

LOSS OF THE "RADYR"

B.O.T. Inquiry Opened at Cardiff

The loss of the steamer *Radyr*, which foundered off Hartland Point, North Devon, on Dec. 7 last with the loss of her entire crew of 21, was the subject of a Board of Trade inquiry which opened at Cardiff yesterday. The inquiry, which is expected to last several days, is being presided over by Mr. W. Hugh Jones, K.C., Deputy Stipendiary of Cardiff, with the following assessors: Captain R. William Blacklin, Captain F. J. Thompson, and Mr. T. H. Blaker.

The Board of Trade was represented by Mr. L. H. Allen Pratt, of Messrs. Vachell & Co., while Mr. A. M. Ingledew, of Messrs. Ingledew & Sons, appeared for the owners of the *Radyr*, the Rupert Phillips Steamship Co., Ltd., Cardiff.

Mr. PRATT said that the *Radyr* was lost with all hands in the Bristol Channel on the morning of Dec. 7 last. The *Radyr* was a British steamer owned by the Rupert Phillips Steamship Co., Ltd., and was built in 1918 by Harland & Wolff, Ltd. Originally she was acquired by French owners and was purchased by the Rupert Phillips Steamship Co. in March or April of 1929. The steamship was 285 ft. long, 42 ft. in breadth and had a depth of 22 ft. 1 in. She had a deadweight carrying capacity of 3375 tons on a summer draught of 19 ft. 3½ in.; her winter freeboard was 3½ in. more, so that her winter draught was 19 ft. No question would arise that the vessel was overladen. As a matter of fact, it would be agreed in evidence that when she left her draught was 18 ft. 11½ in.—half an inch less than her winter draught. She was a self-trimmer and had four cargo hatches, two forward and two aft. When the vessel was acquired by the Rupert Phillips Steamship Co. in 1929 she underwent certain repairs, including the replacing of a number of hatch covers. The vessel was employed by the new owners in carrying coals to French ports. For her last voyage the vessel loaded a cargo of 2799 tons 5 cwt. of coal; she shipped also a quantity of bunkers which, with that already on board, amounted to 156 tons.

The *Radyr* left Cardiff at 7 35 a.m. on Dec. 6, with a crew of 21 hands. The wind was force four to six from south-west and was increasing rapidly. The steamer left in charge of a Channel pilot, who quitted her at 8 15 that morning, and he would say that she was in good trim. The weather continued to be bad, and later in the day a gale warning was issued. About 17 other vessels had left the Bristol Channel that day, but it appeared that only one, the steamer *Headcliffe*, saw the *Radyr*, which passed the *Headcliffe* in Barry Roads about 9 o'clock in the morning. At noon a gale warning was sent out from Fishguard. At 12 43 a wireless message was received at Fishguard from the *Radyr* stating that she was bound for Bordeaux and was then off Hartland Point. At 4 p.m. the *Radyr* was seen by the *Headcliffe* south-east of Lundy. The *Headcliffe* developed engine trouble and had to return to Barry Roads, so saw nothing more of the *Radyr*.

A CALL FOR ASSISTANCE

The next incident reported was that at 7 49 on the morning of Dec. 7 a wireless message was received at Fishguard reading as follows: "*Radyr* off Hartland Point hatches stove in require immediate assistance sinking trying to get lifeboats out." That message was repeated a minute later and acknowledged by the Fishguard Station, but no further communication was received from the *Radyr*. A telegram was sent from Fishguard to the district officer concerned, while efforts were also made to get into touch with other vessels in the vicinity, but unfortunately none of them was able to render any assistance, as they were in difficulties themselves on account of the severe weather. The request for assistance reached the lifeboat stations at Clovelly and Appledore between 9 and 10 o'clock. The Clovelly lifeboat had to be launched in the open sea, and in the weather conditions prevailing it was absolutely impossible to launch the lifeboat. The Appledore lifeboat was launched, but unfortunately owing to the stress of weather she was not able to get over the bar. The weather had broken down telephonic communication along the coast, with the result that the message as to the *Radyr* being in distress did not reach Padstow until a quarter to twelve in the morning. The Padstow lifeboat was launched at 12 30 and proceeded up-channel, cruising off Hartland. About 4 20, seven miles west of Hartland, a quantity of wreckage from the *Radyr* was found. Searchlights were used, but there was no sign of any boats or any bodies. The lifeboat remained cruising for two hours before returning to Padstow. The following morning the body of the wireless operator was washed ashore just south of Hartland Point, and it was a significant fact that his watch had stopped at 8 10. At 8 30 the same morning some hatch covers and three lifeboats were found near North Bude. Further bodies, nine in all, were recovered later in the neighbourhood of Instow. It would be important for the Court to remember that the wireless message from the *Radyr* was received at 7 49, and that the watch of the wireless operator had stopped at 8 10. One of the vital questions which would be submitted was in relation to the hatch covers, and Mr. Pratt said that this matter went to the heart of the inquiry.

The first witness was Mr. D. RUPERT PHILLIPS, registered manager of the *Radyr* and managing director of the Rupert Phillips Steamship Company, Ltd. He said the total purchase price of the *Radyr* to the company, including transfer charges, was £19,525.

Asked what the value of the steamer was at the time of her loss, Witness replied: The freight market was good at the time and she was a profitable ship. I should not have sold her for less than £24,000. The insurances were £18,000 on hull and machinery, £1000 on freight, and £1800 on disbursements. The total insurances were £21,631, so that the steamer was not insured up to her full market value.

Evidence as to the selection and type of timber used when the hatch covers were either renewed or repaired when the vessel was taken over was then given, and the inquiry adjourned until this afternoon.

LOSS OF THE "RADYR"

B.O.T. Inquiry Resumed at Cardiff

The Board of Trade inquiry into the loss of the Cardiff steamer *Radyr*, which foundered off Hartland Point, North Devon, on Dec. 7 last, the entire crew of 21 being drowned, was resumed at Cardiff yesterday. The *Radyr*, a vessel of 3775 tons, was bound from Cardiff to Bordeaux with coal, and at the opening of the inquiry it was emphasised that there was no suggestion of overloading. The question of the hatch covers, however, was a vital one, particularly as the steamer was a self-trimmer, and it was stated that one of the main questions the Court would have to consider would be as to whether any special provision or specification should be laid down with regard to hatch covers for coal-carrying steamers. Mr. W. Hugh Jones, K.C., Deputy Stipendiary of Cardiff, presided over the inquiry, with the following assessors: Captain William Blacklin, Captain F. J. Thompson, and Mr. T. H. Blaker.

The previous proceedings were reported in LLOYD'S LIST of July 24.

The Board of Trade was represented by Mr. L. H. Allen Pratt, of Messrs. Vachell & Co., while Mr. A. M. Ingledew, of Messrs. Ingledew & Sons, appeared for the owners, the Rupert Phillips Steamship Co., Ltd., of Cardiff. Lieut.-Col. H. L. Wheeler attended on behalf of the Royal National Lifeboat Institution.

The owners were not made parties to the inquiry, but Mr. INGLEDREW said they were anxious to assist the Court in every way possible.

Mr. RUPERT PHILLIPS, managing director of the owning company, was recalled and briefly questioned with regard to the trimming of the *Radyr*. He said the vessel was a self-trimmer with four holds. He assumed that the captain was responsible for deciding what quantity of coal should be placed into each hold.

