



THE MERCHANT SHIPPING ACT, 1894

REPORT OF COURT

(No. 7967)

s.s. "Chiswick" O.N. 168469

In the matter of a Formal Investigation held at The Royal Courts of Justice, London, on the 4th day of January, 1951, before K. S. Carpmael, Esq., K.C., assisted by Captain J. P. Thomson and Captain J. W. Grimston into the circumstances attending the stranding of the s.s. "Chiswick" on the 23rd June, 1950.

The Court, having carefully inquired into the circumstances attending the above-mentioned shipping casualty, finds for the reasons stated in the Annex hereto, that the stranding of the "Chiswick" was due to the fault of the Master, Captain Thomas Linton, holder of a Master's certificate No. 39644, as described in the Annex hereto, and accordingly suspends his certificate for two years from to-day.

Dated this 5th day of January, 1951.

KENNETH CARPMAEL, *Judge*.

We concur in the above Report.

J. P. THOMSON
JOHN WM. GRIMSTON } *Assessors*.

QUESTIONS AND ANSWERS.

The Court's answers to the questions submitted by the Ministry of Transport are as follows:—

- Q. 1. By whom was the "Chiswick" owned at the time of her stranding?
- A. The Britain Steamship Company, Limited of 37, Threadneedle Street, London, E.C.2.
- Q. 2. When, where, and by whom was the "Chiswick" built?
- A. By Messrs. Wm. Pickersgill & Sons, Limited, at Sunderland, in 1943.
- Q. 3. With what compasses was the "Chiswick" fitted? Were these in efficient working order previous to the stranding?
- A. Two Sestrel magnetic compasses, one in the wheelhouse and one on monkey's island. Both were adjusted off Sunderland on 20th February, 1950. Also a Brown's type "A" gyro compass with a multiple repeater in the wheelhouse and a bearing repeater on monkey's island. The gyro compass equipment was last serviced at Sunderland on the 17th February, 1950.
- Q. 4. Was the "Chiswick" fitted with echo-sounding apparatus, patent log, patent sounding machine and direction finding equipment?
- A. Yes.

- Q. 5. Were these in efficient working order previous to the stranding, and were these or any of them being used, and if not, why not?
- A. Yes. Except for one reading of the patent log at the material time none of these was being used. Both the echo-sounding apparatus and the patent log should have been in regular use, and no satisfactory explanation was given as to why this was not done.
- Q. 6. With what type of steering gear was the "Chiswick" fitted?
- A. Steam steering gear with telemotor control.
- Q. 7. Did the steering gear work satisfactorily at all material times?
- A. Yes.
- Q. 8. Was the "Chiswick" supplied with all proper charts and publications for the voyage in question, and in particular for navigation in the Gulf of St. Lawrence?
- A. Yes.
- Q. 9. Did the life-saving appliances of the "Chiswick" comply with the regulations?
- A. Yes.
- Q. 10. Did the "Chiswick" leave Sydney, Cape Breton, for Montreal on the morning of 22nd June, 1950?
- A. Yes.
- Q. 11. On the afternoon of 23rd June, 1950, was a safe and proper course set for the voyage in the Gulf of St. Lawrence from Cap des Rosiers along the coast?
- A. No.
- Q. 12. Was the "Chiswick" to the southward of her course line and if so when and how much, and what were the causes?
- A. Yes. At 1525 she was about $2\frac{1}{2}$ miles southerly of her course line. At 1600 she was about $\frac{1}{2}$ mile southerly of her course line. In both cases this was probably due to inset by the current.
- Q. 13. Were prompt and proper steps taken from time to time and when to bring the "Chiswick" on to a safe course?
- A. No.
- Q. 14. Was the Master at all material times properly informed as to the navigation of the "Chiswick"?
- A. No.

