

TUE. AUG. -6. 1912

REPORT ON MACHINERY.

No. 25331

Received at London Office

Writing Report

19

When handed in at Local Office

16. 7. 1912 Port of

Sunderland

Survey held at

Date, First Survey

2 Feb

Last Survey

22 July 1911

Book.

on the S.S. "Hornfels"

ter E. Horu Built at Stockton

By whom built Craig Taylor & Co Ltd

nes made at Sunderland

By whom made North Eastern Marine Eng Co Ltd

ers made at Sunderland

By whom made North Eastern Marine Eng Co Ltd

stered Horse Power

Owners H. B. Horu

Port belonging to

Horse Power as per Section 28

346

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

INES, &c.—Description of Engines

Triple expansion

No. of Cylinders

Three

No. of Cranks

Three

Cylinders 25" x 41" x 68"

Length of Stroke 45"

Revs. per minute 69

Dia. of Screw shaft

as per rule 14.92

Material of

Steel

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

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

the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

yes

If two

fitted, is the shaft lapped or protected between the liners

Length of stern bush

4'-9"

nnel shaft

as per rule 12.4

Dia. of Crank shaft journals

as per rule 13.04

Dia. of Crank pin

13.4

Size of Crank webs

20 1/2 x 8 3/4

Dia. of thrust shaft under

13.4

Dia. of screw

14.3

Pitch of Screw

14.0

No. of Blades

4

State whether moveable

no

Total surface

94 sq

eed pumps

Two

Diameter of ditto

3.75

Stroke

24"

Can one be overhauled while the other is at work

yes

dge pumps

Two

Diameter of ditto

4"

Stroke

24"

Can one be overhauled while the other is at work

yes

onkey Engines

Three

Sizes of Pumps

Ballast 2 off

Feed 1 off

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

2 1/2 x 9 x 10

9 x 6 x 10

In Holds, &c.

Two 3 1/2 in each hold, also one

1/2 in afterhold well

One 3 1/2 tunnel well

Is a separate Donkey Suction fitted in Engine room & size

yes 3 1/2"

Are the roses in Engine room always accessible

yes

Are the sluices on Engine room bulkheads always accessible

how

Connections with the sea direct on the skin of the ship

yes

Are they Valves or Cocks

Both

Are the Discharge Pipes above or below the deep water line

above

Are the Blow Off Cocks fitted with a spigot and brass covering plate

yes

How are they protected

yes

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

yes

Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

yes

Examination of completion of fitting of Sea Connections

22.5.12

of Stern Tube

21.6.12

Screw shaft and Propeller

21.6.12

Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from

the platform

ERS, &c.—(Letter for record

Spence & Sons

Manufacturers of Steel

Heating Surface of Boilers

5064

Is Forced Draft fitted

yes

No. and Description of Boilers

Two single ended

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

9.5.12

No. of Certificate

3014

Can boiler be worked separately

yes

Area of fire grate in each boiler

60.8 sq

No. and Description of Safety Valves to

Two direct spring

Area of each valve

11.04 sq

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

yes

Least distance between boilers or uptakes and bunkers or woodwork

18"

Mean dia. of boilers

15'-1 1/2"

Length

11'-9"

Material of shell plates

Steel

ess 1 1/2"

Range of tensile strength

28 1/2 x 32 tons

Are the shell plates welded or flanged

no

Descrip. of riveting

cir. seams

D.R.

seams T.R.D.B.D.

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

9 1/2"

Lap of plates or width of butt straps

19 1/2"

Advantages of strength of longitudinal joint

rivets 92

plate 85.8

Working pressure of shell by rules

184 lbs

Size of manhole in shell

16" x 12"

compensating ring

2 1/2" x 2 1/2" x 1 1/2"

No. and Description of Furnaces in each boiler

Three horizontal

Material

Steel

Outside diameter

44 1/2"

of plain part

top

Thickness of plates

9"

Description of longitudinal joint

weld

No. of strengthening rings

yes

Working pressure of furnace by the rules

185 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

5/8"

Back

5/8"

of stays to ditto: Sides

8" x 8"

Back

4 1/4" x 8 3/4"

Top

8" x 5 1/2"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

208 lbs

Material of stays

Steel

Diameter at smallest part

1.5"

