

(No. 7419.)

"WARATAH" (S.S.).

The Merchant Shipping Act, 1894.

In the matter of a Formal Investigation held at the Caxton Hall, Westminster, on the 15th, 16th, 17th, 19th and 20th days of December, 1910, the 9th, 10th, 11th, 12th, 16th, 17th, 30th and 31st days of January, and the 1st and 22nd days of February, 1911, before JOHN DICKINSON, Esquire, assisted by Admiral E. H. M. DAVIS, Commander F. C. A. LYON, R.N.R., Professor J. J. WELCH, M.Sc., M.I.C.E., and J. H. HALLETT,* Esquire, M.I.C.E., M.I.M.E., into the circumstances attending the loss of the British ship "WARATAH," of London, which left Durban for Cape Town on the 26th July, 1909, was spoken by the "CLAN MACINTYRE" on the 27th July, 1909, and has not since been heard of.

REPORT OF COURT.

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 ship was lost in the gale of the 28th of July, 1909, which was of exceptional violence for those waters and was the first great storm she had encountered. The Court is led to this conclusion by the facts that she overhauled the "Clan Macintyre," which afterwards experienced the gale; was last seen heading in a direction which would take her into a position where she would feel the full force of the storm; and was never afterwards sighted by the "Clan Macintyre." Had she been only disabled it is almost certain that she would have been so sighted, and if not, would have been picked up by one of the many ships subsequently on the look-out for her.

In the total absence of direct evidence, and with only conflicting evidence of an indirect character, the Court cannot say what particular form was taken by the catastrophe, but the fact that no wreckage has been found in spite of the most careful and exhaustive search which was carried out, indicates that it must have been sudden. The Court, on the whole, inclines to the opinion that she capsized, but what particular chain of circumstances brought about this result must remain undetermined.

The Court does not desire to travel outside the scope of its functions as a tribunal inquiring into a specific casualty, but, in view of the great prominence which the question of stability has assumed in this Inquiry, feels it not out of place to suggest whether it may not be possible, with the help of a committee of experts appointed for that purpose, to arrive at some conclusions concerning the minimum stability requirements of different types of vessel, consistent with safety at sea. A careful investigation by such a committee, including, as it would necessarily do, examination of stability curves of many vessels in all trades, might show the feasibility of recommending minimum curves for different types of vessel for general adoption. If so, rules for the stowage of cargo for a particular ship could be formulated by the builder for the guidance of the shipowner, with greater precision than is now possible.

The Court is fully aware of the complexity of the subject, and of the difficulties of making rules sufficiently elastic to meet the requirements of varying types of ships and of diverse trades, and, being so aware, refrains from making any more definite recommendation.

JOHN DICKINSON,
Judge.

E. H. M. DAVIS, }
F. C. A. LYON, } Assessors.
J. J. WELCH, }

London, 22nd February, 1911.

* Mr. Hallett retired from the case on the 6th day of the hearing, through illness.

ANNEX TO THE REPORT.

I.

Preliminary observations.

This Inquiry was held at the Caxton Hall, Westminster, on the 15th, 16th, 17th, 19th and 20th of December, 1910, the 9th, 10th, 11th, 12th, 16th, 17th, 30th and 31st of January, and 1st and 22nd of February, 1911.

After the sixth day of the hearing, Mr. Hallett, who had been very unwell from the commencement of the proceedings, found himself unable to continue the Inquiry. The Court regretted very much the loss of his valuable assistance, but, as no allegation whatever had been made against the vessel's machinery, all the evidence on the contrary going to show its thorough efficiency, it was considered better to proceed with the Inquiry without an engineer assessor, and, with the consent of parties, this course was adopted.

Mr. Frederick Laing, K.C., Mr. Norman Raeburn, and Mr. Digby appeared for the Board of Trade; Mr. Butler Aspinall, K.C., and Mr. Craig Henderson for the builders; Mr. Leshe Scott, K.C., M.P., and Mr. Daniel Stephens for the owners; Mr. Bucknill for Dr. Edward Bryan, and for others interested in the passengers. Mr. W. M. R. Pringle, M.P., at first appeared for Mr. H. E. Starke, but he withdrew at an early stage of the proceedings.

At the outset of the case it was agreed by counsel for the parties that any matters tending to throw light on the circumstances of the ship's loss should be placed before the Court, although, according to the strict rules of evidence, they might not be admissible. The Court approved the adoption of this course, but has had to consider what effect should be given to such "hearsay" evidence. While desirous that the natural anxiety of the public, and particularly of the friends and relatives of those lost in the ship, should, so far as possible, be set at rest by a complete examination of every scrap of information available, the Court had to remember its functions as a legal tribunal upon which it was incumbent to observe the law of evidence. The rule which, in the peculiar circumstances of the case, it laid down for its own guidance was, that, while any findings of fact must be based upon strictly legal evidence, yet it would consider those findings in the light of the more or less irregular evidence allowed to be introduced, and see how far its conclusions were thereby fortified or invalidated. In the absence of direct evidence it is satisfactory to the Court to find that the inferences it has drawn from the legal evidence would not require any modification had the "hearsay" to which it has listened been evidence upon which it could have acted.

The plan adopted in the following report has been first to give the usual formal description of the ship, then to set out a condensed statement of the evidence, in historical sequence. This is divided into three parts, (1) the first voyage, (2) the interval between the two voyages, and (3) the second voyage. This is followed by a discussion of all the data relating to the ship's stability, directed to the elucidation of two questions; the first whether there was any defect inherent in the design of the ship which would render her unstable under ordinary seagoing conditions, and the second whether on her last voyage instability was produced by the manner in which her cargo was distributed. After dealing with the questions of the ship's stability as constructed and as loaded, some other possible causes of her loss suggested by the evidence are, necessarily briefly, examined. Then come some remarks as to the reports of sighting dead bodies, followed by an account of the search made for the missing ship. Other matters upon which the Court feels it desirable to comment are dealt with; the questions and answers follow; the concluding remarks, and a schedule giving the names of those persons, passengers and crew, who left Durban in the ship on the 26th July, 1909, complete the report.

II.

Formal description of the ship.

The "Waratah," Official Number 125741, was a twin screw steamship, built at Whiteinch in 1908, by Messrs. Barclay, Curle & Company, Limited, of that place. Her length was 465 feet, breadth 59.45 feet, and depth in hold from tonnage deck to ceiling at midships 35.05 feet. Her gross tonnage was 9,339.07, and registered tonnage

6,003-96. She was fitted with two sets of reciprocating compound quadruple expansion direct-acting vertical inverted engines, with five steel boilers having a working pressure of 215 lbs., and developing 548·4 nominal, 5,400 indicated, horse-power. Her speed was 13 knots. Engines and boilers were also by Messrs. Barclay, Curle.

The "Waratah" was owned by the Blue Anchor Line, Limited, the managers being Messrs. William, Frederick William, and Albert Edward Lund.

III.

History of the ship to the end of her first voyage.

The contract for the building of the "Waratah" was arranged in September, 1907. The price was to be £139,900, delivery to be made within twelve months from the 16th September. There was a penalty of £50 a day for non-delivery.

The owners intended her to be an improved "Geelong," the previous addition to the Blue Anchor fleet, and the specification for the new vessel was based upon the existing specification of the "Geelong." Rough sketches were drawn out by the owners' representatives showing the general arrangement of the ship wanted, and the subdivision of the holds. These sketches were sent to various builders as a guide to quote upon, and they were asked to draw out plans on the basis of the sketches. The plans selected as best fulfilling the owners' requirements were from a builder whose tender was not accepted; but these plans were forwarded to Messrs. Barclay, Curle, who built the ship. The plans so sent were two in number. They were:—

1. plan showing
 - (a) spar deck,
 - (b) bridge, poop, and forecastle,
 - (c) promenade deck, and
 - (d) boat deck;
2. outline elevation of the vessel.

On the basis of these plans, the dimensions there shown, and the required draught, Messrs. Barclay, Curle got out a set of lines for the vessel.

She was to be built to Lloyd's Rules (1907-1908) for the 100 A1 spar-deck class with freeboard. The minimum freeboard when fully loaded to 30 feet 4½ inches mean draught was 8 feet 1 inch. She was a larger ship than was contemplated by those rules, and her scantlings were practically the same as those for the three-deck class.

She had three complete steel decks (lower, main, and spar), a plated bridge deck and forecastle, and a partly plated poop. There were in addition a promenade deck and a boat deck, of the same length as the bridge. The bridge house was 175 feet 6 inches long, the fore-castle 84 feet 10 inches long, adapted for the accommodation of the crew, and the poop about 108 feet long. The camber of the spar deck was 14·25 inches, and that of the promenade and boat decks 9 inches.

The poop was closed by a steel bulkhead at its forward end, with two watertight doors. Above the poop was a smoke-room and entrance to the third-class accommodation below. The bridge had a steel bulkhead at the forward end. In it were two doors, 5 feet by 3 feet, each in halves, secured from the outside with turn-buckles; these led into the spar-deck bunker. There were also two plug doors, similarly secured, leading into the cold chamber. The after end of the spar-deck bunker on both sides of the ship was divided from the accommodation (for the engineers, stewards, &c.) aft by weather boards extending to the deck above. The after ends of the alley-ways under the bridge deck were 10 feet from the middle line of the ship, and were fitted with weather boards to half height. There was access from the alley-way on the starboard side at its forward end to the deck above. The first-class accommodation was all above the bridge deck. The fore-castle had a partial steel bulkhead at each side, with weather boards between these and the forward corners of the refrigerator house. The forward well was 73 feet in length, and had at its forward end a refrigerator house 28 feet long and 34 feet wide; the after well was 30 feet long. Both wells had bulwarks 4 feet 2 inches in height above the plated deck, with three washports on each side in the forward well, and two on each side in the after well. The size of each washport was 3 feet 6 inches by 18 inches. The hatch in the forward well measured 30 feet 4 inches by 19 feet 6 inches, and that in the after well 19 feet 6 inches by 26 feet. Both were fitted with hatch covers of 3-inch pine supported by transverse beams formed of 1-inch plate and four angles. The hatch coamings were 3 feet high.

A range of coaling ports in the side, above the main

deck, enabled the bunkers on and below that deck to be filled.

The watertight bulkheads were seven in number, extending to the spar deck, and one, which was not watertight, extended to the main deck.

There were nine tanks in the double bottom, and also fore and after peak tanks. Their capacities were:—

No. 1	...	...	...	129 tons.
" 2	...	...	...	219 "
" 3	...	...	...	168 "
" 4	...	...	...	118 "
" 5	...	...	...	179 "
" 6	...	...	...	78 "
" 7	...	...	...	83 "
" 8	...	...	...	222 "
" 9	...	...	...	42 "
Forepeak	...	...	...	53 "
Afterpeak	...	...	...	47 "
Total	...	...	...	1,338 tons.

No 3 and No. 7 had each a watertight central division, and No. 4 was divided into four watertight compartments. All the other tanks in double bottom had central and side divisions which were pierced with holes. Nos. 4, 6, and 7 were used only for fresh water.

She carried 16 lifeboats capable of accommodating 787 people, one other boat which would take 29 people, and three patent rafts which would support 105 people. She also had on board 14 lifebuoys, two of which, fitted with Holmes lights, were placed on the navigating bridge, and 930 lifebelts (ordinary cork). She was provided with a sufficiency of distress signals and lights. There were three chronometers in the chart room, and all necessary charts and sailing directions. She had a Kelvin patent sounding machine, and four band leads and lines.

She was fitted with Kirkcaldy's distilling apparatus, capable of producing 5,500 gallons of drinking water in 24 hours.

The gear for extinguishing fire was in accordance with Board of Trade requirements.

Her permanent coal bunker capacity was as follows:—

Hold cross bunker	...	...	...	382 tons.
Lower deck alongside casings—				
Port	...	...	...	137½ "
Starboard	...	...	...	137½ "
Main deck bunker	...	...	...	583 "
Coal trunk	...	...	...	81 "
Coal shoot	...	...	...	59 "
Spar deck bunker	...	...	...	614 "
Pocket bunker	...	...	...	10 "
Do.	...	...	...	6 "
Total	...	...	...	2,010 tons.

Reserve bunkers—

No. 3 hold	...	...	...	859 tons.
" lower 'tween decks	...	...	...	491 "
" upper 'tween decks	...	...	...	382 "
trunk hatch	...	...	...	87 "

1,819 tons,

a total of 3,829 tons at 42 cubic feet to the ton. Bilge keels extended for about 190 feet amidships.

Clause 5 of the specification contained the following provisions: "Vessel to be able to stand and shift without any ballast, and to be designed, if possible, to go to sea with permanent coal and water ballast only."

Considerable confusion was introduced into the discussion of this clause, and the correspondence upon it by a loose use of the phrase "in a light condition," or of the word "light." Sometimes it was used as referring to the first limb of the foregoing provision, *i.e.*, "vessel to be able to stand and shift without any ballast," and sometimes as referring to the second condition, *i.e.*, going "to sea with permanent coal and water ballast only." Mr. F. W. Lund unhappily introduced a further complication by using the expression as meaning "with water ballast but without coal"; and Mr. Barrie in his evidence referred to "a" light condition, which meant vessel empty, except that 300 tons of fresh water, stores, and crew were on board.

To avoid continual repetition, the court, throughout this report, will speak of the ship when without coal or water ballast as "in the extreme light condition," and when with permanent coal and water ballast as "light." If occasion arises to deal with other light conditions, they will be set out in detail.

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It seems that the owners desired the ship to be capable of going to sea light. But they were also desirous of having provided a space on the spar deck which could be used as a bunker, or for the provision of temporary accommodation when conveying emigrants or troops, or for any other purpose to which it might be desired to put it. As a matter of fact the space is included in all the plans as a permanent bunker, and it is to be understood that in this report it is always so included, unless the contrary is stated. Having the additional bunker space in mind, the builders were of opinion that they could not guarantee the ship should go to sea with water ballast and permanent coal only, that is if they were to fulfil all the other conditions as to deadweight capacity, dimensions, and general accommodation; and they would not accept the paragraph providing for the ship going to sea light without the insertion of the words "if possible." Correspondence which passed in August, 1907, shows that the question of sending the ship to sea light was then under discussion, and there are indications in other letters that the matter had received attention at a still earlier date. The genesis of this condition will be dealt with at a later stage of the report.

In December, 1907, the following correspondence passed between the parties on this point:—

"3rd December, 1907.

"Messrs. Barclay, Curle & Co., Ltd.,

"Whiteinch, Glasgow, N.B.

"Dear Sirs,

"T.S.S. No. 472.

"We now return herewith the copy of signed specification received from you on the 27th November, and would remark as under:—

"With regard to the phrase 'and to be designed if possible to go to sea with permanent coal and water ballast only,' as you are well aware we should have liked you to have felt justified in deleting the words 'if possible,' but as you have stated you do not feel inclined to do this, we are ready to allow the words to remain, provided you can assure us that the stability of this steamer is greater than that of the 'Geelong.'

".....

"Yours faithfully,

"W. LUND & SONS."

Thereupon an interview ensued between Mr. Peck (of Barclay, Curle & Co.) and Messrs. Lund; subsequently, on the 11th December, Messrs. Barclay, Curle wrote Messrs. Lund, "..... paragraph 5. These points." (i.e., deadweight and stability) "were, we understand, arranged by Mr. Peck and your goodself to remain as specified."

To this Messrs. Lund replied on the 13th December, 1907, "..... paragraph 5. With regard to stability he" (Mr. Peck) "stated the stability of this vessel was greater than 'Geelong,' with which also we will be satisfied." Messrs. Barclay, Curle's reply to this was on the 14th December, 1907, "Remarks regarding deadweight and stability are all in order." Mr. Peck explains that he never promised the "Waratah" should have "greater" stability than the "Geelong," but says he promised she should be "as stable as the 'Geelong.'" He added that he was away when the firm replied, "Remarks regarding deadweight and stability are all in order."

However, one point emerges quite clearly from the evidence and from the correspondence, i.e., that there was an arrangement by which the paragraph, "to be designed if possible to go to sea with permanent coal and water ballast only," was to be replaced by an understanding that the stability of the "Waratah" was to be "as great as" (Mr. Peck), "greater than" (Mr. Lund), that of the "Geelong."

Captain Ilbery, the commodore of the Blue Anchor fleet, and the holder of a certificate of competency as master, No. 24380, supervised the ship's construction in the later stages. When completed he was to take command of her. He was present on the 10th of October, 1908, when the ship was being prepared for the heeling experiment, but before the actual experiment was undertaken he went away. It was conducted by Mr. George Barrie, chief of the scientific department of Messrs. Barclay, Curle, & Co.

Mr. Barrie gave an account of the way he performed the experiment, and the precautions he took to ensure its accuracy. From his account it would appear that all proper measures were adopted to obtain the correct vertical position of the centre of gravity of the vessel in her then condition. The vessel was about to go on trial and was practically complete, all refrigerating machinery on board, insulation

finished, and boats in place. It was estimated that weights yet to be put into the ship amounted to 20 tons. The metacentric height was found to be 55.6 feet. From the curve of transverse metacentres the metacentre in this condition was ascertained to be 26.38 feet above the base line, the centre of gravity thus being 25.82 feet above the base. Calculations were made to find the effect on the centre of gravity of removing weights, including water ballast in Nos. 3 and 8 tanks, which were to come out of the ship, and of adding the 20 tons above referred to. The metacentric height of the ship in a light condition, viz., vessel empty except that 300 tons of fresh water, stores and crew were on board, was then shown to be 26 feet.

