

REPORT ON MACHINERY.

No. 66055

Received at London Office 13.1914

Report of writing Report *9th May 1914* When handed in at Local Office *MAY 12 1914* Port of *NEWCASTLE-ON-TYNE*
 Date, First Survey *6th Nov 1913* Last Survey *1st May 1914*
 Reg. Book. *77* on the *Machinery of the S.S. "Elfland"* (Number of Visits *29*)
 Tons { Gross *4211*
 Net *2670*
 Built at *Newcastle* By whom built *Northumberland S.B. Co.* When built *1914*
 Engines made at *Newcastle* By whom made *N.E. Marine Eng. Co. Ltd* when made *1914*
 Boilers made at *"* By whom made *"* when made *1914*
 Registered Horse Power *"* Owners *A. Dughorn Ltd* Port belonging to *London*
 Com. Horse Power as per Section 28 *371* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Triple* No. of Cylinders *3* No. of Cranks *3*
 Dia. of Cylinders *25" 41" & 69"* Length of Stroke *48"* Revs. per minute *62* Dia. of Screw shaft *14 1/2"* Material of *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
 Is the propeller boss *Yes* If the liner is in more than one length are the joints burned *Yes* 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 *Yes* Length of stern bush *5'-0"*
 Dia. of Tunnel shaft *12.9"* as per rule *12.7"* Dia. of Crank shaft journals *13.58"* as per rule *13.3"* Dia. of Crank pin *13 7/8"* Size of Crank webs *28 1/2" x 8 1/2"* Dia. of thrust shaft under
 collars *13 5/8"* Dia. of screw *17'-3"* Pitch of Screw *18'-3"* No. of Blades *4* State whether moveable *no* Total surface *92 sq ft*
 No. of Feed pumps *2* Diameter of ditto *3 3/4"* Stroke *26"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *2* Diameter of ditto *4 1/2"* Stroke *26"* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *2* Sizes of Pumps *9" x 12" x 10" & 2 1/2" x 4 1/2" x 6"* No. and size of Suctions connected to both Bilge and Donkey pumps
 in Engine Room *4 of 3 1/2"* In Holds, &c. *2 of 3 1/2" in each hold*
 & one of *2 1/2" in tunnel.*
 No. of Bilge Injections *1* sizes *7"* Connected to condenser, or to circulating pump *pumps* Is a separate Donkey Suction fitted in Engine room & size *Yes 3 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 *none* How are they protected *Yes*
 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 *23/2/14* of Stern Tube *23/2/14* Screw shaft and Propeller *19/3/14*
 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 *J. & S. Spencer & Son*

Total Heating Surface of Boilers *5895* Is Forced Draft fitted *no* No. and Description of Boilers *3 single ended*
 Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *16/1/14* No. of Certificate *8610*
 Can each boiler be worked separately *Yes* Area of fire grate in each boiler *53.33 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 *4'-3"* Mean dia. of boilers *13'-9 1/2"* Length *10'-9"* Material of shell plates *Steel*
 Thickness *1 3/32"* Range of tensile strength *28 3/4 to 32 tons* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *d.r. lap*
 Long. seams *2.r.d. butt* Diameter of rivet holes in long. seams *1 3/16"* Pitch of rivets *8 3/4"* Lap of plates or width of butt straps *17 3/4"*
 Percentages of strength of longitudinal joint *86.7* Working pressure of shell by rules *182 lbs* Size of manhole in shell *16" x 12"*
 Size of compensating ring *flanges* No. and Description of Furnaces in each boiler *3 horizontal* Material *Steel* Outside diameter *41 1/2"*
 Length of plain part *top* Thickness of plates *crown* *1/2"* Description of longitudinal joint *welded* No. of strengthening rings *1*
 Working pressure of furnace by the rules *182 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *2 3/32"* Back *2 3/32"* Top *2 3/32"* Bottom *2 9/32"*
 Pitch of stays to ditto: Sides *9 3/8" x 10 1/2"* Back *9 3/8" x 10 1/2"* Top *9 3/8" x 10 1/2"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *180.5 lbs*
 Material of stays *Steel* Diameter at smallest part *2.03* Area supported by each stay *98.3* Working pressure by rules *185 lbs* End plates in steam space:
 Material *Steel* Thickness *1 3/8"* Pitch of stays *24" x 19 1/4"* How are stays secured *d.n.r.* Working pressure by rules *185 lbs* Material of stays *Steel*
 Diameter at smallest part *8.29* Area supported by each stay *474* Working pressure by rules *182 lbs* Material of Front plates at bottom *Steel*
 Thickness *1"* Material of Lower back plate *Steel* Thickness *2 3/32"* Greatest pitch of stays *14 1/2" x 9 3/8"* Working pressure of plate by rules *190 lbs*
 Diameter of tubes *3 1/4"* Pitch of tubes *4 3/8"* Material of tube plates *Steel* Thickness: Front *1"* Back *3/4"* Mean pitch of stays *8 3/4"*
 Pitch across wide water spaces *14 1/2"* Working pressures by rules *182 lbs* Girders to Chamber tops: Material *Steel* Depth and
 thickness of girder at centre *9 3/8" x 14 1/2"* Length as per rule *31"* Distance apart *10 1/2"* Number and pitch of stays in each *2 of 9 3/8"*
 Working pressure by rules *187 lbs* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked
 separately *Yes* Diameter *Yes* Length *Yes* Thickness of shell plates *Yes* Material *Yes* Description of longitudinal joint *Yes* Diam. of rivet.
 holes *Yes* Pitch of rivets *Yes* Working pressure of shell by rules *Yes* Diameter of flue *Yes* Material of flue plates *Yes* Thickness *Yes*
 If stiffened with rings *Yes* Distance between rings *Yes* Working pressure by rules *Yes* End plates: Thickness *Yes* How stayed *Yes*
 Working pressure of end plates *Yes* Area of safety valves to superheater *Yes* Are they fitted with easing gear *Yes*

