

# REPORT ON MACHINERY.

No. 57376

Port of Newcastle-on-Tyne

Received at London Office

MIN. 27 SEP 1909

No. in Survey held at Newcastle-on-Tyne Date, first Survey 21<sup>st</sup> April '09 Last Survey 20<sup>th</sup> Sep 1909

Reg. Book. SS. "Belgique" (Number of Vests 30)

on the Wood Stump No 161 Tons } Gross 2124  
Net 1288

Master Belgium Built at Newcastle By whom built "Wood Skinner" When built 1888

Engines made at Newcastle By whom made North Eastern Marine Engine Co. Ltd when made 1909

Boilers made at Newcastle By whom made North Eastern Marine Engine Co. Ltd when made 1909

Registered Horse Power \_\_\_\_\_ Owners Societe Anonyme "Belgique" Port belonging to Antwerp

Nom. Horse Power as per Section 28 201 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

**ENGINES, &c.**—Description of Engines Triple compound No. of Cylinders three No. of Cranks 3

Dia. of Cylinders 20" 33" 54" Length of Stroke 36 Revs. per minute 67½ Dia. of Screw shaft 11.48 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 length 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' 3"

Dia. of Tunnel shaft 9.9 Dia. of Crank shaft journals 10.4 Dia. of Crank pin 10.8 Size of Crank webs 21 x 6.78 Dia. of thrust shaft under collars 10.58 Dia. of screw 14.9 Pitch of Screw 14.9 No. of Blades 4 State whether moveable No Total surface 67.8

No. of Feed pumps 2 Diameter of ditto 3" Stroke 20" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3½" Stroke 20" Can one be overhauled while the other is at work yes

No. of Donkey Engines two Sizes of Pumps 6 x 4 x 6, 7½ x 9 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4 x 3"

In Engine Room 4 x 3" In Holds, &c. 2 x 3" in fore hold 1 x 2½" in hold

No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump no 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 no

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 no How are they protected —

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 17/8/09 of Stern Tube 17/8/09 Screw shaft and Propeller 19/8/09

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 Spencer & Co

Total Heating Surface of Boilers 3246 Is Forced Draft fitted no No. and Description of Boilers 2 Single ended cylindrical

Working Pressure 180 lbs Tested by hydraulic pressure to 260 lbs Date of test 5/7/09 No. of Certificate 7867

Can each boiler be worked separately yes Area of fire grate in each boiler 43.67 No. and Description of Safety Valves to each boiler 1 pair direct spring Area of each valve 5.93 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 13" Mean dia. of boilers 13.3 Length 10.6 Material of shell plates Steel

Thickness 1 1/16" Range of tensile strength 28 3/4 to 32" Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d Cap

long. seams table butt Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 8" Lap of plates or width of butt straps 16 3/4"

Per centages of strength of longitudinal joint rivets 86.9 Working pressure of shell by rules 185 Size of manhole in shell 16" x 12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Doughton Material Steel Outside diameter 3' 2 1/2"

Length of plain part top — bottom — Thickness of plates crown 3/16" bottom 3/32" Description of longitudinal joint welded No. of strengthening rings —

Working pressure of furnace by the rules 282 Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 7/8"

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 lbs

Material of stays Steel Diameter at smallest part 2.03 Area supported by each stay 98" Working pressure by rules 186 End plates in steam space: Material Steel Thickness 1 1/32" Pitch of stays 17 1/2" x 23" How are stays secured 2 nuts Working pressure by rules 186 Material of stays Steel

Diameter at smallest part 7.07 Area supported by each stay 402.25" Working pressure by rules 183 Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 189

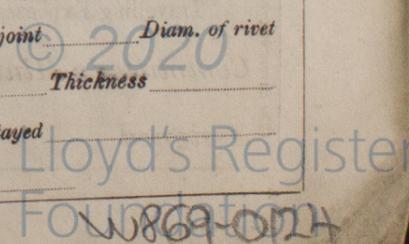
Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 1" Back 3/4" Mean pitch of stays 11 1/4"

Pitch across wide water spaces 14 1/2" Working pressures by rules 182 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/2" x 7 1/8" Length as per rule 2' 7 1/2" Distance apart 10 1/2" Number and pitch of stays in each (2) 9 3/8"

Working pressure by rules 180 Superheater or Steam chest; how connected to boiler no 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. 1 Description Vertical (Blaker Patent) See separate Report appended. Made at By whom made When made Where fixed in Stockholm Working pressure 100 tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety Valves Spring loaded No. of Safety Valves 2 Area of each 4.91 Pressure to which they are adjusted 100 Date of adjustment 20/9/09 If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler 720 Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams Rivets Plates Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint 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:— 2 Top end Collis Franks 2 Bottom end Collis Franks 2 main bearing Collis Franks 1 set of coupling Collis Franks 2 fuel 7/2 bilge pump valves iron Collis Franks assorted

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

Dates of Survey while building: During progress of work in shops - Apr. 21, May 13, 18, 20, 21, 24, 26, 28, June 1, 4, 7, 15, 29, July 5, 6, 13, 22, Aug 6, 10, 11; During erection on board vessel - Aug. 16, 17, 19, 26, 27, 30, Sep. 10, 14, 15, 20; Total No. of visits 30

Dates of Examination of principal parts: Cylinders 28/5/09 Slides 28/5/09 Covers 28/5/09 Pistons 28/5/09 Rods 1/6/09 Connecting rods 1/6/09 Crank shaft 5/7/09 Thrust shaft 20/5/09 Tunnel shafts 26/5/09 Screw shaft 6/8/09 Propeller 6/8/09 Stern tube 10/8/09 Steam pipes tested 2, 27/8/09 Engine and boiler seatings 17/8/09 Engines holding down bolts 24/8/09 Completion of pumping arrangements 30/8/09 Boilers fixed 24/8/09 Engines tried under steam 30/8/09 Main boiler safety valves adjusted 30/8/09 Thickness of adjusting washers P 13/32 S 13/32 P 13/32 S 3/8 Material of Crank shaft Steel Identification Mark on Do. 677/09 Material of Thrust shaft Steel Identification Mark on Do. 6698 N.W.C Material of Tunnel shafts iron Identification Marks on Do. 6697 N.W.C Material of Screw shafts Steel Identification Marks on Do. 677/09 Material of Steam Pipes 5/8 Copper Test pressure 400 lbs

General Remarks (State quality of workmanship, opinions as to class, &c. These engines and boilers have been built under special survey, the materials and workmanship are of good description, they have been well fitted on board and tried under steam. This machinery is now in my opinion eligible to have notification of L.M.C. 9 09 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 9-09 J.M.B. 25/9/09

The amount of Entry Fee. £ 2 : : When applied for, 25 SEP 1909 Special .. £ 30 : : Donkey Boiler Fee .. £ : : When received, 20.9.09 Travelling Expenses (if any) £ : :

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

Committee's Minute TUES. 28 SEP 1909 Assigned + L.M.C. 9 09



Vertical - on - Sign.

Date of work No. in Reg. Book Master Donkey Boiler Owners VERTI Made at tested by No. of safe enter the do strength 27 Lap of plat Radius of d Thickness of plates T 7/8 B 3/8 Thickness of Dates of Survey while building D D T GENER This is bed res Survey Travelli Commit Assigned