JOHN PHILLIP CARREL, marine engineering superintendent, said he acted for the owners of the *Radyr*, when she was transferred from French owners in April, 1929. She was surveyed by Captain Harrison on behalf of the Board of Trade, who directed that certain renewals should be made. There were two lifeboats on the boat deck above the officers' accommodation. The vessel was fitted with new wireless apparatus, while when the steamer was in Mount Stuart Dry Dock immediately after transfer other replacements were effected to the hatch covers and ventilators. Tarpaulins which complied with Board of Trade regulations were also supplied. When the *Radyr* sailed on Dec. 6 she had four sets of tarpaulin for each hatch. Witness said he had nothing to do with the shipment of the cargo on the last voyage, but he went on board a few days before the steamer sailed. The tanks then were all pumped out except for draining. He estimated the surplus bunkers on board to be 33 tons, and an additional 143 tons was shipped. The weight of stores would be

about twelve tons. In further reply to Mr. Pratt witness said that on Sunday, Dec. 8, he proceeded to Bideford, the owner having been informed that the body of one of the men had been washed ashore south of Hartland. There was a lifebelt on the body, which was identified as being that of the wireless operator, while a watch found on the body had stopped at 8.10. The bodies of three firemen were also washed ashore near Barnstaple Bay.

THE QUESTION OF HATCH COVERS

Mr. THOMAS HARRISON, nautical surveyor of the Board of Trade, said he surveyed the *Radyr* when she was transferred from the French to the British flag in 1929. The whole of the upper deck hatches were examined and certain covers renewed or repaired. The hatch covers were three inches thick. Certificates were given in respect of the wireless apparatus, lights, and fog signals, while the life-saving appliances were found to be in order. "In every respect," Mr. Harrison added, "the vessel was in a thoroughly seaworthy condition."

A number of hatch covers which had been recovered from the sea were produced in Court, and Mr. ERNEST PRIGG, of the Mount Stuart Dry Docks, Ltd., said he thought that one of them at any rate was made in his yard. With regard to the other hatch covers, however, he did not think they were made by his firm, as they were of different width. He agreed that the markings on all the hatches were similar, but insisted that he had no knowledge of the wider hatches.

Mr. PRATT: Is there any apparent difference in the age of the timber in the hatches that have been recovered?—WITNESS: They look similar.

Mr. T. H. BLAKE: What is the difference in the hand holes in the hatch covers in dispute and the one you recognise?—WITNESS: There is no difference.

Mr. Prigg, after a further inspection, said he thought one of the hatches was made with red pine and another with white pine, whereupon Mr. PRATT remarked "Unfortunately we have an expert from the British Museum who does not agree with you."

Mr. JAMES JOSEPH NIXON, managing director of the Nixon Rope and Brattice Cloth Company, Cardiff, said that the tarpaulin supplied to the Rupert Phillips Steamship Company for the *Radyr* was guaranteed to be all flax and to contain no mixture of either hemp or jute. It was of a maximum weight of 18½ to 19 oz. before proofing.

Mr. SAMUEL JOHNSON ARTHUR, manager for Messrs. Worms & Co., shippers of the lost cargo, said that when the *Radyr* went down she had a coal cargo of 2799 tons and 143 tons of bunkers.

Mr. FREDK. GILBERT, outdoor foreman of Worms & Co., said he supervised a portion of the loading of the *Radyr* and gave instructions as to the way the mixing of the various coals should be carried out. He last saw her on Dec. 5, when the vessel wanted about 190 tons of cargo to complete. The vessel being a self-trimmer, the trimmers did not go under deck.

The inquiry was adjourned until to-day.



LOSS OF THE "RADYR"

Evidence Regarding Vessel's Hatch Covers

The Board of Trade inquiry into the loss of the Cardiff steamer *Radyr*, which foundered with all hands off Hartland Point on Dec. 7 last, entered upon the third day at Cardiff yesterday, before Mr. W. Hugh Jones, K.C., deputy stipendiary of Cardiff, assisted by the following assessors: Mr. T. H. Blaker, Captain R. W. B. Blacklin and Captain F. J. Thompson.

The previous proceedings were reported in *Lloyd's List* of July 24 and 25.

The Board of Trade was represented by Mr. Allen Pratt, of Messrs. Vachell & Co., while Mr. A. M. Ingledew, of Messrs. Ingledew & Sons, represented the owners of the *Radyr*, the Rupert Phillips Steamship Company, Ltd., who, however, were not made parties to the inquiry. On Thursday Mr. Ingledew and Mr. Rupert Phillips were relieved from further attendance on the understanding that they would be available by phone if again required.

The *Radyr*, it will be recalled, was on a voyage with a coal cargo from Cardiff to Bordeaux, when she experienced heavy weather in the Bristol Channel and was sunk with the loss of the entire crew of 21. There was no suggestion that the vessel was overladen, but it was stated that the most important question which would arise was in respect of the hatch covers, and the Court would have to decide whether it was advisable that special provisions should be laid down regarding hatches for coal-carrying steamers.

When the hearing was resumed yesterday Mr. J. J. Dixon, of the Dixon Rope and Brattice Cloth Company, Cardiff, was recalled and questioned concerning the guarantee of the tarpaulin supplied to the *Radyr*. He said he was satisfied that the material was free from hemp and jute and was in accord with the Board of Trade regulations.

Mr. THOMAS HARRISON, the Board of Trade surveyor at Cardiff, was also recalled regarding the hatch covers which had been recovered and were believed to be from the wreck of the *Radyr*. He said he could not identify them as belonging to the *Radyr*, but they were similar in type, construction and marking to those generally used in the port of Cardiff. Other vessels left Cardiff about the same time as the *Radyr*, and although some had to return through damage caused by the storm, only one, the *Francis Duncaan*, was actually lost. Hatch covers were usually condemned, he said, when they were badly fitting or when

the edges and ends had been damaged through rough usage.

Mr. HUGH JONES: Do you take any notice of the kind of wood? WITNESS: I usually direct that the hatches should be of good, sound material, and leave it to the owners to provide what they think fit. Red pine is usually used in this district.

Mr. HARRISON added that he had never found it necessary to order that a particular type of timber should be used. If, however, it had too many knots or cross grain he would be justified in rejecting it.

Mr. THOMAS CHARLES TOBIN, naval architect to Harland & Wolff, Ltd., Belfast, the builders of the *Radyr* in 1918, gave particulars of the vessel, which, he said, was of standard design and known as "D" type. He gave a detailed description of the latches and covers and said the latter were made of three-inch white pine. They were about 9 ft. long and 22 in. wide. White pine was the usual type of timber used, but when Mr. Pratt suggested there was no such wood, witness said he did not know whether that was a scientifically accurate term, but it was generally accepted in the timber trade.

LIFEBOAT COXSWAIN'S EVIDENCE

The next witness was JOHN ANDREW ATKINSON, coxswain of the lifeboat at Padstow, which he said was one of the best around the coast and cost £15,000. He received a message relating to the *Radyr* at a quarter to twelve on the morning of Dec. 7, which read: "SOS *Radyr* in distress off Hartland." He believed that the message had come from Appledore and was conveyed by the guard of a train. The lifeboat was launched at 12.30, when the weather was still very bad. They arrived about seven miles west of Hartland Point at 4.20, and after cruising for a time saw some wreckage. It was not quite dark but searchlight signals were used. There was no trace of any boats or bodies. They remained cruising and returned to Padstow at 9.50. Answering Capt. Thompson, Atkinson said that he did not think that the ordinary ship's lifeboat could have lived in such a sea, as they had to battle against that day.

Evidence as to a number of hatch covers believed to be from the *Radyr* having been washed ashore was given by farm labourers living on the coast. Mr. JESSE HOWARD, a farmer, living near Bude, said that many of the hatches were in a damaged condition.

