

## Shipbuilding at Port Arthur.

The Port Arthur Shipbuilding Co. established a record on April 3, when it launched 2 steamships and laid a keel for a third. A trawler of the Castle class for the Naval Service Department was launched at 11 a.m., followed at noon by the launching of the steel cargo steamship War Isis, 3,400 tons d.w., for the British Government. Immediately after the launching of the War Isis, the keel for a sister ship, the War Heather, was laid down on the same berth.

The War Isis is a single deck, bulk cargo freighter of the following dimensions: Length over all, 261 ft.; moulded breadth, 43½ ft.; moulded depth, 22 ft. 11½ in.; gross tonnage, 2,240; displace-

ment, with 20 ft. draft, approximately 4,800 tons. She is built on the transverse system, inner bottoms throughout, with 2 large cargo holds, each fitted with 2 hatches. This ship represents the full canal size, standard type, being built to the Imperial Munitions Board order. The cargo will be handled by 4 steel derrick

mess rooms for the deck and engine crews will be located under the poop deck. The propelling machinery will consist of a triple expansion engine, h.p. 20 in., i.p. 33 in., l.p. 54 x 40 in. stroke, with attached air, bilge and feed pumps. A piston valve will be fitted to the h.p. and balanced, double ported slide valves will be fitted to the i.p. and l.p. cylinders, with an assistant cylinder on the latter. Steam will be supplied by 2 Scotch boilers 14½ ft. diameter x 11 ft. long, with a working pressure of 190 lb., and developing about 1,200 i.h.p. The steam steering gear will be located on the main deck aft of the engine casing. The propelling machinery, boilers, and a very considerable portion

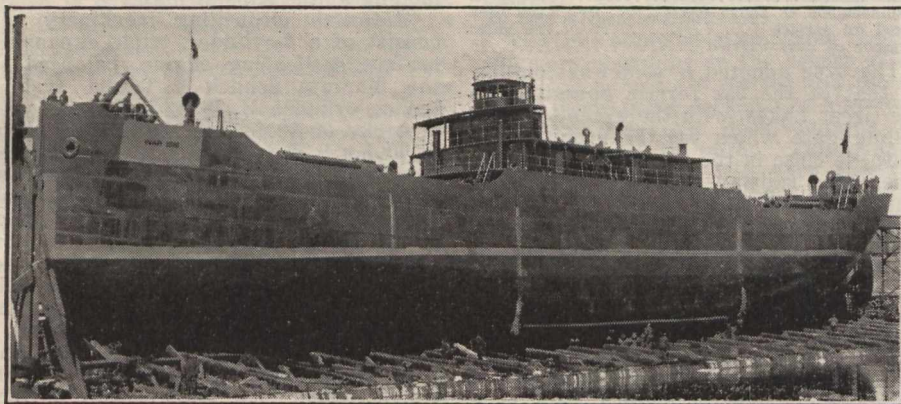
## Water Ballast Favored for Ocean Going Vessels.

So persistent has been the claim advanced by importers of mineral commodities that these commodities occupy no cargo space—only that usually given over to ballast—that the United States Shipping Board committee on mineral imports and exports decided to make a thorough investigation of the subject. F. W. Paine, one of the committee's experts, was assigned to the work and has submitted a report which shows that the proportion of ocean tonnage using water ballast is now so great as to render negligible the claim that this space is available for the carrying of minerals. He says:—

"Double bottom ballast tanks enable ships to carry a weight of water equal to about one sixth, in most modern ships one quarter, of their cargo carrying capacity. This water is held rigid, and acts as solid ballast. Deep tanks, peak tanks, etc., are other forms in use additional to the bottom tanks, and enable ships to carry a weight of water equal to one fourth to one third of cargo capacity. In consequence of the continual development of the water ballast tank construction ever since the sixties, there are now very few ships afloat that require stone, sand, or other solid ballast. The rare exceptions are very old ships, especially a few old Great Lakes vessels that are now on the ocean.

"This development was a most important one, as trade conditions before the war were such that from one fourth to one half of the voyages made by cargo ships, especially those not belonging to standard steamship lines, had to be made without cargo. Great numbers of ships continually sailed to all parts of the world with no ballast except water.

