

REPORT ON MACHINERY.

Received at London Office

Date of writing Report

19

When handed in at Local Office

4. 4 10/14 Port of

Dunderland

No. in Survey held at

Sunderland

Date, First Survey

17 Oct.

Last Survey

18th Apr. 1914

Reg. Book

126 Supp on the

New Steel S.S. "Aydon"

Master

H. J. Thompson

Built at

Blyth

By whom built

Blyth S.S. Coy Ltd. 1916

When built 1914-4

Engines made at

Sunderland

By whom made

North Eastern Marine Eng Coy Ltd.

when made 1914-4

Boilers made at

Sunderland

By whom made

North Eastern Marine Eng Coy Ltd.

when made 1914-4

Registered Horse Power

Owners

J. E. Tully

Port belonging to

Newcastle

Nom. Horse Power as per Section 28

224

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders

Three

No. of Cranks

Three

Dia. of Cylinders

20" x 33" x 54"

Length of Stroke

36"

Revs. per minute

45

Dia. of Screw shaft

11.9"

Material of screw shaft

Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

No liners

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

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

Length of stern bush

4'-6"

Dia. of Tunnel shaft

as per rule 9.94"

Dia. of Crank shaft journals

as per rule 10.42"

Dia. of Crank pin

10 1/2"

Size of Crank webs

16 x 6 1/2"

Dia. of thrust shaft under collars

10 1/2"

Dia. of screw

14'-3"

Pitch of Screw

15'-6"

No. of Blades

4

State whether moveable

no

Total surface

63 sq ft

No. of Feed pumps

Two

Diameter of ditto

3"

Stroke

18"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

Two

Diameter of ditto

3 1/2"

Stroke

18"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

Three

Sizes of Pumps

Two Ballast 9" x 11" x 10"

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

In Engine Room

No. of Bilge Injections

1 size

H"

Connected to condenser, or to circulating pump

yes

Is a separate Donkey Suction fitted in Engine room & size

yes 2 1/2"

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 sized 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

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

10/3/14

of Stern Tube

16.3.14

Screw shaft and Propeller

16.3.14

Is the Screw Shaft Tunnel watertight

none

Is it fitted with a watertight door

yes

worked from

BOILERS, &c.—(Letter for record)

Manufacturers of Steel

J. Spence & Sons Ltd. Newburn Steel Works

Total Heating Surface of Boilers

3918 sq ft

Is Forced Draft fitted

no

No. and Description of Boilers

Two single ended

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

16.2.14

No. of Certificate

2190

Can each boiler be worked separately

yes

Area of fire grate in each boiler

50 sq ft

No. and Description of Safety Valves to each boiler

Two spring loaded

Area of each valve

4.91 sq ft

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

9" (at side)

Mean dia. of boilers

14' 9"

Length

10'-6"

Material of shell plates

Thickness

1/8"

Range of tensile strength

28'8 to 32 tons

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

D.R.

long. seams

T.R.D.P.S.

Diameter of rivet holes in long. seams

1 3/8"

Pitch of rivets

9 3/4"

Lap of plates or width of butt straps

19 1/2"

Per centages of strength of longitudinal joint

86.8

Working pressure of shell by rules

180.3 lbs

Size of manhole in shell

16" x 12"

Size of compensating ring

9 1/2" x 1 1/8"

No. and Description of Furnaces in each boiler

Three Plain

Material

Steel

Outside diameter

Length of plain part

top 4 1/2"

Thickness of plates

bottom 3"

Description of longitudinal joint

weld

No. of strengthening rings

Working pressure of furnace by the rules

186 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

3/4"

Back

2 1/2"

Top

3/4"

Pitch of stays to ditto: Sides

8 1/4" x 12 3/8"

Back

10 1/2" x 11 1/4"

Top

8 1/4" x 10 3/8"

If stays are fitted with nuts or riveted heads

nuts

Material of stays

Steel

Diameter at smallest part

1.63"

Area supported by each stay

100 sq in

Working pressure by rules

188 lbs

End plates in steam space:

Material

Steel

Thickness

1 1/2"

Pitch of stays

20 1/2" x 26 1/2"

