Rpt. 4a.

REPORT ON STEAM TURBINE MACHINERY. No. 105405

Received at London Office 9 JUL 1948

Date of writing Report ____ 19__ When handed in at Local Office 2 JUL 1948 19__ Port of NEWCASTLE-ON-TYNE

No. in Reg. Book. 37918 Survey held at South Shields Date, First Survey 11/5/48 Last Survey 17/6/48 19__ (Number of Visits 28)

on the Turbo Electric 'TURBINELLUS' Tons Gross 10640 Net 6302

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

Engines made at Schenectady N.Y. By whom made General Electric Co. Engine No. 68251 P 11959 When made 1944

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

Shaft Horse Power at Full Power 6600 Owners Anglo Saxon Petroleum Co. Ltd Port belonging to London

Nom. Horse Power as per Rule 1485 = 1396 MN Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which Vessel is intended Petroleum in Bulk.

STEAM TURBINE ENGINES, &c.—Description of Engines Turbo Electric.

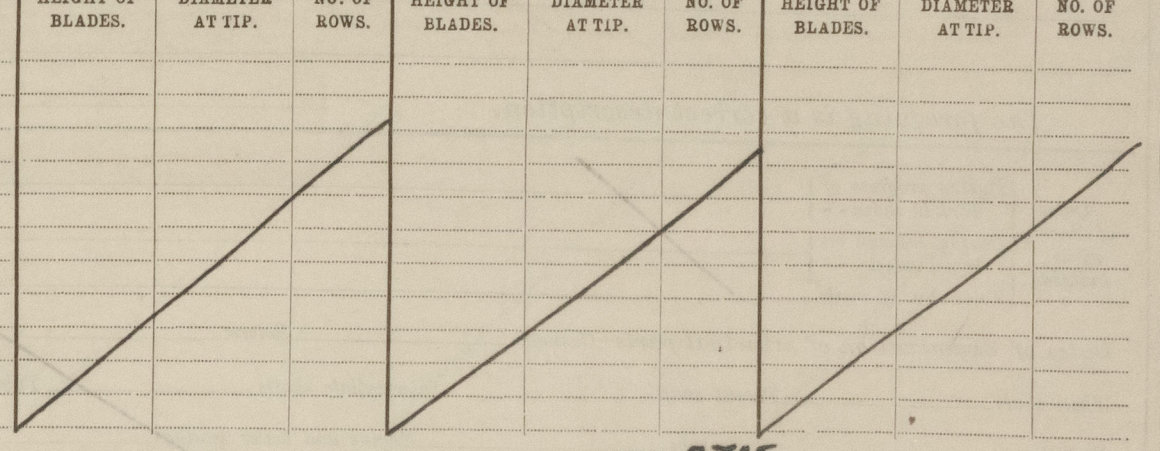
No. of Turbines Ahead One Astern ✓ ~~Direct coupled. single reduction geared double reduction geared~~ to ✓ propelling shafts. No. of primary pinions to each set of reduction gearing ✓

Direct coupled to { Alternating Current Generator 3 phase 62 periods per second / ~~Direct Current Generator~~ } rated 5400 Kilowatts 2370 Volts at 3715 revolutions per minute;

for supplying power for driving One Propelling Motor, Type Marine Synchronous.

rated 5400 Kilowatts 2370 Volts at 93 revolutions per minute. Direct coupled, ~~single or double reduction geared~~ to One propelling shaft.

TURBINE LADING.	H.P. HEIGHT OF BLADES	H.P. DIAMETER AT TIP.	H.P. NO. OF ROWS.	I.P. HEIGHT OF BLADES	I.P. DIAMETER AT TIP.	I.P. NO. OF ROWS.	L.P. HEIGHT OF BLADES	L.P. DIAMETER AT TIP.	L.P. NO. OF ROWS.	ASTERN. HEIGHT OF BLADES	ASTERN. DIAMETER AT TIP.	ASTERN. NO. OF ROWS.
1ST EXPANSION	13/16"	33 7/8"	2									
2ND "	1"	33 1/8"	1									
3RD "	1 3/16"	34 1/4"	1									
4TH "	1 9/16"	35 1/4"	1									
5TH "	15/16"	42 1/2"	1									
6TH "	1 5/16"	43 1/4"	1									
7TH "	2 1/16"	44 3/4"	1									
8TH "	3 5/16"	47 1/4"	1									
9TH "	5 3/8"	50 1/2"	1									
10TH "	9"	56 5/16"	1									
11TH "												
12TH "												



Shaft Horse Power at ~~each~~ turbine { H.P. 6600 / I.P. ✓ / L.P. ✓ } **Revolutions** per minute, at full power, of ~~each~~ Turbine Shaft { H.P. 3715 ✓ / I.P. ✓ / L.P. ✓ } 1st reduction wheel ✓ main shaft 93

Rotor Shaft diameter at journals { H.P. ✓ / I.P. ✓ / L.P. ✓ } **Pitch Circle Diameter** { 1st pinion ✓ 1st reduction wheel ✓ / 2nd pinion ✓ main wheel ✓ } **Width of Face** { 1st reduction wheel ✓ / main wheel ✓ }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion ✓ 1st reduction wheel ✓ / 2nd pinion ✓ main wheel ✓ }