Captain GEORGE HERBERT WAITE, of Bridlington, master of the steamer *Headcliffe*, of South Shields, a vessel of 3654 tons gross, told the Court that he left Cardiff about seven o'clock on Dec. 6 last, just before the *Radyr*. There was a fresh breeze

blowing about force 4, while there was a slight sea. After leaving dock he saw the *Radyr* about eleven o'clock; they were then off Nash. The wind was freshening slightly, and the *Radyr* appeared to be behaving quite ordinarily. About four o'clock that afternoon the weather became worse. They were then between Bull and Lundy, but they saw nothing of the *Radyr*. From four o'clock onwards the wind freshened considerably. The *Headcliffe* was able to make only little progress. At seven o'clock the sea was very heavy, while at midnight, when he passed Hartland, the force of the wind was about 12 and the sea was very heavy. Witness said he saw the lights of another vessel astern of him, but no trace of that steamer was seen subsequently. "I have never experienced such bad weather around the English coast," Captain Waite added, "it was a gale of exceptional severity, and my ship was almost unmanageable. I turned round and made for shallower water." Witness said he received several messages that night from vessels which were in trouble one way or

the other, but no message was received from the *Radyr*. At 7.40 the next morning, when the last message from the *Radyr* was sent out, the *Headcliffe* was dodging between Bull Point and the Foreland, and would not have been able to reach the *Radyr* in time to be of any effective assistance. Having regard to the weather, he did not think the *Radyr* would have been able to put out a lifeboat.

Mr. HARRY THOMPSON COOPER, chief officer of the *Headcliffe*, said that he first saw the *Radyr* when they were making for Hartland Point on the afternoon of Dec. 6. At four o'clock the *Radyr* was a little above the starboard beam of the *Headcliffe*, which was then 6½ miles off Bull Point. He saw the *Radyr* again at 5.30, when he was on the bridge. They then appeared to be overtaking the *Radyr*, which was not more than a mile and a half off. When he left the bridge at eight o'clock the *Radyr* was still on the starboard quarter. She did not appear to be in any difficulties, although the weather was getting worse. From eight o'clock to midnight they travelled only two miles, so were only holding their own. Hurricane squalls were encountered, but the *Headcliffe*, although pitching, was not shipping much water. He saw nothing of the *Radyr* after eight o'clock, when she was 6½ miles off Hartland Point. The weather was so bad that it would have been impossible to launch a lifeboat. Witness said he was concerned as to the safety of the hatches of the *Headcliffe*, which were smaller than those of the *Radyr*.

The hearing was adjourned until to-day.

LOSS OF THE "RADYR"

Evidence Regarding Loading of Vessel

The Board of Trade inquiry into the loss of the Cardiff steamer *Radyr*, which foundered with all hands off Hartland Point on Dec. 7 last, was continued at Cardiff on Saturday. The vessel, it will be recalled, was lost while on a voyage from Cardiff to Bordeaux, with coal. There is no suggestion that she was overladen, but the vital question the Court is being called upon to consider relates to the hatchways. Hatch covers washed ashore after the wreck of the *Radyr* are lined up around the walls of the Court and are to be examined by experts. One possible result of the inquiry will be an investigation as to whether special provisions should be laid down regarding the hatch covers of coal-carrying vessels. The Court is being presided over by Mr. Hugh Jones, K.C., Deputy Stipendiary of Cardiff, assisted by the following assessors: Capt. William Blacklin, Capt. F. J. Thompson and Mr. T. H. Blaker.

The previous proceedings were reported in *Lloyd's List* of July 24, 25 and 26.

Mr. Allen Pratt, of Messrs. Vachell & Co., of Cardiff, represented the Board of Trade, while Mr. A. M. Ingledew, of Messrs. Ingledew & Sons, of Cardiff, held a watching brief for the owners of the *Radyr*, the Rupert Phillips Steamship Company, Ltd., Cardiff. Lieut.-Commander H. L. Wheeler is also attending on behalf of the Royal National Life-Boat Institution.

Mr. H. T. COOPER, chief officer of the steamer *Headcliffe*, recalled, gave evidence as to the position of the *Radyr* off Hartland Point on the evening of Dec. 6. At 8 p.m. the *Headcliffe* was in a position with Hartland Light five miles distant, and at that time the *Radyr* was on her starboard quarter. At 1 a.m. on the seventh the *Headcliffe* was making no headway and turned round and ran before the wind. There was blinding rain and visibility was then poor.

Mr. HENRY LESLIE, second officer of the *Headcliffe*, said his vessel found difficulty in making headway. He was on watch at 8 p.m. and saw the *Radyr* at intervals up to 9 p.m. He thought the *Radyr* was steering more towards Hartland Point. After 9 o'clock the vessel was obscured by heavy

rain. Between 4 a.m. and 8 a.m., he saw nothing of the *Radyr*. The weather had then much improved. When he last observed the *Radyr* her position was north by east, 8½ miles distant from Hartland Point.

Mr. ARTHUR THOMAS, able seaman in the *Headcliffe*, said he saw the *Radyr* leaving Cardiff on Dec. 6. She then had a slight list to port. He next saw her off Penarth Head, and she then appeared to be all right apart from the list. He never saw her again.

Another member of the *Headcliffe's* crew, Mr. THOMAS JAMES ISRAEL, also deposed to seeing the *Radyr* on her voyage down channel. When leaving dock she appeared to be all right and on an even keel. When between Bull Point and Hartland Point the *Radyr* appeared to be heading for the latter point. She was rolling heavily, but owing to the weather conditions he did not think this alarming. The wind at the time was very strong.

LOADING OF THE VESSEL

Mr. WILLIAM WILKINS, coal foreman for the owners of the *Radyr*, deposed to superintending the loading of the vessel prior to her ill-fated voyage. There were no complaints or suggestions made to him by the officers of the vessel in regard to the loading. He saw the holds had been properly levelled down and the hatches battened down. In his opinion everything was properly done.

Mr. HOWARD STANLEY WILLIAMS, a coal trimmer, who said he had had nine years' experience, gave evidence of the process of loading. He said their duties as trimmers in self-trimming vessels would only commence after the bulk of the cargo had been tipped.

The DEPUTY STIPENDIARY here interposed and said he thought they should have someone called to say who authorised the hatch covers to be put on after the loading.

Mr. PRATT replied that he understood such duties were carried out by the chief officer of a vessel after satisfying himself that the loading had been properly done. He would, however, make inquiries and obtain all possible evidence on the point to place before the Court.

The Deputy Stipendiary having asked for evidence with regard to repairs to the *Radyr*, Mr. J. P. CARRELL, marine superintendent to the company, entered the witness box and explained that after the ship was taken over, certain repairs were effected from time to time, accounts in con-

nection with which were produced. The vessel was in Bristol Channel ports every two or three weeks, and most of the communications to him regarding repairs were verbal.

Mr. TOBIN, naval architect of Harland & Wolff, Ltd., Belfast, said the *Radyr* was built for a speed of 11½ knots. Replying to Captain Thompson, witness said no distinction was made between the hatches supplied with self-trimming vessels and those of other vessels. He did not think the hatches should be stronger, provided there was sufficient support. There was no added danger to a ship by having wide hatches.

Mr. J. H. BLAKER, another assessor: Suppose two hatches were stove in and a big rush of water into these two occurred, would that be sufficient to sink that ship? —WITNESS replied that he could not answer without much detailed information.

Mr. TIMOTHY HARRINGTON, leading trimmer, gave further evidence regarding the loading of the vessel. He said that after loading No. 2 hold the vessel had a five degree list to port. When he commenced on No. 3 the chief officer told him to try and get the ship upright. The chief officer was responsible for the loading of the vessel and gave the orders for the quantity of coal required to be tipped. After 1006 tons had been put into No. 3 hold the second officer asked him why a space was left in the forward section of the hatch, and witness told him that he had his complement in the hatch and witness had been ordered to pick the shute up. The officer was satisfied with the explanation. Witness could not explain why the hold was not full after the quantity stated had been put in, except that the coal, which was wet, was heavier than ordinary coal.

