appearance of the Cunarders. In the "Lusitania" and "Mauretania" the engine-power is fully 60 per cent. greater than that of their swiftest predecessors, yet no similar allowance appears to have been thought necessary by some critics, who assumed that performances on the earlier voyages represented the maximum capabilities of the vessels. Subsequent events have shown this view to be fallacious and have justified the recommendation of the Turbine Committee and the action of the Cunard directors. Allegations made in regard to excessive coal consumption have also been disproved by experience; and in this respect the anticipations of the committee and of Mr. Parsons have been fully realized.

The marvellous regularity maintained by the "Mauretania" on a long sequence of consecutive Transatlantic passages—made under varying and in many cases very adverse conditions of wind and weather, and sea—illustrates once more, and on an unprecedented scale, the influence which large diemensions have upon the power of maintaining speed at sea. Starting from the eastward passage, beginning on February 3rd last, and taking twelve passages (westward and eastward) which followed, the average speed for the thirteen passages, approaching 40,000 sea miles in length, has been 25½ knots; the lowest average speed in the series has been 25.2 knots, the highest average speed 25.88 knots. Many of the winter passages in this series were made in winter weather against strong winds and high seas, which would have considerably reduced the speed of her predecessor, but had small influence on the "Mauretania." In many instances delays have been caused by fogs.

On seven consecutive passages made since the beginning of last May the average speed of the "Mauretania" in covering about 20,000 sea-miles has been 25.68 knots, the minimum speed for the passage having been 25.62 knots and the maximum 25.88 knots. On her contract trials, the "Mauretania" maintained an average speed of 26.04 knots for a distance somewhat exceeding 1,200 knots, the steaming time being rather less than forty-eight hours. On the passage when she averaged 25.88 knots, she ran 1,215 knots from noon on June 17 to noon on June 19 (about forty-six hours), at an average speed of 26.23 knots, and by noon on the 20th had covered 1,817 knots at an average speed of 26.18 knots for sixty-nine hours. The ship has, therefore, surpassed on service her performance on the contract trial.

In view of the foregoing facts and of others of a similar nature, it is reasonable to assume that as experience is enlarged and information is accumulated in regard to forms of propellers likely to prove most efficient in association with quick-running turbines, sensibly improved performances will be obtained. At present, in comparisons made between the efficiency of reciprocating-engined ships and turbine-engined ships, the former have the great advantage attaching to long use and extended experiment; but this is not a permanent advantage, and it may be expected that good as the position is to which the marine steam turbine has attained in the brief period it has been in practical use, that position will be gradually improved. Whether or not other forms of propelling apparatus in their turn will surpass the steam turbine it would be unwise to predict. Internal combustion engines are regarded in some quarters as dangerous and probably successful rivals to steam turbines in the near future. Within certain limts of size, internal combustion engines no doubt answer admirably; but as dimensions and individual power of the engines are increased, the difficulties to be overcome also rapidly increase, and the fact is fully recognized by those having the best knowledge of those types of prime movers. On the whole, therefore, it seems probable that the turbine will not soon be displaced, whatever may happen eventually.

All branches of engineering have been and will be drawn upon freely in the execution of this great task. Mining and metallurgy assist by the production of materials of construction; mechanical and electrical engineers contribute machines and appliances required in shipyards and engine factories, as well as guns, gun-mountings, and mechanical apparatus of all kinds required in modern warships in order to supplement and economize manual power; marine engineers design and construct the propelling apparatus, and constantly endeavour to reduce the proportion of weight and space to power developed; naval architects design and build the ships; constructional engineers are occupied in the provision of docks, harbours, and bases adapted to the requirements of the fleet; and other branches of engineering play important, if less prominent parts. The progress of invention and discovery is increasing, rapid changes occur unceasingly, the outlay is enormous, the task is never ending, but its performance is essential to the continued well-being of the Empire, and it must and will be performed.

PERSONAL.

MR. T. A. FRANCOMBE of Windsor, has received the appointment as chief engineer of the Gilchrist Transportation Company, who maintain and operate the largest fleet of boats on the great lakes, next to the United States Steel Corporation. Mr. Francombe has been with the Gilchrist Line for ten years.

MR. WYN MEREDITH, an electrical engineer of high repute, who supervised the construction of the Coquitlam dam and the big power plant at Lake Buntzen, has arrived in Victoria, having been engaged by the B. C. Electric Railway & Lighting Company to construct their contemplated works at Jordan river.

MR. R. R. KELLY, M. Can. Soc. C.E., and formerly city engineer of Edmonton, Alta., has been appointed Professor of Electric Engineering in the Nova Scotia Technical College, Halifax.

MR. C. H. MITCHELL, of Messrs. C. H. and P. H. Mitchell, consulting engineers, Toronto, has just left for Prince Albert, Sask., where he will report on a power plant.

MR. J. A. McLARDY, St. Thomas, Ont., for some years trainmaster of the G.T.R.-Wabash, has been appointed trainmaster of the G.T.R. at Stratford, to succeed Trainmaster Bowker, going to London as superintendent.

FREE ENGINEERING ADVICE.

Sir,—Most municipal engineers spend a great deal of time in answering enquiries on engineering subjects. The following reply might be considered as a standard but it would be interesting to know the opinion of other engineers on this question.

Yours,

T. S. Scott.

Toronto, September, 1909.

Dear Sir,—I have your recent enquiry, and am sorry to say that similar enquiries are so numerous that I have recently decided that my department will furnish information as a matter of professional courtesy to properly accredited engineers, and to them only.

I find that in many cases gratuitous information is used either to confute local engineers under quite different local conditions, or to altogether avoid paying for the services of local engineers.

Visiting or corresponding engineers will be treated with every courtesy and information gladly given. Other enquirers will, in future, be answered on the written understanding that services are to be paid for and a professional estimate or opinion will be furnished when asked for on that basis. It should be remembered that my time and that of my subordinates, in office hours, belongs to the City of ..... and not to other municipalities. Our time after office hours we are entitled to devote, within certain limits, to outside professional work, but feel that engineering advice should be paid for in quite the same way as legal and medical advice.

Yours truly,