

REPORT ON MACHINERY.

No. 10980

Received at London Office

Date of writing Report 4th July 1921 When handed in at Local Office 1921 Port of Southampton SAT. JUL. 9 1921
 No. in Survey held at Comes. Isle of Wight Date, First Survey 4th Oct. 1920 Last Survey 2nd July 1921
 Reg. Book. on the S.S. "RAYLIGHT" (Number of Visits 18) Tons } Gross 719.15
 Net 288.16

Master _____ Built at Comes By whom built J.S. White & Co. Ltd When built 1921
 Engines made at Comes By whom made J.S. White & Co. Ltd when made 1921
 Boilers made at Comes By whom made J.S. White & Co. Ltd when made 1921
 Registered Horse Power _____ Owners Light Shipping Co. Port belonging to Greenock
 Nom. Horse Power as per Section 28 126 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expnd Surface Condensing No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 15"-25 1/2"-41" Length of Stroke 30" Revs. per minute 105 Dia. of Screw shaft 8 1/8" 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 — 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 3'-0 1/2"

Dia. of Tunnel shaft 8 1/4" Dia. of Crank shaft journals 8 1/4" Dia. of Crank pin 8 1/4" Size of Crank webs 5 1/2" Dia. of thrust shaft under collar 8 1/4" Dia. of screw 10'-6" Pitch of Screw 11'-6" No. of Blades 4 State whether moceable No Total surface 37 #
 No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 3 Sizes of Pumps 7x5x12 or 7x4 1/2 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2-2 1/2" and 2-2"
 In Holds, &c. 2-2" from Holdwell.

No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump C. Pump Is a separate Donkey Suction fitted in Engine room & size yes. 2 1/2"
 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 Food. Suctions How are they protected Wood casings
 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 None Is it fitted with a watertight door — worked from —

BOILERS, &c.—(Letter for record S) Manufacturers of Steel The Park Gate Iron & Steel Co. Ltd. Dughlton's Patent Flue and Tube Co. Ltd.
 Total Heating Surface of Boilers 2324 # Is Forced Draft fitted No No. and Description of Boilers 2 Single Ended
 Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 21-4-21 No. of Certificate 350 & 351
 Can each boiler be worked separately yes Area of fire grate in each boiler 33 # No. and Description of Safety Valves to each boiler 2 Spring Loaded Area of each valve 3.97" Pressure to which they are adjusted 182 lbs. Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 5'-3" Mean dia. of boilers 10'-9" Length 10'-9 1/2" Material of shell plates Steel
 Thickness 1 1/16" Range of tensile strength 28 to 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. LAP.
 long. seams T.R. BUTT STRAPS Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 7 1/16" Lap of plates or width of butt straps 16 1/2"
 Per centages of strength of longitudinal joint rivets 91.46 Working pressure of shell by rules 191 Size of manhole in shell 16x12"
 Size of compensating ring 2'-7 3/4" x 2'-3 3/4" No. and Description of Furnaces in each boiler 2 Corrugated Material Steel Outside diameter 3'-3 1/4"
 Length of plain part — Thickness of plates — Description of longitudinal joint Welded No. of strengthening rings —
 Working pressure of furnace by the rules 192.4 Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 3/8" Top 4/8" Bottom 5/8"
 Pitch of stays to ditto: Sides 8 1/2" x 8 3/4" Back 9" x 8 3/4" Top 8 1/2" x 10 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 187.2

Material of stays Steel Area at smallest part 1.79" Area supported by each stay 89.25" Working pressure by rules 180.5" End plates in steam space: Material Steel Thickness 1 1/2" Pitch of stays 1'-11" x 1'-1" How are stays secured DOUBLE NUTS & WASHERS Working pressure by rules 181.4 Material of stays Steel
 Area at smallest part 5.264" Area supported by each stay 299" Working pressure by rules 183.1 Material of Front plates at bottom Steel
 Thickness 1" Material of Lower back plate Steel Thickness 1 1/16" Greatest pitch of stays 8 3/4" x 13" Working pressure of plate by rules 185.8
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/16" Material of tube plates Steel Thickness: Front 1" Back 1 1/16" Mean pitch of stays 9"
 Pitch across wide water spaces 14" Working pressures by rules 182.6 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9" x 1 1/8" Length as per rule 2'-4 1/2" Distance apart 10 1/2" Number and pitch of stays in each 2-8 1/2"
 Working pressure by rules 197.8 Steam dome: description of joint to shell — % 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 —

