

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office.

30 OCT 1946

Date of writing Report 24.10.46. 19 When handed in at Local Office 25.10.46. 19 Port of GREENOCK.

No. in Survey held at GREENOCK. Date, First Survey 21<sup>ST</sup> SEPT. 1945. Last Survey 14<sup>TH</sup> OCTOBER 1946.

Reg. Book 88911. on the STEEL S.S. "SHAHJEHAN" (Number of Visits 58)

Tons { Gross 5459.82. Net 3209.99

Built at PORT GLASGOW. By whom built LITHGOWS, LTD. Yard No. 1012. When built 1946.

Engines made at GREENOCK. By whom made RANKIN & BLACKMORE, LTD. Engine No. 514. When made 1946.

Boilers made at GREENOCK. By whom made RANKIN & BLACKMORE, LTD. Boiler No. 514. When made 1946.

Registered Horse Power Owners ASIATIC STEAM NAV. CO. LTD. Port belonging to LONDON.

Nom. Horse Power as per Rule 524 (M.N.) Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted YES.

Trade for which vessel is intended INDIAN.

## ENGINES, &c.—Description of Engines STEAM TRIPLE EXPANSION. Revs. per minute 93 ON TRIAL.

Dia. of Cylinders 24 1/2 - 41 - 70" Length of Stroke 48" No. of Cylinders 3. No. of Cranks 3.

Crank shaft, dia. of journals as per Rule 14.27 as fitted 14 1/2 Crank pin dia. 14 1/2 Crank webs Mid. length breadth 1'-9 1/4 Thickness parallel to axis 9" shrunk Mid. length thickness 9" Thickness around eye-hole 6 1/4

Intermediate Shafts, diameter as per Rule 13.59 as fitted 13 3/4 Thrust shaft, diameter at collars as per Rule 14.27 as fitted 14 1/2

Tube Shafts, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 15.07 as fitted 15 1/2 Is the screw shaft fitted with a continuous liner YES.

Bronze Liners, thickness in way of bushes as per Rule .76 as fitted 7/8 Thickness between bushes as per Rule .57 as fitted 3/4 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 62"

Propeller, dia. 17'-9" Pitch 17'-1 1/2 (MEAN) No. of Blades 4. Material BRONZE. whether Moveable No. Total Developed Surface 105 sq. feet

Feed Pumps worked from the Main Engines, No. NONE. Diameter Stroke Can one be overhauled while the other is at work

Bilge Pumps worked from the Main Engines, No. 2. Diameter 4 1/2 Stroke 24" Can one be overhauled while the other is at work YES.

Feed Pumps No. and size TWIN 10 1/2 - 8 - 22", 1 @ 12 1/2 - 9 - 24" Pumps connected to the Main Bilge Line No. and size 1 @ 12 1/2 - 14 - 24", 1 @ 8 - 9 - 18", 1 @ 9 1/2 - 7 - 21" How driven STEAM.

Ballast Pumps, No. and size 1 @ 12 1/2 - 14 - 24" Lubricating Oil Pumps, including Spare Pump, No. and size NONE.

Are two independent means arranged for circulating water through the Oil Cooler NONE. Suctions, connected both to Main Bilge Pumps and Auxiliary

Bilge Pumps:—In Engine and Boiler Room 3 @ 3" DIA. In Pump Room In Holds, &c. No. 1 HOLD 2 @ 3" - No. 2 HOLD 2 @ 3 1/2" - No. 3 HOLD 2 @ 2 1/2" - COFFER DAM 1 @ 2 1/2"

No. 4 HOLD 2 @ 3" - No. 5 HOLD 2 @ 3" - TUNNEL WELL 1 @ 2 1/2" DIA. Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 @ 9" DIA. Independent Power Pump Direct Suctions to the Engine and/or Boiler Room Bilges, No. and size 1 @ 5" DIA.

Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes 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 YES.

Are all Sea Connections fitted direct on the skin of the ship YES. Are they fitted with Valves or Cocks BOTH. 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 MAIN DISCHARGE - 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 YES.

What Pipes pass through the bunkers HOLD BILGE SUCTIONS. How are they protected UNDER BILGE LIMBER BOARDS

What pipes pass through the deep tanks NO 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 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 YES. Is it fitted with a watertight door YES. worked from BRIDGE DECK LEVEL.

## MAIN BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 7425 sq ft

Which Boilers are fitted with Forced Draft ALL. Which Boilers are fitted with Superheaters NONE.

No. and Description of Boilers 3 S.E. MULTITUBULAR. Working Pressure 230 lbs sq

IS A REPORT ON MAIN BOILERS NOW FORWARDED? YES.

IS A DONKEY BOILER FITTED? No. If so, is a report now forwarded?

Can the donkey boiler be used for other than domestic purposes

PLANS. Are approved plans forwarded herewith for Shafting YES. Main Boilers YES. Auxiliary Boilers. Donkey Boilers

(If not state date of approval) Superheaters NONE. General Pumping Arrangements YES. Oil fuel Burning Piping Arrangements.

