

REPORT ON MACHINERY

No. 4411

Received at London Office

4a. Date of writing Report 1-10-1919 When handed in at Local Office 1-10-1919 Port of Manchester
 Date, First Survey 10. May 18 Last Survey 14-8-1919
 No. in Survey held at Manchester (Number of Visits 20)
 Reg. Book. Gross 6537
 on the SS War Head Net 4020
 Master Built at Chepstow By whom built National Shipyard When built 1920
 Engines made at Manchester By whom made British Westinghouse Co. when made 1919.
 Boilers made at Huddersfield By whom made David Brown & Sons Ld. when made 1919.
 registered Horse Power Owners Port belonging to
 Shaft Horse Power at Full Power 2900 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

TURBINE ENGINES, &c.—Description of Engines H.P. & L.P. RATEAU TURBINES & DR. GEAR No. of Turbines 2
 Diameter of Rotor Shaft Journals, H.P. 4 1/2" L.P. 4 1/2" Diameter of Pinion Shaft 1 1/2" 4 1/2", 2 1/2" 9"
 Diameter of Journals 1 1/2" 4 1/2", 2 1/2" 9" Distance between Centres of Bearings 1 1/2" 27", 2 1/2" 46 1/2" Diameter of Pitch Circle 1 1/2" 6.302" 2 1/2" 13.379"
 Diameter of Wheel Shaft 1 1/2" 9", 2 1/2" 14 3/4" Distance between Centres of Bearings 1 1/2" 26", 2 1/2" 45 1/2" Diameter of Pitch Circle of Wheel 1 1/2" 49.656", 2 1/2" 76.765"
 Width of Face 1 1/2" 18", 2 1/2" 33 1/2" Diameter of Thrust Shaft under Collars 15" 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 3500 Propeller

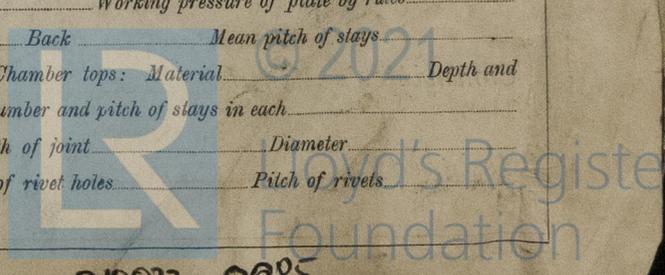
PARTICULARS OF BLADING.

	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.
WHEEL EXPANSION	5/8" x 1 1/8"	3'2 1/2" x 3'3 3/4"	2	1 3/8"	3'3 3/8"	1	H.P.		
"	1 1/16"	3'2 3/8"	1	1 7/8"	3'3 3/8"	1	1 7/16" x 2 1/4"	3'2 1/8" x 3'3 3/4"	2
"	1"	3'3"	1	2 1/2"	3'4 1/2"	1			
"	1 5/16"	3'2 5/16"	1	3 7/16"	3'5 1/8"	1	L.P.		
"	1 1/8"	3'3 1/8"	1	4 3/4"	3'6 3/4"	1	2 1/16"	3'4 1/16"	1
"				6 1/8"	3'8 1/8"	1	4"	3'6"	1
"				7"	3'9"	1			

and size of Feed pumps
 and size of Bilge pumps
 and size of Bilge suction in Engine Room
 In Holds, &c.

of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size
 all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible
 all connections with the sea direct on the skin of the ship Are they Valves or Cocks
 they fixed 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
 they 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
 at pipes are carried through the bunkers How are they protected
 all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
 the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges
 the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

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



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:— *for Turbines:— two bearing bushes for turbine Spindle four diaphragm packing rings, gland casing for spindles, one thrust shaft bearing, assorted bolts and nuts, assorted spanners and tools.*

for O.R. gear 2 bearing bushes for slow speed wheel shaft, 2 bearing bushes for slow speed pinion shaft, 2 bearing bushes for high speed wheel shaft, 2 bearing bushes for high speed pinion shaft. white metaling fixtures for bearing overhauling gear and assorted bolts & nuts. wear down gauges for turbine and gear.

The foregoing is a correct description, *Metropolitan Vickers Electrical Co Ltd*

formerly

THE BRITISH WESTINGHOUSE ELECTRIC & MFG. CO. LTD.

Manufacturer.

W. Mudge 20/9/19.

DAVID BROWN & SONS, (HUDDER) LTD.

W. St. Child

Director.

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

May 1918 to August 1919

20 visits

Is the approved plan of main boiler forwarded herewith? _____

Dates of Examination of principal parts—Casings *June 1918* Rotors *Aug. 1918* Blading *Sept 1918* Gearing *Nov 1918 to Dec 1918*

Rotor shaft *Aug 1918* 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 shaft *mild steel 33.2 and 33.5* Identification Mark on Do. *1662 and 1664*

Material and tensile strength of Pinion shaft *Nickel steel 48.56* Identification Mark on Do. *19*

Material of Wheel shaft *mild steel* Identification Mark on Do. *LLOYDS No 105* Material of Thrust shaft *mild steel* Identification Mark on Do. *108*

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. _____

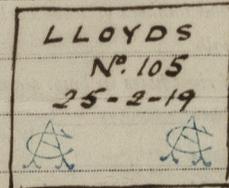
Have the requirements of Section 49 of the Rules been complied with _____

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

General Remarks (State quality of workmanship, opinions as to class, &c.) *These steam turbines and double*

reduction gear have been built under special survey and the materials used in accordance with the Rules of this Society. The materials and workmanship so far as could be seen are sound and good and eligible in my opinion to be classed with the record of the L.M.C.

mark on coupling of slow speed shaft



Machinery now fitted on S/S Sella

See War Head See Rpt No 19912

The amount of Entry Fee ... £ : : _____

Special ... £ *72 15-9* _____

Donkey Boiler Fee ... £ : : _____

Travelling Expenses (if any) £ : : _____

When applied for, _____

When received, _____

1/9/1920 from L. A. Campbell

Engineer Surveyor to Lloyd's Register of Shipping.

FRI. JUL. 30 1920

Committee's Minute

Assigned *See minute on Rpt. 19912*



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