

## REPORT ON MACHINERY.

No. 22798

Port of

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No. in Survey held at *Sunderland*Date, first Survey *12<sup>th</sup> February, 1906* Last Survey *8<sup>th</sup> May 1906*

Book.

*25* on the *Engines & Boilers of the Antwerp No 30* *S/S "Mortar"* (Number of Visits *27*)ster *Krichelo* Built at *Antwerp* By whom built *Chantiers Navals Anvers* Tons { Gross *1218*  
Net *922*ines made at *Sunderland* By whom made *North Eastern Marine Eng<sup>y</sup> Co. Ltd.* when made *1906*lers made at *Sunderland* By whom made *North Eastern Marine Eng<sup>y</sup> Co. Ltd.* when made *1906*istered Horse Power *133* Owners *S. D. Ripcovitch* Port belonging to *Trieste*n. Horse Power as per Section 28 *133* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *No*GINES, &c.—Description of Engines *Triple Expansion, Vertical* No. of Cylinders *Three* No. of Cranks *Three*No. of Cylinders *14-28-46* Length of Stroke *33* Revs. per minute *45* Dia. of Screw shaft *as per rule 9.23* Material of *Iron*  
*as fitted 10.4* screw shaftthe screw shaft fitted with a continuous liner the whole length of the stern tube *Yes* Is the after end of the liner made water tightthe 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 partween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *Yes* If twors are fitted, is the shaft lapped or protected between the liners *—* Length of stern bush *3-6*No. of Tunnel shaft *as per rule 8.32* Dia. of Crank shaft journals *as per rule 8.44* Dia. of Crank pin *9* Size of Crank webs *5.5 x 13.4* Dia. of thrust shaft underlars *9* Dia. of screw *13-0* Pitch of Screw *13-6* No. of Blades *four* State whether moveable *No* Total surface *53 sq*No. of Feed pumps *two* Diameter of ditto *2.3* Stroke *15* Can one be overhauled while the other is at work *Yes*No. of Bilge pumps *two* Diameter of ditto *3* Stroke *15* Can one be overhauled while the other is at work *Yes*No. of Donkey Engines *Two* Sizes of Pumps *7.2 x 8.2 x 6.2 5.2 x 3.2 x 5* No. and size of Suctions connected to both Bilge and Donkey pumpsEngine Room *Three 2 1/2* In Holds, &c. *Two in each hold 2 1/2*the in tunnel well *2 1/2* Suctions to all ballast tanks *3 1/2*No. of Bilge Injections *1* sizes *4"* Connected to condenser, or to circulating pump *Engines a separate Donkey Suction fitted in Engine room & size 2 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 *Yes*Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *valves & cocks*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 *Yes*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*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 *17/5/06* of Stern Tube *17/5/06* Screw shaft and Propeller *17/5/06*Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Engine Room.*MILERS, &c.—(Letter for record *S*) Manufacturers of Steel *John Spencer & Sons Ltd, & the Deighton Co. Ltd.*Total Heating Surface of Boilers *2159 sq* Is Forced Draft fitted *No* No. and Description of Boilers *One Single Ended, Repl<sup>y</sup> Mull<sup>y</sup>*Working Pressure *160 lb* Tested by hydraulic pressure to *320 lb* Date of test *8/5/06* No. of Certificate *2484*Can each boiler be worked separately *—* Area of fire grate in each boiler *60 sq* No. and Description of Safety Valves toeach boiler *2 Spring* Area of each valve *7.17* Pressure to which they are adjusted *165 lb* Are they fitted with easing gear *Yes*Smallest distance between boilers or uptakes and bunkers or woodwork *18"* Dia. of boilers *14-9 1/8* Length *10-6* Material of shell plates *steel*Thickness *1 1/2* Range of tensile strength *29 to 32 ton* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *Exp. D.R.*Long. seams *DRS-TR* Diameter of rivet holes in long. seams *1 1/2* Pitch of rivets *9 1/8* Lap of plates or width of butt straps *18 1/8*Percentages of strength of longitudinal joint rivets *89.15* Working pressure of shell by rules *160 lb* Size of manhole in shell *end 16 x 12*Size of compensating ring *flanged* No. and Description of Furnaces in each boiler *Three, Reighton* Material *steel* Outside diameter *4 1/2*Length of plain part *top* Thickness of plates *crown 1 1/2* Description of longitudinal joint *Weld* No. of strengthening rings *—*Working pressure of furnace by the rules *160.4* Combustion chamber plates: Material *steel* Thickness: Sides *3/4* Back *25/32* Top *3/4* Bottom *1/8*Pitch of stays to ditto: Sides *8 3/4 x 12 1/8* Back *11 x 11 1/8* Top *8 3/4 x 12 1/8* If stays are fitted with nuts or riveted heads *nut* Working pressure by rules *160.4*Material of stays *steel* Diameter at smallest part *1 1/2* Area supported by each stay *150, 131, 113* Working pressure by rules *164 lb* End plates in steam space:Material *steel* Thickness *1 3/8* Pitch of stays *19 1/2 x 2 1/4* How are stays secured *DN + W* Working pressure by rules *161.4* Material of stays *steel*Diameter at smallest part *3.28* Area supported by each stay *128* Working pressure by rules *161.6* Material of Front plates at bottom *steel*Thickness *3/4* Material of Lower back plate *steel* Thickness *29/32* Greatest pitch of stays *11 x 14 3/4* Working pressure of plate by rules *164.6*Diameter of tubes *3 1/4* Pitch of tubes *4 3/8 x 4 7/8* Material of tube plates *steel* Thickness: Front *3/4* Back *3/4* Mean pitch of stays *10 5/32*Pitch across wide water spaces *14 1/2* Working pressures by rules *164.9* Girders to Chamber tops: Material *steel* Depth andThickness of girder at centre *8 5/8 x 1 1/2* Length as per rule *29 1/2* Distance apart *12 1/8* Number and pitch of stays in each *Two 8 3/4*Working pressure by rules *161.5* Superheater or Steam chest; how connected to boiler *—* Can the superheater be shut off and the boiler workedseparately *—* Diameter *—* Length *—* Thickness of shell plates *—* Material *—* Description of longitudinal joint *—* Diam. of rivetholes *—* 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 *—*

