

REPORT ON MACHINERY.

No. 2

Port of *Sunderland.*

Received at London Office

WED. 8 JUN 1904

No. in Survey held at
Reg. Book.*Sunderland.*Date, first Survey *18th January* Last Survey *19th May, 1904*
(Number of Visits *24*)on the *Steel S.S. "Skjold".*Tons } Gross *1299*
Net *802*
When built *1904*

Master *B. Mahcke* Built at *Sunderland* By whom built *Sunderland S.S. Co. Ltd*
 Engines made at *Sunderland* By whom made *North Eastern Marine Eng. Co. Ltd* when made *1904*
 Boilers made at *Sunderland* By whom made *North Eastern Marine Eng. Co. Ltd* when made *1904*
 Registered Horse Power Owners *Actieselskabet Skjold* Port belonging to *Copenhagen*
 Nom. Horse Power as per Section 28 *141 1/2* Is Refrigerating Machinery fitted *No* Is Electric Light fitted *No*

ENGINES, &c.—Description of Engines *Tri compound, surface condensing* No. of Cylinders *3* No. of Cranks *3*
 Dia. of Cylinders *18" - 29" - 48"* Length of Stroke *33"* Revs. per minute *76* Dia. of Screw shaft *as per rule 10.99* Material of *W. 9.*
as fitted 10 5/8 screw shaft
 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 *—* 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 *3' - 7"*
 Dia. of Tunnel shaft *as per rule 8.6* Dia. of Crank shaft journals *as per rule 9.03* Dia. of Crank pin *9 1/8"* Size of Crank webs *14 1/2" x 5 1/4"* Dia. of thrust shaft under
 collars *9 1/8"* Dia. of screw *13' - 0"* Pitch of screw *13' - 6"* No. of blades *4* State whether moveable *No* Total surface *52 1/2*
 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 *Two* Sizes of Pumps *Ballast 6" x 7" x 9"* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *Four 2 1/2"* In Holds, &c. *Two of 2 1/2" in each hold.*

No. of bilge injections *1* sizes *3 1/2"* Connected to condenser, or to circulating pump *B. P.* Is a separate donkey suction fitted in Engine room & size *Yes 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 *—*
 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 *None* 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 vessel* Is the screw shaft tunnel watertight *Yes*
 Is it fitted with a watertight door *Yes* worked from *Main deck*

BOILERS, &c.— (Letter for record *S.*) Total Heating Surface of Boilers *2255 1/2* Is forced draft fitted *No*
 No. and Description of Boilers *One cylindrical multitubular* Working Pressure *160 lbs.* Tested by hydraulic pressure to *320 lbs.*
 Date of test *28/3/04* Can each boiler be worked separately *—* Area of fire grate in *one* boiler *62 1/2* No. and Description of safety valves to
 each boiler *Two direct spring* Area of each valve *7.06"* Pressure to which they are adjusted *165 lbs.* Are they fitted with easing gear *Yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork *14"* Mean dia. of boilers *15' - 1 1/2"* Length *10' - 6"* Material of shell plates *Steel*
 Thickness *1 1/4"* Range of tensile strength *29-32* Are they welded or flanged *No* Descrip. of riveting: cir. seams *D.R.L.* long. seams *T.R.D.B.S.*
 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 86.97* Working pressure of shell by rules *160.6 lbs.* Size of manhole in *and 16" x 12"*
plate 85.93
 Size of compensating ring *4 flanged* No. and Description of Furnaces in each boiler *3 plain* Material *Steel* Outside diameter *3' - 8"*
 Length of plain part *top 7' - 0 1/2"* Thickness of plates *crown 1 1/2"* Description of longitudinal joint *Welded* No. of strengthening rings *—*
bottom 7' - 0 1/2" *bottom 1 1/4"*
 Working pressure of furnace by the rules *164.5 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *3/4"* Back *23/32"* Top *3/4"* Bottom *1"*
 Pitch of stays to ditto: Sides *13" x 8 1/2"* Back *11 1/2" x 9 1/8"* Top *13" x 8 1/2"* If stays are fitted with nuts or riveted heads *Yes* Working pressure by rules *161 lbs.*
 Material of stays *Steel* *Area* at smallest part *2.1"* Area supported by each stay *110.5"* Working pressure by rules *171 lbs.* End plates in steam space:
 Material *Steel* Thickness *1 3/4"* Pitch of stays *22 1/2" x 21"* How are stays secured *D.N.W.* Working pressure by rules *164 lbs.* Material of stays *Steel*
Area at smallest part *8.48"* Area supported by each stay *472.5"* Working pressure by rules *175 lbs.* Material of Front plates at bottom *Steel*
 Thickness *3/4"* Material of Lower back plate *Steel* Thickness *27/32"* Greatest pitch of stays *14 1/4"* Working pressure of plate by rules *163 lbs.*
 Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *Steel* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *9 1/4" x 9"*
 Pitch across wide water spaces *14 1/2"* Working pressures by rules *192.5 lbs.* Girders to Chamber tops: Material *Steel* Depth and
 thickness of girder at centre *8" x 1" x 2* Length as per rule *29"* Distance apart *73"* Number and pitch of Stays in each *2 of 8 1/2"*
 Working pressure by rules *164 lbs.* Superheater or Steam chest; how connected to boiler *None* 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 *—*