Other evidence was given that when the vessel was finished she was perfectly upright.

Mr. STREET, chief supervisor to the Employers' Clearing House, was asked by Captain Thompson as to the use of hatches in the loading of steamers. Witness replied that there was a regulation against it and he had written two or three times to the Trimmers' Union calling their attention to this fact. His reason for doing so was because he had been told that some were being used at this stage.

The inquiry was adjourned until this morning.



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LOSS OF THE "RADYR"

Further Evidence on Coal Loading Operations

The Board of Trade inquiry into the loss of the Cardiff steamer *Radyr*, which foundered with all hands off Hartland Point on Dec. 7 last, was continued at Cardiff yesterday before Mr. Hugh Jones, K.C., (Deputy Stipendiary), sitting with three Assessors, Captain William B. Blacklin, Captain F. J. Thompson and Mr. T. H. Blaker.

The previous proceedings were reported in LLOYD'S LIST of July 24, 25, 26 and 28.

Mr. Allen Pratt, of Messrs. Vachell & Co., of Cardiff, represented the Board of Trade, while Mr. A. M. Ingledeu, of Messrs. Ingledeu & Sons, of Cardiff, held a watching brief for the owners of the *Radyr*, the Rupert Phillips Steamship Company, Ltd., Cardiff. Lieut.-Commander H. L. Wheeler is also attending on behalf of the Royal National Life-Boat Institution.

At the outset of the proceedings yesterday the DEPUTY STIPENDIARY, addressing Mr. Pratt, said: "Do you know if any instructions are issued by the Board of Trade with regard to trimming?"

Mr. PRATT said that he was informed there were no particular instructions issued, but the trimming had to be done to the satisfaction of the master and officers of the ship.

The DEPUTY STIPENDIARY: Where is that stated?

Mr. PRATT: In the Trimming Tariff, para. 106. It is an arrangement made by the Trimmers' Union.

There is nothing from any Government Department like the Board of Trade?—No, Sir.

Mr. Pratt added that, as there was some conflict of evidence on Saturday with regard to loading self-trimmers, he would call evidence from the men's side.

Mr. JOSHUA THOMAS CLATHWORTHY then entered the box, and said he had been connected with the Trimmers' Union since its inception 43 years ago, and had been its President for 18 years.

DUTY OF TRIMMERS

Mr. PRATT said they had evidence that when the *Radyr* was loaded on her last voyage the No. 4 hold was incompletely filled and the coal was left in the shape of a cone. They got a situation in which the coal was loaded and formed a cone, but the height of the cone was just sufficient to allow the hatch covers to be placed on the hatches. There would be no obligation upon the trimmers to level the coal.

WITNESS: That is so.

So that the meaning of the paragraph in the Tariff is that the hatches are only to

be levelled if the ship's officers are unable to get the hatch covers on?—Yes.

In reply to further questions, WITNESS did not agree that there was an established custom, as suggested by Mr. Street, the chief supervisor to the Employers' Clearing House, by which it was the duty of the trimmers to knock off the top of any cone that might be formed. The trimmers might at the request of the officer in charge knock off a cone without any extra charge. If, however, it was a considerable amount, the men would expect to be paid, and the matter of payment would be arranged. In loading a self-trimmer it was the duty of the leading trimmer to direct the shute to give as far as possible an even distribution of the coal. Witness would regard it as bad workmanship if a cone was formed in a hold. Where there was unusual capacity he did not think any man would keep the shute in one position.

Mr. PRATT: To whose satisfaction is the trimming to be done?

WITNESS: The captain or officer in charge. If the trimming was not done satisfactorily the officer would have the right to complain.

Whatever he required, it would have to be done?—Yes.

Answering the Bench WITNESS agreed that knocking off the cone would to some extent make a ship more seaworthy. He agreed that if a ship went to sea with a cone in the hold, and getting round Land's End met with bad weather and rolled to an angle of 35 degrees, it would be possible for the cargo to shift. He did not think there would be any argument on the part of the men about going down and levelling the coal, if it was considered dangerous.

Mr. PRATT: If instead of a single cone formed in the hold there was a ridge fore and aft, would that be consistent with good loading?

WITNESS: It would be inconsistent with good loading.

SUPERVISOR'S DEPOSITION

Mr. DAVID MOSTYN DAVIES, assistant supervisor to the Employers' Clearing House, deposed to being one of those supervising the loading of the *Radyr*. There did not appear to be a cone in No. 4 hold. Had there been one, and he considered it dangerous, he would have immediately told the leading trimmer to knock the top off and make it secure.

In reply to Captain Thompson, WITNESS admitted he was not actually on board at the time, but only saw the position of the coal from the top of the tip. He had a number of vessels to supervise.

Another assistant supervisor said that during his supervision the vessel had a list. He never had any complaint from the officers regarding loading.

Expert evidence regarding the class of timber of which the hatches produced in Court were composed was given by Mr. John

RAMSBOTTOM, keeper of botany at the British Museum (Natural History Section), London, and Mr. REGINALD GEORGE BATSON, chartered civil engineer and chartered mechanical engineer, engaged at the National Physical Laboratory, Teddington, as principal assistant in the engineering section, spoke as to tests he had made to ascertain the breaking strain of the hatch submitted to him. He found the shearing strain 74 tons when the timber was supported in the middle and at the ends of the 9 ft. hatch. The tests were made from selected pieces of timber free from all knots. He considered the timber to be of about the usual commercial standard.

Mr. PETER GROFF, dock pilot, said that when he went on board at midnight on Dec. 5-6, Nos. 2, 3 and 4 hatches had been battened down and also the after part of No. 1. The other portion had been left open to complete loading. The master was ashore watching the marks and gave orders for loading to stop. No. 1 hold was then battened down. They all had wire lashings with screws. The vessel's draught of water was about 18 ft. 6 in. forward and 20 ft. aft. The ventilators were all unshipped and plugged. She had a slight list. No measures were taken with regard to the list except that the master suggested to the engineer that he should pump out any water that might be in the tank. That was done and the vessel was upright before she left the dock side. They remained in the outer lock until 6 o'clock in the morning. He later handed her over to the Channel pilot and she was then quite in order. "In fact," added witness, "I was very nearly going over to Bordeaux in her on a holiday. I had been invited several times."

Mr. PRATT: I congratulate you on not having gone, but you would not have had any hesitation in going out in the ship yourself?

WITNESS: Oh, no, sir. He added that after leaving the vessel in the Roath Dock he watched her down to Lavernock. She appeared to be behaving all right.

Mr. WILLIAM HARRIS, an outdoor officer under the Board of Trade, said the draught of the *Radyr* when she left the East Dock was 18 ft. 8 in. forward, and 20 ft. aft. That was in fresh water. The fresh water allowance, as 4½ in. The vessel was loaded to her correct load line in salt water, and though there was a slight list of about 1½ deg. to port she was in all respects in order.

Mr. WILLIAM BARCLAY DUGGAN, the Channel pilot who took the *Radyr* out, said her engines were in perfect order, and she answered the helm well. He left the vessel about half a mile above the Ranie Buoy, off Lavernock Point, after 8 a.m. The weather was then getting worse, and the wind increasing, the force being about six. The sea was very bad then, but when he last saw the vessel rounding the Ranie Buoy she was behaving well.

At this stage of the proceedings the inquiry was adjourned until to-day.

