

All communications to be addressed
THE SURVEYORS.



Lloyd's Register of Shipping,

162, Trafford Road, Salford,

Manchester, *24 July 1918*

Your
Reference

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The Secretary

LONDON.

Sir.

In accordance with instructions contained in your letter of the 27th ultimo, the undersigned attended at the works of the British Westinghouse C. & M. Co. of Manchester and witnessed the steam trials of a 2500 shaft horse power marine turbine Latham Impulse type designed to run at 3,000 revolutions per minute with double reduction gear, main shaft to run at 70 revolutions per minute.

The turbine and gear with auxiliary machinery have been built under the survey of this Society to the order of the Moss Steamship Co. of Liverpool and are intended to be fitted on a vessel building

building by the north of Ireland
Shipbuilding Co. of Londonderry.

Designed and estimated conditions:-

Boiler pressure 180 lbs \square .

100°F Superheat.

Vacuum 28 $\frac{1}{2}$ " (barometer 30").

Steam consumption 10.5 lbs per S.H.P.

The power developed by the H.P. and L.P.
turbines was taken up by a D.C. electric
generator coupled direct to each
primary wheel shaft (main shaft
running free) and run at varying
speeds. Results:-

Steam pressure at strainer box	148.5 lbs \square	167.8 lbs \square
Temperature at stop valve	457°F	465°F
Superheat	92°F	90.8°F
Vacuum as shown	27.7"	27.142"
" with bar. 30"	27.5"	27.022"
Speed of turbine	2570 revs per min.	2850 revs per min.
" " propeller shaft	60. " " "	66.5 " " "
Output at generator	1704 S.H.P.	2310 S.H.P.
Steam consumption per hour	22109 lbs	28977 lbs
" " " S.H.P.	12.98 "	12.54 "
(reduced to estimated conditions)	11.34 "	10.845 "

The hot oil removed from the gear case was pumped through coolers to a tank 30/40 feet above the turbines and by gravitation supplied the bearings and gear wheels.

The surface condenser was supplied by cooling water by a Drysdale centrifugal pump and the condensed steam and vapour removed from the condenser by a Veir dual air pump.

The turbine and gear worked during four days for about 8 hours per day, comparatively free from vibration and only one main shaft bearing showed any sign of overheating, probably caused by oil pipe being choked.

The noise caused chiefly by the gear was, we think, not abnormal and may be less when the machine is secured to a more solid foundation and the load taken by the main shaft. Altogether the trials were considered

Considered Satisfactory and on
opening out the turbines and gear
for inspection everything appeared
to be in good order and the teeth of
gear wheels and pinions showed
a good bearing across the entire
surface.

We are, Sir.

Yours faithfully
John Dykes.

A. Campbell



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