Norwegian arbitration award - ND-1989-225

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Key word(s)	(89-34) Transport liability (Sections 118 and 168 of the Norwegian Maritime Code, cf. Section 36 of the Norwegian Contracts Act) - cargo loaded on the deck of a pontoon - full disclaimer of liability for deck cargo - the tug's features.
Summary	A shipowner agreed to transport two specially manufactured container cranes from Finland to Saudi Arabia as deck cargo on its own barge (Giant 14) and engaged a tug (Eduard) from another shipowner to execute the tow. The tug and tow capsized in rough weather while in the English Channel. The tug sank and the cranes were a total loss after the barge ran aground. The contract of carriage stipulates any risk to deck cargo is borne by the charterer and "the carrier not being liable for any loss or damage of whatever nature and by whomsoever caused." The owner of the cargo has claimed compensation for its loss and asserts that the disclaimer of liability must be disregarded and that the accident was the result of the tug having inadequate bollard pull and other deficiencies. - The Arbitral Tribunal finds in favour of the shipowner. An Agreement for towing cargo on barges is deemed to be a freight agreement that is subject to the rules pertaining to the carriage of goods in the Norwegian Maritime Code. Section 168, paragraph two of the Norwegian Maritime Code permits the disclaimer of liability for deck cargo and there are no grounds in either the general contract rules or Section 36 of the Norwegian Contracts Act for disregarding the disclaimer of liability when there was no intent or gross negligence on the part of senior employees at the shipowner or the company that owned the tug that was assigned to execute the transport. It was a clear precondition that the charterer would take out transport insurance. - The Arbitral Tribunal finds that the accident was caused due to Eduard having insufficient bollard pull. However, there was no breach of the guarantee that the vessel had "at least 41 tons bollard pull" because this statement must be interpreted as a reference to "maximum bollard pull" achieved at a certain amount of engine overload over brief periods. The accident was also not caused due to the tug having other defects and a clause that a tug with "sufficient horsepower" was to be used was of no consequence when the agreement presupposed that Eduard was to be used with its existing features.
The proceedings	Norwegian arbitration award of 1 December 1989.
Parties	1.Omsesidiga Försäkringsbolaget Sampo and 2. Kone, OY (Attorney Haakon Stang Lund) versus Harms Bergung GmbH (Attorney Gunnar Sørlie) with intervener, J. Johannsen & Sohn (Attorney Jan-Fr. Rafen).
Author	Members of the Arbitral Tribunal: Professor of Law Sjur Brækhus, Supreme Court Judge Jan F. Halvorsen and Supreme Court Attorney and Master of Law Ole Lund.

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1. Introduction. The proceedings

Pursuant to the contract of 19 December 1982, plaintiff no. 2, the Finnish industrial company Kone OY ("Kone"), constructed two large container cranes at its workshop in Hangö for the port authorities in Giza, Saudi Arabia. The cranes were to be delivered carriage paid to Gizan, and Kone was therefore responsible for organising and paying for transport and thus carried the transport risk in relation to the buyer.

In an "Agreement" of 13/19 December 1983 (the "contract of carriage"), the defendant, Harms Bergung GmbH, Hamburg ("Harms") agreed to execute the above-mentioned transport with its seagoing pontoon, GIANT 14, towed by the tug EDUARD, which was owned by the intervener, J. Johannsen & Sohn, Lübeck ("Johannsen"). The arrangement between Harms and Johannsen was regulated in a Towage Contract dated 3 January 1984.

The tug and tow departed Hangö on 30 January 1984. After having called in at Kristiansand on 8-10 February and Vlissingen on 4-16 February, on 20 February the tug was located at the western part of the English Channel. The weather was rough, with storms and high seas. At approximately 02:10 on 21 February, EDUARD began to heel strongly and this increased until the vessel was dragged under by the tow. The captain and 5 other members of a total crew of 10 died in the accident. GIANT 14 and the cranes drifted towards the French coast and ran aground there at 11:40 on 22 February after a failed salvage attempt. After a period of time, GIANT 14 sprang a leak, took in water and capsized, resulting in the loosening and total loss of the cranes.

As the freight insurer, plaintiff no. 1, Ömsesidiga Försäkringsbolaget Sampo, Helsinki ("Sampo"), has compensated Kone's loss of the cranes with an amount of approximately FIM 41 million. In addition to this, Kone suffered a loss of approximately FIM 1.4 million as a result of the accident. Sampo and Kone have claimed compensation from Harms for these amounts. However, Harms has rejected any liability and the dispute has therefore been referred for a decision by arbitration in accordance with the "Addendum" to clause 18 of the contract of carriage which states the following:

"General average and arbitration to be settled in Oslo and Norwegian law to apply."

As arbitrators, the parties have jointly appointed the undersigned Professor of Law Sjur Brækhus, Supreme Court Judge Jan Frøystein Halvorsen and Supreme Court Attorney and Master of Law Ole Lund, with the first-mentioned being the chairman of the Arbitral Tribunal.

The capsizing of EDUARD was the subject of an extensive investigation ("Untersuchung") by Seeamt Lübeck. Public court hearings were held from 13 to 19 June 1984, with the questioning of a number of witnesses and experts, including four of the crew who had survived the accident. Seeamt's report, a 90 page document, was released on 20 September 1984. The overview of the facts in section 2 below is largely based on the factual information in this Seeamt report without special reference to sources.

2. Facts of the case

2.1. *The contract of 19 December 1982 between Kone and the port authorities in Gizan* concerned the manufacture, delivery and installation of two "multi-purpose" cranes with accessories and reserve parts, in return for payment of 24 million riyals, equivalent to FIM 42 million. Kone also agreed to provide "operation maintenance and training services" for 3 years in return for a separate payment of 1,080,000 riyals. The delivery date, which was originally set at 450 days calculated from "the date of the contractor's receipt of the authorisation to supply as per the delivery schedule", was extended by 45 days to 19 April 1984 in "Variation order no. l" to the contract, dated 13 June 1984.

The cranes were listed as each weighing 613 tons, with a total height of 68 metres and a centre of gravity height of 21.4 metres. In addition to this were 2 silos, each weighing 45 tons, with a total height of 13 metres and a centre of gravity height of 9.5 metres.

2.2. The negotiations for the contract of carriage

Kone obtained tenders for the transport of the cranes from several firms. Harms did not receive a request, however expressed interest, and in a telex of 26 April 1983 offered to carry out the transport with its pontoon GIANT 14 "together with a suitable tug of our choice", in return for a lump sum payment of DEM 950.000,

excluding Suez Canal expenses (estimated at DEM 333.000). In its reply of 27 April 1983, Kone stated that GIANT 14 "may be ok", but asked for the pontoon's "rolling/period" which had to be more than 12 seconds. Kone also requested "a total price Suez included". The following was also stated:

"inform us also about the tug you have in mind, (bollar pull and length) in which class is the barge and what is allowed deckpressure."

In a telex of 29 April 1983, Harms responded as follows:

"1. as the transport has to be carried out during the winter period we have of course to expect bad weather conditions during the passage.

therefore, we cannot guarantee that rolling periods might not be less than 12 sec. (demurrage for such delays to be agreed upon). however, if weather/sea conditions are deteriorating, towage convoy would have to change course (keeping head to sea) in order to improve rolling conditions.

under most unfavourable conditions we expect rolling period of abt 7 sec. and consequently transversal acceleration of abt 2.0 Bq/g at mentioned height of centre of gravity.

2. type of tug which will be used: 2.200 ihp with cort nozzle 27 tons bollard pull, bunker capacity 72 tons 223 grt estimated duration of voyage hanko/gizan = 32 days
3. regarding expenses for suez canal would have to make further investigation with canal authority if total basic price including canal dues of lumpsum dm 1.300.000,- is furthermore of interest."

The vessel described under point 2 was AXEL, another of Johannsen's tugs. Kone clearly did not consider this strong enough, because in a telex to Kone of 18 August 1983, Harms made the following offer:

"referring to our telephone conversation we offer transport with a more powerfull tug of 41 to. bollard pull. 220.000 litres bunker capacity at additional expenses of dm 110.000.-."

After further exchanges of technical data, including about the cranes' "wind area" (Kone's telex of 19 August), the parties agreed to a meeting in Hangö on 5 September 1983, cf. Harms' telex confirming this of 13 September 1989.

2.3. Contract of carriage of 12/19 December 1983.

Harms' standard printed template was used for the "Agreement", with certain omissions, and with an "Addendum" with 18 machine written clauses. The following provisions are of interest in this dispute:

According to clause 1 of the "Agreement," the transport was to be carried out with "seagoing pontoon GIANT 14" and with "tug 'EDUARD': dimensions as per specification ab. 41 t bollard pull". In the "Addendum", which, according to the introductory paragraph takes precedence to the provisions in the "Agreement', a somewhat different description is provided of the tug, cf. clause 1, which states:

"The tug has at least 41 tons bollard pull or more, towing-winch with rope over 600 meter and spearerope all with accepted certificates according to bollard pull and class. ..."

The freight, including expenses for the Suez Canal, was set at DEM 1,390,000, of which 50% was to be paid "non-returnable" "upon signing B/L", and the remaining 50% was to be paid "on passing Suez Canal" and "is earned in proportion to distance covered between loadport and discharging port", cf., clause 5 of the "Agreement" and clauses 3 and 13 of the "Addendum".

With regard to transport liability, the following was stated in Harms' offer in the telex of 13 September 1983:

"- b/l will be signed and other conditions as per b/l (hague rules) will be applicable if not contrary to our special agreement with deck remark: "carried on deck without owner's liability howsoever caused, cargo will be insured at your risk and expenses by you".

The contract is regulated somewhat differently. The "Agreement" contains the following liability clauses:

"14. CARGO and other LIABILITIES

Cargo to be shipped on deck of the pontoon at company's risk, the carrier not being liable for any loss or damage of whatever nature howsoever and by whomsoever caused.

If the pontoon is provided with a cargo-hold, the carrier only to be liable for loss of/or damage to cargo or part thereof carried under deck in the pontoon's cargo-hold, if such loss or damage has been caused by the carrier's personal want of due diligence to make the pontoon seaworthy and fit for the voyage at its inception or by any other personal act or mission or default of the carrier. The carrier not to be liable for any other damage to or loss of such under deck cargo or part thereof, whatsoever, howsoever and by whomsoever caused.

Any liability of the carrier under this contract shall be limited to and shall in no circumstances exceed, the amount of freight payable or paid to it under this contract.

15. The carrier shall not in any circumstances be liable for any loss of or any damage to any equipment or materials or other property of the company, its servants, agents or of third parties when loaded, stowed or carried in or on, or discharged from or present in the vicinity of the pontoon, howsoever and by whomsoever such loss or damage be caused.

The company shall indemnify the carrier against any claim by servants, agents or third parties arising as a result of loss of or damage to such equipment or materials.

16. No liability shall attach to the carrier for any damage or loss of whatever nature (including death and injury) caused to the company, servants, agents, subcontractors or others acting on the company's behalf (including their servants and agents), whether or not on board the pontoon and/or tug, howsoever, and by whomsoever such damage or loss be caused. The company ensures and undertakes that no claim for such damage or loss shall be made against the carrier by such person or party, and the company shall hold the carrier harmless and indemnify the carrier against any such claims or against any liability if made or pretended by such person or party despite the provisions of this clause."

2.4. The barge and tug

GIANT 14 was a steel barge without its own propulsion machinery that had been constructed in 1969. It was 76 metres long, 24 metres wide and had a depth of 3.58 metres, was classified 100 A4 by Germanischer Lloyd (GL) and had a speed certificate for "Grosse Fahrt" provided there was a tug with sufficient power. Prior to departure to Hangö, rails were welded onto the pontoon to enable the container cranes to be driven on board.

