

REPORT ON MACHINERY

No. 26567

Received at London Office

THU. 11 NOV. 1915

Date of writing Report 4-11-15 When handed in at Local Office - 9 NOV 1915 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 11 Jan'y Last Survey 1 Nov. 1915
Reg. Book. on the new steel S/S "AVONWOOD". Tons ^{Gross} _{Net}

Master Built at Middlesbrough By whom built W. Harkness & Sons Ltd. (N° 210) When built 1915

Engines made at Sunderland By whom made Mac Bole & Pollock Ltd (N° 258) when made 1915

Boilers made at Sunderland By whom made Mac Bole & Pollock Ltd (N° 258) when made 1915

Registered Horse Power 132 Owners Constantine & Bonking Port belonging to Middlesbrough
Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 16" 27" 44" Length of Stroke 30 Revs. per minute 80 Dia. of Screw shaft 9.06 Material of Steel
as fitted 2 3/4" 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 boxes 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 3'-3"
Dia. of Tunnel shaft 8.1" as per rule 8 3/8" Dia. of Crank shaft journals 8.5" as per rule 8 3/4" Dia. of Crank pin 9" Size of Crank webs 13 1/2" x 5 3/4" Dia. of thrust shaft under

collars 8 3/4" Dia. of screw 11'-0" Pitch of Screw 13'-6" No. of Blades 4 State whether moveable no Total surface 52 sq ft

No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 16" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 16" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 5 1/4" & 3 1/2" & 5" 6 1/2" & 8 1/2" & 8" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 @ 2 1/4" 1 @ 2" In Holds, &c. 2 @ 2"

No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump b.p. Is a separate Donkey Suction fitted in Engine room & size yes, 2 1/2"

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 valves

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 forward hold suction How are they protected under wood casing

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 27.9.15 of Stern Tube 18-10-15 Screw shaft and Propeller 20-10-15

Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door machly aft, worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spence & Sons Ltd

Total Heating Surface of Boilers 2260 sq ft Is Forced Draft fitted no No. and Description of Boilers one single ended marine

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 7-10-15 No. of Certificate 3317

Can each boiler be worked separately ✓ Area of fire grate in each boiler 59 sq ft No. and Description of Safety Valves to

each boiler two direct spring Area of each valve 5.94 sq ft Pressure to which they are adjusted 185 Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4'-6" Mean dia. of boilers 15'-6" Length 10'-6" Material of shell plates steel

Thickness 1 3/16" Range of tensile strength 29 1/2-33 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams WR

long. seams WRB.S.T.R Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 18 1/2"

Per centages of strength of longitudinal joint rivets 87.8 Working pressure of shell by rules 184 Size of manhole in shell 16" x 12"

Size of compensating ring 29" x 27" x 1 3/16" No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 3'-8 5/8"

Length of plain part 7 1/2" Thickness of plates 1 1/16" Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 182 Combustion chamber plates: Material steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 5/16"

Pitch of stays to ditto: Sides 9 3/8" x 9" Back 10 7/16" x 8 1/2" Top 10 7/8" x 9 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182

Material of stays steel Diameter at smallest part 2.030" Area supported by each stay 100 3/4" Working pressure by rules 181 End plates in steam space:

Material steel Thickness 1 5/16" Pitch of stays 24 1/4" x 16" How are stays secured by nuts Working pressure by rules 182 Material of stays steel

Diameter at smallest part 7 1/4" Area supported by each stay 3880" Working pressure by rules 194 Material of Front plates at bottom steel

Thickness 1 5/16" Material of Lower back plate steel Thickness 1 5/16" Greatest pitch of stays 15 1/2" x 8 1/2" Working pressure of plate by rules 199

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 1 5/16" Back 1 3/16" Mean pitch of stays 11 5/32"

Pitch across wide water spaces 13 1/2" Working pressures by rules 185-2 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 7 1/2" x 1 1/4" Length as per rule 27 7/8" Distance apart 10 7/8" Number and pitch of stays in each 2 @ 8 3/8"

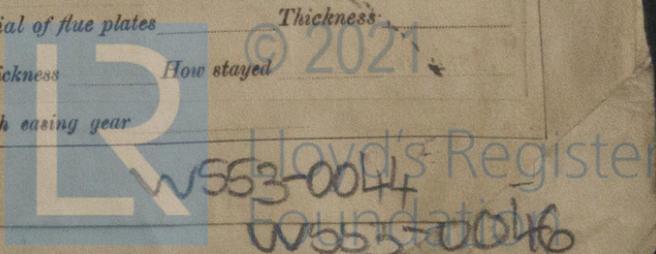
Working pressure by rules 186 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked

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



IS A DONKEY BOILER FITTED? *yes*

If so, is a report now forwarded? *yes*

SPARE GEAR. State the articles supplied:— *Two top and bottom end bolts and nuts, two main bearing bolts, one set of coupling bolts, one set of feed, bridge and air pump iron and bolts of various sizes and one set of springs for each piston.*

The foregoing is a correct description,

MAC COLL & POLLOCK LTD

G.P. Pollock
Managing Director.

Manufacturer.

Dates of Survey while building
During progress of work in shops: 1915 Jan 11, 18, 25 Feb 19, 17, 24 Mar 8, 16 Apr 8, 9, 19 May 13, 20 Jun 2, 23 Aug 24 Sept 15, 22
During erection on board vessel: Oct 5, 6, 7, 18, 20, 26, 28 Nov 1, 11, 15 Dec 19, 15 Jan 27, 6 Feb 5, 14, 19, 24
Total No. of visits: (29) + 6

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

Dates of Examination of principal parts—Cylinders 8-4-15 Slides 19-4-15 Covers 24-8-15 Pistons 24-8-15 Rods 17-2
Connecting rods 24-8-15 Crank shaft 8-4-15 Thrust shaft 8-4-15 Tunnel shafts none Screw shaft 18-10-15 Propeller 18-10
Stern tube 19-4-15 Steam pipes tested 26-10-15 Engine and boiler seatings 27-9-15 Engines holding down bolts 28-10-15
Completion of pumping arrangements 1-11-15 14, 10, 15 Boilers fixed 28-10-15 Engines tried under steam 1-11-15

Main boiler safety valves adjusted 1-11-15 Thickness of adjusting washers P 9/32" S 3/8" base

Material of Crank shaft *Steel* Identification Mark on Do. *A292AFD* Material of Thrust shaft *Steel* Identification Mark on Do. *A260*

Material of Tunnel shafts *none* Identification Marks on Do. *-* Material of Screw shafts *Steel* Identification Marks on Do. *A260*

Material of Steam Pipes *solid drawn copper* Test pressure *400 lbs per sq in*

Is an installation fitted for burning oil fuel *no* Is the flash point of the oil to be used over 150°F. *-*

Have the requirements of Section 49 of the Rules been complied with *✓*

Is this machinery duplicate of a previous case *no* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c. To complete the survey the donkey boiler requires to be fitted and its safety valves adjusted (as advised) See Donkey Boiler Rpt. N° 26567 attached. The materials and workmanship are good. The machinery has been constructed under special survey and is eligible in our opinion for classification and the record + LMC 11. 15 when the survey is complete.

Certificate (if required) to be sent to SUNDERLAND.

It is submitted that this vessel is eligible for THE RECORD + LMC 11. 15.

The amount of Entry Fee ... £ 2 : - :
Special ... £ 19 : 16 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, - 9 NOV 1915
When received, 3/11 1915 4/11/15

J.W.D.
Lewis & Davis
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute FRI. - 3 DEC. 1915
Assigned + L.M.C. 11. 15

MACHINERY CERTIFICATE NOTED.