- Q. 15. On becoming aware at about 1445 on the 23rd June of the vessel's position and of an alteration in course by the second officer, did the master countermand such order, and if so, should he have done so?
- A. Yes. He should not have countermanded such order.
- Q. 16. On becoming aware of the vessel's later position at about 1525, did the Master personally take any or sufficient steps to safeguard his ship, and if not, should he have done so?
- A. No. He should have done so.
- Q. 17. Did the "Chiswick" strand at about 1605, 23rd June, 1950?
- A. Yes.
- Q. 18. What was the place of the stranding?
- A. About 1½ miles to the southward and eastward of Fox Point pier in the River St. Lawrence, and about half a mile off shore.
- Q. 19. What was the state of the weather, wind and sea at the time of the stranding?
- A. Fine and clear, a moderate north-westerly breeze, and a moderate sea.
- Q. 20. Did the "Chiswick" refloat shortly after 1900 on the 23rd June, 1950?
- A. Yes.
- Q. 21. How was she refloated?
- A. She refloated as the tide rose with the help of her helm and engines.
- Q. 22. What was the cause of the stranding of the "Chiswick"?
- A. Setting a course too close to the land, and failure to appreciate an inshore set of current.
- Q. 23. Was the stranding due to the wrongful act or default of the owners of the "Chiswick"?
- A. No.
- Q. 24. Was the stranding due to the wrongful act or default of the master of the "Chiswick"?
- A. Yes.
- Q. 25. Was the stranding due to the wrongful act or default of any other person?
- A. No.

ANNEX TO THE REPORT.

At this Inquiry, Mr. S. Knox Cunningham appeared for the Minister of Transport, instructed by the Treasury Solicitor; Mr. E. Browning for the owners, instructed by Messrs. Holman Fenwick and Willan; the master appeared in person.

The "Chiswick" was a steel screw steamship of 6,005 tons gross, 401 feet in length, and 54 feet in beam, fitted with triple expansion engines.

At the time of her stranding, as hereinafter described, she was in the course of a voyage from Sydney, Cape Breton to Montreal, laden with a cargo of coal, and manned by a crew of 42 hands all told. She left Sydney at 0758 (Atlantic Summer Time) on 22nd June, 1950, her sailing draft being 25 feet 10 inches forward and 24 feet 9 inches aft.

At noon on 23rd June her position by observation was latitude 48° 50' N, longitude 63° 51' W, and a course was set of 298° True by gyro compass. The gyro compass had been checked by sun azimuth during the forenoon watch and found to be in order.

Contrary to the advice given by the St. Lawrence pilot, the course set by the master was deliberately chosen in order to take the inshore route of not more than a mile offshore instead of about 14 miles off outside the Gaspé current.

At 1445 the second officer, after obtaining a position by cross bearings between Cape Gaspé and Cape des Rosiers, considered that the vessel was getting too close inshore and altered course ten degrees to starboard. Five or ten minutes later the master, in pursuance of his deliberate decision to proceed close inshore, countermanded this course and a course of 298° was resumed.

There is no doubt that a strong inshore set was being encountered, because at 1525 cross bearings showed that the vessel was about 2½ miles southerly of her course line, and only about ¾ of a mile off shore. Had the vessel been carefully navigated thereafter, however, there would have been no particular risk in such position.

At 1525 after the cross bearings mentioned in the previous paragraph had been taken, the master altered course to 314°. This was a course which in the opinion of the Court was close-shaving, especially having regard to the inshore set which had been experienced, and which it was to be anticipated would continue.

Again, however, had proper steps been taken by use of the echo-sounder, and by proper observation of the pier off Fox River which was drawing ahead, it could have been appreciated that the vessel was approaching dangerously close to the shore.

The master, however, left the bridge after setting the course of 314°, and gave no special instructions, as he should have done, with regard to special precautions such as mentioned in the preceding paragraph.

The Court has no doubt that the countermanding of the previous action by the second officer, led to the latter taking the view that the master had sized up the situation and knew best, and that this caused this young officer, aged 23, not to take action which he otherwise would have done.

In consequence the course of 314° was maintained, and at 1600 cross bearings showed that the vessel had been set a further ¼ of a mile inshore, and the second officer appreciated that he was in dangerous proximity to the land. He thereupon altered course to 320°, but it was too late, and shortly thereafter the vessel stranded, the tide being then about half an hour after low water.