LOSS OF THE "RADYR"

Evidence on the Duties of Trimmers

When the inquiry into the loss of the Cardiff steamer *Radyr* was resumed at the Law Courts, Cardiff, yesterday afternoon before Mr. Hugh Jones, K.C., Deputy Stipendiary, and three Assessors, Capt. William B. Blacklin, Capt. F. J. Thompson and Mr. T. H. Blaker, Mr. ALLEN PRATT, of Messrs. Vachell & Co., representing the Board of Trade, said he wished to refer to a matter of importance. It was a statement which appeared in a local newspaper that morning that evidence was given on Monday that the steamer was overloaded when she left on her last voyage. Reports of that description were likely to be very misleading. It had already been stated that the Board of Trade were perfectly satisfied that the *Radyr* was not overloaded and that she was not below her marks. In view of the statement published that day it was desirable from the public point of view that he should mention the matter.

The DEPUTY STIPENDIARY: It is sufficient that you have made this public in court.

Mr. Pratt said he wished to correct a reply which he gave the Court the previous day, when the Court inquired if there were any instructions in regard to trimming which were issued generally. He (Mr. Pratt) was informed that the instructions to surveyors which he had handed in, namely, Circular 1665, issued by the Board of Trade, had been circulated among owners and supervisors. It was a public document and could be obtained by anyone. Sect. 4 contained provisions with regard to loading. It said at the beginning of the section: "It is important that all coal-carrying vessels shall be carefully and properly loaded. This is especially necessary in (a) vessels having proportions less favourable to stability than are usually found in the majority of modern vessels in this trade, (b) vessels, especially small vessels with large cubic capacity, having hatchways whose breadth is less than a certain proportion of the breadth of the vessel, and (c) vessels loaded with the class of coal liable to shift."

The first witness called yesterday was Captain THOMAS HARRISON, nautical surveyor to the Board of Trade, Cardiff, who produced records from the Board of Trade's books showing that the *Radyr* had always been properly loaded when leaving that port.

Mr. W. W. HARRIS, Board of Trade surveyor, Cardiff, also gave evidence that since the loss of the *Radyr* he had measured truck loads of the different kinds of coal that were loaded into the *Radyr*. Witness produced a general account of the cubic capacities and the angles of repose of all the coals shipped in the *Radyr*.

Mr. FREDERICK WILLIAM THORNE, engaged at the engineering laboratory, Royal Naval College, Greenwich, as Lecturer in Applied Mechanics, deposed to making tests on certain material supplied to him by the Board of Trade. The result of his tests showed the timber which was part of a hatch cover to be average quality material.

Further evidence regarding the methods adopted in loading the *Radyr* prior to her

last voyage was given by Mr. THOMAS EDWARD RICHARDS, Mr. WILLIAM KENNEDY, and Mr. GEORGE STEELE, deputy supervisors on behalf of the Coaltrimmers' Union. The last-named, referring to No. 4 hatch, said he saw coal above the beams, but later it had been levelled off. The only work the trimmers were expected to do in a self-trimmer was to level hatches. Only with an ordinary boat the men might be down working her up. They worked the shute in such a manner as to distribute the coal as far as possible over the whole area.

Mr. PRATT: One of the things that you should be careful about is to avoid the formation of a cone when you are loading?

WITNESS: Quite.
Replying to further questions, Witness agreed that the capacity of No. 4 hold was 696 tons, and that only 354 tons was loaded on this occasion. The boat finished on his turn, and everything was in order. There were no complaints made to him.

INSPECTING TRIMMING

Answering Captain Thompson, WITNESS said it was his duty to inspect the work of trimmers. In carrying out those duties it was usual to go on board, but not always.

Captain THOMPSON: On this occasion you did not go on board?—WITNESS: The first time, but not afterwards.

Which is the most important time to inspect the trimming—during loading or after completion?—It may be either, sir. It may be during loading or after she has finished. We have to satisfy the mate.

Pressed on the point by Captain Thompson, WITNESS eventually said he thought that during the work was the most important time.

Captain THOMPSON: If the mate complains on completion, that is not so important?—WITNESS: Oh, yes. Then we have to attend to it.

WITNESS added that he did not happen to be on board when the last wagon was tipped.

Captain THOMPSON: You did not think it important to go when the last wagon was tipped into No. 4?—No, sir.

WITNESS added that the leading trimmer would see that all was correct.

Lieut. - Commander HUBERT LESLIE WHEELER, district inspector of the Royal National Life Boat Institution, stationed at Exeter, was the last witness called before the adjournment. He explained that he was in charge of the whole of the lifeboat stations from Hastings to Burnham in the Bristol Channel. Asked by Mr. Pratt as to the Appledore lifeboat, witness said she was always able to be launched, even though the water were rough. The difficulty in putting her out to sea, however, was the Bideford Bar, a sandbank running across the harbour.

Mr. PRATT: We have heard the wind was force ten on this day. You know that lifeboat men are always prepared to face danger. What do you think of the practicability of getting over the bar at Bideford?—WITNESS: Absolutely impossible.

Referring to the Clovelly lifeboat, WITNESS said she was a pulling and sailing boat launched off a shingle beach. She could be launched in a gale, but not one with the wind force ten.

The inquiry was further adjourned until this afternoon.

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LOSS OF THE "RADYR"

B.O.T. Surveyor on the Ship's Stability

The inquiry into the loss of the Cardiff steamer *Radyr* was continued at the Law Courts, Cardiff, yesterday, this being the seventh day of the hearing. Mr. Hugh Jones, K.C. (Deputy-Stipendiary), again presided, being assisted by Captain William E. Blacklin, Captain E. J. Thompson, and Mr. T. H. Baker, as assessors. Mr. Allen Pratt (Messrs. Vachell & Co.) again represented the Board of Trade, and Mr. A. M. Ingledeu (Messrs. Ingledeu & Sons) represented the owners, the Rupert Phillips Steamship Company, Ltd.

Mr. T. C. WICKET, manager of the Mount-stuart Dry Docks, Ltd., was called and produced the tariff with regard to hatches, explaining that there was no distinction made in regard to timber. If they were asked for hatches they supplied the best possible wood. The name "spruce" was used as a general term.

THE DEPUTY-STIPENDIARY: In other words, is the position this: Whatever it says at the heading of the tariff, hatch boards are made of a recognised class of timber?—WITNESS: Quite.

Mr. Wicket added that they did not tell the woodman what to pick out but left it to him. The man knew the right sort of wood to pick out in accordance with the requirements of the Board of Trade. If a shipowner did not prescribe any particular class of wood for the hatches, the foreman shipwright would decide. He would make the selection. That was done in the present case.

THE DEPUTY-STIPENDIARY: Are there any general instructions as to what class of timber shall be used?—WITNESS: No, he just takes out what he thinks best.

Witness added that so far as he knew the shipwright knew nothing of the tariff between the ship-repairers and the ship-owners, and went about his work without that knowledge. Witness did not know anything about grades. They supplied the best timber possible.

LOADING FIGURES

Mr. HENRY EDWARD STEEL, a ship surveyor on the staff of the principal ship's surveyor for the Board of Trade, was the next witness. He produced a loading statement he had prepared relating to the

Radyr on her last voyage. Calculations he had made showed, with regard to the No. 1 hatch, an empty space of 5550 cu. ft., sufficient for 136 tons of the class of coal in that hold. The empty space in No. 2 hold was 3486 cu. ft., sufficient for 89 tons of coal of the kind shipped. In No. 3 hold there was an empty space of 5943 cu. ft., sufficient for 155 tons of coal, representing 15½ per cent. capacity of the hold, while in No. 4 there was 10,036 cu. ft., sufficient for 242 tons of coal, representing 40½ per cent. capacity of the hold. With regard to bunkers, the empty space was about 8923 cu. ft., amounting to 58 per cent. of the capacity of the hold.

