

REPORT ON MACHINERY.

No. 4154

TUE 30 JUL 1918

Received at London Office

Writing Report 10 When handed in at Local Office 29 July 1918 Port of **MANCHESTER**
 Survey held at **MANCHESTER** Date, First Survey 7 June 1917 Last Survey 22 July 1918
 on the **STEAM TURBINES (RATEAU TYPE)** *25" Low Pressure* Number of Vessels *3* Gross *4215*
S.S. "ASSIOUT" Tons Net *2633*
 Built at *Londonderry* By whom built *Ward & Ireland & Co.* When built *1918*
 es made at *Manchester* By whom made *British Westinghouse & Co. Ltd.* when made *1918*
 made at *Paisley* By whom made *H. F. Craig & Co.* when made *1918*
 Horse Power *516 448 HP for fans* Owners *Moss Steamship Co.* Port belonging to *Liverpool*
 se Power at Full Power *2500* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

ENGINES, &c. Description of Engines **IMPULSE TURBINES** WITH DOUBLE REDUCTION GEAR No. of Turbines *1 HP & 1 LP*
 Rotor Shaft Journals, H.P. *4 1/2"* L.P. *4 1/2"* Diameter of Pinion Shaft *5 3/4"*
 Journals *PINION 5"* Distance between Centres of Bearings *2' 6"* Diameter of Pitch Circle *7' 4 3/4"*
 Wheel Shaft *INTERMEDIATE SHAFT 3 1/2"* Distance between Centres of Bearings *5' 0 1/2"* Diameter of Pitch Circle of Wheel *8' 9' 6 1/2"*
1' 8" Diameter of Thrust Shaft under Collars *15"* Diameter of Tunnel Shaft *as per rule 14"*
 Shafts *ONE* Diameter of same *as per rule 14' 7"* Diameter of Propeller *17' 6" 17' 3"* Pitch of Propeller *18' 9" 18' 0"*
4 State whether Moveable *No* *Yes* Total Surface *90 sq. ft.* Diameter of Rotor Drum, H.P. *as per rule* L.P. *as per rule*
 Bottom of Groove, H.P. *as per rule* L.P. *as per rule* Astern *as per rule* Revs. per Minute at Full Power, Turbine *3000* Propeller *70*

BLADES OF BLADING.

H.P.			L.P.			ASTERN.		
HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
<i>1 1/2" AND 1 3/4"</i>	<i>3' 2"</i>	<i>2</i>	<i>1 1/2"</i>	<i>3' 2"</i>	<i>1</i>	<i>1" AND 2 1/4"</i>	<i>3' 2"</i>	<i>2 in H.P. cylindrical</i>
<i>13/16"</i>	<i>3' 2"</i>	<i>1</i>	<i>2 1/16"</i>	<i>3' 2"</i>	<i>1</i>	<i>2"</i>	<i>3' 2"</i>	<i>1 - LP</i>
<i>1"</i>	<i>3' 2"</i>	<i>1</i>	<i>2 5/16"</i>	<i>3' 2"</i>	<i>1</i>	<i>4"</i>	<i>3' 2"</i>	<i>1 - LP</i>
<i>1 5/16"</i>	<i>3' 2"</i>	<i>1</i>	<i>4 3/16"</i>	<i>3' 2"</i>	<i>1</i>			
<i>1 1/8"</i>	<i>3' 2"</i>	<i>1</i>	<i>6 3/8"</i>	<i>3' 2"</i>	<i>1</i>			
			<i>8 1/4"</i>	<i>3' 2"</i>	<i>1</i>			
			<i>10 5/16"</i>	<i>3' 2"</i>	<i>1</i>			

of Feed pumps *Two - 10 1/2" x 8 1/2" x 21" (Independent)*
 of Bilge pumps *One off Lubricating gear 6 1/2" diam x 15" stroke, Ballast 9" x 11" x 10" General 8" x 6" x 8"*
 of Bilge suction in Engine Room *4 - 3 1/2"*
 In Holds, &c. *8 - 3 1/2"*

Injections *out* sizes *9"* Connected to condenser, or to circulating pump *Yes* Is a separate Donkey Suction fitted in Engine Room & size *2 in 3 1/2"*
 bilge suction pipes fitted with roses *Yes* Are the roses in Engine room always accessible *Yes*
 nections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Both*
 ed sufficiently high on the ship's side to be seen without lifting the stokehold plates *Yes* Are the Discharge Pipes above or below the deep water line *Below*
 ch fitted with a Discharge Valve always accessible on the plating of the vessel *Yes* Are the Blow Off Cocks fitted with a spigot and brass covering plate *Yes*
 are carried through the bunkers *Fore hold suction* How are they protected *Wood Casings*
 es, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*
 lge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges *Yes*
 w Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Top platform Engine Room*

