Rpt. 4.

REPORT ON MACHINERY.

No. 12128

Received at London Office 27 OCT 1924

Date of writing Report ____ 19__ When handed in at Local Office 18.10.24 19__ Port of MIDDLESBRO'

No. in Reg. Book. ____ Survey held at Glasgow & Haverton Hill Date, First Survey 3.9.24 Last Survey 16.10. 1924 (Number of Visits 8)

on the Steel Screw Steamer "JOHN HARRISON" Tons Gross ____ Net ____

Master ____ Built at Haverton Hill By whom built Furness S.B.Co Ltd When built 1924

Engines made at Glasgow By whom made Ross & Duncan when made 1924

Boilers made at Glasgow By whom made Ross & Duncan when made 1924

Registered Horse Power ____ Owners H. Harrison (Shipping) Ltd Port belonging to London

Nom. Horse Power as per Section 28 156 ✓ 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 17 - 27½ - 45" Length of Stroke 33" ✓ Revs. per minute ✓ Dia. of Screw shaft as per rule 9.85" as fitted 10¾" ✓ 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 ✓ 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 yes ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 40½" ✓

Dia. of Tunnel shaft as per rule 8.633 as fitted 8¾ ✓ Dia. of Crank shaft journals as per rule 9.06 as fitted 9½ ✓ Dia. of Crank pin 9½ ✓ Size of Crank webs 17½ x 6 Dia. of thrust shaft under collars 9½ ✓ Dia. of screw 12'-9" ✓ Pitch of Screw 12'-6" ✓ No. of Blades 4 ✓ State whether moveable no ✓ Total surface 54 sq ft

No. of Feed pumps 2 ✓ Diameter of ditto 2¾" ✓ Stroke 16½ ✓ Can one be overhauled while the other is at work yes ✓

No. of Bilge pumps 2 ✓ Diameter of ditto 3 ✓ Stroke 16½ ✓ Can one be overhauled while the other is at work yes ✓

No. of Donkey Engines 2 ✓ Sizes of Pumps Ballast 6x8x8 : Feed 6x4½x6 ✓ No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 @ 2½" ✓ In Holds, &c. Fore hold 2 @ 3" : aft-hold 3 @ 3" Tunnel well one @ 2½" ✓

No. of Bilge Injections 1 ✓ sizes 4" ✓ Connected to ~~condenser or~~ circulating pump yes ✓ Is a separate Donkey Suction fitted in Engine room & size yes - 3½" ✓

Are all the bilge suction pipes fitted with roses yes ✓ Are the ~~roses~~ mud-boxes 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 ✓

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 10.9.24 ✓ of Stern Tube 23.9.24 ✓ Screw shaft and Propeller 23.9.24 ✓

Is the Screw Shaft Tunnel watertight Ascertained ✓ Is it fitted with a watertight door yes ✓ worked from R. O'Deck level ✓

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel D. Colville & Sons Ltd. ✓

Total Heating Surface of 2 Boilers 2806 Is Forced Draft fitted no ✓ No. and Description of Boilers Two Single ended 2SB ✓

Working Pressure 180 Tested by hydraulic pressure to 320 Date of test 10.9.24 No. of Certificate 16598

Can each boiler be worked separately yes Area of fire grate in each boiler 39.6 sq ft No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 4.90" Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes

Smallest distance between boilers ~~or uptakes~~ and bunkers or ~~woodwork~~ 1'-7" Mean dia. of boilers 12'-0" Length 10'-6" Material of shell plates S

Thickness 1" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R. long. seams T.R.D.B.S Diameter of rivet holes in long. seams 1" Pitch of rivets 7" ~~Lap of plates or~~ width of butt straps 14⅞"

Per centages of strength of longitudinal joint rivets 86.4 plate 85.7 Working pressure of shell by rules 182 Size of manhole in shell 16" x 12"

Size of compensating ring 30½ x 26½ No. and Description of Furnaces in each boiler 2 Corrugated 2 Cf. Material S. Outside diameter 8'-7⅝"

Length of plain part top ✓ bottom ✓ Thickness of plates crown 9/16" bottom 9/16" Description of longitudinal joint Welded No. of strengthening rings ✓

