

The cargo and passenger vessel

"Tscheluskin".

Burmeister & Wain Ltd., Copenhagen, have recently completed for the Soviet Republic the cargo and passenger vessel "Tscheluskin" ex "Lena", intended for a new route to be established between the mouth of the river Lena and Wladivostock. The ship is of the ice breaking type and highly interesting, being specially equipped for the arctic trade. She is built under Lloyd's special survey with notation "Strengthened for Navigation in Ice". The propelling machinery is also of unique design, consisting of a double compound steam engine of the Burmeister & Wain type.

Principal Dimensions of Hull:

Length B.P.	92.00 m.
Breadth moulded	16.50 "
Depth moulded	7.40 "
Cargo capacity	4594 m ³
Deadweight-carrying capacity	4500 tons
Gross tonnage	3607.27 "
Net tonnage	2088.36 "
Service speed	12.5 knots

General Arrangement.

There are two longitudinally continuous decks, strongly supported by longitudinal steel bulkheads and pillars, arranged in such a manner that the working of the cargo is obstructed as little as possible.

The watertight subdivision of the hull is effected by six main transverse bulkheads, all of which are carried watertight to the uppermost continuous deck. There are thus seven com-

partments, viz., fore-peak tank, hold 1 and 2, boiler and engine room, provision room, hold 3 and after-peak tank. Hold 2 may be used as reserve bunker and communicates with the large cross bunker by means of a watertight sliding door. The bulkhead divisions comply with the requirements of the International Convention. In the forward and after holds are separate compartments for carrying pelts arranged, to which access is afforded through a hatchway in the 2nd deck.

The cellular double bottom extends continuously between the fore-peak and after-peak bulkheads, and is divided into tanks for carrying water ballast, fresh water for washing purposes and boiler feed water. The total capacity of water ballast including the peak tanks is 509 m³, of fresh water 78 m³ and of boiler feed water 110 m³.

Cargo-Handling Equipment.

There are three cargo hatches measuring 8.4 - 6.85 and 7.5 m respectively, the width of all the hatches being 5 m.

The cargo-handling equipment and rigging is specially designed to meet the requirements of the ports at which the ship is to call, and comply throughout with the latest experience. The ship has two pole masts, and two samson posts are fitted on the boat deck with derricks for handling bunker coal. All the derrick booms are of Mannesmann tubular steel, each hatch is served by two 5-ton derricks. In addition the fore mast carries one 20-ton derrick intended for heavy cargo, and the main mast

one 10-ton for handling a hydro-aëroplane stowed on board the ship. All the cargo winches are steam driven, supplied by Pusnæs mek. Værksted, Norway.

A 6.1/2 ton warping capstan is placed aft and fitted with messenger wheel for hoisting the stern anchor, which passes through a hawsepipe fitted in the stern.

The steering gear is of John Hastie's make and of the vertical type, installed in the poop and connected direct to the rudder quadrant. In addition an emergency steering gear is provided. In view of the difficulties which may be experienced in the ship's particular trade, a reserve quadrant is keyed to the rudder stock above the main deck. Steering can in this way be effected by means of tackles connected to the capstan, in case the ordinary steering appliances should fail.

The windlass is supplied by De forenede Maskinfabrikker, Nakskov, and steam driven as all the deck machinery.

Boat Equipment etc.

The ship is provided with two motor driven life boats, two dinghies fitted with outboard motor, two ice boats and one fast-going cabin launch, intended for transport of passengers.

As previously mentioned the ship carries a hydro-aëroplane on the deck aft, which is partly to be used for picking up and deliver the mails on the route, and partly for undertaking scientific expeditions.

Accommodation.

In the bridge, accommodation is arranged for officers and crew. The cabins are spacious, well ventilated and finished in light colours. The outside walls of all living rooms are insulated with 2 inch thick cork slabs glued on to the steel plating. The furniture in the crew's quarters is of pine finished in red lacquer, in the officers' cabins of oak.

The mess and club rooms which also are arranged in the bridge house are of a very pleasing appearance, with paneled walls. The floor in all the living rooms is laid with linoleum.

The galley is located at the after end of the engine room casing. The installation includes a coal-fired cooking range, ample for 75 persons, baker's oven, hot water boiler etc. supplied by Brønnum's Maskinfabrik, Copenhagen.

From the bridge stairways are leading to a separate compartment on the tween deck abaft the engine room, with accommodation for 50 passengers. The tables and benches are collapsable and the complete installation is arranged in such a manner that it conveniently can be stowed away, and the space used for cargo. In view of an eventual wintering in the arctic waters the whole of the tween deck aft can be utilized as living room for passengers and crew. The sides of the ship are similar to all other exposed walls of the accommodation insulated with cork, and portable division bulkheads can conveniently be erected. Coal-fired stoves are carried on board to be fitted in these rooms should wintering be necessary.

The mayor passenger accommodation is in a large house built on the bridge deck, and arranged for 26 persons mostly in two berth cabins. The house also contains a hospital with four beds, a dispensary with surgery, and the doctor's living room.

The cabin are beautifully finished, with walls in white and furniture of oak. The dining saloon is arranged forward in the deck house, being light and spacious with panelled walls in pale mahogany, and panelled ceiling finished white. The furniture is of polished mahogany upholstered in leather.

From the passenger accommodation is a stairway leading to a house on the boat deck, containing the captain's state room, bed room, chart room, wheel house and the wireless station.

All the accommodation is heated by means of steam radiators, steam being supplied from a coal-fired donkey boiler placed in the boiler room. The capacity of the heating plant is such that with an outside temperature of 35 C^o below zero a minimum temperature of 17 C^o above zero can be obtained. Electric light is installed throughout the ship.

The vessel is in every respect equipped to meet the difficulties which may be encountered in this particular trade. In view thereof it should be mentioned that it is provided with echo sounder, two search lights, one of which is fitted on the fore mast, whilst the other is portable, and a very powerful wireless station. A loud speaking telephone is installed for communication between the bridge and engine room.

Electric current at 220 volts d. c. is supplied by one 18 k.w. steam driven dynamo. In addition one 5 k.w. Diesel generator is installed as reserve for the lighting and radio plants.