

REPORT ON MACHINERY

No. 10877

FRI. 3 DEC. 1920

Received at London Office

MIDDLESBRO

Writing Report 10 When handed in at Local Office 19 Port of MIDDLESBRO

Survey held at Stockton-on-Tees Date, First Survey 23rd June/20 Last Survey 23rd Nov 1920

Book on the Steel Screw Steamer ETHEL RADCLIFFE (S.S. No. 196) Tons { Gross 5673
 Net 3456

Master M. Mathias Built at Stockton By whom built Craig Taylor & Co. Lim. When built 1920

Machinery made at Stockton By whom made Messrs Blair & Co. Lim. (No. 1871) when made 1920

Engines made at Stockton By whom made Messrs Blair & Co. Lim. when made 1920

Registered Horse Power _____ Owners Anthony Radcliffe & S. Coffin Port belonging to London

Horse Power as per Section 28 471 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

GINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3

No. of Cylinders 28-46-75 Length of Stroke 48 Revs. per minute 57 Dia. of Screw shaft as per rule 15.09 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

Is the propeller boss yes If the liner is in more than one length are the joints burned in one 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 tight fit If two

shafts are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 5'-6"

No. of Tunnel shaft as per rule 13.67 Dia. of Crank shaft journals as per rule 14.36 Dia. of Crank pin 15 1/4" Size of Crank webs 27 1/2" x 9 1/2" Dia. of thrust shaft under

bars 15 1/4" Dia. of screw 18'-0" Pitch of Screw 18'-10 1/2" No. of Blades 4 State whether moveable no Total surface 104 1/2

No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 34" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 5" Stroke 34" Can one be overhauled while the other is at work yes

No. of Donkey Engines 4 Sizes of Pumps 2 Ballast = 8 x 9 x 10 1/2 10 x 12 x 12 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 2 @ 3 1/2"; Boiler Room 2 @ 3 1/2" In Holds, &c. 2 @ 3 1/2" in each hold except aftermost

Are there 3 @ 3 1/2"; Tunnel well on at 3 1/2"

No. of Bilge Injections 1 size 8" Connected to condenser for 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 no

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

How are they protected wood ceiling

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 27.9.20 of Stern Tube 1.9.20 Screw shaft and Propeller 7.10.20

Is the Screw Shaft Tunnel watertight in hull P.H. Is it fitted with a watertight door yes worked from top platform

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

Total Heating Surface of Boilers 7917 Is Forced Draft fitted no No. and Description of Boilers 3 single ended

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 27.9.20 No. of Certificate 6158

Can each boiler be worked separately yes Area of fire grate in each boiler 65.9 1/2 No. and Description of Safety Valves to

each boiler 2 direct spring Area of each valve 8.29 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 3'-0" Mean dia. of boilers 16'-0" Length 11'-6" Material of shell plates steel

Thickness 1 1/2" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2.R. lap

Long. seams 2.B-3 Riv Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 19 5/8" x 1 3/4"

Per centages of strength of longitudinal joint 86.1 Working pressure of shell by rules 183 Size of manhole in shell 16" x 12"

Size of compensating ring 7 5/8" x 1 1/2" No. and Description of Furnaces in each boiler 3 Dighton Material steel Outside diameter 47.41

Length of plain part top 37" Thickness of plates bottom 64" Description of longitudinal joint Weld No. of strengthening rings 1

Working pressure of furnace by the rules 192 Combustion chamber plates: Material steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2"

Pitch of stays to ditto: Sides 9 3/4" x 8 3/4" Back 9 3/4" x 9" Top 9" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 185

Material of stays steel Diameter at smallest part 1.99 Area supported by each stay 87.18 Working pressure by rules 206 End plates in steam space:

Material steel Thickness 1 1/4" Pitch of stays 18 1/2" x 18 1/2" How are stays secured nuts - 9 x 1 Working pressure by rules 193 Material of stays steel

Diameter at smallest part 7.24 Area supported by each stay 383 Working pressure by rules 198 Material of Front plates at bottom steel

Thickness 1" Material of Lower back plate steel Thickness 1" Greatest pitch of stays 14" x 9" Working pressure of plate by rules 250