Attempts were at once made to refloat, but it was not until about 1900 that she refloated on the rising tide, having sustained extensive bottom damage.

The Court is of opinion that in setting the inshore course in the first instance, and secondly in failing to take proper steps thereafter to ensure the safety of his vessel, the master was guilty of thoroughly bad navigation and seamanship.

In extenuation of his action, the master stated that he was unwell and felt he was in danger of a nervous breakdown. If this was so he ought to have taken the outside course, and turned over to his chief officer for the time being.

In all the circumstances the Court has no alternative but to suspend the master's certificate for two years from 5th January, 1951.

KENNETH CARPMAEL, *Judge.*

J. P. THOMSON }
JOHN WM. GRIMSTON } *Assessors.*

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THE MERCHANT SHIPPING ACT, 1894

REPORT OF COURT

(No. 7968)

s.s. "Indian Enterprise" O.N. 181121

In the matter of a Formal Investigation held at The Law Courts, London, on the 8th, 9th and 10th days of January, 1951, before R. F. Hayward, Esq., K.C., assisted by Dr. H. E. Watts, M.B.E., G.M., B.Sc., Ph.D., F.R.I.C., and Captain Hancock, D.S.C., into the circumstances attending the loss of the s.s. "Indian Enterprise" in the Red Sea by explosion with the loss of 73 lives on or about 19th June, 1950.

The Court having carefully inquired into the circumstances attending the above-mentioned shipping casualty, finds for the reasons stated in the Annex hereto, that the casualty was caused by the explosion due to an unascertained cause of the 580 tons of explosives carried aboard her.

Dated this 18th day of January, 1951.

R. F. Hayward, *Judge*

We concur in the above report.

H. E. Watts }
C. A. Hancock } *Assessors*

QUESTIONS AND ANSWERS.

The Court's answers to the questions submitted by the Ministry of Transport are as follows:—

Q. 1. By whom was the s.s. "Indian Enterprise" owned at the time of her loss?

A. The India Steamship Company, Limited, of D.1, Clive Buildings, Calcutta.

Q. 2. By whom was the s.s. "Indian Enterprise" managed at the time of her loss?

A. Messrs. Stelp and Leighton, Limited, of 9/13, Fenchurch Buildings, London, E.C.3.

Q. 3. Did the s.s. "Indian Enterprise" carry a crew of 74 persons all told under the command of Captain Peter Sinclair Campbell at the time she was lost?

A. Yes.

Q. 4. Did the s.s. "Indian Enterprise" sail from Holehaven on the River Thames on the 3rd June, 1950, for Bombay?

A. Yes.

Q. 5. When the s.s. "Indian Enterprise" left Holehaven for Bombay was she carrying 8,530 tons of general cargo and 580 tons explosives?

A. Yes.

Q. 6. Of the 8,530 tons of general cargo, were 3,852 tons loaded at Bremen, 1,825 tons loaded at Antwerp, and 2,853 tons loaded at London?

A. Yes.

Q. 7. Were the 580 tons of explosives loaded at Holehaven on the River Thames on the 2nd and 3rd days of June, 1950?

A. Yes.

Q. 8. Were the 580 tons of explosives made up of three categories, viz.:—M.S.A. (Magazine Stowage A), O.A.S. (Ordinary Ammunition Stowage), and A.S.P. (Pyrotechnic Stowage)?

A. Yes.

Q. 9. Were all the explosives coming within the category M.S.A. Stowage stowed in a properly constructed close-lined magazine in the fore-end of No. 2 'tween deck, and was such magazine inspected and passed by a Ministry of Transport Surveyor?

A. Yes. Yes.

Q. 10. Were all the explosives coming within the category A.S.P. Stowage stowed in accordance with the regulations laid down for the stowage of that category, and were they in fact stowed in a lock-up steel locker under the fore-castle head?

