

REPORT ON MACHINERY.

No. 1311311

Received at London Office SAT. 4 MAR 1911

Date of writing Report 27/2/11 When handed in at Local Office 19 Port of London
 No. in Survey held at Gt Yarmouth Date, First Survey 26th July 1910 Last Survey 25th Feb 1911
 Reg. Book. 46 on the Engines No 195 for S.S. Hull Trader (Number of Visits 5)
 Master Zelby Built at Zelby By whom built Cochrane & Sons Tons { Gross 260 Net 191
 Engines made at Yarmouth By whom made Crabtree & Co Ltd when made 1911-2
 Boilers made at Stockton By whom made Riley Bros Ltd when made 1911
 Registered Horse Power 59 Owners F. W. Horlock Port belonging to Hull

Nom. Horse Power as per Section 28 59 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion Surface Condensing No. of Cylinders Three No. of Cranks 3

Dia. of Cylinders 11-18-30 Length of Stroke 21 Revs. per minute 652 Dia. of Screw shaft 6 3/4 Material of steel
 as fitted 6 3/4 screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liner Is the after end of the shaft made water tight
 in the propeller boss yes If the liner is in more than one length are the joints burned yes 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 yes If two
 liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 30"

Dia. of Tunnel shaft 5.57 Dia. of Crank shaft journals 5.849 Dia. of Crank pin 6" Size of Crank webs 7 1/2 x 4 1/2" Dia. of thrust shaft under
 collars 6 1/2" Dia. of screw 7-6" Pitch of Screw 10'-6" No. of Blades 4 State whether moveable no Total surface 22 ft²

No. of Feed pumps one Diameter of ditto 2 1/4" Stroke 10 1/2" Can one be overhauled while the other is at work yes
 No. of Bilge pumps one Diameter of ditto 2 1/4" Stroke 10 1/2" Can one be overhauled while the other is at work yes

No. of Donkey Engines one duplex Sizes of Pumps 4" dia x 6" stroke No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room one 2" dia In Holds, &c. one 2" dia on both sides in hold
one 2" in fore peak one 2" in after peak

No. of Bilge Injections one sizes 3 1/2" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size yes 2"
 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 none How are they protected yes
 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 2-2-11 of Stern Tube 1-2-11 Screw shaft and Propeller 2-2-11

Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door yes worked from yes

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Steel

Total Heating Surface of Boilers 1100 ft² Is Forced Draft fitted no No. and Description of Boilers one single ended
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 20-10-10 No. of Certificate 4520

Can each boiler be worked separately yes Area of fire grate in each boiler 38 1/2 ft² No. and Description of Safety Valves to
 each boiler two springs loaded Area of each valve 4.9 ft² Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes

Smallest distance between boilers on uptakes and bunkers 10" boiler lapped dia. of boilers 10" Length 10' Material of shell plates steel

Thickness 1/2" Range of tensile strength 45,000 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams no
 long. seams yes Diameter of rivet holes in long. seams 1/4" Pitch of rivets 2" Lap of plates or width of butt straps 1"

Per centages of strength of longitudinal joint 75% Working pressure of shell by rules 180 lbs Size of manhole in shell 18"
 plate 1/2" Material steel Outside diameter 18"

Size of compensating ring 18" No. and Description of Furnaces in each boiler one Material steel Outside diameter 18"
 length of plain part 10' Thickness of plates 1/2" Description of longitudinal joint lap No. of strengthening rings 1

Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2"
 Pitch of stays to ditto: Sides 12" Back 12" Top 12" If stays are fitted with nuts or riveted heads yes Working pressure by rules 180 lbs

Material of stays steel Diameter at smallest part 1/2" Area supported by each stay 10 ft² Working pressure by rules 180 lbs End plates in steam space: yes
 Material steel Thickness 1/2" Pitch of stays 12" How are stays secured by nuts Working pressure by rules 180 lbs Material of stays steel

Diameter at smallest part 1/2" Area supported by each stay 10 ft² Working pressure by rules 180 lbs Material of Front plates at bottom steel
 Thickness 1/2" Material of Lower back plate steel Thickness 1/2" Greatest pitch of stays 12" Working pressure of plate by rules 180 lbs

Diameter of tubes 1 1/2" Pitch of tubes 12" Material of tube plates steel Thickness: Front 1/2" Back 1/2" Mean pitch of stays 12"

Pitch across wide water spaces 12" Working pressures by rules 180 lbs Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 12" Length as per rule 12' Distance apart 12" Number and pitch of stays in each 12" 12"

Working pressure by rules 180 lbs Superheater or Steam chest; how connected to boiler no Can the superheater be shut off, and the boiler worked
 separately yes Diameter 12" Length 12' Thickness of shell plates 1/2" Material steel Description of longitudinal joint lap Diam. of rivet
 holes 1/4" Pitch of rivets 2" Working pressure of shell by rules 180 lbs Diameter of flue 12" Material of flue plates steel Thickness 1/2"

stiffened with rings yes Distance between rings 12" Working pressure by rules 180 lbs End plates: Thickness 1/2" How stayed by nuts

