

# REPORT ON MACHINERY.

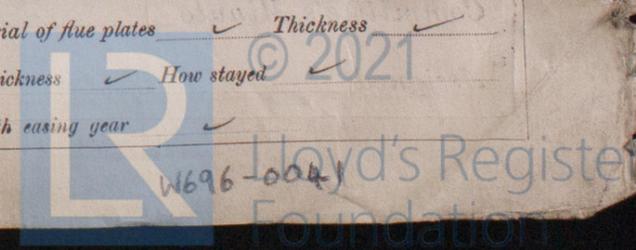
No. 65181  
FRI. NOV. 28. 1913

Received at London Office

Date of writing Report 25<sup>th</sup> Nov 1913 When handed in at Local Office 26<sup>th</sup> Nov 1913 Port of NEWCASTLE-ON-TYNE.  
 No. in Survey held at Newcastle Date, First Survey 7<sup>th</sup> Mar 1913 Last Survey 8<sup>th</sup> Nov 1913 (at sea)  
 Reg. Book. 61 upon the Machinery of the S.S. Anglo Brazilian  
 Master Richardson Built at Glenside By whom built Short Bros. When built 1913  
 Engines made at Newcastle By whom made North Eastern Marine Eng. When made 1913  
 Boilers made at " By whom made " when made 1913  
 Registered Horse Power 607 Owners Nitrate Producers S.S. Co. Ltd Port belonging to London  
 Nom. Horse Power as per Section 28 607 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Quadruple No. of Cylinders 4 No. of Cranks 4  
 Dia. of Cylinders 25 1/2, 36 1/2, 52 1/2, 76 Length of Stroke 54 Revs. per minute 72 Dia. of Screw shaft 15 1/2 as per rule 15 1/2 Material of screw shaft Iron  
 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 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 6'-0"  
 Dia. of Tunnel shaft 14 1/2 as per rule 14 1/2 Dia. of Crank shaft journals 14 1/2 as per rule 14 1/2 Dia. of Crank pin 15 1/2 Size of Crank webs 22 1/2 x 10 Dia. of thrust shaft under collars 15 1/2 Dia. of screw 18'-6" Pitch of Screw 18'-6" No. of Blades 4 State whether moveable no Total surface 1085  
 No. of Feed pumps 2 Weirs Diameter of ditto 8" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 5" Stroke 30" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps 9" x 10" x 10" & 8" x 5 1/2" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 4 of 4" In Holds, &c. N<sup>o</sup> 1 hold, - 1 @ 4". N<sup>o</sup> 2 hold, - 1 @ 4". N<sup>o</sup> 3 hold, - 2 @ 4". N<sup>o</sup> 4 hold, - 1 @ 4". N<sup>o</sup> 5 hold, - 2 @ 3 1/2" & 1 @ 4". Tunnel well, - 1 @ 4".  
 No. of Bilge Injections 1 sizes 10" Connected to condenser, or to circulating pump pumps a separate Donkey Suction fitted in Engine room & size 8"  
 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 both  
 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 26-9-13 of Stern Tube 26-9-13 Screw shaft and Propeller 22/10/13  
 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. & J. Spencer & Sons  
 Total Heating Surface of Boilers 8394 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single-ended  
 Working Pressure 220 lbs Tested by hydraulic pressure to 440 lbs Date of test 19/9/13 No. of Certificate 8560  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 54.5 No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 11.04 Pressure to which they are adjusted 225 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 15'-6" Length 12-10 1/2" Material of shell plates Steel  
 Thickness 1 1/32 Range of tensile strength 29 3/4 - 34 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d.r. lapp long. seams d.r. d. butt Diameter of rivet holes in long. seams 1 1/32 Pitch of rivets 10 1/2" Lap of plates or width of butt straps 1-11 3/4"  
 Per centages of strength of longitudinal joint rivets 91.08 Working pressure of shell by rules 259 lbs Size of manhole in shell 16" x 12" plate 84.29  
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 46"  
 Length of plain part top Yes Thickness of plates crown 1 1/16 Description of longitudinal joint welded No. of strengthening rings Yes bottom Yes  
 Working pressure of furnace by the rules 236 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 1 1/32  
 Pitch of stays to ditto: Sides 8" x 8" Back 8" x 8" Top 8" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 300 lbs  
 Material of stays Steel Diameter at smallest part 2.03 Area supported by each stay 64 Working pressure by rules 304 lbs and plates in steam space:  
 Material Steel Thickness 1 1/16 Pitch of stays 23 1/2" x 18" How are stays secured d.n. w Working pressure by rules 222 lbs Material of stays Steel  
 Diameter at smallest part 11.04 Area supported by each stay 923 Working pressure by rules 266 lbs Material of Front plates at bottom Steel  
 Thickness 1 1/16 Material of Lower back plate Steel Thickness 1 1/16 Greatest pitch of stays 14 3/4" Working pressure of plate by rules 227 lbs  
 Diameter of tubes 2 3/4" Pitch of tubes 4" x 4" Material of tube plates Steel Thickness: Front 1 1/16 Back 7/8" Mean pitch of stays 8"  
 Pitch across wide water spaces 14 3/4" Working pressures by rules 227 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10 1/2" x 2 1/2" Length as per rule 42" Distance apart 8 1/8" Number and pitch of stays in each 4 of 8"  
 Working pressure by rules 238 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



