

probably has natural ability; he is a gifted mechanic, with ideas and notions, but his education may not have been in the way of the maintenance and running of an engine successfully. A driver will shove a lever over and give it a drop of oil, and away the engine goes, but if it goes ten revolutions more or less, he will not bother; but an engineer is not satisfied with that: he knows every point and every click, which is music to him as to an educated woman who knows every note on a piano. It is to the interest of an owner to employ competent men, and if a practical man should not be immediately conversant with the engine, and cannot drive it so satisfactorily as perhaps a man who has been doing it for two years, he should not be barred. Take the engineers of the "Wakatu" and the "Stormbird": they are both capable men, but if placed on board the "Monowai," having so much different gear on board than they have been accustomed to, they would feel strange at first. They have hydraulic gear and electric gear on board to look after, and the engineer must be conversant with them. There are two sets of engines, perhaps triple expansion engines, and in the case of the "Monowai," an engine for driving the dynamos for the electric light. Vessels like that have hydraulic and freezing machinery, and all this machinery is in charge of the same man, a mechanical engineer, and each machine is a speciality.

197. *The Chairman.*] How long have you been a certificated engineer?—Since 1882. I passed as second engineer in 1882, and as chief engineer in 1883. I have numerous other certificates from the Science and Art Department, South Kensington, and from Liverpool School of Science.

198. Are you an electrical engineer?—No. I know a little about it.

199. Have you been in large steamers?—Yes, in the British India Company's Royal Mail service on their home-trades through the Red Sea, and I was in their fast mail-service between Calcutta and Singapore for two years.

200. You said just now that this question was a matter of pounds, shillings, and pence?—Yes.

201. Do you know the Kaipara Heads?—No, I have not been there.

202. Do you know the distance up the river to Helensville?—No. It must be about sixty miles. It is a big estuary.

203. Should there be a certificated engineer on board the "Huia," 350 tons, and if not, what experience should a man have to be in charge of an oil-engine?—Would she carry passengers?

*The Chairman:* No.

*Witness:* A third-class certificated engineer would meet the law, or a man with a permit who had been running an engine for twelve months prior to the 31st May, 1899, running in deep water, or had passed an examination after service for three years in a shop.

204. *The Chairman.*] So that any one who had experience in a shop for three years, and with an examination would be qualified to take charge of one of these boats?—Yes, he should not have less than three years' shop service.

205. I have spoken of the "Huia," which has been trading from Lyttelton to Kaipara?—Yes.

206. Do you know whether she has made some rapid trips?—I have not heard specially, but I have seen it mentioned in the papers. I know she has done some very good work.

207. The captain has told me that on several occasions, when getting into a calm and using the engine, and then getting a fair wind, the owners have earned a lot of money.—If they are doing well they should not grudge the extra £5 a month to keep the machinery working well up to the standard.

208. A vessel of that tonnage getting to the Kaipara Heads might be detained a week or more before getting up the river without the aid of this auxiliary power?—They might make an agreement with the tug-boat people to reduce the rates to a nominal tonnage.

209. But if there was only one tug she could make any demand she pleased?—If so, she could cross the bar with her own sails.

210. *Mr. Carson.*] I think you said that the "Thistle," belonging to the Wanganui Freezing Company, is a failure?—For going long distances; not for the trade for which she was built. For going to Westport it does not pay.

211. Then you mean that it would be better if she had not an oil-engine?—It would be more economical for the company for a long trip.

212. *Mr. Lethbridge.*] You say as much oil is used for steam machinery as in oil-engines?—They use a great quantity. It amounts to a lot of oil.

213. You say that for lubricating the steam machinery it would cost as much?—No, not so much. My report was written hurriedly. I got the requisition for my report on one morning, and wrote it out the next evening. I had no idea that it was coming before this Committee in the way it has.

214. *Mr. Carson.*] Are you aware that the chairman of the company which owns the "Thistle" is one of the petitioners?—I could not say.

215. It is hardly likely he would petition in this matter if he thought the oil-engine was not a success?—I think it would cost more than coal. It would cost roughly from £15 or £20 a day for oil, and it would only use about 4 or 5 tons of coal for same power for steam.

216. *Mr. Crowther.*] Is she schooner-rigged?—Yes, a sort of a scow. I understand now she is ninety-horse power, but I heard she was 105.

217. *Mr. Carson.*] It is all a matter of experience with regard to working these engines, and any man of experience would be capable of working one. Your contention is that he could run it all right, but that if serious difficulty arose he could not repair it?—Yes. The Northern Steamship Company carry an extra engineer not required by law, but it is cheaper to do so, as it saves repairs.

218. That is for the purpose of safety?—Yes. I know that in the matter of survey it may seem excessive, but if a non-practical man were to get ready for survey, the machinery would take him twice as long, and he would put the machinery together in an indifferent fashion. A man trained to the work for a number of years would make sure of every point as he went along.