W382-0097

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied :- 2 Conn^d Rod top-end bolts & nuts. 2 Conn^d Rod bottom-end bolts & nuts. 2 Main Bearing bolts & nuts. 1 Set of Coupling bolts. 1 Feed pump suction valve and 1 Feed pump discharge valve. 1 Bilge pump suction valve and 1 Bilge pump discharge valve. 12 Junk ring studs & nuts. 1 Escape valve spring of each size. 2 Pump link brasses. 36 Condenser tubes. 18 Condenser tube females. 1 set of air pump valves. 2 Eccentric strap bolts & nuts. 12 Eccentric rod top end bolts & nuts. 24 Boiler tubes. 1 set of Safety Valve springs. 2 Feed check valves. 50 Assorted bolts & nuts. Flat & round iron of various sizes.

The foregoing is a correct description, For J. Samuel White & Company. Ltd.

J. Samuel White

Managing Director.

Manufacturer.

Dates of Survey while building	During progress of work in shops - -	4 8	6.25	3.8.21	11.31	7.21	
		10, 11, 1920.	1,	2,	3,	4,	1921
		2.25	1.7.9	1.2	7. 1921		
During erection on board vessel - - -	Total No. of visits	5.	6.	7.	18.		

Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " yes

Dates of Examination of principal parts—Cylinders 21-2-21 Slides 21-2-21 Covers 21-2-21 Pistons 11-3-21 Rods 6-1-21
 Connecting rods 6-1-21 Crank shaft 25-1-21 Thrust shaft 8-11-20 Tunnel shafts ✓ Screw shaft 21-2-21 Propeller 11-3-21
 Stern tube 3-2-21 Steam pipes tested 7-6-21 Engine and boiler seatings 2-5-21 Engines holding down bolts 1-6-21
 Completion of pumping arrangements 7-6-21 Boilers fixed 2-5-21 Engines tried under steam 2-7-21
 Completion of fitting sea connections 21-2-21 Stern tube 21-2-21 Screw shaft and propeller 11-3-21
 Main boiler safety valves adjusted 2-7-21 Thickness of adjusting washers Pat Bl. {P=7/16 S=5/16} Start Bl. {P=7/16 S=1/2}

Material of Crank shaft Steel Identification Mark on Do. 1559 LLOYD 25-1-21 A.H.B. Material of Thrust shaft Steel Identification Mark on Do. 1559 LLOYD 8-11-20 A.H.B.
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Steel Identification Marks on Do. 1559 LLOYD 21-2-21 A.H.B.
 Material of Steam Pipes Copper Test pressure 360 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 and Boilers have been built under special Survey and during erection on board.

The materials and workmanship are sound and good.

The spare gear is in order with the rule requirements.

On trial the machinery proved satisfactory and the same is eligible in my opinion to have notation +L.M.C. 7.21.

An Electric Light Installation has been fitted in accordance with the rule requirements and a report will be forwarded when received from the Contractors.

It is submitted that this vessel is eligible for THE RECORD. +L.M.C. 7.21 C.L.

Roll

15/7/21

J.P.H.

The amount of Entry Fee ...	£ 3 : 0 :	When applied for,
Special ...	£ 31 : 10 :	8 th July 1921
Donkey Boiler Fee ...	£ : :	When received,
Travelling Expenses (if any) £	1 : 8 :	2.9.1921

A.A. Boyle

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 15 JUL 1921

Assigned + L.H.B. 7.21

C.L.

MACHINERY OBSERVATION WRITTEN



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