

**Case No 584/97**

**In the matter between:**

**CONTROL CHEMICALS**

**Appellant**

**and**

**SAFBANK LINE LIMITED**

**First Respondent**

**SOUTH AFRICAN MARINE  
CORPORATION LTD**

**Respondent**

**Second**

**ARGONAUT SHIPPING INC**

**Third Respondent**

**THE BANK LINE LIMITED**

**Fourth Respondent**

---

**CORAM : NIENABER, SCHUTZ, SCOTT, ZULMAN et STREICHER JJA**

**HEARD : 24 FEBRUARY 2000**

**DELIVERED : 28 MARCH 2000**

---

**Insufficiency of proof - carriage of dangerous goods by sea - explosion - various theories as to cause - something extraordinary and unexplained must have happened - appropriate order one of absolution from the instance. Costs - documents missing from appeal record - handed up on morning of hearing - half of perusal costs disallowed.**

---

**J U D G M E N T**

---

**SCOTT JA:**

[1]           The M V Recife sailed from Durban on 20 July 1991 bound for various ports in South and North America. Some 50 days later and shortly before 1 am on 7 September 1991 there was an explosion, followed by a fire in a container which had been stowed on deck in the top tier of the containers on the forward most hatch on the extreme port side. The Recife was then off the straits of Florida and headed for Wilmington, North Carolina. The container in question had been shipped aboard the vessel by the appellant for carriage from Durban to Savannah in the USA pursuant to a contract of carriage evidenced by a bill of lading dated 20 July 1991 and issued to the appellant as shipper in Johannesburg. In terms of the contract the first respondent was the carrier. The container was said to contain 1005 boxes of Klorman Chlorine replacement cartridges. Klorman Chlorine is a trade name for commercial calcium hypochlorite in tablet form. The tablets are

intended for use as a water purifier particularly in swimming pools. Each cartridge contained 10 tablets. Dry calcium hypochlorite with a content of more than 39% available chlorine (as in the case of the tablets) is listed in the International Maritime Dangerous Goods Code (The “IMDG Code”) within “Class 5.1 - Oxidizing substances”. It was common cause that this had been brought to the notice of the first respondent prior to commencement of the voyage.

[2] As a result of the explosion and ensuing fire several of the containers stowed nearby were damaged, as were their contents. The vessel was likewise damaged. The respondents instituted action as plaintiffs in the Court below against the appellant for damages arising out of the fire. The first respondent, *viz* the carrier, was the sub-charterer of the vessel. The other respondents were the time-charterers and owners of the vessel as well as a company having an interest in the sub-charterers. In view of an agreement reached between the parties as to the issues the Court *a quo* was called upon to decide, it became unnecessary to consider the

position of the other respondents. It was further agreed that the extent of the damage suffered by the respondents and the quantum of their claims would likewise stand over for later determination.

[3]           The respondents' action against the appellant, being the shipper of the container in question, was founded in both contract and delict. Counsel for the respondents conceded, however, that the evidence did not establish negligence on the part of the appellant and relied solely on the claim in contract. In my view, the concession was correctly made.

[4]           It was common cause that the contract evidenced by the bill of lading was governed by the Hague Visby Rules as incorporated in the (South African) Carriage of Goods by Sea Act 1 of 1986 and that by reason of s 6(1)(b) of the Admiralty Jurisdiction Regulation Act 105 of 1983 the "matter" was one in respect of which the Roman-Dutch law was to apply. In their particulars of claim the respondents relied in the first place on clause 6 of the bill of lading which purported

to impose strict liability on the shipper in respect of “any damage or expense caused by the contents of the said container to other property or persons”. By reason, no doubt, of the provisions of clause 4 of the bill of lading which rendered void any provision repugnant to the Hague Visby Rules, the respondents made no attempt in this Court or in the Court below to rely on clause 6 of the bill of lading and instead sought to establish their claim in contract solely on the basis of article IV, rule 6, of the Hague Visby Rules which, as I have said, were incorporated into the contract of carriage. The material part of the latter provision reads as follows.

