

# REPORT ON MACHINERY.

Received at London Office

WED. 23 FEB. 1921

Date of writing Report 30 Dec 1920 Port of MIDDLESBROUGH

No. in Survey held at Middlesbrough Date, First Survey 10 Dec 1919 Last Survey 21 Dec 1920

Reg. Book. 48766 on the SS "Elena Peirce" (Hull No. 1310 & Richardson's Westgarth No. 2566)

Master [blank] Built at Middlesbrough By whom built Furness Shipbuilding Co. Ltd Tons { Gross 5820 Net 3625 When built 1921

Engines made at Middlesbrough By whom made Richardsons Westgarth & Co. Ltd when made 1920

Boilers made at [blank] By whom made [blank] when made 1920

Registered Horse Power [blank] Owners Peirce Bros. Port belonging to Hapsles

Nom. Horse Power as per Section 28 343 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

Dia. of Cylinders 24" 45" 76" Length of Stroke 51" Revs. per minute 130 Dia. of Screw shaft 15" Material of screw shaft Iron

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 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 5'-2"

Dia. of Tunnel shaft 13 3/4" Dia. of Crank shaft journals 14 3/8" Dia. of Crank pin 15" Size of Crank webs 20" x 9 3/8" Dia. of thrust shaft under collars 15 1/4" Dia. of screw 14" - 9" Pitch of Screw 18" - 0" No. of Blades 4 State whether moveable No Total surface 100 sq ft

No. of Feed pumps 2 Diameter of ditto 8" x 10 1/2" Stroke 21" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/4" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps 8" x 6" x 8" 10" x 12" x 10" 4" x 4" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 of 3 1/2" and 2 of 3 1/2" direct in Tunnel Well.

In Holds, &c. 2 of 3 1/2" in each hold and 1 of 2 1/2"

No. of Bilge Injections 1 size 8" Connected to condenser, or to circulating pump Yes Are 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 Yes

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 None How are they protected Yes

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 21.9.20 of Stern Tube 10.11.20 Screw shaft and Propeller 14.11.20

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Sons Ltd

Total Heating Surface of Boilers 8580 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 3 Multitubular Cylindrical

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 29.6.20 No. of Certificate 6138

Can each boiler be worked separately Yes Area of fire grate in each boiler 62.8 sq ft No. and Description of Safety Valves to each boiler Two direct spring loaded

Area of each valve 12.56 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 15'-6 1/2" Length 12'-1 1/2" Material of shell plates Steel

Thickness 1 1/4" Range of tensile strength 28/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR lap

long. seams DR DR Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 14 1/2"

Per centages of strength of longitudinal joint rivets 86.08 Working pressure of shell by rules 181 lbs Size of manhole in shell 16 1/2" x 13"

plate 85.29 Size of compensating ring 30 1/2" x 29" No. and Description of Furnaces in each boiler 3 Deightons Material Steel Outside diameter 49 3/4"

Length of plain part top 19 1/2" bottom 13 1/2" Thickness of plates top 19 1/2" bottom 13 1/2" Description of longitudinal joint Weld No. of strengthening rings Yes

Working pressure of furnace by the rules 190 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/32" Back 1/16" Top 19/32" Bottom 23/32"

Pitch of stays to ditto: Sides 7 1/2" x 6 5/8" Back 8 3/8" x 8" Top 7 1/2" x 6 5/8" If stays are fitted with nuts or riveted heads Riveted heads Working pressure by rules 180 lbs

Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 49 sq in Working pressure by rules 193 lbs End plates in steam space

Material Steel Thickness 1 1/8" Pitch of stays 19 1/2" x 15 3/4" How are stays secured Nuts & Washers Working pressure by rules 192 lbs Material of stays Steel

at smallest part 6.1 sq in Area supported by each stay 31.6 sq in Working pressure by rules 206 lbs Material of Front plates at bottom Steel

Thickness 5/16" Material of Lower back plate Steel Thickness 13/16" Greatest pitch of stays 13 3/4" x 8" Working pressure of plate by rules 181 lbs

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 3/4" Material of tube plates Steel Thickness: Front 15/16" Back 13/16" Mean pitch of stays 10 3/8"

Pitch across wide water spaces 13 1/2" Working pressures by rules 185 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 3/4" x 1 1/2" Length as per rule 32 3/4" Distance apart 4 1/2" Number and pitch of stays in each 3 - 6 3/8"

Working pressure by rules 198 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes

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

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

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

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

IS A DONKEY BOILER FITTED? no

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Propeller and screw shaft. 2 Top end bolts & nuts. 2 Bottom end bolts & nuts. 2 Main bearing bolts & nuts. 1 set of Coupling bolts & nuts. Centrifugal pump impeller shaft. 16 Condenser tubes. 1 set of Feed pump valves. 1/2 set of Air pump valves. 1 set of valves & seats for Bilge pumps. 1 main and 1 Auxiliary check valve. 1 Filter basket. 3 Safety valve springs. 1 pair of bottom end bushes. 2 pair of Top end bushes. Assorted bolts & nuts. Rod & sheet steel

The foregoing is a correct description,

For and on behalf of

RICHARDSONS, WESTGARTH & Co., Ltd.