Area supported by each stay

64.5 sq

Working pressure by rules

186 lbs

End plates in steam space:

Material

Steel

Thickness

1 3/8"

Pitch of stays

Material at smallest part

8.29 sq

Area supported by each stay

440 sq

Working pressure by rules

196 lbs

Material of Front plates at bottom

Steel

Thickness

3"

Greatest pitch of stays

14 1/2" x 8 3/4"

Working pressure of plate by rules

190 lbs

Mean pitch of stays

9 1/16"

Material of tube plates

Steel

Thickness: Front

2 1/2"

Back

3"

Mean pitch of stays

9 1/16"

Width across wide water spaces

13 1/4"

Working pressures by rules

225 lbs

Girders to Chamber tops: Material

Steel

Depth and

Thickness of girder at centre

20 1/2" x 15"

Length as per rule

32 5/8"

Distance apart

4 1/2"

Number and pitch of stays in each

308"

Working pressure by rules

183 lbs

Superheater or Steam chest; how connected to boiler

how

Can the superheater be shut off and the boiler worked

separately

yes

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

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

yes

Lloyd's Register

Foundations

W256-0011

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. 1011	Description		Made at		By whom made	When made	Where fired
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:— One Tail shaft, one piston rod, one eccentric strap, one slide spindle, one air pump rod, one set each top & bottom end bearings, two safety valve springs, 50 Cords tubes, two of each bolts & nuts for top & bottom ends & main bearings, two main bearing bolts & nuts, 1 set coupling bolts, 1 set feed & bilge pump valves, assorted bolts nuts & iron.

The foregoing is a correct description,

per pro NORTH EASTERN MARINE ENGINEERING Co., LTD.

Manufacturer.

S. T. Harrison Secretary.

Dates of Survey while building	During progress of work in shops --	1912 Feb. 2, 14, 21, 29, Mar. 8, 12, 19, 21, 25, 28, Apr. 1, 10, 11, 16, 17, 26, 30, May 2, 7, 8, 9, 15, 21, 31
	During erection on board vessel --	June 6, 19, 21, 28, July 1, 4, 8, 9
	Total No. of visits	37

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts	Cylinders	30-4-12	Slides	30-4-12	Covers	1-4-12	Pistons	1-4-12	Rods	19-3-12	
Connecting rods	19-3-12	Crank shaft	1-12	Thrust shaft	14-4-12	Tunnel shafts	21-5-12	Screw shaft	21-5-12	Propeller	30-4-12
Stern tube	6-6-12	Steam pipes tested	16-4-12, 9-4-12	Engine and boiler seatings	22-5-12	Engines holding down bolts	1-4-12				
Completion of pumping arrangements	28-6-12	Boilers fixed	28-6-12	Engines tried under steam	9-4-12						
Main boiler safety valves adjusted	9-4-12	Thickness of adjusting washers	0.009" 5/8", 0.009" 5/8"								
Material of Crank shaft	Steel	Identification Mark on Do.	23-6-12	Material of Thrust shaft	Steel	Identification Mark on Do.	36-19-12				
Material of Tunnel shafts	Steel	Identification Marks on Do.	36-19-12	Material of Screw shafts	Steel	Identification Marks on Do.	14-13-12				
Material of Steam Pipes	Wrought Iron	Test pressure	540 lbs.								

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

This machinery has been built under special survey, the materials and workmanship are of good quality & the hydraulic test of the boiler proved satisfactory, the whole of the machinery has been securely fitted in board & satisfactorily tried under steam & is in good safe working condition & eligible in our opinion to be classed & have record + L.M.C. 7.12 when the survey is complete.

To complete the survey the hold suction have to be fitted, Middlesbrough surveyors notified.

All the hold suction have now been satisfactorily fitted

It is submitted that this vessel is eligible for THE RECORD + LMC 7.12

FD. 1/8

1/8

The amount of Entry Fee	£ 3 : 0 : 0	When applied for	16.7.12
Special	£ 38 : 16 : 0	When received	1.8.12
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

Committee's Minute TUE. AUG. 13. 1912

Assigned

William Dutton & Wm Harrison
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

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

MACHINERY CERTIFICATE
WRITTEN



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Foundation