

REPORT ON MACHINERY.

No. 670

FRI. OCT. 19 1923

Received at London Office

Date of writing Report 14th Oct 1923 When handed in at Local Office

Port of Armen

No. in Survey held at 41554 Reg. Book.

Date, First Survey 1st February Last Survey 11th Oct 1923

(Number of Visits 23)

on the Steel Single Screw Steamer "ZEMBRA"

Gross Tons 5074
Net Tons 2823

Master Built at Grostenwinde By whom built J. Sebeck A.G.

When built 1923

Engines made at Grostenwinde By whom made J. Sebeck A.G.

when made 1923

Boilers made at Grostenwinde By whom made J. Sebeck A.G.

when made 1923

Registered Horse Power Owners F.C. Strick & Co. Ltd.

Port belonging to Swansea

Nom. Horse Power as per Section 28 347 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted ya

ENGINES, &c. Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 590, 980, 1600 mm Length of Stroke 433/18" Revs. per minute 80 Dia. of Screw shaft 348 mm Material of screw shaft steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no Is the after end of the liner made water tight in the propeller boss yes 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 a plastic material insoluble in water and non-corrosive yes If two liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 1540 mm

Dia. of Tunnel shaft 310 mm Dia. of Crank shaft journals 325 mm Dia. of Crank pin 335 mm Size of Crank web 220x630 Dia. of thrust shaft under collars 326 mm Dia. of screw 500 mm Pitch of Screw 5030 mm No. of Blades 4 State whether moveable ya Total surface 8.362 m²

No. of Feed pumps 2 Diameter of ditto 95 mm Stroke 550 mm Can one be overhauled while the other is at work ya
No. of Bilge pumps 2 Diameter of ditto 100 mm Stroke 550 mm Can one be overhauled while the other is at work ya

No. of Donkey Engines 6 Sizes of Pumps given on other side No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 5: 72-80 mm dia. In Holds, &c. 2 in each hold 76 mm dia.

No. of Bilge Injections 1 size 85 mm Connected to condenser, or to circulating pump ya Is a separate Donkey Suction fitted in Engine room & size 80 mm
Are all the bilge suction pipes fitted with roses ya Are the roses in Engine room always accessible ya Are the sluices on Engine room bulkheads always accessible ya

Are all connections with the sea direct on the skin of the ship ya Are they Valves or Cocks both
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates ya Are the Discharge Pipes above or below the deep water line both

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel ya Are the Blow Off Cocks fitted with a spigot and brass covering plate ya
What pipes are carried through the bunkers bilge suction pipes How are they protected wooden casings

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times ya
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges ya

Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door yes worked from top

BOILERS, &c. — (Letter for record 4736) Manufacturers of Steel J. Sebeck A.G. Grostenwinde No. and Description of Boiler 2 cylindrical multitubular

Total Heating Surface of Boilers 4404 m² Is Forced Draft fitted ya Working Pressure 14.5 kg Tested by hydraulic pressure to 19.5 kg Date of test 16x18.6.23 No. of Certificate 5734

Can each boiler be worked separately ya Area of fire grate in each boiler 5.35 m² No. and Description of Safety Valves to each boiler 2 spring loaded Area of each valve 7854 mm² Pressure to which they are adjusted 14.5 kg Are they fitted with easing gear ya

Smallest distance between boilers or uptakes and bunkers or woodwork 280 mm Mean dia. of boilers 4432 mm Length 3690 mm Material of shell plates steel
Thickness 32 mm Range of tensile strength 45-52 kg Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double

long. seams quadruple Diameter of rivet holes in long. seams 37 mm Pitch of rivets 466 mm Lap of plates or width of butt straps 740 mm
Per centages of strength of longitudinal joint rivets 98 plate 92 Working pressure of shell by rules 14.5 kg Size of manhole in shell 350 x 450 mm

Size of compensating ring 850 x 950 mm No. and Description of Furnaces in each boiler 3, Marston Material steel Outside diameter 1150 mm
Length of plain part top 15 mm bottom 15 mm Thickness of plates crown 15 mm Description of longitudinal joint welded No. of strengthening rings —

Working pressure of furnace by the rules 14.5 kg Combustion chamber plates: Material steel Thickness: Sides 7 mm Back 6.5 mm Top 7 mm Bottom 2.1 mm
Pitch of stays to ditto: Sides 200 x 180 Back 200 x 180 Top 200 x 200 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 17.6 kg

Material of stays steel Area at smallest part 10460 mm² Area supported by each stay 3600 mm² Working pressure by rules 18 kg End plates in steam space: Material steel Thickness 29 mm Pitch of stays 400 x 420 How are stays secured nuts & washers Working pressure by rules 16.8 kg Material of stays steel

Area at smallest part 41850 mm² Area supported by each stay 1680 mm² Working pressure by rules 18.2 kg Material of Front plates at bottom steel
Thickness 27.5 Material of Lower back plate steel Thickness 25 mm Greatest pitch of stays 360 x 180 Working pressure of plate by rules 18.7

Diameter of tubes 76 mm Pitch of tubes 105 x 105 Material of tube plates steel Thickness: Front 27.5 Back 22 mm Mean pitch of stays 210 mm
Pitch across wide water spaces 360 mm Working pressures by rules 14.75 kg Girders to Chamber tops: Material steel Depth and thickness of girder at centre 240 x 2 x 18 Length as per rule 850 mm Distance apart 200 Number and pitch of stays in each 3-200 mm

