

REPORT ON MACHINERY.

No. 26434
MON, APR. 26, 1915

Received at London Office

Date of writing Report 6-4-1915 When handed in at Local Office 24-4-1915 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 26 August Last Survey 24-4-1915

Reg. Book. 59 on the new steel 3/8 "ROSE CASTLE".

(Number of Visits 55)

Tons { Gross 7546
Net 4351
When built 1915

Master Smith Built at Sunderland By whom built Short Brothers Ltd (No 388)

Engines made at Sunderland By whom made George Blanks Ltd (No 1014) when made 1915

Boilers made at Sunderland By whom made George Blanks Ltd (No 1014) when made 1915

Registered Horse Power Owners Rabastless & Co Ltd (J. Chambers & Co) Port belonging to Liverpool

Nom. Horse Power as per Section 28 606 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

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

Dia. of Cylinders 28 1/2, 47, 79 Length of Stroke 54 Revs. per minute 70 Dia. of Screw shaft as per rule 16.08" Material of J. 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 5'-6 1/2"

Dia. of Tunnel shaft as per rule 14.42" Dia. of Crank shaft journals as per rule 15.15" Dia. of Crank pin 15 7/8" Size of Crank webs 24x10 7/8" Dia. of thrust shaft under

collars 1'-4" Dia. of screw 19'-6" Pitch of Screw 17'-3" No. of Blades 4 State whether moveable yes Total surface 115 sq ft

No. of Feed pumps 2 Dia. of ditto 12 9/16" Stroke Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 5" Stroke 30" Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps 2 @ 10 1/2 x 12 10 @ 8 1/2 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 @ 3 1/2" (also 2 @ 3 1/2" connected to main bilge pumps) Holds, &c. No 1 hold, - 2 @ 3 1/2" No 2 hold, - 2 @ 3 1/2"

No 3 hold, - 2 @ 3 1/2" No 4 hold, - 2 @ 3 1/2" No 5 hold, - 2 @ 3 1/2" Tunnel well, - 1 @ 3 1/2"

No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump 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 No 3 hold suction How are they protected under timber boards

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 13-1-15 of Stern Tube 8-2-15 Screw shaft and Propeller 11-2-15

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top platform

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel David White & Sons Ltd

Total Heating Surface of Boilers 8670 sq ft Is Forced Draft fitted yes No. and Description of Boilers Three single ended marine

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 15-1-15 No. of Certificate 3275

Can each boiler be worked separately yes Area of fire grate in each boiler 71 sq ft No. and Description of Safety Valves to

each boiler two direct spring Area of each valve 12.56 sq in Pressure to which they are adjusted 185 Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4'-6" Mean dia. of boilers 16'-1 1/2" Length 12'-0" Material of shell plates steel

Thickness 1 1/8" Range of tensile strength 29 1/2-33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.

long. seams D.B.S., T.R Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9" Lap of plates or width of butt straps 2 0/8"

Per centages of strength of longitudinal joint rivets 90.4 plate 85.5 Working pressure of shell by rules 183 Size of manhole in shell 16" x 12"

Size of compensating ring 8 1/2" x 1 1/4" No. and Description of Furnaces in each boiler 4 Beighton bond Material steel Outside diameter 3'-4"

Length of plain part top 37" bottom 64" Thickness of plates crown 37" Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 212 Combustion chamber plates: Material steel Thickness: Sides 3/32" Back 3/32" Top 3/32" Bottom 7/8"

Pitch of stays to ditto: Sides 10 1/4" x 1 1/8" Back 10 1/2" x 1 1/8" Top 9" x 1 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 184

Material of stays steel Diameter at smallest part 2-3/16" Area supported by each stay 114 sq in Working pressure by rules 186 End plates in steam space

Material steel Thickness 1 1/8" Pitch of stays 24" x 2 5/8" How are stays secured D.N Working pressure by rules 185 Material of stays steel

Diameter at smallest part 8-9/16" Area supported by each stay 5000 sq in Working pressure by rules 186 Material of Front plates at bottom steel

