

REPORT ON MACHINERY.

No. 26378

Received at London Office

SAT. MAR. 6 - 1915

of writing Report

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When handed in at Local Office 26 February 1915 Port of Sunderland

in Survey held at Sunderland

Date, First Survey 24th Mar. 1914. Last Survey 3. 2 - 1915

on the new steel S/S "KILLELLAN."

(Number of Visits 32.)

Master M. J. Hardy Built at Sunderland

By whom built Sunderland S.B. & L. (S/N: 282) Tons Gross 1972. Net 1215

Engines made at Sunderland

By whom made Macleod & Pollock Ltd (N: 254) when made 1914

Boilers made at Sunderland

By whom made Macleod & Pollock Ltd (N: 254) when made 1914

Registered Horse Power

Owners Atlas Shipping Co. Ltd (John Reid & Co) Port belonging to Sunderland

Horse Power as per Section 28 134

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion

No. of Cylinders 3 No. of Cranks 3

No. of Cylinders 16 26 43 Length of Stroke 33 Revs. per minute 85 Dia. of Screw shaft as per rule 9.56 Material of screw shaft as fitted 9 3/4 steel

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

Is 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

are fitted, is the shaft lapped or protected between the liners - Length of stern bush 3-5"

No. of Tunnel shaft as per rule 8.32 Dia. of Crank shaft journals as per rule 8.73 Dia. of Crank pin 8 7/8 Size of Crank webs 13 1/2 x 5 1/8 Dia. of thrust shaft under

bars 8 7/8 Dia. of screw 12-0" Pitch of Screw 13-0" No. of Blades 4 State whether moveable yes Total surface 55 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 2 1/2 Stroke 16 Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps 2 @ 9 1/2 & 11 1/2 & 10 6 & 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Three @ 4" In Holds, &c. N: 1 hold - 2 @ 4" N: 2 hold - 2 @ 4"

N: 3 hold - 2 @ 4" of Bilge Injections one size 5 1/2" Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size yes 4"

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 Except Downcomer pump discharge, about 4' above deep water line

Are the Blow Off Cocks fitted with a spigot and brass covering plate yes

How are they protected - at pipes are carried through the bunkers none

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 23.7.14 of Stern Tube 30.7.14 Screw shaft and Propeller 30.7.14

Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door Machinery worked from -

MAKERS, &c.—(Letter for record (5)) Manufacturers of Steel John Spence & Sons Ltd

Total Heating Surface of Boilers 2329 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 10-7-14 No. of Certificate 3232

Can each boiler be worked separately - Area of fire grate in each boiler 65 sq ft No. and Description of Safety Valves to

boiler 2. direct spring Area of each valve 7.07 sq ft Pressure to which they are adjusted 185 Are they fitted with easing gear yes

Least distance between boilers or uptakes and bunkers or woodwork 1-9" Mean dia. of boilers 16-0" Length 11-0" Material of shell plates steel

Thickness 1 3/8" Range of tensile strength 29 3/4 - 33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams DR

seams D.D.S. TR Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 9 7/8" Lap of plates or width of butt straps 1-9 1/8"

Percentages of strength of longitudinal joint rivets 88.6 Working pressure of shell by rules 208 Size of manhole in shell 16" x 12"

Area of compensating ring 31 x 34 x 1 3/8 flanged No. and Description of Furnaces in each boiler 3 Dighton box Material steel Outside diameter 4'-4"

Length of plain part top bottom Thickness of plates crown bottom 21/32 Description of longitudinal joint welded No. of strengthening rings -

Working pressure of furnace by the rules 205 Combustion chamber plates: Material steel Thickness: Sides 11/16" Back 3/32" Top 11/16" Bottom 1"

Number of stays to ditto: Sides 8 3/4 x 9 3/4 Back 9 3/4 x 9 Top 11 x 7 3/4 If stays are fitted with nuts or riveted heads nut in use Working pressure by rules 180

Material of stays steel Diameter at smallest part 20 3/8 x 23 6/8 Area supported by each stay 87 7/8 x 105 Working pressure by rules 208 & 202 End plates in steam space:

Material steel Thickness 1 1/8" Pitch of stays 15 x 20 How are stays secured D.N. Working pressure by rules 181 Material of stays steel

Area at smallest part 6-10" Area supported by each stay 300 sq ft Working pressure by rules 211 Material of Front plates at bottom steel