“Goods of an inflammable, explosive or dangerous nature to the shipment whereof the carrier, master or agent of the carrier has not consented, with knowledge of their nature and character, may at any time before discharge be landed at any place .... and the shipper of such goods shall be liable for all damage and expenses directly or indirectly arising out of or resulting from such shipment ....”

It was common cause that the contents of the container, *viz* calcium hypochlorite in tablet form, constituted “goods of an inflammable, explosive or dangerous

nature” within the meaning of rule 6 quoted above and that this was known to the carrier when the container was shipped aboard the vessel. The respondents’ case, however, was that the calcium hypochlorite was defective or in a contaminated state or had been improperly stowed in the container and that this had caused the explosion. It was accordingly alleged that the carrier, master or agent of the carrier had not consented to the shipment of the appellant’s goods “with knowledge of their nature and character” as contemplated by the said article IV, rule 6. In order to succeed in the action the respondents were accordingly obliged in the first place to discharge the burden of proving on a balance of probabilities that the cause of the fire was the defective or contaminated state of the calcium hypochlorite or its improper stowage in the container. In the event of them doing so the further question that had to be decided was whether the consent of the carrier or master as contemplated in article IV, rule 6, was vitiated by reason of the defective or contaminated state of the calcium hypochlorite or its improper stowage. The trial

Court found in favour of the respondents on both issues; hence the present appeal.

The judgment is reported *sub nom The M V Recife Safbank Line Ltd and Others v Control Chemicals (Pty) Ltd* 1997 (4) SA 852 (C).

[5] It is necessary at this juncture to say something more about the nature and the properties of calcium hypochlorite in the context of the present case and its carriage by sea. It is a commercial chemical used for sanitising water and is said to have an available chlorine content of 70%. Broadly stated, it is manufactured by first extracting chlorine from sodium chloride using a process of electrolysis; the chlorine is then combined with a lime slurry resulting in calcium hypochlorite in water and the water is thereafter taken off. The substance finally produced has a content of approximately 70% pure calcium hypochlorite and 30% other salts which serve to render the former more stable. The product, to which I shall for convenience continue to refer simply as calcium hypochlorite, is highly reactive and will react violently with organic materials, particularly fluids. As an oxidising agent

it will produce large quantities of oxygen if ignited and will burn at temperatures higher than normal. Notwithstanding the presence of about 30% of inert substances it remains inherently unstable. It is capable of self-heating to the extent of igniting and producing a mild explosion. I shall refer to this process in more detail later.

[6]           During the period from about the late 1960's to the early 1970's there were a number of fires on ships emanating from cargoes of drums containing calcium hypochlorite. Typically these occurred in ships in tropical waters but not invariably so. A research programme sponsored by certain P and I clubs was established in England, principally to find the cause of the fires. One of the researchers was Dr V J Clancey of the Burgoyne group of companies which specialises in the investigation of fires and explosions. An article subsequently written by him entitled "Fire hazards of calcium hypochlorite" was published in 1975 in an international journal. In 1976 a circular to which Dr Clancey's article was attached was sent by the second respondent to all its marine superintendents and



those employed by its subsidiary or associated companies. It is apparent from the article, and from a paper delivered by the same author at a symposium held at Manchester in 1987, that the cause of the fires could not positively be identified.

Two hypotheses were advanced as possible explanations for the fires which occurred within intact drums, i.e. where there was no possibility of contamination resulting from spillage or the like. The first was a possible increased instability of the product resulting from variations in the nature of the raw materials used in its manufacture; the second was the introduction of some reactive contaminant before packaging. What made the possible cause of the fires all the more elusive was, however, their apparent rarity, given the large quantities of calcium hypochlorite carried at sea. Ultimately Dr Clancey could do no better than attribute the spontaneous explosions and fires to some “unusual” or “rogue” portion of the cargo which was “for whatever reason, of lower stability or greater sensitivity than normal”. In his 1975 article he, warned of “a real risk of spontaneous ignition” and

emphasized the need for further understanding of the problem. However, the problem appeared to resolve itself, at least to the extent that from the mid-seventies there appeared to be no further accidents; but this was not entirely so. According to the evidence, in 1988 a container of calcium hypochlorite ignited and exploded at Durban harbour after being discharged from a ship. None of the witnesses at the trial were aware of any similar accidents.

