

REPORT ON MACHINERY.

No. 26942

Received at London Office

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of writing Report 12th Aug 1908. When handed in at Local Office 31st Aug. 1908. Port of Glasgow.
 in Survey held at Date, First Survey 19th March Last Survey 21st Aug. 1908
 Book. on the S/S "NGAHERE". (Number of Visits 42.)

ster Built at Port Glasgow By whom built A. Rodgers & Co (No 407) When built 1908
 ines made at Glasgow. By whom made A. Rodgers & Co (No 154) when made (1908)
 lers made at do By whom made Lindsay Burnet & Co (No 1187-8) when made 1908
 istered Horse Power Owners Port belonging to

2. Horse Power as per Section 28 165 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted yes.

GINES, & Co. — Description of Engines Triple expansion. Sur. condensing No. of Cylinders 3 No. of Cranks 3
 of Cylinders 18"-30"-48" Length of Stroke 33" Revs. per minute 96 Dia. of Screw shaft as per rule 9.983" Material of Steel
 as fitted 10.994" screw shaft

he 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 If the liner does not fit tightly at the part

een the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes. If two
 rs are fitted, is the shaft lapped or protected between the liners Length of stern bush 3'-7"

of Tunnel shaft as per rule 9.0" Dia. of Crank shaft journals as per rule 9.452" Dia. of Crank pin 9.5" Size of Crank webs 34 5/8" x 17 1/2" x 6 1/4" Dia. of thrust shaft under
 rs 9.78" Dia. of screw 12'-0" Pitch of Screw 12'-9" No. of Blades 4 State whether moveable No Total surface 41 sq. ft.

of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 16 1/2" Can one be overhauled while the other is at work yes.

of Bilge pumps 2 Diameter of ditto 2 3/4" Stroke 16 1/2" Can one be overhauled while the other is at work yes.

of Donkey Engines 4 Sizes of Pumps Main feed 7" x 5" x 15" stroke No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room 2-2" for Port & Starboard + 2 1/2" centre Ballast 6" x 4 1/2" x 10" In Holds, &c. Ford 2-2" + Aft 2-2" and 2 1/2" to
 mek well. (Aux. Air & Circ. pump 9" Cyb. 11" dia. + 2-5 1/2" Air pumps x 14" stroke)

Bilge Injections 1 sizes 1 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes 2 1/4"

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 none
 connections with the sea direct on the skin of the ship yes. Are they Valves or Cocks Both.

ey 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 below
 ey 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.

pipes are carried through the bunkers Held + Peak suction How are they protected Cased in with plates.

l Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes.

e Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes.

of examination of completion of fitting of Sea Connections of Stern Tube Screw shaft and Propeller

Screw Shaft Tunnel watertight yes. Is it fitted with a watertight door yes. worked from Top grating.

ERS, & Co. — (Letter for record \$) Manufacturers of Steel D. Colville & Sons, and The Lanarkshire Steel Co.

Heating Surface of Boilers 28500 sq. ft. Is Forced Draft fitted no No. and Description of Boilers 2 Single Ended Marine
 ing Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 7.7.08 No. of Certificate 9260

ach boiler be worked separately yes. Area of fire grate in each boiler 43 sq. ft. No. and Description of Safety Valves to
 boiler 2 spring loaded Area of each valve 4.9 sq. in Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear yes.

est distance between boilers or uptakes and bunkers or woodwork 8' 6" beams Inside dia. of boilers 13'-0" Length 10'-6" Material of shell plates Steel
 ess 1 3/16 Range of tensile strength 35 3/32 lbs. Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R. Lap

seams T.R. B.S. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 7/8" Lap of plates or width of butt straps 1'-6 1/4"

ntages of strength of longitudinal joint rivets 86.5% plate 85.75% Working pressure of shell by rules 207 lbs Size of manhole in shell 16" x 12"

compensating ring Flanged in + No. and Description of Furnaces in each boiler 2 Brighton Material Steel Outside diameter 4'-2 3/4"
 of plain part top 3 1/2" embossed door crown 3 7/8" Description of longitudinal joint welded No. of strengthening rings

ng pressure of furnace by the rules 198 lbs Combustion chamber plates: Material Steel Thickness: Sides 21/32" Back 21/32" Top 21/32" Bottom 15/16"
 f stays to ditto: Sides 9 1/4" x 8 1/4" Back 9 1/4" x 8 1/4" Top 9 1/4" x 8 1/4" If stays are fitted with nuts or riveted heads no Working pressure by rules 194 lbs