On the 21st October, 1908, a loadline certificate was issued by Lloyd's. The centre of the disc was to be 8 feet 1 inch below the spar deck line.

The "Waratah" was delivered by the builders to the owners on the 23rd October, 1908. Captain Ilbery brought her round from the Clyde to London. Before she left she was swung and her compasses adjusted by Mr. A. W. Baird, of Messrs. Kelvin & James White, Limited, of Glasgow. They certified that the compasses were in perfect order, and they gave tables of deviation to the master.

Mr. F. W. Lund was on board during this trip. He said that so far as he could recollect the water ballast tanks were full, and that about 3,000 tons of coal were on board. Mr. Shanks, the superintending engineer, who also made the trip, said she had 2,900 tons of coal on board, some in those permanent bunkers situated below the spar deck and the rest stowed partly in the spar deck bunker and partly in No. 3 hold, with some in the 'tween decks. He afterwards corrected this by saying there was no coal in the spar deck bunker, as the builders stopped it being placed there, considering it unsafe that it should be so placed in this special condition for the voyage round to London. The weather was fairly good until the ship got to the English Channel, but it blew very hard when she was off Dungeness. There the ship was delayed an hour and a half waiting for a pilot. Mr. Lund said that she behaved very well indeed, and that when manoeuvring off Dungeness in that gale of wind the remark of those on the bridge was how easy she was to handle. She rolled very little and had only a very slight list when broadside on to the gale. Mr. Shanks corroborated Mr. Lund as to the good behaviour of the ship, and said that nothing occurred which could have given rise to the statement attributed to Mr. Hemy (the third officer) by Mr. John Latimer, who made a deposition at Sydney, that "we got caught in some heavy weather in the Channel coming round from the builder's yard to London and she gave me a scare, because I thought she was going over on her broadside."

On the 27th October, 1908, a passenger certificate was issued entitling the "Waratah" to carry 128 first class, and 160 third class passengers, with a crew of 144, a total of 432 persons.

On the 3rd November, 1908, Messrs. Barclay, Curle sent to Messrs. Lund a stability statement giving particulars under six different conditions, and also a general statement regarding loading.

Those statements are as follows:—

Stability in Various Conditions.

- I. Ship light with stores and fresh water aboard ... G.M.=2½ inches.
Range of stability=57 degrees.
- II. Light ship, with all coal including reserve, all water, all water ballast except forepeak, and 1,200 tons in bottom of hold ... G.M.=6 inches.
Range of stability=69 degrees.
- III. Ship loaded to disc with cargo at 40 cubic feet per ton in holds, and cargo of 80 cubic feet per ton in 'tween deck, all coal including reserve, F.W., stores, crew, and passengers ... G.M.=4½ inches.
Range of stability=36 degrees.
- IIIA. Condition III. with coal in bridge space burned out ... G.M.=10 inches.
Range of stability=50 degrees.
- IV. Condition III. but with all coal burned out and W.B. tanks Nos. 5 and 8 full ... G.M.=15 inches.
Range of stability=73 degrees.
- V. About 5,900 tons of cargo distributed as in Condition III., all coal, and tanks Nos. 5 and 8 full ... G.M.=10 inches.
Range of stability=42 degrees.

General Statement Regarding Loading.

1. Vessel in her trial condition had a G.M. of about 6 inches.
2. In order to complete coaling, 1,200 tons D.W. must be shipped low down in holds.
3. When loaded to disc with cargo of 40 cubic feet to the ton in holds, and 80 cubic feet to the ton in 'tween decks, ship has a G.M. of about 4½ inches. This is increased to 10 inches by burning out the 614 tons of coal in bridge.
4. When loading and coaling at the same time, tanks must be full and all coal except bridge space and trunk may be filled; but before the bridge space may be filled the 1,200 tons cargo mentioned in (2) must be shipped. After this point the tanks may be gradually emptied as the remaining cargo goes aboard.
5. It is strongly recommended that vessel should have a G.M. of 10 inches when going to sea.

The vessel sailed on the 5th November, and it is not known whether this information reached the captain before departure. In any case it could not have available for loading on the first occasion in London.

On the 30th November, Messrs. Lund wrote as follows to Messrs. Barclay, Curle, & Co.:

"We have now marked on a plan the manner in which the cargo was distributed in this vessel, and shall be very pleased to go into the same with one of your representatives at the earliest possible moment for our guidance for the future loading of this vessel."

It does not appear whether an interview took place or not, but apparently in response to this request Messrs. Barclay, Curle, & Co. made calculations based upon the loading on the first outward voyage, and embodied the result, with certain modifications, in a curve, marked "Condition A," which, with others, they sent to Messrs. Lund on the 17th December, 1908.

Particulars of the curves are set out below.

Condition I. Ship light. Fresh water, stores, and crew aboard. G.M.=2½ inches. (It should be noted that this very slightly differs from the figure given by Mr. Barrie in his evidence already referred to.) The righting lever steadily increases to a maximum of 8 inches at an angle of 38°, then diminishes till it vanishes at 64°.

Condition II. All coal (including reserve). All water ballast, except forepeak, and 1,200 tons heavy cargo in bottom of hold. G.M.=6 inches. The righting lever reaches 2 feet 6 inches at an angle of 53°, and does not vanish till beyond 90°.

Condition III. Ship loaded to disc with cargo at 40 cubic feet to the ton in holds, and not less than 80 cubic feet to the ton in 'tween decks. All coal, including reserves. Fresh water, stores, &c. aboard.

G.M.=4½ inches. The maximum righting lever is 10 inches at 48°, and it vanishes at 73°.

Condition IV. Condition III. with all coal burnt out and tanks Nos. 5 and 8 full. G.M.=15 inches. The righting levers are moderate for small angles of heel, but grow fast from 20° to 53°, where there is the maximum lever of very nearly 3 feet. At 90° there is still a righting lever of 9 inches.

Condition V. Loaded to disc with all coal, fresh water, stores, passengers, crew, and 1,500 tons heavy cargo in bottom of holds, remainder measurement cargo. G.M.= - 6 inches. There is a small upsetting lever to 27½°, then a small righting lever, never more than 3 inches, vanishing at 57°, after which there is an upsetting lever of rapid growth.

Condition VI. Condition III. but with coal in bridge space burnt out. G.M.=9½ inches. The maximum righting lever of 18 inches is at 50°, and vanishes at 84°.

Condition A. Loaded as on first outward voyage but with bridge coal put in upper 'tween decks, cargo in remainder of upper 'tween decks, at 80 cubic feet per ton except in No. 5, cargo at 100 cubic feet per ton in bridge. G.M.=about 4½ inches. The maximum righting lever of 15 inches is at 50° and vanishes at 78°.

A note appears on the stability graph, "If in any condition it be considered that the vessel has insufficient stability, the filling of No. 8 tank increases the G.M. by about 4 inches.

It will be noted that Conditions III. and IIIA. of the stability statement correspond with Conditions III. and VI. of the stability curves, but in the former case the range of stability is stated to be 36° and 50° respectively, whereas the curves of stability show that the ranges were 73° and 84° respectively. The first-named statement only reached the Court at the end of the Inquiry, when there was no opportunity of seeking an explanation of the discrepancies.

On Thursday, the 5th November, 1908, the "Waratah" left London on her maiden voyage. She carried 67 cabin passengers, 689 emigrants, and a crew of 154. She was surveyed the same day off Gravesend by the emigration officer, Captain M. H. Clarke, who found she fully complied with all the requirements of the Merchant Shipping Acts. From his report it appears that the ship had three Lord Kelvin compasses—one on top of the chart room, one on the bridge, and one in the wheelhouse aft, besides four boat compasses properly stowed in lockers.

Evidence as to the behaviour of the ship both on her outward and her homeward voyage was forthcoming from a number of persons. The effect of this evidence is exhibited in the following tabular statement:—

MAIDEN VOYAGE—OUTWARD.

Name of Witness.	Quality &c.	Evidence.	Reference.*
Harry McKay Bennett.	Late third mate of "Waratah." Left her on promotion to the "Narrung." At sea since 1898—the "Waratah" his first passenger ship.	There was nothing extraordinary in her behaviour	977
		She had no abnormal list, never more than four or five degrees due to wind pressure, or working bunkers.	979
		Very easy in rolling	980
		An even roll throughout	981
		Would call her a tender ship	984
Frederick Little...	General servant on "Waratah." Left her at Durban on homeward voyage to take a shore job. At sea since 1906.	Noticed nothing on the way out. No bad weather	1095
Herbert Comer Herbert.	Steward. Four years at sea on passenger steamers, none larger than the "Waratah." Left because he did not like the ship.	She had a list nearly all the time	1699
		Would stop for a day or two on the same side, then go to the other side, and stop a day or two.	1705
		No excessive rolling	1707
		...	1708
Edgar H. Pask ...	Ordinary seaman on "Waratah," acting as officers' servant. Now captain of a racing yacht. Other experience all in yachts and smacks.	...	1701
		I certainly thought she was top heavy	1967
		She had a long roll. She was a long while coming up at times, and she never seemed to be upright.	1968
		If there was a little air of wind she would simply lie on one side, and, if a blow of wind came, the other side, and sometimes if she got upright she was just as likely to drop on the other side.	1969
		Rolled excessively for the weather, a slow roll	1971
		She was a good while lying down and a long while coming back	1973
		A slow recovery—no jerk	1974
		...	1975

* S = Sydney depositions.

M = Melbourne depositions.

A = Adelaide depositions.

D = Durban deposition

Mi = Miscellaneous Affidavits.

A number without a letter refers to the minutes of evidence given in Court.

Name
Witness

Edgar H.
continued

Albert Va

Gerald St

John Fran

Brightme

Worthingt

Leslie Au
Burton

Charles H
Campb

Morley J

Robert C

John La

John Ma

* S = S

Maiden Voyage—Outward—continued.

Name of Witness.	Quality &c.	Evidence.	Refer-ence.*
Edgar H. Pask— <i>continued.</i>		She always had a slight list away from the wind It was a long steady roll right through, and then came back slowly to the other side.	1985 1993
Albert Vandam ...	Passenger, Cape Town to Sydney. Had travelled on steamships for 15 years—P. & O., Union Castle, British India, and Nippon Yusen Kaisha.	She would have a list even when the wind was ahead List continued for two or three days and then went over to the other side, not an alarming list. I have seen similar occurrences.	2025 2249 2252 2253
Gerald Steele ...	Passenger. Had made 15 passages to America, and been to South Africa.	No roll out of the common, but all one way No noticeable jerk	2266 2268 2270
John Francis Ryan	Senior 4th engineer on "Waratah." Left on promotion.	She appeared to me to be top heavy. She did not roll comfortably ... She would get down on either side, and hang there before she recovered herself.	2692 2693
Brightmer John Shore.	Steward on "Waratah" ...	She did not roll as if she cared about it She neither pitched nor rolled anything out of the ordinary	2712 3269
Worthington Church.	Passenger. Had been threetimes to Australia, once to W. Indies, and twice to the Cape.	As on second voyage outward—see post	—
Lealie Augustus Burton Wade.	Passenger, Cape Town to Sydney. Had travelled on several other deep-water vessels.	I thought she was very top heavy She rolled a great deal and shivered. She seemed to have great difficulty in getting back to her other side. There was generally a list on the boat. I changed cabins because the boat rolled so much Had conversations with the captain, who said he was not altogether satisfied with the ship. She took a big roll and seemed to have difficulty in recovering herself ... Should not call her a comfortable sea-going boat	3155 3157 3171 3177 3187 3221 S. 46
Charles Richard Campbell Lloyd.	Passenger, Cape Town to Sydney. Had been 80,000 miles in large steamships.	On several occasions on the run from Cape Town to Sydney, the vessel lurched or heaved over for no apparent reason. She would for hours, some times for a full day, be proceeding in the usual way, lifting and falling to the water as would be expected, when, for no apparent reason, she would roll or lurch well over, slowly, and then slowly recover herself again. I do not know what caused these peculiarities of behaviour, but the master of the vessel (Captain Ilbery) told me it was probably because of the way the vessel was stowed, and that no two vessels were stowed alike, and it was necessary to gain experience with every new vessel in order to ascertain the best method of stowing her. This conversation took place on the voyage. Sometimes the ship would roll in this way in fine weather and when the sea was moderately calm. From Cape Town to Adelaide the fiddles remained practically continuously on the dining saloon tables. On one occasion, between Cape Town and Adelaide, the master (Captain Ilbery) and I were conversing after lunch in the dining saloon, when the vessel lurched in the way I have described, and heeled well over. The piano in the dining saloon commenced to move on its castors, and, so far as I remember, went about half-way across the dining saloon before the ship recovered herself sufficiently to prevent its proceeding further. I recollect the captain saying to me, "There goes my piano," and rushing off to stop it. Previous to the time this roll or lurch took place, the ship had not been rolling in that way, and there seemed no reason in the condition of the sea for its occurrence at that time. With the exception of these intermittent peculiarities in the behaviour of the vessel at sea, I observed nothing to occasion particular interest or attention as regards the ship, and I at no time heard any of the officers speak disparagingly as to the stability of the ship.	S. 47
Morley Johnson...	Passenger. Had been in other large ships.	During the trip from Cape Town to Sydney, the vessel lurched or heeled over in an unusual way on several occasions and for no reason that I could see. It was the subject of conversation and amusement on board. It was impossible to say when it would happen. The sea did not appear to be responsible for the lurches, for they happened whether the sea was calm or moderately rough. The vessel, without the slightest warning, after proceeding for hours without anything unusual happening, would for no apparent cause suddenly but slowly lurch or heel over well on to her side, then she would slowly recover herself and come back again. Sometimes a full day might intervene before a repetition of this peculiar lurch occurred. It was very noticeable, and some of the golf balls and articles used in deck golf went over board when the vessel lurched in the way described. It was the only peculiarity in the behaviour of the vessel at sea that I noticed, beyond her unusual slowness in recovering a normal position when rolling, otherwise she seemed to me to be stable.	S. 49
Robert Glass Millar.	Passenger	The behaviour of the vessel was in general quite equal to that of any vessels I have been in. Rolling nothing unusual. No person ever expressed to me a doubt of the ship's stability.	S. 49
John Latimer ...	Shipping clerk to the agents for "Waratah."	Heard no complaint of the vessel at sea or of her seaworthy condition ... I do not agree she rolled and seemed to hang. The roll was easy and natural. Mr. Hemy (the second officer) and I entered into a conversation about the ship. I remember saying to him, "How do you like your new ship?" He replied, "I don't like her at all. Between ourselves, I think she has a deck too many. When the ship was coming round from the builders' yards at Glasgow—or Belfast—I forget which place he said) to London, to load for Australia, we got caught in some heavy weather in the Channel, and she gave me a scare, because I thought she was going over on her broadside." We had further conversation about the ship, and he said, "I'm different to a seaman, and an officer cannot throw up his job when he likes, but I intend to get out of her as soon as I get a chance," or to that effect. He also said something about the vessel being a difficult vessel to stow, and that she would require a lot of dead weight in the 'tween decks to steady her. I cannot recollect the precise words, but the substance of the conversation as regards the stowing was to the effect stated.	S. 50
John Marshall Lennie.	Steward on "Waratah." No other experience in deep sea ships.	She was what I termed a "dead" ship. When she rolled she gave me the feeling at the end of the roll that she wouldn't recover. She recovered slowly from each roll, and hung for a while at the end of the roll. It was the same in the roll on both sides. She rolled the same way throughout the voyage. From my experience, I could not understand why a ship of that size and draught rolled at all in the sort of weather we had. I never experienced the same sort of rolling in any other ship. he did not pitch badly.	M. 26.

* S = Sydney depositions.

M = Melbourne depositions.

A = Adelaide depositions.

D = Durban depositions.

Mi = Miscellaneous Affidavits.

A number without a letter refers to the minutes of evidence given in Court.

Maiden Voyage—Outward—continued.

Name of Witness.	Quality &c.	Evidence.	Reference.*
Robert Girling ...	Pilot ... Been master of foreign going ships.	I piloted the ship from Adelaide to Melbourne ... I thought she was a beautiful ship to handle, but drawing about 26 feet aft and about 21 feet 6 inches forward, she was very tender indeed. There was a strong south-west wind at the time. I did not mention it to the captain or officers, but I did to two other pilots. I thought it was on account of her being light and a strong breeze on the broadside when going round the bend of the river at Snapper Point. She had, of course, discharged her Adelaide cargo by this time. It was only at that place that I noticed her being rather tender. As she came head to wind, she righted and kept so ... I never heard anyone on board express an opinion as to the sea-going qualities of the ship.	A. 21.
Samuel Trott ...	Cook on "Waratah." ... Been at sea for four years previously (in the ships of the British India Company).	There was nothing about the ship to frighten me. I left the ship because she was laid up, but allowed my son (a pantry boy) to make the second voyage.	6780 et seq.
Edward Joseph Collins.	Stevordore ... Passenger London to Sydney. Had been passenger on other large steamers.	I was never on a better sea-boat, and I have been on the "Kensington" of the Dominion Line, "Caronia" of the Cunard Line, "Arawa" of Shaw, Savill, & Albion Line, also the "Mokoia" of the New Zealand Line, and different other vessels, and I found the "Waratah" a better sea boat than any of them.	6853
Wm. Fraser Chapman.	Senior third engineer on "Waratah." Left on account of wife's health. Afterwards joined the "Commonwealth," another Blue Anchor ship.	The behaviour of the "Waratah" at sea in ordinary weather was just usual, nothing to call for remark. We had no "first class" gale, but in running the "Easting" down, the vessel did not roll or pitch more than usual.	6882 et seq. Mi 2
Alexander Reader	A.B. on "Waratah" ... Seventeen years' experience at sea.	I found her a good sea boat while I was in her... With my experience I noticed nothing, and was not at all alarmed at anything she had done in the way of pitching, listing, rolling, or anything of that sort.	7184 7185

MAIDEN VOYAGE—HOMEWARD.

