

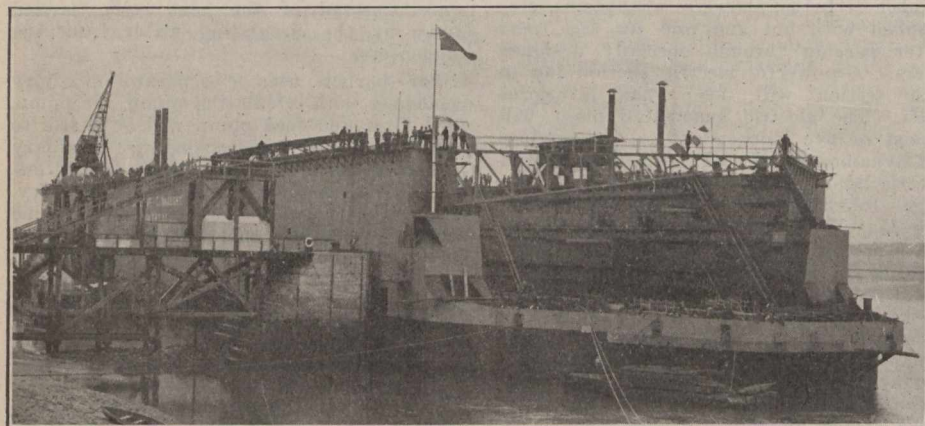
The Floating Dry Dock for Montreal.

The dry dock, of which some particulars have already been given in Canadian Railway Marine World, which is to be established at Montreal as a part of Canadian Vickers Ltd., dry dock and shipbuilding plant, left Barrow-in-Furness, Eng., for Montreal, Aug. 29, in tow of two powerful steam tugs, specially engaged from a firm in Holland, who make a specialty of this

intercostal between the transverse girders. Under the wall, in addition to the transverse lattice girder, intermediate transverse ordinary frames are placed 2½ ft. apart, and prolonged upward, forming the ordinary frames of the walls. The centre bulkhead between the transverse girders, is stiffened by vertical breathing plates, also stiffened and connected to a longitudinal curtain

ft. below the top deck, and made water tight. Each wall is divided, in addition to the joint chambers, into 10 water tight divisions by plate bulkheads, in line with the bulkheads of the pontoon, of which they are a continuation. A docking land is formed at each end of the wall, on which the central portion can rest when being self-docked. The framing of the walls is both braced and ordinary. The frames consist of single angles stiffened by vertical web plates, the front and cross frames being cross connected by diagonals and gussets. The ordinary frames of the walls consist of single angles back and front, cross connected by horizontal struts. About a foot below the top deck a running deck is arranged from one end of the dock to the other, outside the stanchions, to enable the ropes to be handled easily, and timber heads and other fittings required for berthing vessels are placed on this deck. Two other platforms, known as the painting and shoring platforms, are placed 15 and 29 ft. respectively, below the running deck.

Each end of the centre section and each square end of the terminal sections is provided with a joint chamber, so that the sections can be joined, or parted. For dealing with trading vessels, not of large weight or dimensions, the dock has been designed so that it can be worked in two independent units of unequal size, and to enable a rapid connection of the two portions to be made, cast steel rocking joints, in the form of knuckles, are fitted to the level of the keel blocks. The pumps are driven by steam supplied by boilers carried on the dock, each installation consisting of two boilers, two engines and pumps placed in specially built chambers on one of the walls. The pumps are of the centrifugal type, 17 ins. diam., and are seated on the main drain at the bottom of the dock, from which compartment pipes are led to each separate water tight division. Each compartment is governed by its own sep-



