

No. 4000

Port of Belfast

Received at London Office

17 NOV 91

No. in Survey held at Reg. Book.

Belfast

Date, first Survey July 6th

Last Survey Oct 29th 1891

(Number of Visits 13)

on the Steel screw steamer "Pioneer"

Tons 538.8 gr.

Master Kelly

Built at Belfast

By whom built McIlwaine & McCole Ltd When built 1891

Engines made at Belfast

By whom made McIlwaine & McCole Ltd when made 1891

Boilers made at Belfast

By whom made McIlwaine & McCole Ltd when made 1891

Registered Horse Power 1400

Owners Richard Foley

Port belonging to Cork

ENGINES, &c.—

Description of Engines

Triple expansion

Diameter of Cylinders 13 1/4, 23 1/4 & 40 Length of Stroke 30" No. of Rev. per minute 90 Point of Cut off, High Pressure 1 1/4 in Low Pressure 1 1/2 in

Diameter of Screw shaft 7 1/8 Diam. of Tunnel shaft 7 1/4 Diam. of Crank shaft journals 7 1/8 Diam. of Crank pin 7 1/8 size of Crank webs 9 1/2 x 4 1/2

Diameter of screw 10" 3" Pitch of screw 14" 0" No. of blades 3 state whether moveable yes total surface 214 sq. ft.

No. of Feed pumps diameter of ditto Stroke Can one be overhauled while the other is at work Pumps Two Carruthers's

No. of Bilge pumps diameter of ditto Stroke Can one be overhauled while the other is at work Duplex 6" 4" 6" draw

Where do they pump from ing from sea, hotwell, bilges, tanks (one from boiler), delivering to boiler, over

No. of Donkey Engines Size of Pumps Where do they pump from Aft Condenser.

Carruthers's duplex 6" 4" 6" from tanks, bilges (separately connected to Eng. Rm. bilges) discharging overboard.

Spider donkey 3 1/2" 2" 4" drawing from sea tanks, & delivering to donkey boiler.

W.M. Allen & Co's 5 in. centrifugal pump drawing from sea tanks & delivering through condenser.

Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes

No. of bilge injections one and sizes 4 in Are they connected to condenser, or to circulating pump circulating pump.

How are the pumps worked Air pump by levers from S.P. Engine All other pumps separate from main engines

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks valves & cocks

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 except

What pipes are carried through the bunkers none How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock not docked after launching

Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from level of Raised Is. deck.

OILERS, &c.—

Number of Boilers one Description Hor. Sing. Ended. Multitub Whether Steel or Iron steel

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 25th Sept 1891

Description of superheating apparatus or steam chest none

Can each boiler be worked separately Can the superheater be shut off and the boiler worked separately

No. of square feet of fire grate surface in each boiler 42 Description of safety valves Cockburns No. to each boiler two

Area of each valve 2 1/2 diam Are they fitted with easing gear yes No. of safety valves to superheater area of each valve

Are they fitted with easing gear Smallest distance between boilers and bunkers or woodwork 11 in Diameter of boilers 12" 6"

Length of boilers 10" 0" description of riveting of shell long. seams Doub. butt circum. seams Doub. 1 in. lap Thickness of shell plates 1 3/16

Diameter of rivet holes 1 5/16 whether punched or drilled drilled pitch of rivets 12" 6" 1 3" Lap of plating match straps 2 1/8

Percentage of strength of longitudinal joint 89 working pressure of shell by rules 200 lbs size of manholes in shell 16" 12" 7 14" 10"

Size of compensating rings Holes in ends, not doubling plates No. of Furnaces in each boiler two

Outside diameter 3" 7 3/8 length, top 6" 6" bottom 9" 0" thickness of plates 1/16 description of joint welded if rings are fitted yes

Greatest length between rings 23" working pressure of furnace by the rules 200 lbs combustion chamber plating, thickness, sides 1/16 back 5/8 top 1/16

Pitch of stays to ditto, sides 8 1/2 back 7 3/4 top 8 1/2 If stays are fitted with nuts or riveted heads nuts working pressure of plating by

rules 200 Diameter of stays at smallest part 1 1/8 9 1/2 working pressure of ditto by rules 205 end plates in steam space, thickness 29/32 9 29/32 doubling

