

REPORT ON STEAM TURBINE MACHINERY. No. 105405

Received at London Office 9 JUL 1948

Date of writing Report 10 When handed in at Local Office 2 JUL 1948 Port of **NEWCASTLE-ON-TYNE**

No. in Survey held at **South Shields** Date First Survey 11/5/48 Last Survey 17/6/48 19

Reg. Book. **37918** on the **Turbo Electric 'TURBINELLUS'** (Number of Visits 20) Tons Gross **10640** Net **6302**

Built at **Portland Oregon** By whom built **Kaiser Co. Inc** Yard No. **110** When built **1944**

Engines made at **Shenectady** By whom made **General Electric Co** Engine No. **S 70624** When made **1944**

Boilers made at **New York** By whom made **Combustion Eng. Co. NY.** Boiler No. **S 11957** When made **1944**

Shaft Horse Power at Full Power **NW 525** Owners **Anglo Saxon Petroleum Co. Ltd.** Port belonging to **London**

Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**

Trade for which Vessel is intended **Petroleum in Bulk**

TEAM TURBINE ENGINES, &c.—Description of Engines **Two single reduction gear impulse turbines**

No. of Turbines Ahead **One** Direct coupled, single reduction geared **Generators** No. of primary pinions to each set of reduction gearing **One**

Astern **One** Double reduction geared **Also 2 motor 1-75 H.P. 1-50 KW.**

Direct coupled to Alternating Current Generator **3** phase **60** periods per second Direct Current Generator } rated **400** Kilowatts **450** Volts at **1200** 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 LADING.	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	2 1/2"	25 3/8"	1									
2ND	1 3/8"	26"	1									
3RD	1 1/2"	25 7/8"	1									
4TH	1"	26 1/4"	1									
5TH	1 3/8"	25 3/8"	1									
6TH	2 1/4"	26 5/8"	1									
7TH												
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. **700** I.P. **5645** L.P. **1200** } Revolutions per minute, at full power, of each Turbine Shaft

Rotor Shaft diameter at journals { H.P. **2 1/2"** I.P. **4 1/2"** L.P. **4 1/2"** } Pitch Circle Diameter { 1st pinion **5.43"** 1st reduction wheel **25.56** 2nd pinion **6 5/8"** main wheel **6 5/8"** } Width of Face { 1st reduction wheel **8 1/4"** main wheel **8 1/4"** }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion **6 5/8"** 1st reduction wheel **6 5/8"** 2nd pinion **6 5/8"** main wheel **6 5/8"** }

Flexible Pinion Shafts, diameter { 1st **4"** 2nd **4"** } Pinion Shafts, diameter at bearings { External 1st **4"** 2nd **4"** Internal 1st **4"** 2nd **4"** } diameter at bottom of pinion teeth { 1st **5 1/2"** 2nd **4"** }

Wheel Shafts, diameter at bearings { 1st **4"** main **4"** } diameter at wheel shroud, { 1st **4"** main **4"** } Generator Shaft, diameter at bearings **4"** Propelling Motor Shaft, diameter at bearings **4"**

Intermediate Shafts, diameter as per rule **4"** as fitted **4"** Thrust Shaft, diameter at collars as per rule **4"** as fitted **4"**

Tube Shaft, diameter as per rule **4"** as fitted **4"** Screw Shaft, diameter as per rule **4"** as fitted **4"** Is the { tube screw } shaft fitted with a continuous liner

Bronze Liners, thickness in way of bushes as per rule **1/8"** as fitted **1/8"** Thickness between bushes as per rule **1/8"** as fitted **1/8"** 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 **Oil Gland** Length of Bearing in Stern Bush next to and supporting propeller **12"**

Propeller, diameter **48"** Pitch **20"** No. of Blades **4** State whether Movable Total Developed Surface **100** 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

Condenser No. of Turbines fitted with astern wheels **2** Feed Pumps { No. and size **2** How driven **Electric** }

Pumps connected to the Main Bilge Line { No. and size **2** How driven **Electric** }

Ballast Pumps, No. and size **2** Lubricating Oil Pumps, including Spare Pump, No. and size **2**

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 **2** In Pump Room **2**

Holds, &c. **2**

Main Water Circulating Pump Direct Bilge Suctions, No. and size **2** Independent Power Pump Direct Suctions to the Engine Room **2**

Bilges, No. and size **2** 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

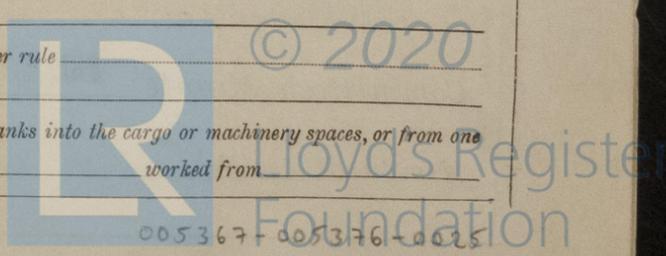
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes pass through the bunks 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 **Engine Room**



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? 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

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,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } { During erection on board vessel --- } Total No. of visits

Dates of Examination of principal parts—Casings Rotors Blading Gearing

Wheel shaft 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 Identification Mark

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength Identification Mark

1st Reduction Wheel Shaft, Material and tensile strength Identification Mark

Wheel shaft, Material Identification Mark Thrust shaft, Material 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

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 If so, state name of vessel

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

These machines have been constructed under the supervision of the U.S. Coast Guard and the American Bureau of Shipping. The workmanship is good and the materials considered sound. Examined under working conditions and found satisfactory.

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

Table with columns for fee types (Entry Fee, Special, Donkey Boiler Fee, Travelling Expenses) and amounts (£).

Chas. White, Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 13 AUG 1948

Assigned See F.E. mshy. rpt.



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