

# REPORT ON STEAM TURBINE MACHINERY

No. 75999

WED. OCT. 4 1922

Received at London Office

Date of writing Report **30. 9 1922** When handed in at Local Office **3. 10. 1922** Port of **NEWCASTLE-ON-TYNE**  
 No. in Survey held at **Reg. Book.** Date, First Survey **6 July 1921** Last Survey **29 Sept. 1922**  
 on the **STEEL SCREW STEAMER BRITISH GUNNER.** (Number of Visits **117**) S/S **1130**

Built at **WALKER ON TYNE** By whom built **SWAN HUNTER WIGHAM** Yard No. **1130** When built **1922**  
 Engines made at **WALKER** By whom made **S. H. WIGHAM RICHARDSON** Engine No. **1130** When made **1922**  
 Boilers made at **WALKER** By whom made **S. H. W. R. L.** Boiler No. **1130** When made **1922**  
 Shaft Horse Power at Full Power **3200** Owners **BRITISH TANKER CO. LD.** Port belonging to **LONDON**  
 Nom. Horse Power as per Rule **642** Is Refrigerating Machinery fitted for cargo purposes **NO** Is Electric Light fitted **YES**

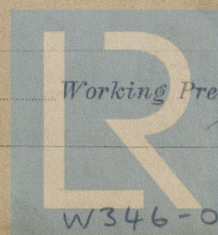
**H. P. ONE L. P. METROPOLITAN-VICKERS-RATEAU. IMPULSE TURBINES WITH DOUBLE REDUCTION GEARS**  
**TEAM TURBINE ENGINES, & C.**—Description of Engines **3 GEAR BOXES, FLOATING** No. of Turbines **2**  
**FRAME TYPE** Astern **2**

Direct coupled, single or double reduction geared to **ONE** propelling shaft. No. of primary pinions to each set of reduction gearing **2**, direct coupled to **plane**  
 periods per second, Alternating Current Generator rated **Kilowatts** Volts at **revolution per minute**; for supplying power for driving  
 Propelling Motors. Propelling Motors, Type **—**  
 Kilowatts Volts at **—** revolutions per minute. Direct coupled, single or double reduction geared to **—** propelling shafts.

PARTICULARS OF TURBINE BLADING. PLEASE SEE MANCHESTER REPORTS **4869-5007**

	H. P.			I. 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.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
EXPANSION												