Pitch of stays to ditto 18" 16 1/2 max how stays are secured Double nuts working pressure by rules 250 lbs diameter of stays at

smallest part 2 7/8 ins working pressure by rules 202 lbs Front plates at bottom, thickness 3/4 Back plates, thickness 1/8 doubling

Greatest pitch of stays 13 ins working pressure by rules 200 lbs Diameter of tubes 3 1/4 ins pitch of tubes 1 1/2 ins thickness of tube

Plates, front 1/16 back 1/16 how stayed 58 stay tubes pitch of stays width of water spaces 15" 6" 6" 6"

Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes

Pitch of rivets working pressure of shell by rules diameter of flue thickness of plates If stiffened with rings

Distance between rings working pressure by rules end plates of superheater, or steam chest; thickness how stayed

Superheater or steam chest; how connected to boiler

DONKEY BOILER— Description *Horizontal, multitubular, one furnace, 1 tube abreast of furnace*
Made at *Belfast* by whom made *McIlwaine & McColl Ltd* when made *1891* where fixed *Stokehole, Star's side*
Working pressure *60 lbs* tested by hydraulic pressure to *120 lbs* No. of Certificate *125* fire grate area *7.875 sq ft* description of safety
valves *Cockburn's* No. of safety valves *two* area of each *2" dia.* if fitted with easing gear *yes* if steam from main boilers can
enter the donkey boiler *no* diameter of donkey boiler *5' 6"* length *6' 6"* description of riveting *Double riveted lap*
Thickness of shell plates *3/8* diameter of rivet holes *1/16* whether punched or drilled *drilled* pitch of rivets *2 1/4" dia.* lap of plating *1 1/2"*
per centage of strength of joint *69.5* thickness of ~~exposed~~ ^{end} plates *1/2* stayed by *four 1 3/4" steel stays 12" apart*
Diameter of furnace, top *27 3/4"* bottom *4' 5"* length of furnace *4' 5"* thickness of plates *3/8* description of joint *welded*
Thickness of furnace crown plates *2 5/32* stayed by *no screw stays in sides or top* working pressure of shell by rules *79 lbs*
Working pressure of furnace by rules *100 lbs* diameter of uptake *Back plate of c.c. 7/16" stayed with 1 1/8" screw stays 9" pitch.* thickness of plates *3/8* thickness of water tubes

SPARE GEAR. State the articles supplied:— *2 Connecting rod bolts & nuts. 2 cross-h bolts & nuts. 2 main
bearing bolts & nuts. 5 Coupling bolts & nuts. 6 Studing bolts. 5 metallic air pump valves. 2 feed pump
valves. 2 bilge pump valves. 2 M.P. packing rings. 2 N.P. ditto. 1 main safety valve spring. 1 Donkey b. drum
3 propeller blades. Assorted bolts & nuts. Iron various sizes.*

The foregoing is a correct description,

MACILWAINE & MACCOLL, LIMITED.

Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines & boilers have
been constructed under special survey & in accordance with
the photoprints of boilers herewith forwarded & the Secretary's
letters dated 18th & 29th April 1891.*

*The boiler steel has been tested as required by the Rules,
& the certificate for the crankshaft forgings is enclosed herewith.*

*The boilers & the main steam pipe have been tested by water
pressure to double their working pressures & found to be tight.*

*The safety valves of the donkey boiler have been adjusted to
blow off at 60 lbs per sq in.*

*The safety valves of the main boiler, just before the vessel left,
were found adjusted to lift at 210 lbs instead of 205 lbs; as the
vessel will be at Cork in a day or two the Surveyor for that Port
has been notified of this & requested to see the valves readjusted
to 205 lbs per sq in.*

*The machinery of this vessel will in my opinion be eligible
for the notification of **L.M.C. 10.91** when the main boiler safety valves
have been adjusted to blow off at 205 lbs per sq in.*

The amount of Entry Fee .. £ 1 : 0 : 0 received by me,

Special .. £ 13 : 7 : 0

Donkey Boiler Fee .. £ : : :

Certificate (if required) .. £ : : : 11.11.1891

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

TUES. 10 NOV 1891

FRI 27 NOV 1891

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

A. Stewelyn Jones

Lloyd's Register
Foundation