

Report on Steam Turbine Machinery.

No. 711

14 SEP 1953

Received at London Office

Date of writing Report 14th August 53 When handed in at Local Office 1953 Port of Bremen
 No. in Survey held at Bremerhaven Date, First Survey 17.4.53 Last Survey 11.8.1953
 Reg. Book 59011 on the S.S. "ESSO BELFAST" Tons {Gross 13074 Net 7864
 Built at Kearny N.J., U.S.A. By whom built Federal Shipbuilding Co. Ltd. Yard No. 113 When built 1930
 Engines made at Trenton N.J., U.S.A. By whom made Delaval Steam Turbine Co. Engine No. 201947 When made 1930
 Boilers made at Kearny N.J., U.S.A. By whom made Federal Shipbuilding Co. Ltd. Boiler No. --- When made 1930
 Shaft Horse Power at Full Power 4,000 Owners Esso Transportation Co. Port belonging to London
 Nom. Horse Power as per Rule 800 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes
 Trade for which Vessel is intended Carrying Petroleum in bulk.

TEAM TURBINE ENGINES, &c.—Description of Engines De Laval Impulse

No. of Turbines Two ~~XXXXXX~~ to one propelling shafts. No. of primary pinions to each set of reduction gearing two
 Direct coupled to { Alternating Current Generator --- phase --- periods per second --- rated --- Kilowatts --- Volts at --- revolutions per minute;
 or 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	H. P.	I. P.	L. P.	ASTERN.
LOADING.				
No. of rows	<u>12</u>	<u>---</u>	<u>7</u>	<u>3</u>
No. of stages	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>
No. of rows in each stage	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>

Shaft Horse Power at each turbine { H.P. 5.500 1st reduction wheel
 I.P. --- 77.5 max main shaft, 75 (see remarks)
 L.P. 4.275

Motor Shaft diameter at journals { H.P. 4" Pitch Circle Diameter { 1st pinion 10.4" 1st reduction wheel 63.6"
 I.P. --- 2nd pinion 13.87" main wheel 126.5"
 L.P. 7" Width of Face { 1st reduction wheel 2 X 9"
 main wheel 2 X 21.5"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 15.5" 1st reduction wheel 15.5"
 2nd pinion 17.25" main wheel 41.6"

Flexible Pinion { 1st 4" Pinion Shafts, diameter at bearings { External 1st 6" 2nd 12" 1st 10"
 Shafts, diameter { 2nd 5" Internal 1st --- 2nd --- diameter at bottom of pinion teeth 2nd 13.4"

Wheel Shafts, diameter at bearings { 1st 12" diameter at wheel shroud, { 1st 13.5" Generator Shaft, diameter at bearings ---
 main 22" main 24" Propelling Motor Shaft, diameter at bearings ---

Intermediate Shafts, diameter { as per rule --- as fitted 15 3/4" (16" at bearing). Thrust Shaft, diameter at collars { as per rule --- as fitted 13 3/4" (11 3/4" at collar)

Tube Shaft, diameter { as per rule --- as fitted --- Screw Shaft, diameter { as per rule --- as fitted 18" off? Is the XXXX shaft fitted with a continuous liner { ---

Bronze Liners, thickness in way of bushes { as per rule --- as fitted --- Thickness between 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 ---

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 ---

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

ft No If so, state type --- Length of Bearing in Stern Bush next to and supporting propeller 6'-3" off?

propeller, diameter 20'-2" Pitch --- No. of Blades 4 State whether Moveable moveable Total Developed Surface --- square feet.

Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yes Can the H.P. XXXX Turbine exhaust direct to the

condenser Yes No. of Turbines fitted with astern wheels One Feed Pumps { No. and size 1-25 tons/hr. 1-25 tons/hr.
 How driven Electric geared. (both)

Pumps connected to the Main Bilge Line { No. and size 1-45 tons, 1-80 tons, 1-120 tons
 How driven Electric, steam, steam

Ballast Pumps, No. and size --- Lubricating Oil Pumps, including Spare Pump, No. and size 2-40 tons/hr. each.

