

REPORT ON MACHINERY.

No. 23428

THUR. 12 SEP 1907

Port of Sunderland

Received at London Office

4. Survey held at Sunderland Date, first Survey 1st Nov: 1906 Last Survey 2nd August 1907.
Book. S. S. Arnett (Number of Visits 84)

on the S. S. Arnett Tons { Gross 3813.04
Net 2433.34
Built at Sunderland By whom built Messrs J. L. Thompson & Sons When built 1907

W. L. Newton Sunderland By whom made Messrs J. Dickinson & Sons when made 1907
Machinery made at Sunderland By whom made Messrs J. Dickinson & Sons when made 1907
Registered Horse Power 350 Owners W. R. Kea. Port belonging to Sunderland

Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

GINES, &c.—Description of Engines Inverted, triple expansion No. of Cylinders 3 No. of Cranks 3

of Cylinders 25" 42" 68" Length of Stroke 48" Revs. per minute 70 Dia. of Screw shaft as per rule 14.24" Material of screw shaft Iron
as fitted 14.5"

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 Yes 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 Yes If two

are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5' 0"

of Tunnel shaft as per rule 12.72" Dia. of Crank shaft journals as per rule 13.35" Dia. of Crank pin 13.3" Size of Crank webs Patent Dia. of thrust shaft under

lars 13.3" Dia. of screw 17.6" Pitch of Screw 16.6" No. of Blades 4 State whether moveable no Total surface 86 1/2 sq ft

of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes

of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

of Donkey Engines 2 Sizes of Pumps 7 1/2 x 5 x 7 1/4 8 x 10 x 10" No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 4 of 3 1/2" In Holds, &c. 2 of 3 1/2" to each & one of 2 1/2"

in tunnel well

of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size Yes - 4"

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

What pipes are carried through the bunkers none How are they protected Yes

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

Dates of examination of completion of fitting of Sea Connections 17.6.07 of Stern Tube 17.6.07 Screw shaft and Propeller 8.7.07

is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

OILERS, &c.—(Letter for record 5) Manufacturers of Steel Messrs J. Spencer & Sons

Total Heating Surface of Boilers 5428 sq ft Is Forced Draft fitted no No. and Description of Boilers 2 S.E. Cylindrical Built

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 25.4.07 No. of Certificate 2605

Can each boiler be worked separately Yes Area of fire grate in each boiler 71.5 sq ft No. and Description of Safety Valves to

each boiler 2 spring Area of each valve 9.6 sq in 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 1.11" Mean dia. of boilers 16.3 3/8" Length 11.4 3/2" Material of shell plates steel

Thickness 1 5/16" Range of tensile strength 20/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d.v. lap.

long. seams L.v. d.v. S. Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 20 1/2"

Per centages of strength of longitudinal joint rivets 88.5 Working pressure of shell by rules 181.1 lbs Size of manhole in shell 16 x 12"

Size of compensating ring 8 3/4" x 1 5/16" No. and Description of Furnaces in each boiler 4 plain Material steel Outside diameter 40 1/4"

Length of plain part top 6.8 1/2" bottom 7.3 7/8" Thickness of plates crown 49/64 Description of longitudinal joint weld No. of strengthening rings Yes

Working pressure of furnace by the rules 185.7 lbs Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1 3/16"

Pitch of stays to ditto: Sides 10 x 9" Back 10 x 9" Top 9 x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181.6 lbs

Material of stays steel Diameter at smallest part 2.03" Area supported by each stay 90 sq in Working pressure by rules 203 lbs End plates in steam space:

Material steel Thickness 1 3/32" Pitch of stays 18 x 17 1/2" How are stays secured d.n. & w. Working pressure by rules 183.5 lbs Material of stays steel

Area at smallest part 5.57 sq in Area supported by each stay 308.27 sq in Working pressure by rules 184 lbs Material of Front plates at bottom steel

Thickness 7/8" Material of Lower back plate steel Thickness 3/32" Greatest pitch of stays 13 x 10" Working pressure of plate by rules 183 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 7/8" Back 7/8" Mean pitch of stays 9 x 9"

Pitch across wide water spaces 13 1/4" Working pressures by rules 244 lbs Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 8 3/4" x 2 1/4" Length as per rule 2.11 1/32" Distance apart 9" Number and pitch of stays in each 3-9"

