

REPORT ON MACHINERY.

No. 85356

Received at London Office 15 MAR 1922

Date of Writing Report 14th March 1922 When handed in at Local Office 19 Port of London (Approved)

No. in Survey held at 10716 on the S.S. Land Scout ex "Betzdorf" Date, First Survey 29th AUGUST 1921 Last Survey 11th March 1922 (Number of Visits 2)

Master Built at Kiel By whom built F. Krupp. Akt. Ges. Tons Gross 2399 Net 1147 When built 1920

Engines made at Essen By whom made F. Krupp. Akt. Ges. when made 1920

Boilers made at By whom made when made 1920

Registered Horse Power Owners Bodiac Shipping Co. Ltd. (Moller & Co. Agents) Port belonging to

Nom. Horse Power as per Section 28 245 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 19 $\frac{1}{2}$ " - 32 $\frac{1}{2}$ " - 54 $\frac{3}{4}$ " Length of Stroke 39 $\frac{1}{2}$ " Revs. per minute 70 Dia. of Screw shaft as per rule 12.16 Material of screw shaft as fitted 12.2 Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liner Is the after end of the liner made water tight in the propeller boss If the liner is in more than one length are the joints burned 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 Length of stern bush

Dia. of Tunnel shaft as per rule 10.23" as fitted 10.43" Dia. of Crank shaft journals as per rule 10.75" as fitted 10.91" Dia. of Crank pin 10.91" Size of Crank web 10.63" x 7" Dia. of thrust shaft under collars 10.91" Dia. of screw 14" Pitch of Screw No. of Blades State whether moveable Total surface

No. of Feed pumps 2 Diameter of ditto 3.15" Stroke 23.6" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3.15" Stroke 23.6" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps General 7 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 5" No. and size of Suctions connected to both Bilge and Donkey pumps Ballast 7 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " x 8"

In Engine Room Four 3" dia. In Holds, &c. N°1 Hold two 3" N°2 Hold two 3" N°1 D.B. tank one 4 $\frac{1}{2}$ " N°2 two 3" N°3 4" two 3" dia. N°5 two 4 $\frac{1}{2}$ " N°6 one 4 $\frac{1}{2}$ " A.P. tank one 4 $\frac{1}{2}$ " Deep tanks 2-4 $\frac{1}{2}$ "

No. of Bilge Injections one sizes 6 $\frac{1}{4}$ " Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 3" dia.

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices in Engine room bulkheads always accessible None

Are all connections with the sea direct on the skin of the ship Yes Are they 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 Discharge Pipes 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

What pipes are carried through the bunkers None How are they protected

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

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Main deck level.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel

Total Heating Surface of Boilers 3445 $\frac{1}{2}$ Is Forced Draft fitted Yes No. and Description of Boilers 2 Single ended.

Working Pressure 185 $\frac{1}{2}$ Tested by hydraulic pressure to Built under G. L. Supervision No. of Certificate

Can each boiler be worked separately Yes Area of fire grate in each boiler 43 $\frac{1}{2}$ No. and Description of Safety Valves to each boiler 2 Spring direct Area of each valve 7.7 $\frac{1}{2}$ Pressure to which they are adjusted 186 $\frac{1}{2}$ Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 28" Mean dia. of boilers 12-9 $\frac{1}{4}$ " Length 11-10" Material of shell plates Steel

Thickness 1 $\frac{1}{16}$ " Range of tensile strength — Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.P. lap

long. seams D.B.S. joints Diameter of rivet holes in long. seams 1 $\frac{3}{16}$ " Pitch of rivets 11 $\frac{1}{16}$ " Lap of plates or width of butt straps

Per centages of strength of longitudinal joint rivets 83 $\frac{1}{2}$ Working pressure of shell by rules 185 $\frac{1}{2}$ Size of manhole in shell 16" x 12"

Size of compensating ring No. and Description of Furnaces in each boiler 2 Mainman Material Steel Outside diameter 46 $\frac{1}{2}$ "

Length of plain part top Thickness of plates crown 3 $\frac{5}{8}$ Description of longitudinal joint Welded No. of strengthening rings

