

REPORT ON MACHINERY.

Received at London Office WED. MAY 8 - 1912

Date of writing Report 4-5-1912 When handed in at Local Office 7.5.1912 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey 24 Aug. Last Survey 2nd May 1912
 Reg. Book. "LIBRA" Number of Visits 42 Tons { Gross 211
 Net 89
 Master Shepherdson Built at Dundee By whom built Dundee S B & L^{ts} S/N^o 241 When built 1912
 Engines made at Sunderland By whom made Macboll & Pollock L^{ts} (N^o 224) when made 1912
 Boilers made at Sunderland By whom made Macboll & Pollock L^{ts} (N^o 224) when made 1912
 Registered Horse Power _____ Owners Grimsby & North Sea Steam Trawling Co^{ltd} Port belonging to Grimsby
 Nom. Horse Power as per Section 28 73 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 11 3/4, 20, 34 Length of Stroke 24 Revs. per minute 105 Dia. of Screw shaft 7 1/16 Material of screw shaft 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 no 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 no If two
 liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 3-0
 Dia. of Tunnel shaft 6.13 as per rule none Dia. of Crank shaft journals 6.43 as per rule 6 3/4 Dia. of Crank pin 6 3/4 Size of Crank webs 10 1/2 x 4 5/8 Dia. of thrust shaft under
 collars 6 3/4 Dia. of screw 9-0 Pitch of Screw 11-3 No. of Blades 4 State whether moveable no Total surface 32
 No. of Feed pumps 1 Diameter of ditto 2 3/4 Stroke 12 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 1 Diameter of ditto 2 3/4 Stroke 12 Can one be overhauled while the other is at work yes
 No. of Donkey Engines 1 Sizes of Pumps 6 & 3 + 6 general donkey No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Two @ 2" In Holds, &c. Slush well, - 1 @ 2", Fishhod, - 1 @ 2"
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size NO
 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 valves
 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 for suction & winch pipes 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 Dundee Rpt. 7667 of Stern Tube 17-4-12 Screw shaft and Propeller 17-4-12
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door mach. aft worked from _____

BOILERS, &c.—(Letter for record (5)) Manufacturers of Steel John Spence & Sons L^{td}
 Total Heating Surface of Boilers 1298 Is Forced Draft fitted no No. and Description of Boilers one single ended
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 13-3-12 No. of Certificate 3004
 Can each boiler be worked separately yes Area of fire grate in each boiler 34.5 No. and Description of Safety Valves to
 each boiler two direct spring Area of each valve 3.970 Pressure to which they are adjusted 180 Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 9" Mean dia. of boilers 12-0 Length 10-0 Material of shell plates steel
 Thickness 3 1/32 Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams W.R.
 long. seams W.B. STR Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 7 9/16 Lap of plates or width of butt straps 1-3 1/4
 Per centages of strength of longitudinal joint rivets 90 Working pressure of shell by rules 180 Size of manhole in shell 16 x 12
 plate 85.95 Size of compensating ring 26 x 28 x 3 1/32 No. and Description of Furnaces in each boiler 2 plain Material steel Outside diameter 3-7
 Length of plain part top 42 1/2 Thickness of plates crown 2 1/2 Description of longitudinal joint welded No. of strengthening rings none
 bottom 18 1/16 bottom 2 1/2 Working pressure of furnace by the rules 181 Combustion chamber plates: Material steel Thickness: Sides 1 1/16 Back 1 1/16 Top 1 1/16 Bottom 1 5/16
 Pitch of stays to ditto: Sides 9 x 9 1/8 Back 10 3/16 x 8 3/8 Top 8 1/2 x 8 3/8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183
 Material of stays steel Diameter at smallest part 2.030 Area supported by each stay 88.80 Working pressure by rules 205 End plates in steam space:
 Material steel Thickness 1 1/16 Pitch of stays 14 x 15 3/8 How are stays secured W.N. Working pressure by rules 189 Material of stays steel
 Diameter at smallest part 5.050 Area supported by each stay 265.50 Working pressure by rules 194 Material of Front plates at bottom steel
 Thickness 1 1/8 Material of Lower back plate steel Thickness 1 1/8 Greatest pitch of stays 13 x 8 3/8 Working pressure of plate by rules 214
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates steel Thickness: Front 1 1/8 Back 1 3/16 Mean pitch of stays 11 1/2
 Pitch across wide water spaces 14 x 9 1/16 Working pressures by rules 244 Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 2 @ 7 x 13 Length as per rule 2.450 Distance apart 8 3/8 Number and pitch of stays in each 2 @ 8 1/2
 Working pressure by rules 184 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
 _____ Pitch of rivets _____ Working pressure of shell by rules _____ Diameter of flue _____ Material of flue plates _____ Thickness _____
 _____ 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 _____

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—

MAC GILL & POLLOCK LTD.

The foregoing is a correct description,

Manufacturer.

Hugh MacCall
Managing Director

Dates of Survey while building: During progress of work in shops -- 1911. Aug. 24. Sep. 4. 11. 13. 22. 28. Oct. 5. 10. 17. 22. 26. Nov. 6. 13. 24. 29. Dec. 4. 6. 7. 12. 13. Jan. 2. 4. 11. 16. 19. 29.

During erection on board vessel --- Feb. 1. 6. 16. 20. 27. Mar. 9. 13. 18. 25. Apr. 17. 18. 19. 24. 29. 30. May 2

Total No. of visits (42)

Is the approved plan of main boiler forwarded herewith yes

Approved engine room pumping plan forwarded herewith. Please return for duplicate engines. (Returned 11/5/12)

Dates of Examination of principal parts—Cylinders 22-9-11 Slides 22-10-11 Covers 22-10-11 Pistons 28-9-11 Rods 24-8-11

Connecting rods 24-8-11 Crank shaft 26-9-11 EMS Thrust shaft 25-3-12 Tunnel shafts none Screw shaft 18-3-12 Propeller 18-3-12

Stern tube 9-3-12 Steam pipes tested 19-4-12 Engine and boiler seatings Dun Rpt 1766 Engines holding down bolts 29-4-12

Completion of pumping arrangements 2-5-12 Boilers fixed 24-4-12 Engines tried under steam 30-4-12

Main boiler safety valves adjusted 5.7.12 none Thickness of adjusting washers _____

Material of Crank shaft S-Steel Identification Mark on Do. 238 EMS Material of Thrust shaft S-Steel Identification Mark on Do. 2159 HS

Material of Tunnel shafts none Identification Marks on Do. ✓ Material of Screw shafts S-Steel Identification Marks on Do. 2161 HS

Material of Steam Pipes solid drawn copper 3 1/2" + 7 MS Test pressure 400 lbs per sq. in.

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

To complete the survey the main boiler safety valves require to be overhauled and readjusted the accumulation being excessive at present. It has been arranged with the engine makers and superintendent that this should be done at Grimsby, for which port the vessel has left. Surveyor notified.

The materials and workmanship are good.

The machinery has been made under special survey and is eligible in our opinion for classification, and the record LMC (with date) when the survey is completed, as above.

The amount of Entry Fee .. £ 1 : - : When applied for, _____

Special £ 10 : 19 : 7.5.1912

Donkey Boiler Fee £ : : When received, _____

Travelling Expenses (if any) £ : : _____

Signature: *Lewis Lewis*
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute Assigned

TUE. MAY 21. 1912

Deferred

