

REPORT ON MACHINERY.

No. 25276

Received at London Office

FRL AUG. - 2. 1912

Date of writing Report 29-7-12 When handed in at Local Office 1/8/12 Port of Hull
 No. in Survey held at Hull Date, First Survey Jan 19th Last Survey July 1912
 Reg. Book. 591 on the steel screw hauler Emmanuel (Number of Visits 37) Gross 248
 Master By whom built Cochrane & Sons Tons Net 101
 Built at Leby when made 1912-7
 Engines made at Hull By whom made Charles C. L. & Co. when made 1912-7
 Boilers made at Hull By whom made Charles C. L. & Co. when made 1912-7
 Registered Horse Power 70 Owners Tricite Anonyme Pecherier & Co. Port belonging to Belend
 Nom. Horse Power as per Section 28 70 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion Surface Condensing No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 12" - 20" - 32" Length of Stroke 23" Revs. per minute 6.96 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 36"
 Dia. of Tunnel shaft 6.1" Dia. of Crank shaft journals 6.4" Dia. of Crank pin 6.1/2" Size of Crank webs 4 1/4 x 12 1/2" Dia. of thrust shaft under
 collars 6 1/2" Dia. of screw 8'-F" Pitch of Screw 11'-3" No. of Blades 4 State whether moveable no Total surface 277
 No. of Feed pumps one Diameter of ditto 2 3/4" Stroke 10" Can one be overhauled while the other is at work ✓
 No. of Bilge pumps one Diameter of ditto 2 3/4" Stroke 10" Can one be overhauled while the other is at work ✓
 No. of Donkey Engines two 2 1/2" ejectors Sizes of Pumps two 5" x 2 1/2" x 5" 6" x 6" x 6" 8" x 8" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room one 2" In Holds, &c. one 2" in each clush well also connected
 to 2 1/2" ejector
 No. of Bilge Injections one sizes 3 1/2" Connected to condenser to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size 2 1/2" ejector
 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 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 yes
 What pipes are carried through the bunkers forward suction How are they protected wood casing
 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 18-7-12 of Stern Tube 18-7-12 Screw shaft and Propeller 18-7-12
 Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Phoenix A.K. Ges. Hörde
 Total Heating Surface of Boilers 1300 Is Forced Draft fitted no No. and Description of Boilers one single ended
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 14-6-12 No. of Certificate 1906
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 32 No. and Description of Safety Valves to
 each boiler two spring loaded Area of each valve 4.91 sq. ins. (shell 6.8.12) Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes
 Smallest distance between boilers on uptakes and bunkers on woodwork 7" boiler lagged dia. of boilers 150" Length 10'-3" Material of shell plates S
 Thickness 5/32 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double
 long. seams Y.R.B.1 Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 9/16" Lap of plates or width of butt straps 18 1/4"
 Per centages of strength of longitudinal joint 92.2 Working pressure of shell by rules 206 lbs Size of manhole in shell 12" x 16"
 Size of compensating ring 9" x 1 1/32" No. and Description of Furnaces in each boiler two Dighton Material S Outside diameter 44 1/2"
 Length of plain part top ✓ Thickness of plates bottom 19/32 Description of longitudinal joint welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 212 Combustion chamber plates: Material S Thickness: Sides 3/4" Back 2 1/32" Top 2 1/32" Bottom 3/4"
 Pitch of stays to ditto: Sides 9 1/2" x 8 1/2" Back 8 3/4" x 8" Top 8 1/2" x 8 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 212
 Material of stays S Diameter at smallest part 1.76" Area supported by each stay 70" Working pressure by rules 201 End plates in steam space:
 Material S Thickness 1 1/8" Pitch of stays 16 1/2" x 17" How are stays secured D. H. Working pressure by rules 202 Material of stays S
 Diameter at smallest part 6.23" Area supported by each stay 280 Working pressure by rules 281 Material of Front plates at bottom S
 Thickness 1" Material of Lower back plate S Thickness 15/16" Greatest pitch of stays 14 1/2" x 8 3/4" Working pressure of plate by rules 212
 Diameter of tubes 3 1/2" Pitch of tubes 4 19/16" Material of tube plates S Thickness: Front 1" Back 7/8" Mean pitch of stays 9 7/8"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 207 lbs Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 9 1/2" x 13 1/4" Length as per rule 35 1/2" Distance apart 8 1/2" Number and pitch of stays in each three 8 1/4"
 Working pressure by rules 205 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 ✓

VERTICAL DONKEY BOILER— Manufacturers of Steel

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:— *Two top end bolts, two bottom end bolts, two main bearing bolts, one set of coupling bolts, one set of pump valves, a quantity of iron bolts of various sizes.*

FOR EARLE'S

SHIPBUILDING & ENGINEERING CO. LIMITED.

The foregoing is a correct description,

J. J. Tulethorp Manufacturer.

SECRETARY.

Dates of Survey while building
 During progress of work in shops— 1912:— Jan 19. 22. 25. Apr 19. May 1. 7. 15. 21. 23. 30. 31. Jun 1. 4. 5. 6. 7. 11. 13. 14. 19. 20.
 During erection on board vessel— Jun 24. 26. 28. Jul 1. 3. 4. 10. 12. 16. 17. 18. 19. 22. 23. 24. 25.
 Total No. of visits 37

Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders 1-6-12 Slides 11-6-12 Covers 11-6-12 Pistons 1-7-12 Rods 1-7-12
 Connecting rods 1-7-12 Crank shaft 4-7-12 Thrust shaft 10-7-12 Tunnel shafts ✓ Screw shaft 12-7-12 Propeller 12-7-12
 Stern tube 11-6-12 Steam pipes tested 23-7-12 Engine and boiler seatings 18-7-12 Engines holding down bolts 22-7-12
 Completion of pumping arrangements 25-7-12 Boilers fixed 24-7-12 Engines tried under steam 25-7-12
 Main boiler safety valves adjusted 25-7-12 Thickness of adjusting washers *Pro 1 1/2" Lamin 4 1/2"*

Material of Crank shaft *Steel* Identification Mark on Do. *2945 WDH* Material of Thrust shaft *Steel* Identification Mark on Do. *1154D EC*
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Steel* Identification Marks on Do. *1154D EC*
 Material of Steam Pipes *Copper* Test pressure *400 lbs.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Machinery of this vessel has been constructed under special survey in accordance with the approved plans & the rules of this Society, the materials & workmanship are good. The Boiler has been tested by Hydraulic pressure to 400 lbs found sound & tight. The Machinery has been properly fitted & secured on board & on completion was tried under steam & found satisfactory & in my opinion is eligible for the record + L.M.C. 7. 12. W.P. to be noted 180 lbs.*

These engines were designed for a working pressure of 180 lbs the owner desired a boiler constructed for a working pressure of 200 lbs to work at 180 lbs.

It is submitted that this vessel is eligible for THE RECORD + LMC 7. 12.

180 lbs.

The amount of Entry Fee ... £ 1 : 0 :
 Special ... £ 10 : 10 :
 Donkey Boiler Fee ... £ - : - :
 Travelling Expenses (if any) £ - : - :
 When applied for, 29.7.12
 When received, 9.8.12

Committee's Minute

FRI. AUG. -9. 1912

Assigned

thmc 7.12

Frank L. Sturgeon.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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