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 rt of G O T H E N B U R G. Continuation of Report No. 12111. dated 23rd November, 1938 on the

Steel Single Screw Steamer "LISS", 5925 tons gross, of Oslo.

Repairs effected due to damage, stated to have been caused by heavy weather while on a voyage from Aruba to Vado and Neapel in January and February, 1938.

The propeller shaft ground in way of stuffing box and the packing in same renewed.

White metal in lower halves of all six main bearings of main engine renewed /cracked and badly worn/.

The alignment of the crankshaft and thrust shaft readjusted.

Repairs effected due to wear and tear:-

Boilers.

52 leaky tubes in centre tubenest and 5 in starboard of port boiler re-expanded.

7 ditto in port tubenest, 20 in centre and 1 in port of starboard boiler, and 38

in port, 10 in centre and 15 in starboard of aft boiler also re-expanded. Several

leaky stud bolts made tight by means of caulking.

The boilers tested by water pressure and found tight.

Some other repairs of minor importance were also carried out.

Alterations:-

The following alterations have been made in order to reduce the oil fuel consumption while maintaining the same IHP of the engine.

A turbo-compressor set, consisting of a low pressure steam turbine and a steam turbo compressor, both manufactured by Messrs. Aktiebolaget de Laval's Ångturbin, Stockholm, has been fitted on the condenser. The turbine, which is driven by exhaust steam from the LP cylinder, drives the turbo compressor. This one takes exhaust steam from the HP cylinder and delivers same with increased pressure and temperature to the IP cylinder, which diameter has been reduced from 45" to 38". In order to have this done the HP piston valve and liner have been made in conformity to a special construction allowing passage for the exhaust from the HP cylinder to a valve box, fitted on top of the HP and IP receivers. This valve box contains: 6 non-return valves giving the steam from HP cylinder free access to the IP side of the receiver when the set is not in use, also 2 emergency equalizer valves so regulated that difference of steam pressure on the two sides of the IP piston multiplied by the IP area will never be more than the boiler pressure multiplied by the HP area and also a safety valve on the IP side of the valve box.

It is also arranged that the exhaust steam from the LP cylinder can be led direct to the condenser without the turbo-compressor set in use.

The main condenser has been replaced by a new one of increased capacity. The top of the condenser is constructed as a seating for the turbo compressor set.

Another low pressure turbine, driven by exhaust steam from the LP cylinder has also been installed. This turbine, which also can be driven by fresh steam from boilers, drives a feed water pump (centrifugal) and an electric generator of 50 KW. Major part of this electric energy is intended for a new electric driven circulating pump.

A feed water heater of Götaverken's make Type No.16 has also been installed.

The centrifugal fan for forced draft has been altered to be electric driven by an electric motor of 12 - 15 BHP.

/Cont./

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In connection with the 50 KW generator, placed port side in the forward end of the engine room, a new main switchboard has been installed forward of same. This one is in connection with two other main switchboards placed starboard aft in the engine room. This new electric installation has been fitted on board in accordance with plans, approved the 5th July, 1938.

Certificate of the turbo compressor set is attached herewith. Certificates of the electric generator and electric motors will be forwarded within a few day's time from date.

Note:- The particulars of engines in column No.13 in the Register Book to be altered, viz:- T.3 Cy. 27", 38" & 75" - 51" (s) & Exhaust Turbine driving steam compressor.

S.R. List:-

The circulating pump with steam engine has been replaced by a new electric driven one as stated above. The insertion regarding circulating pump engine cylinder to be removed from the S.R. List.

*Folke Cassel.*



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