Harry McKay Bennett.	—	See outward voyage—ante ...	—
Frederick Little...	See ante ...	Rollled very heavily after leaving the Heads (Melbourne) ... It seemed she went over more than usual ... Nothing peculiar after that... Was rather slow in recovering (in heavy rolling after leaving the Heads)... Still carried list from Australia to Durban ... Rolled excessively in dirty weather (between Durban and Cape Town) ... Very slow recovery ... Same as to outward—see ante ... Came up the Channel with a heavy list, and made a very rotten trip of it. I was very alarmed ... Thought she was unstable for small displacements, but stable for larger ones. My impression was that metacentre was just slightly below centre of gravity when she was upright, and then as she heeled over on either side she came to a position of equilibrium. Judging by the camber the list was four or five degrees ... The list would last for several days in one direction ... One morning she came upright, then went over, and stopped down on the other side. The vessel got more upright getting towards Durban. After leaving Cape Town the list developed again. I was surprised to find how little she rolled, but that fitted in with her being in neutral equilibrium. Thought she was a remarkable steady and comfortable boat... Often talked to the captain about the stability of ships, but never put a direct question about this ship—asked for stability curves, but was told they were not on board. Spoke to the chief engineer who said she was safe as a church, that if necessary the tanks would be filled, and she would then be as stiff as a board.	1520 1523 1530 1545 1713 1728 1733 1981 2110 2111 2112 2123 2127 2128 2133 2139 2144 2146 2148 2153
Herbert Comer Herbert.	See ante ...	As on outward voyage—see ante ...	—
Edgar H. Pask ...	See ante ...	As on outward voyage—see ante ...	—
William Hy. Bragg.	Passenger — Fellow of Royal Society and Cavendish Professor of Physics at the University of Leeds—fourth long voyage.	Never in a better ship—never had a better voyage ... Less rolling than I have seen in other ships ... No jerk or hang in the roll ... The chief engineer was very pleased with her, and likewise the captain ... She seemed to go through the water like a duck ... Never pitched heavily at any time ... Quite incorrect to say she had a permanent list to one side or the other, or that she had a heavy list for some days.	3328 3329 3337 3338 3353 3372 3371 3383
Alfred Montague Sedgwick.	Passenger ... (Melbourne to Adelaide). Had made 30 voyages to South Africa and back.	Appeared to be top heavy—cumbersome, heavy above water ... Rolled a good deal, but no jerk. Seemed to go right over as far as the roll would carry her, then seemed to be dead and did not come back. Seemed to hesitate a second or two before she came back—a sort of dead still.	3239 3241 3241
John Francis Ryan.	See ante ...	As on outward voyage—see ante ...	—
David Tweedie ...	Passenger ... Had made about 16 ocean voyages. Personal friend of the Messrs. Lund.	Never in a better ship—never had a better voyage ... Less rolling than I have seen in other ships ... No jerk or hang in the roll ... The chief engineer was very pleased with her, and likewise the captain ... She seemed to go through the water like a duck ... Never pitched heavily at any time ... Quite incorrect to say she had a permanent list to one side or the other, or that she had a heavy list for some days.	3328 3329 3337 3338 3353 3372 3371 3383
Alfred Philip Pinel.	—	See second voyage outward. Same evidence ...	—
Brightmer John Shore.	—	As on second voyage outward—see post ...	—
Thomas John Burrin.	Pantryman on "Waratah" ... 11 years at sea—21 deep sea voyages.	Rolled in the same way as any other vessel would roll in a high sea; nothing unusual about her behaviour; carried herself well in the sea. Did not dive. At times listed, but would right herself and be on an even keel for a week or so.	S. 37
Samuel Trott ...	—	See maiden voyage outward—ante ...	—
Wm. Fraser Chapman.	—	See maiden voyage outward—ante ...	—
Alexr. Reader ...	—	See maiden voyage outward—ante ...	—
Wm. Caig Marshall.	Trimmer on "Waratah"	My belief was that the boat was top heavy, and on that account and because I did not like the way she rolled, and because of the list, I was anxious to get out of her.	M. 28

* S = Sydney depositions.

M = Melbourne depositions.

A = Adelaide depositions.

D = Durban depositions.

Mi = Miscellaneous Affidavits.

A number without a letter refers to the minutes of evidence given in Court.

On the coal in the on fire. from the "6th engineer deck, all room and coal fire. H two places kept on "4 p. both pu "7th sionally "2 p. ca-ing o "4 p. bunker, gets exc "8th when ne "11 a "9th ing coal "6 a. "10 a In the "6th board b "8 a. playing "6 p. bunker "7th bunker "9 p. out and the nigh "8th starboar "10th Mr. l "Warat fire. H near the was des over th bunker Capta althoug of the the chie followin "On after lov a hole i 11 a.m. reducing starboar lated, b engine a it will o it done That satisfac The i one the disappe bunkers have no voyage, loss it b the who One c point. into A was not some v deponer carefull ship dic hours o She too fouled. the exa In a l from th

On the 6th December, 1908, on the outward run, the coal in the starboard lower deck bunker was found to be on fire. The following are the relevant entries extracted from the engineer's logbook:—

"6th December, 1908, 5 a.m. Reported by second engineer smoke issuing from hatch of bunker on lower deck, alongside boiler casing and extending into engine-room as far as the store rooms. All bunker doors shut and coal worked only from starboard bunker where on fire. Hose put on to same from deck, and holes cut in two places in engine-room, and hose put into same, pumps kept on, and at 11.30 a.m. smoke greatly reduced."

"4 p.m. Coal in bunker making more smoke, started both pumps on same for one hour."

"7th December, 1 a.m. Using hoses and water occasionally on fire in bunkers."

"2 p.m. Found large piece of burning coal back of casing over boilers. Played water on same."

"4 p.m. Working all coal from starboard lower deck bunker, using water when necessary on coal when smoke gets excessive."

"8th December, 4 a.m. Using water on coal in bunkers when necessary."

"11 a.m. Fire still in starboard lower bunker."

"9th December, 4 a.m. Large piece or batch of burning coal found, same extinguished by water."

"6 a.m. Bunker still burning slightly."

"10 a.m. Fire out in bunker at 10 a.m."

In the deck log are the following entries:—

"6th December, 6 a.m. Discovered smoke in starboard bunker, got hose to work."

"8 a.m. Working coal out of starboard bunker, and playing hose at intervals, keeping the fire under."

"6 p.m. Keeping fire hose and men in attendance on bunker throughout."

"7th December, 8 a.m. Hose still kept in readiness in bunker and played on coal at times, coal being worked out and found heated in wake of boiler."

"9 p.m. Hands attending hose in bunker throughout the night."

"8th December, 4 p.m. Fire still showing signs in the starboard bunker, hose kept in attendance night and day."

"10th December, 12 noon. Fire in bunker finished."

Mr. Ryan, the former senior fourth engineer of the "Waratah," was examined as to the circumstances of the fire. He said that it was over the after set of boilers and near the engine-room, in the 'tween decks; that no coal was destroyed in putting out the fire, that the bulkhead over the engine-room was pretty warm, but that the bunker plates never got distorted.

Captain Ilbery made no report of the fire to his owners, although he wrote twice from Adelaide; but in a letter of the 15th December, 1908, written from Adelaide by the chief engineer to the superintending engineer is the following paragraph:—

"On Sunday, December 6th, a small fire started in the after lower bunker. We found smoke at 5 a.m. and we cut a hole in the engine-room and practically put it out at 11 a.m. The fire was caused by the heat from the several reducing valves and steam valves in the recess on the starboard side of the engine-room. The roof is insulated, but at the back of the reducing valves for steering engine and starboard side of the engine-room is not. As it will only be a small job, it would be advisable to have it done here."

That work was done in Sydney to the engineer's satisfaction.

The incident has been related at some length, because one theory—it will be examined later—of this ship's disappearance is that she blew up in consequence of her bunkers firing. What happened on her first voyage could have no direct relation to what happened on the second voyage, but in the absence of direct evidence as to her loss it has been considered advisable closely to scrutinize the whole history of the ship on both voyages.

One other small incident should be dealt with at this point. A witness named Trott (a cook) said, that going into Adelaide, the ship ran on to Kangaroo Island, and was not got off for six hours; and his evidence received some vague corroboration from one of the Sydney deponents (a steward named Shore). The Court has carefully examined the logbooks, and is quite satisfied the ship did not take the ground. She did stop for several hours on the early morning of December the 15th, 1908. She took a pilot aboard and anchored; and the anchor fouled. It was no doubt this small incident which led to the exaggerated report of the running ashore.

In a letter dated from Melbourne, 12th January, 1909, from the chief engineer to Mr. Shanks, the following

passage occurs, "We had a lot of trouble bunkering in Sydney. Twice the coal was stopped, the captain being afraid of the ship listing, and we left Sydney with the shoots empty, which meant about 130 tons."

On the voyage home no coal was carried in the spar deck bunker, but cargo, including some tallow and wool, was there stowed.

It is not accurate, as Mr. Shanks stated, that the space was full of tallow. The stowage plan shows that a considerable portion of the space was filled with wool, and that some part of it was empty.

IV.

History of the Ship during interval between her two Voyages.

The "Waratah" arrived in the Thames from her maiden voyage on Sunday the 7th March, 1909.

No special report, so Mr. F. W. Lund assured the Court, was made by Capt. Ilbery as to the ship's behaviour on her maiden voyage. None, he said, was looked for. Captain Ilbery remarked in conversation that she was a comfortable ship, satisfactory in every way, easy in a heavy seaway, but in a light condition not so stiff as the "Geelong." Mr. Lund produced to the Court what he said were all the letters written home by Captain Ilbery. In no one of them is the ship's behaviour at sea touched upon. Trivial matters such as a cow or a little dog being on board are mentioned, emigrants' complaints as to food and attendance are dwelt on at length, but nowhere in the correspondence is the behaviour of his fine new ship mentioned. In view of the fact that the "Waratah" was a new departure for this line, and that her specification was being used as the basis of the specification of another new ship, the Court is quite unable to understand how silence could have been preserved on such an important and interesting subject as her stability and behaviour at sea. It is contrary to the whole practice of shipowners and shipmasters to treat such a matter with the indifference with which Mr. Lund represented to the Court that he and Captain Ilbery treated it; and from this fact alone the Court is almost compelled to draw an inference unfavourable to the owners as regards their knowledge of the ship's behaviour on her maiden voyage, an inference which is greatly strengthened by the correspondence which passed between them and the builders after the vessel was first loaded in London, and also after she returned from her first voyage. The fact that after the first loading Messrs. Lund found it necessary to send details thereof to Messrs. Barclay, Curle, asking for an interview at the earliest possible moment to discuss the matter for their guidance in the future stowage of the vessel indicates that some difficulty must have been met with in the initial lading. It will be noted that Condition "A" shows Messrs. Barclay, Curle & Co. considered some modification of the stowage in the direction of lowering weight was advisable.

The correspondence after the ship's return from her first voyage was as follows:—

"5th April, 1909.

"Messrs. Barclay, Curle & Co., Limited,
"Whiteinch,
"Glasgow, N.B.

"Dear Sirs,

"T.S.S. 'Waratah.'

"The contract for this vessel provides that she is to be able to stand and shift without any ballast, but this our superintendent does not think she will do. Please let us know if you consider it safe to tow this vessel, without ballast, from one berth to another in dock, and if so, will you take the responsibility?"

"The vessel was also to be designed, if possible, to go to sea with permanent coal and water ballast only, and although it states 'if possible,' we agreed this wording on account of your assurance that she would be able to fulfil this condition. This, you will agree, was not fulfilled, as you stopped the coaling of the vessel in Glasgow last October, before the permanent bunkers were full.

"We would refer to our letters of the 3rd and 13th December, 1907, and your reply of the 14th December, 1907, referring to deadweight and stability. Regarding the former, the cargo on the first voyage was not such as would allow us to test the lifting, but as regards the stability, from what our representatives report, it seems clear that she has not the same stability as 'Geelong.' Will you please inform us if your heeling tests prove this?"

"Captain Ilbery informs us that you omitted to place on board a framed plan of stability curves, as provided for in clause 2 of specification. It is most important that this should be on board; kindly therefore send these, and a spare copy by return; such important plans should not have been omitted.

"With reference to your letter of the 25th March, we must again express our surprise at your not sending us a copy of the lines of this vessel; there are no secrets, and we think it quite reasonable to consider that we are entitled to plans relating to any part of the vessel, which is constructed for us.

"Yours faithfully,
"W. LUND & SONS,
"London."

"Whiteinch,
"Glasgow, 7th April, 1909.

"Messrs. Wm. Lund & Sons.
"London.

"Dear Sirs,

"'Waratah.'

"In reply to your letter of 5th inst., our calculations show that the vessel can be shifted in dock without ballast, and we are satisfied of the accuracy of these calculations. As to taking the responsibility of such shifting, we consider this is a matter outside of our province, and, on reflection, we are sure you will take the same view.

"As to going to sea with water ballast and permanent coal only, we agree with you that this is unsafe, but it would have been impossible to design the ship for this condition whilst adhering to the contract plans.

"Our calculations show that with the ship empty the initial stability is the same as the 'Geelong.'

"Regarding the stability curves, we sent you a copy on 17th December, 1908, but regret we do not appear to have forwarded other copies. We now enclose two prints of same.

"Trusting that this information is sufficient for your purposes.

"We are,
"Yours truly,
"For Barclay, Curle & Co., Ltd.,
"Hy. Soullly, Secretary."

"16th April, 1909.

"Messrs. Barclay, Curle & Co., Ltd.,
"Whiteinch, Glasgow, N.B.

"Dear Sirs,

"T.S.S. 'Waratah.'

"We duly received your letter of the 7th inst., and the information you give us is in no way satisfactory to us.

"We certainly consider you should take the responsibility of our moving the vessel without ballast, as perhaps you may have done so yourselves, and as you had several opportunities of doing so, please let us know if you did.

"We have consulted Captain Ilbery, and he has been able to convince us that this vessel has not the same stability as the 'Geelong,' and considering he was present during the construction of these two vessels, and has commanded them both, he is in a perfect position to judge this and all other matters.

"Our contract was that this vessel should have a greater stability than the 'Geelong,' which has not been carried out. We consider also that the contract conditions for shifting the vessel with no ballast, and also for going to sea with ballast, and bunkers and reserve bunkers full, have not been fulfilled.

"It being your responsibility that the design and plans would permit of the conditions as agreed, we must hold you responsible for anything that may happen, and we will record again our protest to your objection to supply us with a copy of the lines of this vessel's hull; we consider, as before mentioned, that we are entitled to all and any plan in connection with the construction of our ship, although the responsibility of the vessel's performance is entirely with you.

"Yours faithfully,
"Wm. LUND & SONS."

Following on the last letter, Mr. Peck (a director of Messrs. Barclay, Curle) called and saw Messrs. Lund.

He fixed the date of the interview as about the 23rd of April. Mr. Peck says he assured them that in any condition the 'Waratah' was as stable as the 'Geelong,' and they accepted that statement. "There was never," he said (paragraph 563 of the printed evidence) "any question raised between us with regard to the vessel at sea." After putting this complexion upon the interview Mr. Peck in his evidence dealt only with the moving of the ship in dock.

Mr. Lund gave a similar account of this interview. He represented himself as easily satisfied by Mr. Peck's assurances. The correspondence cannot be reconciled with this account of the interview. Captain Ilbery, "a most experienced captain," who "undoubtedly knew a very great deal about ships in every way," and by whom "we were guided in most things" (answer 2797), and who moreover "has commanded them both" (i.e., "Geelong" and "Waratah") and "is in a perfect position to judge" had been "able to convince us that this vessel has not the same stability as the 'Geelong,'" and "we consider that the contract conditions for going to sea with ballast, and bunkers and reserve bunkers full have not been fulfilled;" yet a few words from Mr. Peck settle the whole matter. His mere assurance carries more weight than Captain Ilbery's considered representations.

It will be noted that Captain Ilbery never had the vessel in the extreme light condition on her first voyage, and his representations could not, therefore, have had reference to that condition; moreover, to compare the two vessels in their extreme light condition it would not have been necessary for him to have "commanded them both."

The Court considers that neither Mr. Peck's nor Mr. Lund's account of this interview is complete. The Court can only leave the matter there.

