

"EMPRESS OF CANADA" INQUIRY

Questions on Ship's Wiring System

ELECTRICAL ENGINEER'S VIEWS

From Our Own Correspondent

LIVERPOOL, Saturday

Questions relating to the ship's wiring system were put to-day to an electrical engineer, Mr. R. W. Donnelly, at the Ministry of Transport Inquiry into the loss of the *Empress of Canada* by fire. Asked if he thought it probable for a berth light to have set fire to a pillow, the witness said he thought it not probable. The fire occurred on Jan. 25 last, in No. 1 branch, North Gladstone Dock, Liverpool. Mr. K. S. Carpmael, Q.C., is sitting at Wreck Commissioner with Captain Lewis Parfitt and Messrs. W. J. Nutton, I. J. Gray and F. Dunn as assessors.

[The previous proceedings were reported in LLOYD'S LIST of Dec. 8, 9, 10, 11, 12, 14, 15, 16, 17, 18 and 19.]

Mr. J. B. Hewson and Mr. Gerald Darling are representing the Ministry of Transport. Mr. George Bean is appearing for Bootle Corporation. Mr. J. V. Naisby, Q.C., and Mr. R. J. H. Collinson are representing Canadian Pacific Steamships, Ltd. Mr. Glyn Burrell and Mr. Norman Sellers are appearing for the Mersey Docks and Harbour Board. Mr. Trevor Davies is appearing for Harland & Wolff, Ltd. Mr. P. F. Broadhead (instructed by Messrs. Ingledeu, Brown, Bennisson & Garrett, London) is instructed to watch the interests of the members of the Mercantile Marine Service Association and the Navigators and Engineer Officers' Union.

PUMP STARTED IN SHIP

Mr. R. H. MOFFAT, intermediate fifth engineer, said he was engaged up to 4 p.m. emptying No. 9 fresh water tank aft on the engine-room deck. Shortly after 4 p.m. he went back to the engine-room and noticed some smoke about C deck. It seemed to be dropping as though the smoke above it was building up. He was told there was a fire amidships. He started the starboard sanitary pump on his own initiative and opened the discharge valves. He left the sanitary valve closed. At about 4 25 p.m. they switched off the starboard diesel generator after Mr. Joughin was told the fire brigade did not need the ship's fire main.

Mr. Moffat said that the starboard diesel generator was the only means of power. The port generator was under overhaul. Instructions in the case of fire were posted on the notice board by the assistant chief engineer who personally instructed the three fifth engineers and told them what to do. Replying to Mr. Hewson, witness said they could get up to 75 lb. pressure with full rheostat on the generator. He had never seen it on full rheostat. He had no instructions as to what pressure to use if there was a fire. It never occurred to him to give more than normal sea pressure.

Mr. Hewson: Don't you think you should have given it more than normal sea pressure as there was a fire?—Well, if more pressure was required somebody would have contacted me. The speed could easily have been put up.

Witness said he never heard any fire alarm bell in the engine-room. He added that he saw smoke in the engine-room but had received no report of anything wrong before that.

ENGINEER'S INSTRUCTIONS PASSED ON

Mr. A. J. BELLEW, junior fifth engineer, said he had served in the ship since 1952 as assistant to the engineer in charge. He described the appliances available in the engine-room and said they consisted of foam extinguishers and C.O.₂ smotherers. He did not know how to use the smotherers but he could use the extinguishers. As regards instructions to the engineers in case of fire they were to open the sea suction to these pumps and open the discharge to the fire main. No notice was posted up to the time he left the ship at 5 p.m. on the Saturday evening, but he had received instructions in the morning of everything that had to be done and he passed them on to his relief watch keeper.

He went on board at about 4 35 p.m. on Jan. 25. The fire brigade were already there. Shiprepairers were on board. He went to the emergency generator on B deck aft. There was smoke coming out of the doors on B deck leading from the accommodation to the open deck, but he saw no one about. He went to the emergency generator as there were no lights in the ship, and he took it that lights might be wanted. He was told that the firemen had said the generator was not to be started until the firemen gave the word. He went to his room on the boat deck, changed into a boiler suit and stood by. There was thick smoke there.

Mr. HEWSON: On the way up to the engineers' quarters did you see any flames?—I saw no flames anywhere, I only saw smoke.

Mr. R. W. DONNELLY, assistant electrical engineer supervising the work of shore contractors working in the ship, said he went on board at about 8 30 a.m. on Jan. 25 to supervise electrical work being carried out by contractors. The work being done that day was on force lubrication pumps below.

Mr. HEWSON: Was any electrical work being done in the passenger accommodation that day?—I would say none.

Do you know if there was any electrical work being carried out on B deck, starboard side?—Definitely no.

