

REPORT ON MACHINERY.

No. 27907

WED. AUG. 25 1920

24 AUG 1920 Port of Sunderland

Date, First Survey 16 Jan 1920 Last Survey

19

of writing Report

When handed in at Local Office

Survey held at Sunderland
on the S/S "IRONDE"

Built at Hoboken

By whom built Antwerp Engineering Co. Ltd (S/N 75)

Tons { Gross
Net

When built 1920

Engines made at Sunderland

By whom made North Eastern Marine Engg Co. Ltd (N 2407) when made 1920

Boilers made at Sunderland

By whom made North Eastern Marine Engg Co. Ltd (N 2407) when made 1920

Port belonging to

Registered Horse Power

Owners

Is Electric Light fitted

Net Horse Power as per Section 28 213

Is Refrigerating Machinery fitted for cargo purposes

GINES, & Co. — Description of Engines Triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 20.33.54

Length of Stroke 36

Revs. per minute 77

Dia. of Screw shaft

as per rule 11.38"
as fitted 11.58"

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

the propeller boss If the liner is in more than one length are the joints burned

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

liner fits tightly

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

Length of stern bush 3.10.5

Dia. of Tunnel shaft

as per rule 9.93"
as fitted 10.78"

Dia. of Crank shaft journals

as per rule 10.427"
as fitted 10.78"

Dia. of Crank pin 10.78"

Size of Crank webs 16x6.5

Dia. of thrust shaft under

Blades 10.78"

Dia. of screw 14.3"

Pitch of Screw 13.9"

No. of Blades 4

State whether moveable no

Total surface 630 ft

No. of Feed pumps 2

Diameter of ditto 3"

Stroke 1.9"

Can one be overhauled while the other is at work yes

No. of Bilge pumps 2

Diameter of ditto 3"

Stroke 1.9"

Can one be overhauled while the other is at work yes

No. of Donkey Engines 2

Sizes of Pumps 78x9"

68x4x6"

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

Engine Room

In Holds, &c.

No. of Bilge Injections

sizes

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 the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

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

Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the Discharge Pipes above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

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

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

Is the Screw Shaft Tunnel watertight

Is it fitted with a watertight door

worked from

MANUFACTURERS, & Co. — (Letter for record)

Manufacturers of Steel

John Spencer & Sons Ltd.

Total Heating Surface of Boilers 2632 sq ft

Is Forced Draft fitted no

No. and Description of Boilers two single ended marine

Working Pressure 180

Tested by hydraulic pressure to 360

Date of test 25.6.20

No. of Certificate 3698

Can each boiler be worked separately

Area of fire grate in each boiler 46 sq ft

No. and Description of Safety Valves to

each boiler

Area of each valve

Pressure to which they are adjusted

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Thickness 1.5"

Range of tensile strength 29-33 tons

Are the shell plates welded or flanged no

Descrip. of riveting: cir. seams DR

Long. seams DBS. TR

Diameter of rivet holes in long. seams 1.2"

Pitch of rivets 9.25"

Lap of plates or width of butt straps 19.25"

Percentages of strength of longitudinal joint

rivets 86.8
plate 87.1

Working pressure of shell by rules 182

Size of manhole in shell 16x12"

Size of compensating ring flange

No. and Description of Furnaces in each boiler 3 Brighton

Material steel

Outside diameter 3.4 1/4"

Length of plain part

top
bottom

Thickness of plates

crown 1.2"
bottom 1.2"

Description of longitudinal joint welded

No. of strengthening rings

Working pressure of furnace by the rules 181

Combustion chamber plates: Material steel

Thickness: Sides 2.3/4"

Back 2.5"

Top 2.3/4"

Bottom 2.3/4"

Working pressure by rules 181

Pitch of stays to ditto: Sides 9.25x10.25"

Back 11.25x10"

Top 9.25x9.25"

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 181

Material of stays steel

Area at smallest part 2.03 sq ft

Area supported by each stay 950"

Working pressure by rules 192

End plates in steam space:

Material steel

Thickness 1.5"

Pitch of stays 2.42x1.72"

How are stays secured NN&W

Working pressure by rules 180

Material of stays steel

Area at smallest part 1.66 sq ft

Area supported by each stay 4300"

Working pressure by rules 186

Material of Front plates at bottom steel

Thickness 1.3"

Material of Lower back plate steel

Thickness 1.5/16"

Greatest pitch of stays 15.3/8x10"

Working pressure of plate by rules 181

Diameter of tubes 3.25"

Pitch of tubes 4.2x4.25"

Material of tube plates steel

Thickness: Front 1.3/16"

Back 3/4"

Mean pitch of stays 10.1/2"

Girders to Chamber tops: Material steel

Depth and

Pitch across wide water spaces 15 (H. 15")

Working pressures by rules 182

Thickness of girder at centre 2.08x1.78"

Length as per rule 2.62"

Distance apart 9.25"

Number and pitch of stays in each 2 @ 9.25"

% of strength of joint

Working pressure by rules 188

Steam dome: description of joint to shell

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

TESTER. Type

Date of Approval of Plan

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Pressure to which each is adjusted

Is Easing Gear fitted

Diameter of Safety Valve

007257 007258-1130

Shipping.