[7]           The respondents sought to prove by way of a process of elimination that the cause of the fire on board the Recife was the defective or contaminated state of the calcium hypochlorite. This they sought to do by disproving the two other possible causes that had been postulated. The first was that the heat of the sun in the tropics had been sufficient to heat up the calcium hypochlorite to such an extent as to cause a runaway chemical reaction, resulting ultimately in the explosion. (It will be recalled that the container in question had been stowed in the top tier and therefore in the sun.) The second possibility was that the temperature

of the calcium hypochlorite had similarly been raised beyond a critical level, but as a result of a fire caused by spontaneous combustion in a tobacco-filled container immediately aft of the container in question. The latter possibility, referred to in the evidence as the “tobacco theory”, was raised by the appellant for the first time shortly before the trial. It was ultimately shown to be somewhat far-fetched. Dr Buchan, an employee of the appellant at the time and the person who supervised the production and packaging of the calcium hypochlorite tablets, explained however that because the explosion itself had been so extraordinary he began looking for some extraordinary event that might have caused it.

[8] The witness called on behalf of the respondents to disprove what I shall call the “insolation theory” was Dr Atherton, who is a colleague of Dr Clancey and similarly employed by the Burgoyne group of companies. Stated briefly, his evidence with regard to this aspect of the matter was as follows. He explained that the “critical temperature” in relation to calcium hypochlorite is the temperature at

which the substance, given its particular mass and shape, will take an infinite length of time to heat up to the extent of resulting in rapid decomposition and ignition. In other words, provided the critical temperature is not exceeded, there will be no explosion or fire. On the strength of a publication by a Japanese researcher, Dr Atherton calculated that the critical temperature of a cartridge of tablets containing approximately 70 grams of calcium hypochlorite would be of the order of 120° - 130°C. He explained, however, that once the cartridges were assembled in a single stow the critical temperature would be substantially reduced by reason of the effect each cartridge would have on the other. At this point, it is necessary to explain that as calcium hypochlorite decomposes it releases heat; if the temperature is increased the rate of decomposition is similarly increased as is the heat that is released. Once a stage is reached where more heat is generated than is lost to the surroundings self-heating will result, leading ultimately to a “thermal runaway” and ignition. The calculation of a critical temperature in relation to the whole stow involves therefore

determining the extent of the transfer of heat between the cartridges. Although extremely difficult given the nature and extent of the packaging, Dr Atherton considered the critical temperature to be of the order of 80°C but felt that a range of 70° to 90°C was a fair assessment. However, in the course of cross-examination I understood him to concede that the critical temperature of the whole stow could even have been as low as 60°C.

[9] Turning to the likely temperature of the stow, Dr Atherton accepted that the ambient temperature attained in the container could be as much as 20°C to 24°C above the outside ambient temperature. According to the deck log the highest air temperatures recorded in the latter part of August were in the region of 34°C. It follows that a maximum ambient temperature in the container could have been in the vicinity of 58°C. Dr Atherton testified, however, that for the purpose of determining the temperature of the stow in relation to its critical temperature regard had to be had not to maximum peak temperatures but to the mean ambient temperature

calculated over a period of 24 hours. Relying largely on a publication by one P C Bowes, he justified this conclusion on the basis of the thermal inertia of the stow considered in the light of the diurnal variations in the temperature; in other words, he said the temperature of the stow would always lag behind the maximum ambient temperature. Having regard to the temperatures recorded in the deck log he concluded that the mean temperature within the container, and hence the maximum temperature attained by the stow, had not exceeded 35°C which he pointed out was well below the critical temperature as calculated by him.

[10] Dr Atherton rejected the “tobacco theory” and concluded that notwithstanding the extreme care taken at the appellant’s factory to avoid contamination or the use of inferior chemicals, the only inference one could draw was that however improbable it may seem, some contaminant or impurity must have found its way into a “rogue” tablet resulting in its critical temperature being substantially reduced and that once the ambient temperature in the container

reached a certain level this “rogue” tablet would have begun releasing heat at a rate which ultimately caused the whole stow to heat up and ignite.