Mr. Lund endeavoured to explain away these strong letters by saying that at the time he wrote them, his firm and the builders were in conflict over a question of demurrage, the vessel having been delivered after the contract date. He said that his complaints about the ship were mere "bluff" intended to facilitate the forcing of a settlement of the monetary claim. It is a comment on this explanation that Mr. Lund was unable to remember whether a final settlement of the demurrage question, which he had considered so important, had ever been arrived at.

The Court has had an opportunity of examining the correspondence on this question. On the 30th November 1908, in an account prepared by Messrs. Lund and sent to Messrs. Barclay, Curle, a claim for £1,900 "demurrage from 16th September to 20th October, 38 days at £50 per diem," was set against the balance of contract price &c. This is the first time a claim was made for demurrage. In their reply of the 8th December the builders declined to entertain the claim, and on the 8th February, 1909, Messrs. Lund paid in full, under protest. The matter there rested until the ship returned from her first voyage. Then a number of repairs were done to the ship, the large item being deck caulking. Messrs. Lund claimed the cost of these repairs from the builders, to which the latter objected. Then Messrs. Lund, in a letter of the 26th May, 1909, revived the demurrage claim, the history of which it is unnecessary to trace beyond this point.

Before commencing her second voyage the ship went into dry dock, and was surveyed by Lloyd's surveyor. Certain repairs were effected during her stay in London, including the caulking of the decks previously alluded to, and the overhauling of the boats.

V.

History of the Ship's Second Voyage.

The 'Waratah' left London on her second (and last) voyage on the 27th April, 1909. She carried 193 steerage passengers, 22 cabin passengers and a crew of 119. The vessel was again surveyed and reported satisfactory by Captain M. H. Clarke, the emigration officer. It is not known what cargo she carried on the outward voyage. The bunker coal on board when leaving consisted of 3,456 tons, none of which was carried in the spardeck space.

The insurances upon the ship will be found set out in the answer to the third question of the Board of Trade.

Witnesses were forthcoming as to the vessel's behaviour on her last voyage. Their evidence is set out in tabular form as follows:—

Name
Witness

Ernest Cross
Nicholas Sh

Alfred Phil

Samuel Lyo

Fredk. Carl
Lu

Wm. Steph
E

Alan Geo. M

Brightmer

Wm. Hy. P
Baker.

Herbert Du

Geo. Dought

Reginald T
Ri

William I

Thomas Jo

Edward D

W. H. Bak

Harold Sk
T

* S = Syd

19081

SECOND VOYAGE—OUTWARD.

Name of Witness.	Quality &c.	Evidence.	Reference.*
Ernest Crossley ... Nicholas Sharp ...	Seaman on "Waratah" ... London to Sydney. At sea since 1896.	Set out <i>ante</i> ... She was all right in fine weather and smooth water, but as soon as you got the wind a little on the beam she would hang over that way—she seemed to be top-heavy. She was very crank. I did not think she was safe, and shammed sick to get clear of her. The chief officer, when engaging me, said, "If you can get anything else, take it, because this ship will be a coffin for somebody." Going round the Ushant Light, the vessel had the wind and sea on her beam, and she there commenced to roll very noticeably. She appeared to hang and shake at the end of the roll, before recovering herself and commencing the return roll. The roll to leeward was more pronounced than the roll to windward. She would sometimes roll to leeward, stop, and then continue the roll further, and then recover. The vessel appeared to be very badly balanced, and to be "dead" in the water if there was any sea on.	S. 14 S. 15
Alfred Philip Pinel.	Carpenter's mate on "Waratah." In the Royal Navy nine years.	As regards seaworthiness, she was all right. As regards stability, she was a bit top-heavy. She rolled very heavily. There was a big roll crossing the Bight, and I thought she was never going to come back two or three times.	S. 16
Samuel Lyons ...	Steward on "Waratah" ...	One day she gave a very heavy lurch, and stopped there, over to the star-board side. The boatswain said, "By God, I wouldn't like to be on this ship in a storm; she would go to the bottom." She was very top-heavy; she never seemed to right herself.	S. 17
Fredk. Carl Lusakin.	Steward on "Waratah" ... First experience at sea.	The ship was right enough. Never heard anyone on board run her down. The carpenter was my intended brother-in-law, and he never complained of the ship.	S. 18
Wm. Stephen Powell.	Steward on "Waratah" ... First time at sea.	Seemed a steady enough boat, but it was good weather all the way out. Heard the sailors say she was top-heavy.	S. 19
Alan Geo. Melville	Clerk who tallied grain from "Ennerdale" into "Waratah" at Sydney.	I said to Mr. Owen (the chief officer) in the presence of Mr. Morgan (third officer), "Well, how do you like your new ship, Mr. Owen?" He replied, "Splendid." I said, "What's she like in a seaway?" He replied, "I was never in a better." Mr. Morgan then said, "She's like a rocking chair."	S. 51
Brightmer John Shore.	Steward on "Waratah" ...	Always had a list—would change her list as often as three or four times in the course of an hour or an hour and half—rolled heavily.	S. 20
Wm. Hy. Pearson Baker.	Seaman on "Waratah," but worked in the stoke- hold.	Had nothing against the ship—she only rolled when there was a bit of a blow.	S. 23 S. 24
Herbert Duncan Mason.	Passenger. An engineer holding a first class cer- tificate—33 years at sea.	Nothing to prove the ship seaworthy or not coming out because smooth all the time. The only time there was a bit of a breeze, coming out of Melbourne, she heeled over very heavily. She did not recover herself properly, was not quick enough. In my opinion, if she got in a heavy seaway and did not recover herself, which I do not think she would, she would get another one on top of her, and I believe she went over. The mate and I were old friends, and I said to him, "Owen, if I were you I would get out of this ship; she will be making a big hole in the water some of these days." He said, "I'm afraid she will," and he told me himself that when discharging cargo in Adelaide they had to be very careful in getting them out; she would go over as easily as possible either one way or the other.	S. 25
Geo. Doughty Short.	A.B. on "Waratah" ...	A good sea boat—no list to notice, but a fine weather passage ...	S. 27
Reginald Thomas Richards.	Passenger ... Had been an A.B.	Noticed nothing peculiar—but no rough weather. A first class seagoing ship.	S. 29
William Duncan	Chief officer, s.s. "Hun- ter," which discharged bullion into "Waratah" at Sydney.	She had a big list over on to the wharf, but that might have been due to the way they were discharging cargo. She struck me as being tender.	S. 30
Thomas John Burrin.	See <i>ante</i> (maiden voyage homeward).	Between Gabo and Sydney was awakened by the list which had become very pronounced—she righted herself—list only lasted a few minutes. Behaviour of ship gave no cause to fear for her safety.	S. 37
Edward Dischler	A.B. on "Waratah" ... Had been in 14 deep sea vessels.	The ship when rolling went over on one side and did not seem to be able to recover herself, but stayed there quite an appreciable time. She appeared to be dead in the water and to have difficulty in keeping on an even keel.	S. 41 S. 42
W. H. Baker ...	Seaman on "Waratah" ...	The unsteadyest boat I ever made a voyage in, and was absolutely unseaworthy in my opinion. I did not consider at any time the list was a serious feature about the vessel. She rolled more to leeward than to windward. When she got to the end of the roll to leeward, she seemed to hang over a moment of time and then appeared slowly to recover herself. The momentary stoppage at the end of the roll was very noticeable.	S. 43 S. 45
Harold Skarratt Thomas.	Surgeon on "Waratah" ...	On three occasions during my voyage on the "Waratah" her behaviour attracted my notice. The first occasion was when we were in the Bay of Biscay. The sea was choppy. The vessel rolled considerably, and did not appear to recover herself quickly at any time. The second occasion was on the voyage across the Indian Ocean during very fine weather. The water was smooth with scarcely a ripple, but there was a heavy swell which came from the south. One morning during that time I was having my bath. I had the bath full almost to overflowing, and had been lying full length in it for some time. The motion of the vessel had not been remarkable, when suddenly I was rolled on to the side of the bath. At first I was amused at the water flowing over the side of the bath, but a second or two later, it seemed to me that the vessel would never stop. When the roll did cease, the vessel appeared to remain on her side for some time. I am unable to say how long, but it seemed to me longer than should have been the case. When the vessel recovered herself, I was surprised to find that the water in the bath did not cover my body. I have a very distinct recollection of the incident, because I was startled by it at the time. The bath steward a few minutes later made some remark to me about the rolling of the vessel. The third occasion on which I noticed the behaviour of the vessel was one evening soon after we had cleared the Port Phillip Heads en route to Sydney. The wind was blowing hard, and the sea appeared rough.	M. 24

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Second Voyage—Outward—continued.

Name of Witness.	Quality &c.	Evidence.	Reference.*
Harold Skarratt Thomas—continued.		I had retired early that evening, and had been asleep. I cannot say how long I had been asleep, when I was awakened by being rolled forcibly against the side of my bunk, and I had to grip the railing hard in order to avoid being thrown completely out of bed. On the whole I do not think I had on that voyage much opportunity of judging the behaviour of the vessel, because we had such a smooth passage. On the three occasions, however, which I have mentioned, the behaviour of the vessel was sufficient to attract my attention, though it is only since the supposed loss of the vessel that I have really considered the matter. The vessel rolled considerably at times, and certainly seemed to me to be "dead" in the water. I mean by "dead" that when rolling she did not recover herself quickly.	
Wm. Macdonald...	Trimmer on the "Waratah."	At times the "Waratah" had a considerable list on. It was more noticeable at some times than at others. The list was nearly always to leeward. As a trimmer on the coal, I know that the list was not due to the uneven distribution of the coal, because the coal was worked down evenly on both sides. When there was any sort of a sea on at all, the vessel had a big roll. It was bigger than what I had experienced on other ships. At the end of each roll she seemed to stop for a little while before she commenced the return roll. The roll was different from what I had experienced on other vessels. I had not felt on any other vessel the same pause at the end of a roll. The vessel did not pitch as much as she rolled. She recovered quickly from a pitch.	M. 2
Arthur Victor Thomson.	Trimmer on "Waratah." Had been from Melbourne to Hamburg in a German steamship, and had been on other ships.	I don't think she was what is called "dead" in the water. At times the vessel had a considerable list on. It was more noticeable at some times than at others. The list was nearly always to leeward. As a trimmer working on the coal, I know that the list was not due to the uneven distribution of the coal, because the coal was worked down evenly on both sides. When there was any sort of a sea at all the vessel had a big roll. It was bigger than what I had experienced on other ships. When working in the bunkers I have had my barrow thrown right away from me with the roll. Sometimes she would appear to stop at the extremity of a roll, and then roll further over again as if another sea had struck her. At the end of each roll she seemed to stop a little while before she commenced the return roll. The roll was different from what I have experienced on other vessels. I had not felt on any other vessel the same pause at the end of a roll. The vessel did not pitch as much as she rolled. I do not think she was what is called "dead" in the water.	M. 26
Wm. Caig Marshall. Wm. Walter Dewey.	General servant on "Waratah." Never before on ocean-going vessel.	Same as maiden voyage homeward—see ante	—
J. Chas. Neill ...	Port Adelaide manager for Geo. Mills & Co., agents to owners.	My quarters were in the No. 5 upper 'tween decks. After we had left Cape Town there were a couple of days during which there was a heavy swell on the sea and the vessel rolled very much, so much so that the port holes in our quarters had to be kept closed. One had been left open, and a lot of water came in and flooded one of the bunks. This water came in owing to the heavy rolling of the vessel. I noticed the rolling particularly because, as a steward, I had to carry soup and other things about to the tables. When the vessel rolled she always paused for a little time before she commenced the return roll, and I had to wait and be ready for that pause every time or else I would have been thrown off my balance. I can't say definitely how long that pause was, but it seemed to be a considerable time. She used to roll over steadily and then hang for a time at the extremity of the roll before she commenced to return. She did this whether the roll was to port or starboard. I did not take much notice of the pitching of the vessel and did not notice anything to draw attention to. My attention was devoted to the rolling because that interfered more with me in my work.	M. 28 M. 29
John Hy. Maxwell	Fireman At sea about 16 years. Worked passage.	I have known Captain Ilbery intimately for twenty years, and he always spoke most highly and proudly of her (the "Waratah"). He never suggested any defect or anything remarkable as to her behaviour at sea. I, having had intimate association with the ship and her captain and officers, know absolutely nothing to the detriment of the ship. I noticed on one occasion, when I was lying in my bunk at night, that the ship rolled heavily to port and hung there, and I lay wondering when she was going to right herself. I naturally expected to feel her roll back to starboard, but she seemed not to come back, but to go still further to port. If she did come back it was in a very slow manner and could scarcely be felt. The wind was abeam on the starboard side. It was a fairly strong wind, but not what I would call a heavy one. On other occasions, when there was little or no wind but with a swell on, she would act in the same kind of way. I thought at the time she acted in a rather peculiar way. I mentioned it to several of the sailors and firemen on board, and some said they were sorry they came out in the ship and would like to be out of her. They did not like the way the ship was behaving. I think quite a dozen were of that opinion, perhaps more. Sometimes, when going head to wind, she would take more water over her than one would expect under the circumstances; that is, in quite ordinary weather.	A. 3 A. 12
Frank Edward Thomas.	Shipping clerk to agents Passenger, Adelaide to Sydney.	Had one blow during my trip to Melbourne and Sydney, but it was mostly fair weather. It took us four hours to get alongside the Port Melbourne Railway Pier on account of a perfect gale blowing broadside on, but it seemed to have no effect upon her and she certainly showed no sign of tenderness. I saw nothing while I was on board to correspond with the reported statement of Mr. Sawyer at Durban. The only thing I noticed was that on leaving Melbourne for Sydney she had a slight list to starboard, and on the next day on looking over the side I noticed she was discharging rusty-looking water. The chief engineer came along, and I asked him the cause, and he said they were pumping out a tank to rectify the list. The list, however, continued. The morning after I noticed this we arrived in Sydney, and the list was still on. It was only slight, and probably a casual observer would not have noticed it. . . .	A. 24

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Second Voyage—Outward—continued.

Name of Witness.	Quality &c.	Evidence.	Reference.*
Frank Edward Thomas—continued.		After the "Waratah's" first voyage some remarks came to my ears (I do not know who made them), to the effect that the ship was a crank one. During my trip, in sitting one day with the chief engineer, the chief officer, and purser, I took advantage of my being connected with the agents, and, knowing the officers so intimately, asked them whether there was truth in it. They all agreed there was not. . . . The chief officer said, "You often hear things like this said, and a ship in certain trim or badly loaded might be expected to be crank." But so far as the "Waratah" was concerned they were perfectly satisfied. On account of my long and intimate connection with the line and its officers, I think that if there had been any defect in the ship or anything out of the way in regard to her behaviour at sea, I should have heard something about it. I feel certain that I should, but I never did.	
Ernest Vivian Lewis.	A.B. on "Waratah" ...	I do not remember any very bad weather while I was on board of her. I have had experience in different kinds of ships, sailing and steam. I never saw anything to lead me to suppose that the ship was not all that she ought to be. During the voyage from London to Adelaide we remarked in the fore-castle that she was a fine sea-going ship. I never heard anything on board the "Waratah" to suggest that the ship was in any way faulty. I went all over her myself; if she was here to-day I would not hesitate to ship in her again.	A. 29
G. W. Ambrose ...	Quartermaster, s.s. "Waratah."	Wrote from Cape Town to his mother, under date 18th May, 1909: "We have had a fine passage out as far as this; we haven't had a drop of water on deck yet. She is a splendid sea-boat."	Page 397 of printed evidence.

SECOND VOYAGE—HOMEWARD.