A. Yes.

Q. 11. Was there a portable magazine on the fore deck in which Smoke Generators were stowed?

A. Yes.

Q. 12. Were all the explosives carried on the s.s. "Indian Enterprise" stowed in compliance with the regulations as laid down in Ministry of Transport Circular 1817 (T.152) of October, 1947?

A. Yes.

Q. 13. Was the electric wiring of the ship in Nos. 1 and 2 'tween decks modified to comply with the regulations?

A. Yes.

Q. 14. Were the ventilators leading to the 'tween decks where explosives were carried protected by the insertion of double fine mesh wire gauze?

A. Yes.

Q. 15. Was the loading of the explosives supervised by officers experienced and competent in directing the loading and stowage of explosives?

A. Yes.

Q. 16. Was that part of the general cargo coming within the category of hazardous cargo, namely acetic acid and ethylchloride, stowed on deck on the after-part of the ship, and at a safe distance from any part of the explosive stowage?

A. Yes.

ANNEX TO THE REPORT.

The s.s. "Indian Enterprise" was a single-screw steel cargo vessel built in 1945 in Sunderland to the order of the Ministry of War Transport.

In September, 1946, she was sold to the India Steamship Company, Limited, of D.1, Clive Buildings, Calcutta, when her name was changed from "Empire Mombasa" to "Indian Enterprise." She remained registered in Sunderland, and was managed by Messrs. Stelpand Leighton, Limited, of 9/13, Fenchurch Buildings, London, E.C.3. Her ship's husband was Mr. Norman Leighton of that firm.

The s.s. "Indian Enterprise" was of 7,319 tons gross, 431 feet in length by 56 feet in beam, with a moulded depth of about 35 feet. Her engines were amidships. She had six holds, four of which were forward of the engines, and two abaft them. She was divided into eight water-tight compartments by seven transverse bulkheads, and her double bottom, divided into eight water-tight tanks, extended nearly throughout the ship. She was fitted with the usual side bunkers, and No. 4 lower hold was adapted for use as a reserve bunker.

In addition to the cargo holds mentioned, she was fitted with two separate special cargo compartments, situated forward of No. 1 hold, the upper one being within the forecandle-head immediately above the lower one, which was a forward extension of No. 1 'tween deck. Access to the upper one was through steel doors from the upper deck. Access to Nos. 1 and 2 holds, which are the only ones with which this Inquiry is specially concerned, were by the usual hatchways, and in No. 2 'tween deck by a trunk on the port side of the foremast house, which was fitted with a door capable of being locked.

The ship was fitted forward with ventilators, two on the forecandle head, two on the fore deck forward of No. 1 hatch, two abaft No. 1 hatch, two on the foremast house, two ventilators through the derrick posts leading to No. 1 hold, two forward of No. 2 hatch and abaft it. The ventilators connecting with the compartments laden with explosives were fitted with double fine mesh wire gauze, in accordance with Ministry requirements.

The ship's personnel was accommodated as follows:—

The master and navigating officers in the bridge round house at the forward end of the boat deck; the engineer officers and stewards in the midships superstructure; petty officers in a round house at the after end of the boat deck; and sailors and firemen were accommodated below decks in the stern of the ship.

The s.s. "Indian Enterprise" was fitted with triple-expansion steam engines, coal-fired, and her speed was about 11 knots. She was fitted with appropriate pumps, steering gear, compasses, and anchors and cables. Her life-saving and fire appliances, lights and distress signals complied with the latest Ministry of Transport requirements when they were last inspected at Liverpool in May of 1950 by the Ministry's surveyors. A Marconi echometer was fitted in the chartroom, the wire connections for which passed down in No. 1 hold to the bottom of the ship. The vessel's last annual inspection and endorsement of her loadline certificate was made in Bombay in February, 1950, and she passed a special survey for retention of her Lloyd's classification, during the early months of 1950.

