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The steam for the turbine, coming from the 4 Cylinder goes over a change-over valve with two passages, one to the turbine and one to the condenser. This change-over valve is held in place under oil pressure by means of a servo motor, and controlled by hand lever from the manoeuvring platform and by the safety governor of the turbine. The turbine is a reaction turbine rating at about 2900 rev/min. with an estimated output of 1250 shaft H.P. To the fore end of the turbine shaft a safety governor is fitted for a revolution limit of 3400 per minute. The filling and emptying of the oil coupling is also controlled by the hand lever already referred to, and this lever is blocked by means of a connecting rod to the piston engine manoeuvring shaft, so that it is only possible to have the coupling filled and the turbine in action when the steering of the piston engine is in the "ahead" position.

The Main Condenser has been thoroughly overhauled, all tubes cleaned and tested. A new surplus sea water inlet valve of 300 mm dia has been fitted to the ship's side and connected with the existing sea water inlet pipe to the circulating pumps. The impeller wheel & shaft of the circulating has been renewed.

For the oil service two independent duplex steam driven oil pumps of each 53 m³ h capacity have been fitted, one being a reserve pump. Further fitted: one oil filter, one oil cooler, of 24 m² cooling surface, two oil tanks of each 1.75 m³ situated in the engine room skylight and an oil pump of 0.5 m³ with swimmer to control the steam valve of the oil pumps. To maintain a good vacuum one vacuum augmenter was fitted direct to the main condenser.

In the Main Steam line a cast steel T piece and a cast steel valve of 100 mm dia have been fitted with direct pipe connection to the exhaust steam turbine, with the intention to give direct steam from the boiler to the turbine.

The newly installed Machinery has been built under special survey in accordance with the approved plans, the Secretary's letters and otherwise in accordance with the requirements of the Rules. The Materials used in the construction are made at works recognized by the Committee and tested by the Loc. Surveyors. A number of spare parts for turbine & gear have been supplied.

The whole Machinery has been tried under full working and manoeuvring condition, with & without turbine, while the ship was moored, and has given full satisfaction. Increase of revolution with turbine about 6.

Another trial was made with the reciprocating engine uncoupled and direct boiler steam to the turbine. The turbine was able to drive the propeller shaft, only ahead, with about 40 rev. per minute.

During this trial the boiler pressure was 190 lbs and the steam pressure before entering the turbine about 10 lbs; vacuum 28 1/2" maintained by the augmenter.

Humbly 11th June 1929

P. Carstensen

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