PERHEATER.

Date of Test

Diameter of Safety Valve

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Pressure to which each is adjusted

Is Easing Gear fitted

007257 007258-1130

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD.

Manufacturer.

Dates of Survey while building	During progress of work in shops - -	1920 Jan 16 Mar 24 Apr 14 19 24 May 1 6 18 27 Jun 4 17 21 22 24 28 Jul 13 22 27
	During erection on board vessel - - -	
	Total No. of visits	
		Is the approved plan of main boiler forwarded herewith <i>Yes</i>

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 17-6-20 Slides 13-7-20 Covers 18-5-20 Pistons 28-6-20 Rods 13-7-20

Connecting rods 21-6-20 Crank shaft 24-4-20 Thrust shaft 24-4-20 Tunnel shafts 21-6-20 Screw shaft 27-7-20 Propeller 29-7-20

Stern tube 22-7-20 Steam pipes tested _____ Engine and boiler seatings _____ Engines holding down bolts _____

Completion of pumping arrangements	Boilers fixed	Engines tried under steam
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Completion of fitting sea connections _____ Stern tube _____ Screw shaft and propeller _____

<i>Main boiler safety valves adjusted</i>	<i>Thickness of adjusting washers</i>
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Material of Crank shaft Steel Identification Mark on Do. LLYD'S Material of Thrust shaft Steel Identification Mark on Do.

Material of Tunnel shafts *See 2nd* Identification Marks on Do. L.C.D. Material of Screw shafts *See 2nd* Identification Marks on Do.

Material of Steam Pipes	Test pressure
Cast iron	150 lb. per sq. in.
Steel	200 lb. per sq. in.
Brass	150 lb. per sq. in.
Copper	150 lb. per sq. in.
Aluminum	150 lb. per sq. in.
Lead	150 lb. per sq. in.
Concrete	150 lb. per sq. in.
Refractory	150 lb. per sq. in.
Insulating	150 lb. per sq. in.
Valves	150 lb. per sq. in.
Flanges	150 lb. per sq. in.
Welds	150 lb. per sq. in.
Boilers	150 lb. per sq. in.
Pressure vessels	150 lb. per sq. in.
Heat exchangers	150 lb. per sq. in.
Condensers	150 lb. per sq. in.
Refrigerators	150 lb. per sq. in.
Compressors	150 lb. per sq. in.
Pumps	150 lb. per sq. in.
Engines	150 lb. per sq. in.
Motors	150 lb. per sq. in.
Generators	150 lb. per sq. in.
Transformers	150 lb. per sq. in.
Switches	150 lb. per sq. in.
Relays	150 lb. per sq. in.
Control systems	150 lb. per sq. in.
Instrumentation	150 lb. per sq. in.
Structural steel	150 lb. per sq. in.
Reinforced concrete	150 lb. per sq. in.
Foundation	150 lb. per sq. in.
Roofs	150 lb. per sq. in.
Floors	150 lb. per sq. in.
Walls	150 lb. per sq. in.
Windows	150 lb. per sq. in.
Doors	150 lb. per sq. in.
Stairs	150 lb. per sq. in.
Elevators	150 lb. per sq. in.
Escalators	150 lb. per sq. in.
Conveyors	150 lb. per sq. in.
Cranes	150 lb. per sq. in.
Lifts	150 lb. per sq. in.
Hoists	150 lb. per sq. in.
Winches	150 lb. per sq. in.
Blocks	150 lb. per sq. in.
Sheaves	150 lb. per sq. in.
Ropes	150 lb. per sq. in.
Cables	150 lb. per sq. in.
Wires	150 lb. per sq. in.
Conduits	150 lb. per sq. in.
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Pipes	150 lb. per sq. in.
Valves	150 lb. per sq. in.
Flanges	150 lb. per sq. in.
Welds	150 lb. per

Is an installation fitted for burning oil fuel _____ 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..... If so, state name of vessel

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

The materials and workmanship are good.

The machinery has been constructed under Special Survey and will shortly be sent to Antwerp to be fitted in the vessel. The machinery will be eligible in our opinion for classification and the record + LMC (with date) when this has been satisfactorily done.

The amount of Entry Fee ...	£ 2	:	:	When applied for,
Special $\frac{2}{3}$ fee ...	£ 20	:	8	24 AUG 1920
Donkey Boiler Fee $\frac{1}{2}$ fee due on app.	£	:	:	When received,
Travelling Expenses (if any) £	:	:	:	23-9-1920

When applied for,

When received.

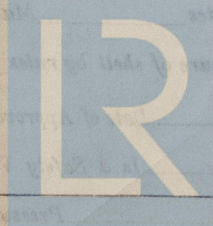
Committee's Minute

FRI. 17 DEC. 1920

Assigned

+ Lm 6 11.20

Engineer Surveyor to Lloyd's Register of Shipping.



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Lloyd's Register
Foundation

CERTIFICATE WRITTEN.