The "Indian Enterprise" in May loaded some 3,852 tons of general cargo at Bremen, a further 1,825 tons at Antwerp, and 2,853 tons in the Royal Albert Dock, London. At this time it was known

- Q. 17. Were the explosives stowed at a safe distance from engine room bunkers, and quarters occupied by the ship's crew and officers?
- A. Yes.
- Q. 18. When the ship sailed from the River Thames, was the only means of access to the magazine by way of a steel door in the forward mast-house which was provided with a padlock and key?
- A. Yes.
- Q. 19. Were the life-saving appliances carried by the s.s. "Indian Enterprise" in order when she sailed?
- A. Apparently so. They had been inspected and found in order by a Ministry surveyor in May, 1950.
- Q. 20. Did the s.s. "Indian Enterprise" call at Port Said on the 17th June and take on board 625 tons of coal bunkers, and did she leave Port Said on the 18th June?
- A. Yes. Yes.
- Q. 21. Did the s.s. "Indian Enterprise," after passing through the Suez Canal, stop at Suez to unload the searchlight, and did she leave Suez at approximately 02.20 hours on June 18th?
- A. Yes. Yes.
- Q. 22. At about 20.40 hours G.M.T. on the 19th June, when approximately midway between the Brothers and Daedalus Lights, was the s.s. "Indian Enterprise" seen to blow up by observers on the m/v "H. Westfal-Larsen" and the s.s. "Lake Chilliwack"?
- A. At about 20.20 hours G.M.T. the s.s. "Indian Enterprise" in the position named was seen to blow up by observers on the ships named.
- Q. 23. At the time of the explosion, was the m/v "H. Westfal-Larsen" in a position 23° 30' north 35° 27' east?
- A. At this time the named ship was in the position about 25° 30' north 35° 27' east.
- Q. 24. Did the m/v "H. Westfal-Larsen" and the s.s. "Lake Chilliwack" and other vessels make a thorough search?
- A. Yes.
- Q. 25. Did the life-boat of the m/v "H. Westfal-Larsen" pick up one survivor, Nur Hossain?
- A. Yes.
- Q. 26. Was the only wreckage seen by the searching vessels in the nature of small pieces of broken wood scattered over a considerable area of scum?
- A. Yes.
- Q. 27. Was there anything in the weather or atmospheric conditions which could have caused the explosion?
- A. No.
- Q. 28. Was there any feature so far as is known in the ventilation of Nos. 1 and 2 'tween decks which could have caused or induced conditions giving rise to the explosion?
- A. No.
- Q. 29. Is there any likelihood of a sea mine or any other under-water explosion having caused the destruction of the s.s. "Indian Enterprise"?
- A. No.
- Q. 30. What was the probable cause of the loss of the s.s. "Indian Enterprise"?
- A. The Court cannot say. See Annex to the Report.

that she was to carry a large consignment of explosives, and arrangements were made for the construction of a magazine in the most suitable place, namely, immediately abaft the forward bulkhead of No. 2 'tween deck, and extending from side to side. The magazine was in three separate compartments, each of which had a door at the after end. It was constructed by specialists in that work, according to Ministry requirements as set out in their Circular No. 1817, and after completion was inspected and approved by a Ministry surveyor. The Court is satisfied that this magazine was in all respects a proper one.

After the magazines had been loaded and the space abaft them filled with other ammunition, the only access to the magazine was through a door in the trunkway in the mast house. This door was fitted with lock and key and was apparently kept locked; the chief officer retained the key. The trunkway was fitted with an iron ladder which, however, being in the magazine, had been boarded up in accordance with Ministry requirements.

The "Indian Enterprise" left the Royal Albert Dock and anchored in the river off Holehaven, and on the 2nd June commenced loading explosives.

The stevedores were provided by Messrs. Sheridan & Son, Limited, who had constructed the magazines. They were in charge of a capable foreman and charge-hand, who had their regular gang of 19 men. This, however, had to be augmented by men from the pool at Northfleet to a total of 42 hands. They were all transported to the ship in a tug together with other people, including Mr. Bart, the Managers' dock representative, Flight-Sergeant Wright of No. 1 R.A.F. Movements Unit at Poplar, and Captain Lupton, the freight superintendent of the Royal Naval Armament Depot at Woolwich.

