

REPORT ON STEAM TURBINE MACHINERY. No. 86078

Received at London Office 15 AUG 1930

NEWCASTLE-ON-TYNE

Date of writing Report 14/8/30 When handed in at Local Office 14/8/30 Port of NEWCASTLE-ON-TYNE
 No. in Survey held at Walker Date, First Survey 28 Oct/28 Last Survey 9 Aug. 1930
 Reg. Book. 1641 on the S. P. Bauer - Wash Turbine for the S. S. S. Port "Brisbane" Tons } Gross }
 } Net }
 Built at Belfast By whom built Workman Clark & Co Yard No. - When built 1923-19
 Engines made at do By whom made do Engine No. - When made do
 Boilers made at Walker By whom made Swan Hunter & W. R. Sims & Co No. 1310 When made 1930
 Shaft Horse Power at Full Power 2060 Owners Commonwealth & Dan Line Co Port belonging to Cardiff
 Nom. Horse Power as per Rule 1944 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
 Trade for which Vessel is intended Meat & Fruit Trade.

STEAM TURBINE ENGINES, &c.—Description of Engines. Two S. P. Bauer - Wash Turbines.

No. of Turbines Ahead 1 Pt. 1 St. Direct coupled, single reduction geared } to Two propelling shafts. No. of primary pinions to each set of reduction gearing One
 Astern - double reduction geared }
 Direct coupled to Alternating Current Generator phase periods per second } Direct Current Generator } rated Kilowatts Volts at revolutions per minute;
 for supplying power for driving Propelling Motors, Type
 Direct coupled, single or double reduction geared to propelling shafts.

TURBINE LOADING.	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.
T EXPANSION							40" M.	890" M.	1			
D							93 "	936 "	1			
D							114 "	984 "	1			
H							142 "	1034 "	1			
H							142 "	1090 "	1			
H							200 "	1150 "	1			
H												
H												
H												
H												
H												
H												
H												

Shaft Horse Power at each turbine { H.P. - } 1st reduction wheel 552
 { I.P. - } main shaft 91.5
 { L.P. 1182 }
 Motor Shaft diameter at journals { H.P. - } Pitch Circle Diameter { 1st pinion 2309", 1st reduction wheel 198.4", Width of Face { 1st reduction wheel 250" M.,
 { I.P. - } { 2nd pinion 345.4", main wheel 2166.4" } { main wheel 530" M.,
 { L.P. 140" M. } { 1st pinion 235.368" M., 1st reduction wheel 260.1480" M.,
 { 2nd pinion 410" M., main wheel 530" M.,

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 140" M., 340" M., diameter at bottom of pinion teeth { 1st 216.3" M.,
 { 2nd 285" M., } { 2nd 360.8" M.,

Pinion Shafts, diameter at bearings { 1st 190" M., } diameter at wheel shroud, { 1st 1421" M., Generator Shaft, diameter at bearings -
 { 2nd - } { main 2049" M., Propelling Motor Shaft, diameter at bearings -
 Wheel Shafts, diameter at bearings { 1st 260" M., }
 Intermediate Shafts, diameter as per rule 12.46" Thrust Shaft, diameter at collars as per rule 13.6" Tube Shaft, diameter as per rule -
 as fitted 12.718" as fitted 35.0" as fitted -

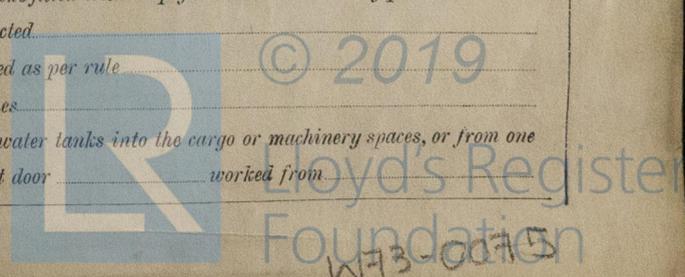
Propeller Shaft, diameter as per rule - Is the tube screw shaft fitted with a continuous liner { Bronze Liners, thickness in way of bushes as per rule
 as fitted - Is the after end of the liner made watertight in the propeller boss - If the liner is in more than one length are the junctions
 made by fusion through the whole thickness of the liner - 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 - If two liners are fitted, is the shaft lapped or protected between the liners - Is an approved Oil Gland
 or other appliance fitted at the after end of the tube shaft - Length of Bearing in Stern Bush next to and supporting propeller.

Propeller, diameter Pitch No. of Blades State whether Movable Total Developed Surface square feet.
 If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or I.P. Turbine exhaust direct to the
 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 }
 Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, 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, &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 fixed 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



W73 00715

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?
Is an Auxiliary Boiler fitted?

If so, is report now forwarded?

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

Main Boilers

Auxiliary Boilers

Donkey Boilers

Superheaters

Central Pumping Arrangements

Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:—

as per Society's Rules and attached list.

FOR SWAN, HUNTER & WIG

The foregoing is a correct description,

Dates of Survey while building	1928			1929			1930		
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
During progress of work in shops --	23, 30	22	6	22, 30	11	10	19	8, 11, 13, 14, 25	
During erection on board vessel ---	1, 2, 4, 7, 9, 14, 25, 28	5, 8, 12, 18, 21		17		15, 20, 22, 27, 29		11, 17	
Total No. of visits	55								

Dates of Examination of principal parts—Casings 20.8.29, Rotors 18.11.29, Blading 18.11.29, Gear 18.11.29
 Wheel shaft 12.11.29, Thrust shaft 12.11.29, Intermediate shafts —, Tube shaft —, Screw shaft —
 Propeller —, Stern tube —, TURBINE Engine and boiler seatings 16.6.30, Engine holding down bolts 3.
 Completion of pumping arrangements —, Boilers fixed —, Engines tried under steam 8.8.30
 Main boiler safety valves adjusted —, Thickness of adjusting washers —

Part	Material	Identification Mark
Rotor shaft, Material and tensile strength	Steel (As per attached Rpt.)	59120 8.2.29 18.11.29
Flexible Pinion Shaft, Material and tensile strength	Steel	"
Pinion shaft, Material and tensile strength	Steel	"
Keyed Coupling	Steel	"
Reduction Wheel Shaft, Material and tensile strength	Steel	"
Wheel shaft, Material	Steel	59120 12.11.29 8.2.29
Thrust shaft, Material	Steel	"
Intermediate shafts, Material	Steel	"
Tube shaft, Material	Steel	"
Screw shaft, Material	Steel	"
Steam Pipes, Material	Steel	"

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? **yes** If so, state name of vessel: **Pat Campbell.**

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Machinery has been built under special survey in accordance with the approved plans & the Rules of the Society & has been securely fitted on board the vessel, tried under full working conditions & found satisfactory. The turbines have been built to work in conjunction with the existing reciprocating engines. The workmanship & materials are of good quality throughout.*

The amount of Entry Fee	£	When applied for, 14 AUG 1930
Special	£ 34 : 6	
Donkey Boiler Fee	£	When received, 19-8-30
Travelling Expenses (if any)	£	

Geo. A. Ferguson
 Engineer Surveyor to Lloyd's Register of Shipping.

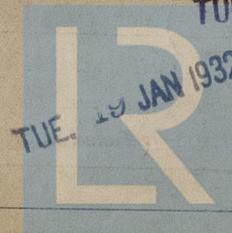
Committee's Minute

FRI. 29 AUG 1930

TUE. 8 DEC 1931

TUE. 18 OCT 1932

Assigned



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Certificates (if required) to be sent to...
 The Surveyors are requested not to write on below the space for Committee's Minute.