Horse Power at each turbine **—** Revolutions per minute, at full power, of each Turbine Shaft **3120** 1st reduction wheel **491**  
 Shaft **73** Pitch Circle Diameter, 1st pinion **6.79411** 2nd pinion **11.64916** 1st reduction wheel **43.10012** main wheel **78.26779**  
 of Face, 1st reduction wheel **20°** main wheel **40°** Distance between centres of pinion and wheel faces and the centre of the adjacent bearings, **3 bearing shafts**  
 on **9 3/8** 2nd pinion **15 3/4** 1st reduction wheel **21** main wheel **2-11 1/2** Flexible Pinion Shafts, diameter 1st **3 1/8** 2nd **5 3/4**  
 Shafts, diameter at bearings External 1st **6** 2nd **10** diameter at bottom of teeth of pinion 1st **6.21751** 2nd **10.73736**  
 Internal 1st **3 7/16** 2nd **6** diameter at wheel shroud, 1st **3-3 3/4** main **6-1 3/8**  
 Shafts, diameter at bearings, 1st **10** main **19** diameter at wheel shroud, 1st **3-3 3/4** main **6-1 3/8**  
 Propelling Motor Shafts, diameter at bearings **—**  
 Shafting, diameter of Tunnel Shafting as per rule **14.1** as fitted **19** diameter of Thrust Shafting as per rule **14.81** as fitted **19 1/4**  
 of Screw Shaft as per rule **16.38** as fitted **17 3/8** Is the screw shaft fitted with a continuous liner the whole length of the stern tube **NO** Is the after end of the liner  
 tight in the propeller boss **YES** If the liner is in more than one length are the joints burned **—** If the liner does not fit tightly at the  
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive **—** If two liners are fitted, is the  
 lined or protected between the liners **—** Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently  
 ed **YES. WHITE METAL LINED BUSH** Length of Stern Bush **5-7** Diameter of Propeller **18-6**  
 of Propeller **17-6** No. of Blades **4** State whether Moveable **YES** Total Surface **103** square feet. If Single Screw, are  
 arrangements made so that steam can be led direct to the L.P. Turbine, and either the H.P. or I.P. Turbine can exhaust direct to the Condenser **YES**  
 of Turbines fitted with astern wheels **TWO. H.P. L.P.** Total number of power driven Main and Auxiliary Pumps **18**  
 and size of Feed Pumps **TWO. 10 1/2 x 8 x 21** How driven **WEIRS-STEAM** No. and size of Pumps connected to the Main Bilge Line **TWO. 6 x 6. BILGE MOTOR**  
 driven **1. ROTO - PLUNGER PUMP - 5 1/2 HP** No. and size of Ballast Pumps **ONE. 10 x 12 x 10 - STEAM** No. and size of Lubricating Oil Pumps, including  
 e Pump **1. STM. PUMP** Are two independent means arranged for circulating water through the Oil Cooler **YES** No. and size of suction  
 ed to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room **4 of 3 1/2 BORE.** and in Holds, &c. **3 1/2 in tri Hold**  
 and size of Main Water Circulating Pump Bilge Suctions **ONE. 11 BORE** No. and size of Donkey Pump Direct Suctions  
 Engine Room Bilges **ONE - 3 1/2 BORE** Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes **YES**  
 the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges **YES. AS PLAN**  
 all connections with the sea direct on the skin of the ship **YES.** Are they Valves or Cocks **BOTH.**  
 they fixed 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 **BOTH.**  
 they each 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**  
 pipes are carried through the bunkers **NONE.** How are they protected **—**  
 all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **YES**  
 arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one  
 ment to another **YES** Is the Screw Shaft Tunnel watertight **NONE** Is it fitted with a watertight door **—** worked from **—**  
**ERS, & C.**—(Letter for record **S**) Total Heating Surface of Boilers **8225** **MCHY. AFT**  
 forced Draft fitted **YES/OF** No. and Description of Boilers **3**



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Working Pressure **200 lb**Lloyd's Register  
Foundation

W346-0052

W596-0054



Is a Report on Main Boilers now forwarded? YES

Is a Donkey Boiler fitted? YES - ON DECK.

If so, is a report now forwarded? YES

Plans. Are approved plans forwarded herewith for Shafting NO

Main Boilers YES

Auxiliary Boilers

Donkey Boilers YES

(If not state date of approval)

Spare Gear. State the articles supplied 2 bolts on Studs and nuts for each size of Turbine or Gen Case bearing - one set of bolts

nuts for main shaft - 5% of total number of bolts, Studs, Nuts for each gear case or Turbine joint - 2 flanges for oil circulating system - 4 diaphragm gland rings - 1 sealing gland box - 1 set of pads for Turbine Thrust Blocks - 2 bearing bushes for Turbine Rotor. Low speed gear wheel and internal gear wheel respectively - 3 bearing bushes for H.S. Pinion shaft - 3 bearing bushes for L.S. Pinion shaft - one H.S. pinion with complete flexible coupling - one set of pads for main shaft - Michell Thrust block - one spare Tail shaft (no line) - 2 cast iron spare propeller blades - 24 Condenser Tubes - one shaft pin & spindle for motor driven feed pump - one shaft pin & spindle for motor driven circulating pump - half set of valves for steam driven feed pump - half set of valves for General service pump - one set of valves for lubricating oil pump - one bucket complete for lubricating oil pump - one escape valve for each size fitted - assorted, iron bolts nuts & plates and general Engine Room stores and tools - General spares for oil fuel installation -

The foregoing is a correct description,

SWAN, HUNTER & WICHAM RICHARDSON, LTD.

Manufacturer.