On arrival of the stevedores at about 9.30 a.m., there was already lying alongside a lighter containing 2,969 containers of rocket motors, weighing 127 tons. It had been intended to ship these rocket motors in March on another vessel, and for that purpose they had been inspected in February and laden on to a lighter, but they were shut out from the ship and taken back to Woolwich, where they remained in the lighter in open storage at the pier for some two months, until sent to the "Indian Enterprise." They were hoisted on to the ship in cargo nets, and reddish or rusty water was seen dripping from them. Subsequently, when the lighter was emptied, she was found to be holding water above her ceiling. The attention of the flight-sergeant was drawn to their wet condition, and he proceeded ashore and telephoned to Flight Lieutenant Waring, and was informed that the shipment could proceed. The shipment was accordingly completed, the containers being placed at the forward end of No. 1 'tween deck from side to side of the ship, extending about four feet in height above the deck. These containers were over-stowed by 17 tons of Q.F. cartridges, 2½ tons of filled shell, and 180 pounds of fuses with burster, extending up to just below the hatchway, and extending aft as far as the middle of the hatchway.

When the R.A.F. consignment was all stowed, the flight-sergeant handed over a certificate, which Flight Lieutenant Waring had previously signed and given to him to pass on to the ship if and when he was satisfied that the stowage was in order. With the usual time off work for meals etc. the stevedores continued stowing explosives until about 5.30 p.m. On Saturday, 3rd June, the loading of explosives was resumed, and completed in the course of the afternoon. In No. 2 'tween deck the magazines had been filled, and the stowage of ammunition and the stowage of explosives extended along the 'tween deck to about the middle of No. 2 hatch.

During the loading on the 3rd June, a consignment of signal flares, signal rockets, and target rocket-heads was stowed in the special compartment under the fore-castle head. A portable magazine had been made in accordance with Ministry requirements and placed on the foredeck between the foremast and No. 1 hatch. This was filled with a case of smoke generators. During the loading of the ship, certain materials classed as dangerous cargo, namely acetic acid and ethylchloride, were stowed on deck on the after part of the ship, which was a proper place for them.

According to the evidence of the stevedore foreman, who superintended the loading in both hatches, all the packages of the commercial consignment of explosives were in very good condition, and no spillage was observed. They were of recent manufacture and had been inspected before shipment. The Naval Officer in charge of the Naval consignment supervised the loading of the goods under his responsibility, and certified that they were properly laden.

As to the question of security, whilst the ship was in the Royal Albert Dock, night and day watchmen were supplied by the London Ship Services. Whilst at Holehaven, the chief officer of the ship organised his own security, and, according to the evidence, a Pakistani quartermaster was kept at the gangway, and whilst loading was proceeding junior officers were at the hatchways. The gangway quartermaster had orders that if any stranger boarded the ship the chief officer was to be notified. The many witnesses who came in contact with the chief officer spoke of his ability and devotion to duty, and there was much evidence that he was aware of the safety regulations which provided for the adequate ventilation of the spaces in which explosives were stowed. The sole survivor, who, in the opinion of the Court was an honest witness, but who had been through a terrible experience in the disaster, was definitely satisfied that all the forward ventilator cowls had been removed, that their trunkways were blocked with their wooden covers and covered over in the usual manner with canvas covers lashed down, and that this condition continued throughout the voyage.

Having regard to the chief officer's careful compliance with the explosives regulations and the need for ventilation, and the fact that during this voyage one would normally expect nothing but fine and hot weather, there appears to have been no motive at all for such a restriction of ventilation. If however the ventilation was so restricted, as to which the Court makes no finding, expert evidence satisfies it that although the consequences would be to raise the temperature of the compartments the resulting heat would not be sufficient to affect detrimentally the safety of normal explosives.

