

REPORT ON MACHINERY.

FRI DEC 27 1912

NEWCASTLE ON TYNE

No. 63455
25522

Received at London Office

MON. DEC. -9. 1912

Date of writing Report

19

When handed in at Local Office

7. 12. 1912

Port of

Sunderland

No. in Survey held at
Reg. Book.

SUNDERLAND

Date, First Survey

15 July

Last Survey

Decr 1912

Ship on the

S/S. "Combe"

Master

Built at

By whom built

Wood Skinner & Co

Gross Tons

Net Tons

When built

Engines made at

By whom made

H. Dickinson & Sons Ltd

when made

Boilers made at

By whom made

when made

Registered Horse Power

Owners

H. Dickinson & Sons Ltd

Port belonging to

London

Nom. Horse Power as per Section 28

244

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Tri. C.P. & A.

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

21" 33" 58"

Length of Stroke

39"

Revs. per minute

75

Dia. of Screw shaft

12 1/2"

Material of

screw shaft

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

4' 3"

Dia. of Tunnel shaft

as per rule

as fitted

Dia. of Crank shaft journals

as per rule

as fitted

Dia. of Crank pin

11 1/8"

Size of Crank webs

Patent

Dia. of thrust shaft under

collars

No. of Feed pumps

2

Diameter of ditto

3"

Stroke

19 1/2"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

4"

Stroke

19 1/2"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

3

Sizes of Pumps

2 off 10" x 10"

4" x 6"

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

In Engine Room

3 of 3"

Sps 10.8. 4"

In Holds, &c.

two 3 1/2" in each hold

No. of Bilge Injections

1

sizes

4"

Connected to condenser, or to circulating pump

C.P.

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

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

5. 11. 12

of Stern Tube

5. 11. 12

Screw shaft and Propeller

24. 10. 1912

Is the Screw Shaft Tunnel watertight

none

Is it fitted with a watertight door

yes

worked from

OILERS, &c.—(Letter for record)

S

Manufacturers of Steel

Spencer & Sons Ltd

Total Heating Surface of Boilers

3984

Is Forced Draft fitted

no

No. and Description of Boilers

2. S. E.

Working Pressure

180

Tested by hydraulic pressure to

360 lbs

Date of test

20. 11. 1912

No. of Certificate

3063

Can each boiler be worked separately

yes

Area of fire grate in each boiler

55 1/2 sq ft

No. and Description of Safety Valves to

each boiler

two Spring

Area of each valve

7. 07"

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

5 ft.

Mean dia. of boilers

14. 6"

Length

10. 6"

Material of shell plates

S

Thickness

1 1/2"

Range of tensile strength

28 - 32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

A. 7. 6"

ong. seams

E. 7. 2. 8"

Diameter of rivet holes in long. seams

1 1/4"

Pitch of rivets

8 1/2"

Lap of plates

on

width of butt straps

1' 6"

Per centages of strength of longitudinal joint

rivets 92. 18

plate 85. 4

Working pressure of shell by rules

181 lbs

Size of manhole in shell

end. 16" x 12"

No. and Description of Furnaces in each boiler

3. plain

Material

S

Outside diameter

3' 6"

Size of compensating ring

flanged

No. and Description of Furnaces in each boiler

3. plain

Material

S

Outside diameter

3' 6"

Length of plain part

top 6. 5"

bottom 5. 9"

Thickness of plates

crown 3/4"

bottom 3/4"

Description of longitudinal joint

weld

No. of strengthening rings

yes

Working pressure of furnace by the rules

181 lbs

Combustion chamber plates: Material

S

Thickness: Sides

1/8"

Back

1/8"

Top

1/8"

Bottom

1/8"

Pitch of stays to ditto: Sides

9" x 9 1/2"

Back

9 1/2" x 9 1/2"

Top

9" x 10"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

181 lbs

Material of stays

S

Diameter at smallest part

1. 6"

Area supported by each stay

90"

Working pressure by rules

203

End plates in steam space:

Material

S

Thickness

1 1/8"

Pitch of stays

18" x 18 1/2"

