

REPORT ON MACHINERY.

No. 11194

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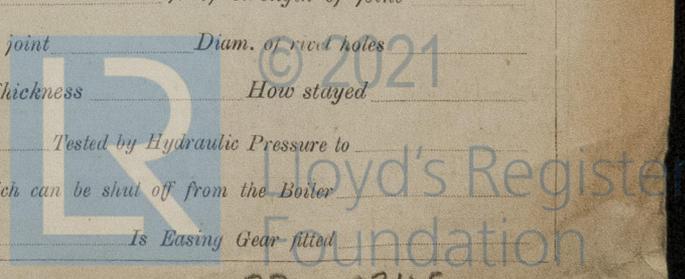
Date of writing Report 19 25/1/22 When handed in at Local Office 25/1/22 Port of Middlesbrough
 No. in Survey held at Stockton-on-Tees Date, First Survey 24th Feb. 1921 Last Survey 20th Jan. 1922
 Reg. Book. on the Steel Screw Steamer ILLINGWORTH (S.S. No. 669) (Number of Visits 83)
 Master Richardson Duck & Co Built at Stockton By whom built Richardson Duck & Co When built 1922
 Engines made at Stockton By whom made Messrs Blair & Co Jim (1875) when made 1922
 Boilers made at Stockton By whom made Messrs Blair & Co Jim when made 1922
 Registered Horse Power _____ Owners _____ Port belonging to _____
 Nom. Horse Power as per Section 28 629 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Quadruple Expansion No. of Cylinders 4 No. of Cranks 4
 Dia. of Cylinders 25 1/2, 36 1/2, 52 1/2, 76 Length of Stroke 54 Revs. per minute _____ Dia. of Screw shaft 15.78 as per rule 17 as fitted _____ Material of screw shaft Eng 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 in one 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 tight fit If two liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 5'-7 1/2"
 Dia. of Tunnel shaft 14.198 as per rule 14 3/4 as fitted _____ Dia. of Crank shaft journals 14.91 as per rule 15 3/4 as fitted _____ Dia. of Crank pin 15 3/4 Size of Crank web 25 x 10 1/2 Dia. of thrust shaft under collars 15 3/4 Dia. of screw 19'-0" Pitch of Screw 18'-0" No. of Blades 4 State whether moceable no Total surface 114 sq ft
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 36" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 5" Stroke 36" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps Ballast 10 x 11 x 10 Fuel 8 x 5 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps _____
 In Engine Room 4 @ 3 1/2" In Holds, &c. 2 @ 3 1/2" in each hold except aftermost where 2 @ 2 3/4" + one @ 3 1/2" Tunnel with one @ 2 1/2"
 No. of Bilge Injections 1 sizes 10" Connected to centrifugal circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes - 4"
 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 no
 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 suctions to forward holds How are they protected wood ceiling
 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
 Is the Screw Shaft Tunnel watertight see hull Rpt Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Messrs John Spencer & Sons Jim Howdens
 Total Heating Surface of Boilers 8875 Is Forced Draft fitted yes No. and Description of Boilers 3 single ended
 Working Pressure 220 Tested by hydraulic pressure to 380 Date of test 14.10.21 No. of Certificate 6247
 Can each boiler be worked separately yes Area of fire grate in each boiler 72 sq ft No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 9.62 Pressure to which they are adjusted 225 lb Are they fitted with easing gear yes
 Smallest distance between boilers or ~~plates~~ and bunkers 3'-6" external dia. of boilers 16'-0" Length 12'-3" Material of shell plates steel
 Thickness 1 9/16" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 Riv. top long. seams 2 Riv. 3 Riv. Diameter of rivet holes in long. seams 1 9/16" Pitch of rivets 10 3/4" Top of plates or width of butt straps 23 1/2" + 1 1/2" in 1 1/2" out
 Per centages of strength of longitudinal joint rivets 88.3 Working pressure of shell by rules 221 Size of manhole in shell 16" x 12" plate 85.47 Rule 39 1/2"
 Size of compensating ring 8 1/4" x 1 1/2" No. and Description of Furnaces in each boiler 4 Deighton Material steel Outside diameter 39 1/2"
 Length of plain part top _____ bottom _____ Thickness of plates crown _____ bottom 5/8" Description of longitudinal joint Weld No. of strengthening rings _____
 Working pressure of furnace by the rules 230 Combustion chamber plates: Material steel Thickness: Sides 23/32" Back 1/2" Top 23/32" Bottom 7/8"
 Pitch of stays to ditto: Sides 8 x 9 1/2" Back 9 1/2 x 8 1/2" Top 9 1/4 x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 232
 Material of stays steel Area at smallest part 1.99 Area supported by each stay 73.8 Working pressure by rules 244 End plates in steam space: Material steel Thickness 1 1/4" Pitch of stays 15 1/4" x 21 How are stays secured nuts & washers Working pressure by rules 228 Material of stays steel
 Area at smallest part 8.48 Area supported by each stay 331 Working pressure by rules 288 Material of Front plates at bottom steel
 Thickness 1" Material of Lower back plate steel Thickness 1 1/2" Greatest pitch of stays 14" x 8 1/2" Working pressure of plate by rules 344
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 3/4" Material of tube plates steel Thickness: Front 1 1/2" Back 7/8" Mean pitch of stays 8 3/8"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 238 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 10 1/2" x 1 1/2" Length as per rule 34 1/2" Distance apart 9 1/4" Number and pitch of stays in each 3 @ 8 1/2"
 Working pressure by rules 237 Steam dome: description of joint to shell none % of strength of joint _____
 Diameter _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____
 Pitch of rivets _____ Working pressure of shell by rules _____ Crown plates _____ Thickness _____ How stayed _____

