

REPORT ON MACHINERY.

No. 23173

Made No. 4974

Received at London Office

TUES. MAR 26 1907

Port of

Date, first Survey 15th March, 06. Last Survey 15th March 1907

No. in Survey held at

Reg. Book. Supp.

115

on the Steel Screw Steamer "SYENA"

(Number of Visits 53)

(Date) 5

Gross

Tons

Net

When built 1904

Master

Built at Middlesbrough

By whom built Sir R. Dixon & Co. (Ld)

Engines made at

Sunderland

By whom made

The N.E. Marine Eng. Co. (Ld)

when made 1904

Boilers made at

Sunderland

By whom made

The N.E. Marine Eng. Co. (Ld)

when made 1904

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28 431

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

No.

ENGINES, &c.—Description of Engines

Triple Expansion (Fitted aft)

No. of Cylinders Three

No. of Cranks Three

Dia. of Cylinders 26-42-70

Length of Stroke 48

Revs. per minute 40

Dia. of Screw shaft

as per rule 14.67

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

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 5-1

Dia. of Tunnel shaft

as per rule 13.0

Dia. of Crank shaft journals

as per rule 13.65

Dia. of Crank pin 13.4

Size of Crank webs 8.2 x 20.2

Dia. of thrust shaft under collars 13.4

No. of Feed pumps Two

Diameter of ditto 4

Stroke 21

Can one be overhauled while the other is at work

yes

No. of Bilge pumps Two

Diameter of ditto 4

Stroke 21

Can one be overhauled while the other is at work

yes

No. of Donkey Engines Two

SIZES OF PUMPS

11.2 x 18 Ballast, 8 x 4 x 6 for No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room four 3 1/2

In Holds, &c. 2 in each hold 3 1/2 diameter

No. of Bilge Injections One

sizes 5

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses

Are all connections with the sea direct on the skin of the ship

yes except Main 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 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

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

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

Dates of examination of completion of fitting of Sea Connections

17/11/06

of Stern Tube 8/2

Screw shaft and Propeller 8/2

Is the Screw Shaft Tunnel watertight

No Tunnel

Is it fitted with a watertight door

worked from

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel

John Spencer & Sons & John Peggitt & Co.

Total Heating Surface of Boilers 4918

Is Forced Draft fitted

yes

No. and Description of Boilers

Two 5.2. Lyle & Co. Ltd. One 5.2. Lyle & Co. Ltd.

Working Pressure 180 lb.

Tested by hydraulic pressure to 360 lb.

Date of test 10/10/06

No. of Certificate 2531 + 2539

Can each boiler be worked separately

yes

Area of fire grate in each boiler 61.4

each boiler

No direct spring

Area of each valve 8.29

Pressure to which they are adjusted 180 lb.

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork 18

(Rule Mean dia. of boilers 14-9 1/2 Length 11-6 Material of shell plates steel

Thickness 1.5

Range of tensile strength 29.5-32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams Lap & R.

long. seams 5.2.8-TR

Diameter of rivet holes in long. seams 1.4

Pitch of rivets 9 1/2

Lap of plates or width of butt straps 18 1/2

Per centages of strength of longitudinal joint

rivets 84.1

plate 86.2

Working pressure of shell by rules 180.5 lb.

Size of manhole in shell 16 x 12 (in end.)

Size of compensating ring

flange

No. and Description of Furnaces in each boiler

Three, daylight

Material steel

Outside diameter 4 1/2

Length of plain part

top

Thickness of plates

crown 9

bottom 16

Description of longitudinal joint

weld

No. of strengthening rings

Working pressure of furnace by the rules 180.5 lb.

Combustion chamber plates: Material steel

Thickness: Sides 25

Back 25

Top 25

Bottom 15

Pitch of stays to ditto: Sides 9 x 12 3/8

Back 11 x 10 5/8

Top 9 x 12 3/8

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules 180.3 lb.

Material of stays steel

Diameter at smallest part 1.76

Area supported by each stay 11.4

Working pressure by rules 180.1 lb.

End plates in steam space:

Material steel

Thickness 1.5

Pitch of stays 2.4 x 20 1/8

How are stays secured

DN + 11

Working pressure by rules 180.2 lb.

Material of stays steel

Diameter at smallest part 3.54

Area supported by each stay 5.44

Working pressure by rules 180.7 lb.

Thickness 1.3

Material of Lower back plate steel

Thickness 1

Greatest pitch of stays 14.8 x 10 5/8

Working pressure of plate by rules 181.7 lb.

Diameter of tubes 2.2

Pitch of tubes 3.4 x 3.4

Material of tube plates steel

Thickness: Front 1.3

Back 1.3

Mean pitch of stays 8.9

Pitch across wide water spaces 1.3

Working pressures by rules 258 lb.

