

Rpt. 4.

## REPORT ON MACHINERY.

No. 11194

Received at London Office

THU. JAN. 26 1922

Date of writing Report

19

When handed in at Local Office

25/1/22

Port of

Middlesbrough

No. in Survey held at  
Reg. Book.

Stockton-on-Tees

Date, First Survey

24th Dec. 1921

Last Survey

20th Jan. 1922

1922

on the

Steel Screw Steamer ILLINGWORTH

(S.S.N. 669)

(Number of Visits 83)

Gross

Net

When built 1922

Master

Built at

Stockton

By whom built

Richardson Duck &amp; Co

Engines made at

Stockton

By whom made

Messrs Blair &amp; Co Ltd (1875)

when made 1922

Boilers made at

Stockton

By whom made

Messrs Blair &amp; Co Ltd

when made 1922

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28

629

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &amp;c.—Description of Engines

Quadruple Expansion

No. of Cylinders

4

No. of Cranks

4

Dia. of Cylinders

25½, 36½, 52½, 76

Length of Stroke

54

Revs. per minute

Dia. of Screw shaft

as per rule 15.78

Material of

Ang 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

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

liners are fitted, is the shaft lapped or protected between the liners

yes

Length of stern bush

5'-7½"

Dia. of Tunnel shaft

as per rule 14.198

Dia. of Crank shaft journals

as per rule 14.91

Dia. of Crank pin

15¾"

Size of Crank web

25" x 10½"

Dia. of thrust shaft under

collars

15¾"

Dia. of screw

19'-0"

Pitch of Screw

18'-0"

No. of Blades

4

State whether moveable

no

Total surface

114 ft

No. of Feed pumps

2

Diameter of ditto

4"

Stroke

36"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

5"

Stroke

36"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

2

Sizes of Pumps

10" x 11" x 10"

No. and size of Suctions connected to both Bilge and Donkey pumps

8" x 5" x 8"

In Engine Room

4 @ 3½"

In Holds, &amp;c.

2 @ 3½" in each hold except aftermost

where 2 @ 2¾" &amp; one @ 3½": Tunnel with one @ 2½"

No. of Bilge Injections

1

sizes

10"

Connected to

centrifugal circulating pump

yes

Is a separate Donkey Suction fitted in Engine room &amp; 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

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

yes

What pipes are carried through the bunkers

suctions to forward holds

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

Is the Screw Shaft Tunnel watertight

see hull Rpt

Is it fitted with a watertight door

yes

worked from

top platform

BOILERS, &amp;c.—(Letter for record (S) 3)

Manufacturers of Steel

Messrs John Spencer &amp; Sons Ltd

Howdens

Total Heating Surface of Boilers

8875

Is Forced Draft fitted

yes

No. and Description of Boilers

3 single ended

Working Pressure

220

Tested by hydraulic pressure to

380

Date of test

14.10.21

No. of Certificate

6247

Can each boiler be worked separately

yes

Area of fire grate in each boiler

72 ft

No. and Description of Safety Valves to

each boiler

2 direct spring

Area of each valve

9.62 ft

Pressure to which they are adjusted

225 lb

Are they fitted with easing gear

Smallest distance between boilers or bunkers

3'-6"

dia. of boilers

16'-0"

Length

12'-3"

Material of shell plates

steel

Thickness

1½"

Range of tensile strength

28-32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

2 Riv. top

long. seams

2 Riv. 3 Riv.

Diameter of rivet holes in long. seams

1½"

Pitch of rivets

10¾"

Top of plates or width of butt straps

23½"

1½ in

1½ out

Per centages of strength of longitudinal joint

rivets

88.3

Working pressure of shell by rules

221

Size of manhole in shell

16" x 12"

Rule

39½"

Size of compensating ring

8½" x 1½"

No. and Description of Furnaces in each boiler

4 Dighton

Material

steel

Outside diameter

39½"

Length of plain part

top

Thickness of plates

bottom

Description of longitudinal joint

Weld

No. of strengthening rings

23/32"

Back

23/32"

Top

Bottom

Working pressure of furnace by the rules

230

Combustion chamber plates: Material

steel

Thickness: Sides

23/32"

Back

1½"

Top

23/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

8" x 9½"

Back

9½" x 8½"

Top

9½" x 8½"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

232

Material of stays

steel

Area at smallest part

1.99

Area supported by each stay

73.8

Working pressure by rules

244

End plates in steam space:

Material

steel

Thickness

Area at smallest part

8.48

Area supported by each stay

331

Working pressure by rules

288

Material of Front plates at bottom

steel

Thickness

1"

Material of Lower back plate

steel

Thickness

1½"

Greatest pitch of stays

14" x 8½"

Working pressure of plate by rules

344

Diameter of tubes

2½"

Pitch of tubes

3½" x 3¾"

Material of tube plates

steel

Pitch across wide water spaces

13½"

Working pressures by rules

238

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

10½" x 1½"

Length as per rule

34½"

Distance apart

Working pressure by rules

237

Steam dome: description of joint to shell

none

% 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

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

Lloyd's Register Foundation

W1330-0245



IS A DONKEY BOILER FITTED? *no*

*If so, is a report now forwarded?*

SPARE GEAR. State the articles supplied:— Two each of connecting rod top-end, bottom end and main bearing bolts and nuts: One set of coupling bolts and nuts: One set of feed & bilge pump valves; one set of check valves: 2 safety valve springs: one set each of H.P. & M.P. piston rings; Iron of various sizes assorted bolts and nuts: One tail-end shaft: one propeller and minor gear

*The foregoing is a correct description,*

FOR BLAIR & Co., LIMITED.

Geo. Nittushup

*Manufacturer.*

MANAGING DIRECTOR

Dates of Survey while building	During progress of work in shops - -	1921 4-6-24-25. Mar. 1-3-4-5-10-11-14-21-23-31 Apr. 1-4-6-7-8-11-12-14-15-18-21-22-26-27-29 May 3-6-9-11-13 July 4-11
	During erection on board vessel - - -	14-18-20-22-24-27-28-29 Aug. 2-5-8-9-11-24-26-30 Sept. 1-5-18-20-22-26-28-30 Oct. 4-6-10-12-14-18-19-24-27-31 Nov. 1-9-14
	Total No. of visits	21-23-25-29- <del>Mar</del> 9-12-19 <sup>1922</sup> Jan. 10-11-12-20 Is the approved plan of main boiler forwarded herewith <u>yes</u> ✓

83

“ “ “ *donkey* “ “

**Dates of Examination of principal parts**—Cylinders 9.8.21 Slides 20.9.21 Covers 9.8.21 Pistons 11.8.21 Rods 11.8.21  
Connecting rods 20.9.21 Crank shaft 9.9.21 Thrust shaft 9.8.21 Tunnel shafts { 18.7.21 G 2  
26.8.21 Screw shafts 9.9.21 Propeller 30.9.21  
Stern tube 13.5.21 Steam pipes tested Gls 11.10.21 Engine and boiler seatings 8.8.21 Engines holding down bolts 9.11.21  
Completion of pumping arrangements 29.11.21 Boilers fixed 11.1.22 Engines tried under steam 11.1.22  
Completion of fitting sea connections 8.8.21 Stern tube 8.8.21 Screw shaft and propeller 19.10.21  
Main boiler safety valves adjusted 11.1.22 Thickness of adjusting washers P.Bh P-7/16 S-13/32 Cent.Bh P-7/16 S-15/32 S.Bh P-11/32 B S-13/32  
Material of Crank shaft *Ing Steel* Identification Mark on Do. 5931-N Material of Thrust shaft *Ing Steel* Identification Mark on Do. 5931-N  
Material of Tunnel shafts *Ing Steel* Identification Marks on Do. 5931-N Material of Screw shafts *Ing Steel* Identification Marks on Do. 5931-N  
Material of Steam Pipes *Lake welded Steel* Test pressure 660 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 no If so, state name of vessel ✓

*General Remarks* (State quality of workmanship, opinions as to class, &c. 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 in a good and safe working condition and renders the vessel eligible in my opinion to have the notation of  $\Phi$  L.M.C-1-22 in the Register Book

Note: - This vessel is fitted with Electric Light and "Wireless"

It is submitted that  
this vessel is eligible for  
THE RECORD.

✠ L.M.C. - 1.22. F.D. C.L.

The amount of Entry Fee	...	£	65-0	✓	When applied for,	
Special	...	£	106-9	✓	13-1	1922
Donkey Boiler Fee	...	£	✓	:	When received,	
Travelling Expenses (if any)	£	✓	:	:	16-1	1922

W<sup>m</sup> Morrison

*Engineer Surveyor to Lloyd's Register of Shipping.*

## Committee's Minute

THE 7 FEB 1922

*Assigned*

+ L<sup>th</sup> 1.22

F. D. C. L.

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