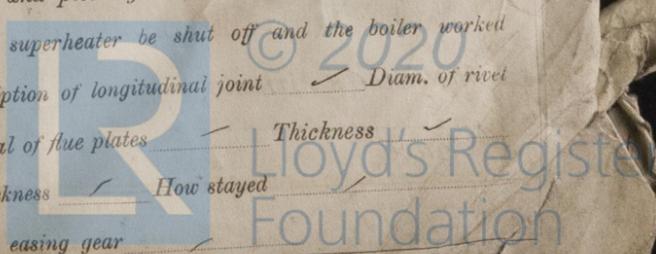
Working pressure by rules 184 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked

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



810-927M

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____

Working pressure tested by hydraulic pressure to _____ Date of test _____ When made _____ Where fixed _____

Valves _____ No. of Safety Valves _____ Area of each _____ No. of Certificate _____ Fire grate area _____ Description of _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Pressure to which they are adjusted _____ Date of adjustment _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Dia. of donkey boiler _____ Length _____

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 top end, 2 bottom end, 2 main bearing & 1 set of coupling bolts, Propeller, & propeller shaft, 1 set of feed and bilge pump valves, 2 main & 2 donkey feed check valves, 6 piston bolts.*

The foregoing is a correct description,
John Wilson & Sons, Limited.
 Manufacturer.

Dates of Survey while building: During progress of work in shops— 1906: Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Dec: 3, 13, 14, 15, 20, Jan: 5, 7, 9, 15, 18, 22, 24, 29, Feb: 1, 6, 11, 14, 19, 20, 21, 26, March: 5, 6, 8, 11, 12, 13, 15, 19, 20, 21, 22, 25, 26, 28, April: 3, 4, 6, 8, 9, 10, 11, 12, 16, 18, 19, 22, 23, 24, 25, 26, 30, May: 2, 3, 6, 10, 13, 14, 15, 23, June: 7, 8, 11, 14, 18, July: 8, 10, 11, 22, 24, 29, Aug: 1, 2, Total No. of visits 84.

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

Dates of Examination of principal parts—Cylinders *P. 4. 07* Slides *10. 4. 07* Covers *18. 4. 07* Pistons *18. 4. 07* Rods *26. 3. 07*
 Connecting rods *6. 4. 07* Crank shaft *9. 4. 07* Thrust shaft *19. 4. 07* Tunnel shafts *4. 4. 07* Screw shaft *24. 4. 07* Propeller *24. 4. 07*
 Stern tube *22. 5. 07* Steam pipes tested *10 & 11 July 07* Engine and boiler seatings *17. 6. 07* Engines holding down bolts *11. 7. 07*
 Completion of pumping arrangements *1. 8. 07* Boilers fixed *11. 7. 07* Engines tried under steam *1. 8. 07*
 Main boiler safety valves adjusted *1. 8. 07* Thickness of adjusting washers *P.F. 15/32, P.A. 7/16, S.F. 7/16, S.A. 7/16*
 Material of Crank shaft *steel* Identification Mark on Do. *394 B* Material of Thrust shaft *steel* Identification Mark on Do. *1308 P*
 Material of Tunnel shafts *steel* Identification Marks on Do. *1307, 1304, 1305, 1306* Material of Screw shafts *Iron* Identification Marks on Do. *397 B*
 Material of Steam Pipes *Copper* Test pressure *400 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Machinery of this vessel has been constructed under special survey, the workmanship and materials used are both of good quality, the Engines have been tried under steam and worked satisfactorily.*

I beg to recommend that this vessel is eligible in my opinion to have the record L.M.C. 9.07 in the Register Book

It is submitted that this vessel is eligible for THE RECORD L.M.C. 9.07

The amount of Entry Fee.. £ 3 : : When applied for, _____
 Special .. £ 37 : 10 : : 10. 9. 07
 Donkey Boiler Fee .. £ : : :
 Travelling Expenses (if any) £ : : : 13/19/07

J.M. Coomber
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. 13 SEP 1907

Assigned

hmc 8.07

MACHINERY CERTIFICATE WRITTEN.



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Certificate (if required) to be sent to the Registrar of Shipping, London, E.C. 4, in the space for Committee's Minute.