Claude G. Sawyer	Director of Public Companies. Booked by the "Waratah" from Sydney to Cape Town with option to continue to London at a cheaper rate. Left the ship at Durban, forfeiting his passage money to Cape Town, a sum of eight guineas, and the right to cheaper fare to London. Accustomed to ocean travelling. Had been on twelve ocean steamers within nine months.	I first noticed something peculiar at Melbourne, and that was when we left the port; she had a big list to port. I formed the opinion that the list was considerable when I walked in my cabin. It was very uncomfortable to walk towards the port. I suppose the floor of the cabin was inclined slightly to port. Then going through the disturbed water just before you get out to the Heads, she wobbled about a good deal and then took a list to starboard and remained there for a very long time. She went right over so that the water was right underneath me. I was standing on the promenade deck.	1158
		She remained so long there that I did not like it.	1159
		Then, by degrees, she went over the other way, and remained with a list to port so that it was very uncomfortable walking in my cabin, because my cabin was on the port side.	1160
		The weather was fine although the passengers from Sydney to Melbourne complained of the roll. I did not think much of it because I had had very bad weather in the "Warimoo," which had however not alarmed me.	1161
		The "Waratah" did alarm me, by degrees, before I got to Durban.	1162
		On leaving Adelaide it was fine through the Right, but just by Cape Leeuwin we got it somewhat rough, not very rough, and she rolled in a very disagreeable way, a very unusual way. She rolled and then remained a long time on her side, and did not recover. So I looked round to see why she was not recovering, and then in the middle, just when she was level again, she gave a decided jerk very often. Several passengers had bad falls in consequence of the jerk. Then, when she got on the other side, she remained equally long before she recovered.	1163
		I made some enquiries regarding the roll. I used to bath very early, and one morning, when I was lying in the bath at full length, all at once the ship rolled very much, and was so slow that I had time to measure the angle that the water took with the bath, and apparently to me it was about 45 degrees, or, as near as I could calculate, half a right angle. But the water may have had a swing or anything, I do not know, but it alarmed me anyway. I went and asked one of the officers to what angle the ship had rolled, but I did not get any satisfactory answer. I asked if there was an instrument on the bridge, because I did not know that they did not have one there. I knew they had one in the engine-room, but the reply I got was, "Oh, the builders would have seen to the roll—it was all right."	1164
		After that I was talking about the rolling to Mr. Ebsworth, another passenger. He had been a sailor, so he told me, for about seven or nine years. One day I was talking to him about this rolling, so he said, "Oh, that is not all; we will go and look at the way she is pitching." So we walked to the forward end of the promenade deck, and watched the ship, and there were big rollers coming straight towards the ship, so she took the first one; when she went into the trough of the wave, she remained there, and she seemed to keep her nose into the next wave, and simply plough through it. We watched her for a long time, and then a very big wave came, and Mr. Ebsworth caught hold of the railing and said that in the whole of his experience he had never seen any ship do that before. That set me thinking, and so I made enquiries about the ship, and then I found out for the first time it was her second trip. Then I formed an opinion, and I thought I had better be off that ship. I should say that was about ten days or more before arriving at Durban.	1166
		I did not speak to the captain about the ship; one does not like to talk about a ship to the captain, but I mentioned I was going to leave the ship at Durban. I gave no reason.	1167
		[Mr. Sawyer gave evidence as to two remarkable dreams, quite simply and straightforwardly. It was clear that the dreams were produced by his disagreeable impressions of the ship. One, thrice repeated, was before he left her, and seems to have influenced his conduct in so far only as it vividly recalled to him the resolution he had already formed to leave the ship, a resolution which immunity from disaster had no doubt weakened, but which was only in abeyance. The importance of the dreams is as evidence of the state of mind produced in him by the ship's behaviour as he saw it.]	1168
		When I was on board of her just before her departure (from Durban) she had a slight list to the starboard side, but nothing to speak of.	1169
		I heard the third officer express an opinion she was top-heavy.	1170
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Second Voyage—Homeward—continued.

Name of Witness.	Quality &c.	Evidence.	Reference.*
Ernest Crossley ...	Marine inventor ... Knew the chief officer of the "Waratah." Had known him for some years, and when he came into port visited him regularly.	I lunched with the chief officer at Melbourne, somewhere between the 28th June and the 1st July, 1909. I asked him if he was satisfied with his new ship. He said he was very dissatisfied. He said she did not behave as she should do. He said she had a peculiar way of getting on one side, on the port side or the starboard side, without righting herself immediately. He gave a description as falling. It fell more than rolled, and got hit back again. That was his way of expressing the motion of the steamer. He told me the engineers were dissatisfied as well. He mentioned the second and third, but just generally speaking the whole lot. They were going to have trouble, I think, in London. The chief officer said the majority of the officers intended, the lot of them, to leave the ship and complain about it. He said he was thoroughly dissatisfied with the ship, and if he could not leave her without leaving the Company, he would leave the Company. So that satisfied me he was highly dissatisfied.	2460 2464 2465 2466 2467
J. H. Veitch ...	Shipping Inspector, New South Wales (Sydney).	I saw the ship daily for ten days discharging and loading cargo. There was nothing in the alteration of trim to suggest instability.	S. 35.
Alexander Sangster.	Do.	She left in good ballast trim and, so far as could be seen, in perfect sea-going order.	S. 36.
L. A. B. Wade ...	See ante ...	In June, 1909, just before the "Waratah" left Sydney for London on her last voyage, the master (Captain Ilbery) dined with me at my house. He said, referring to the vessel, "You should be on her now—we know how to stow her; she's as steady as a rock." He went on to explain that the steadiness of the vessel largely depended on the stowage, and that they now had the necessary experience of her peculiarities.	S. 46.
Jonathan Owen ...	Manager of Central Wharf Stevedoring Co., Ltd., Sydney. Holds master mariner's certificate.	Seaworthy as far as I could judge in still water. I had no doubt of her stability. No list except when tipped with coal or filling up boilers.	S. 12.
Basil Alfred Oslear.	Shipping Clerk to Messrs. Gilchrist, Watt & Sanderson, Agents for the "Waratah." Passenger, Sydney to Adelaide.	I noticed nothing unusual. She did not list more than any boat would. It was good weather and there was nothing to show whether she was a good or bad sea boat.	S. 13/14.
Wm. Dow ...	Pilot under Marine Board of Victoria. Holds a master's certificate.	I piloted the ship from the Railway Pier at Melbourne to the pilot station outside Port Phillip Heads. She appeared to be staunch and in every way fit for the voyage. I saw nothing while on board to make me alter that opinion, and I had the same opinion when I left her. I saw no sign of a list on her while at the pier or going down the Bay, neither did she appear to be tender. As I had not piloted her before, and the captain was an old acquaintance, I took particular notice of the vessel, and her condition and behaviour. The sea conditions in the Bay, so far as I remember them, were exceptionally good, and the vessel behaved well. There was no rolling or pitching, but she went along as steadily as could be wished. The captain and officers spoke very cheerfully to me about the passage home, and made no complaint of any kind about the vessel or any remarks about the seagoing qualities of the ship.	M. 17
Fredk. Chas. Saunders.	Passenger, Adelaide to Durban. Had made numerous trips in mail ships and coasting vessels.	We ran into dirty weather soon after leaving Adelaide, and then for a few days until well past Breaksea we had heavy seas and wind squalls from the south-west. The vessel rolled a lot during that time, but to my mind, it was nothing unusual having regard to the weather, practically midwinter in Australia. The rolling was not sufficient to interfere with my sleep, or cause me to put out my elbows to steady myself in my bunk as I have had to do in other vessels. The only matters which occurred to cause comment at the time were when the vessel (on two occasions) gave a bit of an extra roll and seemed to shake before she started to return, and one day when it was fairly calm when the vessel took two or three waves over her bows without any apparent reason. Mr. Richardson called my attention to this latter fact, and Mr. Ebsworth and I went to the fore end of the boat deck to see the occurrence. When I saw it I remarked that I had seen something like it before in the Indian Ocean—a wave getting up suddenly without any apparent cause or reason—and Mr. Ebsworth agreed that it was not uncommon, but he thought the "Waratah" showed a fondness for "putting her nose into them." These matters passed from our minds at the time, and were only recalled by me in the light of what subsequently occurred.	M. 18
Geo. Samuel Richardson.	Chief mechanical engineer of the Geelong Harbour Trust, Victoria. Had made other ocean passages.	Both Mr. Ebsworth and myself were so confident of the safety of the vessel that we made arrangements to go back by her to Australia on her return voyage. I arranged to join the vessel at Cape Town. When we arrived at Durban it was difficult to obtain apartments or accommodation, and I had decided to proceed to Cape Town (i.e., in the "Waratah"), but at the last moment a friend managed to make arrangements for me, and I then went to the vessel and cleared my luggage. While off the Leeuwin we had some bad weather. There was a heavy sea running with a strong wind. The vessel did not roll to any great angle, but she rolled slowly. It was a slow majestic roll with a distinct pause at the extremity of the roll. She was pitching, but I did not notice anything abnormal about the pitching. The sluggish character of the rolling of the vessel continued after we left the vicinity of the Leeuwin, but in the moderate seas the rolling was not so pronounced. When we encountered the heavy swells in the Indian Ocean, the vessel began to both roll and pitch to a greater extent. The rolling and pitching were worse than when she was in the heavy weather off the Leeuwin. I accounted for that in my own mind by the fact that she was getting lighter owing to the consumption of coal on the voyage, and that the wave length of the swell was greater than it was off the Leeuwin. The rolling had the same character as before, that is, a slow roll with a distinct pause before recovery, and the pitching was of a similar character with the same pause and slow recovery especially from the forward dip. She rose more quickly aft.	M. 19 M. 20 M. 21

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Second Voyage—Homeward—continued.

Name of Witness.	Quality &c.	Evidence.	Reference.*
W. Fisher—continued.		I have never seen the "Waratah" empty. Have often had experience with crank or tender ships, but have never found the "Waratah" a tender ship, on the contrary I always considered her a stiff ship. I have known Captain Ilbery perhaps 30 years, and considered him a most capable ship master and one who took more interest in his ship and cargo than any master I ever knew. He was most particular in every respect. I am sure that he was as satisfied as I was in regard to the stowage of the ship. It is a very common thing with stevedores to hear remarks about peculiarities or defects in ships, but although I have been so intimate with the captain and officers of the "Waratah," I have never heard a whisper of anything of the kind in regard to that vessel, and I had not the faintest suspicion of anything. If there had been anything peculiar or out of the ordinary in regard to the ship's behaviour at sea, I am satisfied I would have heard something about it, but I never did.	A. 10
Arthur James Fisher.	Assistant to father (as above).	When loading was completed and the ship ready for sea, she was, in my opinion, a thoroughly well loaded ship, not overloaded, and fit for any voyage. She was perfectly upright when she left Port Adelaide Wharf, and so she was when I left her at the Outer Harbour. The captain was the strictest man I ever knew for keeping his ship upright. I was very intimate with the officers, but never heard a word as to any peculiarity in the vessel or her behaviour at sea. If there had been anything I think I would have heard something. I have found it not uncommon to hear remarks about a ship, but never heard anything as to the "Waratah," that is, nothing detrimental. I remember reading reports as to a passenger who left at Durban being interviewed by a newspaper representative, and was surprised at the remarks he made, as I never heard a whisper from anyone on board of anything of the kind. We have loaded the "Waratah" before, but I have never seen her empty; she would not be empty at Port Adelaide. I never saw any sign that the ship was tender and never heard a word from the captain or officers that she was. If a ship is tender we are usually informed, so as to be specially careful to properly adjust the heavy cargo, but there was no such suggestion in the case of the "Waratah."	A. 11
John McDiarmid.	Licensed Pilot ... Holds a master's certificate, and has had 30 years' experience at sea.	I was pilot to the "Waratah" inwards and outwards on her last voyage. Inwards, took charge of her 2 miles to the southward of the Port Adelaide Lighthouse and berthed her at the Ocean Steamers Wharf, Port Adelaide. She had the assistance of a tug which was placed right ahead all the way to assist at the bends in the river. Her draught, as recorded by me after berthing, was 25 feet 8 inches forward and 26 feet 4 inches aft. Pilotage is paid for on tonnage and not on draught. We steamed in slowly. Had no difficulty in steering the ship or otherwise. She had a slight list to port when I boarded her, but it was very little. No remarks were made about it or anything else, except the business we had in hand. She was not down to her marks or anywhere near it when I boarded her. When going round the bends she had a tendency to list when the tug got a strain broad on the bows, caused by the action of the helm and tug combined. I would not expect this in a ship that was nearly loaded as this one was. It might be ascribed to several reasons, the principal one being that Port Adelaide being the last port and taking the heaviest cargo (flour, grain, &c.), space would be left to take that cargo as low as possible. Another reason might be the starting of pumping out water prior to taking in that cargo, and a third reason might be that she was naturally a somewhat tender ship. I had had charge of the vessel before and remarked this latter to the captain on the previous voyage. Do not remember what he said, but am under the impression that he agreed with me. What caused the remark was, when negotiating the turn in the cutting at Snapper Point coming up the river she rolled from side to side without any apparent cause—I knew of none. I boarded the vessel again as pilot to take her out of the port down to the outer harbour on the afternoon of 6th July, 1909. Had the tug "Wato" in attendance to help us off the wharf down the river and alongside the Outer Harbour Wharf. I turned the vessel on her inward trip so that she was heading down stream ready for departure. When starting, the tug plucked her off from the bows to get away from the wharf and then went ahead. The ship was heavy in working and slow to answer the helm, but she had no sign of tenderness, neither did she on the way down the river or in going alongside the Outer Harbour Wharf. The heaviness mentioned I attributed to her heavy draught going down the Port Adelaide River, which was 27 feet 9 inches on an even keel. I put her as close as I could to the wharf and the tug then left the bow and went amidships on the starboard side and pushed her into the wharf. I left the vessel when she was made fast to the wharf. The next afternoon I returned to take her to sea. She was then drawing 28 feet 3 inches forward and 29 feet 5 inches aft. The same tug was again in attendance and plucked her off the wharf at the stern, the ship heaving off to her cable to get her bow off. She was not then down to her marks. She was quite upright and stiff, and proceeded to sea as far as the Semaphore Anchorage without any difficulty or any sign that the ship was tender or that anything was wanting to make her a seaworthy vessel fit for the voyage. I knew the master and officers only when on board the ship, and have not heard from anybody on board since I left her. I always looked upon her as a tender ship, but not to such an extent as to make her unseaworthy. Apart from my remarks to the captain about the ship rolling I never referred to the matter again, either to him or to the officers, and they never made any remarks to me as to that or the vessel's behaviour at sea. The circumstances being peculiar, i.e., the rolling, I mentioned it to some of the other pilots at the time, and they thought as I did. It is a well-known fact that steamers loading on the Australian coast, especially in the wool season, are compelled, in order to complete their voyage with safety and stability, to keep their water ballast tanks full all the way home. This, especially if a ship is inclined to be tender, renders it all the more necessary for care in loading at the ports previous to arrival at Port Adelaide in order to leave room to put the heavy cargo of this port as low down as possible. I do not know whether that was done in this case, in fact I know nothing about the loading of the "Waratah."	A. 16.
			A. 17.

* S = Sydney depositions.

M = Melbourne depositions.

A = Adelaide depositions.

D = Durban depositions.

Mi = Miscellaneous Affidavits.

A number without a letter refers to the minutes of evidence given in Court.

Second Voyage—Homeward—continued.

Refer- ence.*	Name of Witness.	Quality &c.	Evidence.	Refer- ence.*
A. 10	Jas. Hy. Gibbon...	Lloyd's Surveyor, Ade- laide.	I had no conversation with the master of the steamer about the ship, as I never had any doubt in regard to her. I never saw her empty. Every time she came here she was from a half to two-thirds full of cargo. I have visited the "Waratah" ever since she first came to this port, and have watched both loading and discharging. I have never observed anything in regard to her to cause me any uneasiness. Since she has been reported as missing I have heard, mostly in conversation with engineers in other lines of steamers, who either knew the "Waratah" or engineers who had served on her, that she was a crank ship when light in Sydney, but I have no personal knowledge of that. I have never heard anything said against the "Waratah" by the master or officers employed on her. They would not be likely to talk if they knew anything.	A. 18
A. 11	Chas. Augustus Johnson.	Wharf Manager, Outer Harbour, Port Adelaide. In employ of State Government.	I have known Captain Ilbery for many years, and I heard him say what a splendid ship she was. I was in conversation with several of the officers on both her trips, and I never heard a word about her being tender or unseaworthy or in any other way objectionable. The chief engineer is an intimate friend of mine, and he said it was the best job he had ever been in. He visited my house, having known him when he was third, second, and chief engineer, and I think had there been anything unusual or extraordinary about the vessel or her behaviour at sea, I should have heard something about it in a private way, but I did not. There was never any suggestion about his leaving the ship.	A. 19
A. 11.	Alexander Inglis	Harbour Master, Port Adelaide.	The ship had no list when I saw her, except when touching the ground. I have heard since the accident, never before, that she was tender but have never seen anything to indicate it here, and have never heard anything on board to that effect.	A. 20
A. 16.	Andrew Phillip Field.	Superintendent, South Australian Stevedoring Company.	I have known Captain Ilbery for many years and was intimate with him. I know that he was proud of his ship, and never heard from him, or anyone on board, anything to complain of in regard to her stability or behaviour at sea.	A. 23
	John McArthur...	Foreman Stevedore, Adelaide.	I was very intimate with the chief officer. He never expressed any opinion or made any remark respecting any tenderness or unseaworthiness of the ship or as to anything out of the ordinary in her behaviour at sea. If there had been anything I think he would have mentioned it privately. I never heard from the captain, officers, crew, or passengers a single word that might have any bearing on any unseaworthiness of the ship. I have had about twenty-eight years' experience loading ships every day in the week, and I am satisfied that the "Waratah" was a well-stowed ship, not overloaded and in a thoroughly fit condition for the voyage. She touched the ground alongside the Port Adelaide Wharf at low water, which is a daily occurrence with other ships and at other wharves when they are deeply loaded, but as far as I ever knew it does them no harm. I believe it is a soft bottom. Apart from this she was perfectly upright. The captain was always very particular about this. I do not think she was a tender ship; saw nothing to make me believe she was. I was very intimate with the officers, but never heard on board that she was a tender ship. I always heard she was a splendid sea boat. I never heard anything of her acting badly at sea, such as Mr. Claude G. Sawyer is said to have described. If she had been a ship like that I think I would have heard something about it. I was on the wharf when she started. She was perfectly upright then, and I know of no defect either in the ship or the stowage, and considered her perfectly seaworthy.	A. 25
A. 17.	Wm. Arthur Wills	Tug-master	My tug attended the "Waratah" to help her off the Ocean Steamers Wharf, Port Adelaide, and down the river to the Outer Harbour Wharf on her last voyage to the Cape and London. The vessel was upright, in good trim (not too much by the stern or by the head), and in good handling trim for going down the river. She was in the deep water, but I did not know the draught. There was no difficulty in removing from the wharf, towing down the river, or getting alongside the Outer Harbour Wharf. The tug also attended the steamer next day to help her away from the Outer Harbour, where she finally started on her voyage. She hauled off her bow with her own anchor, and the tug pulled her stern off. We simply pulled her off the wharf, and then she went out of the channel to sea by her own power. She was upright then and drawing over 28 feet. She had no list and appeared to be in good sea-going trim. She showed no tenderness when we pulled her broad off from the Outer Harbour Wharf, neither did she the previous day when leaving the Ocean Steamers Wharf, Port Adelaide, and going down the river. There was nothing whatever that appeared to me, as a master mariner, to in any way suggest unseaworthiness.	A. 27
	John Rainnie ...	Port Captain, Port Natal	So far as I could see when that ship left Durban, I do not think it was top-heavy. She was not at all "tender." I observed that when the ship was leaving the wharf she had no list whatever, and when our tug commenced to pull upon it, it seemed to have no effect in the way of creating a list. We often see, if when we take hold of a tender ship with one of our heavy tugs, that she at once lists to the pull. But there was nothing of that in the case of the "Waratah." I have not the slightest doubt that when the vessel left the Port of Durban she was far "stiffer" than when she arrived at this port two days before.	D. 2
	Alexander Smith Duthie.	Master of Government tug "Richard King" at Durban.	We towed the "Waratah" round from "C" shed. She did not lean towards us at all. Hawsers were put right on her port quarter. We accompanied her outside the bar. She was upright at the wharf, and when we started towing her round as nearly upright as possible. Had she been tender she would probably have leaned towards us. She did not do so.	D. 4
	William Robert Wright.	Manager, Cotts & Company, Durban, who supplied coal to the "Waratah."	She was late in sailing owing to a list, which was perhaps caused by too much coal on one side in the bunker. The captain insisted on Messrs. Nicoll & Company taking the list out and declined to go until that was done. She went out perfectly upright.	D. 5
	Victor Lindsey Nicoll.	Manager, Nicoll & Company, who supplied coal to the "Waratah."	To same effect as Wright (above) I saw an instrument in the chief officer's cabin which indicated that the ship was perfectly upright.	D. 16
	William George Miller.	Leading mooring attendant, Durban.	The ship looked in beautiful trim when she left the harbour. There was nothing in her appearance to indicate she was top-heavy.	D. 17

* S=Sydney depositions.