DONKEY BOILER— No. *One* Description *Blaker's Improved Patent*
 Made at *Middlewich* By whom made *Richardson Wengarth & Co.* When made *1904* Where fixed *Household.*
 Working pressure *100 lb* tested by hydraulic pressure to *200 lb.* No. of Certificate *3195* Fire grate area *21.54* Description of safety valves *Direct spring.*
 No. of safety valves *Two* Area of each *3.98* Pressure to which they are adjusted *100 lb.* 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.L.* Dia. of rivet holes *5/16"* Whether punched or drilled *Drilled* Pitch of rivets *3"*
 Lap of plating *4 5/8"* Per centage of strength of joint Rivets *78.2* 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'-1"* Bottom *5'-2"* Length of furnace *4'-1"* Thickness of furnace plates *5/8"* Description of joint *S.R.L.* Thickness of furnace crown plates *5/8"* Stays by *—* Working pressure of shell by rules *101.8 lb.*
 Working pressure of furnace by rules *111 lb.* Diameter of tubes *2 1/2"* Thickness of tubes plates *F.I. B. 1 1/16"* Pitch of tubes *3 5/8"*

SPARE GEAR. State the articles supplied:— *Propeller, two top end + two bottom end bolts + nuts, two main bearing bolts + nuts, set of coupling bolts, set of feed + bilge pump valves + angled bolts, nuts + iron.*

The foregoing is a correct description, *For* **NORTH EASTERN MARINE ENGINEERING CO. LTD.**
Walter Beattie Secy M.R.N.
 Manufacturer.

Dates { During progress of } *1904: Jan: 18, 20, 30. Feb: 4, 8, 12, 17, 22, 29. Mar: 3, 7, 10, 14, 16, 17, 28. May 4*
 of Survey { work in shops - - }
 while { During erection on } *5, 7, 9, 11, 13, 18, 19.*
 building { board vessel - - }
 Total No. of s *24*

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 of this vessel has been constructed under special survey, the material + workmanship being of good quality. The boilers + main steam pipes have been tested by hydraulic pressure to double the working pressure, the whole satisfactorily tried under steam + the safety valves adjusted.

*This vessel, in my opinion, is eligible to be classed in the Register Book with the record of **L.M.C. 5.04.***

It is submitted that
this vessel is eligible for
THE RECORD **L.M.C. 5.04.**

Wm
8.6.04

The amount of Entry Fee. . . £ *2* : - : - When applied for,
 Special £ *21* : *3* : - } *7.6.04*
 Donkey Boiler Fee £ : : : When received, *10.6.04*
 Travelling Expenses (if any) £ : : : *9.6.04*

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

Committee's Minute

FRI. 10 JUN 1904

Assigned

+ L.M.C. 5.04

MACHINERY CERTIFICATE
 WRITTEN.



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Lloyd's Register
 Foundation

Sunderland.

Certificate (if required) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)