

REPORT ON MACHINERY.

No. 8799

Mo. No. 212

Port of West Hartlepool

Received at London Office

6 MAY 92

No. in Survey held at West Hartlepool

Date, first Survey 7th Oct 1891 Last Survey 10th March 1892

Reg. Book.

(Number of Visits 33)

on the Saw Steamer "Kaffir"

Gross 2736.21
Tons Net 1774.27

Master Built at Huddlesbro By whom built Lt Rayton Dixon & Co When built 1892

Engines made at Hartlepool By whom made Messrs J. Richardson & Sons when made 1892

Boilers made at Hartlepool By whom made Messrs J. Richardson & Sons when made 1892

Registered Horse Power 500 Owners British & Colonial S. Nav Co Port belonging to London

Com. Horse Power as per Section 28 282

ENGINES, &c.— Description of Engines Inverted, Triple Expansion, 3 Cranks No. of Cylinders 3
Diameter of Cylinders 24", 38", 64" Length of Stroke 42" Revolutions per minute 60 Diameter of Screw shaft as per rule 11.24"
Diameter of Tunnel shaft as fitted 10.68" Diameter of Crank shaft journals 11.24" Diameter of Crank pin 12" Size of Crank webs 17.4" x 7.2"
Diameter of screw 16.0 Pitch of screw 16.0 No. of blades 4 State whether moveable no Total surface 72.4 sq. ft.
No. of Feed pumps 2 Diameter of ditto 3.24" Stroke 27" Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 3.24" Stroke 27" Can one be overhauled while the other is at work yes
No. of Donkey Engines 2 Sizes of Pumps (18" x 4.24") (3.2" x 7") No. and size of Suctions connected to both Bilge and Donkey pumps
Engine Room Five, Two 4.2" dia., Three 2.2" dia. In Holds, &c. Seven, Two 2.2" dia. for hold, Two 2.2" dia. main hold, Two 2.2" dia. After hold, One 2.2" dia. after well.
No. of bilge injections one sizes 4.2" dia. connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size yes, 4.2" dia.
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
That 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
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yes
Then were stern tube, propeller, screw shaft, and all connections examined in dry dock New vessel Is the screw shaft tunnel watertight
Is it fitted with a watertight door yes worked from Top platform in Engine Room

BOILERS, &c.— (Letter for record (S)) Total Heating Surface of Boilers 4495 sq. ft.
No. and Description of Boilers Two, Cyl. mult. Single Ended Working Pressure 160 lb. Tested by hydraulic pressure to 320 lb.
Date of test 28.1.92 Can each boiler be worked separately yes Area of fire grate in each boiler 69 sq. ft. No. and Description of safety valves to
each boiler Two, spring Area of each valve 8.29 sq. in. Pressure to which they are adjusted 165 lb. Are they fitted
with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 22" Mean diameter of boilers 15.6"
Length 11.0" Material of shell plates Steel Thickness 1.8" Description of riveting: circum. seams Double riv lap long. seams Double butt straps
Diameter of rivet holes in long. seams 1.32" Pitch of rivets 12 in 8.24", 2 in 4.8" Lap of plates or width of butt straps 11"
Percentages of strength of longitudinal joint
rivets 84.6 plate 84.6 Working pressure of shell by rules 162 lb. Size of manhole in shell none
Size of compensating ring
No. and Description of Furnaces in each boiler 3, horizontal Material Steel Outside diameter 48"
Length of plain part top 3" bottom 7" Thickness of plates crown 1.8" bottom 1.8" Description of longitudinal joint welded No. of strengthening rings none
Working pressure of furnace by the rules 166 lb. Combustion chamber plates: Material steel Thickness: Sides 1.9" Back 1.9" Top 1.9" Bottom 1.8"
Pitch of stays to ditto: Sides 8.5" x 8.2" Back 8.5" x 8.4" Top 8.2" x 8.4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 163 lb.
Material of stays steel Diameter at smallest part 1.8" Area supported by each stay 73.2 sq. in. Working pressure by rules 162 lb. End plates in steam space:
Material steel Thickness 1.16" Pitch of stays 18.4" x 16.2" How are stays secured Double nut Working pressure by rules 160 lb. Material of stays Steel
Diameter at smallest part 2.8" Area supported by each stay 301 sq. in. Working pressure by rules 161 lb. Material of Front plates at bottom Steel
Thickness 1.16" Material of Lower back plate steel Thickness 2.7" Greatest pitch of stays 12.4" Working pressure of plate by rules 164 lb.
Diameter of tubes 3.2" Pitch of tubes 4.24" x 4.8" Material of tube plates steel Thickness: Front 1.5" Back 1.16" Mean pitch of stays 9.2" x 9.4"
Pitch across wide water spaces 14.4" Working pressures by rules 166 lb. Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 9.4" Length as per rule 35" Distance apart 8.2" Number and pitch of Stays in each Three, 8.4"
Working pressure by rules 186 lb. 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 —
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