[11] It is necessary to consider briefly the “tobacco theory”. On leaving the port of La Guaira, Venezuela, a container of tobacco was struck by the ship’s crane and damaged. The Recife arrived at New Orleans some six days later. The damaged container was discharged and remained at new Orleans while the ship sailed up the Mississippi River, returning about a week later. On her return the contents of the damaged container were transferred to a new container which was stowed on board immediately aft of the container of calcium hypochlorite. The ship’s log revealed that isolated thunder showers were experienced between La Guaira and New Orleans and that it rained on and off on the day the contents of the damaged container were transferred to the new container. The hypothesis advanced on behalf of the appellant was that the tobacco had probably become wet prior to the new container being shipped aboard and that a fire caused by spontaneous

combustion could have resulted in the forward face of the container heating up sufficiently to heat the adjacent container of calcium hypochlorite to the extent of causing its contents ultimately to ignite. Evidence of a technical nature was adduced on both sides as to the amount of oxygen that would have been available in the tobacco container and whether it would have been sufficient to support a fire of such a magnitude as to be of any consequence. There was also some debate regarding the extent to which heat would be transferred from the one container wall to the other having regard to the gap of 90 cm between the two containers. The Court *a quo* found it unnecessary to resolve these issues. I agree. In the first place, on the basis of the expert evidence led at the trial it would seem highly improbable that, given the size of the tobacco stow and the short period between its possible wetting and the explosion, there could have been an actual fire caused by spontaneous combustion. Of even more significance, however, was the evidence of the first officer regarding the events immediately following the explosion. He



testified that after extinguishing the fire in the calcium hypochlorite container the members of the fire-fighting team hosed down the surrounding containers to cool them off. Having done so, they experienced no difficulty working in the gaps between the containers when extinguishing the fires which they discovered had started in some of the surrounding containers. Had the heat radiating from a fire in the tobacco container been such as to increase the temperature of the calcium hypochlorite in the adjacent container to the extent of causing it ultimately to ignite they would not have been able to pass between the two without being aware of what, according to the appellant's expert, Dr Erens, would have had to have been a considerable amount of heat emanating from the tobacco container. In the event, they had to feel the metal for warm spots to ascertain in which of the surrounding containers fires had started. It follows that in my view the "tobacco theory" was correctly rejected as a cause of the fire.

[12]           The appellant was entitled, if it wished, to plead or attempt to prove

some other cause of the explosion; but it was under no duty to do so. The onus of proof remained throughout upon the respondents. (See for eg the remarks of Lord Brandon in *The "Popi M"* [1985] 2 Lloyd's Rep 1 (HL) at 5.) In addition to raising the "insolation theory" and the "tobacco theory" as possible causes of the explosion, the appellant adduced direct evidence regarding the production and packaging of calcium hypochlorite tablets at its factory at the relevant time in order to demonstrate the care and the steps taken to avoid the introduction of any contaminant or the use of any defective material. Dr Atherton subsequently visited the factory. He could point to no inadequacies in the procedures adopted by the appellant. He contended, however, that something "out of the ordinary" must have occurred; something which was no more than a "remote" possibility. The import of his evidence, therefore, was that once it was accepted that insolation was not the cause of the accident (on the basis of his calculations) then the cause had to be some defect or contaminant in what he called a "rogue tablet", even if the

possibility of that occurring could be categorized as remote.

[13] In these circumstances, it is unnecessary to record in any detail the safety procedures adopted by the appellant in its manufacturing and packaging process to guard against contamination. It is, however, necessary to say something about the appellant's tablet making process. In 1978 the appellant found a way of compacting calcium hypochlorite in such a manner as to produce a slow dissolving tablet. It is the holder of patents both in the United States and South Africa and is a major producer of such tablets. At the time of the trial it had produced something in the region of 40 million tablets. The appellant does not make its own calcium hypochlorite; this is obtained in granule form from a South African factory which manufactures the substance under licence of a large American corporation which is one of the major producers in the world. Broadly stated, the tablets are manufactured by adding zinc stearate to serve as a lubricating agent to facilitate the tabletting process as well as a fine powder of chlorite of lime to fill the voids within

the granules. According to the evidence these additives are all obtained from reputable sources. The mixture is compressed into tablets in a machine which applies a pressure of 35 tonnes per square inch. The tablets are then packed into non-reactive cartridges which are sealed and double shrink-wrapped and then put into boxes which are likewise sealed.

