

REPORT ON MACHINERY

No. 4869

Received at London Office THU 3 NOV 1921Date of writing Report 19 When handed in at Local Office 2nd Nov 1921 Port of MANCHESTERNo. in Survey held at Manchester Date, First Survey 18th March Last Survey 26th October 1921
Reg. Book. (Number of Visits 12)on the H.P. & L.P. TURBINE SPINDLES, WHEELS & BLADING. ENGS NOS 1866 & 1867 Gross
FOR SWAN HUNTER & WIGHAM RICHARDSON'S SHIP No 1130. Tons
NetMaster ROTOR PARTS Built at By whom built When builtEngines made at Manchester By whom made Metropolitan-Turner & Co. when made 1921

Boilers made at By whom made when made

Registered Horse Power 642 NHP Owners Port belonging toShaft Horse Power at Full Power 3200 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fittedTURBINE ENGINES, &c.—Description of Engines RATEAU IMPULSE H.P. & L.P. No. of Turbines TwoDiameter of Rotor Shaft Journals, H.P. 5" L.P. 5" Diameter of Pinion Shaft

Diameter of Journals Distance between Centres of Bearings Diameter of Pitch Circle

Diameter of Wheel Shaft Distance between Centres of Bearings Diameter of Pitch Circle of Wheel

Width of Face Diameter of Thrust Shaft under Collars Diameter of Tunnel Shaft as per rule as fitted

No. of Screw Shafts Diameter of same as per rule as fitted Diameter of Propeller Pitch of Propeller

No. of Blades State whether Moveable Total Surface Diameter of Rotor Drum, H.P. L.P. astern

Thickness at Bottom of Groove, H.P. L.P. Astern Revs. per Minute at Full Power, Turbine 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.
1ST EXPANSION	<u>7/16" x 1/16"</u>	<u>3'-2 1/16" x 3'-2 1/16"</u>	<u>2</u>	<u>1 5/16"</u>	<u>3'-3 3/16"</u>	<u>1</u>	<u>1" x 2/8"</u>	<u>3'-2 3/4" x 3'-3 3/8"</u>	<u>2 rows on</u>
2ND	<u>1/16"</u>	<u>3'-2 1/16"</u>	<u>1</u>	<u>1 3/16"</u>	<u>3'-3 3/16"</u>	<u>1</u>			<u>one wheel</u>
3RD	<u>7/8"</u>	<u>3'-2 7/8"</u>	<u>1</u>	<u>2 5/16"</u>	<u>3'-4 3/16"</u>	<u>1</u>			
4TH	<u>7/8"</u>	<u>3'-2 7/8"</u>	<u>1</u>	<u>4 3/16"</u>	<u>3'-6 3/16"</u>	<u>1</u>			
5TH	<u>1"</u>	<u>3'-3"</u>	<u>1</u>	<u>6 3/8"</u>	<u>3'-8 3/8"</u>	<u>1</u>			
6TH				<u>8 1/4"</u>	<u>3'-10 1/4"</u>	<u>1</u>	<u>2 1/2" x 5/8"</u>	<u>3'-0 1/2" x 3'-3 3/8"</u>	<u>2 wheels</u>
7TH				<u>10 3/16"</u>	<u>4'-0 3/16"</u>	<u>1</u>			<u>one row</u>
8TH									<u>on each</u>

No. and size of Feed pumps

No. and size of Bilge pumps

No. and size of Bilge suction in Engine Room

In Holds, &c.

No. of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size

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

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

Are 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

Are 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

What pipes are carried through the bunkers How are they protected

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

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

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

BOILERS, &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

Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to

each 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

long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps

Per centages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell

plates

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

Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings

bottom

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

Pitch 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

Pitch 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:— *One set (ten) pads for Turbine Thrust Block (Michell Type)*

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

1/2, 3/3, 8/4, 26/4, 7/7, 14/7, 31/8, 14/9, 22/9, 3/10, 10/10, 26/10 = 12 visits.

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Casings Rotors *3.10.21.* Blading *14.9.21.* Gearing

Rotor shaft *22.9.21.* 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 fired Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Material and tensile strength of Rotor shaft *Forged mild steel H.P. 38.5 T° L.P. 37.9 T°* Identification Mark on Do. *HP. U695 L.P. U682.*

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.) *These spindles, wheels & blading have been constructed under special survey and the materials tested in accordance with the Rules of the Society; the materials & workmanship so far as could be seen are sound & good. These spindles have been dispatched to Messrs Swan Hunter & Wigham Richardson, Newcastle, to be fitted into casings & the turbines completed by them. Job No. 1130.*

The amount of Entry Fee

Special

Donkey Boiler Fee

Travelling Expenses (if any)

When applied for,

19

When received,

3/2/22

Advised from Lom to Nwc (£90.0)

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 6 OCT. 1922

Assigned

See Nwc No. 75999



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