Mr. PRATT: Would it have been possible that the coal would have reached up to the level of the hatch coaming?—WITNESS: I do not think so.

EFFECT OF SUDDEN LURCH

With a ship loaded in this way, what would be the effect, say, of a sudden lurch of the vessel in heavy weather?—There would be a distinct tendency for the vessel's coal to shift in all her holds, but especially in Nos. 1 and 4.

We have evidence that there was no trimming in No. 4 hold, and if the vessel met with heavy weather under the circumstances in which we know that the hold was loaded what would be the effect?—A distinct likelihood of the coal shifting.

That would, of course, cause a list?—Yes.

Referring to the circular issued to surveyors with regard to trimming, WITNESS said that all parties concerned with the loading and trimming of steamers had, as far as he was aware, received copies of the circular. With regard to stability, it was found from calculations that the metacentric height was 2.61 ft. That was a perfectly satisfactory position. No complaint had been made in regard to that in any way. It was proof of the stability of the vessel.

WITNESS proceeded to give lengthy evidence regarding the hatches (produced in Court), which he had personally inspected after they were washed ashore on the North Devon coast.

Mr. PRATT: Did you gather from your observations that the whole of the hatches from the *Radyr* were disturbed?—WITNESS: Yes. I judged that all the main hatchways were disturbed, and also the three bunker hatches on the bridge deck, but, of course, that might have been due to pressure of water as she sank. Referring to a fracture in one piece of hatch cover, WITNESS said it would be consistent with it being caused by a blow from the sea.

Mr. Steel had not completed his evidence when the Court adjourned until this afternoon.



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LOSS OF THE "RADYR"

Question of Hatch Covers

INQUIRY EXPECTED TO CONCLUDE TO-DAY

The inquiry into the loss of the Cardiff steamer *Radyr*, which foundered with all hands on Dec. 7 last off Hartland Point, was resumed at the Law Courts, Cardiff, yesterday. Mr. Hugh Jones, K.C. (Deputy Stipendiary) again presided, being assisted by Captain William B. Blacklin, Captain F. J. Thompson and Mr. T. H. Blaker as Assessors. Mr. Allen Pratt (Messrs. Vachell & Co.) represented the Board of Trade, and Mr. A. M. Ingledew (Messrs. Ingledew & Sons) represented the owners of the vessel, the Rupert Phillips Steamship Company, Ltd.

Mr. HENRY EDWARD STEEL, a ship surveyor on the staff of the Principal Ship Surveyor for the Board of Trade, continued his evidence. He gave details regarding the shifting beams of the *Radyr* and those of her sister ships, of which there were 21 built.

Replying to Mr. Pratt, WITNESS said that the beams which were fitted to the *Radyr*, which was built in 1918, as compared with Lloyd's requirements to-day, were stronger vertically, but the flanges were of less width. At the time the ship was constructed there were no Lloyd's rules with regard to shifting beams of that size.

Mr. PRATT: If a deflection took place in the whole of the beams, what effect would that have upon the strength of the hatch covers?—WITNESS: Practically none.

Supposing one or more of the shifting beams was deflected, what effect would that have upon the strength of the covers?—The covers would be likely to break in the middle.

The likelihood of breaking would come from the force applied on top?—Yes.

Such as would be caused by the sea breaking on the hatches?—Yes; of course, it would be necessary for the middle beams to deflect to the extent of several inches to cause a break at the centre by a blow from the sea.

Asked if he could give the pressure exerted on rocks by waves, WITNESS replied that the pressure of the sea round the coastal rocks had been recorded as high as three and a half tons per square foot. With a ship that was floating on the water one would not expect the pressure of the sea to be so great. He had calculated that where some covers were broken the weight of the sea must have been at least one ton per square foot.

Mr. PRATT: Having regard to what you have said, can you give the Court any indication of the force of the blow which fractured the cover marked "Y"?—WITNESS:

It would be only a general indication. The blow would probably be equal to a static blow of 1.7 ton per square foot.

Mr. PRATT: That indicates a pretty severe blow?—I think in any case the blow must have been severe.

THICKNESS OF TIMBER

What is the requirement for the thickness of hatch covers?—For an unsupported spar not exceeding 4 ft. 6 in., that would be the distance between the flanges and the beams, it is two and a half inches.

What was the thickness of the timbers you saw?—I saw nothing less than two and seven-eighths, and in some cases three inches.

They were half an inch above the standard, and I suppose it follows that if they had only been of standard thickness they would have been much less strong and efficient?—Yes, that follows.

Replying to further questions, witness said there was no standard for timber of which the covers were made. The only requirement was that covers should be solid and not less than two and a-half inches in thickness. In selecting timber for hatch covers the absence of knots was one of the things that should be looked for, and also that the grain was regular. It would be easier to detect the presence of knots before the timber was made up into hatches. He thought it more important to have efficient hatch covers in the case of self-trimmers than in the case of non-self-trimmers.

Mr. PRATT: I think it is recognised that so far as the deck area is concerned the hatch covering is one of the weakest parts of the deck, and it follows that the greater the area of vulnerability the more effective should be the precautions taken to cover the same?—Yes.

A FAST SHIP

Mr. CYRIL G. REES, of Bangor Street, Cardiff, who served as an A.B. on board the *Radyr* from May to September of last year, was the next witness. He said he joined the *Radyr* on May 1, 1929, and remained aboard until Sept. 3. Generally speaking, the vessel was a good vessel, while her speed was remarkable for a vessel of her size. She did not ship much water, mostly spray, and did not roll out of the ordinary. The vessel took coal to Bordeaux and brought pitwood to the Bristol Channel. Witness proceeded to give particulars of the methods of loading, and said the shifting beams were, sometimes removed, when shipping large coal, in order that it should not be broken. The No. 4 hold was generally filled three-quarters of the way up. He did not think any trimming was done in this hold, the trimmers generally trying to avoid getting into the hold. No. 4 was generally completed before No. 1. Witness was unable to recall any instance where the vessel had a list after No. 4 had been loaded and before No. 1 had been started. He could not recall any occasion

when trimmers went down into No. 4 hold and knocked the top off the coal, but it might have been done without his knowledge. He identified some of the hatch covers produced in Court as being aboard the *Radyr* when he was there.

Describing the method of putting on the hatch covers, WITNESS said they were each covered with three tarpaulins, these being secured with wedges, battens and wire lashings consisting of two pieces of wire, one end was secured with a bottom screw and the other by a shackle. Owing to the distortion caused by the pressure of coal on the shifting beams they occasionally experienced trouble in replacing the hatch covers of No. 2 hold in particular, and crowbars and hammers were used to prise them back. When that failed, a portion of from half an inch to an inch was sawn off the hatch covers to make them fit.

Mr. RUPERT PHILLIPS, of the Rupert Phillips Steamship Company, Ltd., was next called, and, replying to the Court, said he had no abstracts of the logs in his possession. He understood they were all kept aboard the ship. No written instructions were ever given to the captain, who was simply told verbally where he had to proceed. He never gave any instructions with regard to trimming. What happened was that the charterers ascertained the holds, drew up a plan of what had to go into each hold, and that plan was submitted to the ship's master, who had full discretion to approve or amend the plan. Nothing had ever been brought to his knowledge with regard to the beams being left in during loading, nor of any difficulty with the hatch covers as described by the previous witness. It was a matter for his foreman, but if there was any complaint of any kind he would have expected it to be brought to his knowledge. The *Radyr* was an exceptionally fast boat for a tramp steamer. The usual time for a ship from Cardiff to Bordeaux was five tides, about 60 hours. His vessel had done it in four tides.