IS A DONKEY BOILER FITTED? *Yes* If so, is a report now forwarded? *yes*

SPARE GEAR. State the articles supplied:— *Two top end & 2 bottom end bolts, 4 main bearing bolts, 2 sets of coupling bolts, 1 set of feed & bilge pump valves, a quantity of assorted bolts nuts & iron, spare propeller & propeller shaft etc.*

The foregoing is a correct description,  
NORTH EASTERN MARINE ENGINEERING CO., LTD.

*J. J. Harrison* Manufacturer.  
Secretary, 1913

Dates of Survey while building: During progress of work in shops --- *Mar. 7, Apr. 3, 17, 22, 26, 30, May 1, 8, 9, 15, 16, 20, 27, Jun. 3, 11, 13, 17, 18, Jul. 4, 9, 18, 22, 23, 25, 28, 31, Aug. 7, 8, 13, 19, 20, 25, 26, 27, 29, 4th 3, 4, 8, 11, 12, 13, 16, 17, 19, 22, 23, 30, Oct. 16, 22, 24, Nov. 4, 6, 7, 8.*  
Total No. of visits *57, 61* Is the approved plan of main boiler forwarded herewith? *Yes*  
*Sl. Sep. 24, Nov 14, 21, 25, 27, 28 Dec 1.* " " " donkey " " " *filed*

Dates of Examination of principal parts—Cylinders *22/7/13* Slides *4/9/13* Covers *27/5/13* Pistons *18/6/13* Rods *28/4/13*  
Connecting rods *3/6/13* Crank shaft *17/6/13* Thrust shaft *29/4/13* Tunnel shafts *9/5/13* Screw shaft *11/6/13* Propeller *16/10/13*  
Stern tube *27/8/13* Steam pipes tested *15/9/13* Engine and boiler seatings *22/10/13* Engines holding down bolts *29/10/13*  
Completion of pumping arrangements *21-11-13* Boilers fixed *29/10/13* Engines tried under steam *8/11/13*  
Main boiler safety valves adjusted *8/11/13* Thickness of adjusting washers *P.P. 5/8" S. 3/4" C.P. 5/8" S. 3/4" S. P. 3/4" S. 3/4"*  
Material of Crank shaft *steel* Identification Mark on Do. *23/7/13* Material of Thrust shaft *Steel* Identification Mark on Do. *1/5/13*  
Material of Tunnel shafts *steel* Identification Marks on Do. *16/5/13* Material of Screw shafts *iron* Identification Marks on Do. *25/8/13*  
Material of Steam Pipes *Loop welded steel* Test pressure *660 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, the engines have been tried under full power.*

*I'm my opinion this vessel is eligible for the record of L.M.C. 12-13 with date when the survey is completed*

To complete this survey: *The donkey boiler safety valves should be adjusted, the safety valve casing gear and pumping arrangements should be examined when completed.*

**SUNDERLAND - Survey complete.**  
*Now done: - Donkey boiler fixed and its safety valves adjusted (see separate report) the main boiler safety valve casing gear fitted and the pumping arrangements completed.*

The amount of Entry Fee ... £ *3* : : When applied for, *NOV 27 1913*  
Special ... £ *50* : : *FD.* *It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12-13.*  
Donkey Boiler Fee ... £ : : *J.W.D.*  
Travelling Expenses (if any) £ : : *5.12.1913* *Charles Cooper*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *DEC. 12. 1913*  
Assigned *Home 12-13*  
MACHINERY CERTIFICATE WRITTEN.



W.T.  
BU  
W.T.  
FLAT  
GARI  
Stat  
way  
B  
Write "Aiming or Shelter Deck" "Sheer Strake" opposite its corresponding letter.  
THE  
OLE  
D  
DBL  
" Le  
POOL  
SHO  
FOR  
A  
Sh  
St  
Up  
Stri  
FRA  
REV  
Lo  
Bo  
To  
Ri  
Sa

Rpt. 5  
Date of  
No. in  
Reg. Bo  
supp 61  
Master  
Engin  
Donke  
Boiler  
Register  
MUL  
(Letter  
Boiler  
No. of  
safety  
Are the  
Smaller  
Materi  
Descri  
Lap  
rules  
boiler  
Descri  
plates  
Top  
smaller  
Pitch  
Area  
Lower  
Pitch  
water  
girder  
Work  
separ  
holes  
If stip  
Work  
Da  
of Su  
wh  
buil  
GE  
Th  
sto  
Co  
As