

REPORT ON MACHINERY.

No. 46780

Port of Newcastle on Tyne

Received at London Office

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No. in Survey held at S. Shields

Date, first Survey: Aug 20 '03 Last Survey 7th April 1904

Book.

(Number of Visits 41)

on the S.S. INGA

Tons Gross Net

ster Osismangu 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 1064 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

o. of Cylinders 15 3/4 - 25 - 42 Length of Stroke 30 Revs. per minute

Dia. of Screw shaft as per rule 9 1/4 Material of Engt Steel
as fitted 9 1/4 screw shaft)

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 Fitting If two

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

o. of Tunnel shaft as per rule 7.85 Dia. of Crank shaft journals as per rule 8.26 Dia. of Crank pin 8 1/2 Size of Crank webs 5 1/4 x 1 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

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

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

o. 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

hold two of 2 1/2" & after well one of 2 1/2"

o. of bilge injections 1 sizes 3" Connected to condenser to circulating pump Pumps a separate donkey suction fitted in Engine room & size Yes 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 Yes

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 they protected Wash deck Pipe How are they protected Close under deck

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 Two Visits Is the screw shaft tunnel watertight Yes

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

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

No. and Description of Boilers One Cyl. Mult. Single end. Working Pressure 175 lb Tested by hydraulic pressure to 350 lb.

Date 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

each boiler Two spring loaded Area of each valve 5.94 sq Pressure to which they are adjusted 180 lbs 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 5/32 Range of tensile strength 29/32 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

Percentage of strength of longitudinal joint rivets 82.4 Working pressure of shell by rules 180 lb. Size of manhole in shell 46 x 12"

Size 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 top 75" Thickness of plates crown 3/16 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 + 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 31/32 Material of Lower back plate S. Thickness 29/32 Greatest pitch of stays 15 7/16 = 9 Working pressure of plate by rules 178 lb.

Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates S. Thickness: Front 31/32 Back 13/16 Mean pitch of stays 13 1/2 - 9

Pitch across wide water spaces 14 1/4 Working pressures by rules 177 lb. Girders to Chamber tops: Material S. Depth and

Thickness of girder at centre 6 3/8 x 2 3/4 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 Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet

holes Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes

If stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes

Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes

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 t
 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 bilges & feed pumps bolts & nuts & iron assorted*

The foregoing is a correct description,

Jos. D. Cunningham & Co Manufacturers of main engine, *G. T. Grey* Engine Bldg
 per *W. H. Bell*
 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. 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 _____ s *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. †- LMC. 4.04.

W. H. Bell
8.4.04
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8.4.04

Newcastle-on-Tyne.

Certificate (if required) to be sent to the Surveyors and to be held in the space for Committee's Minute.

The amount of Entry Fee. . . £ *2* : . :
 Special £ *15* : *15* :
 Donkey Boiler Fee £ . : . :
 Travelling Expenses (if any) £ . : . :
W. H. Bell

When applied for, *7 APR 1904*
 When received, *9/4/04*
S. P. W. Lane G. A. Dryden Joynes
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute *FRI. 8 APR 1904*
 Assigned *+ L.M.C 4.04*