

REPORT ON MACHINERY.

No. 13072
MON. DEC. 3, 1912

Port of

HAMBURG

Received at London Office

19

No. in Survey held at

Flensburg

Date, first Survey 8th Nov. 1912 Last Survey 5th Dec. 1912

Reg. Book.

60 on the Steel & L. R.

"Australia"

(Number of Visits 20)

Master A. Hellerich Built at

Flensburg By whom built Flensburger Schiffbau Ges.

Tons { Gross 7485
Net 4692

Engines made at Flensburg

By whom made Flensburger Schiffbau Ges. when made 12. 12

Boilers made at Flensburg

By whom made Flensburger Schiffbau Ges. when made 12

Registered Horse Power 836

Owners Deutsch-Austral. Dampfschiff. Ges. Port belonging to Hamburg

Nom. Horse Power as per Section 28 836

Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines

Compound Expansion

No. of Cylinders 4

No. of Cranks 4

Dia. of Cylinders 26 1/4, 38 1/8, 56 1/4, 82 1/8 Length of Stroke 59 Revs. per minute 78 Dia. of Screw shaft 16 1/2 as per rule 16 1/2 as fitted 17 1/8 Material of screw shaft Steel

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 water tight

in the propeller boss yes 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 5' 9 1/4"

Dia. of Tunnel shaft as per rule 15 1/2 as fitted 15 1/2 Dia. of Crank shaft journals as per rule 15 1/2 as fitted 15 1/2 Dia. of Crank pin 16 1/2 Size of Crank webs 10 1/2 x 29 1/2 Dia. of thrust shaft under

collars 16 1/2 Dia. of screw 20 3/4 Pitch of Screw 16 9/16 No. of Blades 4 State whether moveable yes Total surface 97 sq. ft.

No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 31 1/2 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4 3/8 Stroke 31 1/2 Can one be overhauled while the other is at work yes

No. of Donkey Engines 5 Sizes of Pumps See Specifications No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 5 off 4 1/2, 1 from Well 4 1/2, 1 from Recess 2 1/2, 1 from In Holds, &c. 12 off 4 1/2, 1 from Tanks 16 off 4 1/2

No. of Bilge Injections 1 sizes 15 3/8 Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes, 4"

Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves & Cocks

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 yes

What pipes are carried through the bunkers four holds suction How are they protected by wood boxes

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

Dates of examination of completion of fitting of Sea Connections 17.10 of Stern Tube 8.11. Screw shaft and Propeller 8.11

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from bylinder platform

BOILERS, &c.—(Letter for record B) Manufacturers of Steel Fried. Krupp AG, Essen/Ruhr.

Furnaces: Rheinische Stahlwerke, Duisburg

Total Heating Surface of Boilers 12456 sq. ft. Is Forced Draft fitted yes No. and Description of Boilers 4 Single ended multi-tubular

Working Pressure 213 lbs. Tested by hydraulic pressure to 426 lbs. Date of test 3/10/24/10/12 No. of Certificate 180, 181, 182, 183

Can each boiler be worked separately yes Area of fire grate in each boiler 66.8 sq. ft. No. and Description of Safety Valves to

each boiler 2 Spring loaded Area of each valve 12.56 sq. in. Pressure to which they are adjusted 213 lbs. Are they fitted with easing gear yes

Smallest distance between boilers on uptakes and bunkers or woodwork 20" Mean dia. of boilers 15' 10 3/16" Length 12' 3" Material of shell plates Steel

Thickness 1/4" Range of tensile strength 28-32 Tons Are the shell plates welded or flanged Descrip. of riveting: cir. seams lap, dbl. riv.

long. seams dbl. lap, gas riv. Diameter of rivet holes in long. seams 1.65" Pitch of rivets 20.3" Lap of plates or width of butt straps 31.87 x 1.2"

Per centages of strength of longitudinal joint rivets 122% plate 99% Working pressure of shell by rules 238 lbs. Size of manhole in shell 12.6 x 16.56"

Size of compensating ring 8.68 x 1.4" No. and Description of Furnaces in each boiler 3 horizontal Material Steel Outside diameter 49 1/4"

Length of plain part top 4" bottom 4" Thickness of plates crown 1.67" Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 230 lbs. Combustion chamber plates: Material Steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2" 984

Pitch of stays to ditto: Sides 7.87" Back 7.87" Top 7.87" If stays are fitted with nuts or riveted heads nuts & heads Working pressure by rules 262 lbs

Material of stays Steel Diameter at smallest part 1.5" Area supported by each stay 62 sq. in. Working pressure by rules 265 lbs End plates in steam space:

Material Steel Thickness 1.08" Pitch of stays 15" How are stays secured blank and Working pressure by rules 237.5 lbs Material of stays Steel

Diameter at smallest part 3" Area supported by each stay 225 sq. in. Working pressure by rules 326.8 lbs Material of Front plates at bottom Steel

Thickness 1.02" Material of Lower back plate Steel Thickness 1/2" Greatest pitch of stays 12" Working pressure of plate by rules 290 lbs

Diameter of tubes 2 1/2" Pitch of tubes 3.66 x 3.74" Material of tube plates Steel Thickness: Front 1.07" Back 1.05" Mean pitch of stays 7.3"

