

Pressure to  
the Boiler  
Gear fitted

# REPORT ON MACHINERY.

No. 4557  
MON APR 12 1920

Site of writing Report 1. 4. 1920. When handed in at Local Office 10. 4. 1920. Port of Manchester.  
Survey held at Manchester. Date, First Survey 20. 11. 19. Last Survey 29. 3. 1920.  
Reg. Book. (Number of Visits 14.)  
on the RATEAU STEAM TURBINES Nos 1727 & 1728.  
Built at PT Glasgow By whom built Lithgow & Co. Ltd. When built 1920.  
By whom made The Metropolitan Traction & Engineering Co. when made 1920.  
By whom made K. Rowan & Co. Ltd. when made 1920.  
Registered Horse Power Owners J. Brocklebank & Co. Ltd. Port belonging to  
Horse Power at Full Power Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

BINE ENGINES, &c.—Description of Engines RATEAU IMPULSE H.P. & L.P. No. of Turbines 2.

Size of Rotor Shaft Journals, H.P. 4 1/2" L.P. 4 1/2" Diameter of Pinion Shaft  
Distance between Centres of Bearings Diameter of Pitch Circle  
Distance between Centres of Bearings Diameter of Pitch Circle of Wheel  
Diameter of Thrust Shaft under Collars Diameter of Tunnel Shaft as per rule  
Diameter of same as fitted Diameter of Propeller Pitch of Propeller  
State whether Moveable Total Surface Diameter of Rotor Drum, H.P. L.P. Astern  
Revs. per Minute at Full Power, Turbine Propeller

## DETAILS 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.
EXPANSION	1 1/8"	3'-2 3/8" x 3'-4"	2	3 1/8"	3'-5 1/8"	1	H.P.	3'-3 1/2" x 3'-4 1/2"	2.
"	1 1/8"	3'-3 1/8"	1	3 7/8"	3'-5 7/8"	1	"	"	"
"	1 1/8"	3'-3 5/8"	1	4 3/4"	3'-6 3/4"	1	"	"	"
"	1 3/4"	3'-3 3/4"	1	5 1/2"	3'-7 1/2"	1	"	"	"
"	2 1/4"	3'-4 1/4"	1	6 3/8"	3'-8 3/8"	1	L.P.	3'-1 1/2" x 3'-3 7/8"	2.
"	"	"	"	8 1/4"	3'-10 1/4"	1	"	"	"
"	"	"	"	10 3/16"	4'-0 3/16"	1	"	"	"

Size of Feed pumps

Size of Bilge pumps

Size of Bilge suction in Engine Room

In Holds, &c.

Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size

Bilge suction pipes fitted with roses Are the roses in Engine room always accessible

Connections with the sea direct on the skin of the ship Are they Valves or Cocks

Pipes sized sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes above or below the deep water line

Each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

Pipes are carried through the bunks How are they protected

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Shaft Tunnel watertight Is it fitted with a watertight door worked from

RS, &c.—(Letter for record) Manufacturers of Steel

Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers

Pressure Tested by hydraulic pressure to Date of test No. of Certificate

Boiler 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

Distance between boilers or uptakes and bunks 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

Strength of longitudinal joint Working pressure of shell by rules Size of manhole in shell

Sensating ring No. and Description of Furnaces in each Boiler Material Outside diameter

Main part Thickness of plates Description of longitudinal joint No. of strengthening rings

Pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

Stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules

Stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space

Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays

Smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

Tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

Wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and

Order at centre Length as per rule Distance apart Number and pitch of stays in each

Pressure by rules Steam dome: description of joint to shell % of strength of joint Diameter

Shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets

Pressure of shell by rules Crown plates: Thickness How stayed

53-0023



SUPERHEATER. Type \_\_\_\_\_ Date of Approval of Plan \_\_\_\_\_ Tested by Hydraulic Pressure to \_\_\_\_\_  
Date of Test \_\_\_\_\_ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler \_\_\_\_\_  
Diameter of Safety Valve \_\_\_\_\_ Pressure to which each is adjusted \_\_\_\_\_ Is Easing Gear fitted \_\_\_\_\_

IS A DONKEY BOILER FITTED? \_\_\_\_\_ If so, is a report now forwarded? \_\_\_\_\_

SPARE GEAR. State the articles supplied:— One sealing gland box, one spare Thrust bearing, one set of bearing bushes for rotor, one escape valve spring for each size fitted, one complete spare governor lead, one set of coupling bolts for each size, for turbine couplings, 5 spare condenser tubes & packers, one set of spare tubes suitable for use with any of the three oil coolers, a quantity of assorted bolts & nuts.

The foregoing is a correct description,

METROPOLITAN-VICKERS ELECTRICAL CO. LTD.

Manufacturer.

Dates of Survey while building  
(During progress of work in shops --)  
(During erection on board vessel --)  
Total No. of visits

25<sup>th</sup> Nov 1919 various dates & 29<sup>th</sup> March 1920. Total visits

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Casings 25.11.19 Rotors 16.2.20. Blading 12.1.20. Gearing

Rotor shaft 31.12.18. Thrust shaft Tunnel shafts Screw shaft Propeller

Stern tube Steam pipes tested Engine and boiler seatings Engines holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Material and tensile strength of Rotor shafts 33.2 tons & 33.4 tons Identification Mark on Do. U455, U4

Material and tensile strength of Pinion shaft Identification Mark on Do.

Material of Wheel shaft Identification Mark on Do. Material of Thrust shaft Identification Mark on Do.

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.

Material of Steam Pipes Test pressure

Is an installation fitted for burning oil fuel 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 If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.) The steam turbines H.P. & L.P. have been built under survey and materials tested in accordance with the rules. The materials & workmanship, so far as can be seen are sound & good and eligible in my opinion to be classed with this Society with record L.M.C.

The amount of Entry Fee ... £ 12-12-9 When applied for, 10.4.1920  
Special ... £ : :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When received, 11.8.20

L. H. Kopp

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute

GLASGOW

29 SEP 1920

Assigned

See Glasgow Report N° 40400.

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