The tug, EDUARD, was constructed in 1961 for Unterweser Reederei, and sailed for this company under the name ROTESAND until it was purchased by Harms in 1971 and given the name SALUS. In 1973, Harms sold the vessel to Reederei Petersen & Alpers, who renamed the vessel HANSEAT and made various conversions in 1974. Among other things, a new and stronger capstan for the tow lines was installed, and the hull was extended by 3 metres. The tug was then purchased by Johannsen in 1982 (delivery in 1983) who renamed it EDUARD.

EDUARD was equipped with two Deutz-Marine diesel engines, which together provided engine thrust of 2,400 BHP and had a capstan with two drums for tow lines, located on the aft deck. One line was 950 metres in length, while the other was 1,200 metres. The capstan drums were connected to an electrical motor by a gear. The line that was in use during the tow was moved forward from the drum to a wheel arrangement on the aft side of the superstructure and from there towards the aft side over two transverse braces and out over the stern. The ability of the tow line to shift athwartships over the stern could be restricted in a number of ways: Using bollards located on the stern on each side of the line with a gog wire, i.e. a wire attached to the tow line aft of the drums and passed down to a separate "gog winch" and/or through two slings "Beistopper", attached to the tow line and attached to each side of the deck.

While under tow, there were two different methods of preventing the tow line from unwinding, and a combination of both these methods could also potentially be used: Firstly, using band brakes that worked directly with the relevant wire drum. These brakes had to be engaged and released mechanically by hand. Secondly, by engaging the gear. Provided that the brakes were not applied, by engaging the gear the tow line could be slackened or tightened while the vessel was moving, something that can be necessary when manoeuvring a towage convoy in narrow waters. However, engaging the gear would not provide any definite braking effect. If the strain on the tug line is strong enough, the line can pull the electrical motor with it. In extreme instances, the entire line can unwind with the risk of the electrical motor being destroyed.

Many tugs are equipped with so-called "quick release, i.e. a device that is manoeuvred from the bridge and which enables the immediate release of the tow line, such that, in a critical situation, the tug can be released from the drag the tow may be causing. EDUARD was not equipped with such a device. The tug line could only be released by a member of the crew going out onto the aft deck and releasing the drum brakes and/or disconnecting the gear.

From July until September 1983, EDUARD was at the Flender shipyard in Lübeck for class work and to have the class renewed. A new propeller with a fixed Kort-nozzle was also installed which was supplied by the company Schaffran Propeller Lehne & Co. ("Schaffran").

In December 1983, EDUARD made a voyage from Kiel to Norfolk, Virginia and from there sailed with two Victory ships in a tandem tug to Avilés in Spain. There were no problems of note during this voyage. After returning to Germany, EDUARD was sent to the workshop for various maintenance work etc. Among other things, the 4 spindles that were used when adding the band brakes were shortened by approximately 10-15 cm, while a distance piece was also inserted.

2.5. EDUARD's bollard pull

Prior to its conversion in 1983, EDUARD's bollard pull was listed at 28 tons. The purpose of installing a Kort-nozzle was to improve the efficiency of the propeller and thereby the tug's bollard pull. According to Schaffran, this type of nozzle can increase the bollard pull by 30 to 50%. For EDUARD, the company had "theoretisch ... einen Propeller-Düsen-Schub von 41.3 t, bei 10 % überleistung errechnet", cf. the company's letter of 10 April 1984, presented to Seeamt Lübeck. Since it was already stated in the telex of 18 August 1983 that Harms could offer Kone a tug with 41 tons of bollard pull, Harms had to use this calculation as a basis.

"Bollard pull" is not an unambiguous term, cf. letter of 22 October 1985 from Norwegian Underwriters Agency in Rotterdam to attorney Stang Lund. Among other things, "Bollard pull" may mean:

(l) "Maximum static pull" ("peak value"), the peak value that can be achieved over a reasonably short period at engine overload, possibly in combination with manoeuvring the helm.

(2) "Maximum bollard pull" measured at engine overload over a certain period. According to Lloyd's Register of Shipping ("Lloyd's"), this is at least 1 minute.

(3) "Steady bollard pull", used by Lloyd's, equivalent to the maximum bollard pull measured over a period of 5 minutes.

(4) "Continuous bollard pull", used by Det Norske Veritas ("DnV"), equivalent to a maximum bollard pull measured over a period of 10 minutes.

(5) "Effective bollard pull", equivalent to the bollard pull the vessel can achieve over a long period in the open sea.

The bollard pull values determined as mentioned under (3) and (5) have to be lower, sometimes significantly lower, than the values referred to under (1) and (2). This is primarily due to the fact that overloading the engines will very quickly result in acceptably high exhaust gas temperatures.

At Johannsen's request, EDUARD's bollard pull following the conversion in 1983 was measured in a test at Trave on 21 September 1983 at a depth of approximately 6 metres. The manometer that was made available to the Flender shipyard and which was adjusted by the people at the shipyard was placed on a pontoon at a distance of approximately 250 metres from EDUARD. The manometer was read by a Mr Held from Johannsen, and Flender's operations engineer Wolter was also on the pontoon. In EDUARD's engine room, the engine performance was read by a technician from the engine supplier Deutz. Engineer Wittzen from Schaffran was located partly on the pontoon (but did not himself take any readings from the manometer) and partly in EDUARD's engine room. GL's surveyor, Wohlfeil, was located on EDUARD's deck and received notifications of the observed bollard pull and engine performance from the pontoon and engine room. On 22 September, Wohlfeil presented the following "survey report" on behalf of GL:

"Auf Antrag des Eigners wurde nach Einbau einer starren Kortdüse bei der Flender Werft A.G., Lübeck, der Trossenzug (Pfahlzug) erneut getestet u. mit 41.2 ton festgestellt. Der Zug erfolgte über die Schleppwinde.

Keine Beanstandungen."

Additional information about the test was provided in the "survey report" presented by GL on 23 September that concerned the class work and installation of the Kort-nozzle. This report had the following conclusion:

"Während der Phahlzugprobe wurde längere Zeit 100 % u. kurzzeitig 110 % Leistung ausgefahren."

2.6. The towage convoy's journey: Kiel-Hangö-Kristiansand.

On 16 January 1984, EDUARD towed GIANT 14 from Kiel and arrived in Hangö on the 20th of the same month. EDUARD's captain was Jürgen Fock and on the date of the accident the vessel had a total crew of ten. GIANT 14 was unmanned.

In a “Conveyance Certificate” issued in Hamburg on 19 January, GL confirmed that “from a technical point of view ... and after reviewing the documents submitted for approval”, the classification society had no “objection to the crane transport:

PROVIDED THAT:

1) the changes, amendments and reinforcements resulting from G's review and scrutiny of the documents presented have been observed and effected to the surveyor's satisfaction,
2) conveyance is effected in tow of a sufficiently strong tug,
3) the individual parts of the voyage are started only under good local weather conditions and a favourable meteorological situation according to forecasts (the master of the tug who is in charge of the conveyance in responsible for determining the time of starting the towage),
4) In case of worsening weather conditions course and speed are changed accordingly and/or a sheltered place is resorted to if possible,
5) if during transport rolling and/or pitching of the barge increases to such a degree that acceleration exceeds the maximum permissible value indicated by the acceleration measuring device the course and/or speed are changed to decrease the rolling or pitching of the barge and/or a sheltered place is resorted to,
6) functioning and reliability of the measuring and recording system provided will be checked regularly,
7) weather and seaway forecasts are obtained and evaluated continuously,
8) the barge, cranes, and lashings are inspected by the riding crew regularly, (i.e. at least every second day provided weather condition and circumstances permit transportation of the riding crew), in any case before starting for an individual part of the voyage

   and after critical situations

   or when requested by GERMANISCHER LLOYD Head Office.

   In the event of any damages being found GERMANISCHER LLOYD Head Office has to be contacted immediately, and advice regarding further procedures to be followed is to be awaited,
9) all openings through which water might intrude into the interior of the barge are closed watertight,
10) all components and objects stored on board are fastened and lashed seaworthily,
11) the navigation lights are arranged such as to comply with the international regulations,
12) prior to commencement of the voyage, a conveyance survey is conducted by our surveyors,
13) during the conveyance no changes become necessary to conveyance conditions confirmed by the undesigned surveyor,
14) GERMANISCHER LLOYD Head Office will be informed every second day of the position, seastate and weather conditions.”

In Hangö, the cranes and the associated equipment were mounted and fastened on board GIANT 14 by Kone’s employees under the supervision of GL’s surveyor who, in an endorsement dated 29 January, confirmed in the“Conveyance Certificate” that the “Conveyance Survey” had been “effected with satisfactory result”, cf. the certificate’s proviso no. 13.

In order to comply with proviso no. 7, Harms had entered into an agreement with “Seewetteramt” in Hamburg for EDUARD to report its position to Wetteramt at 10am each day, after which Wetteramt would, at 13:30 on the same day, send the ship a weather port for the next 24 hours, including weather forecasts for a period of up to 144 hours. This took place from and including 30 January when the towage convoy departed from Hangö.

A minor accident occurred while sailing through the Baltic Sea. The electronic autopilot failed, causing EDUARD to lose control and heel 15-20°. After manual control was activated, the vessel quickly righted itself. However, Johannsen made sure that the system was monitored by specialists who came on board from Copenhagen. No further faults with the autopilot occurred during the rest of the voyage.

Another minor accident occurred on 7 February, when the towage convoy was in Kattegat. Some containers belonging to Harms and that were loaded on GIANT 14 suffered wave damage. In consultation with Harms, Captain Fock decided to call in at Kristiansand, and the towage convoy arrived there on 8 February. Here,

arrangements were made after the container accident. In addition, the towage convoy was inspected by a GL surveyor who examined the barge and fastening of the cranes etc.

At Harms' request and occasioned by the freight insurance this company wanted to take out, GL made extensive calculations to determine whether EDUARD was strong enough to execute the planned tow. The result of the calculations appears in the "Seaworthiness Certificate (Fitness to be Towed)" for EDUARD, issued by GL, Hamburg, on 10 February with the following conclusion:

"From our point of view, the above mentioned tug is sufficiently strong for the intended voyage."

2.7. The towage convoy's voyage from Kristiansand to Vlissingen.

The towage convoy departed Kristiansand on 10 February. On 11 February, when the vessels were approximately 60 nautical miles west of Esbjerg, another accident occurred. For unknown reasons, the wire that was used for the tow (port side drum) fully unwound resulting in the loss of the connection between the tug and the pontoon. The crew from EDUARD, who were placed on board the pontoon, tried unsuccessfully to pull up the unwound tow line and this therefore had to be cut. A new tow connection was then established using the wire on the starboard side drum and the voyage continued on 12 February after the gear on the drum had been engaged at the orders of the shipmaster.

The towage convoy arrived in Vlissingen in the Netherlands on 14 February. GIANT 14 with the cranes was anchored, with Johannsen's barge AXEL as "stand by". EDUARD went into port, where the following work was carried out in consultation with Fehling from Johannsen and Bronisch from Harms, both of whom had travelled to Vlissingen: A new 1,200 metre tow line was inserted in the port side drum and this was closely examined in the hope of determining the cause of the line unwinding on 11 February. However, Fehling and Bronisch were unable to find any explanation for the accident. The brake bands on the drum were shown to be undamaged and were therefore not replaced. It was considered sufficient to replace 4 bolts that connected the upper knee joint of the brakes with the structure on deck since these bolts had received some minor scratches. In addition, the electrical motor for the gog winch received a thorough overhaul. Finally, a minor repair was made to GIANT 14 while at anchor. A welding seam that had opened up when EDUARD struck the pontoon during the work to re-establish the tow connection, was welded shut.

GL was not summoned in connection with this work in Vlissingen.

2.8. The voyage from Vlissingen. The accident

On 16 February, EDUARD departed Vlissingen with GIANT 14 in tow in the starboard side tow line and with the drum gear engaged. The voyage proceeded without any major problems until 20 February. The towage convoy had an average speed of 5 knots and on the morning of 20 February was located at 49° 16'N, 5° 24'W, i.e. in the middle of the western outlet of the English Channel. The weather situation deteriorated as the day progressed. "Ein zustzlicher und ausserordentlicher Wetterbericht" at 20:29 gave the following warning:

"Schweres Sturmtief, 975 westlich Irlands, langsam ostziend, Trog südwestlich Irland ostschwenkend.

