

REPORT ON MACHINERY.

No. 22304

Port of Sunderland

No. in Survey held at Sunderland

Date, first Survey 20th. January, Last Survey 6th. June, 1905

Received at London Office 17 JUN 1905

Reg. No. 57

on the S. S. "Volmer"

Number of Visits 35

Master N. P. Jørgensen Built at Sunderland By whom built Sunderland Shipbuilding Co. Tons { Gross 1344
 Net 827
 Engines made at Sunderland By whom made North Eastern Marine Engineering Co. Ltd when made 1905
 Boiler made at Sunderland By whom made North Eastern Marine Engineering Co. Ltd when made 1905
 Registered Horse Power _____ Owners Aktieselskabet Dampskibsselskabet Port belonging to Copenhagen
 Nom. Horse Power as per Section 28 145 Is Refrigerating Machinery fitted no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Inverted triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 18", 29", 48" Length of Stroke 33" Revs. per minute 74 Dia. of Screw shaft as per rule 10.35" 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 _____
 Dia. of Tunnel shaft as per rule 8.94" Dia. of Crank shaft journals as per rule 9.36" Length of stern bush _____
 as fitted 9.0" as fitted 9.5" Dia. of Crank pin 9.5" Size of Crank webs 15" x 5 7/8" Dia. of thrust shaft under
 collars 9.5" Dia. of screw 13.3" Pitch of screw 14.0" No. of blades 4 State whether moceable no Total surface 54 sq ft
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 15" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 6 x 7 x 9" & 5 x 3 x 4 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 3 of 2 1/2" well In Holds, &c. 2 of 2 1/2" in each & 1 of 3" in after
 No. of bilge injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump pump Is a separate donkey suction fitted in Engine room & size 2 1/2"
 Are all the bilge suction pipes fitted with roses _____ Are the roses in Engine room always accessible _____ Are the sluices on Engine room bulkheads always accessible _____
 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 _____ 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock new 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) Total Heating Surface of Boilers 2256 sq ft Is forced draft fitted no
 No. and Description of Boilers one single ended cylindrical Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs
 Date of test 20.3.05 Can each boiler be worked separately Yes Area of fire grate in each boiler 62 sq ft No. and Description of safety valves to
 each boiler 2 spring Area of each valve 7.07 sq in 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 180 7/8" Length 10' 6" Material of shell plates steel
 Thickness 1 3/4" Range of tensile strength 42 1/4/32 Are they welded or flanged no Descrip. of riveting: cir. seams d.r. lap long. seams d.r. double
 Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 8 7/16" Lap of plates or width of butt straps 18"
 Per centages of strength of longitudinal joint rivets 86.59 Working pressure of shell by rules 180 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 24" x 1 3/16" No. and Description of Furnaces in each boiler 3 Dighton Material Steel Outside diameter 45 1/4"
 Length of plain part top _____ bottom 1' Thickness of plates crown 1 7/32" Description of longitudinal joint weld No. of strengthening rings 1
 Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material S Thickness: Sides 3/4" Back 2 1/32" Top 3/4" Bottom 1"
 Pitch of stays to ditto: Sides 1 1/4" x 8 1/2" Back 1 2" x 9 1/2" Top 1 1/4" x 8 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 2.43" Area supported by each stay 114 sq in Working pressure by rules 191 lbs End plates in steam space:
 Material steel Thickness 1 1/32" Pitch of stays 22" x 2 1/4" How are stays secured d.r. washers Working pressure by rules 182 lbs Material of stays steel
 Diameter at smallest part 8.46" Area supported by each stay 467.5 sq in Working pressure by rules 181.3 lbs Material of Front plates at bottom steel
 Thickness 1 3/16" Material of Lower back plate steel Thickness 7/8" Greatest pitch of stays 14 1/4" x 9 1/2" Working pressure of plate by rules 180.4 lbs
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates steel Thickness: Front 1 3/16" Back 1 3/16" Mean pitch of stays 9" x 9"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 215.7 lbs Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 8" x 2" Length as per rule 26.5" Distance apart 11 7/8" Number and pitch of Stays in each 2 - 8 1/2"
 Working pressure by rules 187 lbs Superheater or Steam chest; how connected to boiler _____ Can the superheater be shut off and the boiler worked
 separately Yes 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 _____

WAS - 0117

DONKEY BOILER— No. *One* Description *Blake Improved Patent*
 Made at *Middlebro'* By whom made *Mr Richardson Westgate & Co* When made *1905* Where fixed *In stokehold*
 Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* No. of Certificate *3436* Fire grate area *21.5* Description of safety valves *spring*
 No. of safety valves *2* Area of each *3.96* Pressure to which they are adjusted *100 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *no*
 Dia. of donkey boiler *6' 6"* Length *15' 0"* Material of shell plates *steel* Thickness *1/2"* Range of tensile strength *27/32* Descrip. of riveting long. seams *d. r. lap* Dia. of rivet holes *15/16"* Whether punched or drilled *drilled* Pitch of rivets *3"*
 Lap of plating *4 5/8"* Per centage of strength of joint Rivets *1 1/2* Thickness of shell crown plates *1/2"* Radius of do. *3' 3"* No. of Stays to do. *—*
 Dia. of stays. *✓* Diameter of furnace Top *3' 3"* Bottom *5' 2"* Length of furnace *4' 1"* Thickness of furnace plates *5/8"* Description of joint *5. r. lap* Thickness of furnace *inner* plates *Back 1/2"* Stayed by *cylindrical* Working pressure of shell by rules *101.8 lbs*
 Working pressure of furnace by rules *111 lbs* Diameter of uptake *2 1/2"* Thickness of uptake plates *Back 1/16"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *2 top end, 2 bottom end, 2 main bearing & 1 set-coupling bolts*
1 set feed and bilge pump Valves, Main & donkey feed check Valves, 1 set Valves for Feed
and Ballast donkeys, 1 propeller, bolts & nuts assorted & iron of sizes

The foregoing is a correct description,
NORTH EASTERN MARINE ENGINEERING CO. LTD. Manufacturer.
Malvin Beattie & Co

Dates of Survey while building
 During progress of work in shops— *1905— Jan'y; 20, 23, 25, 31, Feb'y; 1, 3, 6, 8, 13, 14, 17, 21, 24, 27, 28, Mar; 3, 6, 7, 8, 9, 15, 17,*
 During erection on board vessel — *20, 22, 23, 28, 30, 31, Apr; 17, May, 2, 8, 19, 22, 27, June 6,*
 Total No. of visits *35.* Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " " *No.*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Machinery for this vessel*)
has been constructed under special survey the workmanship &
materials used are both of good quality, the main steam pipes
have been tested to twice the working pressure & proved satisfactory
under test, the Engines have been tried under steam ahead & astern
and worked satisfactorily

I beg to recommend that this vessel in my opinion is eligible to have the record *L.M.C. 6.05* in the Register Book

It is submitted that this vessel is eligible for **THE RECORD L.M.C. 6.05.**

J.M. Smith
17.6.05

The amount of Entry Fee... £ 2 : : :
 Special ... £ 21 : 15 : :
 Donkey Boiler Fee ... £ : : :
 Travelling Expenses (if any) £ : : :
 When applied for, *16.6.05*
 When received, *22/6/05*

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

Committee's Minute **TUES. 20 JUN 1905**
 Assigned *+ L.M.C. 6.05*

MACHINERY CERTIFICATE WRITTEN



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