L. J. Sweet

During progress of work in shops - 1921 July 6, 13, 15, 20, 22, 26, 27 Aug. 4, 12, 18, 22, 23, 24 Sep. 15, 19, 22, 30 Oct. 3, 5, 10, 12, 14, 17, 20, 24 Nov. 1, 3, 4, 10, 11, 15, 17, 21, 23, 30 Dec. 1, 2, 7, 9, 12, 13, 14, 21, 22, 23 Jan. 4, 13, 17 1922 Feb. 2, 10, 14, 22 Mar. 2, 6, 8, 9, 15, 21, 23, 25 Apr. 4, 5, 7, 11, 12, 13, 20, 21, 24, 25 May 1, 9, 10, 12, 17, 18, 22, 30 June 5, 16, 27, 29 July 5, 6, 7, 10, 14, 17 1922 Aug. 2, 4, 28 Sep. 1, 2, 8, 9, 11, 15, 16, 21, 24, 25, 28, 31 Oct. 1, 5, 7, 8, 13, 15, 18, 19, 21, 29 Nov. 1, 2, 8, 9, 11, 15, 16, 21, 24, 25, 28, 31 Dec. 1, 2, 8, 9, 11, 15, 16, 21, 24, 25, 28, 31

Dates of Examination of principal parts - Casings 20.7.21 - 17.11.21 Rotors 20.4.22 Blading 20.4.22 Gearing 26.9.22

Wheel shaft 31.8.22 Thrust shaft 12.8.21 Tunnel shafts - - - - - Screw shaft 15.7.21 - 24/1/21 Propeller 22.7.21 - 4/8.21

Stern tube 13.7.21 15.9.21 Engine and boiler seatings 19.9.22 Engines holding down bolts 19.9.22

Completion of pumping arrangements 27.9.22 Boilers fired 19.9.22 Engines tried under steam 19.9.22 - 26.9.22

Main boiler safety valves adjusted 19.9.22 Thickness of adjusting washers FB. F 32 A 3/8. PTB 7 3/4 A 7/16. STB. F 7/16 A 1/2

Material and tensile strength of Rotor shaft Manchester Report Identification Mark on Do.

Material and tensile strength of Flexible Pinion Shaft Ingot Steel Identification Mark on Do.

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

Material and tensile strength of 1st Reduction Wheel Shaft Identification Mark on Do.

Material of Wheel shaft STEEL Identification Mark on Do. LLOYDS LGS 38530.218. 38530. MR. 224 12.8.21

Material of Tunnel shafts STEEL Identification Marks on Do. LLOYDS LGS 38530.218. 38530. MR. 224 12.8.21

Material of Steam Pipes steel/iron. Test pressure 600 lb Date of test 5.9.22, 1.5.22

Is an installation fitted for burning oil fuel YES. / UNDER F.D. MB Is the flash point of the oil to be used over 150° F. YES

Have the requirements of the Rules for carrying and burning oil fuel been complied with YES.

Is this machinery a duplicate of a previous case If so, state name of vessel SISTER VESSEL 9/1126 - S.H. - W.R.L. British Grenadier

General Remarks (State quality of workmanship, opinions as to class, etc.)

The Boilers and Machinery built under Special Survey. The material and workmanship found good and efficient - The Turbines and Boilers fitted up on board Satisfactorily - The Machinery Tested under Steam (Tried at morning) and found Satisfactory - The Auxiliary Machinery tested and found on foot in order as required (For particulars of Electrical Installation please see report to follow) - NOTE - The Turbine Casings, Condensers, Feed Heaters, Steamers, Pipes, Valves, etc. tested under Suitable hydraulic pressure as required - with Satisfactory results - The Machinery tried under Steam under working conditions at sea - and found Satisfactory - In my opinion this vessel is now eligible for the notation of + L.M.C. 9-22 to be made in the Register Book. F.D.

The amount of Entry Fee ... £ 6 : : : When applied for, 3/10/22. Special (Balance) ... £ 89 : 2 : : When received, 5-10-22 Donkey Boiler Fee ... £ : : : Travelling Expenses (if any) £ : : : L. G. Shallerross Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 6 OCT. 1922

Assigned + L.M.C. 9.22. S.D. O.G. 2 MACHINERY DEPTS Filled for oil fuel 9.22 S.P. also 150° F

