

REPORT ON MACHINERY

No. 1004
2 NOV 1909

Old. 24270

Date of writing Report 19 When handed in at Local Office 1001 10 09 Port of MIDDLESBROUGH
 No. in Survey held at Stockton-on-Tees Date, First Survey 17 August Last Survey 26 October 1909
 Reg. Book. 4-101-09-28
 on the steel screw steamer LEVERSONS (S.S. No. 256) Tons } Gross 1774
 Master Storey Built at Sunderland By whom built Thos R. Thompson & Sons When built 1909 Net 1100
 Engines made at Stockton By whom made Thos Blair & Co Lim (No. 1662) when made 1909
 Boilers made at Stockton By whom made Thos Blair & Co Lim when made 1909
 Registered Horse Power _____ Owners The Gordon S. S. Co. Ltd Port belonging to London
 Nom. Horse Power as per Section 28 218 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders three No. of Cranks 3
 Dia. of Cylinders 21-34-56 Length of Stroke 36 Revs. per minute ✓ Dia. of Screw shaft as per rule 12.45 Material of IRON
 as fitted 12.3/4 screw shaft }
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube no 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 no Length of stern bush 4'-4"
 Dia. of Tunnel shaft as per rule 10.23 Dia. of Crank shaft journals as per rule 10.74 Dia. of Crank pin 11 1/2 Size of Crank webs 22 1/2 x 6 1/2 Dia. of thrust shaft under
 collars 11 1/2 Dia. of screw 15'-0" Pitch of Screw 16'-6" No. of Blades 4 State whether moveable no Total surface 62 sq ft
 No. of Feed pumps 2 Diameter of ditto 2 3/4 Stroke 26 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 26 Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps Ballast 10 x 13 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4 @ 2 1/2 In Holds, &c. Fore hold 2 @ 2 1/2; aft hold 4 @ 2 1/2
Tunnel 1 @ 2 1/2
 No. of Bilge Injections 1 sizes 4 1/2 Connected to condenser or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 3 1/4
 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 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 stowhold 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 fore hold 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; fore hold; aft hold; tunnel
 Dates of examination of completion of fitting of Sea Connections 15.10.09 of Stern Tube 15.10.09 Screw shaft and Propeller 19.10.09
 Is the Screw Shaft Tunnel watertight see hull report Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Thos J. Spencer & Sons Lim
 Total Heating Surface of Boilers 3550 Is Forced Draft fitted no No. and Description of Boilers 2 Single Ended
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 Date of test 8.10.09 No. of Certificate 4325
 Can each boiler be worked separately yes Area of fire grate in each boiler 50 1/2 sq ft No. and Description of Safety Valves to
 each boiler 2 direct spring Area of each valve 5.94 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 18" Mean dia. of boilers 13'-9" Length 10'-6" Material of shell plates steel
 Thickness 1 1/2" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 Riv lap
 long. seams 2 Riv-3 Riv Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 8 3/8 Lap of plates or width of butt straps 17 3/8 + 1 1/2
 Per centages of strength of longitudinal joint rivets 87.6 Working pressure of shell by rules 184 lbs Size of manhole in shell 16" x 12"
 plate 85-92 Size of compensating ring 7 1/2" x 1 1/8" No. and Description of Furnaces in each boiler 3 Ribbed Material steel Outside diameter 36"
 Length of plain part top Thickness of plates bottom 1/2" Description of longitudinal joint welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 193 Combustion chamber plates: Material steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 3/4"
 Pitch of stays to ditto: Sides 9 3/4 x 9 1/2 Back 9 3/4 x 8 1/2 Top 9 3/4 x 9 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183 lbs
 Material of stays steel Diameter at smallest part 1.59 Area supported by each stay 89 sq in Working pressure by rules 201 End plates in steam space:
 Material steel Thickness 1 1/2" Pitch of stays 21 1/2 + 18 How are stays secured nuts Working pressure by rules 188 Material of stays steel
 Diameter at smallest part 2.04 Area supported by each stay 387 sq in Working pressure by rules 195 Material of Front plates at bottom steel
 Thickness 1 1/2" Material of Lower back plate steel Thickness 1 1/2" Greatest pitch of stays 17 1/4 x 8 1/2 Working pressure of plate by rules 180
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 + 4 3/8 Material of tube plates steel Thickness: Front 1 1/2" Back 1 1/2" Mean pitch of stays 9 3/4
 Pitch across wide water spaces 14 1/2" Working pressures by rules 187 lbs Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 7 1/2 x 1 1/2 Length as per rule 28" Distance apart 9 3/4 Number and pitch of stays in each 2 @ 9 1/2"
 Working pressure by rules 189 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
 plates — 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 none*

