washing overboard lies in the fact that the former is a deliberate act committed by man throwing cargo overboard, whilst the latter is an act of the sea...".[p198]

130 O'May, *Marine Insurance and Policy* stated:

"It should be noted that the cover [washing overboard] does not extend to loss overboard caused by the ship merely rolling in heaving weather or by the sudden listing of the ship. The assured is required to show that the goods were ... washed overboard." [p181]

131 Kenneth Goodacre, *Marine Insurance Claims (3<sup>rd</sup> ed)* stated:

" Loss of cargo over the ship's side in bad seas can only be the subject of a claim if it is actually washed overboard, not if it simply breaks loose." [p264]

132 The term "washing overboard" is defined in the *Dictionary of Marine Insurance Terms and Clauses* by Robert Brown as a peril

"restricted to loss of cargo which is washed over the side of the ship by waves that sweep the deck during heavy weather..It does not embrace 'loss overboard' from any other cause; such as deck cargo which breaks loose during heavy weather and falls overboard."

133 The construction of the term adopted in these four works and indeed others is plainly correct. In ordinary speech, the constituent of "washing overboard" is the action of the sea in heavy weather where the force of the waves pushes or sweeps the cargo overboard. Looking at the term in its context in the list of perils insured against, it is distinct and separate from the risk of jettison and the others. It is also distinct and separate from "perils of the sea" under an all risk policy where for higher premium a wider and better coverage is provided. An extended meaning canvassed by Hua Seng would blur and render uncertain the various types of coverage on offer and for which different premium considerations apply. Whilst the loss might have been covered under an ICC (A) policy, what is clear here is that the loss was not caused in the way required by the specific insured peril sued upon.

## **Conclusion**

134 In my judgment, the policy simply does not provide coverage for the loss. The action is therefore dismissed. On the question of costs, QBE is awarded 90% of the costs of the action. Wasted costs in this case occasioned by QBE in the conduct of the proceedings have to be borne by it.