

REPORT ON MACHINERY

Nwc. No. 55743.
S.L.D. No. 23850.
JHUR. 19 NOV 1906Port of SunderlandReceived at London Office MUN. 26 OCT 1906No. in Survey held at SunderlandDate, first Survey 19th June 08 Last Survey 21st Oct 1908

Reg. Book.

on the

Steam Trawler "Kirkland"(Number of Visits 26) Nwc. No. 55743Master J. DaviesBuilt at H. ShieldsBy whom built Thos. Smith's Dock Co. Ltd.Tons { Gross 224
Net 86Engines made at SunderlandBy whom made Messrs Mac Coll & PollockWhen built 1908Boilers made at SunderlandBy whom made Messrs Mac Coll & Pollockwhen made 1908

Registered Horse Power

Owners G. H. B. Birt & J. DaviesPort belonging to LondonNom. Horse Power as per Section 28 78Is Refrigerating Machinery fitted for cargo purposes noIs Electric Light fitted no

ENGINES, &c.—Description of Engines

Inverted triple expansionNo. of Cylinders 3No. of Cranks 3Dia. of Cylinders 12 1/2", 20", 34"Length of Stroke 24"Revs. per minute 105

Dia. of Screw shaft

as per rule 7 1/2"Material of steelIs 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 YesLength of stern bush 2' 6 1/4"

Dia. of Tunnel shaft

as per rule 6 3/4"

Dia. of Crank shaft journals

as per rule 6 1/2"Dia. of Crank pin 6 1/8"Size of Crank webs 10 1/2" x 4 1/2"

Dia. of thrust shaft under

collars 6 1/8"Dia. of screw 9' 3"Pitch of Screw 11' 9"No. of Blades 4State whether moveable noTotal surface 34 1/2"No. of Feed pumps oneDiameter of ditto 2 1/4"Stroke 12"Can one be overhauled while the other is at work YesNo. of Bilge pumps oneDiameter of ditto 2 1/4"Stroke 12"Can one be overhauled while the other is at work YesNo. of Donkey Engines 2Sizes of Pumps 3 1/2" x 6" x 6"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 of 2, one ejector 2 1/2"In Holds, &c. 17 1/2"No. of Bilge Injections oneConnected to condenser, or to circulating pump YesIs a separate Donkey Suction fitted in Engine room & size Yes - 2"Are all the bilge suction pipes fitted with roses YesAre the roses in Engine room always accessible YesAre the sluices on Engine room bulkheads always accessible YesAre all connections with the sea direct on the skin of the ship YesAre they Valves or Cocks bothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YesAre the Discharge Pipes above or below the deep water line aboveAre they each fitted with a Discharge Valve always accessible on the plating of the vessel YesAre the Blow Off Cocks fitted with a spigot and brass covering plate YesWhat pipes are carried through the bunkers injection to sledge tankHow are they protected wood casingAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesDates of examination of completion of fitting of Sea Connections 7.10.08of Stern Tube 12.10.08Screw shaft and Propeller 12.15.08 1908Is the Screw Shaft Tunnel watertight nilIs it fitted with a watertight door Yesworked from YesBOILERS, &c.—(Letter for record AS)Manufacturers of Steel J. Spencer & Sons & W. Beardmore & Co.Total Heating Surface of Boilers 1423Is Forced Draft fitted noNo. and Description of Boilers one single ended cylindricalWorking Pressure 180 lbsTested by hydraulic pressure to 360 lbsDate of test 15.9.08No. of Certificate 2722Can each boiler be worked separately YesArea of fire grate in each boiler 38 1/2"

No. and Description of Safety Valves to

each boiler 2 springArea of each valve 3.98"Pressure to which they are adjusted 185 lbsAre they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 10"Mean dia. of boilers 12' 6"Length 10' 6"Material of shell plates steelThickness 1 1/2"Range of tensile strength 28/32Are the shell plates welded or flanged noDescrip. of riveting: cir. seams laplong. seams lapDiameter 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 92.5Working pressure of shell by rules 182.9 lbsSize 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 plainMaterial steelOutside diameter 43"Length of plain part 6' 9"

Thickness of plates

crown 49/64"Description of longitudinal joint weldNo. of strengthening rings 1Working pressure of furnace by the rules 180 lbs

Combustion chamber plates

Material steelThickness: Sides 1/8"Back 1/8"Top 1/8"Bottom 1/8"Pitch of stays to ditto: Sides 9 x 9 1/2"Back 9 1/2 x 9 1/2"Top 9 1/2 x 9 1/2"If stays are fitted with nuts or riveted heads nutsWorking pressure by rules 185.8 lbsMaterial of stays steelDiameter at smallest part 2.07"Area supported by each stay 87.875"Working pressure by rules 212 lbs

End plates in steam space:

Material steelThickness 1 1/4"Pitch of stays 20 1/2 x 18 1/2"How are stays secured d.u. w. s.Working pressure by rules 189.1 lbsMaterial of Front plates at bottom steelThickness 1 1/4"Greatest pitch of stays 12 1/4 x 9 1/4"Working pressure of plate by rules 193.6 lbsDiameter of tubes 3 1/4"Pitch of tubes 4 1/2 x 4 1/2"Material of tube plates steelThickness: 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 lbsGirders 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 1/4"Working pressure by rules 182.3 lbs

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

separately Yes

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

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

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

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 _____ 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

W.D. & H.O. WILLS LTD

The foregoing is a correct description,

Manufacturer.

Hugo MacCall
Managing Director

Dates of Survey while building { During progress of work in shops - 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, 14, 20, 21, Nov. 1908 Oct 29, 30

Total No. of visits 29 26

Is the approved plan of main boiler forwarded herewith Yes

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 $\frac{5}{16}$; S. Valve $\frac{3}{8}$

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.

JAN. 19. 11. 08 ARR 20. 11. 08

We beg to recommend that this vessel is eligible in our opinion to have the record 8 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 : 14 : 0

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

Travelling Expenses (if any) £ : : :

Committee's Minute

FRI. 20 NOV 1908

Assigned

+ L.M.C. 10.08

MACHINERY CERTIFICATE WRITTEN.

Leonard Challengers.
K.W. Coombes

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



Lloyd's Register Foundation

Gundland

Certificate (U required) to be sent to the Committee's Minute.