

# REPORT ON MACHINERY.

No. 46780

Port of *Newcastle on Tyne*

Received at London Office

APR 1904

No. in Survey held at *S. Shields*

Date, first Survey *Aug 20 '03* Last Survey *7<sup>th</sup> April 1904*

Book.

(Number of Visits *41*)

on the *S.S. INGA*

Tons } Gross ☒  
Net ☒

ster *Osprey* Built at *Rotterdam* By whom built *A. Vrijk*

When built *1904*

ines made at *South Shields* By whom made *E. T. Grey*

when made *1904*

lers made at *S. Shields* By whom made *J. J. Eltringham and Co.*

when made *26. 1. 04.*

istered Horse Power Owners *J. J. McNeil*

Port belonging to *Christiania*

n. Horse Power as per Section 28 *1064* Is Refrigerating Machinery fitted *No*

Is Electric Light fitted *No*

GINES, &c.—Description of Engines *Tri-compound* No. of Cylinders *3* No. of Cranks *3*

of Cylinders *15 3/4-25-42* Length of Stroke *30* Revs. per minute *9.25* Dia. of Screw shaft *9 1/4* Material of *Hypt Steel*

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

the propeller boss *Yes* If the liner is in more than one length are the joints burned *1 length* If the liner does not fit tightly at the part

ween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *7 fitting* If two

ers are fitted, is the shaft lapped or protected between the liners Length of stern bush *3' 1"*

u. of Tunnel shaft *7.85* as per rule *8.26* Dia. of Crank shaft journals *8 1/2* as fitted *8 1/2* Dia. of Crank pin *8 1/2* Size of Crank webs *5 1/4 x 11 1/4* Dia. of thrust shaft under

bars *8 1/2* Dia. of screw *11-3* Pitch of screw *12-9"* No. of blades *4* State whether moveable *No* Total surface *44 sq*

of Feed pumps *2* Diameter of ditto *2 1/2"* Stroke *16"* Can one be overhauled while the other is at work *Yes*

of Bilge pumps *2* Diameter of ditto *2 1/2"* Stroke *16"* Can one be overhauled while the other is at work *Yes*

of Donkey Engines *2* Sizes of Pumps *5 1/4 x 3 1/2 x 5* Duplex No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *Three of 2 1/2" diam* In Holds, &c. *after hold two of 2 1/2", main*

of bilge injections *1* sizes *3"* Connected to *condenser* to circulating pump *Pump* Is a separate donkey suction fitted in Engine room & size *Yes 3"*

re 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 *Yes*

re all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Both*

re 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*

re 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*

hat pipes are carried through the bunkers *Wash duck Pipe* How are they protected *Close under deck*

re all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*

re the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *Yes*

Then were stern tube, propeller, screw shaft, and all connections examined in dry dock *Two Visits* Is the screw shaft tunnel watertight *Yes*

it fitted with a watertight door *Yes* worked from *Engine Room platform*

ILERS, &c.— (Letter for record *S.*) Total Heating Surface of Boilers *1670 sq* Is forced draft fitted *No*

o. and Description of Boilers *One Cyl. Mult. Single end.* Working Pressure *175 lb* Tested by hydraulic pressure to *350 lb*

ate of test *26. 1. 04* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *50 sq* No. and Description of safety valves to

ch boiler *Two spring loaded* Area of each valve *5.94 sq* Pressure to which they are adjusted *180 lb* Are they fitted with easing gear *Yes*

smallest distance between boilers or uptakes and bunkers or woodwork *14"* Mean dia. of boilers *13-7 1/32* Length *10'-6"* Material of shell plates *S.*

Thickness *1 5/32* Range of tensile strength *29 1/2 T.* Are they welded or flanged *Yes* Descrip. of riveting: cir. seams *J. D. R.* long. seams *D. B. S. T. R.*

diameter of rivet holes in long. seams *1 3/16* Pitch of rivets *6 3/4" (L. P. P.)* Lap of plates or width of butt straps *16 3/4"*

er centages of strength of longitudinal joint rivets *84.4* Working pressure of shell by rules *180 lb* Size of manhole in shell *46 x 12"*

ize of compensating ring *7 1/2 x 1 5/32* No. and Description of Furnaces in each boiler *3. Plain* Material *S.* Outside diameter *41 1/2"*

length of plain part *75"* Thickness of plates *3 1/4* Description of longitudinal joint *D. B. S.* No. of strengthening rings *One T.*

