

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 18 JUL 1945

Date of writing Report 26/5/45 10 When handed in at Local Office 26/5/45 10 Port of Karachi

No. in Survey held at Karachi Date, First Survey March 1944. Last Survey 3/3/1945

Reg. Book. 74124 on the S.S. "EMPIRE RAJA" ex "Wildenfels" (Number of Visits 4) Gross 6224 Tons

Built at Wesermünde By whom built J. G. Tecklenburg A.G. Yard No. - When built 1922

Engines made at " By whom made " Engine No. - when made 1922

Boilers made at - By whom made - Boiler No. - when made -

Registered Horse Power Owners Ministry of War Transport Port belonging to London

Nom. Horse Power as per Rule 700 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

ENGINES, &c. - Description of Engines Triple Expansion, Three cylinders, with B.W. Exhaust Turbine

Dia. of Cylinders 29 1/8" 47 1/4" 76 3/8" Length of Stroke 54" Revs. per minute 75 No. of Cylinders 3 No. of Cranks 3

Dia. of Crank shaft journals as per rule 15 3/4" as fitted 15 3/4" Dia. of Crank pin 15 3/4" Crank webs Mid. length breadth 2-1 1/16" Thickness parallel to axis 10 6/16" shrunk Thickness around eye-hole 7 7/8"

Diameter of Thrust shaft under collars as per rule 15 1/2" as fitted 15 1/2" Diameter of Tunnel shaft as per rule 15" as fitted 15" Diameter of Screw shaft as per rule 16 1/2" as fitted 16 1/2" Is the Screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made watertight in the propeller boss

If the liner is in more than one length are the joints burned Yes If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with 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 appliance fitted at the after end of the shaft to permit of its being efficiently lubricated

Pitch of Propeller 18'-0 3/4" No. of Blades 4 State whether Movable No Total Surface square feet

No. of Feed Pumps fitted to the Main Engines 2 Diameter of ditto 4 3/32" Stroke 2'-3 1/2" Can one be overhauled while the other is at work Yes

No. of Bilge Pumps fitted to the Main Engines 2 Diameter of ditto 4 1/4" Stroke 2'-3 1/2" Can one be overhauled while the other is at work Yes

Total number and size of power driven Feed and Bilge Auxiliary Pumps 2 @ 12"x9"x24" : 1 @ 8"x5 1/2"x15" | 1 @ 12"x9"x24" : 1 duplex 4 3/8"x4 1/16"x5" and 1 @ 13 1/16"x16"x22 1/2"

No. and size of Pumps connected to the Main Bilge Line 2 attached pumps and 3 power driven pumps (size given above)

No. and size of Ballast Pumps 1 @ 13 1/16"x16"x22 1/2" No. and size of Lubricating Oil Pumps, including Spare Pump 2 @ 7 1/2"x7 1/2"x11 3/4"

Are two independent means arranged for circulating water through the Oil Cooler Yes No. and size of suction connected to both Main Bilge Pumps and Auxiliary Bilge Pumps: In Engine and Boiler Room 2 P 25 (S.R. & B.R. bilge common) in Holds, &c. one each side each hold at 3 1/2" bore

No. and size of Main Water Circulating Pump Bilge Suctions one at 9 7/8" bore No. and size of Donkey Pump Direct Suctions to the Engine Room Bilges one 5" bore (See Gen. Remarks) No. and size of 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 connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks all fitted with valves or cocks

Are they sized sufficiently high on the ship's side to be seen without lifting the stowhold plates Yes Are the Discharge Pipes above or below the deep water line main below others 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 Equivalent

What Pipes are carried through the bunkers Bilge pipes to forward holds How are they protected Passing through light holes in brackets covered by timbers

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 Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from E.R. top

MAIN BOILERS, &c. - (Letter for record) Total Heating Surface of Boilers 8608 sq ft

Is Forced Draft fitted Yes No. and Description of Boilers 4 Multitubular Working Pressure 200 lbs sq"

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes

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

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

(If not state date of approval)

General Pumping Arrangements Pumping Plan Oil fuel Burning Piping Arrangements

Tanks Bilge Pump, &c. in E.R. & B.R.

SPARE GEAR. State the articles supplied:

All Spare Gear required by the Rules is on board. The principal additional gear is:

- 1 section main crankshaft
- 1 propeller shaft, with nut, boss, 4 blades and all studs & nuts
- 1 eccentric strap : 1 valve spindle : 2 main bearing bolts : 2 pump links
- 1 set each M.P. & L.P. piston rings

The foregoing is a correct description

Manufacturer.



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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 - Cylinders	Slides
Covers	Pistons
Connecting rods	Crank shaft
Tunnel shafts	Screw shaft
Stern tube	Engine and boiler seatings
Completion of pumping arrangements	Boilers fixed
Completion of fitting sea connections	Stern tube
Main boiler safety valves adjusted	Thickness of adjusting washers
Material of Crank shaft	Identification Mark on Do.
Material of Thrust shaft	Identification Mark on Do.
Material of Tunnel shafts	Identification Marks on Do.
Material of Screw shafts	Identification Marks on Do.
Material of Steam Pipes	Test pressure
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 carrying and burning oil fuel been complied with	
Is this machinery duplicate of a previous case	If so, state name of vessel

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

The quality of workmanship of the main and auxiliary machinery is good and, in my opinion, the machinery of this vessel is fit to have the notation LMC

Superheating arrangements have been removed.

NOTE: The donkey pump direct suction (5") to bilge is in the open cofferdam connecting the port and starboard bilges at the after end of the engine room. The margin plate at each end of the cofferdam is fitted with a lightly loaded flap valve which allows high bilge water to flow into the cofferdam.

Plans Enclosed: Pumping Plan. ✓

Tank & Bilge Piping Plan (in Machinery space).

Diagram to assist in the calculation of unsupported areas around furnaces in boiler.

See Mr H.P. Southwell's letter to the Secretary dated 25/7/43 regarding fees.

The amount of Entry Fee ... £	When applied for,
Special ... £	1/6/1945
Donkey Boiler Fee ... £	When received,
Travelling Expenses (if any) Rs. 20/-	19

John Rundle
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **NO. 5 OCT. 1945**

Assigned *See minute on Oct. 9*