Ecd 9/8/48

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

Wheel Shafts, diameter at bearings { 1st ✓ / main ✓ } diameter at wheel shroud, { 1st ✓ / main ✓ } **Generator Shaft,** diameter at bearings ✓ **Propelling Motor Shaft,** diameter at bearings Aft 10·25" Fwd 17·25"

Intermediate Shafts, diameter as per rule 16·56" as fitted 16·875" ✓ **Thrust Shaft,** diameter at collars as per rule 17·39" as fitted 17·5" at coupling 18 at collars ✓

Tube Shaft, diameter as per rule ✓ as fitted ✓ **Screw Shaft,** diameter as per rule 18·185" as fitted 18·625" ✓ Is the ~~tube~~ screw shaft fitted with a continuous liner Yes ✓

Bronze Liners, thickness in way of bushes as per rule 0·85" as fitted 1·125" ✓ Thickness between bushes as per rule 0·643 as fitted 1·0" ✓ Is the after end of the liner made watertight in the propeller boss Yes 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 No If so, state type ✓ Length of Bearing in **Stern Bush** next to and supporting propeller 7ft 3¾"

Propeller, diameter 19'-6" Pitch 17'-6" No. of Blades 4 State whether Moveable No Total Developed Surface 138·3 square feet.

If **Single Screw,** are arrangements made so that steam can be led direct to the **L.P. Turbine** ✓ Can the **H.P.** ~~and L.P.~~ **Turbine** exhaust direct to the Condenser Yes No. of Turbines fitted with astern wheels None **Feed Pumps** { No. and size 2 Turby 200 G.P.M. 1 – 10"x7"x24" / How driven Steam }

Pumps connected to the **Main Bilge Line** { No. and size 1-Fire & Butterworth 450 G.P.M. 1-Turbo G.S 450 G.P.M. 2-Bilge 175 G.P.M / How driven Electric }

Ballast Pumps, No. and size Fire & G.S pumps connected to Ballast main **Lubricating Oil Pumps,** including Spare Pump, No. and size 2-60 G.P.M. ✓

Are two independent means arranged for circulating water through the **Oil Cooler** Yes ✓ **Suctions,** connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room 2-3" dia Fire off-1-3" dia Fathometer pump. 6-3" dia. 1-3½" dia Bilge In Pump Room 1-4" dia. Holds, &c. well 1-3½" dia Dry well 1-3½" dia Boiler room drain 1-3" dia L.O. sump off. 1-3" dia propeller motor recess.

Main Water Circulating Pump Direct Bilge Suctions, No. and size One 18" dia ✓ **Independent Power Pump Direct Suctions** to the Engine Room Bilges, No. and size 2-4" dia ✓ Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Macomb strainers. Yes. ✓

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 Strum Box & strainers.

Are all **Sea Connections** fitted direct on the skin of the ship Tube steel pieces welded to shell Are they fitted with Valves or Cocks Valves. ✓

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes ✓ Are the Overboard Discharges above or below the deep water line Below. ✓

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

What pipes pass through the bunkers None ✓ How are they protected ✓

What pipes pass through the deep tanks None 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 Yes ✓

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 Yes ✓ Is the Shaft Tunnel watertight W.T. Bulkhead it fitted with a watertight door Yes ✓ worked from Platform.

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers 11,354 sq. feet.

Is Forced Draft fitted Yes No. and Description of Boilers 2 - S.M. Type Working Pressure 500 lbs/sq in

Is a Report on Main Boilers now forwarded? Yes

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)

Superheaters ✓ *General Pumping Arrangements* ✓ *Oil Fuel Burning Arrangements* ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied

Spare propeller has now been ordered and will be placed on board at an early date

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* Yes

Is the flash point of the oil to be used over 150°F. Yes *Have the requirements of the Rules for the use of oil as fuel been complied with* Yes

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* T2 Tankers.

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

The machinery of this vessel has been constructed under the survey of the U.S. Coast Guard and American Bureau of Shipping. Materials and workmanship considered good. The scantlings and general arrangements have been checked and found in accordance with plans on board vessel. Machinery examined under working conditions and found satisfactory and eligible in my opinion to have records of LMC 6.48., WTB 500 lbs/sq in Spt. 473 lbs/sq in F.D. TSCL 6.48 .. Heating surface 11,354 sq. ft. Fitted for oil fuel 1944 F.P. above 150°F.

The amount of Entry Fee	£	:	:	When applied for, ... 19.....
Special	£	:	:	
Donkey Boiler Fee	£	:	:	When received, ... 19.....
Travelling Expenses (if any)	£	:	:	

Committee's Minute FRI. 13 AUG 1948

Assigned LMC 6.48
S (C.L.) 6.48
Fitted for oil fuel F.P. above 150°F F.D. 2 WTB 500lb (Spt 473lb)

Glas Mitchell
Engineer Surveyor to Lloyd's Register of Shipping.

Certificate (if required) to be sent to

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