

RECEIVED

EC 194 Rpt. 4.

No. 23434

D.O. REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

Date of writing Report 3RD DEC. 1946 When handed in at Local Office 5TH DEC. 1946 Port of GREENOCK.

No. in Survey held at GREENOCK Date, First Survey 9TH OCTOBER 1945 Last Survey 2ND DEC. 1946.
Reg. Book (Number of Visits 61)

on the STEEL SC. "SHAHZADA" Tons { Gross 5460
Net 3210

Built at PORT GLASGOW. By whom built LITHGOWS, LTD. Yard No. 1013. When built 1946.

Engines made at GREENOCK. By whom made RANKIN & BLACKMORE LTD. Engine No. 515. When made 1946.

Boilers made at GREENOCK. By whom made RANKIN & BLACKMORE LTD. Boiler No. 515. When made 1946.

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

Indicated Horse Power as per Rule 524. MN. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted YES.

Use for which vessel is intended INDIAN.

MAKES, &c.—Description of Engines STEAM TRIPLE EXPANSION

No. of Cylinders 24 1/2 - 41 - 70 Length of Stroke 48 No. of Cylinders 3. No. of Cranks 3. Revs. per minute

Crank shaft, dia. of journals as per Rule 14.27 Mid. length breadth 1' 9 1/4 Thickness parallel to axis 9"

as fitted 14 1/2 Crank pin dia. 14 1/2 Crank webs shrunk Thickness around eye-hole 6 1/4

Intermediate Shafts, diameter as per Rule 13.59 Thrust shaft, diameter at collars as per Rule 14.27

as fitted 13 3/4 as fitted 14 1/2

Propeller Shafts, diameter as per Rule 15.07 Is the tube screw shaft fitted with a continuous liner YES.

as fitted 15 1/2

Propeller Liners, thickness in way of bushes as per Rule 7.6 Thickness between bushes as per Rule 5.7

as fitted 7/8 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.

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

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 4 1/2 Stroke 24" Can one be overhauled while the other is at work YES.

Large 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 x 8 x 22 (1) 12 x 9 x 24 Pumps connected to the Main Bilge Line No. and size 1 @ 12 1/2 x 14 x 24, 1 @ 8 x 9 x 18, 1 @ 9 1/2 x 7 x 21.

How driven STEAM. How driven STEAM.

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

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected both to Main Bilge Pumps and Auxiliary

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

Pump Room OFFERDAM 1 @ 2 1/2" DIA. - 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 ABOVE

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.

That Pipes pass through the bunkers. HOLD BILGE SUCTIONS How are they protected UNDER BILGE LINBER BOARDS.

That 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 UPPER DECK.

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

Thick 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 lb.

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 13.2.46. Main Boilers 13.2.46 Auxiliary Boilers Donkey Boilers.

(If not state date of approval) NOTE:— PLANS FORWARDED WITH ENG. NO. 514. REPORT NO. 23401. GRK.

Superheaters General Pumping Arrangements 5.2.46 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 PLEASE REFER TO ATTACHED LIST.

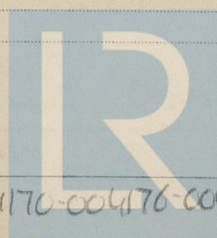
The foregoing is a correct description.

RANKIN & BLACKMORE LTD.

Managing Director.

Manufacturer.

Manufacturer.



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004170-004176-0046

Dates of Survey while building
During progress of work in shops - - (1945) OCT. 9. DEC. 13. (1946) MAR. 21. APRIL 1. 10. 16. 23. 30. MAY 7. 20. 24. 29. JUNE 18. 25. 26. JULY 8. 17. 22. 29. 31. AUG. 19. 20. 21. 23. 24. 26. 28. SEPT. 2. 4. 5. 10. 13. 16. 17. 18. 20. 24. 26. 30. OCT. 3. 4. 8. 11. 14. 17. 21. 24. 29. 30. 31.
During erection on board vessel - - - NOV. 8. 19. 20. 21. 22. 26. 28. 29. DEC. 2.
Total No. of visits 61.

Dates of Examination of principal parts—Cylinders 13.9.46. Slides 19.8.46. Covers 13.9.46.
Pistons 19.8.46. Piston Rods 19.8.46. Connecting rods 19.8.46.
Crank shaft 26.8.46. Thrust shaft 26.8.46. Intermediate shafts 10.9.46.
Tube shaft ✓ Screw shaft W. SHAFT 21.8.46 SPARE 24.8.46. Propeller 21.8.46.
Stern tube 21.8.46. Engine and boiler seatings COMPLETED 26.11.46. (CHECKS). Engines holding down bolts 26.11.46.
Completion of fitting sea connections 16.9.46.
Completion of pumping arrangements 26.11.46. Boilers fixed 21.10.46. Engines tried under steam BASIN 22.11.46. SEA 29.11.46.
Main boiler safety valves adjusted 22.11.46. Thickness of adjusting washers SB. PV = $\frac{23}{64}$ SV = $\frac{23}{64}$ CB. PV = $\frac{1}{32}$ SV = $\frac{3}{8}$ PB. PV = $\frac{1}{2}$ SV = $\frac{1}{2}$
Crank shaft material O.H. INGOT STEEL Identification Mark { 515. LR. 14.330. 26.8.46. OJT 8 Thrust shaft material O.H. INGOT STEEL Identification Mark { 515. LR. 14.330. 26.8.46. OJT 8
Intermediate shafts, material O.H. INGOT STEEL Identification Marks { 515. LR. 14.330. 10.9.46. OJT 8 Tube shaft, material ✓ Identification Mark ✓
Screw shaft, material O.H. INGOT STEEL Identification Mark { 515. LR. 14.330. 21.8.46. OJT 8 Steam Pipes, material ✓ IDENT FINISHED SEAMLESS ✓ Test pressure 690 lbs $\frac{1}{2}$ Date of Test 15.8.46 / 29.10.46
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 No.
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 "SHAHJEHAN" GREENOCK REPORT No. 23401.

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 in a satisfactory manner. The machinery has been tested under steam on basin & sea trials & found satisfactory.

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

The machinery, boilers, & screw shaft are eligible in my opinion to have the notation & records: - LMC. 12.46. CL - 3 SINGLE BOILERS 230 lbs $\frac{1}{2}$ (3 SB. FD.) (S).

Certificate to be sent to

(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 " M & B. £ 127. 8. 0 : 7th DEC. 19.46
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ : : 19.

Date

GLASGOW

IMA.

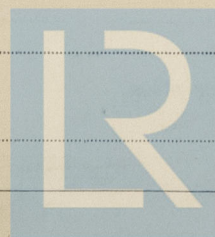
Committee's Minute

-:- LMC 12.46

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Oppechmann

Engineer Surveyor to Lloyd's Register of Shipping.



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