

REPORT ON MACHINERY

SLD No. 22039
No. 47929

Port of Sunderland

Received at London Office. **F.H.I. 25 NOV 1904**

No. in Survey held at Sunderland Date, first Survey 4th August, Last Survey 31st Oct. 1904
Reg. Book. (Number of Visits 12)

on the Steel Screw Steamer "ANGELIA" Tons 196 Gross
W. Nightingale Built at North Shields By whom built Smith's Dock Co. Ltd. Net 45
When built 1904

Engines made at Sunderland By whom made Maccoll & Pollock (Lim) when made 1904

Boilers made at Sunderland By whom made Maccoll & Pollock (Lim) when made 1904

Registered Horse Power 40 Owners G. H. D. Birt & H. H. Hestall Port belonging to A London

Nom. Horse Power as per Section 28 40 Is Refrigerating Machinery fitted no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion, inverted No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 12-20-32 Length of Stroke 23 Revs. per minute 100 Dia. of Screw shaft as per rule 6.9 Material of screw shaft light steel
as fitted 4.3/16

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 2-6

Dia. of Tunnel shaft as per rule 6.1 Dia. of Crank shaft journals as per rule 6.4 Dia. of Crank pin 6.3/4 Size of Crank webs 9 1/2 x 4 1/2 Dia. of thrust shaft under
collars 6.3/4 Dia. of screw 8-6 Pitch of screw 11-0 No. of blades four State whether moveable no Total surface 29.5 sq

No. of Feed pumps one Diameter of ditto 2 1/4 Stroke 11 1/2 Can one be overhauled while the other is at work —
No. of Bilge pumps one Diameter of ditto 2 1/4 Stroke 11 1/2 Can one be overhauled while the other is at work —

No. of Donkey Engines one Sizes of Pumps 5 1/2 x 3 1/2 x 5 duplex No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room one 2 1/2 In Holds, &c. one 2 1/2 from slud tank

No. of bilge injections one sizes 2 1/2 Connected to condenser, or to circulating pump — Is a separate donkey suction fitted in Engine room & size yes 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 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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock — Is the screw shaft tunnel watertight —
Is it fitted with a watertight door — worked from —

BOILERS, &c.— (Letter for record (5)) Total Heating Surface of Boilers 1318 sq Is forced draft fitted no

No. and Description of Boilers one single ended, cylindrical Working Pressure 180 lb Tested by hydraulic pressure to 360
Date of test 21/10/04 Can each boiler be worked separately — Area of fire grate in each boiler 33.3 sq No. and Description of safety valves to
each boiler two direct spring Area of each valve 3.9 sq Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 11 Mean dia. of boiler 12-0 Length 10-0 Material of shell plates steel
Thickness 1 Range of tensile strength 28 1/2 to 32 tons Are they welded or flanged no Descrip. of riveting: cir. seams lap-DR long. seams DRS-TR

Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 4 9/16 Lap of plates or width of butt straps 14 1/8
Per centages of strength of longitudinal joint rivets 84.19 Working pressure of shell by rules 185 lb Size of manhole in shell 16 x 12
plate 85.95

Size of compensating ring 4 x 1 No. and Description of Furnaces in each boiler two, plain Material steel Outside diameter 41 1/2
Length of plain part top 40 bottom 48 Thickness of plates crown 49 bottom 54 Description of longitudinal joint weld No. of strengthening rings none

Working pressure of furnace by the rules 182 lb Combustion chamber plates: Material steel Thickness: Sides 4/16 Back 4/16 Top 4/16 Bottom 1
Pitch of stays to ditto: Sides 9 x 9 3/4 Back 10 5/8 x 8 1/4 Top 8 3/4 x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 191 lb

Material of stays steel Diameter at smallest part 1.57 + 1.63 Area supported by each stay 88 sq Working pressure by rules 182 lb End plates in steam space:
Material steel Thickness 63/64 Pitch of stays 17 3/4 x 12 3/4 How are stays secured D.N. Working pressure by rules 182 lb Material of stays steel

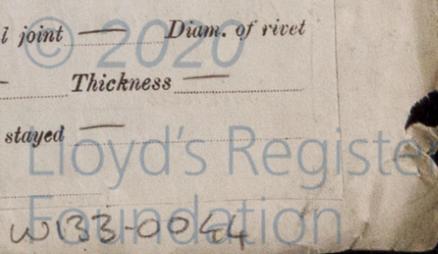
Diameter at smallest part 2.29 Area supported by each stay 227 sq Working pressure by rules 82 lb Material of Front plates at bottom steel
Thickness 13/16 Material of Lower back plate steel Thickness 1 3/4 Greatest pitch of stays 12 1/8 Working pressure of plate by rules 151 lb

Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates steel Thickness: Front 13/16 Back 13/16 Mean pitch of stays 11 1/4
Pitch across wide water spaces 14 1/4 Working pressures by rules 186 lb Girders to Chamber tops: Material steel Depth and
thickness of girder at centre 9 x 1 1/2 Length as per rule 33 Distance apart 9 Number and pitch of Stays in each two 8 3/4

Working pressure by rules 184 lb Superheater or Steam chest; how connected to boiler — 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 —

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DONKEY BOILER— No. Description

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves

No. of safety valves Area of each Pressure to which they are adjusted 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 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

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

Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:—

All set of coupling belts & nuts, two each top end, bottom end & main bearing belts & nuts one set each feed & life pump valves & air circulating pump valve, one piston valve, one propeller, belts & nuts.

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

W. R. Pollock

Dates of Survey while building } During progress of making Director. 1904:— Aug 4, 15, 17, Sep 9, 21, Oct 1, 5, 14, 19, 21, 28, 31.
 } During erection on board vessel - - -
 Total No. of visits 12

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

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

The Machinery of this Vessel has been constructed under Special Survey, the material & workmanship sound and good, the Boiler and steam pipe have been subjected to Hydraulic Pressure in accordance with the Rules, the machinery worked well, and the Safety Valves have been adjusted to the working pressure and easing gear fitted.

Additional advice notes for Boiler Steel to follow

It is submitted that this vessel is eligible for THE RECORD L.M.C. 10.04.

W.S.
25.11.04

*This Vessel is eligible in my opinion to have the Notation *LMC 1004 in the Register Book*

The amount of Entry Fee.. £ 1 : :
 Special £ 10 : 10 :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :

When applied for, 11.11.04
 When received, 13/12/04
W.S.
14.12.04
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES. 29 NOV 1904

Assigned

+ LMB 1004

MACHINERY CERTIFICATE WRITTEN.



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Certificate (if required) to be sent to Sunderland.

The Surveyors are requested not to write on or below the space for Committee's Minute.