How are stays secured

D.N. Wash

Working pressure by rules

181 lbs

Material of stays

Diameter at smallest part

3.5"

Area supported by each stay

543 sq in

Working pressure by rules

188 lbs

Material of Front plates at bottom

Steel

Thickness

3/4"

Material of Lower back plate

Steel

Thickness

3/4"

Material of Lower back plate

Steel

Thickness

1 1/2"

Greatest pitch of stays

11 1/2" x 11 1/4"

Working pressure of plate by rules

180 lbs

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/4" x 4 1/4"

Material of tube plates

Steel

Thickness: Front

3/4"

Back

3/4"

Mean pitch of stays

10.56"

Pitch across wide water spaces

11 1/2"

Working pressures by rules

185 lbs

Girders to Chamber tops: Material

Steel

Depth and thickness of girder at centre

8 1/8" x 1 1/8"

Length as per rule

30"

Distance apart

10 3/4"

Number and pitch of stays in each

2 @ 8 1/4"

VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description		When made	Where fixed
Made at	By whom made			
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
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
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:— Two each bolts & nuts for top & bottom ends & main bearings. One set packing bolts. One set each valves for all pumps. One propeller. 1 set piston spring. 1 set ballast donkey valves etc. Assorted bolts nuts & riv.

The foregoing is a correct description, **NORTH EASTERN MARINE ENGINEERING CO LTD**
S. T. Harrison Secy.
 Manufacturer.

Dates of Survey while building	During progress of work in shops	1913 Oct. 17, 31. Nov. 7, 14, 19, 21, 27, 28. Dec. 4, 5, 9, 18, 23. Jan. 5, 6, 15, 16, 21, 22, 28	Is the approved plan of main boiler forwarded herewith	Yes
	During erection on board vessel	Feb. 4, 5, 10, 13, 16, 18, 19, 20, 25, 26. Mar. 5, 6, 10, 12, 18, 20, 23, 25, 27. 1914 Feb. 23, Apr. 2, 16, 18 (at mtg.)		
	Total No. of visits	(113 39 + 4)		

Dates of Examination of principal parts	Cylinders	11-1-11	Slides	95-2-11	Covers	10-2-11	Pistons	19-2-11	Rods	11-1-11	
Connecting rods	11-1-11	Crank shaft	28-1-11	Thrust shaft	10-2-11	Tunnel shafts	how	Screw shaft	18-2-11	Propeller	25-2-11
Stern tube	25-2-11	Steam pipes tested	9-2-11, 12-3-11	Engine and boiler seatings	10/3/11	Engines holding down bolts	25-3-11				
Completion of pumping arrangements	24-3-11	Boilers fixed	23-3-11	Engines tried under steam	28-3-11						
Main boiler safety valves adjusted	28-3-11	Thickness of adjusting washers	9/32" 7/16" 5/32" 1/8"								
Material of Crank shaft	Steel	Identification Mark on Do.	510 W.S. 246 M.B.	Material of Thrust shaft	Steel	Identification Mark on Do.	40-16 K.H.				
Material of Tunnel shafts	how	Identification Marks on Do.		Material of Screw shafts	Steel	Identification Marks on Do.	90-15 K.H.				
Material of Steam Pipes	Weld iron lap welded. 11" bore x 1/2"	Test pressure	540 lbs.								

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 of good quality and the hydraulic tests of the boilers proved satisfactory. The whole of the machinery has been securely fixed on board & tried under steam & is in good & safe working condition & eligible in our opinion to be classed & have period **LMC 4-14** on completion of the survey.

To complete the survey hold sections & electric light installation to be fitted and the distance between boilers & bunkers to be increased.

As it was not possible to increase the distance between the bunkers and main boilers, baffle plates forming a 3' air space have now been fitted.
 It is submitted that this vessel is eligible for **THE RECORD. + LMC 4. 14**

The amount of Entry Fee	£ 2 : 0 0	When applied for.	14/4/14
Special	£ 31 : 4 0		
Donkey Boiler Fee	£ :	When received.	25/4/14
Travelling Expenses (if any)	£ :		

Committee's Minute
 Assigned
 FRI. MAY 1 - 1914
 + LMC 4. 14

W.D.
 29/4/14
William Dutton
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Certificates (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)