[14] Dr Atherton doubted whether the calcium hypochlorite itself would have contained an unstable ingredient - possibly because in the drying process the product is heated to a temperature of approximately 100° which would be likely to cause the unstable ingredient to reveal itself in the form of an explosion. He thought, however, that one of the additives such as the zinc stearate could have contained some impurity or otherwise some contaminant such as an insect or grease from the presses of the tablet machine could have found its way into the calcium hypochlorite during the tablet-making process.

[15] Dr Buchan, who is a chemist and who worked with calcium

hypochlorite on a daily basis, pointed out, however, that the compression of the calcium hypochlorite with its additives in the tablet-making machine served as a screening process. The application of pressure, he explained, has the same effect as heating and the pressure applied would be such as to cause any contaminant or any unstable ingredient to react almost spontaneously. He argued that calcium hypochlorite in tablet form, having survived the pressure required to make it into a tablet, was therefore safer than calcium hypochlorite in any other form. He accordingly resisted the contention that some contaminant or unstable ingredient could have survived the tablet making process and remain dormant within a tablet for a period of some 50 days before manifesting itself. Furthermore, he pointed out that the tablet has a hard surface and is not susceptible to contamination in the same way as granules. In the case of the latter a contaminant can readily find its way to a point where the heat produced cannot escape so that there would be an exponential build-up of heat. In the case of a tablet, however, any contaminant will

remain on the surface and the heat produced by the reaction with the contaminant will dissipate without any build-up of heat within the tablet.

[16]           The Court *a quo* found the evidence of Dr Atherton to be both logical and objectively acceptable and came to the conclusion that the explosion could not have been caused simply by the heat of the sun, ie that the “insolation theory” had been disproved, and that therefore a contaminant or a defect in the calcium hypochlorite must have caused it to destabilize.

[17]           Some observations with regard to what I have called the “insolation theory” will not be out of place. The exercise undertaken by Dr Atherton was, of course, wholly theoretical and his conclusion that the critical temperature of the stow as a whole would not have been less than 70°C to 90°C, or possibly 60°C, was based on a number of assumptions which, he readily conceded, precluded an accurate calculation. The exercise would also appear to have been premised on the assumption that there would be no room for any variation in what was loosely

called “normal” calcium hypochlorite. On the basis of Dr Atherton’s own calculations the ambient temperature within the container could have reached something of the order of 58°C which is near enough to 60° to be of no consequence. Based on the article by Bowes, Dr Atherton argued that one had to look at the mean temperature and not at peak temperatures. It is true, as emphasized by the trial Court, that Dr Atherton’s evidence in this regard stood alone. But there was evidence that the IMDG Code is constantly revised and updated on the advice of a team of experts. What is significant is that the properties of calcium hypochlorite are said in the code to include the following:

“Critical ambient temperature of decomposition may be as low as 60 degrees C.”

An ordinary reading of this sentence would suggest that once the ambient temperature reaches 60°C there would be a risk of decomposition. The code, as explained by several of the respondents’ witnesses, is directed at the ordinary

carrier or master of a ship and not a person qualified in chemistry. It should therefore be construed accordingly. In these circumstances, it may well be that the Bowes theory is not necessarily one which is universally accepted. The Court *a quo* placed great store on the apparent absence of explosions since the early seventies notwithstanding the vast quantities of calcium hypochlorite carried by ships. It will be recalled that there was in fact an explosion in 1988. Nonetheless, it is true that fortunately such explosions have become indeed rare. But the evidence does not disclose whether containers of calcium hypochlorite are regularly stowed on the top tier in the tropical or sub-tropical sun for periods as long as was the case in the present instance. There may be other distinguishing factors; one does not know.

[18] I mention all these factors to illustrate the imponderables that exist and the difficulty that arises when reliance is placed solely on what in reality is no more than a theoretical exercise. But whatever role the heat of the sun may or may not



have played it must not be overlooked that the onus upon the respondents would not necessarily be discharged simply by disproving the “insolation theory”.

