

# REPORT ON STEAM TURBINE MACHINERY.

No. 103090  
18 JUN 1936

pt. 4a.

Date of writing Report 12<sup>th</sup> June 1936 When handed in at Local Office 18 JUN 1936 Port of London Received at London Office

No. in Survey held at West Alrayton Date, First Survey 5 February 1936 Last Survey 9<sup>th</sup> June 1936  
Reg. Book. on the Reduction Gearing for.

Built at Sunderland By whom built J. S. Thompson & Sons Yard No. 574 When built 1936  
Engines made at Hebburn Type By whom made Whites Marine Eng Co Engine No. 5C When made 1936  
Boilers made at By whom made Boiler No. When made  
Shaft Horse Power at Full Power 1800 Owners The Queen's Shipping Co Ltd Port belonging to Newport  
Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
Trade for which Vessel is intended

Tons } Gross 4312  
Net 2604  
When built 1936

## STEAM TURBINE ENGINES, &c.—Description of Engines RECIPROCATING & TURBINE COMBINATION

No. of Turbines Ahead 1 Direct coupled, single reduction geared } to one propelling shafts. No. of primary pinions to each set of reduction gearing RECIPI UNIT 1  
Astern 1 double reduction geared } TURBINE UNIT 1  
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												
2ND												
3RD												
4TH												
5TH												
6TH												
7TH												
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine RECIP ENGINE 1000 MAX. TURBINE 800 MAX. Revolutions per minute, at full power, of each Turbine Shaft RECIP ENGINE H.P. 305 1st reduction wheel 400  
TURBINE I.P. 3446 main shaft 61

Rotor Shaft diameter at journals H.P. Pitch Circle Diameter 1st pinion 6" 1st reduction wheel Width of Face 1st reduction wheel 16"  
I.P. 2nd pinion 11.666" main wheel 75.333" main wheel 30"  
L.P. RECIP ENG. PINION 15" 1st pinion 12" 1st reduction wheel 12"  
2nd pinion 1'-10" main wheel 1'-10"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 4 1/2" 8 3/4" diameter at bottom of pinion teeth  
2nd pinion 10 1/2" 5" diameter at bottom of pinion teeth  
Flexible Pinion Shafts, diameter RECIP ENG 5 1/4" Pinion Shafts, diameter at bearings External 1st 4 1/2" 8 3/4" diameter at bottom of pinion teeth  
TURBINE 4 3/4" Internal 1st 10 1/2" 5" diameter at bottom of pinion teeth  
2nd 10.933"  
Wheel Shafts, diameter at bearings 1st 8 3/4" diameter at wheel shroud, 1st 10 1/2" RECIP ENG. 8 3/4" EXT 5 1/4" BORE Generator Shaft, diameter at bearings RECIP ENG 14.26  
main 13 1/4" Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule Thrust Shaft, diameter at collars as per rule  
as fitted Tube Shaft, diameter as per rule Screw Shaft, diameter as per rule  
as fitted Is the tube shaft fitted with a continuous liner  
Bronze Liners, thickness in way of bushes as per rule Thickness between bushes as per rule 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 If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, diameter Pitch No. of Blades State whether Moveable 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 Pump 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 tight 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

*Report is for gearing only*

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  an Auxiliary Boiler fitted?

If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only

Plans. Are approved plans forwarded herewith for Shafting  Main Boilers  Auxiliary Boilers  Donkey Boilers   
(If not state date of approval) *Approved 16.12.35*

Superheaters  General Pumping Arrangements  Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied \_\_\_\_\_

State the principal additional spare gear supplied \_\_\_\_\_

The foregoing is a correct description, OF GEARING

*R. E. Hughes* Manufacturer.

Dates of Survey while building: During progress of work in shops -- *1936 Feb 5. 18. 26 Mar 5. 16. 23. 30 Apr. 9. 16. 22. 25. 28. May 11. 21. 25 June 9.*  
During erection on board vessel --  
Total No. of visits *16*

Dates of Examination of principal parts—Casings  Rotors  Blading  Gearing *25.5.36*

Wheel shaft *25.5.36* Thrust shaft  Intermediate shafts  Tube shaft  Screw shaft

Propeller  Stern tube  Engine and boiler seatings  Engine holding down bolts

Completion of fitting sea connections  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

Flexible Pinion Shaft, Material and tensile strength *Steel 55665 lons*

Identification Mark *TURBINE 241 AE 25.5.36* *RECIP ENG 273 AE 25.5.36*

Pinion shafts Material and tensile strength *Steel TURBINE 58.4T RECIP ENG 47.6T*

Identification Mark *TURBINE 241 AE 25.5.36* *RECIP ENG 273 AE 25.5.36*

1st Reduction Wheel Shaft, Material and tensile strength *Steel 29.6T*

Identification Mark *TURBINE 241 AE 25.5.36* *RECIP ENG 273 AE 25.5.36*

Wheel shaft, Material *Steel* Identification Mark *Lloyds 241 AE 25.5.36* Thrust shaft, Material

Identification Mark *Lloyds 273 AE 25.5.36*

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

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with

Is this machinery a duplicate of a previous case *Yes* If so, state name of vessel *J. L. Thompson YON No 573*

General Remarks (State quality of workmanship, opinions as to class, &c.) *Whites Charing Eng Co No 4 C*

*This gearing has been constructed under special survey in accordance with approved plans and Rule requirements. The materials have been made at works approved by the Society and tested in accordance with rules, the workmanship is good. Eligible in my opinion for service in a classed vessel having notation of +LMC with date when satisfactorily installed under survey and tried under working conditions.*

The amount of Entry Fee ... £ *0* : *0* : *0* When applied for, *To be collected at Newcastle*

Special ... £ : : : *See Newcastle*

Donkey Boiler Fee ... £ : : : *When received, Receipt*

Travelling Expenses (if any) £ *5* : *5* : *0*

*W. Ewing*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 28 AUG 1936*

Assigned *See Ill. J.E. 31892*



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