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 2-4" P. & S., 1-4" aft well, 1-2" condenser well In Pump Room 2-4" P. & S.

XXXXXX Ford, pump room: P. & S. c'dam 3 1/2", chain locker 2 1/2", pump room 2", P. & S. deep tank 3 1/2".

Main Water Circulating Pump Direct Bilge Suctions, No. and size One -11 3/4" Independent Power Pump Direct Suctions to the Engine Room

ages, No. and size None (3' 4" off main) Are all the Bilge Suction pipes in XXXXXX fitted with strum-boxes Yes

the Bilge Suctions in the Machinery Space led from XXXXXX wells with grids through filters at pumps XXXXXX Yes

all Sea Connections fitted direct on the skin of the ship or sea boxes Yes Are they fitted with Valves XXXXXX Yes

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

main-below --- Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off XXXXXX valve fitted on steel

XXXXXX pad Yes that pipes pass through the bunkers None pipes. How are they protected ---

that pipes pass through the deep tanks P. & S. ford. cofferdam bilge/Haves Have they been tested as per rule Examined

all Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

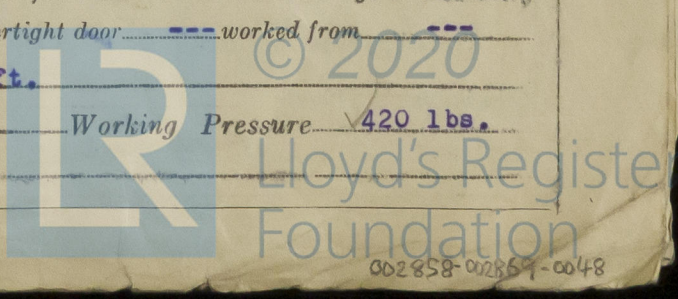
the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery

ices, or from one compartment to another Yes Is the Shaft Tunnel watertight None Is it fitted with a watertight door --- worked from ---

ALERS, &c.—(Letter for record ---) Total Heating Surface of Boilers 10,160 sq.ft.

Forced Draft fitted Yes No. and Description of Boilers Two, water tube. Working Pressure 420 lbs.

Report on Main Boilers now forwarded? No



002858-002859-0048

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 No Main Boilers ✓ Auxiliary Boilers ✓ Donkey Boilers ✓
(If not, state date of approval) 11.4.53
Superheaters ✓ General Pumping Arrangements ✓ Oil Fuel Burning Arrangements ✓
Geared turbines situated aft. Have torsional vibration characteristics of system been approved ✓ Date of approval 11.4.53

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied ---

The foregoing is a correct description,

Manufacture

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 fired 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

Chemical analysis

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment

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.) The above machinery has been examined opened up and found to be in satisfactory condition, the scantlings have been checked and found to be as above.

The last two rows of blades, Nos. 6 & 7, of the L.P. turbine have been previously removed and the propeller shaft is restricted to 67 R.P.M., pending renewal of the blades.

After pump room and adjacent cofferdam bilge lines are connected to the stripping pump in the pump room and are also connected to the engine-room bilge lines which are blanked off in the engine-room.

The main engines and auxiliaries have been examined under working conditions at the quayside and found satisfactory. In my opinion, the above machinery may be classed with the Society with the record of

LMC 8.53. Fitted for oil fuel F.P. above 150° F.

The amount of Entry Fee ... £ 105: -

Special ... £

Donkey Boiler Fee ... £

Travelling Expenses (if any) ...

Committee's Minute

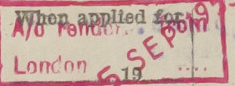
Assigned

LMC 75 9.52

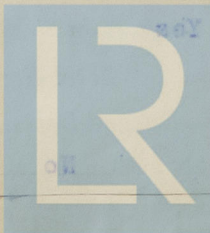
BS 8.53

2WTB 420 lb. (Spt.)

With Endorsement,



Engineer Surveyor to Lloyd's Register of Shipping.



© 2020

Lloyd's Register Foundation