RS, &c. (Letter for record) Manufacturers of Steel *La Glasgow Report N° 37779*
 ating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers
 Pressure Tested by hydraulic pressure to Date of test No. of Certificate
 oiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to
 Area of each valve Pressure to which they are adjusted Are they fitted with easing gear
 istance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates
 Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams
 Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps
 es of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell
 plates
 pensating ring No. and Description of Furnaces in each Boiler Material Outside diameter
 plain part top crown Description of longitudinal joint No. of strengthening rings
 bottom bottom
 pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
 lays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules End plates in steam space
 of stays Diameter at smallest part Area supported by each stay Working pressure by rules Material of stays
 Thickness Pitch of stays How are stays secured Working pressure by rules Material of Front plates at bottom
 at smallest part Area supported by each stay Working pressure by rules Working pressure of plate by rules
 Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
 er of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays
 cross wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and
 ss of girder at centre Length as per rule Distance apart Number and pitch of stays in each
 ng pressure by rules Steam dome: description of joint to shell % of strength of joint Diameter
 ss of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets
 ng pressure of shell by rules Crown plates: Thickness How stayed

0500-THM

See Manufacture Report C. 836, 12-1-18

SUPERHEATER. Type *Schmidt* Date of Approval of Plan

Tested by Hydraulic Pressure to 600

Date of Test 26-11-17

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve 1-2"

Pressure to which each is adjusted 187 lbs

Is Easing Gear fitted

IS A DONKEY BOILER FITTED? *Yes*If so, is a report now forwarded? *See Sheffield*

SPARE GEAR. State the articles supplied:—

Turbines - 2 bearing trasses, one thrust bearing
1 set brass strips for diaphragm & spindle glands, one oil pump (Roto pump).
2 Springs for relief valves, 57 condenser tubes and ferrules, centrifugal pump
and shaft. Dual air pump rod, piston rod, steam valve chest, valves &c.
Reduction gear, 2 high speed shaft bushes, one intermediate shaft bush, one low
bush, one high speed pinion complete, coupling keys.
Miscellaneous: bolts & nuts for all parts.
1 Eccentric pump impeller, 1 set pump & valves & pump rods.
1 set of feed & bills, 1 filter cage for oil, 2 filter baskets for
oil, 1 Back feed check, 1 set tunnel shaft
Spare gear for the 5% Condenser tubes, 100 Furnace trays, 1 Spare Rod oil pump

The foregoing is a correct description.

for The British Westphalia Electric Co. Manufacturer.

Turbines
 Dates of Survey while building
 During progress of work in shops -- 7-13-27 June 3rd Sept. 1-12-20 Oct. 25th Nov. 18th Dec. various other dates to 22 July 1918
 During erection on board vessel -- 1918: Jan 25 Feb 13, 27 March 28 April 22 May 6, 23, 28 Aug 6, 14, 21, Oct 9, 10
 Total No. of visits 20

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Casings 3/9-1-12-20/10-20/11/17 Rotors 1-20/10-20/11-19/12/17 Blading 1/10-20/10-18/12/17 Gearing 16/3-18

Rotor shaft 7-13-27/6/17, 20/11/17 Thrust shaft 16/3/18 Tunnel shafts 11-9-18 Screw shaft 12-10-17 Propeller 23-1

Stern tube 23-5-18 Steam pipes tested 14-8-18 Engine and boiler seatings 28-5-18 Engines holding down bolts 9-1

Completion of pumping arrangements 14-11-18 Boilers fixed 9-10-18 Engines tried under steam 13-1-18

Main boiler safety valves adjusted 13-1-18 Thickness of adjusting washers 8-12-32

Material and tensile strength of Rotor shaft *Super Steel 33.6 tons* Identification Mark on Do. *(L.R.)*

Material and tensile strength of Pinion shaft *Nickel steel 40 tons per sq. in. 23%* Identification Mark on Do. *(L.R.)*

Material of Wheel shaft *5% Nickel* Identification Mark on Do. *(J.P.)* Material of Thrust shaft *Forg. Steel* Identification Mark on Do.

Material of Tunnel shafts *W. Iron* Identification Marks on Do. *LLOYDS R.J.B. 11-9-18* Material of Screw shafts *W. Iron* Identification Marks on Do.

Material of Steam Pipes *W. Iron* Test pressure 540 lbs

Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F. *✓*

Have the requirements of Section 49 of the Rules been complied with *✓*

Is this machinery a duplicate of a previous case *No* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The steam turbines have been*

under Special Survey, the materials and workmanship so far

be seen and found and good and eligible in my opinion to

Classed with this Society with record of L.M.C.

Steam trials of the turbines and gear complete were carried out

Westinghouse Works, the results being satisfactory.

The machinery has now been shipped to Londonderry.

Double reduction gear made by the Power Plant Co. of West Dra

Mechanics, Belfast, was securely fitted on board, and satisfactorily tried under

in Lough Foyle. In my opinion it is eligible for record L.M.C., 18, provided

made for Main Thrust Block (Nickel) and the propeller

board at Liverpool, and the propeller

Sea-connections examined in the

Consequent upon the vessel touching

Lough Foyle on trial trip.

See Belfast Report No 8056

The amount of Entry Fee	When applied for,
1/6 of £45.60	from 10/11/18
Special 1/6	from 10/11/18
Donkey Boiler Fee	from 10/11/18
Travelling Expenses (if any)	from 10/11/18
Belfast Expenses	from 10/11/18
Committee's Minute	from 10/11/18

Assigned

FRI. 10. JAN. 1919

+ L.M.C. 11. 18.

S.D.

When received, 17. 1. 1919

Applied for 18-11-18

FRI. 14. FEB. 1919

MACHINERY CERTIFICATE

Lloyd's Register Foundation