

Rpt. 4.

## REPORT ON MACHINERY

NEWCASTLE-ON-TYNE.

No 65557

No. 25983

FRI. FEB. 13. 1914

TUE. JAN. 20. 1914

Date of writing Report Feb. 11 1914 When handed in at Local Office 19.1.14 Port of Sunderland  
No. in Survey held at Sunderland Date, First Survey 20 August Last Survey 2-3 Feb. 1914  
Reg. Book. 522 on the New Steel S.S. Elsdon (Number of Visits 33)  
Master J. L. Kelly Built at Blyth By whom built Blyth S. S. Coy. Ltd. Tons Gross 1522 Net 805  
Engines made at Sunderland By whom made North Eastern Marine Eng. Coy. Ltd. when made 1914  
Boilers made at Sunderland By whom made North Eastern Marine Eng. Coy. Ltd. when made 1914  
Registered Horse Power 224 Owners Sharp & Co. Ltd. Port belonging to Newcastle  
Nom. Horse Power as per Section 28 224 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

## ENGINES, &amp;c.—Description of Engines

Triple expansion No. of Cylinders Three No. of Cranks Three  
Dia. of Cylinders 20" x 30" x 54" Length of Stroke 36 Revs. per minute 75 Dia. of Screw shaft 11.9" 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 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 4'-5" (white metal)  
Dia. of Tunnel shaft 10" Dia. of Crank shaft journals 10.4" Dia. of Crank pin 10.2" Size of Crank webs 16" x 6.5" Dia. of thrust shaft under collars 10.9" Dia. of screw 14.5" Pitch of Screw 15'-6" No. of Blades 4 State whether moveable no Total surface 63  
No. of Feed pumps Two Diameter of ditto 3" Stroke 18" Can one be overhauled while the other is at work yes  
No. of Bilge pumps Two Diameter of ditto 3.5" Stroke 18" Can one be overhauled while the other is at work yes  
No. of Donkey Engines Two Sizes of Pumps Ballast 9" x 11" x 10" Feed 5.5" x 3.5" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three @ 2.5" dia  
In Engine Room Three @ 2.5" dia In Holds, &c. One @ 2.5" dia Tunnel well  
No. of Bilge Injections One sizes 1" Connected to condenser, or to circulating pump Cir. P. Is a separate Donkey Suction fitted in Engine room & size yes 2.5"  
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 yes  
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 Hold suction How are they protected wood cased  
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 2-12-13 of Stern Tube 2-12-13 Screw shaft and Propeller 20-12-13  
Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from bp platform

## BOILERS, &amp;c.—(Letter for record)

Manufacturers of Steel Spencer & Sons Ltd. Newcastle  
Total Heating Surface of Boilers 2918 Is Forced Draft fitted no No. and Description of Boilers Two single ended  
Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 24-11-13 No. of Certificate 3140  
Can each boiler be worked separately yes Area of fire grate in each boiler 50 No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 4.91 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 14'-9" Length 10'-6" Material of shell plates Steel  
Thickness 1.8" Range of tensile strength 288 & 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.  
long. seams I.R.D.B.S. Diameter of rivet holes in long. seams 1.9" Pitch of rivets 9.14" Lap of plates or width of butt straps 19.5"  
Per centages of strength of longitudinal joint 84.9 Working pressure of shell by rules 180.3 Size of manhole in shell 16" x 12"  
Size of compensating ring 9.5" x 1.8" No. and Description of Furnaces in each boiler Three plain Material Steel Outside diameter 40.4"  
Length of plain part 14.3" Thickness of plates 1.8" Description of longitudinal joint weld No. of strengthening rings none  
Working pressure of furnace by the rules 186 Combustion chamber plates: Material Steel Thickness: Sides 3.4" Back 2.7" Top 3.4" Bottom 3.4"  
Pitch of stays to ditto: Sides 8.4" x 12.8" Back 10.4" x 11.4" Top 8.4" x 10.4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181 lbs  
Material of stays Steel Diameter at smallest part 1.63" Area supported by each stay 100" Working pressure by rules 188 End plates in steam space: Steel  
Material Steel Thickness 1.32" Pitch of stays 20.8" x 26.8" How are stays secured D.N. Wash Working pressure by rules 181 lbs Material of stays Steel  
Diameter at smallest part 3.5" Area supported by each stay 54.3" Working pressure by rules 188 Material of Front plates at bottom Steel  
Thickness 3.4" Material of Lower back plate Steel Thickness 1.6" Greatest pitch of stays 14.5" x 11.4" Working pressure of plate by rules 180 lbs  
Diameter of tubes 3.4" Pitch of tubes 4.16" x 4.16" Material of tube plates Steel Thickness: Front 3.4" Back 3.4" Mean pitch of stays 10.5  
Pitch across wide water spaces 14.5" Working pressures by rules 185 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8.5" x 1.5" Length as per rule 30" Distance apart 10.3" Number and pitch of stays in each 2 @ 8.4"  
Working pressure by rules 186 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately yes  
Diameter 1.63" Length 1.63" Thickness of shell plates 1.63" Material Steel Description of longitudinal joint yes Diam. of rivet holes 1.63" Pitch of rivets 1.63" Working pressure of shell by rules 186 lbs Diameter of flue 1.63" Material of flue plates Steel Thickness 1.63"  
If stiffened with rings yes Distance between rings 1.63" Working pressure by rules 186 lbs End plates: Thickness 1.63" How stayed yes  
Working pressure of end plates 186 lbs Area of safety valves to superheater yes Are they fitted with easing gear yes