"If this were the condition in normal or peace times, it is still more the case today. In these days, when the number of ships is inadequate, it is exceedingly

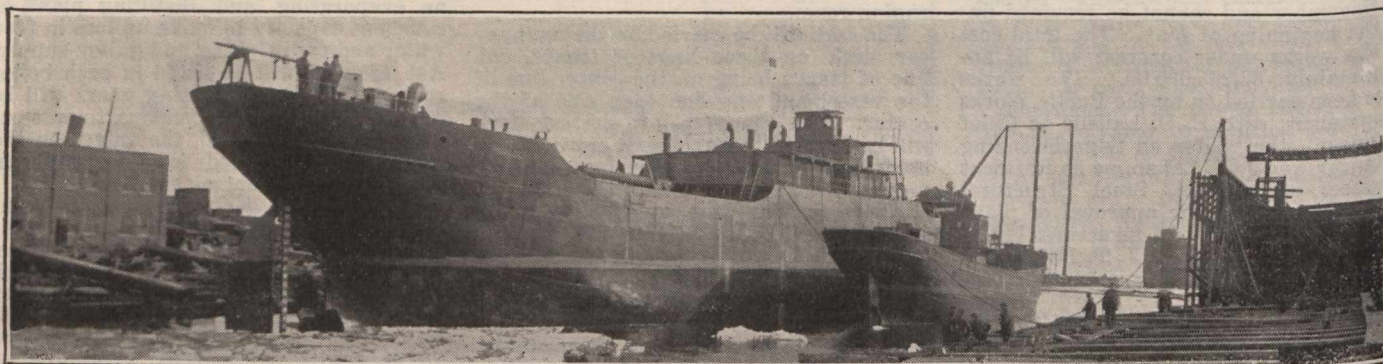


Steel Steamship War Isis, Just Before Launching at Port Arthur, Ont., Apr. 3, 1918.

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of the auxiliary machinery were built in the company's shops.

The Port Arthur Shipbuilding Co.'s programme for this season includes 5 full canal size, ocean going freight steamships, similar to the War Isis, and 10 trawlers of the Castle class. At present 6 vessels are under construction.



Shipbuilding at Port Arthur, Ont.

This illustration shows, from left to right, the steel cargo steamship War Isis, building for the British Government, and the trawler Tr. 5, for the Naval Service Department, both of which were launched April 3. At the right hand side is shown the keel for a sister ship to the War Isis, and in the right background, another smaller ship, War Osiris, also under construction.

masts, equipped with 2 booms each, served by 7 x 12 reversible double drum steam winches. The bridge erection will be located amidships, enclosing the engine and boiler casings, the surrounding spaces on the main deck being available for the stowage of cargo or coal. On the bridge deck will be accommodation for the officers, engineers, wireless operators and gun crew. The saloon, galley, pantry and wireless room will also be located on this deck. The captain's quarters and chart room will be located on the boat deck, with the pilot house and flying bridge above. The hospital and quarters for boatswain and carpenter will be located in the forecabin. Separate quarters and

**Victoria Harbor Works.**—Sir James Lougheed stated in the Senate, May 1, that five tenders were received for the construction of the breakwater and wharves at the outer harbor at Victoria, the contract for the breakwater being awarded to Sir John Jackson (Canada), Ltd., for \$1,797,801.88, schedule rates; and for the wharves to Grant, Smith & Co. and McDonnell, Ltd., for \$2,244,745.15, schedule rates. The total cost of the works, not including sheds, is: on the breakwater, \$2,206,036.02; and on the wharves, \$2,421,830, of which \$23,760, including drawback of \$7,040, is held in abeyance. The total paid to May 1, is \$4,604,106.02.

fortunate that there is no necessity for ships to be delayed loading and unloading ballast, when a voyage must be made without cargo, as happens so often. No more is it necessary for ships to be delayed in loading and unloading cargoes of goods, such as luxuries or non essential commodities. Besides loading delays the added weight makes the ship sink low in the water and makes travel slower, especially in calm weather. Also this greater amount of hull under water is a larger target for German torpedoes."

The B.C. Trading & Transportation Co., Ltd., Kamloops, has changed its name to Sawmills Machinery Co., Ltd.