

# REPORT ON MACHINERY.

15528

Port of Sunderland

Received at London Office TUES 17 JUNE 1890

No. 15528

Survey held at Sunderland

Date, first Survey 3<sup>rd</sup> Oct 1890 Last Survey 30<sup>th</sup> April 1890

g. Book.

(Number of Visits 28)

on the S.S. "Oreus"

Tons } Gross 911.5  
Net 569.2

Master Stewart Built at Sunderland By whom built The Strand Slipway Co When built 1890

Engines made at Sunderland By whom made North Eastern Marine & Coy when made 1890

Milers made at Sunderland By whom made North Eastern Marine & Coy when made 1890

Registered Horse Power 150 Owners Oreus Steamship Co Port belonging to London

## ENGINES, &c.—

Description of Engines Triple compound, three cranks No. of Cylinders three

No. of Cylinders 20, 33, 54 Length of Stroke 33" Rev. per minute 60 Point of Cut off, High Pressure 1/2 stroke Low Pressure 1/2 stroke

Diameter of Screw shaft 10 1/4" Diam. of ~~Tunnel~~ Shaft 10" Diam. of Crank shaft journals 10 1/4" Diam. of Crank pin 10 1/4" size of Crank webs 12 x 4"

Diameter of screw 12-6" Pitch of screw 15-3" No. of blades 4 state whether moveable not total surface 52 sq ft

No. of Feed pumps 2 diameter of ditto 2 1/4" Stroke 33" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 diameter of ditto 3 1/2" Stroke 33" Can one be overhauled while the other is at work yes

Where do they pump from Fore & after peaks, tanks and engine room bilges

No. of Donkey Engines 2 Size of Pumps 8" x 9" & 3 1/2" x 5" duplex Where do they pump from fore & after peaks

tanks, engine room bilges, sea & hot well

Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes

No. of bilge injections 1 and sizes 3 1/2" Are they connected to condenser, or to circulating pump circulating pump

How are the pumps worked direct from all crossheads

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

How are the pipes carried through the bunkers none How are they protected —

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection 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 no tunnel and fitted with a sluice door — worked from —

## BOILERS, &c.—

No. of Boilers One Description ordinary marine type double-ended material steel Letter (for record) S.

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 13-2-90

Description of superheating apparatus or steam chest none

Can each boiler be worked separately only one Can the superheater be shut off and the boiler worked separately no superheater

No. of square feet of fire grate surface in each boiler 42 sq ft Description of safety valves direct spring No. to each boiler 2

Area of each valve 9.62 sq ft Are they fitted with easing gear yes No. of safety valves to superheater — area of each valve —

Are they fitted with easing gear — Smallest distance between boilers and bunkers or woodwork 15" Diameter of boilers 13-8 1/2"

Length of boilers 15-9" description of riveting of shell long. seams treble riv-butts straps circum. seams double in middle seams Thickness of shell plates 1 1/2"

Diameter of rivet holes 1 3/16" whether punched or drilled drilled pitch of rivets 4 1/2" & 3 3/4" Lap of plating 1 1/8" straps

Percentage of strength of longitudinal joint 84% working pressure of shell by rules 163 lbs size of manholes in shell 16" x 12"

Size of compensating rings 8" x 1 3/16" No. of Furnaces in each boiler 6 Description of Furnaces plain furnaces

Outside diameter 3-1 1/2" length 5-6" thickness of plates 3/4" description of joint welded if rings are fitted no

Greatest length between rings — working pressure of furnace by the rules 146 lbs combustion chamber plating, thickness, sides 5/8" back — top 5/8"

Pitch of stays to ditto, sides 4 3/4" x 8 1/2" back — top 4 3/4" x 8" If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 149 lbs

Diameter of stays at smallest part 1 1/2" working pressure of ditto by rules 166 lbs end plates in steam space, thickness 1 1/16"

Pitch of stays to ditto 15 1/2" x 15 3/4" how stays are secured nuts working pressure by rules 163 lbs diameter of stays at smallest part 2 1/16"

Greatest pitch of stays — working pressure by rules — Diameter of tubes 3 1/4" pitch of tubes 5" x 4 3/4" thickness of tube plates, front 1 3/16" back 3/4" how stayed stay tubes pitch of stays 10" x 9 1/2" width of water spaces 1 1/2", 1 3/4", 5 1/2"

Diameter of Superheater or Steam chest none length — thickness of plates — description of longitudinal joint — diam. of rivet holes —

Pitch of rivets — working pressure of shell by rules — diameter of flue — thickness of plates — If stiffened with rings —

Distance between rings — working pressure by rules — end plates of superheater, or steam chest; thickness — how stayed —

Total heating surface 2650 sq ft Superheater or steam chest; how connected to boiler —

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**DONKEY BOILER**— Description *Vertical with three cross water tubes*  
 Made at *Stockton* by whom made *J. Sudron & Co* when made *13-2-90* where fixed *Stokehold*  
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *2069* fire grate area *16 sq* description of safety  
 valves *direct spring* No. of safety valves *1* area of each *9.6* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *5-6"* length *11-0"* description of riveting *long double rivet lap*  
 Thickness of shell plates *1/2"* diameter of rivet holes *13/16"* whether punched or drilled *punched* pitch of rivets *2 1/4"* lap of plating *4-7"*  
 per centage of strength of joint *40-4%* thickness of crown plates *1/2"* stayed by *5 stays 1 1/2 dia*  
 Diameter of furnace, top *4-5"* bottom *4-9"* length of furnace *4-3"* thickness of plates *9/16"* description of joint *lap single rivet*  
 Thickness of furnace crown plates *1/2"* stayed by *same as shell crown* working pressure of shell by rules *82 lbs*  
 Working pressure of furnace by rules *83 lbs* diameter of uptake *12 1/2"* thickness of plates *9/16"* thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied:— *Top and bottom end bolts and nuts for connecting  
 rod two main bearing bolts and nuts. one set of coupling bolts and nuts. feed  
 and bilge pump valves. piston springs. propeller tail end shaft  
 bolts. nuts & iron assorted.*

The foregoing is a correct description,  
 In the North Eastern Marine Engineering Co (Ld)  
*J. H. Mann* Manufacturer. of Main Engines & Boilers only.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*The main steam pipes have been tested by hydraulic pressure to  
 320 lbs. The machinery has been constructed under special survey, the  
 material and workmanship are good and efficient and the engines  
 when tried under steam worked satisfactorily. In my opinion  
 the machinery of this vessel is in good order and safe working condition  
 and eligible for the notification in the Register Book of L.M.C. 6-90*

**Electric Lighting** This vessel is fitted with the electric light, the  
 being manufactured and fitted on board by E. Scott & Co of Close Works  
 Newcastle. The dynamo is driven by a direct acting engine  
 and when running at 300 revolutions per minute produces  
 a current of 65 volts and the circuits are fitted with switch boxes  
 and fusible wires and insulated with india rubber and  
 enclosed in dry wooden casings. The workmanship is good.

*It is submitted that this  
 vessel is eligible to have  
 + L.M.C. 6-90 recorded, & it  
 should be notified that the  
 vessel is lighted by electricity.*

The amount of Entry Fee .. £ *2* : : received by me,  
 Special .. .. £ *22* : *10* :  
 Donkey Boiler Fee .. £ : :  
 Certificate (if required) .. £ : : *19.6.1890*  
 To be sent as per margin.  
 (Travelling Expenses of any £)

*M. J. Salmon*  
 17.6.90  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES 17 JUNE 1890**  
*+ L.M.C. 6/90*

