

REPORT ON MACHINERY.

No. 22552
(mdb) 4345

Port of Sunderland

Received at London Office 22nd Dec^r 1905

No. in Survey held at Sunderland

Date, first Survey 17th August 05 Last Survey 1st Dec^r 1905

Reg. Book. 10 Supp on the Steel Screw Steamer "IRENE"

(Number of Visits 23) (mdb) 7

Master A. Gervick Built at Stockton By whom built Cray Taylor & Co Tons {Gross 3453.51
Net 2348.39
When built 1905

Engines made at Sunderland By whom made North Eastern Marine Eng. Co. Ltd. when made 1905

Boilers made at Sunderland By whom made North Eastern Marine Eng. Co. Ltd. when made 1905

Registered Horse Power _____ Owners {Union Austriaco di Navigazione
Austria Americana & Fratelli Conad
Societa Anonima Port belonging to Trieste

Nom. Horse Power as per Section 28 347 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 24-40-65 Length of Stroke 45 Revs. per minute 44 Dia. of Screw shaft as per rule 13.43 Material of Iron
as fitted 13.2 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 4-8

Dia. of Tunnel shaft as per rule 12.03 Dia. of Crank shaft journals as per rule 12.04 Dia. of Crank pin 12.3 Size of Crank webs 8x19.2 Dia. of thrust shaft under
as fitted 12.4 collars 12.3 Dia. of screw 16-3 Pitch of screw 16-0 No. of blades four State whether moceable no Total surface 80 sq

No. of Feed pumps Two Diameter of ditto 3 1/2 Stroke 21 Can one be overhauled while the other is at work yes

No. of Bilge pumps Two Diameter of ditto 4 Stroke 21 Can one be overhauled while the other is at work yes

No. of Donkey Engines Two Sizes of Pumps 8x10x10 - 4 1/2 x 4 1/2 x 4 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Three 3 1/2 In Holds, &c. Two of 3 1/2 in each hold

One of 3 1/2 in hold well & one of 3 1/2 in tunnel well

No. of bilge injections one sizes 5 Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in Engine room & size one 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 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 Top platform

BOILERS, &c.— (Letter for record 5) Total Heating Surface of Boilers 4918 sq Is forced draft fitted yes

No. and Description of Boilers Two, single Ended, Cyl^r & Mult^r Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 13/11/05 Can each boiler be worked separately yes Area of fire grate in each boiler 61 sq No. and Description of safety valves to
each boiler Two, direct spring Area of each valve 8.29 sq 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 inside dia. of boilers 14-9 1/2 Length 11-6 Material of shell plates steel

Thickness 1 5/32 Range of tensile strength 39.5 Are they welded or flanged no Descrip. of riveting: cir. seams Lap str. long. seams 578-TR
32 tons

Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 9 1/16 Lap of plates or width of butt straps 18 1/2

Per centages of strength of longitudinal joint 84.1 Working pressure of shell by rules 180.5 lbs Size of manhole in shell 16x12
plate 86.2

Size of compensating ring 4x1 5/32 No. and Description of Furnaces in each boiler Three, single Material steel Outside diameter 47 1/2

Length of plain part top 3-9 Thickness of plates bottom 3-16 Description of longitudinal joint weld No. of strengthening rings _____

Working pressure of furnace by the rules 180.5 lbs Combustion chamber plates: Material steel Thickness: Sides 3/32 Back 3/32 Top 3/32 Bottom 5/16

Pitch of stays to ditto: Sides 12 3/8 x 9 Back 11 x 10 7/8 Top 12 3/8 x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180.3 lbs

Material of stays steel Diameter at smallest part 1 5/8 x 1 7/8 Area supported by each stay 116 1/4 sq Working pressure by rules 180.1 lbs End plates in steam space:

Material steel Thickness 1 5/32 Pitch of stays 2 1/2 x 20 5/8 How are stays secured DN & W Working pressure by rules 180.18 lbs Material of stays steel

Diameter at smallest part 3 5/8 Area supported by each stay 56 3/8 sq Working pressure by rules 180.7 lbs Material of Front plates at bottom steel

Thickness 1 3/16 Material of Lower back plate steel Thickness 1 Greatest pitch of stays 14 1/8 x 10 7/8 Working pressure of plate by rules 181.7

Diameter of tubes 2 1/2 Pitch of tubes 3 1/2 x 3 3/4 Material of tube plates steel Thickness: Front 1 1/8 Back 1 1/8 Mean pitch of stays 7 7/8

Pitch across wide water spaces 1 3/4 Working pressures by rules 208 lbs Girders to Chamber tops: Material steel Depth and
thickness of girder at centre 8 1/2 x 2 Length as per rule 29.4 Distance apart 12 3/8 Number and pitch of Stays in each Two 9

Working pressure by rules 192 lbs Superheater or Steam chest; how connected to boiler _____ 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 _____

W1106-0029



DONKEY BOILER— No. _____ Description *See report (5) attached.*

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____

No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ 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 _____ 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 _____

Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____

Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *one set of coupling bolts & nuts, two end top end, bottom end & main bearing bolts & nuts one set each feed & hudge pump valves, one propeller shaft & propeller. spare iron etc.*

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING CO. LTD. Manufacturer.
Walter Beattie Esq. M.M.

Dates of Survey while building

During progress of work in shops - -	1905 Aug. 17, 28, 31, Sept. 8, 14, Oct. 12, 16, 18, 19, 22, 23, 27, 30, Nov. 2, 7, 9, 13, 20, 22, 24
During erection on board vessel - -	27, 29 Dec 1 (Mdb) Nov 13-15 Dec 8-11-13-14-22
Total No. of visits	23 (Mdb) 4

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

" " " donkey " " "

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 sound & good the Boilers & Steam pipes have been tested by hydraulic pressure in accordance with the Rules, the machinery worked satisfactorily at manovring & the safety valves have been adjusted to their working pressure under steam.

*This Vessel is Eligible in my opinion to have the Notation **L.M.C. 12-05** in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD L.M.C. 12.05 F.D.

The amount of Entry Fee..	£ 3	When applied for,	7.12.1905
Special	£ 37	When received,	15.12.1905
Donkey Boiler Fee .. .	£		
Travelling Expenses (if any) £			

W. Beattie & Co. Surveyors
Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
Assigned *+ L.M.C. 12.05*

MACHINERY CERTIFICATE WRITTEN.



No. in Survey Reg. Book. *Supp on the D*

Master *J.M.B.*

Engines made at *Key*

Boilers made at _____

Registered Horse Power _____

MULTITUBULAR

Letter for record _____

Boilers

No. of Certificate _____

safety valves to each _____

Are they fitted with _____

Smallest distance between _____

Material of shell plates _____

Descrip. of riveting _____

Lap of plates or water spaces _____

rules _____

boiler

Description of longitudinal plates: Material _____

Top _____ If stayed _____

smallest part _____

Pitch of stays _____

Area supported by _____

Lower back plate _____

Pitch of tubes _____

water spaces _____

girder at centre _____

Working pressure _____

separately _____

holes _____ Pitch _____

If stiffened with ribs _____

Working pressure _____

VERTICAL

Made at *Stoo*

Working pressure _____

No. of safety valves _____

enter the donkey boiler _____

strength $2\frac{1}{32}$ _____

Lap of plating _____

Radius of do. *3'* _____

Thickness of furnace plates $\frac{21}{32}$ _____

FOR THE FOUNDATION

Dates of Survey while building

During work in shops	
During erection on board	
Total	