ERNEST PRIGG, foreman shipwright at the Mountstuart Dry Docks, Ltd., Cardiff, was questioned with regard to the class of wood from which the hatch covers were made. He said he selected the timber and an official order was afterwards given. He had nothing to do with the price, but selected the timber which he considered most suitable for the job. He considered Grade 4 admirably suitable. Third grade was of better appearance but it did not follow that it was any more suitable.

The DEPUTY STIPENDIARY: What would your employers say if you selected grade three instead of four?—WITNESS: My instructions always are to do the job efficiently.

Mr. PRATT intimated that that concluded the evidence, and in reply to the Stipendiary said he saw no difficulty about concluding the inquiry this afternoon. The Court then adjourned until to-day.



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LOSS OF THE "RADYR"

Importance of Loading and Trimming

INQUIRY CONCLUDED

The concluding stage of the inquiry into the loss of the Cardiff steamer *Radyr* was reached at the Law Courts, Cardiff, yesterday, when Mr. Hugh Jones, K.C. (Deputy-Stipendiary) presided, assisted by Captain William B. Blacklin, Captain F. J. Thompson, and Mr. T. H. Blaker as assessors. Mr. Allen Pratt (Messrs. Vachell & Co.) represented the Board of Trade, and Mr. A. M. Ingledew (Messrs. Ingledew & Sons) represented the owners, the Rupert Phillips Steamship Company, Ltd.

At the outset the Court recalled Mr. HENRY EDWARD STEEL, a ship surveyor, on the staff of the Principal Ship Surveyor to the Board of Trade, who produced Lloyd's Rules and Regulations for the year 1917-18, when the *Radyr* was built. He said there were no regulations for 26 ft. shifting beams. The longest beam dealt with in the rules was one of twenty feet. The rules regarding hatch covers were precisely the same as now, namely, that they must be solid, and not less than two and a-half inches thick. Referring to the fractures in some of the hatch covers he was of opinion that those fractures were slightly more consistent with having been caused by a blow from the sea than anything else.

Mr. BLAKER: Is an ordinary coal-carrying vessel more immune from the danger of the hatch covers being stove in than a self-trimmer?—WITNESS: Yes.

Captain THOMAS HARRISON, a Board of Trade surveyor at Cardiff, was also recalled, and, in reply to Captain Thompson, said he was unable to say whether a Lloyd's survey took place at the same time as the Board of Trade survey in May, 1929.

LIFE OF HATCH COVERS

Captain THOMPSON: Can you give the average life of hatch covers?—WITNESS: That is hard to say. On self-trimmers of short voyages you will appreciate the number of times they are off and on, and consequently their life would probably not be half as long as that of long-period vessels. There is more wear and tear in a short voyage ship, the hatches being off and on much more frequently.

Replying to the Deputy Stipendiary, WITNESS said that there were occasions when men complained that a ship was badly loaded, and he had sometimes found these justified.

Mr. ROBERT CHEETHAM, principal surveyor to Lloyd's Register of Shipping at the Bristol Channel ports, said the *Radyr* was classed 100 A 1 at Lloyd's, but he could not say the exact date of her last survey. It was, however, in April, 1929, at the time the vessel changed her ownership and her registry.

Mr. PRATT: Can you say that either at that time or prior to the loss of the steamer she went through her survey?

WITNESS: She did not go through a special survey, but a docking survey due to the fact that she was placed in dry dock for examination by the prospective buyers.

Mr. PRATT: And she was passed and retained her class?—Yes, it was recommended that her class be retained.

Mr. J. P. CARREL, marine engineering superintendent to the company, also recalled, said the *Radyr* passed her Lloyd's special survey in 1927.

This concluded the evidence, and Mr. PRATT proceeded to read out the wireless messages sent out from Fishguard after the receipt of an SOS from the *Radyr*. He said that these showed that only two messages were received from the *Radyr* at 7 48 and 7 50 in the morning. The first was to the effect that she required immediate assistance, her hatches being stove in and the second announced that the *Radyr* was sinking and that the crew were trying to launch a lifeboat. The messages sent out, and received at Fishguard from other steamers in the vicinity of the *Radyr* showed, he said, perhaps more than he could describe the bad condition of the weather steamers were encountering at that time. They showed also that Fishguard and all vessels in the vicinity were doing their best to get into touch with the *Radyr*.

THE QUESTIONS FOR THE COURT

Coming to the questions to be submitted to the Court, Mr. PRATT remarked that while the inquiry had been more protracted than anticipated, he ventured to say that the time had been well spent in going into all the circumstances surrounding the loss of the vessel. Mr. Pratt then submitted the following questions for the consideration of the Court:—

1.—When, and in what circumstances, was the steamer *Radyr* acquired by her Owners? Was she afterwards re-conditioned under survey by Lloyd's and the Board of Trade? What number of hatch covers were renewed at this time; of what description and quality and thickness of wood were the new covers which were fitted constructed?

2.—What was the cost of the steamer *Radyr* to her Owners? What was her value when she last left Cardiff? What insurances were effected upon and in connection with the ship?

3.—Was the steamer *Radyr* classed for trimming purposes as a "Self-Trimmer" for all or any and if so, which of her four holds?

4.—When the steamer *Radyr* loaded cargo for her last voyage from Cardiff in December, 1929, (a) By whom was the Plan of Loading decided and approved? (b) Had the Master any instructions as to the trimming of the cargo loaded into the four holds of the ship?

5.—What amount and description of coal was shipped in each of the holds on the last voyage? Was the cargo stowed and trimmed in accordance with the existing customary practice at Cardiff in the stowage and trimming of coalliers classed as Self-Trimmers?

6.—When the steamer *Radyr* left Cardiff on Dec. 6, 1929 (a) Was she in good and seaworthy condition as regards hull and equipment? (b) Was she properly supplied with boats, life-saving appliances and distress signals? (c) Were the hatchways covered and adequately protected and secured? (d) Were the tarpaulins battening-down appliances and hatch lashing wires satisfactory, in good condition and sufficient for their purpose? (e) Was the trimming of the cargo adequately and efficiently supervised and was the cargo shipped in each of the holds of the vessel properly and sufficiently trimmed? (f) Was the vessel in proper trim and had she the freeboard required for a winter voyage? (g) Was the steamer *Radyr* so loaded as to ensure safe stability? (h) Was the vessel so loaded as to be in a safe and seaworthy condition?

7.—After leaving Cardiff on the morning of Dec. 6, 1929, was the *Radyr* sighted at any time or times by any other vessel? If so, when and in what position or positions was

she sighted? When, where and from what vessel was she last sighted, and what was her condition at that time?

8.—Was a wireless message sent out by the steamer *Radyr* about 7 49 a.m. on Dec. 7, 1929 and received on shore, to the effect that she was off Hartland, that her hatches had been stove in, and that she required immediate assistance?

9.—In the circumstances which prevailed was it possible for assistance to reach the vessel in time to be of any good?

10.—Were bodies of any members of the crew of the steamer *Radyr* recovered? If so, when and where were they found?

11.—Did the lifebuoys marked "s.s. *Jura*" and a number of hatch covers, parts of hatch covers and other wreckage washed ashore and found at or near Marshland Mouth and Welcombe Mouth, Devon Coast, on or about Dec. 8, 1929, belong to the steamer *Radyr*? If so, how many complete hatch covers or portions of hatch covers were found and what was the thickness of the timber of which they were composed? In what condition were they when found?

