

REPORT ON MACHINERY.

No. 5598

Port of MIDDLESBROUGH-ON-TEES.Received at London Office WED. 14 OCT 1908

No. in Survey held at Middlesbrough Date, first Survey 14 May Last Survey 2nd Oct. 1908
 Reg. Book. 3 on the S.S. "Onaida" (Number of Visits 24)

Master Grangemouth Built at Grangemouth By whom built Grangemouth When built 1908

Engines made at Sunderland & Middlesbrough By whom made Richardsons, Westgarth & Co. Ltd. when made 1908

Boilers made at Middlesbrough By whom made do when made 1908

Registered Horse Power 104 Owners Anglo American Oil Co. Port belonging to London

Nom. Horse Power as per Section 28 104 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple. See Sld. Rpt. No. 23823 No. of Cylinders 3 No. of Cranks 3
4 cyl. "No. 12424"

Dia. of Cylinders 14", 23", 37" Length of Stroke 24" Revs. per minute 120 Dia. of Screw shaft as per rule 7.7" Material of Iron
as fitted 8.4" screw shaft

Is 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

in 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

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive ✓ If two

liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4'-6"

Dia. of Tunnel shaft as per rule 6.83" Dia. of Crank shaft journals as per rule 7.17" Dia. of Crank pin 7.2" Size of Crank webs 12.4x5" Dia. of thrust shaft under

collars 7.2" Dia. of screw 9'-6" Pitch of Screw 8'-6" No. of Blades 4 State whether moveable No Total surface 35 sq. ft.

No. of Feed pumps Two Diameter of ditto 2.2" Stroke 12" Can one be overhauled while the other is at work yes

No. of Bilge pumps Two Diameter of ditto 2.2" Stroke 12" Can one be overhauled while the other is at work yes

No. of Donkey Engines Two Sizes of Pumps 6x4x6" 6x5x6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Two 2" dia. In Holds, &c. For carrying Petroleum in

bulk.

No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump Pumps Is a separate Donkey Suction fitted in Engine room & size yes 2.2"

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 None

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 ✓

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 16.7.08 of Stern Tube 12.9.08 Screw shaft and Propeller 12.9.08

Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Wm. Beardmore & Co. Ltd.

Total Heating Surface of Boilers 2033 sq. ft. Forced Draft fitted No No. and Description of Boilers One S.E. by Mr. Kneller

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 29.7.08 No. of Certificate 4163

Can each boiler be worked separately ✓ Area of fire grate in each boiler 57 sq. ft. No. and Description of Safety Valves to

each boiler Two direct spring Area of each valve 7" 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 15" Mean dia. of boilers 15'-0" Length 10'-6" Material of shell plates Steel

Thickness 1.3" Range of tensile strength 28.4-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR Lap

long. seams DR S. Riv. Diameter of rivet holes in long. seams 1.4" Pitch of rivets 8.7" Lap of plates or width of butt straps 1'-6.2"

Per centages of strength of longitudinal joint 85.8 Working pressure of shell by rules 182 lbs Size of manhole in shell 16x12"

Size of compensating ring 35x29.2x1.3" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 3'-10"

Length of plain part top 9.16" Thickness of plates bottom 9.16" Description of longitudinal joint welded No. of strengthening rings ✓

Working pressure of furnace by the rules 191 Combustion chamber plates: Material Steel Thickness: Sides 1.16" Back 1.16" Top 1.16" Bottom 3.4"

Pitch of stays to ditto: Sides 9.2x9.2" Back 9.2x8.4" Top 9.2x9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 186 lbs

Material of stays Steel Diameter at smallest part 2.1" Area supported by each stay 87.8" Working pressure by rules 215 End plates in steam space:

Material Steel Thickness 1.64" Pitch of stays 18.2x15" How are stays secured DR & U. Working pressure by rules 183.4 Material of stays Steel

Diameter at smallest part 2.2" Area supported by each stay 277" Working pressure by rules 184 Material of Front plates at bottom Steel

Thickness 7.8" Material of Lower back plate Steel Thickness 1.5" Greatest pitch of stays 16x8.4" Working pressure of plate by rules 183

Diameter of tubes 3.4" Pitch of tubes 4.2x4.2" Material of tube plates Steel Thickness: Front 1.64x7.8" Back 7.8x3.2" Mean pitch of stays 13.2x9"

Pitch across wide water spaces 14.4" Working pressures by rules 193.4 Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 9x1.3" Length as per rule 2-8.7" Distance apart 9" Number and pitch of stays in each 20 9.2"

Working pressure by rules 206.4 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 ✓

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Where fixed _____

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 each bolts + nuts for top & bottom ends + main bearings. 6 coupling bolts + nuts, 8 junking bolts. Set of gland studs, valves for all pumps, bolts, nuts, + iron assorted.*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1908 May 14. 24 June 3. 16. 21. 24 July 6. 10. 16. 22. 28. 29 Aug 24
During erection on board vessel - - Sep 2. 14. 17. 18. 19. 22. 24. 28 Oct 1. 7
Total No. of visits 24

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

Dates of Examination of principal parts—Cylinders 8. 9. 08 Slides 11. 8. 08 Covers 11. 8. 08 Pistons 11. 8. 08 Rods 7. 8. 08
Connecting rods 7. 8. 08 Crank shaft ✓ Thrust shaft 2. 9. 08 Tunnel shafts ✓ Screw shaft 2. 9. 08 Propeller 2. 9. 08
Stern tube 2. 9. 08 Steam pipes tested 18. 9. 08 Engine and boiler seatings 24. 6. 08 Engines holding down bolts 24. 9. 08 Forgings.
Completion of pumping arrangements 1. 10. 08 Boilers fixed 24. 9. 08 Engines tried under steam 1. 10. 08
Main boiler safety valves adjusted 1. 10. 08 Thickness of adjusting washers *Both 5/16"*
Material of Crank shaft *Glasgow Rpt.* Identification Mark on Do. *2505 AF* Material of Thrust shaft *Steel* Identification Mark on Do. *6462 J.H.*
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Iron* Identification Marks on Do. *6463 J.H.*
Material of Steam Pipes *S. B. Copper* Test pressure *360 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Engines and Boiler of this vessel have been constructed under Special Survey, are of good material and workmanship, and have been fitted and secured on board in accordance with the Rules. They are now in good working condition and in my opinion eligible to have the notation of +LMC 10.08 in the Register Book.

It is submitted that
this vessel is eligible for
THE RECORD + LMC 10.08.

Electric light

The amount of Entry Fee. £ 2 : 0 : 0 When applied for.
Special (1/3rd due to old) £ 15 : 12 : 0 13. 10. 1908
Donkey Boiler Fee . . . £ : : : When received.
Travelling Expenses (if any) £ : : : 17. 10. 1908

Committee's Minute

FRI. 16 OCT 1908

Assigned

*+ LMC 10.08
elec light.*

MACHINERY CERTIFICATE
WRITTEN.

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



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Foundation