SUPERHEATER. Type _____ Date of Approval of Plan _____ Tested by Hydraulic Pressure to _____
 Date of Test _____ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler _____
 Diameter of Safety Valve _____ Pressure to which each is adjusted _____ Is Easing Gear fitted _____

If not, state whether, and when, one will be sent? yes Is a Report also sent on the Hull of the Ship? yes



W1330-0245

IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two each of connecting rod top end, bottom end and main bearing bolts and nuts: One set of coupling bolts and nuts: One set of feed & bilge pump valves; one set of check valves: 2 safety valve springs: one set each of HP & MP piston rings; Iron of various sizes assorted bolts and nuts: One tail end shaft; one propeller and minor gear*

The foregoing is a correct description,

FOR BLAIR & Co., LIMITED.

Geo. Nittushup

Manufacturer.

MANAGING DIRECTOR

Dates of Survey while building { During progress of work in shops - - 1921 4.26 24 26. On 1.1.3.4.4.10.11.14.21.23.31 Apr 1.4.6.4.8.11.12.14.15.18.21.22.23.24.29 May 3.6.9.11.13 July 4.11
During erection on board vessel - - - 14.18.20 22 24 24 28 29 Aug 2 5 8 9 11 24 26 30 Sep 1.9.15.20 22.26.28.30 Oct 4.6.10.12.14.18.19.24.24.31. Nov 1.9.14
Total No. of visits 21.23.25.29. On 9.12.19 1922 Jan 10.11.12.20 Is the approved plan of main boiler forwarded herewith *yes*

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Dates of Examination of principal parts—Cylinders 9.8.21 Slides 20.9.21 Covers 9.8.21 Pistons 11.8.21 Rods 11.8.21
Connecting rods 20.9.21 Crank shaft 9.8.21 Thrust shaft 9.8.21 Tunnel shafts { 18.7.21 to 26.8.21 Screw shafts 9.9.21 Propeller 30.9.21
Stern tube 13.5.21 Steam pipes tested 11.10.21 Engine and boiler seatings 8.8.21 Engines holding down bolts 9.11.21
Completion of pumping arrangements 29.11.21 Boilers fixed 11.1.22 Engines tried under steam 11.1.22
Completion of fitting sea connections 8.8.21 Stern tube 8.8.21 Screw shaft and propeller 19.10.21
Main boiler safety valves adjusted 11.1.22 Thickness of adjusting washers P.Blk P-7/16 S-13/32; Cent Blk S-15/32; S.Blk S-13/32
Material of Crank shaft *Ing Steel* Identification Mark on Do. 5931-N Material of Thrust shaft *Ing Steel* Identification Mark on Do. 5931-N
Material of Tunnel shafts *Ing Steel* Identification Marks on Do. 5931-N Material of Screw shafts *Ing Steel* Identification Marks on Do. 5931-N
Material of Steam Pipes *Lap welded Steel* Test pressure 660 lbs.

Is an installation fitted for burning oil fuel *no* Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case *no* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been built under special survey. The materials and workmanship are sound and good. The boilers were tested by hydraulic pressure and the engines and boilers examined under steam and all found satisfactory.*

The machinery is in a good and safe working condition and renders the vessel eligible in my opinion to have the notation of L.M.C-1.22 in the Register Book

Note:— This vessel is fitted with Electric Light and Wireless

It is submitted that this vessel is eligible for THE RECORD. *L.M.C. - 1.22. F.D. C.L.*

The amount of Entry Fee ... £ 650-0-0 When applied for.
Special ... £ 106 9-0-0 13.1.1922
Donkey Boiler Fee ... £ ✓ : : When received,
Travelling Expenses (if any) £ ✓ : : 16.1.1922.

Wm Morrison 27/1/22
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute THE 7 FEB. 1922
Assigned + *L.M.C. 1.22*
F.D. C.L.

under seal

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

