

strength must be many times sufficient to withstand the pressure necessary to lift her. This calculation was amply borne out by experience.

The principal dimensions of the ship were as follows: Length of keel, 102 feet; length of water-line, 113 feet; length from stem to stern on deck, 128 feet; extreme breadth, 36 feet; breadth of water-line, exclusive of ice-skin, 34 feet; depth, 17 feet; draught of water with light cargo, $12\frac{1}{2}$ feet; displacement with light cargo, 530 tons; with heavy cargo the draught is over 15 feet and the displacement is 800 tons; there is a freeboard of about 3 feet 6 inches. The hull, with boilers filled, was calculated to weigh about 420 tons, and with 800 tons displacement there should, therefore, be spare carrying-power for coal and other cargo to the amount of 380 tons. Thus, in addition to the requisite provisions for dogs and men for more than five years, we could carry coal for four months' steaming at full speed, which was more than sufficient for such an expedition as this.

As regards the rigging, the most important object was to have it as simple and as strong as possible, and at the same time so contrived as to offer the least possible resistance to the wind while the ship was under steam. With our small crew it was, moreover, of the last importance that it should be easy to work from deck. For this reason the *Fram* was rigged as a three-masted fore-and-aft schooner. Several of our old Arctic skippers disapproved of this arrangement. They had always been