

# REPORT ON MACHINERY.

No. 24441

WED. 11 MAY 1910

Port of Sunderland

Received at London Office

No. in Survey held at Sunderland

Date, first Survey 7 Sept 09

Last Survey 22 April 1910

Reg. Book.

on the Steel Screw Steamer "Largo"

(Number of Visits 32)

Master

Built at Sunderland By whom built L. P. Austin & Son Ltd

Gross Tons

Net Tons

When built 1910

Engines made at Sunderland

By whom made G. Clark Ltd

when made do

Boilers made at do

By whom made do

when made do

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28 193

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted no

ENGINES, &c.—Description of Engines Vertical Triple

No. of Cylinders Three

No. of Cranks Three

Dia. of Cylinders 20 1/2" 33" 54"

Length of Stroke 39"

Revs. per minute 65

Dia. of Screw shaft as per rule 11.65

Material of screw shaft Forged steel

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 —

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 —

If two

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

Length of stern bush 4' 10"

Dia. of Tunnel shaft as per rule 10.31

Dia. of Crank shaft journals as per rule 10.83

Dia. of Crank pin 11"

Size of Crank webs 16 1/2 x 1/2 Dia. of thrust shaft under

collars 11 3/4" Dia. of screw 14-6" Pitch of Screw 16-6"

No. of Blades 4

State whether moveable no

Total surface 59.5 sq ft

No. of Feed pumps Two

Diameter of ditto 2 3/4"

Stroke 22"

Can one be overhauled while the other is at work yes

No. of Bilge pumps Two

Diameter of ditto 3 1/2"

Stroke 22"

Can one be overhauled while the other is at work yes

No. of Donkey Engines Two

Sizes of Pumps 10 x 12 1/2

5 1/2 x 3 1/2

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

In Engine Room Four 3" dia.

In Holds, &c. Two in each 3" dia + one in tunnel

No. of Bilge Injections 1 sizes 4"

Connected to condenser, or to circulating pump Pumps

Is a separate Donkey Suction fitted in Engine room & size yes 5" dia.

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 —

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 9-2-10

of Stern Tube 9-2-10

Screw shaft and Propeller 6-4-10

Is the Screw Shaft Tunnel watertight yes

Is it fitted with a watertight door yes

worked from top platform

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel J. Spencer & Son Newburn Steel Works

Total Heating Surface of Boilers 2905

Is Forced Draft fitted no

No. and Description of Boilers Two single end multibubular

Working Pressure 180 lb

Tested by hydraulic pressure to 360 lb

Date of test 4-3-10

No. of Certificate 2813

Can each boiler be worked separately yes

Area of fire grate in each boiler 49 sq ft

No. and Description of Safety Valves to

each boiler Two direct spring

Area of each valve 6.49 sq in

Pressure to which they are adjusted 185 lb

Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2 ft

Mean dia. of boilers 12-9 1/2"

Length 10-6"

Material of shell plates Steel

Thickness 1 1/2"

Range of tensile strength 28 1/2-32

Are the shell plates welded or flanged no

Descrip. of riveting: cir. seams OTC Lap

long. seams OTC Lap

Diameter of rivet holes in long. seams 1 1/8"

Pitch of rivets 7 1/4"

Lap of plates or width of butt straps 16 5/8"

Per centages of strength of longitudinal joint

ribs 97.5

plate 84.64

Working pressure of shell by rules 180 lb

Size of manhole in shell End 16 x 13

Size of compensating ring End dished

No. and Description of Furnaces in each boiler 3 plain

Material Steel Outside diameter 39"

Length of plain part

top 75.25"

Thickness of plates

crown 4 1/2"

Description of longitudinal joint Weld

No. of strengthening rings —

bottom —

Working pressure of furnace by the rules 186

Combustion chamber plates: Material Steel Thickness: Sides 22-23

Back 22-23

Top 22-23

Bottom 15"

Pitch of stays to ditto: Sides 9 1/2 x 9 1/2

Back 9 x 10 1/2

Top 8 1/2 x 10 1/2 If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 182

Material of stays Steel

Diameter at smallest part 1 1/2"