Working pressure of furnace by the rules *181 lb* Combustion chamber plates: Material *S.* Thickness: Sides *23/32* Back *21/32* Top *23/32* Bottom *3/4"*

Pitch of stays to ditto: Sides *10 1/4-9 3/4* Back *9 1/2-8 1/4* Top *10 1/2-9* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *178 lb*

Material of stays *S.* Diameter at smallest part *1 19/32* Area supported by each stay *100 sq* Working pressure by rules *178 lb* End plates in steam space:

Material *S.* Thickness *7 1/2 x 19/32* Pitch of stays *18 1/4-18* How are stays secured *D. N. W.* Working pressure by rules *191 lb* Material of stays *S*

Diameter at smallest part *2 1/32* Area supported by each stay *338 sq* Working pressure by rules *180 lb* Material of Front plates at bottom *S*

Thickness *3 1/2* Material of Lower back plate *S.* Thickness *29/32* Greatest pitch of stays *15 7/16 x 9* Working pressure of plate by rules *178 lb*

Diameter of tubes *3 1/2* Pitch of tubes *4 1/2 x 4 1/2* Material of tube plates *S.* Thickness: Front *3 1/32* Back *13/16* Mean pitch of stays *13 1/2-9"*

Pitch across wide water spaces *14 1/2"* Working pressures by rules *177 lb* Girders to Chamber tops: Material *S.* Depth and

thickness of girder at centre *6 3/8 x 2 1/2* Length as per rule *32"* Distance apart *9"* Number and pitch of Stays in each *2-10 1/2"*

Working pressure by rules *176 lb* 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 ☒

W1471-0041



**DONKEY BOILER—** No. Description *Donkey Boiler fitted & Safety Valves adjusted at Rotterdam Report*  
 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 *Yes* If steam from main boiler  
 enter the donkey boiler Dia. of donkey boiler Length Material of shell plates Thickness Range of 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 Descript.  
 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:— *Two top end, 2 bottom end, 2 main bearing bolts & nuts, 1 set coupling bolts & nuts, set of valves for air, circulating bilge & feed pumps bolts & nuts & iron assorted*

The foregoing is a correct description,

*Jos. D. Cunningham & Co* Manufacturers of main boiler, *G. T. Grey* Engine Builder  
 Dates of Survey while building  
 During progress of work in shops— *1903. Oct. 14. 27. Nov. 11. 24. Dec. 3. 17. 30. 1904. Jan. 24. Feb. 9. Mar. 10. 21. 22. 29. 31. Apr. 6. 7.*  
 During erection on board vessel— *1903. Aug. 20. 21. 26. Sep. 1. 7. 17. 20. Oct. 16. 19. 23. 29. Nov. 4. 10. 17. 23. 26. Dec. 4. 9. 15. 21. 1904. Jan. 6. 11. 20. 25. 26.*  
 Total No. of *41* Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " "

**General Remarks** (State quality of workmanship, opinions as to class, &c. *This boiler has been constructed under special survey, examined under test, in accordance with the Rules and found to be satisfactory. The materials and workmanship are sound and good.*

*The machinery of this vessel has been built under special Survey & in my opinion is eligible for record F.L.M.C 4.04*

*It is submitted that this vessel is eligible for THE RECORD. F.L.M.C. 4.04.*

*Sal.*  
*8.4.04*

*8.4.04*

*Newcastle-on-Tyne.*

The amount of Entry Fee.. £ *2* : : : When applied for, *7 APR 1904*  
 Special .. £ *15* : *15* : : :  
 Donkey Boiler Fee .. £ : : : When received, *9/4/04*  
 Travelling Expenses (if any) £ : : : *9/4/04*

Committee's Minute *FRI. 8 APR 1904*

Assigned *+ L.M.C 4.04*

MACHINERY CERTIFICATE  
 WRITTEN.



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