

left that out. I go by the fuel used in both cases. The cost is excessive in the case of an oil-engine as compared with a steam-vessel. It is all a matter of expense, and both vessels use oil for lubrication.

27. Do you not think a mechanic who understands the niceties of construction and has practical knowledge of an oil-engine would be capable of driving one just as well as a certificated engineer?—He would still be a driver. He would not be able to look after the up-keep of the machinery for want of the practical knowledge which is obtained in a shop.

28. But suppose they take an engineer out of a shop?—Yes, he could do it.

29. Does that not do away with any objection you have to the prayer of the petition?—I have answered that by saying that three years' shop-experience should qualify, with an examination.

30. Supposing he has the shop-experience, what is your objection?—I have no objection whatever.

31. Then you have no objection to regulations being framed to give what is asked for in the petition?—The petition does not say anything about shop matters.

32. But you can make that alteration?—Exactly. There was a matter mentioned by Mr. Houston in reference to river restrictions at the last meeting. I have thought over that since, and will give you the decision the department has arrived at, with Mr. Glasgow's consent.

33. Supposing the department decides to give effect to clause 2 in the prayer of the petition, how long would it take to frame the regulations and bring them into practical effect?—About the beginning of the year. About the river-limits, I would like to have them defined the same as for a river-steamer engineer, with the reference to the boiler left out. Twelve months' service in a shop where he was employed about machinery on shore should qualify, with the addition of an examination. That, in my opinion, would be sufficient.

34. Do you not think your department might have come to a decision about this matter before this, instead of giving all these people the trouble of coming here?—I am not in a position to say that. That is a matter for the head of the department.

*Mr. Glasgow:* My impression is that what the department has been asked to do is to recognise service on board a ship only, without examination, or even with examination; but shop-service has never been mentioned before. I think shop-service has always been put forward by the department as being necessary for obtaining a permit. When this matter first came up it was represented to the department that anybody could go on board one of these oil-vessels and learn how to start and stop an engine, but it was pointed out that that was not sufficient to satisfy the requirements for the safety of the ship where passengers were concerned. Then it was stated that even an engineer who had a certificate could not start these engines, and that was considered to be very anomalous—that anybody could go on board and start one of these engines and yet a certificated engineer could not. I do not think the department has ever departed from the principle that mechanical knowledge is a necessary qualification. I noticed in this petition there was no reference to shop-service, and I thought that was intentional, so that licenses could be granted to men who had merely an experience through being in charge of oil-engines.

35. *The Chairman* (to Mr. Glasgow).] I gather that there has only been a slight difference of opinion as to the qualifications of persons to take charge of the engines. You thought they should have mechanical knowledge, and that was not put forward by the applicants?—It was decided by the department to give permits to those who had been up to that time twelve months in charge of an engine. No stipulation was made as to shop-service. It was only to meet the case of men who had been in charge of engines, and it was thought it might be a hardship for these to be thrown out of employment.

36. Your view was that the man should have some mechanical knowledge?—Yes. I wrote a minute for the information of the Minister as early as June, 1898, which will be the view I took of the matter then: "The principle which lies at the root of this matter seems to me to be this: Should the department take the position that in the interests of the safety of passengers and crew it is essential that there should be a man on board these vessels who has practical experience of machinery, or is it sufficient that there should be a man, not necessarily a mechanic, but so far acquainted with the mode of operation of these engines as to be able to start and stop them? If the latter view is adopted it will be necessary to amend section 3 of the Act of 1894 so as to exclude these vessels from operation of the law relating to certificated engineers. This course is, however, one demanding very serious consideration. Although at present confined to engines of small horse-power, the system is no doubt capable of great expansion, and in the course of time comparatively large passenger-vessels will be propelled by these engines. It cannot, I think, be argued that it should be left to the discretion of the owners of such vessels as to whether or not there should be a man on board having proper qualifications from experience of machinery to manage engines and keep them in order. I take it, therefore, that the idea of altering the law so as to exclude these vessels may be dismissed. The next question to be considered is whether or not the law should be amended so as to provide for a special certificate for drivers of oil-engines. The question would, however, still remain whether any experience in a shop or foundry where engines are manufactured is to be required as a qualification for examination for such certificates. Is a man who knows how to start or stop an oil-engine, and perhaps knows something of its structure theoretically, but who is not a practical mechanic, and has never handled tools in a foundry or machine-factory, to be entitled to a certificate? It appears to me to be obvious that if mechanical experience is a necessary qualification in the case of a marine steam-engine, it is as necessary for the driver of a marine oil-engine. In fact, I do not think the opposite view could be sustained for a moment in the case of passenger-vessels, propelled solely by oil-engines. The whole difficulty has arisen in connection with sailing-vessels having auxiliary oil-engines, the owners of which object to carry a certificated engineer on account of the extra pay involved.