Vorhersage für West ausgang Kanal:

Südwest bis West 8, nachts vörübergehend zunemend 10, rechtdrehend, morgen West bis Nordwest 8-9."

At 00:00 on 21 February, Captain Fock was relieved from his watch by second mate Mainka. The vessel was being steered manually. The wind had increased to a strong SW-W 8-9, with heavy storms. The wind caused a wave height of 4 metres with a period of 6-7 seconds. In addition to this was a westerly swell with a wave height of 2.5 metres with a period of 10 seconds. This resulted in a wave height of 5 metres, but some waves were twice this size. Under these weather conditions, the towage convoy had practically no forward speed. Captain Fock therefore ordered Mainka to ride out the storm and to ensure that the tug's bow was held up against the wind and sea at all times.

The accident occurred at 02:10. According to Mainka's testimony, the tug was hit by a massive wave on the starboard side, resulting in the vessel listing more than 30° towards the port side. When the vessel failed to right itself, Mainka triggered the general alarm. The machine alarm sounded immediately thereafter. The listing only increased and the revolution indicator showed that revolutions per minute were heading towards zero. The helmsman confirmed that the vessel no longer responded to the helm. Fock came rushing up to the bridge and attempted to increase speed by using the speed lever. The propeller made 60-80 revolutions for a brief period, but then stopped entirely. The cause of this was in the vessel's hydraulic system. The suction pumps were on

the starboard side of the oil tank. In the event of a not so brief listing towards the port side of more than 20-30°, the oil would flow away from the pumps and the oil pressure would then fall, resulting in the multi-brake clutch between the engines and propeller being released. A stand-by pump would immediately come into action, but this would only be able to maintain the necessary pressure for a short period - something that explains why the propeller restarted for a short period after Fock entered the bridge.

The list increased to almost 90°. Fock fired some emergency flares and Mainka attempted to send mayday signals over the radio, but the transmitter had no power. However, no attempts were made to release EDUARD from the tow line. Two life rafts were prepared. Mainka and three other crew members were able to climb on board one of these and escape from the capsizing vessel.

Approximately 10-15 minutes after the vessel had started to list, EDUARD sank, dragged down from astern by the pontoon. Captain Fock and 5 other crew members were taken by the sea.

2.9. The salvage attempt. The issue of removing the wreck

For a period after it was dragged down, EDUARD must have hung on the tow line and acted as an anchor for GIANT 14. However, after the line snapped, the pontoon drifted rapidly in an easterly direction. Approximately 16 hours after the vessel capsized, it was sighted by a Greek freighter at 18:00 on 21 February which reported this and the barge's position to a French coast guard station. The message was intercepted by Radiostation Smith-Rotterdam and from there was passed on to Harms and Johannsen. Several salvage vessels that had also heard the message set a course for the position that was given. At the request of Harms and Johannsen, Hamburg-based shipping company “Bugsier”s PACIFIC, which was berthed in Falmouth, was engaged in the search for EDUARD and GIANT 14.

At 02:00 on 22 February, planes from the French and English navies also took part in the search. GIANT 14 was observed at 05:00. PACIFIC arrived at the location of the barge shortly thereafter. The life raft with the four seamen from EDUARD was observed at approximately 08:30 and these men were taken on board French naval vessels approximately 90 minutes later.

PACIFIC was not able to get a hold of GIANT 14’s emergency tow line which had become tangled. Chief Officer Ebert and another man were therefore placed on board the barge, however they were unable to arrange a tow connection in time. The barge drifted at a speed of 3-4 knots towards the French coast and the two crewmen from PACIFIC had to be evacuated by helicopter. GIANT 14 ran aground at approximately 11:40. The barge sprang a leak and filled with water causing it to capsize. The cranes were ripped away when the vessel capsized.

GIANT 14 was later salvaged and repaired. The French authorities initially demanded that the cranes should also be removed, and Kone therefore engaged assistance to search for these. However, after locating the cranes, the authorities withdrew the demand for removal. The cranes were not worth salvaging and were therefore left on the seabed.

3. Claims and assertions on the part of the plaintiffs

3.1. The accident case

3.10. Overview

There are three alternative reasons for why EDUARD sank:

(1) There may have been a gradual intrusion of water into the tug’s hull such that stability was reduced and eventually lost. If this was the case, water must have intruded through leaks in the hull, openings in the weather deck, or similar.

This alternative must be immediately be dismissed because it is based on pure speculation. Water intrusion of such a magnitude that it would impact on stability would have to have been discovered at an earlier stage. The ship would have had a longer roll period, which is something that would have been notice on the bridge. The build-up of water would also have triggered the alarm in the engine room at an earlier stage.

(2) Water may have intruded into EDUARD's hull due to a giant wave having smashed parts of the superstructure. This alternative can be dismissed even faster than the previous alternative. Mainka, who was on watch on the bridge until the accident occurred, and who has provided testimony about the sequence of events, would have observed such extensive damage.

(3) EDUARD must have been dragged down by the tow. This conclusion is a prominent part of Seeamt's statements, see in particular pages 81-82 of the report, and, in the view of the plaintiffs, is the correct and only possible alternative:

EDUARD had excellent stability which had not been reduced by the vessel having had a Kort-nozzle installed. If, under normal circumstances, EDUARD had been knocked over onto its side by rough seas, it would have eventually righted itself again. However, in this instance the tug was held down by the drag on the tow line. When the accident occurred, the tug and tow must have been drifting uncontrollably astern. The tow led and was towing the tug, which therefore could not manoeuvre itself freely. The tow line must have been pulled over to the side by EDUARD, thus causing a sideways drag that prevented the tug from righting itself. In this type of situation, the only possibility of rescue would be the immediate release of the tow line from the tug. Since this was not possible, EDUARD was fated to sink.

The explanation for the accident stated here does not in itself provide a basis for assessing Harms' liability for the loss that was caused. It is necessary to go back through the causal chain and to ask the following questions: Why were EDUARD and its tow unable to withstand the wind and weather? And why was it not possible to release the tow line when the situation became acute? These questions lead to new issues: Did EDUARD have inadequate bollard pull? See 3.11. Were there any faults in the drum brakes and was this the reason that the drum gear was engaged? See 3.12. Could the barge have been saved if EDUARD had had a quick release mechanism? See 3.13. Did the gog wire system fail? See 3.14. Or were the weather conditions too difficult? See 3.15. Finally: Was there any fault in GIANT 14's emergency tow line system and, if so, was this fault what resulted in the failure to salvage the barge with the cranes? See 3.16.

3.11. EDUARD's bollard pull

When, in a contract of carriage such as this, it is asserted without further specification that a tug must have a certain minimum "bollard pull", this must be understood as being an assertion of "continuous bollard pull". This assignment involved a tow during the winter period, through long stretches of sea with harsh weather, where lengthy periods of bad weather had to be expected and where it was of vital importance that the tug was strong enough to hold itself and the tow up against the wind and sea, such that it could maintain control of the tow, even during possible "drifting". "Maximum bollard pull" or "peak value", which can only be maintained during a relatively brief period, are of no interest in this context. If the tow is to be kept under control during a storm, the necessary bollard pull must be possible at all times.

GL's survey report of 22 September 1983 regarding the bollard pull test on 21 September also provides no information about how long the drag of 41.2 tons was maintained nor how heavily the engines were strained, nor the exhaust gas temperatures that this caused

However, in the statements that were provided to Seeamt by Wohlfeil, Held and Wolter it was stated that 41.2 tons was achieved from a 10% overloading of the engines with 160-165 revolutions per minute for the propeller. Vidnene also claimed that the stated drag was maintained for 10 minutes (see pages 40-43 of the Report). However, the later-mentioned information does not correlate well with the information provided by EDUARD's second engineer Jankowski. Revolutions per minute could not exceed 145 if the exhaust gas temperature was to be held at a maximum of 370°. "Jede Steigerung der Wellenumdrehungen habe bereits nach wenigen Minuten zu Abgastemperaturen von 400° geführt, so dass die Maschine wieder hätte heruntergefahren werden müssen." (Page 33 of the Report), cf. including GL's survey report of 23 September 1983 which makes reference to a "kurzzeitige 110 % Leistung".

Based on what is asserted here, the certified bollard pull of 41.2 tons is a peak value, achieved during a shorter period at 10% engine overload.

According to expert witness Witjen (see pages 43-44 of the Seeamt Report), 41.2 tons at 110% engine load is equivalent to 37.6 tons at 100% load. However, he added that: "Im praktischen Schleppbetrieb könne von einer Dauerleistung von nur 90 % entsprechende 36.9 t ausgegangen werden". If one also took into consideration that revolutions per minute could not exceed 145 due to the exhaust gas temperature, a 14% reduction in the bollard pull to approximately 31.7 tons had to be expected.

Based on this, the plaintiffs claim that EDUARD's continuous bollard pull was approximately 30 tons, i.e. 10 tons less than what was guaranteed in the contract, and that this was the most important reason for the accident.

It was assumed that the test of 21 September had determined a peak value for EDUARD's bollard pull of 41.2 tons. However, the plaintiffs have strong doubts about the accuracy of the test and even suggest the possibility of direct falsification. It is extremely regrettable that GL did not have specific rules for the process when conducting bollard pull tests and the reports that are to be prepared for the tests. The process that was selected was very unfortunate. The measuring instrument used was less accurate than the instruments used by, for example, DnV, and often gives excessively high readings. GL's representative, Wohlfeil, was located on EDUARD's aft deck during the test and therefore could not verify the readings taken from the manometer on the pontoon or the RPM shown in the engine room and therefore could also not verify how long the maximum drag that was achieved had been maintained. He was completely dependent on the notifications he received from the other people who participated in the test, people who must have had a certain interest in the test confirming that EDUARD had the bollard pull that was predicted by Schaffran and which Harms had reported to Kone during negotiations for the contract of carriage. The certificate ("Survey report") which GL issued after the test is a flawed document which, as mentioned above, lacks vital data about the test, including how long the bollard pull of 41.2 tons was maintained and the corresponding engine load and exhaust gas temperature.

3.12. The tow winch

The tow winch was installed in 1974 and must have been dimensioned while taking into account the tug's bollard pull at that time, which was stated as 28 tons. When the bollard pull was significantly increased in 1983 due to the installation of a Kort-nozzle, the brakes on the tow drums should have been strengthened accordingly. However, this did not occur, with the result that EDUARD sailed with drum brakes that were not strong enough. With a braking force of 2 x 42 tons and a bollard pull of 28 tons, the safety factor was originally 84:28 = 3.00, while this was reduced to 84:41.2 = 2.04 following the conversion. DnV's standard requires a minimum safety factor of 2.50, cf. DnV's "Study" of 30 March 1987. The fact that the braking power was inadequate explains why the port side tow line unwound west of Esbjerg on 10 February 1984 and that for the remaining part of the voyage, Captain Fock did not trust the brakes and therefore sailed with the drum gear engaged. This was contrary to standard practice for tows in open waters and was a contributory cause of the accident. In a highly dangerous situation, such as that which arose for EDUARD on 21 February, it would have been possible to release the drum brakes. However, releasing the drum gear would be completely out of the question. Before this could occur, the drag on the tow line and therefore the strain on the drum would have to be reduced. However, this was impossible in a situation when the tug, which was experiencing uncontrolled drifting, was dragged aft by the tow.

3.13. "Quick release"

If EDUARD had been equipped with "quick release", the tug would have been able to free itself from the tug during the critical situation that arose at 02:10 on 21 February and thereby have avoided being dragged down by GIANT 14. It is correct that the barge would have drifted uncontrolled in an easterly direction. However, with EDUARD intact, assistance could have been summoned immediately. However, 16 hours passed before the outside world was alerted and salvage attempts initiated. If PACIFIC had had these extra 16 hours available, there is every reason to believe that GIANT 14 and the cranes would have been salvaged.