W 421-0040

IS A DONKEY BOILER FITTED? *No* ✓

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

Two top end & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed & bilge pump valves, 1 set of springs for L.P. piston, a quantity of assorted bolts nuts & iron, propeller shaft, 1 pair of top end & 1 pair of bottom end bearings, 1 eccentric rod, 2 valve spindles, air & circulating pump rods, pump link brasses & minor details. ✓

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING Co., LTD.

J. J. Harrison Manufacturer.

Dates of Survey while building
During progress of work in shops - - - 1913 Nov. 6. 10. 26. Dec. 1. 9. 15. 23. 30. 1914 Jan. 5. 13. 14. 16. 19. 20. 22. 23. Feb. 9. 16. 17. 19. 23. 24.
During erection on board vessel - - - Mar. 3. 9. 19. 27. 31. May 1.
Total No. of visits 29

Is the approved plan of main boiler forwarded herewith *Yes* ✓

" " " donkey " " " "

Dates of Examination of principal parts—Cylinders 23/1/14 Slides 17/2/14 Covers 17/2/14 Pistons 19/1/13 Rods 24/2/14
Connecting rods 10/11/13 Crank shaft 22/1/14 Thrust shaft 13/1/14 Tunnel shafts 20/1/14 Screw shaft 20/1/14 Propeller 3/3/14
Stern tube 16/2/14 Steam pipes tested 12/3/14 Engine and boiler seatings 23/2/14 Engines holding down bolts 23/2/14
Completion of pumping arrangements 1/4/14 Boilers fixed 27/4/14 Engines tried under steam 31/3/14
Main boiler safety valves adjusted 31/3/14 Thickness of adjusting washers *P.P. 1/8" S. 1/4" C. P. 1/8" S. 1/4" S. P. 1/4" S. 5/16"*
Material of Crank shaft *Steel* Identification Mark on Do. 22/1/14 *ℓℓℓ* Material of Thrust shaft *Steel* Identification Mark on Do. 13/1/14 *ℓℓℓ*
Material of Tunnel shafts *Steel* Identification Marks on Do. 20/1/14 *ℓℓℓ* Material of Screw shafts *Steel* Identification Marks on Do. 6/2/14 *ℓℓℓ*
Material of Steam Pipes *Lap welded iron* ✓ Test pressure 540 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 used are good and the workmanship is satisfactory, it has been properly fitted on board and secured, and the engines have been tried under full power. In my opinion the vessel is eligible for the record of L.M.C. 5.14

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 5.14.

J.W.D.
13/5/14

A.R.R.

The amount of Entry Fee ... £ 3 : : When applied for,
Special ... £ 38 : 11 : MAY 12 1914
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : : When received,
25/5/14

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

Committee's Minute TUE. MAY 12 1914

Assigned

+ L.M.C. 5.14



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Foundation