Rpt. 4.

REPORT ON MACHINERY. No. 22965

Received at London Office TUES. 13 SEP 1910

Date of writing Report ____ 19__ When handed in at Local Office 10th Sept 1910 Port of Hull

No. in Reg. Book. 169 Survey held at Hull Date, First Survey Feb 8th Last Survey 10th Sept 1910 (Number of Visits 45)

on the Steel Sc. Sr. Darlington Tons Gross 1076 Net 425

Master ____ Built at Hull By whom built Messrs Earle's Co Ld When built 1910

Engines made at Hull By whom made Messrs Earle's Co Ld when made 1910

Boilers made at Hull By whom made Messrs Earle's Co Ld when made 1910

Registered Horse Power ____ Owners Wilson & North Eastern Rly Shipping Co. Ltd Port belonging to Hull

Nom. Horse Power as per Section 28 373 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 23½" ~ 38" ~ 62" Length of Stroke 39" Revs. per minute 104 Dia. of Screw shaft as per rule 12·7 as fitted 14·25 Material of screw shaft Steel

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 ____ Length of stern bush 4'~10⅜"

Dia. of Tunnel shaft as per rule 11·3" as fitted 11·5" Dia. of Crank shaft journals as per rule 11·88 as fitted 12·375 Dia. of Crank pin 12¾" Size of Crank webs 19" × 8½" Dia. of thrust shaft under collars 12⅜" Dia. of screw 13'~9" Pitch of Screw 14'~9" to 14'~0" No. of Blades 4 State whether moveable No Total surface 54 □ft

No. of Feed pumps Two Size ~~Diameter~~ of ditto 10½"×8"×18" ~~Stroke~~ Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 3¼" Stroke 23" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps 8"×8"×8" & 6"×4½"×6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Two 2½" One 3" in N°4 Tank. In Holds, &c. One 2½" in F. Peak, one 2¾" N°1 Tank one 2½" each side N°1 hold. One 3" each side N°2 Tank. One 3" each side N°3 tank " 2½" " " N°3 hold. One 3" N°5 tank. One 2¼" tunnel well, One 2½" aft peak tank.

No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 3"

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 Tank suction 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 4. 7. 10 of Stern Tube 4. 7. 10 Screw shaft and Propeller 4. 7. 10

Is the Screw Shaft Tunnel watertight Yes 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. Newburn-on-Tyne

Total Heating Surface of Boilers 5840 Is Forced Draft fitted Yes No. and Description of Boilers Two Cyl. Multi. Single Ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test Port 5.7.10 Stbs 24.6.10 No. of Certificate 1755 1752

Can each boiler be worked separately Yes Area of fire grate in each boiler 77.25 □ft (77.25) No. and Description of Safety Valves to each boiler Two Spring Area of each valve 9.6 □" 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 12" ~~Mean~~ Int dia. of boilers 15'~9" Length 12'~0" Material of shell plates Steel

Thickness 1 13/32" Range of tensile strength 29 tons ~ 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.B. long. seams D.B.S.J.R Diameter of rivet holes in long. seams 1½" Pitch of rivets 9 9/16" ~~Lap of plates or~~ width of butt straps 1'~9 5/8"

Per centages of strength of longitudinal joint rivets 94·5 plate 84·3 Working pressure of shell by rules 208 lbs Size of manhole in shell 16"×12"

Size of compensating ring 10"×1 13/32" No. and Description of Furnaces in each boiler Four Deightons (F) Material Steel Outside diameter 3'~8 9/16"

Length of plain part top ✓ bottom ____ Thickness of plates crown 19/32" bottom ____ Description of longitudinal joint Welded No. of strengthening rings ✓

Working pressure of furnace by the rules 211 lbs Combustion chamber plates: Material Steel Thickness: Sides 11/16" Back 11/16" Top 11/16" Bottom ⅞"

Pitch of stays to ditto: Sides 8½"×8¾" Back 8 9/16"×8½" Top 8"×9 5/8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 208 lbs

Material of stays Steel Diameter at smallest part 1½" Area supported by each stay 44 □" Working pressure by rules 183 lbs End plates in steam space:

Material Steel Thickness 1" Pitch of stays 15"×15½" How are stays secured D.N. Working pressure by rules 192 lbs Material of stays Steel

Diameter at smallest part 2 9/16" Area supported by each stay 232·5 □" Working pressure by rules 231 lbs Material of Front plates at bottom Steel

Thickness 15/16" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 14½"×8" Working pressure of plate by rules 221 lbs

Diameter of tubes 2½" Pitch of tubes 3¾"×3 23/32" Material of tube plates Steel Thickness: Front 15/16" Back ⅞" Mean pitch of stays 7 20/32"

Pitch across wide water spaces 13" Working pressures by rules 186 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9½"×1¾" Length as per rule 2'~9 15/16" Distance apart 9 5/8" Number and pitch of stays in each Three 8"

Working pressure by rules 194 lbs ~~Superheater or Steam chest; how connected to boiler~~ 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 ____

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 each top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set coupling bolts and nuts, one set each, air circulating feed and bilge pump valves, main check valves, a quantity of assorted bolts nuts etc.

The foregoing is a correct description,

Manufacturer. D. V. Palethorpe. SHIPBUILDING & ENGINEERING CO. LIMITED. SECRETARY.

Dates of Survey while building

During progress of work in shops — 1910 - Feb 8. 17. 22, 23. 28. Mar. 2. 7. 9. 16. 21. 23. Apr. 4. 8. 21. 22. 26. May 4. 10. 23. 26. 28. Jun 2.

During erection on board vessel — Jun 7. 9. 16. 18. 20. 23. 24. July 4. 5. 7. 8. 11. 12. 16. 18. 20. 22. 25. 28. 30. Aug 31. Sep 10.

Total No. of visits 45.

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " "

Dates of Examination of principal parts— *Cylinders* 16·6·10 *Slides* 4·7·10 *Covers* 4·7·10 *Pistons* 8·2·10 *Rods* 23·2·10 *Connecting rods* 5·7·10 *Crank shaft* 21·4·10 *Thrust shaft* 5·7·10 *Tunnel shafts* 5·7·10 *Screw shaft* 20·6·10 *Propeller* 4·7·10 *Stern tube* 6·6·10 *Steam pipes tested* 18·7·10 *Engine and boiler seatings* 8·7·10 *Engines holding down bolts* 25·7·10 *Completion of pumping arrangements* 10 9 10 *Boilers fixed* 25·7·10 *Engines tried under steam* 28·7·10 *Main boiler safety valves adjusted* 28·7·10 *Thickness of adjusting washers* 9/32" 9/32" 9/32" 1/4"

Material of Crank shaft Steel *Identification Mark on Do.* 2437 WDH *Material of Thrust shaft* Steel *Identification Mark on Do.* 2437 WD

Material of Tunnel shafts Steel *Identification Marks on Do.* 2437 WDH *Material of Screw shafts* Steel *Identification Marks on Do.* 2437 G.A.

Material of Steam Pipes Steel *Test pressure* 360 lbs per sq inch

General Remarks *(State quality of workmanship, opinions as to class, &c.* The engines and boiler of this vessel have been constructed under special survey in accordance with the Societys Rules. The materials and workmanship are sound and good. The boiler tested by hydraulic pressure found satisfactory, and with the engines, secured on board, and tested under steam, they are now in good order, and safe working condition, and respectfully submitted as being eligible in my opinion to be classed with the notation of ✠ L M C 9.10 in the Register Book.

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

Certificate (if required) to be sent to

It is submitted that this vessel is eligible for THE RECORD. ✠LMC 9.10.

F.D. J.W.R. 14/9/10

J.M.

James Barclay

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

The amount of Entry Fee	£ 3 : . :	When applied for, 12-10-1910
Special	£ 38 : 13 :	
Donkey Boiler Fee	£ - : :	When received, 26-9-1910 W.Ch 27.9
Travelling Expenses (if any)	£ - : :	

Committee's Minute FRI. 16 SEP 1910

Assigned ✠LMC 9.10

MACHINERY CERTIFICATE WRITTEN.