Witness said that with the exception of an air circulating fan there was no ventilation plant running throughout the ship. During 1946-1947 all the auxiliary wiring throughout the vessel was renewed. He described the wiring system in the ship. Electricity was supplied from the main generators below through a main switchboard and then to sub-switchboards throughout the ship. Asked what ring mains were he said they were main feeds from the main switchboard to the auxiliary switchboards situated at different points throughout the vessel. There were no ring mains on B deck. There were switchboards on C and D decks and an emergency switchboard. The highest level of a switchboard was C deck. Asked how electrical current was taken to B deck he said a cable ran from the switchboard from D deck and went aft to the stairway bulkhead on C deck and then to B deck on the starboard side.

He was asked about previous evidence that a few days before the fire a bath overflowed in a cabin on A deck and soaked through to a light fitting in a cabin on B deck. He said that if the light was switched off and it was fresh water nothing would happen. If the light was on it was likely that a fuse would be blown but nothing more. The lighting system in each cabin was protected by two fuses.

Mr. BEAN asked the witness as an expert if he could think of any circumstances in which a fire alarm at a particular point could be operated without it causing the alarm to be sounded or to be shown on an indicator.

Mr. DONNELLY said a fire alarm button might stick or there might be a break in the circuit.

Mr. BEAN: We have heard that at least two glass fire alarms were broken and it would appear from the evidence that the alarm did not sound in the engine-room either by indicator or bell. I am wondering whether anything occurred to you as an expert why the alarm should fail to register in the engine-room?

Mr. DONNELLY said there was a switch on the bridge which could switch the alarm off.

WRECK COMMISSIONER: If this switch is off it puts the whole thing out of action?—Yes.

KNEW THE SHIP WELL

Answering questions by Mr. Naisby, Mr. Donnelly said he knew the *Empress of Canada* very well indeed, having sailed and worked in her. He was with the company when she was built. He produced samples of insulated electric wire cables similar to those in the *Empress of Canada* and, in reply to the Wreck Commissioner, said he had never known an insulated cable catch fire through being overloaded. Insulation on a cable would not sustain a flame.

Mr. NAISBY: Supposing you got such a current passing through the core of a cable that became white hot, would it cause the insulation to burn?—I would say it would cause it to smoulder.

Supposing you got a situation where you had a cable in an enclosed space with a good draught. Would it cause the smouldering to travel along the cable itself?—It would not travel quickly.

The learned Commissioner has suggested a possible cause of fire in a cable. I gather you say that before that happened you would expect such a smouldering from the burning of the insulation that it would be detected?—The smell of burning insulation is most pungent. I have known a small electric fire to permeate the whole of the ship with this distinctive smell.

THE CABIN LIGHTS

Questioned about the reading lamps in cabins, Mr. DONNELLY said they were of 220 volts and those in the lower bunks of 40 watts and those in the upper bunks of 25 watts. Regarding the power for the fire alarm klaxon he said this came from the ship's main supply and also the emergency system.

Mr. NAISBY: There is evidence that when the klaxon was heard it gave one short blow and stopped. Can you think of any electrical explanation for that?—It could be that at the psychological moment the generator shut down.

WRECK COMMISSIONER: If the klaxon gave one groan it would mean the circuit was on and then there was some interruption?—Yes.

Do you remember whether each klaxon had an individual fuse?—Yes.

Would it necessarily follow that if one klaxon was out of order, all would be?—No, but if there was an interruption on the feeds that would blow the main fuse.

In reply to further questions Mr. DONNELLY said that if a distribution box came under fire that would affect the whole klaxon system. There was a distribution box about 10 or 12 frame spaces from the dispensary and if that was on fire it would affect the whole klaxon system.

Mr. HEWSON asked questions about the reading lamps in the cabins. He asked if a mattress or a pillow were stood right against one of the lights whether it would smoulder.

Mr. DONNELLY said he had not known a mattress to smoulder but he had known a pillow to smoulder, due to carelessness.

Mr. HEWSON: Was it caused through one of these berth lights?—It was, in the *Empress of Australia* this year. A passenger wished to shield the berth light from her youngster's eyes and put a pillow up against it. The result was a smouldering pillow and marked paintwork. The light in that case was 40 watts, but it was of Continental manufacture and Continental lights did not have the heat dissipation of lights of British manufacture. The *Empress of Australia* was a former French ship.

WRECK COMMISSIONER: Do you know how long it would take to get to the smouldering stage?—No.

Mr. HEWSON: Do you think it possible in the *Empress of Canada* for a berth light to set fire to a pillow?—If you say, is it possible, the answer must be yes.

Do you think it probable?—No, because the stewards are strictly warned about this and in addition there is no necessity for the lights to be switched on. The switches are on the lamps.

WRECK COMMISSIONER: I am thinking of the possibility of an accidental switching on. Where are the switches?—The switches are sunk in.

Are they sunk in so that it is impossible to knock them accidentally?—It is possible.

The hearing was adjourned until Monday.



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