The "Indian Enterprise" sailed from Holehaven on the evening of the 3rd June, and arrived at Port Said on the 17th June, apparently without incident. Her agents had been notified of her special cargo and her requirements of bunkers. She was moored in the outer harbour, and received about 600 tons of Welsh coal bunkers and some fresh water, and thereafter proceeded through the Suez Canal to Suez, where she discharged the searchlight and the Canal pilot and then proceeded at about 0220 hours on the 18th. Whilst in Port Said, she had been provided with four watchmen from the shore. At about 2230 hours apparent time on the evening of the 19th June, and when approximately half way between the Brothers and Daedalus Lights in the Red Sea, the "Indian Enterprise" was seen to blow up by an observer on the m/v "H. Westfal-Larsen" which had just passed her at a distance of about 7 miles, and also by an observer on another south bound ship, the s.s. "Lake

Chilliwack", which ship about an hour and a half earlier had observed lamp signals from the "Indian Enterprise" giving her name to a passing northbound vessel. The night was clear and dark, there being no moon, and what little wind there was appears to have been from the south westward. Although the "Indian Enterprise" was in view of at least two ships for a substantial time before the casualty, nothing unusual in connection with her was noticed until about the time of the explosion.

Shortly stated, the evidence from the m/v "H. Westfal-Larsen" is as follows. Having sighted the "Indian Enterprise" at about 2230 hours on the starboard bow, her lights remained in view and she was about abeam at about 2250 hours when the attention of the officer of the watch was attracted by a brilliant flash from her direction. The flash lasted between ten and fifteen seconds and was distant about 7 to 9 miles. It was made up of two parts, the first orange in colour, followed by a larger flash, lighter in colour, from the centre of the first flash. The second flash extended above the first glow and expanded in mushroom formation. Shortly afterwards, two explosions were heard at about a two-seconds interval, both of about the same intensity, causing the ship to vibrate. Thereafter, he noticed a column of black smoke. The ship's radio officer, who was seated in his cabin, at about 2018 hours G.M.T. saw a brilliant flash through the starboard window. He stood up and looked through it, and noticed blazing pieces being thrown into the sky. The light was of an orange colour; it died away in about two seconds. He felt two distinct vibrations but did not hear any explosion.

The evidence from the s.s. "Lake Chilliwack" was from her officer of the watch, who, looking in the direction of the "Indian Enterprise," saw a great sheet of flame suspended in the air and coming from her midship portion. The white-coloured flash lasted for about five seconds, and then terminated in a terrific flash which appeared to envelop the ship. No sooner had this flash subsided than it was followed by another flash of about the same intensity and also coloured white. He also saw a considerable quantity of sparks and possibly blazing debris. A few seconds later he heard two explosions in rapid succession and felt the vibrations. Shortly afterwards, all he could see was a huge column of dense black smoke rising to a great height.

Summarised, the evidence of the survivor, Nur Hossain, is as follows: He was a winchman on the "Indian Enterprise" and had been a sailor for several years. He had joined this ship in Calcutta. Having turned in at about 6 p.m., he woke up, and at about 9.30 had a cup of tea and a smoke and came up on deck aft. There was a man and a boy sitting on a seat just forward of the bollards on the starboard quarter, who invited him to sit down also. He said he preferred to stand, and started walking to and fro in front of them. The boy then said: "I can see fire forward", and both of these persons jumped up and ran down the companionway, and then the ship blew up. At the time the survivor's attention was called to the fire, he was facing forward. He saw what appeared to be very similar to a red flare. The boy had said: "The magazine is on fire" before he dashed down below. The survivor was thrown into the sea. He thinks it was fairly calm; he had no recollection of any smell; he did not hear any sounds or any alarm; the flame, he thought, was on the starboard side of the mast. He could not say whether he went down with the ship or whether he was thrown into the water. His next recollection was when he found himself suffocating. When he came to the surface he could not see the ship or any part of it. Both sides of his body had been burnt.