Working pressure of furnace by the rules 189 Combustion chamber plates: Material S. Thickness: Sides 9/16" Back 5/8" Top 9/16" Bottom 9/16"

Pitch of stays to ditto: Sides 9½ x 9 Back 8½ x 8½ Top 9½ x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 187

Material of stays S Diameter ~~area~~ at smallest part 2.07 Area supported by each stay 85.6 Working pressure by rules 195" End plates in steam space: Material S. Thickness 1" Pitch of stays 16" x 17" How are stays secured D.N.& W Working pressure by rules 197 Material of stays S

Diameter ~~area~~ at smallest part 4.57 Area supported by each stay 272 Working pressure by rules 182 Material of Front plates at bottom Steel Thickness ⅞ Material of Lower back plate Steel Thickness 27/32 Greatest pitch of stays 14 x 8½ Working pressure of plate by rules 216

Diameter of tubes 3¼ Pitch of tubes 4½ x 4¼" Material of tube plates Steel Thickness: Front ⅞" Back ¾" Mean pitch of stays 10"

Pitch across wide water spaces 14" Working pressures by rules 183 Girders to Chamber tops: Material S. Depth and thickness of girder at centre 7¾ x 1¾ Length as per rule 80⅝" Distance apart 9" Number and pitch of stays in each 2 @ 9½

Working pressure by rules 214 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 ____

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VERTICAL DONKEY BOILER—

~~Manufacturers of Steel~~ NONE

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 Safet

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 _____ Stayed by _____

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

SPARE GEAR. State the articles supplied :— Two each of con: rod top-end, bottom-end and main bearing bolts + nuts: One set of coupling bolts + nuts: one set each of feed + bilge pump valves: assorted bolts + nuts; iron of various sizes: One main + one donkey feed check valve + one safety valve spring

The foregoing is a correct description,

(Signed) ~~Robt. Duncan~~ Manufacturer. } for Glasgow Rpt. No. 43985

Dates of Survey while building { During progress of work in shops - - } _____ { During erection on board vessel - - } 1924 Sept. 3.11.23. Oct. 2.6.8.14.16

Total No. of visits 8 Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " "

Dates of Examination of principal parts—Cylinders Gls Slides Gls Covers Gls Pistons Gls Rods Gls

Connecting rods Gls Crank shaft Gls Thrust shaft Gls Tunnel shafts Gls Screw shaft Gls Propeller Gls

Stern tube Gls Steam pipes tested 6.10.24 Engine and boiler seatings 11.9.24 Engines holding down bolts 6.10.24

Completion of pumping arrangements 14.10.24 Boilers fixed 14.10.24 Engines tried under steam 14.10.24

Main boiler safety valves adjusted 14.10.24 Thickness of adjusting washers P. Blr P-3/8 S-13/32 : S. Blr P-3/8 S-13/32

Material of Crank shaft S. Identification Mark on Do. W.L Material of Thrust shaft S. Identification Mark on Do. W L

Material of Tunnel shafts S. Identification Marks on Do. W.L Material of Screw shafts S. Identification Marks on Do. J H.

Material of Steam Pipes Solid drawn copper (4" x N:7) Test pressure 360 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. See S.S. Timberhaven Rpt. 11939.

The machinery of this vessel was built under special survey — see Glasgow Report No: 43985, and has now been satisfactorily fitted on board in accordance with the Rules. The engines, boilers & auxiliaries 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 ✠ LMC - 10.24 in the Register Book

It is submitted that this vessel is eligible for THE RECORD. ✠ LMC 10.24. CL.

28/10/24

Wm Morrison

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

The amount of Entry Fee..	£	:	When applied for, 20.10.1924
Special 1/3-14	£	7-16-0	
Donkey Boiler Fee	£	:	When received, 28.10.24
Travelling Expenses (if any)	£	:	

Committee's Minute FRI. 31 OCT 1924

Assigned ✠ LMC. 10.24

CERTIFICATE WRITTEN

C.L.

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

Certificate (if required) to be sent to _____

Date of writing Re

No. in Surve Reg. Book.

on the

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Boilers made a

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SUPERHE

Date of Test

Diameter of S