No. of Visits 35

Phillips

Lloyd's Register Foundation



# 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<br>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 bolts & nuts for top & bottom ends & main bearings. One set of coupling bolts. One set each valves for all pumps. Assorted bolts, nuts & iron.

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERS CO LTD

Manufacturer.

S. T. Harrison Secy

|                |                                     |  |  |
|----------------|-------------------------------------|--|--|
| Dates          | During progress of work in shops -- | 1913 Aug. 20, 27 Sep 26. Oct. 2, 10, 15, 23, 24, 30, 31                              | per F.C.   |
| of Survey      | During erection on board vessel --- | Nov. 6, 7, 12, 14, 18, 21, 25, 27, 28 Dec. 2, 5, 8, 9, 10, 22, 24, 30, Jan. 5, 8, 13 | At home Dec 1 Jan 30   |
| while building | Total No. of visits                 | (30 + 3)   | Is the approved plan of main boiler forwarded herewith <input checked="" type="checkbox"/> |

|   |  |                                    |  |                    |                   |
|---|--|------------------------------------|--|--------------------|-------------------|
| Dates of Examination of principal parts—                            | Cylinders 28-11-13                               | Slides 5-1-13                      | Covers 5-1-13                                  | Pistons 5-1-13     | Rods 3-1-13       |
| Connecting rods 3-1-13  | Crank shaft 28-11-13                             | Thrust shaft 3-1-13                | Tunnel shafts 1-12-13                          | Screw shaft 2-1-13 | Propeller 9-12-13 |
| Stern tube 9-12-13  | Steam pipes tested 2-1-13                        | Engine and boiler seatings 1-12-13 | Engines holding down bolts 8-1-14              |                    |                   |
| Completion of pumping arrangements 8-1-14                           | Boilers fixed 5-1-14                             | Engines tried under steam 13-1-14  |  |                    |                   |
| Main boiler safety valves adjusted 13-1-14                          | Thickness of adjusting washers 13-1-14           |                                    |  |                    |                   |
| Material of Crank shaft Steel                                       | Identification Mark on Do. H.K.O. W.S. 5222 H.K. | Material of Thrust shaft Steel     | Identification Mark on Do. 520. W.S. 4854 J.M. |                    |                   |
| Material of Tunnel shafts Steel                                     | Identification Marks on Do. 51-1-16-19. W.S.     | Material of Screw shafts Steel     | Identification Marks on Do. 2-1-11-13. W.S.    |                    |                   |
| Material of Steam Pipes Wrought iron lap welded 5" dia x 1/8" thick | Test pressure 540 lbs.                           |                                    |  |                    |                   |

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

This machinery of this vessel has been built under special survey, the materials and workmanship are of good quality and the hydraulic tests of the boilers proved satisfactory. The whole of the machinery has been securely fixed in place & tried under steam, and is in good & safe working condition, eligible in our opinion to be classed shore record. + L.M.C. 2-14

To complete the survey. hold suction & spare gear have to be examined and electric light installation fitted; this will be done at Blyth. Newcastle surveyors notified.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 2. 14.

|                                |    |   |   |                          |
|--------------------------------|----|---|---|--------------------------|
| The amount of Entry Fee .. £   | 2  | 0 | 0 | When applied for, 1914   |
| Special .. £                   | 31 | 4 | 0 | When received, 25.1.1914 |
| Donkey Boiler Fee .. £         | :  | : | : |                          |
| Travelling Expenses (if any) £ | :  | : | : |                          |

Committee's Minute TUE. FEB. 17, 1914

Assigned

+ L.M.C. 2. 14

MACHINERY CERTIFICATE WRITTEN.



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