[19] It appears from what has been said above that the Court *a quo* concluded that once the insolation theory was disproved the cause of the explosion must have been a defect or contaminant in the calcium hypochlorite. This step in its reasoning appears from the judgment to have been based at least partly upon what was stated to be a concession by counsel that if the one was not the cause, it had to be the other. In this Court counsel for the appellant, who also appeared at the trial, explained that there had been a misunderstanding in that he had conceded no more than that he himself could suggest no other cause. As I have indicated, however, there was no obligation on counsel or the appellant to do so.

[20] It is clear from the Clancey articles and acknowledged by Dr Atherton, that the cause of the explosions in the late sixties and early seventies was never positively identified and remains a matter of speculation. Indeed, all the indications

are that there is still much to be learned about the factors that may cause, or contribute to, the decomposition of calcium hypochlorite. It was suggested that the likely cause of those explosions was in effect either the presence of a contaminant or some defect or variation in the raw materials used in the manufacturing process. This, of course, was the cause of the explosion postulated by Dr Atherton in the present case. As in the previous instances Dr Atherton was able to do no more than suggest a number of possible contaminants or point to ingredients such as zinc stearate that may have contained an impurity. No tests were conducted to demonstrate that such an impurity or contaminant would remain dormant for such an extended period before manifesting itself. All that Dr Atherton had to rely upon was that the explosions in the past had been preceded by lengthy delays. However, not only was the cause of the past explosions not positively identified, but the calcium hypochlorite involved in those explosions was in granular or powder form; not in tablet form. In other words, it had not been subjected to the tablet-making

process which according to Dr Buchan would have served as a screen for contaminants or defects. Dr Atherton's response was simply that it depended on the contaminant and the extent of the compression. No attempt was made by him or any other of the respondents' witnesses to identify or explain the nature of a contaminant that would survive the compression associated with tablet-making without immediately setting off a reactive process but instead would do so for no apparent reason more than 50 days later; nor was any attempt made to quantify the minimum compression that would have been required to serve as a screen. Dr Atherton's response was therefore hardly persuasive and in my view was no answer at all to Dr Buchan's evidence.

[21]           The Court *a quo* dealt with Dr Buchan's evidence in relation to the tablet-making process (at 863 J- 864 B) as follows:

“Although Dr Buchan attempted to convince me that it was not really possible for contaminated products to leave his factory as the high pressures in the tablet-making machine would ferret out any

contaminants lurking in the ingredients, he did subsequently concede that ignition may well have occurred in tablets after they left the compacting machine. In any event, given that tablet making is an art rather than a science, according to Dr Buchan, and that the raw materials used do lack consistency, it seems to me that one cannot exclude this as a probable cause.”

[22] The “concession” to which the learned judge refers requires elaboration. It was put to Dr Buchan in cross-examination that a Mr Noppe, a former employee of the appellant who had become the appellant’s factory manager after Dr Buchan left in 1993, had told counsel for the respondents that on several occasions while he was employed at the factory tablets had ignited some 10 to 30 minutes after they had come out of the tablet-making machine. Dr Buchan had no knowledge of these incidents but stressed the difference between the short delay alleged and a delay of more than 50 days. In any event, his evidence was to the effect that if there was a defect or contaminant in the mixture the reaction on compaction would be “*almost*” spontaneous. In other words, he acknowledged the

possibility of some delay. The point is, and Mr Noppe's experience did not indicate the contrary, the effect of compaction was to initiate a reaction, even if the delay of 10 to 30 minutes was unusually long. Mr Noppe, I should add, was not called as a witness.

[23]           The reference to tablet making being an "art rather than a science" also requires comment. The judge appears to have regarded this as some sort of concession in relation to the chemical stability of the tablet. This was not the case. The "art" related essentially to determining the correct quantity of zinc stearate and chlorite of lime to be added to the calcium hypochlorite. There was no suggestion that these chemicals affected the stability of calcium hypochlorite in any way.