Manufacturer.

GENERAL MANAGER (MIDDLESBROUGH WORKS.)

Dates of Survey while building: During progress of work in shops: 1919. Dec 1. 9. 17. 24. 1920. Jan 8. 12. 14. 16. 19. 21. 26. 30. Feb 4. 16. 19. 23. 27. Mar 1. 5. 8. 13. 17. 29. April 1. 16. 20. 26. 28. 30. May 5. 11. 13. 14. 18. 28. June 2. 8. 11. 18. 22. 29. July 2. 6. 13. 19. 24. 29. Aug 4. 11. 24. 31. Sep 2. 8. 16. 21. 22. 24. 27. 30. Oct 5. 13. 18. 19. 20. 22. 26. Nov 1. 3. 4. 10. 15. 17. 23. 29. Dec 1. 6. 9. 10. 15. 16. 17. 20. 21. Total No. of visits: 86. Is the approved plan of main boiler forwarded herewith?

Dates of Examination of principal parts—Cylinders 12. 10. 20. Slides 22. 10. 20. Covers 22. 10. 20. Pistons 24. 9. 20. Rods 24. 9. 20. Connecting rods 24. 9. 20. Crank shaft 20. 4. 20. Thrust shaft 11. 8. 20. Tunnel shafts 11. 8. 20. Screw shaft 19. 3. 20. Propeller 12. 10. 20. Stern tube 24. 9. 20. Steam pipes tested 1. 12. 20. 7. 9. 12. 20. Engine and boiler seatings 29. 9. 20. Engines holding down bolts 10. 12. 20. Completion of pumping arrangements 21. 12. 20. Boilers fixed 10. 12. 20. Engines tried under steam 21. 12. 20. Main boiler safety valves adjusted 21. 12. 20. Thickness of adjusting washers P.H. 1/4. P.V. 1/4. S.V. 1/4. Cent. H. 1/2. P.V. 1/2. S.V. 1/2. S.H. 1/2. S.V. 1/2. S.H. 1/2. S.V. 1/2. Material of Crank shaft Steel Identification Mark on Do. 6162 AB. Material of Thrust shaft Steel Identification Mark on Do. 4862 N. Material of Tunnel shafts Steel Identification Marks on Do. 4862 N. Material of Screw shafts Iron Identification Marks on Do. 6140 AB. Material of Steam Pipes Steel (lapwelded) Test pressure 270 lbs. 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? Yes If so, state name of vessel 1/2 "Citta di Messina"

General Remarks (State quality of workmanship, opinions as to class, &c.)  
The machinery of this vessel has been built under Special Survey; the workmanship and materials are good. It has been efficiently fitted on board and proved satisfactory under working conditions.  
The vessel is eligible in my opinion to have the notation of L.M.C. 12.20 made in the Register Book.

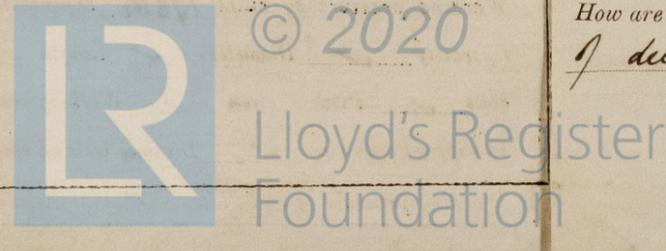
It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12.20 FI

Roll 26/2/21

The amount of Entry Fee ... £ 3 : 0 :  
Special ... £ 48 : 13 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, 22/2/21  
When received, 4. 3. 21

Wm Lewis  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
Assigned + L.M.C. 12.20  
F.D.



MIDDLESBRO

Vertical text on the left margin: The Surveyors are requested not to write on or below the space for Certificate's No. (1922.)

Rpt. 13.  
Port of  
No. in Reg. Book 48466  
Owners  
Yard No.  
DESCRIP  
Engine  
Capacity  
Where is  
Position of  
Positions  
Painting  
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Branch cab  
Branch cab  
Leads to lan  
Cargo light  
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covers  
Are all the j  
position  
Are there an  
How are the  
of deck