

REPORT ON MACHINERY

Nwc. No. 55743.
S.L.D. No. 23850.
JHUR. 19 NOV 1906
MUN. 26 OCT 1906

Port of Sunderland

No. in Survey held at Sunderland

Date, first Survey 19th June 08 Last Survey 21st Oct 1908

Reg. Book. on the Steam Trawler "Kirkland"

(Number of Visits 26) Nwc. 25th October 1908

Master J. Davies Built at H. Shields By whom built Shaw Smith's Dock Co. Ltd Tons { Gross 224 Net 86 When built 1908

Engines made at Sunderland By whom made Messrs Mac Coll & Pollock when made 1908

Boilers made at Sunderland By whom made Messrs Mac Coll & Pollock when made 1908

Registered Horse Power 1 Owners G. H. B. Birt & J. Davies Port belonging to London

Nom. Horse Power as per Section 28 78 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

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

Dia. of Cylinders 12 1/2", 20", 34" Length of Stroke 24" Revs. per minute 105 Dia. of Screw shaft as per rule 4.25" Material of screw shaft 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 in 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 liners are fitted, is the shaft lapped or protected between the liners Yes

Dia. of Tunnel shaft as per rule 6.31" Dia. of Crank shaft journals as per rule 6.62" Length of stern bush 2.6 1/4"

Collars 6 1/8" Dia. of screw 9.3" Pitch of Screw 11.9" Dia. of Crank pin 6 1/8" Size of Crank webs 10 1/2" x 4 1/2" Dia. of thrust shaft under No. of Blades 4 State whether moveable no Total surface 34 sq ft

No. of Feed pumps one Diameter of ditto 2 1/4" Stroke 12" Can one be overhauled while the other is at work Yes

No. of Bilge pumps one Diameter of ditto 2 1/4" Stroke 12" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 3 1/2" x 6" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps 2 of 2, one ejector 2 1/2" In Holds, &c. 17 1/2"

No. of Bilge Injections one sizes 3" Connected to condenser, or to circulating pump no 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 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 injection to sledge tank How are they protected 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 7.10.08 of Stern Tube 12.10.08 Screw shaft and Propeller 12.15.08 1908

Is the Screw Shaft Tunnel watertight no Is it fitted with a watertight door Yes worked from no

BOILERS, &c.—(Letter for record R.S.) Manufacturers of Steel J. Spencer & Sons & W. Beardmore & Co

Total Heating Surface of Boilers 1423 sq ft Is Forced Draft fitted no No. and Description of Boilers one single ended cylindrical

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 15.9.08 No. of Certificate 2722

Can each boiler be worked separately Yes Area of fire grate in each boiler 38 sq ft No. and Description of Safety Valves to each boiler 2 spring Area of each valve 3.98 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 10" Mean dia. of boilers 12.6" Length 10.6" Material of shell plates steel

Thickness 1 1/2" Range of tensile strength 28/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d & lap

long. seams l & d Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7 1/4" Lap of plates or width of butt straps 15 1/4"

Per centages of strength of longitudinal joint rivets 92.5 plate 85.4 Working pressure of shell by rules 182.9 lbs Size of manhole in shell 16 x 12"

Size of compensating ring 28 x 26 x 1 1/2" No. and Description of Furnaces in each boiler 1 plain Material steel Outside diameter 43"

Length of plain part top 6.2 1/2" bottom 6.9" Thickness of plates crown 4 1/4" bottom 4 1/4" Description of longitudinal joint weld No. of strengthening rings no

Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2"

Pitch of stays to ditto: Sides 9 x 9 1/2" Back 9 1/2 x 9 1/2" Top 8 1/2 x 9 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 185.8 lbs

Material of stays steel Diameter at smallest part 2.07" Area supported by each stay 87.875 sq in Working pressure by rules 212 lbs End plates in steam space: Material steel Thickness 1 1/4" Pitch of stays 20 1/2 x 18 1/2" How are stays secured d & w. s. Working pressure by rules 189.1 lbs Material of stays steel

Diameter at smallest part 7.24" Area supported by each stay 388.875 sq in Working pressure by rules 196 lbs Material of Front plates at bottom steel

Thickness 1 1/2" Material of Lower back plate steel Thickness 1 1/2" Greatest pitch of stays 12 1/2 x 9 1/2" Working pressure of plate by rules 193.6 lbs

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 13 1/2 x 9"

Pitch across wide water spaces 14 1/2" Working pressures by rules 210 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 9 1/2 x 1 1/2" Length as per rule 31 1/2" Distance apart 9 1/2" Number and pitch of stays in each 2 - 8 1/2"

Working pressure by rules 182.3 lbs Superheater or Steam chest; how connected to boiler no Can the superheater be shut off and the boiler worked separately no

Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivet holes no Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no

If stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no

Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no

W861-0179

Lloyd's Register Foundation

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 _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 1 Propeller, 2 top end, 2 bottom end, 2 main bearing + set of coupling bolts, 1 set feed + bilge pump Valves, 1 main feed check + 1 donkey feed check Valve, Bolts + nuts assorted + iron of sizes

NEED COLL. & POLLOCK, LTD.

The foregoing is a correct description,

Manufacturer. *Angus MacColl*
Managing Director

Dates of Survey while building

During progress of work in shops - -	1908: -	June 19, 22, 29, July 3, 8, 14, 17, 21, 23, Aug: - 5, 11, 14, 18, 21, 25, 28, Sept: - 1, 8, 15, 22, Oct 1, 9, 12,
	During erection on board vessel - -	15, 20, 21, Nov. 1908, Oct 9, 21
	Total No. of visits	29 26

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " " " " " " " " " "

Dates of Examination of principal parts—Cylinders 28.8.08 Slides 15.9.08 Covers 8.9.08 Pistons 15.9.08 Rods 8.9.08

Connecting rods 8.9.08 Crank shaft 21.8.08 Thrust shaft 23.9.08 Tunnel shafts nil Screw shaft 1.10.08 Propeller 23.9.08

Stern tube 14.7.08 Steam pipes tested 15.10.08 Engine and boiler seatings 7.10.08 Engines holding down bolts 15.10.08

Completion of pumping arrangements 21.10.08 Boilers fixed 15.10.08 Engines tried under steam 21.10.08

Main boiler safety valves adjusted 21.10.08 Thickness of adjusting washers P. Valve 5/16"; S. Valve 3/8"

Material of Crank shaft Steel Identification Mark on Do. 2545 MR Material of Thrust shaft Steel Identification Mark on Do. 2738 PF

Material of Tunnel shafts nil Identification Marks on Do. / Material of Screw shafts steel Identification Marks on Do. 2719 PA

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 ahead & astern and worked satisfactorily

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 10.08.

JWD. 19.11.08 ARR
20.11.08

We beg to recommend that this vessel is eligible in our opinion to have the record L.M.C. 10.08 in the Register Book.

The amount of Entry Fee. £ 1 : 0 : 0 When applied for, 24.10.1908

Special 11 £ 11 : 14 : 0

Donkey Boiler Fee. £ : : : When received, 13 Nov. 1908

Travelling Expenses (if any) £ : : :

Leonard Challers
R.W. Coomber
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. 20 NOV 1908**
Assigned + L.M.C. 10.08

MACHINERY CERTIFICATE WRITTEN.



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Certificate (U required) to be sent to the Registrar in the space for Committee's Minute.