2 DONKEY BOILER—*S* Description *Vertical, Cylindrical, 3 Cross tubes, (Steel)*
 Made at *Stockton* By whom made *Thos. Laidson & Co.* When made *23, 12.91* Where fixed *In stockhold*
 Working pressure *90 lb.* tested by hydraulic pressure to *180 lb.* No. of Certificate *375* Fire grate area *204 sq. ft.* Description of safety valves *Direct Spring*
 No. of safety valves *2* Area of each *4 5/8* Pressure to which they are adjusted *95 lb.* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *6.0* Length *12.0* Material of shell plates *steel* Thickness *1/4*
 Description of riveting long. seams *Double riv. lap* Diameter of rivet holes *1 3/16* Whether punched or drilled *punched* Pitch of rivets *2 3/8*
 Lap of plating *4 1/4* Per centage of strength of joint *73* Rivets *73* Thickness of shell crown plates *1 1/2* Radius of do. *5.9* No. of Stays to do. *7*
 Dia. of stays *1 3/4* Diameter of furnace Top *4.9* Bottom *5.4 1/2* Length of furnace *4.10 1/2* Thickness of furnace plates *5/8* Description of joint *Single riv. lap* Thickness of furnace crown plates *9/16* Stayed by *7 stays 1 3/4 dia.* Working pressure of shell by rules *91 lb.*
 Working pressure of furnace by rules *90 lb.* Diameter of uptake *1 3/8* Thickness of uptake plates *3/8* Thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *One propeller, One crank shaft, One screw shaft, A set of bolts & nuts for a connecting rod & main bearing. One set coupling to 1 set each one Circulating feed & Bilge pump valves. 2 Check valves, 1 set piston pump & each Cylinder, 1 eccentric strap. Bolts & nuts & rim of various sizes*
The foregoing is a correct description,
Thos. Laidson & Co. Manufacturer. *of Engines & main boilers*

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

Main steam pipes tested by hydraulic pressure to 320 lb. per sq. inch and found them tight
The engines and boilers of this vessel have been constructed under Special Survey and of a good quality of workmanship
The engines and main boilers have been examined under steam the safety valves adjusted and found to work well and were in my opinion, be eligible to have ~~L.C.~~ 3.92. recorded in the Register Book when the following work has been done to the satisfaction of a Surveyor of this Society. Bilge suction pipe to be fitted in the forward and after holds also in the screw tunnel. Screw tunnel to be fitted with a sluice door and made water-tight. Sluice valves to be made accessible at all times. Donkey boiler to be made secure, fitted with mountings, and tested under steam. Spare gear to be supplied in accordance with the Rules. The vessel has proceeded to Middlesbrough for completion
The survey on the machinery has now been satisfactorily Completed

A. Boyd

Middlesbrough-in-Lees 5th May 1892.

MACHINERY CERTIFICATE

It is submitted that this vessel is eligible for THE RECORD + LMC 5.92

N.A. 6.5.92

Certificate (if required) to be sent to

The amount of Entry Fee.. £ 2 : 0 : 0 When applied for,
 Special £ 34 : 2 : 0 4.5.18.92
 Donkey Boiler Fee £ : : : When received,
 Travelling Expenses (if any) £ : : : 4.5.18.92

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

Committee's Minute

FRI 6 MAY 1892

Assigned

+ LMC 5.92



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