M=Melbourne depositions.

A=Adelaide depositions.

D=Durban depositions.

Mi=Miscellaneous Affidavits

A number without a letter refers to the minutes of evidence given in Court.

Second Voyage—Homeward—continued.

Name of Witness.	Quality &c.	Evidence.	Refer-ence.*
Hugh Lindsey ...	Government pilot ... Port of Natal. Took "Waratah" out of port.	The vessel did not appear to be at all tender. When we left the wharf I put the tug on her aft with a long hauling wire. I have noticed in some ships when they are tender they lie over to it whichever way the tug pulls them, but the "Waratah" just pulled off steadily.	D. 18
Frank Hayward Benson.	Employed by Cotts & Co., who supplied coal to "Waratah."	Leaving Adelaide we crossed the Australian Bight, and in that place we had bad cross seas, and in those cross seas the "Waratah" acted splendidly—was very steady; she rolled very little, but I noticed that she was slightly slow in recovering when pitching.	D. 25
Geo. Purssey Phillips.	Passenger, Sydney to Durban. Chief officer of "Clan Macintyre."	At 6 a.m. on the 27th July we exchanged signals with the "Waratah." She had no list but seemed to be in good order, and not to be in any difficulty whatever.	Mi. 3
Alexr. Weir ...	Master of "Clan Macintyre."	She appeared to me neither to have a list nor to be rolling excessively, but to be proceeding in an exceedingly steady manner.	page 301 of printed evidence.

* S = Sydney depositions. M = Melbourne depositions. A = Adelaide depositions. D = Durban depositions.
Mi = Miscellaneous Affidavits. A number without a letter refers to the minutes of evidence given in Court.

The next matter to be dealt with is the loading of the cargo on the last homeward voyage. The evidence as to this consists of,

- the manifests;
- the captain's stowage plan;
- the stevedores' stowage plan; and
- depositions made by the stevedores.

The manifests are documents prepared long before anything untoward had occurred to the ship. On them freight was paid. They are therefore to be relied on.

The captain's, or rather the chief officer's, stowage plan also was made before anything had happened to the ship. It was despatched to the owners from Durban. There is no reason to suppose that, so far as it goes, it is anything but accurate and trustworthy. The information it gives is, however, very general in character; in some cases only are sufficient details given to enable any particular parcel of cargo to be identified.

The stevedores' plan is a document which emanates from Sydney, appears to be completed at Adelaide, and thence returned to Sydney. There is some attempt upon it to discriminate between the various ports of loading and also between those of destination; but it seems to be a hurried production, gives no weights, or particulars, beyond the names of the various commodities, and is obviously inaccurate in places both in its colouring and in its disposition of commodities.

The depositions were made after the event, and are confused and contradictory. The Melbourne deposition is misleading; the principal commodities are lumped together beyond hope of disentanglement, the smaller consignments are left out altogether, and yet a total is arrived at considerably in excess of the total manifest weights. The Adelaide depositions give no indication whatever of where the cargo was stowed.

The Court has made a very careful collation of these documents, and desires to acknowledge its great indebtedness to Mr. Larcombe, the Board of Trade Surveyor, who was called as a witness to assist the Court in the matter. From the manifests it appears that, making a reasonable allowance for measurement cargo, about 6,500 tons of cargo were placed in the ship in Australia. The largest items were the 970 tons of leady concentrates shipped at Adelaide, and heavy consignments of wheat, oats, flour, tallow, wool, and skins, taken at the three Australian ports. About 240 tons of this total were consigned to Durban and Beira, and were discharged at Durban. No cargo was shipped at that port.

The method adopted in fixing the distribution of the cargo was to take Captain Ilbery's plan as the best guide, utilizing the other documents to supply its deficiencies where possible. An indication of the accuracy of the captain's plan was that it was found to be in general accord with the manifests.

On this basis the distribution of cargo leaving Durban was approximately as follows:—

Holds	4,230 tons.
Lower 'tween decks	1,425 "
Upper 'tween decks	595 "
Total	6,250 tons.

The bunker coal is shown in the abstracts of the engineer's log, and can be, at least partly, checked from the coal vouchers.

Of the coal on board leaving the Thames, 637 tons were left on arrival at Adelaide. At Sydney 2,053 tons of coal were taken in, and at Melbourne 163 tons. At Adelaide on return 180 tons were bought. To Adelaide 799 tons were consumed, and from thence to Durban 1,785 tons. At Durban 1,929 tons 6 cwt. of coal were taken in. There was thus on board a total of 2,378 tons 6 cwt. Mr. Lund, probably correctly, estimated her consumption whilst in Durban at between 20 and 30 tons, which would leave her with, in round figures, 2,350 tons when she sailed from that port.

The "Waratah" left Durban about 8.15 p.m. on the 26th July, 1909. She was sighted after leaving Durban by the steamship "Clan Macintyre." The circumstances are related succinctly and clearly in an affidavit sworn by Mr. George Purssey Phillips, her chief officer, which he afterwards confirmed by verbal evidence before the Court. The affidavit runs as follows:—

"I am chief officer of the steamship 'Clan Macintyre,' of Glasgow, the official number of which is 115775. I was on watch on the said vessel, in charge, from 4 a.m. to 8 a.m. on the 27th July, 1909, the vessel having left Durban on the 26th July for London; the steamship 'Waratah' was in Durban when we left. I saw her there as we were leaving. When I came on watch at 4 a.m. on 27th July a steamer was in view a good distance astern of us, on our starboard quarter. She was bearing north-easterly from the 'Clan Macintyre,' that is nearer the land. She gradually overhauled us, and when abeam, at 6 a.m., and distant from 2 to 3 miles, we exchanged signals as follows:—

"1. What ship?"

"2. 'Waratah,' for London.

"3. 'Clan Macintyre,' for London. What weather had you from Australia?"

"4. Strong S.W. and southerly wind across.

"5. Thanks, good-bye, pleasant voyage.

"6. Thanks, same to you, good-bye.

"The signals 1, 3 and 5 were from the 'Clan Macintyre' and the signals 2, 4 and 6 were replies by the other vessel. Our signals were made by the fourth officer, Mr. Carson, who was on watch with me, and all the signals were perfectly clear and unmistakable. Mr. Carson has since left the 'Clan Macintyre.' At the time mentioned, 6 a.m., we were approaching Cape Hermes. The steamer remained in sight until about 9.30 a.m., and we could distinguish a blue anchor on her funnel a little after she passed, and recognised her perfectly. When I first saw her we were steering S.W. true, and she was steering S.W. southerly. She passed ahead of us, crossing our bow, and when we lost sight of her she was heading much the same way; she was then one point to one and a half points on our port bow, and would be 8 to 10 miles away, as the weather was fairly clear, and she would be about abeam of Bashee River, and about 12 miles out from it. Her speed all the time was quite 13 knots over the ground. She passed the 'Clan Macintyre' rather quickly, and we were making 9½ knots by log, and the current was about 2 to 3 knots an hour in our favour.

"The 'Waratah' was showing the usual navigation lights, there were also numerous electric deck-lights, &c., on and off from time to time. She had no list, but seemed to be in good order, and not to be in any difficulty whatever. We saw nothing more of her after she passed out of sight.

"During my watch from 4 to 8 a.m. on 27th July the wind was fresh to moderate, mostly from S.S.W., there was a moderate sea and the weather was fine and clear, changing at the latter part to cloudy, and a swell also rising. We had Cape Hermes abeam at 7.11 a.m., distant 13½ miles, and the 'Waratah' was ahead as described, having been abeam on our starboard as stated at 6 a.m.

"On the same day we had Bashee River abeam at 11.11 a.m., distant 11 miles, and at 5.13 p.m. Hood Point (East London) was abeam, 10½ miles distant.

"During the 27th July the wind was first S.S.W. fresh, then about noon S. by E. strong, after that S.W. strong gale, moderating between 4 and 8 p.m. and being N.W. by N., going round to W. towards midnight. The sea was at first moderate, then from 8 a.m. to noon rather rough, then from noon to about 5 p.m. a high head sea, ship pitching and shipping heavy seas over the fore-castle head, and then from 5 p.m. to midnight it was rather less rough. The weather was fine and clear throughout the day.

"On 28th July we experienced a great storm. I never met with anything of such violence on this coast during the 13 years I have been sailing in this trade. The wind seemed to tear the water up and was of quite exceptional fierceness and power, rising at times fully to hurricane force. There was, too, a tremendous sea, with the wind, flooding our decks fore and aft, the ship pitching heavily and shipping very heavy seas. In the 24 hours ending noon on 29th July, the 'Clan Macintyre' only made 32 miles; at times the steamer, an able vessel, was driven backward by the force of the storm. We reduced speed of engines to half-speed at 2 a.m. on 28th July, and they were kept at this until 6.30 a.m. on the 29th July. The storm was now abating, and the engines were put at full speed ahead. After this the weather continued to moderate, and we had fair weather with moderate wind, and passed Cape Point, Cape of Good Hope, distant 5½ miles, at noon on 31st July."

His evidence was corroborated by a statutory declaration made by Alexander Weir, master of the "Clan Macintyre." It is only necessary to set out from his statement the paragraph as to the weather met with:—

"On the afternoon of the 27th day of July, 1909, the wind, which was from the south-west, increased, and there was a high and rough head sea, and it became necessary to lash down anything loose about the decks, as the s.s. 'Clan Macintyre' was pitching heavily and shipping water forward. On the 28th of July, 1909, the weather increased to a whole gale with squalls of hurricane force, with a tremendous head sea; the vessel shipping heavy water fore and aft, and it became necessary to reduce the speed of my vessel to half-speed as she could not take the seas safely otherwise. There is a strong current which runs down the coast of South Africa at an average speed of 2 to 3 knots per hour; and as this current was running in directly the opposite direction to the wind, it piled up the seas to a tremendous height. I have never experienced such a sea or such a gale, although I have had 19 years' experience of this coast."

The Court rather emphasises this matter of the storm, as it attaches great value to the opinion expressed by two officers of such long experience on this coast as the master and chief officer of the "Clan Macintyre." As mentioned, the Court had the advantage of hearing the latter, and was much impressed by the clear and careful manner in which he gave his evidence.

Reports of the supposed sighting of the "Waratah" after she left Durban come from three other ships in addition to the "Clan Macintyre": (1) the "Harlow," (2) the "Guelph," (3) the "Talis."

(1) The "Harlow" report will be dealt with at a later stage when her master's theory of the casualty is discussed.

(2) The circumstances of the "Guelph" report are as follows:—

Mr. James Northcott Culverwell, who was, on the 27th July, 1909, in command of that ship, made an affidavit setting out that at 9.51 p.m. on that date, when

abeam of Hood Point (latitude 33° 21' S., longitude 27° 54' E.) on a course N. 52° E. true, his chief officer reported sighting a steamer distant about 5 miles outside the "Guelph," and making out the last three letters of her name as T A H.

The signal was so far doubtful that only a portion of it could be made out, and even as to that portion the Court is of opinion that there must have been some misapprehension on the part of the "Guelph's" chief officer, because if the ship sighted had been the "Waratah," she had only covered about 70 miles since being seen by the "Clan Macintyre" at 9.30 a.m., and in that case must have been overhauled by the latter, and seen by her. The "Clan Macintyre" was herself off Hood Point at 5.13 p.m.

(3) Six or seven months after the "Waratah" was missing a man called at Messrs. Lund's office, giving a name which Mr. F. W. Lund thinks was Brendon, and saying that he was master of a ship called the "Talis." He told Mr. Lund that he, on the 27th July, 1909, was bound in ballast from East London to Valparaiso, and when about 25 or 30 miles out from East London, about 5 or 6 p.m., the "Waratah" came up and had to alter her course to pass under his stern. He said that he hoisted his number and asked to be reported, which the "Waratah" promised to do. There was, he stated, a heavy swell with a fresh breeze from the south. This gentleman gave the address of an hotel in London.

Every possible attempt has been made to trace Mr. Brendon, but without result, and no better success has attended efforts made to discover a ship named the "Talis."

VI.

The Stability of the Ship.

It will be observed that from the inception of the design the question of stability had received continuous consideration. As embodied in the specification which formed part of the contract, the requirements as to stability were two in number, as previously mentioned. They were set out at the end of clause 5 of the specification as follows:—

(1) "Vessel to be able to stand and shift without any ballast," and

(2) "to be designed if possible to go to sea with permanent coal and water ballast only."

There was evidence to show that condition (1) was actually fulfilled.

The words "if possible" in (2) were introduced because the builders were of opinion that the requirement could not be carried out if the coal to be carried in the spar-deck bunker were intended to be included in the "permanent coal."

The insertion of the words "if possible" rendered nugatory either this paragraph (2), or the requirement, which appears earlier in clause 5, that the ship should be capable of taking about 2,100 tons of coal in permanent bunkers.

It appears to the Court that only one of four people could be responsible for this clause in its first shape (*i.e.*, without the words "if possible"). Mr. F. W. Lund, Mr. Shanks, and Mr. Bidwell, each stated that he was not the author of the clause. It therefore appears that it must have been Captain Ilbery's suggestion, and, if so, was presumably based upon his experience. It is reasonable to suppose he had found that a ship capable of fulfilling this condition would present no difficulty in loading during the varying seasons of the Australian trade. It seems unfortunate from the owners' point of view that a condition suggested by the wide experience of such a trusted adviser as Captain Ilbery should have been so lightly abandoned.

Paragraph (2) was subsequently given up upon an understanding that the stability of the "Waratah" should be greater than that of the "Geelong." (See the correspondence of December, 1907, set out *ante*.)

It may be that the owners attached no exact technical significance to the phrase "greater stability than the 'Geelong,'" but the only meaning which, in the Court's opinion, can be fairly deduced from the phrase when used in substitution for paragraph (2), is that the "Waratah" should be better able than the "Geelong" to proceed to sea in the light condition. A comparison

of the stability of the two vessels in corresponding conditions is here set out.

	"Waratah."	"Geelong."
	Feet.	
1. Metacentric height in extreme light condition (except that 300 tons of fresh water, stores, &c. are on board).	+ 26	+ 16
2. Metacentric height with vessel in light condition (i.e., with water ballast and permanent coal).	- 69	+ 07
2a. Do., but without spar-deck coal in "Waratah."	+ 52	-
3. Metacentric height with permanent coal on board (for "Waratah," including 614 tons on the spar-deck), no water ballast, homogeneous cargo in all cargo spaces of such density as to sink vessel to loadline.	- 48	- 22

From the foregoing it will be evident that, without the spar-deck coal, the "Waratah" was better able than the "Geelong" to go to sea light. This, however, leaves the "Waratah" with only about 1,400 tons of permanent coal, and if it be assumed that the 614 tons left out of the spar-deck bunker is stowed in one of the lower reserve bunkers, the "Waratah" compares still more favourably with the "Geelong."

Although the Court has not found it possible to discover from Mr. Lund exactly what meaning he attached to the words "greater stability than the 'Geelong,'" it seems not unlikely that he intended a comparison between the two ships in similar conditions of lading. For this reason the third condition has been added to the above comparison of stability, and from this it will be seen that somewhat more care would be required in loading the "Waratah" than the "Geelong" to obtain equally satisfactory stability conditions.