Pitch across wide water spaces 13.56" Working pressures by rules 243 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 11" x 1.34" Length as per rule 33.5" Distance apart 7.5" Number and pitch of stays in each 3 x 7.87"

Working pressure by rules 222 lbs Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

W497-0195

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No Donkey Boiler fitted

No.	Description	Made at	By whom made	When made	Where fixed
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
If fitted with easing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Length		
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting long. seams		
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint	Rivets Plates
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays	
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint	
Working pressure of furnace by rules	Thickness of furnace crown plates	Stayed by			
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— shaft, 1 pair crankpin brasses, 2 pair crosshead brasses, 2 bolts with nuts for main bearings, 2 bolts and nuts for connecting rod bottom— and 4 bolts with nuts for connecting rod top end, 2 pump links one for each side, 1 slide rod, 1 air pump rod, 1 set coupling bolts, 30 tubes for main boilers, 35 condenser tubes with 50 screw glands, 1 set valves for air pump, 1 set valves & seats for feed & bilge pumps each, 1 set valves for each auxiliary steam pump, for centrifugal pump: 1 piston rod with piston, 1 slide rod, 1 metal shaft for wheel, 1 pair brasses with bolts for connecting rod top and bottom end each, 1 set packing rings for each piston and HP piston valve, 1 spring for main boiler safety valves, 1 spring for escape valve of feed pump, 12 set fire bars for each boiler, a large number of bolts, studs, nuts, rivets, bar and plate iron assorted.

The foregoing is a correct description.
Flensburger Schiffsbau-Gesellschaft
Manufacturer.

Dates of Survey while building	During progress of work in shops—	8/5, 22/6, 3/7, 24/7, 1/8, 12/8, 17/8, 19/8, 23/8, 27/9, 3/10, 17/10.
	During erection on board vessel—	21/10, 8/11, 13/11, 19/11, 23/11, 30/11, 3/12, 5/12, 19/12
	Total No. of visits	20

Is the approved plan of main boiler forwarded herewith ☒ yes

Dates of Examination of principal parts—	Cylinders 3. 10	Slides 13. 11	Covers 13. 11	Pistons 17. 10	Rods 12. 8
Connecting rods 8. 11	Crank shaft 27. 9	Thrust shaft 21. 10	Tunnel shafts 21. 10	Screw shaft 21. 10	Propeller 17. 10
Stern tube 17. 10	Steam pipes tested 8+19. 11	Engine and boiler seatings 8. 11	Engines holding down bolts 8. 11		
Completion of pumping arrangements 23. 11	Boilers fixed 13. 11	Engines tried under steam 23. 11			
Main boiler safety valves adjusted 23. 11	Thickness of adjusting washers 24. 12, 24. 14, 24. 16, 24. 18, 24. 20, 24. 22, 24. 24, 24. 26, 24. 28, 24. 30, 24. 32, 24. 34, 24. 36, 24. 38, 24. 40, 24. 42, 24. 44, 24. 46, 24. 48, 24. 50, 24. 52, 24. 54, 24. 56, 24. 58, 24. 60, 24. 62, 24. 64, 24. 66, 24. 68, 24. 70, 24. 72, 24. 74, 24. 76, 24. 78, 24. 80, 24. 82, 24. 84, 24. 86, 24. 88, 24. 90, 24. 92, 24. 94, 24. 96, 24. 98, 24. 100				
Material of Crank shaft Steel	Identification Mark on Do. 7685, 67, 8KH	Material of Thrust shaft Steel	Identification Mark on Do. 8020 KH		
Material of Tunnel shafts Steel	Identification Marks on Do. 7840 KH	Material of Screw shafts Steel	Identification Marks on Do. 7635 KH		
Material of Steam Pipes Steel		Test pressure 45 Atm.	by rolls.		

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

Specification of Donkey Pumps:

- Simplex double acting 7" diam. by 6 1/4" stroke for Feed purposes.
- Duplex " " 5" " " 6" " " " and bilges
- Simplex " " 14" " " 12" " " Ballast " "
- Duplex " " 7 1/2" " " 6" " " Auxiliary Condenser " "
- Duplex " " 3 3/4" " " 4" " " Fresh water
- Injector to supply 13 1/2 Tons water pr. hour to Boilers.

Material and workmanship of these Engines and Boilers are of very good description, the outfit is ample. The tests of the Steel Boiler material, signed by the testing Surveyors, are in my hands. The Forging Certificates of shafting and other large Forgings will be found attached. I attended to the stand trial along side the Yard when the machinery gave full satisfaction. I beg to recommend that the machinery be classed and that **LMC 12.12** be entered in the Society's Register Book and that a Certificate to this effect be issued.

The amount of Entry Fee.	£ 65-	When applied for.	3. 12. 12
Special	£ 1236-	When received.	6. 12. 12
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£ 300-		

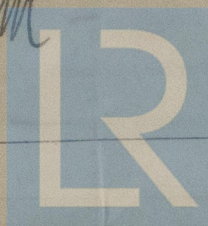
It is submitted that this vessel is eligible for THE RECORD + LMC 12.12.
R.D. J.W.D. Engineer Surveyor & Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. DEC. 13. 1912

Assigned

thmc 12.12



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Lloyd's Register Foundation

Certificate (if required) to be sent to Hamburg Office

The Surveyors are requested to write on or below the space for Committee's Minute.