

taining the speed at sea. In order to secure the sea-speed above mentioned, it has been necessary to provide for engines and boilers capable of developing a very large horse-power. After full consideration it has been decided to adhere to twin screws and not to adopt triple screws; experience in the "Blake" and the "Blenheim," as well as in the large twin screw steamers of the mercantile marine, having established the complete efficiency of such propellers within the limits of power and draught contemplated.

We learn from *Engineering* that the contracts have now been let for the construction of the hulls of these vessels at £338,000 and £345,000 respectively, and the same journal informs us that the engines and boilers will cost about £100,000 each set.

We have in the "Campania" a high speed mercantile vessel which compares in tonnage and speed very closely with the "Powerful" and "Terrible" class. The "Terrible" class will be superior in fighting and resisting quality to any regular armed cruiser now afloat, and it remains to be seen what cargo-carrying capacity could be given them by somewhat reducing the weight of their armour and diminishing their guns to such a number as would be carried in times of peace by the class of cruisers I am advocating. The published figures of the "Powerful" and "Terrible" give them a 4-in. protective steel deck, the weight of which with the armament would be about 2000 tons. If the weight of armament and protected deck is reduced one-half and the coal carried is reduced to the amount which suffices the "Campania" for one high speed trip across the Atlantic, namely, 2000 tons, we have left 2000 tons apparently available for cargo, figures which compare favorably with the 1600 tons cargo capacity of the "Campania." It would therefore seem not too much to say that, on a route in which the passenger traffic is not so prominent a feature as it is in the transatlantic trade, the "Campania" might retain at least the same cargo-carrying capacity and have added sufficient armament, offensive and defensive, at the expense of reducing the passenger accommodation. We have also the cost of the hull and the machinery of the "Powerful" and "Terrible," £438,000 each. So that £500,000 each would be a liberal figure to assign as the cost of an ordinary passenger and fast freight steamer of the same tonnage and speed.

The Huddart scheme of four 20 knot vessels on the Atlantic service and five 16 knot vessels on the Pacific services is to involve a capital of £3,000,000. Nine vessels of the size and capacity of the "Powerful" class, as shown above, would cost about £4,500,000.

The details and tonnage of the Huddart vessels are not published, but they would probably compare very closely with the present C. P. R. "Empress" ships of about 5,900 tons and 16 knots. It seems a very fair assumption that the 50% greater cost of the nine mercantile "Terrible" class is more than met by 50% greater