An examination of the correspondence which passed between the owners and the builders immediately after the ship left on her first voyage, and of the evidence set out in tabular form earlier in the report, indicates that difficulties had been experienced in satisfactorily loading her, at a time when it appears almost certain that the owners had no guidance from the builders as to the proper stowage of the ship. Thus when the builders were consulted as to the future loading, they recommended (see Condition A of the stability curves) the placing of the spar-deck coal lower down, into the upper 'tween decks, and that if the spar-deck space were required, only cargo of 100 cubic feet to the ton should be stowed therein.

The existence of "Condition A" indicates to the Court that the owners' representatives must have found difficulty in loading her into a satisfactory sea-going condition for her first voyage from London, and raises a presumption that she was "tender" when starting that voyage.

There is sufficient trustworthy evidence in that given as to the behaviour of the ship on her outward voyage to strengthen this presumption, and the evidence as to the homeward voyage indicates that the difficulty had not been surmounted. It is hardly necessary to say that "tenderness" in the upright does not necessarily involve instability at large angles of heel.

The Court has, of course, in dealing with the evidence, made every allowance for the lay character of many of the deponents, but is satisfied that on the whole it is the fairly accurate testimony of truthful people as to phenomena which, in many cases, they did not fully understand.

The letters addressed by the owners to the builders after the return of the ship from the first voyage (April, 1909) show that representations had been made to the former by Captain Ilbery as to the stability of the ship. It is to be noted that on the homeward voyage Captain Ilbery had not used the spar-deck space for coal, but had had some cargo stowed there, consisting of tallow and wool. When those letters were written the full information supplied by the builders for loading the ship was available, and sufficient time had elapsed since the vessel's return for Captain Ilbery to have had an opportunity of examining that information. It seems to have been utilized for the stowage of the ship on her second outward voyage. One indication of this is that, on that occasion, Captain Ilbery carried no coal in the spar-deck bunker, although some difficulty must have been experienced in stowing, without using this space, the 3,456 tons

of coal taken on this voyage, the total capacity of all the other bunkers (including the reserve) being 3,215 tons at 42 cubic feet to the ton.

On the second voyage outward two incidents should be recorded. The first is testified to by the witness Pinel, who was carpenter's mate on the "Waratah," and had been nine years in the Royal Navy. There was, he said, a big roll crossing the Bight, and the impression made upon his mind led him to say that he thought "she was never going to come back two or three times."

The second incident is spoken to by Mr. Mason, an engineer, holding a first class certificate, and of 33 years experience at sea, who was also a personal friend of the "Waratah's" chief officer. From his evidence it appears that, coming out of Melbourne, bound for Sydney, when there was a breeze the ship heeled heavily and did not recover herself properly. This experience led him to make the strong remarks to the chief officer set forth in his evidence already given. Mr. Mason is corroborated by Dr. Thomas, who was then surgeon on the "Waratah," and who therefore possessed a trained mind. There is also some general evidence as to the peculiar "hang" at the end of the roll. On the other hand, it will be seen from the tabular statements there is a considerable amount of evidence that she behaved well on this voyage. It is to be remarked that the ship was in a distinctly light condition, her draught when crossing the Bight being about 23 feet mean, and coming out of Melbourne 21 feet 5 inches mean.

There is no evidence to show how the cargo was stowed at any part of this outward voyage.

The documents already mentioned (manifests, plans, &c.) have been used by the experts consulted by the owners, as the basis of calculations to arrive at the disposition of the cargo, and the centre of gravity of the ship when leaving Durban on the last homeward voyage; and their results are in substantial agreement with the independent figures of Mr. Larcombe, the Board of Trade Surveyor, based on the same documents. Upon these figures the metacentric height of the ship appears to have been, when leaving Durban, about 1.5 feet. In this condition the vessel had a maximum righting lever of 2.15 feet at an angle of 53°, and a range of stability of 90°.

The bases of these calculations are not free from ambiguity and possible sources of error, such as the following:—

1. The draught of the ship on leaving Durban. This was assumed in the calculations as being correctly taken, and necessitated taking the total displacement as 170 tons in excess of the known weights in the ship. This difference was regarded as being made up of 129 tons of water ballast, 20 tons of bilge water, and 21 tons of additional stores and baggage. If, however, the draught was in error to this extent the metacentric height (without the 170 tons) would be reduced to about 1.32 feet. Considering, however, that the draught was taken by a government official in calm weather, the draught given seems likely to have been accurate.

2. Possible change at Adelaide in the disposition of cargo loaded at other Australian ports. Alexander Inglis, harbour master, detaining officer, and shipwright surveyor, in the employ of the Marine Board at Adelaide, said in his deposition that he had known cargoes to be considerably altered there to make room for Adelaide freight, but had heard of nothing in this respect so far as the "Waratah" was concerned; no other deponent said anything on this point.

3. The absence of complete details as to the disposition of cargo, especially as to its height in the ship. The method adopted by Mr. Larcombe was, after obtaining the distribution of weight in the manner already described, to obtain the volume of each parcel of cargo by calculations based upon information collected from persons experienced in the Australian trade. This seems the only method available in the circumstances, but shows occasional discrepancies when its results are compared with the depositions. Such, for example, is the case with the concentrates loaded at Adelaide. Arthur James Fisher, the assistant manager of the stevedoring company there, deposed that the concentrates were 8 feet deep all over the hold, and this figure was corroborated by John McArthur, the foreman stevedore. If this were correct it would necessitate taking the concentrates higher than the position assumed by Mr. Larcombe, who took their density such that 1 ton would occupy 12 cubic feet, being supported in this by a statement of McArthur that they go 11 cubic feet to the ton. The two statements made by the latter are irreconcilable, and there is little doubt that the height of 8 feet is excessive.

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4. The incompleteness of the evidence as to the coaling at Durban. The foreman who had the actual stowage of the spar-deck bunker is reported to be dead, and the only evidence as to the amount placed there is that of Mr. Victor Lindsey Nicoll, manager to the firm which supplied the coal. He deponed that he put "not less than 250 tons" there. He was unable to say how much more there might have been, but added that the space was "possibly one-third" full. From the deposition of Mr. William Robert Wright, manager for Messrs. William Cotts & Co., shipping agents, it appears the captain instructed Messrs. Nicoll & Co., in his presence, to place "about 250 tons on the spar-deck." In the calculations it has been assumed that 250 tons only were there. It was suggested in the course of the Inquiry, but without any evidence to support the suggestion, that the chief engineer might have over-estimated the amount of coal used on the voyage, and that he really had on arrival at Durban a considerable amount over that shown in his abstracts, this helping to account for the difference between her displacement and the known weights. If, instead of assuming No. 1 tank (129 tons) as filled, it is taken that he had a surplus of 129 tons of coal, which it is not unfair to presume must, in that case, have been in the spar-deck bunker, a reduction of about 3 feet in the metacentric height would ensue. Another point to be considered is the trimming of the coal at Durban. If the statement that only 250 tons were placed in the spar-deck bunker is accurate, the coal placed below must have been properly trimmed, but if the latter were not properly trimmed, there must have been more than 250 tons in the spar-deck space. It is to be remarked that on this voyage the "Waratah" coaled in much less time than on her maiden voyage, but, according to those who stowed the coal, it was not done at an unusual rate.

It is not possible to indicate the extent of the cumulative effect of errors arising from these causes, but the Court is of opinion, from the figures which have been placed before it, that no serious error has arisen.

To enable a critical examination to be undertaken of the evidence as to the ship's behaviour on her second homeward voyage, her approximate metacentric height when leaving each of the Australian ports has been calculated. It is as follows:—

leaving Sydney ...	... about 1 foot,
" Melbourne ...	" 1.5 feet,
" Adelaide ...	" 1.9 feet.

The Court has no evidence as to the amount of water ballast in the tanks leaving Melbourne and Adelaide, and has been compelled to assume it from the draught. There is evidence that on leaving Sydney she had 651 tons of water ballast in the double bottom. This tallies with the draught given in the log. On leaving Melbourne and Adelaide 360 tons of water ballast are assumed for the reason given above.

In connection with the stability of the ship on this voyage, Mr. Wade's evidence may be mentioned to the effect that the captain told him that he (the captain) had learned the peculiarities of the ship, and now knew how to stow her.

It is not easy to reconcile metacentric heights such as those set out above with the positive testimony of some of the witnesses, as for example the tenderness on entering Adelaide spoken to by the witness McDiarmid. His deposition shows signs of careful observation. In the matter of the draught, for instance, his evidence is in accord with the log book, whereas the witness Johnson, whose evidence would otherwise discount McDiarmid's, is largely in error on this point. McDiarmid, however, adds that she showed no signs of tenderness when leaving Adelaide.

There is a fair amount of evidence to show that the ship was upright when leaving each of the Australian ports.

Mr. Sawyer's evidence had considerable prominence during the course of the investigation, but while the court is convinced that this gentleman was doing his best to assist the Court by his evidence, there seem to be in it only three points requiring detailed examination. These are: (1) the big list of Melbourne, (2) the behaviour of the ship off Cape Leeuwin, and (3) her behaviour when pitching.

1. Mr. Sawyer's evidence is to the effect that the ship started from the wharf at Melbourne with a list to port. Outside the Heads it changed to starboard, and later on returned to the port side. The initial list cannot have been very appreciable, because Mr. Dow, the pilot who took the ship from the wharf to the heads, noticed "no sign of a list while at the pier or while going down the

bay." Information was sought by the Court through the Board of Trade as to the weather prevailing outside Port Phillip Heads when the "Waratah" passed. A telegram from the Registrar of Shipping states that the wind was S.E., a moderate gale, and that the sea was moderate. The effect of a strong south-east wind on a ship coming out of the bay would be to list her to starboard. When she had proceeded some distance further she would have the wind aft, and the initial list, if existing, would again become evident. The weather conditions seem adequately to explain Mr. Sawyer's observations.

2. As to the behaviour of the ship off Cape Leeuwin, the Court had the letter of Mr. Ebsworth written to his wife before the loss of the ship, and his description entered in his diary at the time. Mr. Richardson also dealt with the point. He described the rolling as a slow majestic roll with a distinct pause at the extremity. Mr. Sawyer is probably describing the same action.

3. Briefly, Mr. Sawyer's complaint is that she did not rise forward as she encountered successive waves; but there was nothing in the construction, trim, or loading of the vessel which would make her behaviour in this particular different from that of other ships of similar size and type in like conditions of sea.

It should be noted that whilst Mr. Sawyer was so alarmed by what he saw of the ship's behaviour that he left her, Mr. Ebsworth, who had the same opportunities of observation, and who had discussed the matter with Mr. Sawyer, went on in the vessel, and had made arrangements with Mr. Saunders (*see* his evidence set out *ante*) to return in her to Australia.

Two people qualified to express an opinion deponed as to the "Waratah's" condition when leaving Durban—Mr. John Rainnie, the port captain, and the master of the tug "Richard King," which towed her from the wharf to outside the bar. Mr. Rainnie's statement that she had no list when leaving the wharf, and that none was created by the tug pulling upon her, is of importance, and the evidence of the tugmaster is conclusive on this point.

The master and chief officer of the "Clan Macintyre," who were the last persons to see the "Waratah," state that she had no list and was proceeding steadily (*see* their evidence *ante*).

The Court has had to seek an explanation of the large amount of adverse comment made upon the "Waratah's" behaviour during her career, and is of opinion that it is to be found in the undoubted tenderness of the ship throughout her first voyage and whilst loading. In such a condition quite observable lists could be produced by moderate wind pressures, relatively small alterations of water ballast, the consumption of fresh water, or non-symmetrical working out of coal.

After this voyage the captain had full guidance as to stowing the ship, and the evidence as to the loading on the second voyage homeward, together with his remark to Mr. Wade that he had now learned to stow her, indicate that he had made use of the information at his disposal.

VII.

Theories of the Vessel's Loss.

One suggestion put forward to account for the vessel's loss, a suggestion based upon the statement of the master of the "Harlow," Captain Albert John Bruce, was that her bunker coal had heated, and she had blown up. Summarized briefly, his statement is as follows:—At about 5.30 p.m. on the 27th July, he was to the southward and west of Cape Hermes, proceeding on a N.E. by E. course, at a distance from the coast varying from 1 to 2½ miles. He saw smoke about 25 miles astern, which he took to be from a fast steamer coming up behind him. Later, about 7.15, he saw two masthead lights and a red light, right astern, about 10 or 12 miles away. The lights were at times obscured by the smoke, which was blowing forward. About 7.50 p.m. the master of the "Harlow" went to consult his chart. When he returned a short time after, he saw two quick flashes astern, one of which went about 1,000 feet into the air, and the other about 300 feet. The flashes were narrow at the bottom, widened out as they ascended, and were red in colour. He heard no noise. His own eyes were dazzled with the strong light in the chart-room, and he asked the chief officer, who was on the bridge, where the steamer's lights were. The reply was that they were again obscured by the smoke. No steamer overtook the "Harlow," although, judging by the rapidity with which the following ship had

hitherto come up, she should have overhauled the "Harlow." Long after, on hearing of the loss of the "Waratah," Captain Bruce arrived at the conclusion that her bunkers had fired, she had turned back to Durban, the nearest port where the fire could be dealt with, and, when between Cape Hermes and the St. John's River, near the Hole in the Wall, she had blown up. Of course, such an occurrence is within the range of possibility, but there are several circumstances which tell against its probability in this case. The wind was blowing from the direction of the flashes to the "Harlow," and such a violent explosion ought to have been heard as well as seen. Reports were received from the lightkeepers at the Cape Hermes Lighthouse. They saw no flares or fires at sea. Another circumstance is that a bunker explosion would probably have taken effect inwards, and is not likely to have destroyed the floating power of the vessel so suddenly as to prevent boats being lowered.

It is to be noted that the chief officer of the "Harlow" does not support Captain Bruce in his account of what he thought he saw. The chief officer says that what Captain Bruce took for a steamer's lights was really the flare of a distant bush fire, several of which were visible at different heights, some on the hills, and some low down towards the shore. The chief officer adds the pertinent observation, with which the Court agrees, that had any steamer on fire been in the vicinity, she would have been sending up rockets and signals of distress, and these would have been easily distinguishable from the bush fires and flares. The facts that Captain Bruce made no attempt to verify what he believed himself to have seen, and made no report at Durban, indicate that he could not at the time have attached much importance to his observations.

The only circumstance which does lend some weight to this suggestion is the bunker fire on the first voyage, which has already been dealt with at length (*see ante*); but if the repairs mentioned were properly effected, a second outbreak of fire from the same cause was extremely unlikely.

On the whole, and in view of the much greater likelihood of the ship having met disaster in the storm of the 28th July, the Court is not disposed to regard a bunker explosion as the cause of her loss.

The theory put to the Court by Mr. Bucknill was that she was an unstable ship, and that she capsized. The question of her stability has been very fully discussed, and all the opinion the Court can express has been set out in the answers to the Board of Trade questions.

Where so little is known the range of conjecture is wide. It would be idle to discuss in detail all the many guesses which might be made to account for the loss of this ship. It must not, however, be supposed that the Court has lost sight of other possibilities merely because they are not set forth here. Every suggestion which could be extracted from the evidence, or evolved from the long experience of the Court's technical assessors, has been carefully considered.

VIII.

Reports as to the Sighting of Bodies.

These emanate from two ships, the "Insizwa" and the "Tottenham." Both reports relate to the same day, the 11th August.

1. The master of the "Insizwa" said that when about 10 miles off the Bashee River on that date, he sighted four objects in the water floating beneath the surface, and that they looked suspiciously like human bodies. The sea was too heavy for a boat to be lowered to investigate. Two of his officers also saw the objects; one of the officers was inclined to agree with the master, the other declined to express an opinion.

2. Certain officers of the steamship "Tottenham" state that when she was 20 or 25 miles south of East London on the same day, they saw some human bodies in the water. This was reported to the master, who at once put back, and from what he saw he was disposed to consider that what were taken for human remains were nothing more than dead sunfish or whale offal. It was stated by a witness that there is a whaling station at Durban from whence a large amount of such offal is set adrift. The Court is inclined to accept the explanation offered by the master of the "Tottenham." The "Waratah" was last seen by the "Clan Macintyre" at 9.30 a.m. on the 27th July, and was then abreast of the Bashee River. Throughout that day the "Waratah" must have made considerable progress to the south; she was not at any rate overhauled by the "Clan Macintyre." She must consequently have passed East London before

she met the heavy storm to which she probably succumbed, and, if she did so succumb, her loss must have taken place some distance south of the most southerly point where the presence of dead bodies was reported. The whole set of the current in that part of the sea is southward and westward, and, on the above-mentioned supposition, any bodies from the "Waratah" would have drifted with it in a direction away from the Bashee River. Even if it be suggested that they had at the time of observation not long risen from the submerged ship, the facts that the latter, if she had foundered would have been lying much further south, and that the set of the current is southward and westward, are still against the possibility of the bodies being where they were said to have been.

IX.

The Search.

The "Waratah" should have arrived at Cape Town on the 29th July, 1909.