12.—Did the hatch covers or parts of hatch covers afford sufficient evidence to determine (a) The position they occupied on board the ship? (b) Whether any and, if so, which of them had been stove in and what was the immediate cause of their being stove in? (c) Whether the fractures in the broken hatch covers or portions of hatch covers had been caused or contributed to by defects in or lack of strength of the timber? (d) Of what description of timber the hatch covers and broken hatch covers were made and whether the latter were old or new hatch covers?

13.—When and where was the steamer *Radyr* lost? What was the cause of the loss of the vessel and all hands on board her?

14.—In the opinion of the Court should definite provisions and stipulations be made in the specification for timber ordered for and used in the construction of hatch covers fitted in large and exposed hatchways on sea-going vessels? If so, what definite provisions and stipulations are desirable or necessary? What, if any, precautions are necessary or desirable in the selection of such timber used for this purpose?

Mr. PRATT then addressed the Court at considerable length, reviewing the whole of the evidence that had been submitted. In the first place, he said, they had had evidence that the vessel was surveyed by the Board of Trade, who issued their certificate, and so far as the Board of Trade was concerned she was thoroughly seaworthy and complied with the whole of their requirements. They were fortunate in having evidence of officers who examined the vessel before she left on her last voyage that the vessel was on the proper side of her winter load line, so that there was no question of overloading. One of the important questions the Court had to consider, however, was whether the steamer was carefully and properly loaded, and it was important, too, for the Court to say whether there was effective supervision of the trimming. It could not be said that there were not sufficient men for purpose of supervision, because they had evidence of the number of supervisors and others who were employed during the loading of the ship. Actually, added Mr. Pratt, it seemed as if there were too many men as supervisors in this case, and what may have happened was that what was everybody's business turned out to be nobody's business. Mr. Pratt also referred to the hatch covers produced, and said that there could be little doubt after the evidence produced that they were from the *Radyr*. In conclusion, he acknowledged the assistance rendered him by the assessors in the investigations.

The PRESIDENT intimated that judgment would be delivered in due course.

LOSS OF THE "RADYR"**Board of Trade Inquiry Findings****RECOMMENDATIONS REGARDING HATCH COVERS**

The findings of the Board of Trade Inquiry into the loss of the Cardiff steamer *Radyr*, which foundered off Hartland Point with the loss of all hands in December last, were delivered by the President, Mr. Hugh Jones, K.C., at the Law Courts, Cardiff, yesterday. The Court found that the cause of the loss of the vessel was the large influx of water into two or more holds through heavy seas breaking in the hatches during weather of exceptional violence, and considered that it was probable that the cargo in Nos. 1 and 4 holds shifted during the heavy weather, causing a list; that the breaking of the hatches was caused by the inferior quality and defective condition of some of the hatch covers, and that the comparatively large area of the hatchways exposed the whole of the hatches to exceptional strain.

The Court was of the opinion that the cargo in Nos. 1 and 4 holds was not properly and efficiently trimmed, although such loading was not sufficient to make her unseaworthy. They recommended that some provision should be made to secure that the coal in incompletely filled holds of self-trimmers should be properly levelled. They were of the opinion that provisions should be made in the specifications for timber used in the construction of hatch covers fitted in large and exposed hatchways. It was strongly urged that the question of the use of steel in the construction of such covers should be considered. The desirability of hatch covers, after being coated and painted, being subject to the approval of the Board of Trade Surveyor was also emphasised. Finally, more frequent

periodical surveys of the hatch covers of self-trimmers were recommended.

The previous proceedings were reported in *Lloyd's List* of July 24, 25, 26, 28, 29, 30, 31, and Aug. 1 and 2.

The Court, after tracing the history of the vessel, said it was satisfied that for the last fatal voyage the cargo was stowed and trimmed in accordance with the existing customary practice at Cardiff, but there was a diversity of opinion as to what practice prevailed in the trimming of an incompletely filled hold. According to the evidence of Mr. J. T. Clatworthy, president of the National Coal Trimmers' Union, the tariff prescribed for self-trimmers required that the coal in the hatches only should be levelled, and that there was no obligation to level the coal in an incompletely filled hold. Mr. E. Street, the chief supervisor of the Employers' Clearing House at Cardiff, stated that it had always been the custom to take off the top of the cone in an incompletely filled hold, although no provision was made by the tariff. The Court thought that coal left in the form of a cone or coal not properly levelled in an incompletely filled hold might, through its tendency to shift in heavy weather, imperil the safety of the vessel. They therefore recommended that some provision should be made to secure that the coal in all incompletely filled holds of vessels of the self-trimmer type should be properly levelled.

SUPERVISION OF TRIMMING

Adequate provision was made for the supervision of the loading and trimming of the *Radyr* at Cardiff docks, but it appeared that the trimming of the cargo was not adequately supervised. The inspection of holds upon the completion of loading was most essential. The cargo shipped in Nos. 2 and 3 holds was properly trimmed, but there was a conflict of evidence as to the trimming of No. 4 hold. The Court did not consider that the whole of the coal in the hold was loaded in the centre in the shape of a cone, but it was of the opinion that about 264 tons was first loaded in the forward end of the hold against the bulkhead with the coal sloping towards the after end. In loading the hold the coal was so tipped as to cause a list to port, and the error was improperly corrected by the trimming of coal to the starboard side of No. 1 hold. The Court was of the opinion that the cargo in Nos. 1 and 4 holds was not properly and efficiently trimmed, while the loading of Nos. 1 and 4 holds would tend to cause a list in the event of the vessel meeting heavy weather. Yet the Court considered that such loading was not

of itself sufficient to regard her as being in an unsafe or unseaworthy condition. It was, however, a source of danger, in that it was calculated to cause her hatches in heavy weather to be more exposed to the impact of the seas.

On the question of the hatch covers that had been recovered, 61 were undamaged, 21 damaged, and 9 broken. In the opinion of Mr. Steel, of the Board of Trade, 15 formed part of No. 1 hatch, 45 of No. 2 hatch, 23 of Nos. 3 and 4 hatches, and 8 were banker hatches. Some of the covers were fractured, and the Court was satisfied that they had been stove in while they were in position on the hatches, and that the immediate cause of their being stove in was the force of the heavy seas breaking in on the hatches. Lack of strength of the timber contributed to the fractures, and the Court considered that the parts of broken hatch covers recovered were from old hatch covers of inferior quality.

The loss of the vessel and all hands on board was due to the large influx of water into two or more of the holds owing to the force of heavy seas breaking in the hatches during weather of exceptional violence. In the absence of direct evidence, the Court could not express a definite opinion, but it was probable that the cargo in Nos. 1 and 4 holds shifted during the heavy weather and thus caused a list which rendered the vessel more vulnerable to the impact of the seas; further, that the breaking in of the hatches was caused by the inferior quality and defective condition of some of the hatch covers, and that in the heavy weather experienced the large area of hatchways in proportion to the area of the deck constituted a serious danger and exposed the whole of the hatches to exceptional strain. All the circumstances tended to show that the disaster to the *Radyr*, with the most regrettable loss of the lives of all those on board, was sudden and overwhelming.

The Court was of the opinion that definite provisions and stipulations should be made in the specifications for timber ordered for and used in the construction of hatch covers fitted in large and exposed hatchways in sea-going vessels, and recommended that where covers were made of wood they should be of high grade straight-grained timber, free from knots, shakes and sap. It was, however, strongly urged that the question of the use of steel in the construction of such covers should be considered. If such recommendations were adopted it did not appear to be necessary to take precautions in the selection of such timber used for the purpose of hatch covers, but it was necessary and desirable that all hatch covers should, after being made and after being coated and painted, be subject to the approval of a Board of Trade Surveyor. It was further recommended that there should be more frequent periodical surveys of the hatch covers of such vessels.