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

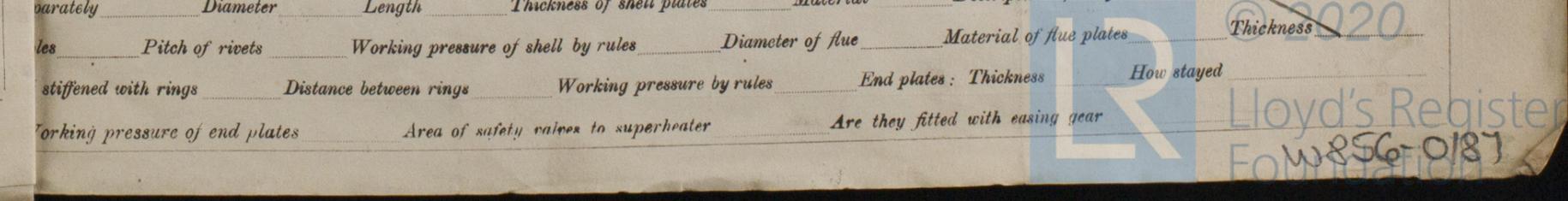
Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes

Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear yes



VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description	When made	Where fixed
Made at	By whom made		
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted
If fitted with easing gear	If steam from main boilers can enter the donkey boiler		Date of adjustment
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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates
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:— Two top end bolts, Two bottom end bolts, Two main bearing bolts, one set of coupling bolts, one set of feed & bilge pump valves, a quantity of bolts & nuts & iron of various sizes, six condenser tubes, 3 plain boiler tubes, 6 junk ring bolts & one safety valve spring

The foregoing is a correct description,

Manufacturer.

Dates of Survey: 1910: July 26, Aug 22, Sept. 6, 11, 16, 30, Oct. 24, Dec 20 (1911) Jan 3, Feb. 15
 During progress of work in shops - -
 During erection on board vessel - -
 Total No. of visits 15

Is the approved plan of main boiler forwarded herewith no

Dates of Examination of principal parts—Cylinders 6-9-10 Slides 6-9-10 Covers 6-9-10 Pistons 6-9-10 Rods 6-9-10
 Connecting rods 6-9-10 Crank shaft 27-7-10 Thrust shaft 20-9-10 Tunnel shafts ✓ Screw shaft 6-9-10 Propeller 1-2-11
 Stern tube 3-1-11 Steam pipes tested (Hall) 2-11 Engine and boiler seatings 1-2-11 Engines holding down bolts 17-2-11
 Completion of pumping arrangements 25-2-11 Boilers fixed 17-2-11 Engines tried under steam 25-2-11
 Main boiler safety valves adjusted 25-2-11 Thickness of adjusting washers P9/32 S 1/4
 Material of Crank shaft see Surveyor's letter 30/5/10 Material of Thrust shaft steel Identification Mark on Do. 146 F.L.
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts steel Identification Marks on Do. 145 F.L.
 Material of Steam Pipes copper ✓ Test pressure 400 lbs per sq. in.

General Remarks (State quality of workmanship, opinions as to class, &c. These engines were partly constructed in 1906. They have been totally dismantled, cylinders, condenser & pumps tested all parts thoroughly examined & found good. The shafting has been tested as required by the rules & the engines reconstructed under survey; the material & workmanship are good; on completion they were properly fixed on board & the vessel satisfactorily tried under steam. In my opinion the machinery of this vessel is eligible for the record & L.M.C. 2-11.

It is submitted that this vessel is eligible for THE RECORD, + L.M.C. 2-11.

J.W.D. 7/3/11

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

The amount of Entry Fee .. £ 1 : 0 :
 Special £ 5 : 18 :
 Donkey Boiler Fee £ 1 : 0 :
 Travelling Expenses (if any) £ 3 : 0 : 1

TUE. 7 MAR 1911

Committee's Minute

Assented

+ L.M.C. 2-11



FLAT PL. (If Bar K GARBOAR)
 State act thickness way of Do Bottom
 DOUBLING Length
 POOP SIDE SHORT BRI FORECASTL
 Manu manufactur Plates, Pla
 Has the Ste
 FRAMES REVERSE
 LOWER MA
 Bowsprit Topmasts, Rigging, Sails.
 EQUIPM
 Number of Certificate.
 64592
 64593
 64620
 Number of Certificate.
 45750
 Iron Stream Chain or Steel Wire
 Boats 2
 Pumps, N
 Windlass
 Engine R
 What arran
 Coal Bun
 Number of
 Ceiling in
 Cargo Ha
 State size
 Number of
 Bulwark
 This above
 Builder's

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

Rpt. 5a
 Date of writ
 No. in Reg. Book
 Master
 Engines m
 Boilers m
 Registered
 MULTI
 (Letter fo
 RE
 the Port o
 ip's Name
 report
 ent from
 Noted by
 Returned
 To be retu
 smallest p
 Pitch of
 Area sup
 Lower ba
 Pitch of
 water spa
 girder at
 Working
 separately
 holes
 If stiffene
 Working
 Dates of Survey while building
 GENE
 Specie
 by h
 Surv
 Trav
 Comm
 Assign