## SPARE GEAR.

Has the spare gear required by the Rules been supplied YES.

State the principal additional spare gear supplied 1 spare Crank intended for engines No. 514 & 515. 1 spare screw shaft Complete.

1 spare Cast Iron Propeller. 1 valve spindle for MP or LP. 2 HP Andrew Cameron valve spindles. 4 HP Cam rollers & pins.

4 HP Valve gear wrist pins. 4 HP Cam lever tumbling blocks. 1 eccentric strap Complete for MP engine & 1 for HP or LP engines

Complete sets of piston packing rings for HP-MP & LP engines. Complete sets of US metallic packing MP & LP piston & valve rods.

& Complete set of US metallic packing for HP piston rod. 1 bottom end bearing Complete. 1 pair of Crosshead brasses Complete.

1 set of thrust pads. 12 Condenser tubes & 2 gross of ferrules. 3 cylinder escape valves & springs. 3 boiler safety valve springs.

1 Circulating pump impeller & shaft & Complete sets of spares for circulating pumps & fan engine. 1 Complete set of

water end valves for each independent pump. 1 set of surface plates for wear pump shuttle valves

Sundry minor articles of spare gear.

The foregoing is a correct description.

RANKIN & BLACKMORE LTD.

James Lewis DIRECTOR.

Manufacturer.



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Lloyd's Register

Foundation

003964-003970-0049

Dates of Survey while building

During progress of work in shops -- (1945) SEPT. 21-25. OCT. 12. NOV. 28. DEC. 10-13-27. (1946) JAN. 10. MAR. 26. APR. 10-17. 23-30. MAY 7-14. 20-24-25-28-29. JUNE 5-6-4. 13-18. 21-25-26-27. JULY 8-11-16-17-19-22-24-29-31.

During erection on board vessel -- AUG. 2-21. SEPT. 10-12-14-16-18-19-21-23-24-26-27-28-30. OCT. 3-7-8-14.

Total No. of visits 58.

Dates of Examination of principal parts—Cylinders 7.6.46. Slides 11.7.46. Covers 7.6.46.

Pistons 16.7.46. Piston Rods 16.7.46. Connecting rods 25.5.46.

Crank shaft 17.4.46. Thrust shaft 28.5.46. Intermediate shafts 28.5.46.

Tube shaft ✓ Screw shaft 7.6.46. Propeller 7.6.46.

Stern tube 7.6.46. Engine and boiler seatings 16.9.46 - 24.9.46 - 28.9.46. Engines holding down bolts 16.9.46 - 24.9.46.

Completion of fitting sea connections 21.6.46.

Completion of pumping arrangements 23.9.46. Boilers fixed 24.7.46. Engines tried under steam 19.9.46 - 30.9.46 - 14.10.46.

Main boiler safety valves adjusted 23.9.46. Thickness of adjusting washers SB. PV = 13/32 SV = 11/32 CB. PV = 3/8 SV = 23/64 PB. PV = 15/64 SV = 25/64

Crank shaft material SM. STEEL Identification Mark { LLOYDS. No. 14329 AFS. 17.4.46 Thrust shaft material SM. STEEL Identification Mark { LLOYDS. No. 14329 AFS. 28.5.46

Intermediate shafts, material SM. STEEL Identification Marks { LLOYDS. No. 14329 AFS. 28.5.46 Tube shaft, material ✓ Identification Mark ✓

Screw shaft, material SM. STEEL Identification Mark { LLOYDS. No. 14329 AFS. 7.6.46 Steam Pipes, material HOT FINISHED SEAMLESS STEEL TUBES. Test pressure 690 lbs Date of Test 16.8.46 & 11.9.46

Is an installation fitted for burning oil fuel No. ✓ 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 No. 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 No.

Is this machinery duplicate of a previous case YES. If so, state name of vessel SS. NADIR. GREENOCK REPORT NO. 22863.

General Remarks (State quality of workmanship, opinions as to class, &c. These engines & boilers have been built under Special Survey in accordance with the Rules & the approved plans, have been securely fitted in the vessel, & tested & tried under steam in a satisfactory manner.

The materials as far as could be determined are sound & free from visible defects, & the workmanship is good.

The machinery, boilers, & screw shaft, are eligible in my opinion to have the records & notation \* LMC. 10.46. - C.L. - 3 S.B. FD. 230 lbs

*J. Frechmann*

Certificate to be sent to *Greenock*

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

The amount of Entry Fee ... £	:	:	When applied for,
Special ... .. £ 127-8-0	:	:	25 <sup>th</sup> OCT. 1946.
Donkey Boiler Fee ... .. £ ✓	:	:	When received,
Travelling Expenses (if any) £	:	:	19

*J. Frechmann*  
Engineer Surveyor to Lloyd's Register of Shipping.

Date GLASGOW 29 OCT 1946

Committee's Minute - 1/ LMC 10.46 LD H