If EDUARD had been classified by DnV, it would have had to install a system for the quick release of the tow line that was controlled from the bridge. GL introduced equivalent rules in 1977, but only for tugs launched after the rules had entered into force. However, the fact that GL did not require that EDUARD be equipped with quick release did not of course prevent the owner of the tug from voluntarily complying with the new rules out of consideration to the safety of the vessel and the crew.

3.14. The gog wire

In the view of the plaintiffs, the gog wire must have snapped at some point before the accident, which resulted in the tow line's focal point being moved from the stern to a point at the aft edge of the superstructure. This in turn must have resulted in the drag on the tow line moving at an angle with the direction of the tug, something that would rapidly push the tug over and down. One must disregard the witness statement from second officer Mainka that, after EDUARD had been pulled over on its side, he observed that the "beistopperne" used to hold the tow line amidships were in place. Such an observation was not possible in the situation that arose when EDUARD listed.

3.15. The weather conditions

It is clear that the weather conditions were a contributory cause of EDUARD capsizing. If the wind speed had been lower and the sea not as rough, the tug could have tolerated the strain. However, this is of no significance to the question of liability. The tow was to take place at a time of year and through waters where it had to be expected that there would be storms of the type the tow encountered on 20-21 February 1984.

On the contrary, the fact that the towage convoy was exposed to a storm with wind speeds of up to 10 Beaufort can be particular grounds for holding Harms liable. Provisos 3, 4 and 5 in the Conveyance Certificate set specific requirements with regard to the weather conditions, requirements that Harms was obliged to respect. Since GL was not more active, Harms should have intervened to prevent EDUARD and its tow from encountering a storm. Even with a continuous bollard pull of 41.2 tons, EDUARD would not have been strong enough to keep the tow steady in the face of weather with this wind speed and in heavy seas. This is shown in the calculations made by GL's expert, Dieter Mix, prior to when GL's "Seaworthiness Certificate (Fitness to be Towed)" was issued on 10 February 1984. Mix based his calculations on the "Bescheinigung" which his colleague Wohlfeil had given from the bollard pull test on 21 September 1983 and assumed that the stated bollard pull of 41.2 tons was achieved from "maximaler Dauerleistung", and that this was therefore a "continuous bollard pull". With this starting point, his calculations gave the result: "dass der Schlepper bei Seegängen bei Windstärken bis auf Bft 9 in relativ geschützten Gewässern bzw. Bft 8 in freien Gewässern geeignet sei". See page 58 of the Seeamt Report. It its "Study on towing causalty M/V EDUARD" of 30 March 1987, DnV set an even stricter restriction. In point 1 of "Conclusions" it states that:

"The necessary bollard pull for the tug should, according to VMO's recommendations for unrestricted operation, be 67 tons. For a bollard pull of 41 tons, VMO would limit the actual towage to take place only in weather conditions of Beaufort 6 or better."

3.16. GIANT 14's emergency tow line.

GIANT 14 was equipped with an emergency tow line that had previously been attached to a crowfoot and which from there was passed aft along the side of the barge. Attached to the end of the line was a 50 metre "messenger line" which passed over a thinner 15 metre "pick-up line" with a "pick-up buoy" at the far end. While being towed, these lines were supposed to float in the sea behind the barge such that another vessel, for example, a salvage vessel, would be able to pull up the messenger line and wind in the emergency tow line and thereby establish a tow connection.

However, this system failed when PACIFIC attempted to salvage GIANT 14 on the morning of 22 February. The buoy had become attached to the side of the barge and the lines were tangled. This delayed the salvage operation. Crew from PACIFIC had to be placed on board the barge, where they faced such major problems preparing the emergency tow line that they ran out of time. These people had to be evacuated from the barge by helicopter before they were able to establish a tow connection. The result was that the barge ran aground and the container cranes were lost.

3.2. Grounds for liability

3.21. Liability for negligence

Harms was the expert party when concerning sea-going tows.

Kone was proud of its know-how and technology in connection with manufacturing large container cranes and moving these onto pontoons and securing them for transport across the sea. The later-mentioned work was inspected and approved by GL on assignment from Kone and was shown to be completely satisfactory.

However, contrary to what Harms has claimed, Kone did not have any knowledge about towing barges with cranes on board. It is correct that Kone had once owned a tug (KONE, now KRAFT). However, this was not suited for sea-going transport and was sold in 1979. This also resulted in the loss of the tug expertise that Kone may have possessed. Therefore, when concerning the need for expert guidance, Kone had to be considered as being in the same position as Harms' other customers. Unlike Kone, Harms specialised in sea-going tows of large barges. In connection with this, Kone placed a great deal of emphasis on the fact that Harms was a subsidiary of Smit in Rotterdam, a company that administers the largest and best equipped tow and salvage vessels in the world and has the foremost towing expertise available.

Based on this, it was clear that the transport contract imposed a duty on Harms to ensure that the towage of the barge with the cranes was executed in a satisfactory manner. Of vital importance in this context was that Harms had to use a well-equipped and sufficiently strong tug, cf. provision no. 2 in the Conveyance Certificate.

GL's approval was conditional upon the transport being "effected in tow of a sufficiently strong tug". Harms (represented by Bronisch) and Johannsen (represented by Fehling, who Harms must be fully liable for) breached this obligation in a manner that must be characterised as grossly negligent and that clearly entails liability. This criticism particularly applies to the following:

(1) It was a gross miscalculation on the part of Harms to use a tug that was as weak as EDUARD for the transport. Kone had made it clear that this was an extremely demanding assignment, cf. in particular, Kone's telex of 19 August 1983 with the statement of the cranes' wind area. After having received this assignment, Harms should have immediately made calculations of the power that would be necessary to enable the tug and barge to withstand wind of a specific strength. It would then have been clear that EDUARD would not be strong enough for the winds that would have to be expected on the planned voyage and Harms would therefore have offered a stronger tug. However, no such calculations were made before the tow had commenced. The calculations that GL carried out and which resulted in the "Fitness to be Towed" certificate of 10 February 1984, were based on the incorrect assumption that EDUARD had a continuous bollard pull of 41.2 tons. However, this is not stated in the certificate and the certificate also says nothing about the assumptions it is based on in terms of wind speed. A specialist towing enterprise such as Harms cannot "hide behind" this certificate.

Since they had knowledge of the manner in which the bollard pull test of 21 September 1983 was carried out, Harms and Johannsen (Bronisch and Fehling) must have also understood that EDUARD did not have a "continuous bollard pull" of 41.2 tons.

(2) Johannsen (Fehling) must have understood that EDUARD's drum brakes had become too weak after the bollard pull had been increased significantly through the installation of a Kort-nozzle, but without there being a corresponding increase in the braking power. In any event, the accident that occurred on 11 February, when the port side tow line was lost, must have made Johannsen aware of the situation. However, GL was not notified of this and was also not summoned to inspect the tow winch in Vlissingen on 14-16 February. Criticism for failure to provide a warning also applies to Harms (Bronisch), cf. proviso 8 of the Conveyance Certificate: "In the event of any damages being found" GL's head office must be contacted "immediately and advice regarding further procedure to be followed is to be awaited."

(3) It was also a fault entailing liability that EDUARD was not equipped with "quick release". The fact that there was no requirement from the authorities or the class for this cannot be a decisive factor. This was an extremely demanding tow assignment in the middle of winter in rough waters, and it must be considered a major failure that a professional towage company used a tug for this type of assignment without ensuring that the vessel had the vital safety system that quick release provides.

(4) As noted under 3.13 above, Harms should have actively intervened to prevent EDUARD from continuing the voyage under the extreme weather conditions that arose. Liability cannot be avoided by delegating all authority to the captain of the tug, particularly when the captain has not been informed about the wind areas of the cranes and the applicable forces.

(5) The fact that GIANT 14's emergency tow line system was defective, something that proved to be fateful, was a fault that Harms must have been aware of.

3.22. Liability for the guarantee that EDUARD's bollard pull was at least 41 tons.

When it states in clause 1 of the Addendum that "The tug has at least 41 tons bollard pull", a so-called guarantee exists pursuant to contract law. It is a certain rule of law that the relevant contractual party has an objective responsibility for such a guarantee being correct. As noted under 3.11 above, "in this context, bollard pull means 'continuous bollard pull'". It is now clear than EDUARD's "continuous bollard pull" was only approximately 30 tons. There was therefore a shortfall of approximately 25%. If the tug had had the guaranteed bollard pull, the chances of the tug having ridden out the storm would have been significantly better. The fact that the tug lacked the guaranteed feature is therefore a contributory cause of the accident and the loss of the cranes and, on this basis, Harms must be held liable for the loss - without it being necessary to discuss the question of culpability.

3.3. The scope of the loss

Sampo claims compensation for the payments the company has made under the insurance policy for the container cranes, FIM 41,493,740 in total.

Kone claims compensation for the expenses the company incurred in locating the cranes after the accident when ordered to do so by the French authorities. Compensation for these expenses, which amount to FIM 1,431,116, cannot be claimed under Kone's insurance for the cranes with Sampo.

In addition, interest is claimed on these amounts of 15% from 1 July 1985 until 1 February 1986 and 18% p.a. from 1 February 1986 until payment takes place.

3.4. Limitation of liability pursuant to clause 14 of the Agreement

As a universal disclaimer, clause 14 must be interpreted restrictively. The reason that a carrier wishes to be exempt from liability for damage to deck cargo is the special risks that the cargo is exposed to when being transported on deck. Based on this, it is natural to interpret the disclaimer as only applying to damage that can be said to be the result of these particular risks. In that case, the disclaimer cannot be asserted in this instance. The fact that the cranes were loaded onto the deck of the barge was of absolutely no significance to the sequence of events. The reason for the loss was that EDUARD lost control of the tow and was dragged down. The deck cargo, i.e. the cranes, withstood everything and was not lost until GIANT 14 ran aground and capsized.

In the alternative, it is asserted that the disclaimer must be disregarded pursuant to the mandatory rule of law. It is a clear rule of law that a contracting party cannot validly disclaim liability for loss caused by the said contracting party's own intentional or grossly negligent actions. As referred to under 3.21 above, such gross negligence was exhibited by Harms'/Johannsen's management (Bronisch/Fehling) in connection with the towing assignment. Harms' liability for its subcontractor, Johannsen, means that there is also identification between Harms and Johannsen when concerning gross culpability that prevents the limitation of liability.

The plaintiffs also assert that the disclaimer must be disregarded pursuant to Section 36 of the Norwegian Contracts Act. It would "appear unreasonable" if Harms should completely evade liability when negligence displayed by people in leading positions results in total loss as in this case.

The objective liability due to a bollard pull of 41.2 tons having been guaranteed, cannot be limited in any instance and in this case the special justification for liability must take precedence to the general disclaimer.

3.5. Global limitation

The applicable Norwegian rules pertaining to global limitation (Section 234-243A of the Norwegian Maritime Code) entered into force on 1 April 1985, i.e. after EDUARD capsized. Potential global limitation must therefore apply in accordance with the older rules (Act no. 13 of 7 April 1972). Pursuant to these rules, limitation is excluded for "liability due to errors or omissions on the part of the shipowner itself". Simple negligence exhibited by the management of the responsible company is therefore sufficient to preclude the right to limit liability. There is no doubt that such negligence was exhibited by Bronisch and Fehling, who in this instance must be deemed to represent the management on the carrier side.

3.6. Costs

The plaintiffs have claimed costs from Harms and that Harms be ordered to pay the costs of the Arbitral Tribunal. In a letter of 14 November 1986 from Supreme Court Attorney Stang Lund, the plaintiffs' costs were stated as NOK 1,070,197.20, plus NGL 146,525, plus DEM 118,239, plus FIM 115,087.97. Based on the current exchange rates, the total amount is equivalent to approximately NOK 2,184,000.

