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REPORT ON MACHINERY.

No. 25456

Received at London Office FRI. OCT. 18. 1912

of writing Report ..... 19 ..... When handed in at Local Office 14. 10. 1912 Port of Sunderland

in Survey held at Sunderland Date, First Survey 17 May Last Survey 11 Octbr 1912 (Number of Visits 33)

g. Book.

on the steel S/S "LAERTIS". (S/O No. 637) Tons Gross 3914 Net 2380

ster S. Hanos Built at Sunderland By whom built Sir James Laing & Sons Ltd When built 1912

gines made at Sunderland By whom made George Clark Ltd (No. 973) when made 1912

ilers made at Sunderland By whom made George Clark Ltd (No. 973) when made 1912

gistered Horse Power Owners G. C. Dracoulis Port belonging to Ithaca

m. Horse Power as per Section 28 357 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

GINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3

ia. of Cylinders 25, 42, 68 Length of Stroke 45 Revs. per minute 65 Dia. of Screw shaft as per rule 13.95 as fitted 14¼" Material of screw shaft steel

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 yes If the liner is in more than one length are the joints burned — If the liner does not fit tightly at the part

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

ners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 4'-9"

Dia. of Tunnel shaft as per rule 12.4 as fitted 12¾" Dia. of Crank shaft journals as per rule 13.08 as fitted 13¼" Dia. of Crank pin 13¼" Size of Crank webs 19½"×8¼" Dia. of thrust shaft under

ollars 13½" Dia. of screw 14'-0" Pitch of Screw 14'-2" No. of Blades 4 State whether moveable no Total surface 88.5 ft

No. of Feed pumps 2 Diameter of ditto 3½" Stroke 26" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4¼" Stroke 26" Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps Bilge 9"×10"×10" Feed 8"×5"×8" D.B. Feed 6"×4"×6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 @ 3½" In Holds, &c. No. 1 hold, - 2 @ 3½". No. 2 hold, - 2 @ 3½".

No. 3 hold, - 2 @ 3½". No. 4 hold, - 2 @ 3½". L.P. Tunnel well, - 1 @ 3½"

No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump L.P. Is a separate Donkey Suction fitted in Engine room & size yes. 5"

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 none

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 forward hold suctions How are they protected wood casing.

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 16-8-12 of Stern Tube 11-9-12 Screw shaft and Propeller 11-9-12

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 John Spencer & Sons Ltd

Total Heating Surface of Boilers 5774 ft Is Forced Draft fitted no No. and Description of Boilers Two single ended

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 31-8-12 No. of Certificate 3043

Can each boiler be worked separately yes Area of fire grate in each boiler 77 ft No. and Description of Safety Valves to

each boiler Two direct spring Area of each valve 10.32 □" Pressure to which they are adjusted 185 Are they fitted with easing gear yes

Smallest distance between ~~boilers or~~ uptakes and bunkers ~~or woodwork~~ 2'-0" ~~Mean~~ exd dia. of boilers 14'-0" Length 11'-0" Material of shell plates steel

Thickness 19/32" Range of tensile strength 29½-33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams WR

long. seams WBS.TR Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8⅞" ~~Lap of plates or~~ width of butt straps 20"

Per centages of strength of longitudinal joint rivets 86.3" plate 85.3" Working pressure of shell by rules 181 Size of manhole in ~~shell~~ end 16"+13"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 4. Deighton bowl Material steel Outside diameter 3'-8½"

Length of plain part top ..... bottom ..... Thickness of plates crown / bottom 17/32" Description of longitudinal joint welded No. of strengthening rings —

Working pressure of furnace by the rules 184 Combustion chamber plates: Material steel Thickness: Sides 11/16" Back 23/32" Top 11/16" Bottom 7/8"

Pitch of stays to ditto: Sides 9½"×9½" Back 10½"×9⅜" Top 10½"×8¼" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180

Material of stays steel ~~Diameter~~ area at smallest part 2.03 □" Area supported by each stay 98.50 □" Working pressure by rules 185 End plates in steam space:

Material steel Thickness 1⅜" Pitch of stays greatest 23⅞"×17" How are stays secured WN Working pressure by rules 183 Material of stays steel

~~Diameter~~ area at smallest part 6.49 □" Area supported by each stay 371 □" Working pressure by rules 180 Material of Front plates at bottom steel

Thickness 13/16" Material of Lower back plate steel Thickness 15/16" Greatest pitch of stays 15½"×9⅜" Working pressure of plate by rules 185

Diameter of tubes 3¼" Pitch of tubes 4½"×4⅜" Material of tube plates steel Thickness: Front 13/16" Back ¾" Mean pitch of stays 11⅛"

Pitch across wide water spaces 1'-2¾" Working pressures by rules 244 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 2 @ 8⅛"×⅞" Length as per rule 2'-6 11/32" Distance apart 10½" Number and pitch of stays in each 2 @ 8¼"

Working pressure by rules 184 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

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

Forecastle 37.0 ft.

is to be given as it

Cellular

ength.	Water Capacity.
Feet.	Tons.
–	155
–	228
–	–
–	–
–	–
–	–

yes.

8.16. 20. 30.

13. 16. 18. 19. 20.

of Visits 53

W858-0085

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VERTICAL DONKEY BOILER— Manufacturers ~~of Steel~~ Riley Bros. Stockton.

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 S

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 Radius of do. Stayed by

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

SEE SEPARATE REPORT

SPARE GEAR. State the articles supplied:— Two connecting rod top and bottom end bolts and nuts. two main bearing bolts. one set of coupling bolts. one set of feed and bilge pump valves. one set of air and circulating pump valves. iron and bolts of various sizes. one propeller.

The foregoing is a correct description,

FOR GEORGE CLARK, LIMITED

James C. Clark Manufacturer.

Dates of Survey while building — During progress of work in shops: 1912 May 17. 30. Jun 3. 5. 11. 19. 21. Jul 1. 2. 16. 19. 24. 25. 30. Aug 1. 9. 13. 16. 26. 28. 30. 31.

During erection on board vessel: Sept. 2. 10. 12. 16. 18. 19. 20. 21. 26. Oct. 5. 11.

Total No. of visits (33) Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " yes

Dates of Examination of principal parts—Cylinders 9-8-12 Slides 1-8-12 Covers 21-6-12 Pistons 13-8-12 Rods 30-4-1

Connecting rods 1-8-12 Crank shaft 1-4-12 Thrust shaft 28-8-12 Tunnel shafts 28-8-12 Screw shaft 28-8-12 Propeller 26-8-

Stern tube 16-8-12 Steam pipes tested 12 & 14-9-12 Engine and boiler seatings 24-4-12 Engines holding down bolts 20-9-1

Completion of pumping arrangements 11-10-12 Boilers fixed 19-9-12 Engines tried under steam 21-9-12

Main boiler safety valves adjusted 21-9-12 Thickness of adjusting washers Sthd Blr. - both 7/16. Port. bth. - both 1

Material of Crank shaft I. Steel Identification Mark on Do. 4684 PA Material of Thrust shaft I. Steel Identification Mark on Do. 1630 M

Material of Tunnel shafts I. Steel Identification Marks on Do. 1837 M.B. 7365-6-7 JM. Material of Screw shafts I. Steel Identification Marks on Do. 1629 M

Material of Steam Pipes Lapwelded Steel 4@6" × 5/16" Test pressure 540 lbs per □".

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

The materials and workmanship are good.
The machinery has been made under Special Survey and is eligible in my opinion for classification and the record
✠LMC 10,12

It is submitted that this vessel is eligible for THE RECORD ✠LMC.10.12.

JWD. 24H.
18/10/14

Certificate (if required) to be sent to

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

The amount of Entry Fee .. £ 3 : - : When applied for, 16 10 1912

Special .. .. .. £ 34 : 14 :

Donkey Boiler Fee .. .. £ : : Paid in full When received 19 10 1912

Travelling Expenses (if any) £ : :

Committee's Minute FRI. OCT. 18. 1912

Assigned L.M.C. 10.12

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

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