[24]           In my view, therefore, there was no justifiable basis for disregarding Dr Buchan's evidence as to the effect of the tablet-making process. He was obviously an expert in his field with many years experience in the tableting of calcium hypochlorite. It is true that certain aspects of his subsequent conduct were

criticized by the trial Court but he was not found to be untruthful. Once regard is had to his evidence as to the screening effect of tableting calcium hypochlorite, it had to follow that a delay of 50 days or more would be wholly inconsistent with a defective ingredient or contaminant being the cause of the explosion. The same is true of the contention that there would have been a lowering of the critical temperature of the tablets by reason of a defective ingredient or contaminant. I have previously referred to Dr Atherton's evidence to the effect that something out of the ordinary must have occurred and that one was looking at "remote possibilities". No doubt that is so, but in all the circumstances I can see no justification for the inference that whatever the cause of the explosion might have been it had to relate to the state of the calcium hypochlorite when it was shipped on board. Something extraordinary and unknown could just as well have occurred during the voyage. Once one is driven to look for remote possibilities and assume that something unknown and out of the ordinary must have happened, one in truth

simply does not have the answer. In such cases the result must inevitably be determined by the incidence of the burden of proof.

[25] In The “Popi M”, *supra*, at 6 Lord Brandon, in relation to the cause of the sinking of a ship, said the following:

“In my opinion Mr Justice Bingham adopted an erroneous approach to this case by regarding himself as compelled to choose between two theories, both of which he regarded as extremely improbable, or one of which he regarded as extremely improbable and the other of which he regarded as virtually impossible. He should have borne in mind, and considered carefully in his judgment, the third alternative which was open to him, namely, that the evidence left him in doubt as to the cause of the aperture in the ship’s hull, and that, in these circumstances, the shipowners had failed to discharge the burden of proof which was on them.”

The learned judge in the Court below referred to this passage in Lord Brandon’s speech but in my judgment erred in not adopting the third alternative that was open to him.

[26] It follows that in my view the respondents failed to discharge the

burden of proving that the cause of the explosion was the defective or contaminated state of the calcium hypochlorite or that it had been improperly stowed in the container. That being so, they failed to establish that the shipment of the “goods” was without the consent of “the carrier, master or agent” within the meaning of article IV, rule 6, of the Hague Visby Rules. The Court *a quo* accordingly erred in not granting absolution from the instance with costs.

[27] It is unfortunately necessary to have to comment on the state of the record. During the course of the trial various documents were handed in almost on a daily basis. These included the summaries of the expert witnesses, Captain Browne and Dr Erens as well as a “second report” of Dr Atherton. The summary of Dr Erens’ evidence and Dr Atherton’s report were of particular importance. Each referred in his evidence-in-chief to his summary or report and was later cross-examined on its contents. But neither document formed part of the record and their absence rendered passages in the evidence of both witnesses virtually



unintelligible, particularly in view of its technical nature. To make matters worse the respondents' counsel referred to the missing documents, or some of them, in his heads of argument and stated that with the concurrence of the appellant's legal representatives they would in due course be forwarded to the Registrar of this Court. That did not happen. Instead, a bundle of missing documents was handed up on the morning of the hearing. The documents were unaccompanied by an application for condonation for their late filing. The workload of this Court is such that records have to be read and assimilated during the recesses. The absence of documents necessary to properly understand the evidence is not only frustrating and annoying for the judges concerned but can impair the smooth running of the court. There is no reason why portions of the record should have to be read a second time by judges during term time for no better reason than that the original record was defective. As an indication of this Court's displeasure, I propose to disallow both sets of attorneys for the appellant, i e the local and Bloemfontein

attorneys, 50 percent of their costs of perusing the record.

[28] In the result the following order is made.

- (a) The appeal succeeds with costs, save that 50 percent of the costs of the appellant's local and Bloemfontein attorneys in respect of the perusal of the appeal record is disallowed.
- (b) The order made by the Court *a quo* is set aside and the following is substituted:

“Absolution from the instance is granted with costs.”

**D G SCOTT**  
**JUDGE OF APPEAL**

**NIENABER JA)**  
**SCHUTZ JA) - CONCUR**  
**ZULMAN JA)**  
**STREICHER JA)**

.