3.7. Claim for relief

The plaintiffs have submitted the following claim for relief:

1. Harms Bergung GmbH is ordered to pay Ömsesidiga Försäkringsbolaget Sampo FIM 41,493,740.00 and Kone Oy FIM 1,431,116.00, with the addition of interest of 15% p.a. from 1 July 1985 until 1 February 1986 and 18% p.a. from 1 February 1986 until payment takes place.
2. Harms Bergung GmbH is ordered to pay the costs of the same parties, including the fees and expenses of the Arbitral Tribunal.

4. Assertions and claims on the part of the defendant and intervener

4.1. Grounds for liability

4.11. The bollard pull

In the arrangement with Harms, Kone also had to be considered a professional party when concerning the towing of cranes on barges. Kone had owned both barges and tugs and had also arranged transport with its own barges and hired tugs, including the transport of cranes with a large wind area to Qatar with the barge CHARLOTTE WESSELS. It is difficult to understand that Kone's expertise in this area disappeared upon the sale of the barge KONE. For example, Kone's Lars Mannström was an expert in tow transports. Among other things, Mannström had a good knowledge of Harms' barges.

During the negotiations for the contract of carriage, little interest was given to the issues regarding wind area and bollard pull. Kone therefore provided no information about the wind area when AXEL was proposed as the tug to be used. The assertions regarding "wind area" in Kone's telex to Harms of 19 August 1983 more closely resemble the provision of information. Kone themselves had calculated that a bollard pull of 35-40 tons was required "to keep the tow in a wind of 20-25 m/s". The relevant paragraph of the telex ended as follows: "we hope that insurance company accept 41 tons, we are controlling it". No clarification was provided by Kone's insurer, most likely because it was uncertain at this time as to which insurance company would insure the cranes. Sampo, which took over coverage in a policy dated 23 January 1984, does not appear to have been interested in the tug's capabilities. Sampo was sent GL's "Conveyance Certificate" on 30 January 1984 with the survey endorsement of 29 January. This endorsement satisfied proviso no. 12 in the certificate, but not proviso no. 2. There does not appear to have been any contact between Kone and Sampo regarding the issue of whether EDUARD was a "sufficiently strong tug". GL's "Seaworthiness Certificate" of 10 February 1984, which answered the question, was issued at Harms' request and out of consideration to this company's freight insurance. It does not appear that Sampo was informed of the certificate.

Harms agrees that the statement in clause 1 of the Addendum that "The tug has at least 41 tons bollard pull or more" constitutes a guarantee. However, the question is what "bollard pull" means in this context. Mannström and Bronisch did not touch upon this. One must then refer back to what was the standard commercial expression for bollard pull at that time.

Practices regarding statements of a tug's performance have changed somewhat over time. Previously, it was standard to express engine performance in the form of horse power. Use of tow force or bollard pull became standard in connection with assignments for the offshore industry. In lieu of standardised methods for measurement, it was natural to use the method that gave the greatest bollard pull, i.e. measuring the bollard pull at engine overload and possibly when manoeuvring the rudder. It is correct that a "peak value", which is only achieved for an instant, is of no interest. One is left with "maximum bollard pull", i.e. the bollard pull that can be maintained over a certain period when the engines are overloaded. The fact that this was the value that was most commonly used when describing tugs was confirmed by Even Skraastad, SCUA Rotterdam, who wrote the following in a letter of 22 October 1985 to attorney Stang Lund:

"When quoting bollard pull the practice has often been to adopt the maximum static pull."

The alternative "effective bollard pull" can be immediately disregarded. In addition, without evidence based on what was agreed to, one also cannot include the special bollard pull definitions set by Lloyd's ("Steady bollard pull") or DnV ("Continuous bollard pull").

In Harms' view, EDUARD satisfied the requirement of a bollard pull of at least 41 tons, defined as the "maximum bollard pull". The decisive evidence is the bollard pull test of 21 September 1983, which was performed by GL and confirmed in the "survey report" of 22 September. Harms refutes the criticism of the manner in which the test was carried out. Wohlfeil had to be able to use assistants to record the necessary readings on the pontoon and in the engine room. DnV is also no a stranger to the idea of being able to trust people. A bollard pull of 41 tons also correlates with Schaffran's calculations. Reference is also made to calculations performed by Dr. Østergaard. In the view of the defendant, Harms had no obligation to assess whether a stronger tug than EDUARD should have been used or possibly make a proposal regarding this to Kone. The agreement concerned an individually specified tug with a guaranteed bollard pull. Kone could not demand anything else. GL's "Conveyance certificate" of 19 January 1984 is not part of the contract of carriage. It was issued at Kone's request in connection with the insurance of the cranes and is only relevant in the arrangement between Kone and Sampo. Harms was not bound by this and therefore had no obligation pursuant to proviso no. 2 to ensure that the transport was "effected in tow of a sufficiently strong tug".

The issue regarding the strength of the tug also has a price related aspect. The use of EDUARD instead of the originally proposed AXEL resulted in a significant, additional freight charge. Kone was aware that a bollard pull of 41 tons would not be sufficient to keep the tow moving under extreme weather conditions, cf. Kone's telex of 19 August 1983 to Harms, which states that a bollard pull of 35-40 tons was calculated for being able to "keep the tow in a wind of 20-25 m/s". 20-25 m/s is equivalent to Beaufort 9, "strong gale". For the planned voyage, even stronger winds had to be expected at times. In that case, Kone's requirement therefore must have been that the towage convoy should be able to tolerate controlled drifting.

In the alternative: A potential obligation for Harms to ensure that the tow was executed with a "sufficiently strong tug" would only impose a duty of care on Harms. The choice of EDUARD cannot be said to have been negligent. In any event, it must be in Harms favour that the expert body, GL, confirmed in its "Seaworthiness Certificate" of 10 February 1984 that EDUARD was "sufficiently strong for the intended voyage". Harms was unaware that the certificate had been issued based on an incorrect assumption of what GL's bollard pull test of 21 September 1983 involved.

4.12. The tow winch

The uncontrolled deployment of 500 metres of tow line from the port side drum on 10 February 1984 is a mystery. Mainka has stated that the drum brakes became increasingly more tensioned and that those on board did not notice that the line had unwound. The drag on the wire under the prevailing weather conditions must have been moderate. A subsequent inspection of the drum in Vlissingen could not detect any damage to the brake bands. The theory that the brake bands were replaced at sea must be ruled out. Could the explanation be that there had been a miscalculation of the distance to the tow and such a large amount of tow line was deployed that the line was on the inner layer of the drum?

The fact that the winch was later inspected does not mean that there was something wrong with the winch, it simply demonstrates the shipping company's high level of maintenance. The replacement of bolts that took place in Vlissingen was probably unnecessary, but confirms that the shipping company did everything to keep the winch in a first class condition.

The winch was not subject to GL's supervision and there was therefore no reason to summon the classification society for an inspection in Vlissingen, something that was confirmed by witness Oppermann from SCUA, Hamburg.

Each of the brakes on the tow drum had braking power of 42 tons. This gave a combined braking power of about double the maximum bollard pull of 41.2 tons, which was completely adequate. The criticism of the tow winch must therefore be refuted.

It was EDUARD's shipmaster, Captain Fock, who decided to continue the voyage from Vlissingen with the drum gear engaged. This matter was not discussed with any representative from Harms or Johannsen, and these companies were not aware that the gear had been used until after the accident. Engaging the gear made it possible to regulate the length of the tow line by using the winch's electrical motor without prior operation of the gear. When towing in busy and narrow waters such as the English Channel it is not unusual to sail with the gear engaged. It was also fully possible to release the tow with the gear engaged by using the winch motor. However, in order to do so the band brakes had to be loosened before the line could be deployed and it was therefore the operation of the brakes that determined the ability to jettison the tow.

In accordance with this, the criticism relating to EDUARD having sailed with the drum gear engaged must also be dismissed.

4.13. "Quick release"

With regard to the requirements for a tug's features, the flag state's standard must be decisive, despite the contract of carriage being governed by Norwegian law. Neither the German maritime authorities nor GL have stipulated rules that require tugs constructed before 1977 to install a remote controlled emergency release of the tow line ("quick release"). The consideration behind these rules must be decisive when a standard of care is set in this area. The duty of care does not entail that one must be at the very top level in terms of safety at all times. In addition, a party that satisfies the somewhat more modest requirements from the authorities and the classification society must be considered to be on the safe side. A "bonus pater familias" does not have to be the "cleverest boy in the class". In his witness testimony, Sven Mortensson stated that in 1983-84 several of Röda Bolaget's tugs sailed without quick release and that the company still has one such boat.

There is a price element associated with quick release. If Kone wanted to have a tug equipped with this type of device, the company would have had to expect to pay a higher freight charge.

4.14. The gog wire

The gog wire winch was not used on the voyage from Vlissingen. Therefore, only the fixed “Beistopper” are of interest. These consisted of 44 mm of steel wire with a rupture strength of 125 tons and there is no reason to believe that these failed.

4.15. The weather conditions

No criticism can be directed at the manner in which the weather forecast service was organised. The decision on whether to delay departure or to cancel a voyage that has commenced due to weather warnings, had to be made by the tug’s shipmaster. In the situation that the towage convoy found itself in at 20:29 on 20 February 1983 when it received the extraordinary weather forecast with the storm warning, it was also not possible to call off the voyage. The towage convoy was so far from land that attempting to reach an emergency port in time was ruled out.

That a towage convoy may experience a storm is also something that one must be prepared for in connection with this type of towing assignment. One must therefore set a course towards the wind. If, after a period, it is not possible to maintain a certain speed through the water, one then switches over to “controlled drift”. The engine power is reduced, but kept at a high enough level to prevent reverse drift (prior to capsizing, EDUARD was moving at a reduced speed, equivalent to 125°/min.). Using the helm, attempts are made to keep the tug up against the wind. The tow line moves a little to the side, which causes a slight heel. As long is the vessel is in open sea, drifting is harmless. A dangerous situation will only arise if the reverse drift becomes so strong that the rudder effect is lost and the tug is dragged aft with the tow line controlling the direction.

Based on what is stated here, neither the shipmaster nor the shipowner can be criticised for EDUARD experiencing wind and seas of such a magnitude that the towage convoy sometimes had to drift.

4.16. The emergency tow line on GIANT 14

The witness statements that were provided by Mainka and Ebert were largely the same. The emergency tow line was arranged in an adequate manner. However, this arrangement was damaged by the sea in the period after the tug capsized when GIANT 14 was out of control. Harms cannot be held liable for this situation.

4.2. Causation

Seeamt was not able to determine the cause of EDUARD's sinking and the cause of the accident can also not be said to have been clarified at a later stage. Of the three alternatives that have been suggested, cf. section 3.1 above, the defendant agrees with alternative 2: sudden intrusion of water into the tug, with the resulting loss of stability and the tug then capsizing.

In any event, the accident cannot be said to be the result of EDUARD having had less bollard pull than what was stipulated in the contract of carriage, cf. the statement regarding controlled drifting under 4.11 above. If the towage convoy was to maintain a specific speed going forward, even during extreme wind conditions, the guaranteed 41.2 tons would also not have been sufficient, even if this had represented a “continuous bollard pull”. In its “Study” of 30 March 1987, DnV stated that EDUARD should have had a minimum bollard pull of 67 tons if the towage convoy was to have been given permission to sail without "strong operational limitations”.

Possible deficiencies in the tow winch could not have been a contributory cause of the accident. The chances of salvaging the barge with the cranes would most likely have increased somewhat if the tow line had been detached when EDUARD heeled. However, it must also be taken into consideration that in the initial period following the accident, EDUARD acted as a drag anchor for the barge and thereby slowed down its drift towards land. Under all circumstances, the decisive factor is that during the accident it would have been impossible to remove the tow line even if EDUARD had sailed without the drum gear engaged. The brakes on the drum would still have had to be released. It was also impossible to do this in the very brief period of time available, with the furious weather, major heel, and the sea well above the aft deck where the brakes had to be manoeuvred.