Working pressure of furnace by the rules 185 $\frac{1}{2}$ Combustion chamber plates: Material Steel Thickness: Sides 4 $\frac{3}{4}$ " Back 5" Top 4 $\frac{3}{4}$ " Bottom 3 $\frac{1}{4}$ "

Pitch of stays to ditto: Sides 7.9" Back 7.9" Top 7.9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 215 $\frac{1}{2}$

Material of stays Steel Area at smallest part 1.76 $\frac{1}{2}$ Area supported by each stay 7 $\frac{29}{32}$ Working pressure by rules 250 $\frac{1}{2}$ End plates in steam space:

Material Steel Thickness 1" Pitch of stays 15 $\frac{3}{4}$ " How are stays secured Double nuts Working pressure by rules 217 $\frac{1}{2}$ Material of stays Steel

Area at smallest part 6.4 $\frac{1}{4}$ Area supported by each stay 15 $\frac{3}{4}$ Working pressure by rules 200 $\frac{1}{2}$ Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 3 $\frac{1}{4}$ " Greatest pitch of stays 13 $\frac{8}{32}$ x 7 $\frac{29}{32}$ Working pressure of plate by rules 400 $\frac{1}{2}$

Diameter of tubes 2 $\frac{3}{4}$ " Pitch of tubes 3.9" Material of tube plates S. Thickness: Front 1" Back 1" Mean pitch of stays 7 $\frac{29}{32}$

Pitch across wide water spaces 14 $\frac{1}{4}$ " Working pressures by rules 200 $\frac{1}{2}$ Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 8 $\frac{1}{4}$ " x 13 $\frac{1}{2}$ " Length as per rule 29" Distance apart 7 $\frac{29}{32}$ " Number and pitch of stays in each 3. 7 $\frac{29}{32}$ "

Working pressure by rules 186 $\frac{1}{2}$ Steam dome: description of joint to shell Nil. % 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 Nil 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

013447-014003-0172

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *✓*

SPARE GEAR. State the articles supplied:—*As per Rule:— 2. Top end bolts & nuts, 2 bolt end bolts & nuts. 2 main bearing bolts & nuts, 1 set coupling bolts, 1 set helix & feed pump valves, 1 set piston springs, a quantity of assorted bolts & nuts, turn of various sizes. Also:— 1 pair con rod brasses, 1 pair crosshead brasses, 1 set link brasses, 1 pair of rod, 1 H.P. valve spindle, 1 L.P. valve spindle, 1 set check valves, 3 cylinder cone bolts, 4 junk ring bolts, 12 condenser tubes, 1 set safety valve springs.*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building	{	During progress of work in shops --	(1921) Aug 29. Sep 3 Oct 10 Nov 9 Dec 16. 17.	(1922) JAN 24. MAR 11.
		During erection on board vessel --		
		Total No. of visits	8	
			Is the approved plan of main boiler forwarded herewith	
			" " " donkey " " "	
Dates of Examination of principal parts—Cylinders Slides Covers Pistons Rods				
Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft Propeller				
Stern tube Steam pipes tested Engine and boiler seatings Engines holding down bolts				
Completion of pumping arrangements Boilers fixed Engines tried under steam				
Completion of fitting sea connections Stern tube Screw shaft and propeller				
Main boiler safety valves adjusted 11. 3. 21 Thickness of adjusting washers P. tube. F. 1/8" A. 1/8" S. tube. 1/8" F. 1/8" A.				
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 Steel Test pressure 540 lb per sq. inch.				
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 If so, state name of vessel				

General Remarks (State quality of workmanship, opinions as to class, &c. .
The engines & boiler of this vessel were constructed under the inspection of surveyors to the Germanischer Lloyd.
The material and workmanship are good and in my opinion eligible for the record of L.M.C. 3.22.
For the information of the Committee.

Certificate (if required) to be sent to

The amount of Entry Fee ... £	When applied for.
Special ... £	19
Donkey Boiler Fee ... £	When received.
Travelling Expenses (if any) £	19

Committee's Minute
Assigned

See Report
FRI. MAR. 17 1922
L.M.C. 3.22

A.E. Salminen
Engineer Surveyor to Lloyd's Register of Shipping.