No. 7903

REPORT ON MACHINERY.

MON. 19 AUG 1895

Port of Leith Received at London Office 18

No. in Survey held at Leith Date, first Survey 18th April Last Survey 15th August 1895
Reg. Book. (Number of Visits 20)

on the Steam Lug. "Minnie" Tons { Gross / Net

Master Mitchell Built at Leith By whom built John Cran & Co When built 1895

Engines made at Leith By whom made John Cran & Co when made 1895

Boilers made at Do By whom made Do when made 1895

Registered Horse Power 20 Owners The Manchester Ship Canal Co Port belonging to Manchester

Com. Horse Power as per Section 28 ✓ (20)

ENGINES, &c.— Description of Engines Compound, inverted No. of Cylinders 2

Diameter of Cylinders 11" & 23" Length of Stroke 18" Revolutions per minute 130" Diameter of Screw shaft as per rule 4·35" as fitted 4½"

Diameter of Tunnel shaft as per rule 4·13" as fitted 4¼" Diameter of Crank shaft journals 4½" Diameter of Crank pin 4½" Size of Crank webs 6¼" × 2¾"

Diameter of screw 5' 9" Pitch of screw 9' 6" No. of blades 3 State whether moveable No Total surface 10·8 ☐f

No. of Feed pumps 1 Diameter of ditto 2" Stroke 10" Can one be overhauled while the other is at work ✓

No. of Bilge pumps 1 Diameter of ditto 2" Stroke 10" Can one be overhauled while the other is at work ✓

No. of Donkey Engines One Sizes of Pumps 4" × 1¾" × 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room One 1½" diat. In Holds, &c. One to fore hold & one to after hold both 1½" diat.

No. of bilge injections 1 sizes 2½" Connected ~~to condenser, or~~ to circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes 1½"

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 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 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 New vessel Is the screw shaft tunnel watertight None

Is it fitted with a watertight door No worked from ✓

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 460·7 ☐f

No. and Description of Boilers One, multitubular single ended Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs

Date of test 11-7-95 Can each boiler be worked separately ✓ Area of fire grate in each boiler 20·4 ☐f No. and Description of safety valves to each boiler Two - spring loaded Area of each valve 3·98 ☐" Pressure to which they are adjusted 105 lbs Are they fitted with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 4½" Mean diameter of boilers 8' 2½"

Length 8' 6¼" Material of shell plates Steel Thickness 17/32" Description of riveting: circum. seams Lap D. Rivd long. seams D.B.S.S. Rivd

Diameter of rivet holes in long. seams 13/16" Pitch of rivets 4¼" ~~Lap of plates or~~ width of butt straps 9¼"

Per centages of strength of longitudinal joint rivets 102 plate 80·8 Working pressure of shell by rules 106 lbs Size of manhole in shell 16" × 12"

Size of compensating ring 6" × 17/32" No. and Description of Furnaces in each boiler 2 - plain Material Steel Outside diameter 29 15/16"

Length of plain part top 6' 0" bottom 6' 0" Thickness of plates crown 15/32" bottom 15/32" Description of longitudinal joint D.B.S.S Rivd No. of strengthening rings ✓

Working pressure of furnace by the rules 109 lbs Combustion chamber plates: Material Steel Thickness: Sides ½" Back ½" Top ½" Bottom ½"

Pitch of stays to ditto: Sides 8½" Back 8¼" × 7⅝" Top curved If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 113 lbs

Material of stays Steel ~~Diameter~~ area at smallest part ·96 Area supported by each stay 63 ☐" Working pressure by rules 122 lbs End plates in steam space:

Material Steel Thickness 7/8" Pitch of stays 16½" How are stays secured S. N & W. Working pressure by rules 130 lbs Material of stays Steel

~~Diameter~~ area at smallest part 3·49 ☐" Area supported by each stay 273 ☐" Working pressure by rules 115 lbs Material of Front plates at bottom Steel

Thickness 9/16" Material of Lower back plate Steel Thickness 9/16" Greatest pitch of stays 10⅛" Working pressure of plate by rules 106 lbs

Diameter of tubes 3½" Pitch of tubes 4¾" Material of tube plates Steel Thickness: Front 9/16" Back 11/16" Mean pitch of stays 9½"

Pitch across wide water spaces 14" Working pressures by rules 106 lbs Girders to Chamber tops: Material ✓ Depth and thickness of girder at centre ✓ Length as per rule ✓ Distance apart ✓ Number and pitch of Stays in each ✓

Working pressure by rules ✓ 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 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 ✓

LTH565-0121

DONKEY BOILER— *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 casing gear* *If steam from main boilers can enter the donkey boiler* *Diameter of donkey boiler* *Length* *Material of shell plates* *Thickness*

Description of riveting long. seams *Diameter 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 :—* As per Rule.

The foregoing is a correct description,

Manufacturer. John Crane & Co

General Remarks (*State quality of workmanship, opinions as to class, &c.*) The engines & boiler of this vessel have been constructed under special survey, the materials & workmanship are good. The engines have been tried under steam & the boiler safety valves adjusted at the working pressure.
The machinery is now in good & safe working condition & eligible in my opinion to have the notation of +L.M.C. 8,95.
The approved boiler tracing is forwarded herewith.

It is submitted that this vessel is eligible for THE RECORD + L. M. C. 8.95.

J.C.
20.8.95.

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 1	:-	:-	When applied for, 15th Aug 1895
Special	£ 8	:-	:-	
Donkey Boiler Fee	£ -	:-	:-	When received, 20/8/95
Travelling Expenses (if any)	£ -	:-	:-	

MACHINERY CERTIFICATE WRITTEN.

G.H. 21

Committee's Minute TUES. 20 AUG 1895

Assigned + L.M.C. 8,95

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

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