4.3. Limitations of liability

Clause 14.1 of the Agreement is clear, and the restrictive interpretation proposed by the plaintiffs is inconsistent with the wording. This form of total disclaimer for deck cargo is not unusual. It involves a rational sharing of the risk between the parties. Kone had to insure the cranes and bear the cost of the premiums. If Harms also had to cover the risk of loss and corresponding cost of premiums, this would have been of significance when determining the amount Kone had to pay for the transport.

However, Harms understands that it cannot assert the disclaimer if the plaintiffs are found to have established that the loss was the result of intent or gross negligence on the part of Harms' management. Errors that may have been made at the management level of Johannsen's organisation are of no significance in this context. There is even less reason to take into consideration errors made by GL's management.

The disclaimer in clause 14.1 must also preclude Harms from being held liable for the "guarantee" that EDUARD had a bollard pull of 41.2 tons. The requirement for such liability is that the Arbitral Tribunal accepts the plaintiffs' interpretation of the expression "bollard pull", i.e. that the hidden dissent that existed on this point is resolved in favour of the plaintiffs. Under no circumstances can the fact that Harms did not understand what Kone meant by bollard pull be grounds for blaming the shipowner of gross negligence.

In the alternative, Harms asserts the limitation of liability in clause 14.3, i.e. limitation to an amount equal to the "freight payable or paid", calculated at DEM 875,700.

There can be no question of invalidating clause 14 pursuant to Section 36 of the Norwegian Contracts Act. Clause 14 establishes the sharing of risk, which is standard in towing arrangements and which forms the basis for rational insurance coverage for the transport risk.

Further in the alternative, global limitation is asserted pursuant to Chapter 10 of the Norwegian Maritime Code. Harms has not exhibited sufficient negligence to have lost the right to limit liability. It is accepted that the limitation amount, calculated based on the tonnage of the barge and tug, is SDR 190,000.

4.4. The extent of the loss

Harms claims that interest on Kone's claim can only be imposed from 4 April 1986, i.e. from one month after the case was commenced, cf. Section 2.1 of the Norwegian Delayed Payments Act. Harms has otherwise made no particular objections to the plaintiffs' calculation of loss.

4.5. Costs

Harms has claimed payment of costs and that the plaintiffs, relative to the defendant, are ordered to pay the fees and expenses of the Arbitral Tribunal. According to attorney Sørlie's letter of 19 October 1989, Harms' costs amount to NOK 613,513.10, plus DEM 36,485.00, which, based on the present exchange rate, is a total of approximately NOK 750,460.

With regard to the plaintiffs' calculation of costs, Harms asserts that expenses totalling approximately NOK 1.2 million for expert assistance are higher than necessary for the adequate preparation and implementation of the case. Coverage of expenses associated with Seeamt's work cannot necessarily be claimed.

4.6. Harms has submitted the following prayer for relief:

1. The Arbitral Tribunal finds in favour of Harms Bergung GmbH.
2. Ömsesidiga Försäkringsbolaget Sampo and Kone OY are jointly ordered to pay Harms Bergung GmbH's costs, and, in the internal arrangement, to pay the fees and expenses of the arbitral tribunal in their entirety.

4.7. The intervener

Johannsen has fully acceded to the claims asserted by Harms and has submitted the following claim for relief:

1. Johannsen & Sohn accedes to point 1 of Harms Bergung GmbH's claim for relief.
2. Ömsesidiga Försäkringsbolaget Sampo and Kone Oy are jointly ordered to pay J. Johannsen & Sohn's costs.

According to attorney Rafen's statement of 23 October 1989, Johannsen's costs amount to NOK 334,488.5, plus DEM 90,228.60, which, converted according to the present exchange rate, amounts to a total of approximately NOK 673,600.

5. The Arbitral Tribunal's remarks

5.1. The accident case. Overview

The documentation submitted and witness testimony provided during the arbitration case have not provided complete clarity about the causes of EDUARD capsizing on 21 February 1984. However, after a thorough assessment of all information that has emerged, the Arbitral Tribunal finds that the explanation provided by Seeamt Lübeck and DnV is the most probable. See pages 76-82 of the Seeamt Report and DnV's "Study on the towing casualty M/V EDUARD", dated 30 March 1987. In section 5.2 in the latter-mentioned report it states that:

"The towage was according to VMO's estimates not able to make any forward advances, and was most probably drifting backwards at a velocity in the order of 2-4 knots. It is reasonable that this drifting situation was difficult to control taking tug size and delivered bollard pull into consideration. (32-38 tons bollard pull and a length between perpendiculars of 33.5 meter.)

It is reasonable to assume that an angle did arise between the tug's heading angle and the towline prior to the casualty, either due to a failure of the gog wire arrangements or the tug being hit by a heavy wave and heeled. The towline pull component resulted in increased heeling as described in the following section."

The following was stated in section 5.3 regarding "the increased heeling":

"Hence, the conclusions from Germanischer Lloyd are found reasonable, stating that the rolling of the tug in heavy seas played an important part in the capsizing. After the initial heeling due to a heavy wave, or a failure of the gog wire arrangements, the tow line was immediately tensioned up due to the large windage area of the barge, thus preventing the tug from righting itself; the next wave will cause a new rolling; the towline will be further tensioned up, following further build up of tow line tension for each rolling of the tug, until a position of 70-90 degrees is reached. In this position, only the buoyancy of the superstructure prevented the tug from capsizing; and as the hull was flooded through windows and doors in the wheelhouse, the tug inevitably capsized and sank."

The following assessment of the question of liability is based on this explanation, which for Harms and Johannsen must appear to be the least favourable alternative.

Seeamt and DnV's explanation does not in itself provide any basis for deciding on the question of liability. Within the framework of this explanation, the Arbitral Tribunal must review the acts and omissions on the part of Harms and Johannsen that may have had a negative impact on the sequence of events and which therefore may entail liability. This review is undertaken in sections 5.3 to 5.7 below.

However, before the Arbitral Tribunal addresses these individual elements relating to the question of liability, it considers it appropriate to first assess the general requirements for Harms to be held liable, first and foremost, the interpretation of the disclaimer in clause 14 of the contract of carriage and the validity of this clause, cf. section 5.2 below. The solutions that the Arbitral Tribunal arrives at when concerning these issues will thus entail a considerable simplification of the subsequent assessment of each of the possible grounds for liability.

5.2. Grounds for liability - general considerations

5.21. The legal rules pertaining to transport liability when transporting by barge

An agreement for transporting goods by sea on a barge that is being towed is - unlike the agreement between tug and tow - a freight agreement by law and therefore governed by the rules in Chapter 5 of Norwegian Maritime Code 1893, cf. Brækhus in Marius no. 1 (1975) 8, Grönfors: Sjölagens bestemmelser om godsbefordran (1982) 21 and Philip and Bredholt: Søloven, 2. ed. (1986) 111-112. Since in this instance, the transport commenced in Finland, which is a signatory to the 1924 Bills of Lading Convention which was amended by the 1968 Protocol and the so-called Hague-Visby rules, it is, as a starting point, the mandatory Finnish rules relating to transport liability that are decisive, cf. Section 169, subsection 2 of the Norwegian Maritime Code. However, Section 169, subsection 5 of the Norwegian Maritime Code permits the parties to enter into a valid agreement for the transport to be governed by the Hague-Visby rules of a different state to that which is stipulated in Section 169, subsection 2. The provision in clause 18 of the Addendum that "Norwegian law to apply" is therefore valid, including for the mandatory rules of law regarding transport liability.

The general rule regarding transport liability is found in Section 118, subsection 1 of the Norwegian Maritime Code: The carrier, in this case Harms, is liable "for losses resulting from the goods being lost, damaged or delayed while in the custody of the carrier on board or ashore, unless the carrier establishes that the loss was not due to fault or neglect on the part of the carrier or any party the carrier is responsible for." Among those the carrier is responsible for in this instance include the leadership and crew of the tug that was used for the transport, cf. Brækhus: Rederens husbondsansvar (1954) 30 note 58.

Certain exceptions to the general rule are authorised in Section 118, subsection 2. The most important provision here is Section 118, subsection 2a, which exempts the carrier from liability for loss "resulting from fault or neglect in the navigation or management of the ship" exhibited by any party the carrier is responsible for. Therefore, pursuant to the rules in the Norwegian Maritime Code, Harms will not be liable for the errors EDUARD's crew may have made in the navigation or handling of the tow and tug. However, Section 118, subsection 3 sets an important restriction for applying Section 118, subsection 2a: The carrier is always liable for losses resulting from the ship not being seaworthy at the commencement of the voyage if the carrier or a party the carrier is responsible for, failed to exercise proper care.

In principle, the liability rules in Section 118 are mandatory and cannot be deviated from by an agreement to the detriment of the cargo owner, cf. Section 168, subsection 1. However, there are certain exceptions to the mandatory rules in Section 168, subsection 2. What is of interest in this context is that Section 168, subsection 1 does not prevent that "a restriction in the carrier's liability for loss or damage may be agreed ... when transporting ... goods that are stipulated in the freight agreement as deck cargo and carried on deck".

The legal policy background to the deck cargo rule is obviously the exposed position of the deck cargo, i.e. the risk of surface water damage and being washed overboard etc., together with evidence related problems that assert themselves in this context. The contractual freedom pursuant to Section 168, subsection 2 enables the carrier to protect itself from these special risks. A clause that "reverses" the burden of proof pursuant to Section 118, subsection 1 may be sufficient, i.e. the carrier only accepts liability for damage or loss of deck cargo if evidence is presented that the damage or loss was due negligence on the part of the carrier. A disclaimer of liability for damage and loss caused by the typical risks associated with deck cargo extends somewhat further and would therefore have been avoided if the cargo had been placed in the hold. However, Section 168, subsection 2 does not set the limit here. The law is worded in such a way that full disclaimer of liability for deck cargo is permitted, however the general restrictions that are set for contractual freedom when concerning disclaimers must also apply for disclaimers in freight agreements, cf. sections 5.23 and 5.24 below.

The liability rules in Section 118 can clearly be deviated from to the benefit of the cargo owner. For example, this may occur by the carrier "guaranteeing" that the ship has certain features that are of importance to the cargo's safety. See section 5.32 below.

5.22. The disclaimer in clause 14 of the "Agreement"

Kone's cranes etc. were carried as deck cargo on GIANT 14 in full compliance with the agreement between the parties, cf. the introduction in clause 14: "Cargo to be shipped on deck of the pontoon ...". The requirements in Section 168, subsection 2 of the Norwegian Maritime Code for the valid disclaimer of liability are therefore satisfied.

The actual disclaimer in clause 14.1 is clear and unequivocal: The cargo was to be transported "at company's (Kone's) risk, the carrier not being liable for any loss or damage of whatever nature whosoever and by whomsoever caused".

The plaintiffs' claim that the clause must be interpreted restrictively, such that it only exempts the carrier from liability for the consequences of the typical risks associated with deck cargo. The Arbitral Tribunal cannot agree with this. Neither the wording of the clause, the negotiations that resulted in the contract of carriage nor other relevant background information provide any grounds for such an interpretation. The proposed restriction of the scope of the clause would entail censoring of the clause and should, in this instance, be done openly, cf. 5.23 and 5.24 below.

5.23. Liability for deliberate or grossly negligent actions on the part of people at management level of a contracting party's organisation

It is established Norwegian law that a contracting party cannot validly disclaim liability for damage caused to the other contracting party due to intent or grossly negligent actions that are in violation of the contract, cf. *Krüger:* Norsk kontraktsrett (1989) 784 with further references. Equated with errors by the contracting party's personnel are errors committed at the management level of the contracting party's company. When, as in this case, the contracting part is a company, there will only be issues regarding errors made at management level. Harms' procurist, Bronisch, was clearly at this level. The disagreement between the parties, and the doubt, first manifests itself when it is asked whether errors at management level at Johannsen must be equated with errors at management level at Harms, i.e. whether the identification of Harms' subcontractor Johannsen shall also apply when concerning invalidating a disclaimer due to serious errors at management level.