al of stays Steel Diameter at smallest part 1.73" Area supported by each stay 76.75 sq. in Working pressure by rules 180 lbs End plates in steam space:
 al Steel Thickness 1 1/8" Pitch of stays 17" x 18" How are stays secured D.N. + D.W Working pressure by rules 196 lbs Material of stays Steel

er at smallest part 6.33" Area supported by each stay 306 sq. in Working pressure by rules 186 lbs Material of Front plates at bottom Steel
 es 13/16 Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 14" Working pressure of plate by rules 199 lbs

r of tubes 3 1/2" Pitch of tubes 4 3/4" Material of tube plates Steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 11 3/8"

across wide water spaces 14" Working pressures by rules 198 lbs Girders to Chamber tops: Material Steel Depth and
 s of girder at centre 9' x 1" Length as per rule 2-9 9/16 Distance apart 9 1/4" Number and pitch of stays in each 3 @ 8 1/4"

g pressure by rules 246 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked
 y Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 ed with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

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

W708 - 0108

Lloyd's Register

Lindsay Burnett & Co. Manufacturers of the Boilers.

VERTICAL DONKEY BOILER—Manufacturers of Steel

No. _____ Description _____

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

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

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 _____ Plates _____

Working pressure of shell by rules _____ 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 _____

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

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:—Two connecting rod top end & 2 bottom end bolts & nuts. 2 main bearing bolts, 6 coupling bolts, 1 set each of feed & bilge pump valves, a quantity of assorted bolts & nuts, 1 section of crankshaft, propeller & shaft, 1 air & 1 circulating pump rod, ballast & feed bky valves, safety valve springs, boiler & condensers tubes, 1 spare winch, 2 escape valve springs, firebars etc.

The foregoing is a correct description,

C. Rodger & Co. Manufacturer of the Engines.

Dates of Survey while building

During progress of work in shops	During erection on board vessel	Total No. of visits
1908. Mar. 19. 25. Apr. 3. 14. 23. 29. May 2. 13. 19. 25. June 2. 9. 25. 27. 29. July 7. 15. 16.	Aug. 6. 12. 13. 15. 19. 21.	25 + 17 = 42

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

“ “ “ donkey “ “ “ *none*

Dates of Examination of principal parts—Cylinders *29.4.08* Slides *13.5.08* Covers *19.5.08* Pistons *2.6.08* Rods *25.5.08*

Connecting rods *25.5.08* Crank shaft *27.5.08* Thrust shaft *25.5.08* Tunnel shafts *2.6.08* Screw shaft *9.6.08* Propeller *15.6.08*

Stern tube *15.6.08* Steam pipes tested *13.8.08* Engine and boiler seatings *6.8.08* Engines holding down bolts *12.8.08*

Completion of pumping arrangements *15.8.08* Boilers fixed *15.8.08* Engines tried under steam *21.8.08*

Main boiler safety valves adjusted *19.8.08* Thickness of adjusting washers *S.B. 1 3/8" FOR 2 1/2" P.B. 3/8" = 7/16"*

Material of Crank shaft *Steel* Identification Mark on Do. *2072 A.T.C.* Material of Thrust shaft *Steel* Identification Mark on Do. *154*

Material of Tunnel shafts *Steel* Identification Marks on Do. *154* Material of Screw shafts *Steel* Identification Marks on Do. *154*

Material of Steam Pipes *Copper* Test pressure *360 lbs per sq. in.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The engines & boilers of this vessel have been built under Special Survey: the workmanship & materials are of good quality, & having been fitted on board & satisfactorily tried under steam. I am of opinion that they will be eligible for the record + L.M.C. 8.08.*

The amount of Entry Fee. £ *2* : - : When applied for. *15.9.08*

Special .. £ *24* : *15* : When received. *25.9.08*

Donkey Boiler Fee .. £ : : ..

Travelling Expenses (if any) £ : : ..

Committee's Minute *GLASGOW 1 SEP. 1908*

Assigned *+ L.M.C. 8.08*

W. H. Pilditch.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

MACHINERY CERTIFICATE
WRITTEN. 2/9/08