Thickness 2 1/32" Material of Lower back plate steel Thickness 2 1/32" Greatest pitch of stays 13 3/4 x 9 Working pressure of plate by rules 182

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4 x 4 5/8 Material of tube plates steel Thickness: Front 2 1/32" Back 2 1/32" Mean pitch of stays 11 3/4"

Thickness across wide water spaces 1 1/2 x 3/16 Working pressures by rules 231 Girders to Chamber tops: Material steel Depth and

Thickness of girder at centre 2 @ 9 1/4 x 1" Length as per rule 34 5/8 Distance apart 11" Number and pitch of stays in each 3 @ 7 3/4"

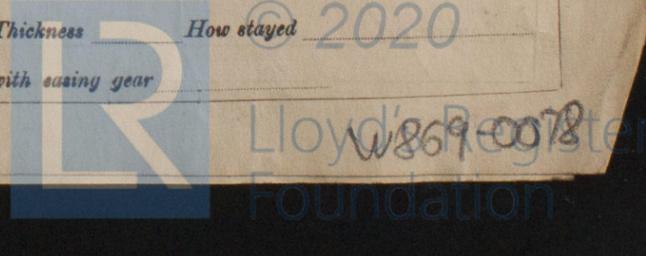
Working pressure by rules 183 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked

separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

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

Are they 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		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		Radius of do.	Stayed by	
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SEPARATE REPORT

SPARE GEAR. State the articles supplied:— Two connecting rod top and bottom end bolts and nuts two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves, iron and bolts of various sizes, four propeller blades.

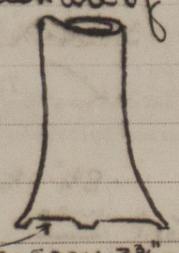
The foregoing is a correct description,
MAO COLL & POLLOCK LTD. Manufacturer.

Maacoll
 Dates of Survey while building: During progress of work in shop **1914 Mar. 24. Apr. 22. 24. May. 8. 11. 15. 22. 26. Jan. 4. 10. 11. 18. 22. 23. 29. 30.**
 During erection on board vessel --- **Jul. 1. 3. 10. 23. 24. 30. Aug. 1. 4. 8. 10. 12. 18. 27. Sep. 4. 9. 1915. Feb. 3.**
 Total No. of visits **(32)**

Dates of Examination of principal parts—Cylinders **8-5-14** Slides **29-6-14** Covers **10-6-14** Pistons **18-6-14** Rods **11-6-14**
 Connecting rods **23-6-14** Crank shaft **5-5-14** Thrust shaft **29-6-14** Tunnel shafts **none** Screw shaft **29-6-14** Propeller **30-6-14**
 Stern tube **10-4-14** Steam pipes tested **8-8-14** Engine and boiler seatings **23-7-14** Engines holding down bolts **8-8-14**
 Completion of pumping arrangements **27-8-14** Boilers fixed **18-8-14** Engines tried under steam **27-8-14**
 Main boiler safety valves adjusted **27-8-14** Thickness of adjusting washers **P 1 1/2" S 3/8"**
 Material of Crank shaft **Steel** Identification Mark on Do. **3748AFÖ** Material of Thrust shaft **Steel** Identification Mark on Do. **5372 H.K.**
 Material of Tunnel shafts **none** Identification Marks on Do. ✓ Material of Screw shaft **Steel** Identification Marks on Do. **5371 H.K.**
 Material of Steam Pipes **solid drawn copper. 1 @ 4 1/2" x 5 W.G.** Test pressure **360 lbs per square inch.**

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The materials and workmanship are good ✓
 The machinery has been made under special survey and is eligible in my opinion for classification and the Record **+ L.M.C. 2.15** ✓

In accordance with the owner's wishes the usual rose boxes have been omitted in the case of the hold suction (letter hereunder). In lieu thereof the tail pipes, which are of lead - 4" internal diameter, - have been bellmouthed and the edge slotted, thus:-
 An extra large mudbox is fitted between these suction and the pumps. ✓



It is submitted that this vessel is eligible for **THE RECORD + L.M.C. 2.15.**

The amount of Entry Fee	£ 2	When applied for,	15. OCT. 1914
Special	£ 20	When received,	2. 12. 14
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		

JWD
J.M.
James D. Davis
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. MAR. 19. 1915**
 Assigned **+ L.M.C. 2.15**