The Arbitral Tribunal is not aware of case law that sheds light on this issue and can also not see that this has been discussed in legal doctrine. The solution must therefore be sought in actual considerations. The rule that liability for serious errors at management level cannot be validly waived can be said to protect the other contracting party from the complete dilution of contractual liability. There must be a party with a certain minimum liability behind any contractual obligation. A contracting party often has a broad right to involve independent assistants that, in relation to the relevant contracting party, agree to carry out larger or smaller parts of the contractual obligation. In that case, part of the management function is transferred to the assistants. If serious errors by the assistants at management level were not equated with serious errors by the contracting party's own management, the management liability, and thereby the actual contractual liability, could be greatly diminished. At any rate, there should be identification at management level when a contracting party has used an independent assistant to fulfil important parts of the contract, parts that most contractual parties will be responsible for themselves.

Applied in this situation, this viewpoint leads to identification at management level between Harms and Johannsen. A carrier must not only provide space for the goods that are to be transported, it must also ensure that the goods are transported from the port where they are loaded on board to their port of destination, and for this engine power is required. Propulsion machinery will normally be an integrated part of the transporting vessel and serious management errors in connection with the machinery will therefore entail liability. When concerning transport by barge, the propulsion function was assigned to an independent assistant, the tugboat company. If the minimum protection the cargo owner has for normal sea transport is not to be significantly reduced when the cargo is towed, serious errors on the part of the tugboat company's management must result in liability, irrespective of the disclaimers. Therefore, the Arbitral Tribunal's conclusion on this point is that Harms must be responsible for damage caused by possible negligent actions committed by Johannsen's procurist, Fehling.

The plaintiffs have claimed that GL's "Fitness to be Towed" certificate cannot exempt Harms from liability for providing a sufficiently strong tug. Harms cannot "hide behind" the classification society. The Arbitral Tribunal does not understand this as being an assertion that Harms must be responsible for errors committed by GL and that there must also be identification for errors at management level at GL. Such an assertion would also not be successful. A carrier does not have general liability for subcontractors for employees of the classification society, cf. among others, Brækhus: Rederens husbondsansvar (1954) 32. There is therefore no reason to set mandatory, and therefore more stringent identification, at management level.

5.24. Censoring the agreement pursuant to Section 36 of the Norwegian Contracts Act?

Section 36 of the Norwegian Contracts Act, as it is presently worded, was adopted and entered into force on 4 March 1983 and therefore applies for the contract of carriage of 12/19 December 1983. This section permits the Arbitral Tribunal to partly or fully disregard the disclaimer in clause 14 "to the extent that it would be unreasonable or contrary to sound business practice to assert this". The later-mentioned alternative can be disregarded. It has not been demonstrated that there is any established "business practice" when concerning the regulation of liability in contracts of carriage as in this instance. The question will be whether censoring should occur in accordance with the unreasonableness alternative. It is not necessary to assess and possibly invalidate clause 14 in purely general terms. The question must be put forward specifically: Would it be unreasonable for Harms to evade any liability for the two expensive container cranes and their accessories that were a total loss during the transport that Harms had undertaken to provide?

The answer must undoubtedly be in the affirmative when concerning liability for the consequences of intentional or grossly negligent actions on the part of Harms' management that were in violation of the

contract. However, liability for such actions can be based directly on an older and well-established mandatory rule of liability. On the other hand, invalidating the disclaimer cannot deprive the carrier of the protection against liability that is stipulated in Section 118, subsection 2a of the Norwegian Maritime Code. Censoring the agreement pursuant to Section 36 of the Norwegian Contracts Act can therefore only be relevant for liability for loss due to simple negligence at management level or deliberate or negligent error or omission committed outside the nautical area of any of the assistants Harms had liability qua employer for.

In the doctrine, criticism has been directed at extensive disclaimers for transport liability for deck cargo. In Gram: Fraktavtaler, 4th edition. (1977) 137, the following is stated about the deck cargo clauses:

"The clauses for utilising contractual freedom on this point have varied. There are clauses that firmly disclaim any liability for this. This is unreasonable and, at the very least, the shipowner should be liable for seaworthiness in relation to the ship's safety. If the ship capsizes because the captain has not taken on enough bunkers, there is no reason that the shipowner should evade having to pay for the deck cargo. Normal damage from unloading is also not linked to the cargo having been carried on deck. However, scratches on the paintwork of unpackaged motor vehicles are."

This was written before Section 36 of the Norwegian Contracts Act was adopted and it is unlikely that Gram used the term "unreasonable" to suggest that the mentioned disclaimers must be invalid. On the contrary, the intention was to provide the shipowners with an indication of the extent to which they should utilise the freedom the Hague-Visby rules give them to disclaim liability. In addition, Gram's statement applies to liability under liner bills of lading, i.e. in a sector where the carrier, the liner shipping company, often has a strong and sometimes monopolistic position in relation to the many shippers and when consumer law viewpoints are applicable.

The transport arrangement in this case was of a completely different character. This was a special transport with a considerable degree of difficulty and with clear and particular elements of risk which have no parallels with cargo transport using conventional vessels. It also involved two contractual parties that both had considerable business experience and insight. In terms of negotiations, they also must be considered to have been equals. Neither of them had a dominant financial position or market position that made it possible for them to force through contractual provisions against the wishes of the other party. For such a relationship, one should be very reluctant to censor the agreement pursuant to Section 36 of the Norwegian Contracts Act.

In addition, the regulation of liability pursuant to Clause 14 cannot simply be characterised as arbitrary. With the large amounts that were at stake and the dangers that threatened this special form of transport, it was clear that the transport risk had to be covered by insurance. Transport insurance (property insurance) for the cranes could have been taken out with either the owner Kone or the carrier Harms as the insured. The insurer would then only be able to exercise the right of recourse against Harms in the event of gross culpability. However, an almost identical result is achieved when the owner alone takes out transport insurance, but also accepts a disclaimer from the carrier. As long as it is valid, such a disclaimer will also bind the insurer in the event of possible recourse against the carrier and thereby reduce or completely remove the need for independent insurance (liability insurance) for the carrier. The idea of such a rational sharing of risk appears to have been the intention when, in its telex of 13 September, Kone added the following immediately after the proviso regarding exemption of liability for deck cargo: "cargo will be insured at your risk and expenses by you".

Based on what is stated here, the Arbitral Tribunal finds that it cannot disregard Clause 14 beyond what is asserted under section 5.23 below.

5.3. EDUARD's bollard pull

5.31. The risk of capsizing would have been reduced with a stronger tug

Based on the hypothesis concerning the accident which the Arbitral Tribunal has accepted, cf. section 5.1 above, and based on the calculations that are now available for the necessary bollard pull at different wind speeds, it appears clear that the risk of an accident of the type that occurred could have been reduced and perhaps completely avoided if GIANT 14 had been towed by a stronger tug than EDUARD. The towage convoy could then perhaps have held up against the wind and the drifting in an aft direction could at least have been limited to such an extent that the tug would have maintained control and guidance of the tow. The question is then whether Harms can be held liable for EDUARD proving to have lacked sufficient strength for the assignment.

5:32. Liability pursuant to clause 1 in the "Addendum": "The tug has at least 41 tons bollard pull or more"?

The parties agree that the quoted statement in the contract constitutes a "guarantee" pursuant to contract law, and that, regardless of fault, Harms is responsible for the assertion being correct. However, the parties disagree about how the guarantee should be understood. Does it apply to "continuous bollard pull" as asserted by the plaintiffs, or does it apply to "maximum bollard pull" achieved from a certain overloading of the engines as asserted by the defendant?

This question does not appear to have been addressed during the contract negotiations. The parties appear to have understood "bollard pull" as being a specific, unambiguous term. The many different tug-related terms that have now been presented, cf. section 2.5 above, were only first brought into the discussion after the dispute between the parties had arisen. Kone, and thereby also Sampo, were entitled to be presented with "accepted certificates according to bollard pull", cf. clause 1 of the "Addendum". However, it does not appear as if the plaintiffs asked for any such certificate nor were they sent GL's "survey report" of 22 September 1983.

Based on this, it must be correct to accept the meaning of "bollard pull" that was standard for towing arrangements of this type when the contract was entered into. This means that "bollard pull" in clause 1 must be interpreted as the "maximum bollard pull" achieved over a period of time at engine overload. The expert institution, GL, clearly used this definition as a basis in its "Pfahlzug" test of 21 September 1983 and when issuing the "certificate", i.e "Survey" report of 22 September. The statement from the plaintiffs' expert witness, Even Skraastad from SCUA, Rotterdam, in a letter of 22 October 1985 to the plaintiffs' attorney clearly indicates the same:

"When quoting bollard pull the practice has often been to adopt the maximum static pull".

On the other side of the argument, no instances have been documented in which an unqualified statement of "bollard pull" has been deemed to apply to "continuous bollard pull".

In accordance with this, the question is whether EDUARD actually had a "maximum bollard pull" of at least 41 tons. The Arbitral Tribunal finds, with reservations, that the answer has to be in the affirmative and refers to GL's bollard pull test. To a certain extent, the Arbitral Tribunal can follow the criticism the plaintiffs have made about the manner in which the test was conducted, particularly the compilation of the accompanying "survey report". However, there must equally be a strong presumption that the measurement result was correct. The information available about EDUARD's original bollard pull and the importance the installation of a Kort-nozzle has for the bollard pull provide no decisive grounds for disregarding the measurement. Based on the evidence available, there are no grounds for the plaintiffs' insinuation of direct falsification in connection with the test.

The fact that the guarantee of 41 tons of bollard pull in clause 1 is directly linked to the carrier's duty to present "accepted certificates according to bollard pull" can be understood to mean that the carrier is free from liability if it presents an acceptable certificate that covers the guarantee, i.e. that the carrier, provided it has acted in good faith, is not liable for the accuracy of the certificate. However, the Arbitral Tribunal does not need to address this issue, because it has accepted the certificate (the "survey" report) as evidence of the relevant bollard pull.

5.33. Did Harms have an obligation - irrespective of the "guarantee" in clause 1 - to ensure that the transport was executed with the assistance of a sufficiently strong tug?

The Arbitral Tribunal is inclined to answer this question in the negative. It is true that the following appears in the printed text of clause 2 of the "Agreement":

"After loading of the goods on the pontoon the pontoon will be towed/pushed to the final destination by sufficient horsepower, to be provided by the carrier."

However, immediately above this clause the following was written by typewriter:

"tug 'EDUARD': dimensions as per specification abt. 41 t. bollard pull."

It is obvious to interpret this to mean that the general obligation pursuant to clause 2 has been specified as an obligation to execute the transport using an individually determined and named tug with a guaranteed bollard pull and that this tug is approved by the charterer. If the charterer had wanted a guarantee that the approved tug

was strong enough to adequately execute the tug, possibly combined with a duty for Harms to, if necessary, replace EDUARD with a stronger tug, this must have been stated in the agreement.

The negotiations prior to the conclusion of the agreement support this understanding of the agreement. Kone initially proposed (telex of 29 April 1983) executing the transport with a tug (AXEL) that had a bollard pull of 27 tons. This was rejected by Kone, who wanted a stronger tug. Harms then offered (telex of 28 August) "transport with a more powerfull tug of 41 to. bollard pull" (EDUARD), in return for an increase of DEM 110,000 on the previously quoted freight price. Kone did not accept this offer immediately. In the reply on the 19th of the same month, certain information was first provided about the cranes' "wind area", with calculations of the force a wind speed of 25m/sec would create. Kone then added that:

"this gives us that to keep the tow in a wind of 20-25 m/sec. 35-40 tons bollard pull. ...

we hope insurance company accept 41 tons. We are controlling it."