Area supported by each stay 97 sq in

Working pressure by rules 189

End plates in steam space:

Material Steel

Thickness 1 1/2"

Pitch of stays 18 1/4 19 1/2

How are stays secured to nuts

Working pressure by rules 182

Material of stays Steel

Diameter at smallest part 7/8"

Area supported by each stay 335

Working pressure by rules 188

Material of Front plates at bottom Steel

Thickness 1 1/2"

Material of Lower back plate Steel

Thickness 1 1/2"

Greatest pitch of stays 15"

Working pressure of plate by rules 185

Diameter of tubes 3 1/4"

Pitch of tubes 4 1/2 4 1/2 4 1/2

Material of tube plates Steel

Thickness: Front 1 1/2"

Back 1 1/2"

Mean pitch of stays 10.2"

Pitch across wide water spaces 14 1/2"

Working pressures by rules 262 lb

Girders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 8 1/4 1 1/4

Length as per rule 29 5/8"

Distance apart 10 1/4"

Number and pitch of stays in each Two 8 1/2"

Working pressure by rules 188

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

Diam. of rivet

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

How stayed

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

—

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# VERTICAL DONKEY BOILER—Manufacturers of Steel

No. 118 Description Appendix  
 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 Say  
 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  
 Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays Plates  
 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:— Propeller, 1 each bolt & nut for top & bottom ends and  
main bearings, set of coupling bolts & nuts, valves for all pumps, springs for safety  
and escape valves, bolts, nut, & iron assorted sundries etc.

The foregoing is a correct description,

James C. Clark Manufacturers

Dates of Survey During progress of work in shops— 1909 Sept 7. 11. 22. Oct 5. 11. 25. Nov 4. 12. 24. 30. Dec 7. 23.  
During erection on board vessel— 1910 Jan 5. 13. 20. 25. Feb 18. 9. 18. Mar 3. 4. 9. 15. 18. 21. 31. Apr 3. 6. 7. 14. 22.  
 while building Total No. of visits (32)

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 20. 1. 10 Slides 5. 1. 10 Covers 5. 1. 10 Pistons 5. 3. 10 Rods 24. 11. 09  
 Connecting rods 24. 11. 09 Crank shaft 20. 1. 10 Thrust shaft 20. 1. 10 Tunnel shafts 9. 3. 10 Screw shaft 21. 3. 10 Propeller 18. 3. 10  
 Stern tube 1. 2. 10 Steam pipes tested 7. 4. 10 Engine and boiler seatings 31. 3. 10 Engines holding down bolts 12. 4. 10  
 Completion of pumping arrangements 14. 4. 10 Boilers fixed 12. 4. 10 Engines tried under steam 14. 4. 10  
 Main boiler safety valves adjusted 14. 4. 10 Thickness of adjusting washers all 3/8"  
 Material of Crank shafts Ident. Mark on Do. 4690 KH Material of Thrust shafts Ident. Mark on Do. 1791 KH  
 Material of Tunnel shafts Ident. Marks on Do. 1839 44 5429 PA 1806 HK Material of Screw shafts Ident. Marks on Do. 5102 KH  
 Material of Steam Pipes Leakless copper & lengths 4' dia x 6' 11 1/2" Test pressure 400 lbs

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

The above machinery has been constructed under special survey, the  
material & workmanship found good & efficient, fitted & tested  
in accordance with the rules & eligible in my opinion for  
classification with record of + LMC 4. 10

It is submitted that  
 this vessel is eligible for  
 THE RECORD. + LMC 4. 10

The amount of Entry Fee. £ 2 : 0 :  
 Special .. £ 28 : 19 :  
 Donkey Boiler Fee .. £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 2. 5. 1910  
 When received, 5. 5. 1910

E. J. Stoddart

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

Committee's Minute

FRI. 13 MAY 1910

Assigned

+ LMC 4. 10



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Lloyd's Register  
 Foundation

Certificate (if required) to be sent to the Committee's Minute.

The Surveyors are requested not to write on or below the space for Committee's Minute.

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