

## REPORT ON STEAM TURBINE MACHINERY. No. 92273

Received at London Office 28 FEB 1935

Date of writing Report

19

When handed in at Local Office

27.2.35 Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

Walker-on-Tyne

Date, First Survey 3<sup>rd</sup> Dec/34Last Survey 13<sup>th</sup> Feb 1935

Reg. Book.

(Number of Visits 15.)

on the Cas-pressure Bauer-Wach turbine for hull.

Tons } Gross

Net

Built at Hull

By whom built

Charles B. Holmes &amp; Co. Ltd. by

Yard No.

When built

Engines made at

Walker

By whom made

Swan Hunter &amp; Co. Ltd.

Engine No. 1440

When made

1935

Boilers made at

By whom made

Boiler No.

When made

Shaft Horse Power at Full Power 304

Owners

Port belonging to

Nom. Horse Power as per Rule 51

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Trade for which Vessel is intended

## STEAM TURBINE ENGINES, &amp;c.—Description of Engines One L. P. exhaust Bauer-Wach turbine,

No. of Turbines Ahead One Direct coupled, single reduction geared to one propelling shafts. No. of primary pinions to each set of reduction gearing one

direct/coupled to { Alternating Current Generator phase periods per second } rated Kilowatts Volts at revolutions per minute;

for supplying power for driving Propelling Motors, Type

rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

## TURBINE BLADING.

	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.
1ST EXPANSION							23 1/2"	396 1/4"	1			
2ND							36 "	418 "	1			
3RD							44 "	438 "	1			
4TH							54 "	458 "	1			
5TH							65 "	480 "	1			
6TH							75 "	500 "	1			
7TH							84 "	520 "	1			
8TH							100 "	550 "	1			
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. : I.P. : L.P. 304 } Revolutions per minute, at full power, of each Turbine Shaft { H.P. : I.P. : L.P. 4080 } 1st reduction wheel 415 main shaft 116

Rotor Shaft diameter at journals { H.P. : I.P. : L.P. 99.9 1/2" } Pitch Circle Diameter { 1st pinion 111.985 1/2" 2nd pinion 201.342" } 1st reduction wheel 1101.185 1/2" main wheel 1191.427 1/2" 1st reduction wheel 110 3/4" main wheel 340 3/4"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 112 3/4" 2nd pinion 268 1/2" } 1st reduction wheel 196 1/2" 8.4 1/2" 2nd reduction wheel 245 1/2" 8.250 1/2"

Flexible Pinion Shafts, diameter { 1st : 2nd } Pinion Shafts, diameter at bearings { External : Internal } 1st : 2nd { 99.9 1/2" : 20 3/4" } 1st : 2nd { 180 3/4" : 109.94 1/2" } 1st : 2nd { 109.94 1/2" : 94.64 1/2" }

Wheel Shafts, diameter at bearings { 1st : 2nd } { 200 3/4" : 220 3/4" as approved } { 1st : 2nd } { 1080 3/4" : 1084 3/4" } Generator Shaft, diameter at bearings { 1st : 2nd } { 1080 3/4" : 1084 3/4" } Propelling Motor Shaft, diameter at bearings { 1st : 2nd } { 1080 3/4" : 1084 3/4" }

Intermediate Shafts, diameter { as per rule : as fitted } { 220 3/4" : 220 3/4" } Thrust Shaft, diameter at collars { as per rule : as fitted } { 220 3/4" : 220 3/4" } Tube Shaft, diameter { as per rule : as fitted }

Screw Shaft, diameter { as per rule : as fitted } { 220 3/4" : 220 3/4" } Is the { tube : screw } shaft fitted with a continuous liner { Yes : No } Bronze Liners, thickness in way of bushes { as per rule : as fitted }

Thickness between bushes { as per rule : as fitted } Is the after end of the liner made watertight in the propeller boss { Yes : No } If the liner is in more than one length are the junctions

made by fusion through the whole thickness of the liner { Yes : No } If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive { Yes : No } If two liners are fitted, is the shaft lapped or protected between the liners { Yes : No } Is an approved Oil Gland

or other appliance fitted at the after end of the tube shaft { Yes : No } Length of Bearing in Stern Bush next to and supporting propeller { as per rule : as fitted }

Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface square feet. Can the H.P. or L.P. Turbine exhaust direct to the

If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine { Yes : No } Condenser No. of Turbines fitted with astern wheels Feed Pumps { No. and size : How driven }

Pumps connected to the Main Bilge Line { No. and size : How driven } Lubricating Oil Pumps, including Spare Pump, No. and size

Ballast Pumps, No. and size Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Engine and Boiler Room In Holds, &amp;c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room

Bilges, No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes

Are 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

Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

Are they fired sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Overboard Discharges 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 pass through the bunkers How are they protected

What pipes pass through the deep tanks Have they been tested as per rule

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

Is the 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 compartment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from



BOILERS, &c.—(Letter for record ) Total Heating Surface of Boilers

Is Forced Draft fitted No. and Description of Boilers Working Pressure

Is a Report on Main Boilers now forwarded?

Is { a Donkey } Boiler fitted?  
{ an Auxiliary }

If so, is a report now forwarded?

Plans. Are approved plans forwarded herewith for Shafting  
(If not state date of approval)

Main Boilers

Auxiliary Boilers

Donkey Boilers

Superheaters

General Pumping Arrangements

Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:—

2 studs + nuts each for turbine + pinion bearings. 2 Tap bolts for 2<sup>nd</sup> reduction wheel bearings. 2 bolts + nuts for gear case top joint. 2 studs + nuts for gear case middle joint. 14 kiesel pads for main thrust + 10 for turbine thrust also 2 rings for 2<sup>nd</sup> reduction pinion thrust. Spring + oil-washers for governor.

The foregoing is a correct description,

For SWAN, HENDER, & WILKINSON Limited  
Geo H Wright, Manufacturer

Dates of Survey while building { During progress of work in shops -- } 1934 Dec. 3. 7. 10. 14. 20. 28. { During erection on board vessel --- } 1935 Jan. 3. 11. 14. 16. 22. 23. 28. Feb. 4. 13.  
Total No. of visits 15

Dates of Examination of principal parts—Casings 13. 2. 35 Rotors 16. 1. 35 Blading 16. 1. 35 Gearing 22. 1. 35

Wheel shaft 14. 1. 35 Thrust shaft Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings Engine holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength Steel 37.9 tons Identification Mark 463 AC

Pinion shaft, Material and tensile strength Steel 43.8 kiesel Identification Mark 470 AC

2<sup>nd</sup> Red. wheel shaft Pinion shaft, Material and tensile strength Steel 32.8 Pinion 44.9 Identification Mark 466 AC 4602 JG

1st Reduction Wheel shaft, Material and tensile strength Steel 34.8 Identification Mark 10864 MB

Wheel shaft, Material and Identification Mark - Thrust shaft, Material Steel Identification Mark

Intermediate shafts, Material Identification Marks Tube shaft, Material Identification Marks

Screw shaft, Material Identification Marks Steam Pipes, Material Test pressure

Date of test 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 the Rules for the use of oil as fuel been complied with

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo If so, have the requirements of the Rules been complied with

Is this machinery a duplicate of a previous case for If so, state name of vessel 1454 "Kingston Cornelian" also 1468

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

This machinery has been constructed under special survey in accordance with the rules + approved plans, examined under steam on test bed + found satisfactory. The materials + workmanship are good. The machinery is being forwarded to Hull to be installed in conjunction with reciprocating machinery.

The amount of Entry Fee ... £ : When applied for, 27 FEB 1935 For J. A. Ferguson T. J. Hoddart  
Special 2/3 ... £ 3 : 8  
Donkey Boiler Fee ... £ :  
Travelling Expenses (if any) £ : When received, 14. 3. 1935 to Hull Ld.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 19 MAR 1935

Assigned See Hull J.E. 45380



© 2020

Lloyd's Register Foundation