The first search was made by a salvage steamer called the "Fuller," despatched by Messrs. Lund from Cape Town on the 31st July. She was driven in by bad weather a week later. She searched some distance along the coast. About the same time the "Harry Escombe" tug left Durban in search of the vessel. She too was driven back by heavy weather. Captain Black, her master, stated that the waves 7 miles off the coast were running 30 feet high. The coast was also searched from the land side.

The search was next taken up by three of His Majesty's ships, the "Hermes," the "Forte," and the "Pandora." A chart was put in showing their tracks, which lie roughly within that part of the sea included in a trapezium-shaped area whose angles are Cape Town, Port Natal, a point 35° 10' S. latitude, 38° E. longitude, and a point 40° 15' S. latitude, 25° E. longitude. The search lasted from the 4th to the 22nd August, and within the area covered was exhaustive. It included a search right along the coast from Port Natal to Algoa Bay, and the ground where the officers of the "Tottenham" reported the presence of dead bodies on the 11th August was thoroughly traversed.

The steamship "Sabine" was then chartered by the owners and underwriters, with financial assistance from the Australian Government. The Admiralty lent Lieutenant Beattie, with seventy-five naval ratings. The ship was equipped with a search light.

The "Sabine" left Cape Town on the 11th September, 1909, and returned on 7th December. She searched as far south as the Crozets, and as far east as St. Paul's Island, the searchlight being constantly worked during the hours of darkness. The plan adopted was to apply the set and drift experienced by the "Waikato" to the assumed position of the "Waratah" at the time of breakdown. This position was midway between the Bashee River and the position of the "Waikato" on 6th June, 1899 (the latter was a point about 150 miles south of Cape Agulhas). Then the scheme was to cross and recross the track of the "Waikato," never getting too far ahead of the assumed daily position of the "Waratah."

The "Waikato," it should be explained, was a steamship which broke down on the date, and in the position above mentioned, being picked up on 15th September, 1899, in about latitude 39° 20' S., longitude 65° E. It was hoped that similar good fortune might have attended the "Waratah," and as she was well provisioned, and had a large cargo of frozen meat and other edibles, all would have been well.

Lieutenant Beattie carried out his programme, zig-zagging continually across the line he had adopted as the basis of his operations, making in addition a most exhaustive examination of an area lying within a circle whose centre was 39° S. latitude, 40° E. longitude, and whose diameter was between six and seven degrees of latitude. This area lay south and east of that traversed by the three ships of the Royal Navy in August. Possession Island was visited on Sunday, the 24th October. No signs of recent habitation were found. On Friday, the 12th November, St. Paul's Island was visited, with a like result. The "Sabine" then zigzagged back to Cape Town, covering an area lying north of her previous chain of zigzags. The total distance covered by the "Sabine" was over 14,000 miles, within an area of about 3,000 miles. No wreckage of any description, save one piece of wood covered with barnacles, was seen.

In addition to the search by the "Sabine," every east-bound vessel leaving Cape Town and other South African ports between the 2nd August and the 10th September,

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was asked to keep a look-out for the "Waratah." Such vessels included the "Suffolk," the "Suevic," the "Salamis," the "Geelong," the "Narrung," the "Bergsdorf," the "Tainui," the "Firth," and the "Oberhausen." Their tracks form another network within and beyond the area of the "Sabine's" search, and it is only reasonable to suppose that any other shipmaster in that neighbourhood, knowing of the "Waratah's" being missing, would have been on the alert.

The whole search has been fruitless in any positive result, but it establishes the moral certainty that the "Waratah" did not break down and drift, or that if she did, she succumbed at some point to the heavy weather which was frequently met with by the "Sabine." It is the carefully considered opinion of the Court that, so far as certainty can be attained in human affairs, no person survives of those who left Durban in the "Waratah."

X.

Other Matters of Comment.

A good deal of conflicting evidence was given as to the condition of the boats. The Court does not accept as authentic the loose accounts given by some of the Colonial deponents of the boats' rotten and useless state, but it does appear that they were not in a satisfactory seaworthy condition on the first voyage, for in an account rendered by Messrs. Lund to Messrs. Barclay, Curle on the 5th May, 1909, appears an item, "Labour employed to make boats good and watertight on saloon boat deck (caused by unseasoned wood shrinking at butts and seams. The emigration officer, Captain Clarke, reports unfavourably of these boats)."

The boats appear to have been put into good condition before the ship sailed on her second voyage, or they would not have been passed by Captain Clarke, as in fact they were.

The fire gear on this ship was all new and presumably in good condition. But no fire drill ever seems to have been carried out. The Court is aware that fire drill is held on most large passenger ships, and strongly urges on the owners of others where it is not adopted the necessity of accustoming the crew to the use of fire gear. Fire drill not only serves the purpose of practising the men in the performance of their duties in emergency, but shows whether the hose and other appliances are in good working order, and reassures passengers by showing them that attention is paid to the matter.

At the conclusion of the case for the Board of Trade the questions set out were put for the Court's consideration, counsel addressed the Court, which subsequently gave judgment and delivered answers to the questions.

XI.

Questions.

(1) What number of compasses had the vessel, were they in good order and sufficient for the safe navigation of the vessel, and when and by whom were they last adjusted?

(2) When the vessel left Durban on the 26th July, 1909—

(a) was she supplied with proper and sufficient boats and life-saving appliances, and were they in good order and ready for use?

(b) was she adequately manned?

(c) was the cargo properly stowed and secured from shifting, and were the weights so distributed as to make the vessel easy in a seaway?

(d) as laden had the vessel sufficient stability and was she in proper trim for the voyage she was about to undertake? Was she in a good and seaworthy condition?

(3) What was the cost of the vessel to her owners? What were the insurances effected upon and in connection with the ship?

(4) Was the s.s. "Waratah" seen or spoken by any other vessel or vessels after having been spoken by the s.s. "Clan Macintyre" in or about latitude 31° 36' S., longitude 29° 58' E. on or about the 27th July, 1909?

(5) What is the cause of the vessel not having been heard of since she was last spoken?

Answers.

(1) The vessel had three Lord Kelvin compasses—one on top of the chart-room, one on the bridge, and one in the wheelhouse aft. So far as the Court can learn they were in good order. They were sufficient for the safe

navigation of the vessel. They were last adjusted on the 23rd October, 1908, by Mr. A. W. Baird, of Messrs. Kelvin & James White, Ltd., of Glasgow.

(2) When the vessel left Durban on the 26th July, 1909—

(a) she was supplied with proper and sufficient boats and life-saving appliances, in good order and ready for use;

(b) she was manned considerably in excess of Board of Trade requirements, which for foreign going steamships over 5,500 tons gross or over 420 feet in length only demanded one master, two mates, and not less than ten efficient deck hands, whereas she had a master, four mates, 15 able seamen, each of whom produced satisfactory proof of his qualification to be so rated, one ordinary seaman, one carpenter's mate, two apprentices, and three petty officers, a total of 27.

In the opinion of the Court, however, an early opportunity might be taken of reconsidering whether those requirements are sufficient in the case of large ships carrying passengers.

There is no reason whatever to suppose that the casualty which happened to the "Waratah" was in any way due to insufficiency of crew;

(c) upon the evidence, the Court is of opinion that the cargo was properly stowed, and the statement of the stevedores responsible for the stowage is that the cargo was properly secured. The weights were so distributed as to make the vessel easy in a seaway;

(d) on the basis of the calculations made by the expert witnesses, with the results of which the Court is in general agreement, she had sufficient stability as laden. She was in proper trim for the voyage she was about to undertake. She was in good condition as regards structure, and, so far as the evidence goes, in a seaworthy condition, but there was not sufficient evidence before the Court to show that all proper precautions, such as battening hatches, securing ports, coaling doors, &c. had been taken.

(3) The cost of the ship to her owners was £139,900, the builders' contract price; extras, £390; refrigerating machinery, £7,475; plate, linen, crockery, &c., £3,739; incidental and travelling expenses, wages, and supervising during building, £2,352; in round figures, £154,000.

The insurances were:—

On hull and machinery	...	...	£135,000,
On disbursements	...	...	£15,000.

(4) So far as the Court as been able to ascertain, the "Waratah," after having been spoken by the "Clan Macintyre," was not seen or spoken by any other vessel.

(5) The cause of the "Waratah" not having been heard of after being sighted by the "Clan Macintyre" on the 27th July, 1909, was her loss during the gale of the 28th July. The precise manner of her loss cannot be determined upon the evidence available.

The Court has already expressed itself as inclining to the view that the vessel capsized, but the particular chain of circumstances leading up to this is a matter of mere conjecture.

XII.

Concluding remarks.

The Court, in conclusion, desires to express its regret for the loss of life which occurred, and its sympathy with the relatives and friends of those lost. It has been a peculiarly trying lot to wait from week to week and from month to month in the hope that something would be heard of missing friends, but the Court trusts that this very full Inquiry will have the effect of setting at rest the minds of those concerned. There is no reasonable doubt but that, whatever the cause of the casualty, all the passengers and company of the "Waratah" met their deaths at sea soon after she left Durban. The Court regards it as the kindest course to emphasize this view in the strongest manner.

JOHN DICKINSON,
Judge.

E. H. M. DAVIS,	} Assessors.
F. C. A. LYON,	
J. J. WELCH,	

London, 22nd February, 1911.

SCHEDULE.

List of persons who left Durban in the steamship
"Waratah."

PASSENGERS.

Name.	Travelling from—	To—
Mrs. Govett	Sydney.	London.
Mrs. Lascelles	do.	do.
Mrs. Starke	Melbourne.	do.
Miss Starke	do.	do.
Mrs. Wilson	do.	do.
Miss L. Wilson	do.	do.
Mr. J. Ebsworth	do.	do.
Mr. Neil Black	do.	do.
Miss M. Campbell	do.	do.
Mrs. Wilson	do.	do.
Miss Wilson (8 years)	do.	do.
Colonel P. J. Browne	Adelaide.	Cape Town.
Miss K. Lees	do.	do.
Miss L. Cooke	do.	do.
Mrs. A. Hay	do.	London.
Miss H. G. Hay	do.	do.
Miss M. Hesketh Jones	do.	do.
Mr. R. E. Hugo	Durban.	Cape Town.
Rev. Father Fadle	do.	London.
Dr. J. T. Carrick	do.	do.
Mr. D. Turner	do.	do.
Mrs. Turner	do.	do.
and child (14)	do.	do.
do. (12)	do.	do.
do. (7)	do.	do.
do. (5)	do.	do.
do. (3)	do.	do.
Mr. J. F. J. Taylor	do.	do.
Miss Taylor	do.	do.
Miss Taylor	do.	do.
Mr. W. Stocken	do.	do.
Mrs. Stocken	do.	do.
and child (5)	do.	do.
do. (2)	do.	do.
Miss Young	do.	do.
Mrs. Sillery	do.	do.
Mrs. Ashe	do.	do.
Mr. Charles Taylor	Sydney.	Cape Town.
Mrs. Taylor	do.	do.
Miss M. Taylor	do.	do.
Master C. Taylor	do.	do.
Mr. or Mrs. Harvey	do.	do.
Master Harvey	do.	do.
Miss Miller	do.	do.
Mrs. Allen	do.	London.
and infant	do.	do.
Miss Rose Allen	do.	do.
Mr. J. McS. Hunter	do.	do.
Mr. E. A. Murphy	do.	do.
Miss Henderson	do.	do.
Mr. Wright	do.	do.
Mrs. Wright	do.	do.
Mr. Wm. Cumming	do.	do.
Mrs. J. Harwood	do.	do.
Mrs. Bowden	do.	do.
Miss Bowden	do.	do.
Mr. Bowden	do.	do.
Mrs. Bowden	do.	do.
and infant	do.	do.
Master Bowden	do.	do.
Miss L. Schaumann	do.	do.
Miss D. Schaumann	do.	do.
Mr. T. Blackburn	Melbourne.	Cape Town.
Mr. G. H. Tickell	do.	London.
Miss B. Murphy	do.	do.
Mrs. Ibbett	do.	do.
Mr. J. G. Stokoe	do.	do.
Mr. E. B. Page	do.	do.
Mrs. Page	do.	do.
Mr. P. J. Calder	do.	do.
Mr. A. Clark	do.	do.
Mr. R. Lowenthal	do.	do.
Mr. P. O'Connor	Durban.	Cape Town.
Mr. J. McCausland	do.	do.
Mrs. A. E. Press	do.	London.
Mrs. A. Lyon	do.	do.
and child (1)	do.	do.
Mrs. P. Connolly	do.	do.
Miss Connolly	do.	do.
Mr. Donaldson	do.	do.
Mrs. Dawes	do.	do.
and child	do.	do.
Mr. E. A. Bradley	do.	do.
Mrs. Adamson	do.	do.
Mr. M. J. Govendo	do.	do.
Mrs. Petrie	do.	do.
Master Petrie	do.	do.
Mrs. Dunn	do.	do.
Miss D. Dunn (7)	do.	do.
Miss B. Dunn (2)	do.	do.
Mr. C. B. Nicholson	do.	do.
Mr. Wm. Coote	do.	do.

Total 92.

CREW.

J. E. Ilbery	Master.
C. Owen	Chief Officer.
H. F. Hemy	Second do.
J. P. Morgan	Third do.
G. Thruston	Fourth do.
H. A. Gibbs	Apprentice.
N. H. G. S. Clarke	do.
H. C. Fulford	Surgeon.
R. Walker	Carpenter.
H. Barr	Carpenter's Mate.
A. Georgeson	Boatswain.
E. J. Schafer	Boatswain's Mate and Lamp-trimmer.
E. Stace	Boatswain's Mate.
W. Belshaw	A.B.
M. McIver	A.B.
H. G. Smith	A.B.
W. Rackliff	A.B.
T. Newman	A.B.
G. W. Ambrose	A.B.
C. Turkle	A.B.
W. Waite	A.B.
W. Harding	A.B.
C. Allen	A.B.
J. Shea	A.B.
A. P. Moore	A.B.
A. Martin	A.B.
J. Costello	A.B.
R. Robinson	Ordinary Seaman.
G. W. Hodder	Chief Engineer.
A. Hunter	Second do.
T. Humphreys	Senior Third Engineer.
F. T. Hunt	Junior do.
J. H. Jamieson	Senior Fourth Engineer.
J. Hamilton	Junior do.
F. Monk	Fifth Engineer.
R. A. Hamelton	Refrigerating Engineer.
S. Pearson	Donkeyman.
W. Smith	Storekeeper and Refrigerating Greaser.
W. Walters	Greaser.
B. Steiner	Greaser and Fireman.
J. Conn	do. do.
A. Cumming	do. do.
J. Jewers	do. do.
W. Comper	do. do.
J. Lydiard	Fireman and Trimmer.
O. Schelier	do. do.
J. Immelmann	do. do.
J. Nelson	do. do.
C. Butcher	do. do.
J. Clarke	do. do.
A. Brown	do. do.
C. Samuelson	do. do.
J. Jacobson	do. do.
F. Dorander	do. do.
H. Seiffort	do. do.
R. Bocker	do. do.
W. Reinsch	do. do.
K. Lindross	do. do.
C. French	do. do.
A. Bellringer	Trimmer.
A. Sandon	do.
G. Meek	do.
H. McCrone	do.
W. Thornton	do.
T. Coulson	do.
J. Kelly	do.
G. Dixon	do.
J. Steel (or Street)	do.
H. Dance	do.
F. (or T. H.) Benson	do.
H. Taylor	do.
W. McKierian	do.
H. (or F. T.) Tanner	Fireman and Trimmer.
P. Skailes	Purser and Chief Steward.
P. Oxford	Barman and Storekeeper.
K. Papinean	Pantryman.
F. Shasal	Assistant Pantryman.
J. C. Clark	Assistant Steward.
A. Dennison	General Servant.
W. B. Rogers	do.
E. Rumbold	do.
F. M. Wellington	do.
C. Baxter	do.
P. Bonham	do.
W. McPhee	do.
W. R. Allan	do.

Crew—continued.

A. R. Francis ...	...	General Servant.	A. E. Phillips ...	...	Baker and Confectioner
W. Edwards ...	...	do.	J. Jones ...	...	Second Baker.
P. F. Monaghan ...	...	do.	C. E. Haysom ...	...	Butcher.
W. G. White ...	...	do.	F. Poland ...	...	Assistant Butcher.
A. Woodcock ...	...	do.	P. Murray ...	...	Sculleryman.
C. Hammond ...	...	do.	Sarah E. Whitehorn ...	...	Stewardess.
E. J. Walters ...	...	do.	Emma Swan ...	...	do.
G. Wyborn ...	...	do.	P. Isaacs ...	...	General Servant.
W. M. Campbell ...	...	do.	W. Smith ...	...	do.
F. Trott ...	...	do.	H. W. Harding ...	...	do.
A. Blake ...	...	do.	Total ...	...	... 119
P. R. Alexander ...	...	do.			
T. Ings ...	...	do.	Passengers ...	...	... 92
W. Thomas ...	...	do.	Crew ...	...	... 119
G. Sudbury ...	...	do.	All told ...	...	... 211
E. Sterne ...	...	do.			
L. Burgess ...	...	do.			
A. Nicholls ...	...	Fore-cabin Steward.			
S. E. Gorham ...	...	do. Pantryman.			
S. Templeton ...	...	Chief Cook.			
C. W. Southwell ...	...	Ship's do.			
F. Sale ...	...	Third do.			
A. Sach ...	...	Fourth do.			

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