How are stays secured

A. nuts

Working pressure by rules

180

Material of stays

S

Diameter at smallest part

2. 7 1/8"

Area supported by each stay

333"

Working pressure by rules

190

Material of Front plates at bottom

S

Thickness

7/8"

Material of Lower back plate

S

Thickness

7/8"

Greatest pitch of stays

13 1/4" x 9 1/2"

Working pressure of plate by rules

198

Diameter of tubes

3 1/2"

Pitch of tubes

4 1/2" x 4 1/2"

Material of tube plates

S

Thickness: Front

7/8"

Back

7/8"

Mean pitch of stays

9"

Pitch across wide water spaces

1' 2 1/4"

Working pressures by rules

249 lbs

Girders to Chamber tops: Material

S

Depth and

Thickness of girder at centre

7/4" x 2"

Length as per rule

2' 5 1/2"

Distance apart

10"

Number and pitch of stays in each

2 @ 9"

Working pressure by rules

186

Superheater or Steam chest; how connected to boiler

yes

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

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

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 casing 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 | Radius of do. | Stayed by | | |
| Diameter of uptake | Thickness of uptake plates | Thickness of water tubes | Dates of survey | | |

SPARE GEAR. State the articles supplied:—*Propeller. Set coupling bolts + nuts. two in bearing bolts + nuts. Set top + bottom end bolts + nuts. Set of feed and bilge pump valves. Main + donkey check valves. Set of air + circulating pump valves. assorted iron bolts + nuts*

The foregoing is a correct description,

John D. ... Sons, Limited.

Manufacturer.

Dates of Survey while building: During progress of work in shops -- *1912. Jul 15 Aug 20 22 25 Sep 13 Oct 10 16 21 22 24 28 30 31*
During erection on board vessel --- *Nov 4 8 13 18 20 21 22 26 Dec 2 (Aug 29 Oct 23 Nov 5 Dec 11 23 of Nov)*
Total No. of visits *(22)* Is the approved plan of main boiler forwarded herewith *yes.*

Dates of Examination of principal parts—Cylinders *July 15* Slides *15/7. 1912* Covers *15. 7. 1912* Pistons *15. 7. 1912* Rods *15. 7. 1912*
Connecting rods *15. 7. 1912* Crank shaft *20. 8. 1912* Thrust shaft *22. 8. 1912* Tunnel shafts --- Screw shaft *25. 8. 1912* Propeller *25. 8. 1912*
Stern tube *22. 25/8. 4/2* Steam pipes tested *26. 11. 1912* Engine and boiler seatings *22. 11. 1912* Engines holding down bolts *21. 22. 11. 1912*
Completion of pumping arrangements *23. 12. 12* Boilers fixed *22. 11. 1912* Engines tried under steam *2. 12. 1912*
Main boiler safety valves adjusted *2. 12. 1912* Thickness of adjusting washers *PS f 5/16 A 5/16 SB f 1/4 A 1/2*
Material of Crank shaft *S* Identification Mark on Do. *K. 7458 4/2* Material of Thrust shaft *S* Identification Mark on Do. *K. 7624 5/2*
Material of Tunnel shafts *✓* Identification Marks on Do. *K. 7627 6/2* Material of Screw shafts *2S.* Identification Marks on Do. *K. 7628 5/2*
Material of Steam Pipes *Copper. ✓* Test pressure *400 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c. *Machinery + boilers built under Special Survey. Materials and workmanship good. Engines and boilers examined under full pressure + found satisfactory.*
It is submitted that this vessel is eligible for the record of L.M.C. 12. 1912.

It is submitted that this vessel is eligible for THE RECORD + LMC 12.12.

J.W.D. J.R.R.
28/12/12

The amount of Entry Fee .. £ *2* : : :
Special .. £ *32. 4* : : :
Donkey Boiler Fee .. £ : : :
Travelling Expenses (if any) £ : : :
When applied for. *7. 12. 1912*
When received. *as per letter 10/12/12*

Committee's Minute

TUE DEC. 31. 1912

Assigned

Thme 12. 12

MACHINERY CERTIFICATE
Written



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