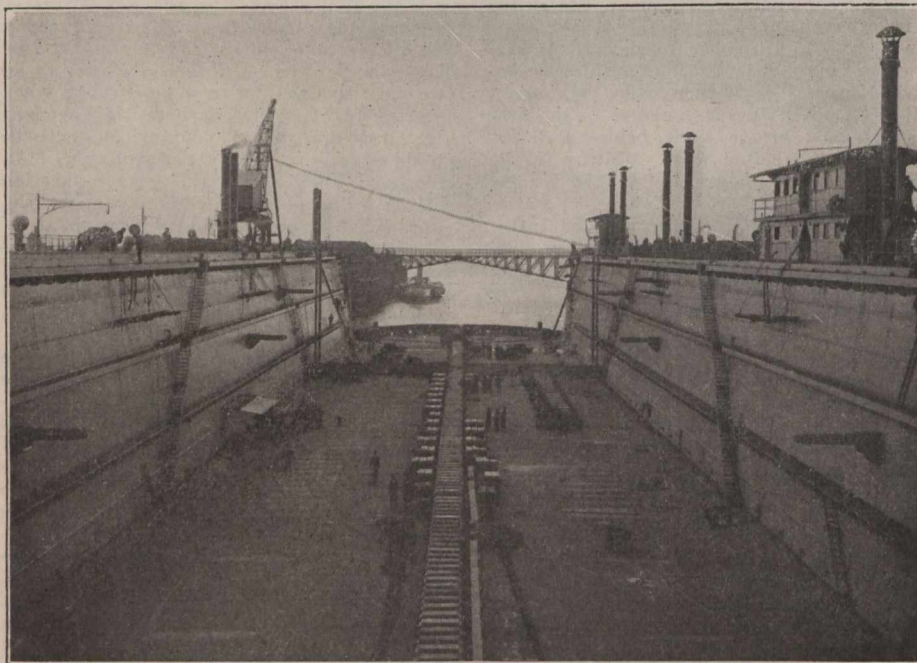
Floating Ship Dry Dock, Duke of Connaught, for Montreal.

class of work. One of the tugs is equipped with a wireless telegraph installation, so that immediately the tow enters the area of communication, reports of the progress will be kept up. The arrival on this side was expected about the end of September, or early in October, the longer, or extreme southern route being taken, so that in case of accident, the Azores might be made.

The dock is of the double sided, self docking type, on the bolted sectional principle, consisting of a pontoon or lifting portion, and parallel side walls, built on and forming a part of same, and the whole divided into three complete, separate sections, which when bolted together form the complete dock. These sections are so arranged that when the dock is separated into three parts, any two of them can dock the remaining third between them, and for this purpose, each section is fitted with independent pumping machinery, so that it can act as an independent unit. The construction has been so carried out that it is suitable for lifting a modern British battleship, the pontoon deck having been specially stiffened for the support of a large portion of the weight of the vessel on the side, or bilge, as well as the central keels.

The pontoon consists of a rectangular structure, plated all round except the portion of the deck directly under the walls, and stiffened internally by longitudinal and transverse girders. It is divided into three sections, the two end sections having their outer extremities built in the form of a point or bow, ending in a working platform arranged on plate and braced girders. The bottom plating, except under the walls, runs transversely, and is connected with the plating of the sides and points by chine angles, and the top or deck plating, which is arranged in the same manner, is similarly connected with the face of the side wall. The pontoon is divided into four compartments, by three longitudinal intercostal water tight plate bulkheads, and transversely it is divided into 54 bays, of which 17 are in each end section, by transverse girders, consisting of plate bulkheads. Special lattice girders are used in the compartments under the walls, instead of plate girders. In addition to the bulkheads, the deck and bottom platings are stiffened by a series of longitudinal frames running fore and aft over the length of the pontoon.

plate. Outside this last mentioned framing, the pontoon deck and bottom are stiffened by longitudinal framings of angles connected to the transverse bulkhead stiffeners by gussets and diagonals. These extend to the face of the wall, and in the centre section several of these frames are provided with plates riveted to them to take the load from the side keel blocks. The intermediate longitudinal bulkheads are formed of vertical plates, intercostal between the girders to which they are attached, as they are also to the top and bottom plating. In



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order to facilitate the complete withdrawal of all water in the pontoon, shallow troughs, forming a gutter, are fitted. The walls of the dock are plated horizontally and have a batter on the inside wall. The top deck of the walls is plated longitudinally, and is connected to the side plating by double chine angles. All the machinery of the dock is placed on an engine deck about 16

feet above the main inlet pipe and pump discharge pipe are governed by separate screw-down valves and a non-return flap valve on the outside. The compartment valves of each section of the dock are operated from a valve house located on the top deck of each section, by the Westinghouse electro-pneumatic system, based on the principle of operating presses by com-