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 S \_\_\_\_\_

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 \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— One set of connecting rod top & bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set coupling bolts & nuts, 1 set feed & bilge pump valves, Propeller, safety valve springs, check valves, Air circulating pump valves, &c.

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

Dates of Survey while building { During progress of work in shops - 1906 Feb. 12, 14, 27, Mch 5, 15, 16, 21, 23, 26, 28, 29, Apl. 2, 5, 8, 9, 10, 14, 20, 21, 26, 27, 30, May 1, 5, 6, 7, 8, 1906 May 18, 31 June 5, 6, 12.  
During erection on board vessel -  
Total No. of visits 27 + 5 = 32.

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

Dates of Examination of principal parts—Cylinders <sup>27/14/21/9/3/5</sup> Slides — Covers <sup>15/3</sup> Pistons <sup>15/3 26/4</sup> Rods <sup>16/3 10/4 19/4</sup>

Connecting rods <sup>12/1 14/2</sup> Crank shaft <sup>28/7/24/3/5</sup> Thrust shaft <sup>24/4</sup> Tunnel shafts <sup>3/5 4/5</sup> Screw shaft <sup>24/4 1/5</sup> Propeller <sup>24/4</sup>

Stern tube — Steam pipes tested <sup>31/5/06</sup> Engine and boiler seatings <sup>28/5/06</sup> Engines holding down bolts <sup>5/6/06</sup>

Completion of pumping arrangements <sup>4/6/06</sup> Boilers fixed <sup>4/6/06</sup> Engines tried under steam <sup>4/6/06</sup>

Main boiler safety valves adjusted <sup>4/6/06</sup> Thickness of adjusting washers <sup>3 3/8 P. 7/16</sup>

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYDS 304.D AB* Material of Thrust shaft *Steel* Identification Mark on Do. *R 1577 4-N-0*

Material of Tunnel shafts *Steel* Identification Marks on Do. *as under* Material of Screw shafts *Iron* Identification Marks on Do. *LLOYDS 195.D AB*

Material of Steam Pipes *Copper* Test pressure <sup>320 lbs per sq in</sup>

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

The machinery of this vessel has been constructed under supervision, the material & workmanship sound & good. The Main Boiler has been tested by hydraulic pressure in accordance with the Rules, together with the Engine stop Valve & Boiler stop Valve.

The machinery & boilers have been fitted on board in accordance with the Rules. The safety valves have been adjusted under steam to blow off at 165 lbs per sq in.

The Engines worked well under steam.

The machinery is eligible in our opinion for the record of + L.M.C. 6.06

It is submitted that this vessel is eligible for THE RECORD L.M.C. 6.06.

The amount of Entry Fee. £ 2 : : When applied for, 29.5.1906  
Special £ 13 : 6 :  
Donkey Boiler Fee £ 6 : 13 :  
Travelling Expenses (if any) £ : : When received, 29.5.1906

Committee's Minute

TUES. 26 JUN 1906

Assigned

MACHINERY CERTIFICATE  
WRITTEN.

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

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