At the time he observed the fire he was half asleep and could not really say whether he saw a flame; "it was something either like fire or like the glow from a fire". He had only been on deck about two seconds when the boy said: "Look there is a fire". About two seconds later, everything went blank. "I could see the mast and the bridge silhouetted against the light. I could see the flame and the glare of the light and the bridge in front of it all". He said that the flame was higher than the mast itself. "I do not think the fire came up very quickly, but it was fairly rapid, and the colour, I think, was red; but I have no clear recollection of it. These things occurred to me. I have a feeling that this is what happened. The counsel, or a few other people have asked me from time to time, and I have told them what I knew. I think I have said the same to others".

The two ships mentioned above observing the explosion made a thorough search for survivors, and within about an hour the Norwegian ship had picked up the above-mentioned only survivor, their attention being directed to him by his cries, in a region densely covered with debris, consisting mainly of pieces of wood about two feet in length or less. Search was made by other ships until well after daylight, and also by aircraft, and the Court is satisfied that everything possible was done to save life by those who were in a position to give help.

Appreciating that this inquiry is mainly for the purpose of gaining from it, if possible, knowledge that will be useful to the maritime community, the Court has considered anxiously and deeply the question: What was the probable cause of the loss of this fine ship and 73 lives?

Certain otherwise possible causes may be ruled out. For instance:—(1) There is no ground for thinking that the ship struck a mine in this part of the Red Sea. (2) There is no evidence of any electrical disturbance at all. (3) The fact that she was in clear weather, in deep water, rules out the probability that her echometer, with its electric cable through No. 1 hold, was in use; in other words, that cable was colloquially "a dead wire." (4) Though there was some cross-examination on the subject, the Court is satisfied that at the time in question, the weather being calm, there was no possibility of ignition arising in the magazine of any explosives in it by reason of spillage and friction. (5) There appears to have been no part of the general cargo that was liable to spontaneous combustion. (6) The explosion did not arise from the so-called dangerous cargo stowed on deck aft.

It remains to consider the possible causes, and to see whether one can decide, with any degree of confidence, if one of the possible causes was a probable cause.

The possible causes appear to be:

(1) The metal containers of the rocket motors were non-watertight and had drain holes in them. Inside each container were two metal cylinders hermetically sealed with adhesive tape and varnished, containing cordite and an igniter (which would be fired electrically). An unascertained but undoubtedly considerable number of the containers must have had a quantity of water inside them, probably for a considerable time, because rusty coloured water dripped out of them during loading, and water was found covering the bottom of the barge after the containers had been removed. If this water had rusted through the interior metal cylinders, or loosened the sealing of them and so reached the cordite, it seems possible that this, combined with subsequent heat, might lead to decomposition and subsequent self ignition of the cordite or igniters in one or more of the cylinders.

(2) Compositions (type C) P.N. The compositions have a relatively low temperature of ignition and are affected by the presence of moisture and small quantities of impurities, and self ignition of such material is not unknown.

(3) Sabotage. The evidence as to the safety measures taken was limited to the period whilst the ship was in London or at Holehaven, and in Port Said. During these periods those responsible for the safety of the ship appear to have taken reasonable precautions and there is nothing in the evidence which would create suspicion that sabotage was committed. The Court, however, is not satisfied on the evidence before it that it would be impossible for an evilly disposed person, at some time before the "Indian Enterprise" sailed from the U.K. or Port Said, to secrete on board her a time-bomb or similar "infernal machine", but it seems very doubtful that such could have been secreted near enough to the main body of explosive cargo as to explode it and so cause so complete and sudden disappearance of the ship.

In conclusion the Court finds that the loss of the s.s. "Indian Enterprise" was due to an explosion of the explosives laden on board her, and was probably due to one of the three above mentioned possible causes. In the absence of detailed evidence of the components, the manufacture, the storage and examinations of many of the various explosives shipped on board the s.s. "Indian Enterprise," the Court is unable to state which of the three above-mentioned possible causes was the more probable, but it is left with a suspicion, (and it is mere suspicion) that self ignition of composition (type C) P.N. is the more probable cause.

R. F. Hayward, *Judge.*

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