This means that, based on its own assessments, Kone was willing to accept 41 tons, but the proviso for this was approval from the insurer that was to insure the cranes during the transport. Such approval must have subsequent been given since at the meeting on 5 September the parties agreed to terms that presupposed the use of EDUARD.

Sampo does not appear to have set any special requirements for the tug that was to be used. In the insurance policy dated 23 January 1984 it states rather briefly that the cranes etc. shall be "Sent by Tug 'EDVARD'/pontoon 'GIANT XIV'". Kone did not send Sampo GL's "Conveyance Certificate" of 19 January until the 30th of that month. Among other things, the certificate sets the following proviso:

"THAT ...: 2) Conveyance is effected in tow of a sufficiently strong tug".

It has not been reported that Sampo or Kone attempted to have the provisions in this Conveyance Certificate accepted as part of the agreement between Kone and Harms. Sampo also did nothing to ensure that proviso no. 2 was complied with. GL was not requested to provide any declaration that EDUARD was "sufficiently strong". It is correct that such a certificate, "Seaworthiness Certificate (Fitness to be Towed)", was issued by GL on 10 February, but this was at Harms' request and out of consideration to the freight insurance that Harms was to take out. Kone does not even appear to have known about this certificate until the accident occurred.

The Arbitral Tribunal does not need to take a definitive position regarding the question of whether Harms had an independent duty to ensure that there was a sufficiently strong tug. Based on what is asserted under 5.22 to 5.24 above, potential dereliction of duty on this point could only result in liability if the dereliction of duty can be characterised as a deliberate or grossly negligent act or omission on the part of Harms' management.

When one considers that Kone itself calculated the necessary bollard pull at 35-40 tons and that GL had confirmed, in its "Seathworthiness Certificate" of 10 February 1984 that EDUARD was "sufficiently strong for the intended voyage", Harms would have had to assume that the necessary assurance was in place. In any case, the fact that Harms did not have a sufficiently critical approach to what was presumed to be an expert classification society cannot be characterised as gross negligence. Harms was not aware that the calculations that formed the basis for GL's certificate were based on an incorrect understanding of the bollard pull tests that another division of GL had carried out.

All of those involved must have been clear that the safety of a tow can be improved by increasing the installed bollard pull. However, the issue also has a cost aspect. As mentioned, when the originally proposed tug, AXEL, with 28 tons of bollard pull, was replaced with EDUARD, Harms' original price increased from DEM 1,300,000 to DEM 1,410,000. A requirement for an even stronger tug would obviously have resulted in a further increase in the tow price. Like anywhere else, there must be a trade-off between cost and safety requirements. The tow experts who provided statements during the main hearing appeared to agree that a towage convoy does not need to be equipped with such strong bollard pull that it could be moved forward through the water even under extreme weather conditions. Within certain limits, drifting is a normal and harmless occurrence. After an objective ex post consideration, what is stated here cannot of course entail that it can be said to have been correct to accept EDUARD's bollard pull in this instance. However, it provides an important basis on which to assess whether Harms should have questioned Kone and GL's assessment of the necessary bollard pull.

5.4. The tow winch

The Arbitral Tribunal can largely agree with the criticism the plaintiff has directed against Harms and Johannsen when concerning EDUARD's tow winch. It is surprising that the inspection in Vlissingen on 14-16 February 1984 failed to establish the cause of the port side tow line having unwound and been lost on 11 February. Bronisch and Fehling should have notified GL of the inspection. Even though, as a classification institution, GL was not responsible for inspecting the tow line, the company was so heavily involved in the towing operation through the issuing of the certificates of 19 January and 10 February 1984 that it should have been given the opportunity to re-evaluate its position regarding EDUARD's "fitness to tow".

The information that is available indicates that the drum brakes were not strong enough. By installing a Kort-nozzle, the bollard pull was increased from 28 to 41 tons, i.e. by almost 50%, without the drum brakes being strengthened. Inadequate braking power could also explain the uncontrolled deployment on 11 February, however, the fact that this occurred under comparatively calm weather conditions and apparently without damage to the brake bands makes this somewhat doubtful. Finally, the fact that Captain Fock chose to continue the voyage with the drum gear engaged indicates that he did not trust the brakes.

Therefore, the question is whether Harms and Johannsen's (Bronisch and Fehling's) actions can, in this context, be said to have been grossly negligent. The Arbitral Tribunal finds, with reservations, that the question has to be answered in the negative.

In their statements to the Arbitral Tribunal, Bronisch and Fehling stated that the question of whether to engage or disconnect the drum gear was something that was decided by the tug's shipmaster and was therefore not something they involved themselves with. However, they must have been fully aware that the uncontrolled deployment of the tow line could be prevented by engaging the gear and that there would therefore be no risk of EDUARD losing its tow even if the brakes on the tow drums were of the weaker variety. That they refrained from summoning GL on this basis can hardly be characterised as gross negligence.

In any case, liability on this basis must be disregarded because there no necessary causal link exists between Bronisch and Fehling's actions and the subsequent accident.

To begin with, there is no reason to believe that a surveyor from GL who had been summoned would have stopped the towage convoy and demanded that EDUARD be replaced by another tug. This type of intervention would have resulted in a significant delay in the transport and therefore have been contrary to Kone's interests. Considering the recommendation GL had already made for the towing enterprise, it is most likely that the surveyor would have allowed the tow to continue, trusting that the tow line could be secured by applying the brakes plus engaging the gear.

The fact that the gear was engaged during the voyage from Vlissingen can also not be said to have caused the accident. The accident occurred in such a way that it would have been impossible to detach the tow line in time, even if the drum brakes could be trusted and the tow had therefore sailed without the gear being engaged. During the extreme weather and with a significant heel, it would not have been possible in the very small amount of time available for any of the crew to go out onto the aft deck and release the drum brakes before EDUARD was dragged down by the tow.

5.5. "Quick release"

The only thing that could have saved EDUARD in the situation that arose at 02:10 on 2 February was a quick release device, i.e. a device remotely controlled from the bridge that enabled the immediate release of EDUARD from the tow line and the tow. If EDUARD had managed to free itself in this manner, it is probable that it would have managed to stay afloat and that Captain Fock would have immediately sent out an alarm that GIANT 14 was drifting. This would, in turn, have significantly increased the chances of salvaging the barge and the cranes.

Therefore, the question is whether it was a relevant defect that EDUARD was not equipped with quick release and whether this can be considered gross negligence on the part of Harms and/or Johannsen.

The first question raises a problem regarding the choice of law. Should the provision in clause 8 of the "Addendum" that "Norwegian law to apply", be accepted, including with regard to the chartered ship's general standard, i.e. the features, crew and equipment etc. that the charterer can require that the ship must have in lieu of a separate agreement? The answer must obviously be no. When an agreement is entered into and the charterer is aware of the ship's flag and class, it must - for purely practical reasons - be the system of rules in

the flag state and the classification society that is decisive. This is also a condition in clause 1 of the "Addendum" relating to "accepted certificates according to ...class" and clause 15 which states:

"Carrier to guarantee that the vessel's condition and certificates are in conformity with the rules and the laws in respective country ..."

In this instance, neither GL nor the German maritime authorities had rules that dictated that EDUARD should be equipped with quick release. This was not a consequence of the system of rules having lapsed or that the problem had been overlooked. The issue must have been assessed in 1977 when GL introduced the quick release requirement, but only for new tugs. Therefore, pursuant to the relevant background law, it is difficult to claim that it was a defect that EDUARD was not equipped with quick release. A requirement of this type could of course have been set by Kone during the contract negotiations. However, there is nothing that indicates that Kone or Sampo demonstrated any interest in this matter at that time.

In accordance with this, the question of whether Harms can be said to have acted with gross negligence in this context is not applicable.

5.6. The gog wire

The information provided during the course of the arbitration case regarding EDUARD's gog wire arrangement has been somewhat confusing. In the pleadings that were exchanged it was assumed that the tow line was held in place using the wire that was connected to the gog winch and it was discussed whether the gog winch was strong enough, cf. among other things, section 9 of the plaintiffs' pleading of 29 April 1987 and sections 14 and 19 of the defendant's pleading of 29 March 1989. However, during the main hearing it was reported that the gog winch and gog wire had not been in use. To prevent the tow line from moving thwartships and over the stern, two strong and fixed slings had been attached to the line and to the deck on either side. The fact that the Seeamt Report states that "die Beistopper waren dichtgeholt" increases the confusion. The gog wire could be tightened, but not the two slings, which were fixed. On the other hand, Seeamt refers to "Beistopper" in the plural form, something which points towards the slings. Finally: Why were the gog winch and its motor given an extensive overhaul in Vlissingen when it was not the intention to use the winch for this voyage?

Despite this, the Arbitral Tribunal finds that it has to accept Mainka's statement about the use of "Beistopper" and the dimensions and location of these. However, the Tribunal is somewhat confused about Mainka's statement that when the accident occurred and after EDUARD had listed, he observed that the "beistopper" arrangement was intact.

On the other hand, there is no evidence that the system failed and that this was a contributory cause of the accident. The sequence of events referred to in section 5.1 above could still be possible without such a failure. In any case, there are no grounds for holding Harms liable for the accident, at least when concerning this particular issue.

5.7. The weather conditions

In the view of the Arbitral Tribunal, neither Harms nor Johannsen can be criticised for the manner in which the weather report service was arranged. The storm on 20-21 February 1984 was sudden and was therefore reported at a rather late stage. However, considering the position of the towage convoy at that time, it would not have been possible, with even an earlier warning, to move the tow into safe waters in time.

It was and always had to be EDUARD's shipmaster who assessed the impact of the weather conditions on the execution of the tow. Possible miscalculations in connection with this could not have resulted in liability on the part of Harms. This is stipulated in Section 118, subsection 2a of the Norwegian Maritime Code relating to nautical errors. Harms and Johannsen could not use their judgement in relation to the ship's captain in an attempt to navigate the tow from land. In addition, when it had first entered the open sea, the towage convoy was advised to attempt to continue, regardless of the weather conditions. The fact that the prospects of this succeeding would have been better if the tug had had greater bollard pull is another matter and the issues of liability this gives rise to are discussed under 5.3 above.

5.8. The emergency tow line on GIANT 14

No evidence has been presented that the emergency tow line system for GIANT 14 was defective or unsuitable. The fact that it had become tangled when PACIFIC made its salvage attempt on the morning of 22

February 1984 could have been due to the sea and wind during the 27 hours in which the barge was drifting uncontrollably. This factor cannot provide any grounds for holding Harms or Johannsen liable for the accident.

5.9. Conclusion. Costs. Conclusion of ruling

As stated above, the Arbitral Tribunal has not found any grounds to hold Harms liable for the loss of the container cranes. The Arbitral Tribunal must therefore find in favour of the defendant and, pursuant to Section 172, paragraph two of the Norwegian Civil Procedure Act, the plaintiffs must be ordered to pay the defendant's costs. Costs must also be awarded to the intervener, Johannsen. The plaintiffs have made no objections to the statement of costs that the defendant and intervener have submitted and these are therefore accepted.

The ruling is unanimous.

Conclusion of ruling:

1. The Arbitral Tribunal finds in favour of the defendant, Harms Bergung GmbH.
2. The plaintiffs, Ömsesidiga Försäkringsbolaget Sampo and Kone OY, are jointly ordered to pay the following amounts as compensation for costs: a. NOK 613,513.10, plus DEM 36,485.00 to Harms Bergung GmbH, b. NOK 334,488.50, plus DEM 90,228.60 to Johannsen & Sohn.
3. The date for compliance with the obligations referred to under point 2 is 21 days, calculated from the pronouncement of this ruling.
4. The plaintiffs, defendant and intervener are jointly liable for the fees and expenses of the Arbitral Tribunal. In the internal arrangement, these amounts shall be determined in full by the plaintiffs.