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 3/8" Material of tube plates steel Thickness: Front 1 1/2" Back 1 3/8" Mean pitch of stays 11 3/8"

Pitch across wide water spaces 14 1/2" Working pressures by rules 192 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 8 1/2" x 1 1/2" Length as per rule 33 3/4" Distance apart 9" Number and pitch of stays in each 30 @ 8 1/2"

Working pressure by rules 191 Superheater or Steam chest; how connected to boiler none 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 _____

W35-0033

Lloyd's Register Foundation

IS A DONKEY BOILER FITTED? *yes*

If so, is a report now forwarded? *yes Indb No 1075*

SPARE GEAR. State the articles supplied:— *Two each of con. rod top-end, bottom-end and main bearing bolts and nuts: one set of coupling bolts and nuts: one set each of, feed, bilge and air-pump valves, assorted bolts & nuts: iron of various sizes: One Tail-end shaft, one propeller one circulating pump bronze impeller and minor gear.*

The foregoing is a correct description,

FOR BLAIR & Co. LIMITED,

Geo. Wattershup
MANAGING DIRECTOR

Manufacturer.

Dates of Survey while building: During progress of work in shops -- *1920. June 23. 28. July 5. 13. 20. 23. 27. 28. 30. Aug 3. 9. 11. 13. 28. 28. 27. 31. Sep 1. 2. 3. 10. 14. 15. 17. 20. 22. 24. 27. 29. Oct 1. 4. 7. 8. 11. 14. 19. 21. 22. 25. 29. Nov 2. 5. 11. 15. 22. 23. Dec 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31.*
Total No. of visits *47.*

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

" " " donkey " " " *yes*

Dates of Examination of principal parts—Cylinders *25. 8. 20* Slides *27. 8. 20* Covers *27. 8. 20* Pistons *2. 9. 20* Rods *2. 9. 20*
Connecting rods *20. 9. 20* Crank shaft *10. 9. 20* Thrust shaft *20. 7. 20* Tunnel shafts *31. 8. 20 to 2* Screw shafts *3. 9. 20* Propeller *4. 10. 20*
Stern tube *9. 8. 20* Steam pipes tested *22. 10. 20* Engine and boiler seatings *1. 9. 20* Engines holding down bolts *19. 10. 20*
Completion of pumping arrangements *23. 11. 20* Boilers fixed *5. 11. 20* Engines tried under steam *5. 11. 20*
Main boiler safety valves adjusted *8. 11. 20* Thickness of adjusting washers *P.B. 5-1/2; Cont A 5-3/8; S.P. 5-13/16*
Material of Crank shaft *Eng Steel* Identification Mark on Do. *7275* Material of Thrust shaft *Eng Steel* Identification Mark on Do. *4989*
Material of Tunnel shafts *Eng Steel* Identification Marks on Do. *4989* Material of Screw shafts *iron* Identification Marks on Do. *7275*
Material of Steam Pipes *solid drawn copper (5" x 1/2")* Test pressure *400 lbs.*

Is an installation fitted for burning oil fuel *See note* 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. *no* If so, state name of vessel *✓*

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

Note: - With a view to carrying oil fuel, if desired at any future time, all the water ballast pipes in the double bottom and machinery space have been fitted of iron with machined flanges and cardboard joints and the stokehold and engine room platforms have been made of iron to the exclusion of wood.

The machinery of this vessel has been built under special survey. The materials and workmanship are sound and good. The boilers were tested by hydraulic pressure and the engines and boilers examined under steam and all found satisfactory.

*The machinery is now in a good and safe working condition and renders the vessel eligible in my opinion to have the notation of **LMC-11-20** in the Register Book.*

*It is submitted that this vessel is eligible for **REG. RECORD + LMC-11-20***

The vessel is fitted with Electric Light and Wireless

The amount of Entry Fee ... £ *3-0-0*
Special ... £ *43-11-0*
Donkey Boiler Fee ... £ *1-*
Travelling Expenses (if any) £ *1-12-0*

When applied for, *29/11/20*
When received, *1/12/20*
Wm Morrison
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute
Assigned *+ LMB 11.20*

MIDDLESBRO



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Writing Report 27.7
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Brighton
Description of longitudinal joint
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