Thickness 3/32" Material of Lower back plate steel Thickness 1" Greatest pitch of stays 14" x 10 3/4" Working pressure of plate by rules 193

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 7/8" Material of tube plates steel Thickness: front 3/32" Back 3/4" Mean pitch of stays 8 3/4"

Pitch across wide water spaces 13 1/2" Working pressures by rules 184 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 2 @ 8 3/8" x 7 1/8" Length as per rule 2-7 1/4" Distance apart 11 1/2" Number and pitch of stays in each 2 @ 9"

Working pressure by rules 182 Superheater or Steam chest; how connected to boiler none 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

Lloyd's Register Foundation
4212-0017

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 _____ 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:— 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 iron and bolts of various sizes, one tail shaft, two cast iron propeller blades, one valve spindle and one set of bottom end bearings.

The foregoing is a correct description,

FOR GEORGE CLARK, LIMITED

Manufacturer of the Main Engines & Boilers

W. B. G. M. C.

Dates of Survey while building	During progress of work in shops --	1914 Aug. 26, Sep. 14, 23, 28, Oct. 5, 13, 19, 21, 22, 23, 28, Nov. 2, 4, 10, 11, 17, 20, 23, 26, 30, Dec. 3, 7, 10, 11, 24, 29, Jan. 8, 13
	During erection on board vessel --	15, 18, 21, 22, 27, Feb. 2, 4, 8, 9, 10, 11, 16, 17, 18, 19, 22, 23, 24, Mar. 2, 11, 12, 17, 24, Apr. 6, 7, 20, 24
	Total No. of visits	(55)

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

Dates of Examination of principal parts—Cylinders	7-12-14	Slides	13-1-15	Covers	17-11-14	Pistons	29-12-14	Rods	29-12-14
Connecting rods	28-10-14	Crank shaft	3-12-14	Thrust, shaft	18-1-15	Tunnel shafts	27-1-15	Screw shaft	27-1-15
Stern tube	15-1-15	Steam pipes tested	23-2-15	Engine and boiler seatings	8-1-15	Engines holding down bolts	24-2-15		
Completion of pumping arrangements	6-4-15	Boilers fixed	6-4-15	Engines tried under steam	12-3-15 & 24-4-15				
Main boiler safety valves adjusted	12-3-15	Thickness of adjusting washers	Port boiler - P 3/32 5 7/16. Centre do. do. 3/8. Shell do. do. 7/16						
Material of Crank shaft	1. Steel	Identification Mark on Do.	18550-FC	Material of Thrust shaft	1. Steel	Identification Mark on Do.	18550-FC		
Material of Tunnel shafts	1. Steel	Identification Marks on Do.	18550-FC & 18550-LC	Material of Screw shafts	1. Steel	Identification Marks on Do.	18550-MR		
Material of Steam Pipes	Sapwelded wrought iron	10 @ 10 1/4 in. x 3/8 in. @ 20 1/2 in. x 3/8 in.		Test pressure	540 lb per square inch				

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 is eligible in my opinion for classification and the record + LMC 4, 15

Damage stated to have been caused by an excess of water in the air pump, when about to move the vessel in the River Wear on the 4th April 1915. Found the pump lever bracket broken off the back LP column the air pump levers slightly twisted and the gudgeon shaft bent.

Repairs:— The LP column now renewed with separate pump lever bracket attached, the air pump levers straightened and rebuilt with new gudgeons and pins, an additional relief valve fitted to the air pump (Edwards), all satisfactorily fitted in place the engines again tried under steam and found good.

It is submitted that this vessel is eligible for **THE RECORD + LMC 4. 15 F.D.**

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

The amount of Entry Fee .. £	3	When applied for,	21 APR. 1915
Special £	50. 6	When received,	24 APR. 1915
Donkey Boiler Fee £			
Travelling Expenses (if any) £			

Committee's Minute
 Assigned + LMC 4. 15 F.D.

Certificate (if required) to be sent to the Surveyors as requested was to write on or below the space for Committee's Minute.