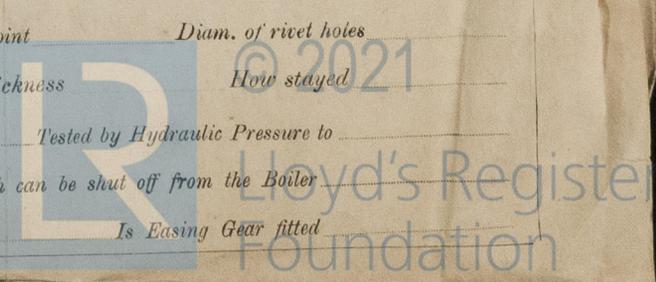
Working pressure by rules 14.5 kg Steam dome: description of joint to shell — % of strength of joint —
Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type none Date of Approval of Plan — Tested by Hydraulic Pressure to —
Date of Test — Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler —
Diameter of Safety Valve — Pressure to which each is adjusted — Is Easing Gear fitted —

If not, state whether, and when, one will be sent?

Is a Report also sent on the Hull of the Ship?

W1386-0131



IS A DONKEY BOILER FITTED? *Yus*

If so, is a report now forwarded? *Yus*

SPARE GEAR. State the articles supplied:—1 propeller shaft, 2 propeller blades, 1 slide valve rod, 1 pair of bottom and top end brasses, 2 connecting rod bolts, 4 crosshead bolts & nuts, 2 main bearing bolts, 2 sets of coupling bolts, 8 piston rings for HP, 6 ditto for M.P. & 6 ditto for LP cylinder, 10 junkie ring bolts, 10 cylinder cover bolts, 4 valve chest cover bolts, 2 sets of link brasses, 1 set of feed pump valve, 1 air pump piston rod, 25 condenser tubes, 1 set of slide valve, 1 set of safety valve springs, 1 dozen boiler tubes, 1 set circulating pumps 1 piston & piston rod, 1 slide valve rod, 2 connecting rod top & bottom brasses, 1 main bearing.
A quantity of assorted bolts & nuts. Iron of various sizes.

The foregoing is a correct description,

Hoops



Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1923: Feb. 1, 12, 19, 25 March 6, 17, April 5, 17, 24 May 14, July 4, 14, 16, 18, 23, 25, Aug 13
During erection on board vessel -- Sept 8, 12, 29, Oct. 8, 10, 11.
Total No. of visits 23

Is the approved plan of main boiler forwarded herewith *Yus*
" " " donkey " " " *Yus*

Dates of Examination of principal parts—Cylinders 1/2, 19/2 Slides 19/2 Covers 1/2 Pistons 19/2 Rods 19/2
Connecting rods 19/2 Crank shaft 17/3 Thrust shaft 17/3 Tunnel shafts 17/3 Screw shaft 17/3, 13/8 Propeller 5/4, 13/8
Stern tube 5/4, 13/8 Steam pipes tested 12/9 Engine and boiler seatings 5/4 Engines holding down bolts 5/4
Completion of pumping arrangements 8/10 Boilers fixed 12.9, 29/9. Engines tried under steam 11/10.
Completion of fitting sea connections 13/8 Stern tube 13/8 Screw shaft and propeller 13/8
Main boiler safety valves adjusted 9/10. Thickness of adjusting washers STAR 23 m/m PORT 22.5 " DONKEY BOILER 23 m/m PORT 19.5 " DONKEY BOILER 17.5 m/m PORT 17.5 "

Material of Crank shaft *Ingot steel* Identification Mark on Do. *G.L.* Material of Thrust shaft *Ingot steel* Identification Mark on Do. *G.L.*
Material of Tunnel shafts *Ingot steel* Identification Marks on Do. *G.L.* Material of Screw shafts *Ingot steel* Identification Marks on Do. *G.L.*
Material of Steam Pipes *Steel* Test pressure 50 Kilogrammes ✓

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 Section 49 of the Rules been complied with ✓

Is this machinery duplicate of a previous case *Yus* If so, state name of vessel *S.S. "MORA" Run Rpt. No. 600*

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

Size of Donkey engines:—1 Feed pump (Wier) 150 x 216 m/m 450 m/m 1 ditto 200 x 268 m/m 560 m/m 1 180 x 180 m/m 250 m/m
1 100 x 150 m/m 150 m/m 1 220 x 280 m/m 350 m/m 1 main circulating 200 m/m 180 m/m impeller 900 m/m dia.

These engines and boilers have been manufactured in accordance with the approved plans, the Secretary's letters and otherwise in conformity with the Rules.

The materials used in the construction and the workmanship are good.

They are eligible in my opinion to be classed in the Society's Register Book with the notation + L.M.C. 10, 23.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 10-23. F.D. O.G. 22/10/23

The amount of Entry Fee ... £ 5 : 0 :
Special ... £ 77 : 0 :
Donkey Boiler Fee ... £ 4 : 4 :
Travelling Expenses (if any) £ 1 : 0 :
When applied for, 15.10.23
When received, 10.11.23

G.H.C. Hamer
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 2 NOV. 1923

Assigned

+ L.M.C. 10.23

G.D.



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Certificate (if required) to be sent to the Registrar of Shipping, London, in the space for Committee's Minute.

REPLICATE WRITING