No. *1106 B* Description *Vertical Donkey Boiler*
 Made at *1106 B* By whom made *Geo. Nettleship* When made *1909* Where fixed *1106 B*
 Working pressure *1106 B* tested by hydraulic pressure to *1106 B* Date of test *1106 B* No. of Certificate *1106 B* Fire grate area *1106 B* Description of Safety *1106 B*
 Valves *1106 B* No. of Safety Valves *1106 B* Area of each *1106 B* Pressure to which they are adjusted *1106 B* Date of adjustment *1106 B*
 If fitted with easing gear *1106 B* If steam from main boilers can enter the donkey boiler *1106 B* Dia. of donkey boiler *1106 B* Length *1106 B*
 Material of shell plates *1106 B* Thickness *1106 B* Range of tensile strength *1106 B* Descrip. of riveting long. seams *1106 B*
 Dia. of rivet holes *1106 B* Whether punched or drilled *1106 B* Pitch of rivets *1106 B* Lap of plating *1106 B* Per centage of strength of joint *1106 B*
 Working pressure of shell by rules *1106 B* Thickness of shell crown plates *1106 B* Radius of do. *1106 B* No. of stays to do. *1106 B* Dia. of stays *1106 B*
 Diameter of furnace Top *1106 B* Bottom *1106 B* Length of furnace *1106 B* Thickness of furnace plates *1106 B* Description of joint *1106 B*
 Working pressure of furnace by rules *1106 B* Thickness of furnace crown plates *1106 B* Stayed by *1106 B*
 Diameter of uptake *1106 B* Thickness of uptake plates *1106 B* Thickness of water tubes *1106 B* Dates of survey *1106 B*

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 piston rings: one set feed and bilge pump valves: assorted bolts and nuts: iron of various sizes and one cast iron propeller*

The foregoing is a correct description,
 FOR BLAIR & CO., LIMITED.
Geo. Nettleship Manufacturer.

Assistant Secretary
 Dates of Survey while building
 During progress of work in shops— *1909 Aug. 6 10 14 24 27 30 Sept. 1 3 7 9 11 15 22 24 28 30 Oct. 2 5 7 8 12 14 15 19 21 25 26*
 During erection on board vessel— *Old: Oct 30 Nov 4*
 Total No. of visits *27 + 2 = 29* Is the approved plan of main boiler forwarded herewith *yes*
 " " " donkey " " " *yes*

Dates of Examination of principal parts—Cylinders *9.15.09* Slides *24.9.09* Covers *15.9.09* Pistons *22.9.09* Rods *22.9.09*
 Connecting rods *22.9.09* Crank shaft *28.9.09* Thrust shaft *28.9.09* Tunnel shafts *9.22.9.09* Screw shaft *5.10.09* Propeller *2.10.09*
 Stern tube *2.10.09* Steam pipes tested *25.10.09* Engine and boiler seatings *15.10.09* Engines holding down bolts *25.10.09*
 Completion of pumping arrangements *26.10.09* Boilers fixed *25.10.09* Engines tried under steam *26.10.09*
 Main boiler safety valves adjusted *26.10.09* Thickness of adjusting washers *P. Blk PV = 11/32, SV = 3/8 f: St Blk - PV = 11/32, SV = 11/32*
 Material of Crank shaft *Ing Steel* Identification Mark on Do. *6516* Material of Thrust shaft *Ing Steel* Identification Mark on Do. *6902-N*
 Material of Tunnel shafts *Ing Steel* Identification Marks on Do. *6902-N* Material of Screw shafts *IRON* Identification Marks on Do. *6517*
 Material of Steam Pipes *Solid drawn copper 4 1/2 Bore x 5 L.S.G.* Test pressure *400 lbs.*

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

To complete the survey the items marked on the report, namely:— Examination of sea connections, stern tube, non-return valves in tunnel & engine and boiler seatings require to be noted on the report. It is stated that this work has been carried out at Sunderland.

The machinery of this vessel has been built under Special Survey and satisfactorily passed on board in accordance with the Rules. The materials and workmanship are sound and good. They are now in a good working condition and eligible in my opinion to have the notation of L.M.C 11.09 when the survey has been completed.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C 11.09

J.P.R. *H.A.D.*
 19.11.09 19.11.09

The amount of Entry Fee. . . £ *2-0-0* When applied for. *17.11.09*
 Special £ *30-18-0* When received. *20.11.09*
 Donkey Boiler Fee £ *✓*
 Travelling Expenses (if any) £ *✓*
 Committee's Minute *FRL 19 NOV 1909*

Wm Morrison
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
E. J. Toddart

Assigned *+ L.M.C 11.09*



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Certificate (if required) to be sent to the Secretary of the Committee's Minutes.