

# Report on Steam Turbine Machinery. No. 10862

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Received at London Office **20 AUG 1948**  
 Date of writing Report **19-8-1948** When handed in at Local Office **19-8-1948** Port of **Falmouth**  
 No. in Survey held at **Falmouth** Date, First Survey **21-5-48** Last Survey **6-7-1948**  
 Reg. Book **58403** (Number of Visits **9**)  
**3549** on the **S.S. ESSO BIRMINGHAM** Tons {Gross **10727**  
 {Net **6324**  
 Built at **Chester, Pa.** By whom built **Sun S.B. Dry Dock Co.** Yard No. \_\_\_\_\_ When built **1943**  
 Engines made at **Dynn, Mass.** By whom made **General Electric Co.** Engine No. **72130** When made **1943**  
 Boilers made at \_\_\_\_\_ By whom made **Babcock & Wilcox, Ltd.** Boiler No. \_\_\_\_\_ When made **1943**  
 Shaft Horse Power at Full Power **6000** Owners **Anglo-American Oil Co. Ltd.** Port belonging to **London**  
 Nom. Horse Power as per Rule **MN=1500** Is Refrigerating Machinery fitted for cargo purposes **No.** Is Electric Light fitted **Yes**  
 Trade for which Vessel is intended **Carrying Petroleum in bulk**

## STEAM TURBINE ENGINES, &c.—Description of Engines. **One Curtis Impulse 10 Stage turbine**

No. of Turbines **One** Ahead  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 **3 PHASE, 62 CYCLE, 80 POLE, REVOLVING FIELD, SALIENT POLE, SYNCHRONOUS**  
 rated **2300** Kilowatts **90** revolutions per minute. Direct coupled,  single or double reduction geared to **one** propelling shaft.

STAGING.	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			<b>2</b>									
2nd			<b>1</b>									
3rd			<b>1</b>									
4th			<b>1</b>									
5th			<b>1</b>									
6th			<b>1</b>									
7th			<b>1</b>									
8th			<b>1</b>									
9th			<b>1</b>									
10th			<b>1</b>									
4th												
2th												

Shaft Horse Power at \_\_\_\_\_ turbine { H.P. \_\_\_\_\_ }  
 { I.P. \_\_\_\_\_ } Revolutions per minute, at full power, of \_\_\_\_\_ Turbine Shaft { L.P. \_\_\_\_\_ }  
 { H.P. **3715** } 1st reduction wheel   
 { L.P. **90** } main shaft

Motor Shaft diameter at journals { H.P. **5" x 10"** } Pitch Circle Diameter { I.P. \_\_\_\_\_ }  
 { L.P. \_\_\_\_\_ } 1st pinion  1st reduction wheel  Width of Face { 1st reduction wheel   
 2nd pinion  main 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

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

Wheel Shafts, diameter at bearings { 1st  } diameter at wheel shroud, { 1st  } Generator Shaft, diameter at bearings **5.507"**  
 { main  } Propelling Motor Shaft, diameter at bearings **17.268"**

Intermediate Shafts, diameter as per rule **16.56"** Thrust Shaft, diameter at collars as per rule **17.39"**  
 as fitted **16 7/8"** as fitted **17 1/2"**

Shaft diameter as per rule  Screw Shaft, diameter as per rule **18.185"** Is the  screw shaft fitted with a continuous liner {  Yes  No }  
 as fitted  as fitted **18 5/8"**

Bronze Liners, thickness in way of bushes as per rule **8.58"** Thickness between bushes as per rule **6.43"** Is the after end of the liner made watertight in the  
 as fitted **1 1/8"** as fitted **1"** 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

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 **7'-3"**

Propeller, diameter **19'-6"** Pitch **17'-6"** No. of Blades **4** State whether Moveable **No.** Total Developed Surface **138.3** square feet.  
 Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine **One Turbine Only** Can the H.P. or I.P. Turbines exhaust direct to the

Condenser  No. of Turbines fitted with astern wheels **None** Feed Pumps { No. and size **2 Centrif. 200 G.P.M.** **1 Simplex 10" x 7" x 24"**  
 How driven **Turbine** **Steam Cylinder**

Pumps connected to the Main Bilge Line { No. and size **2-175 G.P.M.** **1 Butterworth Ballast-450 G.P.M.** **1 Butterworth Fire-450 G.P.M.**  
 How driven **Motor** **Motor** **Motor**

Ballast Pumps, No. and size **1-10" x 7" x 10" in. For 2 Pump Room** Lubricating Oil Pumps, including Spare Pump, No. and size **2-Vert. Rotary 60 G.P.M.**  
 Are two independent means arranged for circulating water through the Oil Cooler **Yes** Suctions, connected both to Main Bilge Pumps and Auxiliary

Bilge Pumps, No. and size:—In Engine and Boiler Room **8 @ 4"**, **2 @ 3 1/2"** In Pump Room **2 1/2" P.S. in Pump Room**   
**2 1/2" P.S. in Stairs**

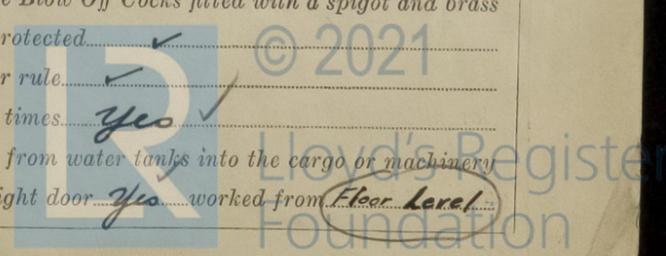
Holds, &c. Main Water Circulating Pump Direct Bilge Suctions, No. and size **One @ 18"** Independent Power Pump Direct Suctions to the Engine Room  
 Bilges, No. and size **2 @ 4"** Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes

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 **Valves**

Are they fixed sufficiently high on the ship's side to be seen without lifting the stowhold plates **Yes** Are the Overboard Discharges above or below the deep water  
 level **Below** Are they each fitted with a Discharge Valve always accessible on the plating of the vessel **Yes** Are the Blow Off Cocks fitted with a spigot and brass  
 covering plate **No** What pipes pass through the bunkers **None** How are they protected

Are all Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times  Have they been tested as per rule

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 **Yes** Is it fitted with a watertight door **Yes** worked from **Floor Level**



BOILERS, &c.—(Letter for record *S*) Total Heating Surface of Boilers *11552 sq (L'pool Rept)*  
 Is Forced Draft fitted *Yes* No. and Description of Boilers *2 W.T.B* Working Pressure *500 LBS/0"*  
 Is a Report on Main Boilers now forwarded? *No. See L'pool Rept 125861*  
 Is *a Donkey* Boiler fitted? *No* If so, is a report now forwarded?   
*an Auxiliary*  
 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, except spar propeller which has been ordered*  
 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 - - *A.B. Survey*  
 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 *T.2. Type Tanker*

General Remarks. (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel was constructed under the Special Survey & to the requirements of the American Bureau of Shipping & the materials & workmanship are considered satisfactory. The scantlings & general arrangements have been checked as far as possible & found to conform to the plans aboard the vessel. For recommendations as to class, please see Report 9*

Certificate (if required) to be sent to Committee's Minute.

The amount of Entry Fee	£ 48 -	When applied for
Special	£ :	19
Donkey Boiler Fee	£ :	When received
Travelling Expenses (if any)	£ :	19

*Joe Stevenson*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned



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