Girders to Chamber tops: Material steel

Depth and thickness of girder at centre 8.2 x 2

Length as per rule 29.8

Distance apart 12.3

Number and pitch of stays in each

Working pressure by rules 193 lb.

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

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

No

Yes

No

Yes

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

No

Yes

No

Yes

No

Yes

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

No

Yes

No

Yes

No

Yes

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

No

Yes

No

Yes

No

Yes

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

No

Yes

No

Yes

No

Yes

13-9

1110-11200 298200

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 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	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	Stayed by			
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— One set coupling bolts & nuts, two each top and bottom end & main bearing bolts & nuts, one set each feed & bilge pump valves, one crank, one propeller shaft & propeller, one crank pin & one eccentric strap, assorted bolts &c.

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING CO. LTD.

Manufacturer.

Dates of Survey while building: During progress of work in shops— 06. Mch 15, May 16, July 2, 17, 19, 24, Aug. 2, 9, 16, 16, 20, 23, 25, 27, 28, 30, 31, Sept. 3, 5, 7, 8, 12, 15, 19, 21, 25, 27, Oct. 1, 2, 4, 5, 9, 10, 11, 15, 16, 17, 19, 20, 23, 25, Nov. 1, 2, 9, 24, — 27, Dec. 7, 8, 12, 16, 15, 20, 21, 25, Mch 1, 1904. Total No. of visits 53 (11/16) 5

Is the approved plan of main boiler forwarded herewith yes" " " donkey, auxiliary " yes

Dates of Examination of principal parts—Cylinders 27/8 30/3 12/9 Slides 27/8 9/10 Covers 19/10 Pistons 19/10 22/10 1/11 Rods 15/1 19/11

Connecting rods 2/24 5/2 19/21 Crank shaft 20/8 13/8 27/8 30/8 Thrust shaft 17/4 4/10 Tunnel shafts none Screw shaft 11/10 14/10 4/11 11/11 Propeller

Stern tube 16/8 Steam pipes tested 14/2 15/2 Engine and boiler seatings none Engines holding down bolts 14/3

Completion of pumping arrangements 20/2 14/3 Boilers fixed 8/2 Engines tried under steam 20/2 25/2

Main boiler safety valves adjusted 19/2 20/2 Thickness of adjusting washers Auxiliary 3/8 3/8 Main 1/8 1/8

Material of Crank shaft steel Identification Mark on Do. 339 D AB Material of Thrust shaft steel Identification Mark on Do. 1997 AB 8

Material of Tunnel shafts none Identification Marks on Do. — Material of Screw shafts iron Identification Marks on Do. 360 D 361 D AB AB

Material of Steam Pipes Copper solid drawing Main 6 1/2 line No. 3 ms. 5 1/2 line No. 5 ms. Smoothing 3 1/2 line No. 8 ms. Test pressure 400 lb.

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

The Machinery of this Vessel has been constructed under Special Survey the material & workmanship sound & good, the Boilers & Steam Pipes have been tested by Hydraulic pressure in accordance with the Rules, the Machinery worked well & the Safety Valves of the Main & Auxiliary Boilers have been adjusted to their working pressure & easing gear has been fitted.

This Vessel is eligible in. Our opinion to have the Notation LMC 3/07 in the Register Book—Machinery left—

It is submitted that this vessel is eligible for THE RECORD. + LMC 3.07 F.D.

The amount of Entry Fee. £ 3 : : When applied for, 6/3 19/07
Special .. £ 41 : 11 :
Donkey Boiler Fee .. £ : : When received, 14/3 19/07
Travelling Expenses (if any) £ : :

Committee's Minute TUES. 26 MAR 1907

Assigned

+ LMC 3.07

MACHINERY CERTIFICATE WRITTEN.

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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Lloyd's Register Foundation

No. in Survey Reg. Book.

on the

Master

Engines made at

Boilers made at

Registered Horse

MULTITUB

(Letter for record)

Boilers One

No. of Certificate

safety valves to

Are they fitted w

Smallest distance

Material of shell

Descrip. of rivet

Lap of plates on

rules 180/1

boiler Two

Description of lo

plates: Material

Top 8 3/4 x 10 1/2

smallest part 5/8

Pitch of stays 2

Area supported

Lower back pla

Pitch of tubes 4

water spaces

girder at centre

Working pressu

separately —

holes — Pe

If stiffened with

Working pressu

VERTICAL

Made at

Working pressu

No. of safety va

enter the donkey

strength

Lap of plating

Radius of do.

Thickness of ju

plates

The

NORTH EASTERN

Mach

Dates of Survey while building: Dur won Dur boar Tota