

REPORT ON MACHINERY.

No. 8346

(Received at London Office 12th FEB. 1883)

No. in Survey held at *Greenock & Glasgow*

Date, first Survey *22nd March 1882* Last Survey *9th February 1883*

Reg. Book.

on the

S.S. "Elsa"

Tons *850.34*

Master *McKinlay*

Built at *Campbeltown*

When built *1882*

Engines made at *Greenock*

By whom made *Kincaid & Co* when made *1882*

Boilers made at *Glasgow*

By whom made *H. Wallace & Co* when made *1882*

Registered Horse Power *110*

Owners *The Steamship "Elsa" Co. Ltd. Port belonging to Glasgow*
managers R. Monteith & Co. 28 Henfield St. Glasgow

ENGINES, &c.—

Description of Engines *Compound Inverted Direct Acting*

Diameter of Cylinders *26 & 50* Length of Stroke *33* No. of Rev. per minute *75* Point of Cut off, High Pressure *20 1/2* Low Pressure *20 1/2*

Diameter of Screw shaft *8 1/4* Diameter of Tunnel shaft *8 1/2* Diameter of Crank shaft journals *8 1/2* Diameter of Crank pin *8 1/2* size of Crank webs *10 x 5 1/8*

Diameter of screw *12 1/8* Pitch of screw *15 1/8* No. of blades *four* state whether moveable *No* total surface *44 sq feet*

No. of Feed pumps *two* diameter of ditto *3* Stroke *16 1/2* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *two* diameter of ditto *3* Stroke *16 1/2* Can one be overhauled while the other is at work *yes*

Where do they pump from *Engine Room, Cargo Holds & Ballast Tanks.*

No. of Donkey Engines *one* Size of Pumps *4 1/2 x 8* Where do they pump from *Sea, Bilges, Tanks & Hot water.*

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 *3 1/2* Are they connected to condenser, or to circulating pump *Circ pump.*

How are the pumps worked *by levers*

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 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 *9th February 1883*

Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Engine Room (top of funnel)*

BOILERS, &c.—

Number of Boilers *One* Description *Cylindrical Multitubular (Iron shell)*

Working Pressure *70 lbs* Tested by hydraulic pressure to *140 lbs* Date of test *October 18th 1882.*

Description of superheating apparatus or steam chest *Horizontal Steam Receiver*

Can each boiler be worked separately *—* Can the superheater be shut off and the boiler worked separately *No super heater*

No. of square feet of fire grate surface in each boiler *62* Description of safety valves *Direct spring*

No. to each boiler *two* area of each valve *15.9 sq* Are they fitted with easing gear *yes*

No. of safety valves to superheater *No superheater* area of each valve *—* are they fitted with easing gear *—*

Smallest distance between boilers and bunkers or woodwork *11"*

Diameter of boilers *14'-0"* Length of boilers *10'-6"* description of riveting of shell long. seams *Double Lap.* circum. seams *Double Lap*

Thickness of shell plates *7/8"* diameter of rivet holes *1 3/32"* whether punched or drilled *drilled* pitch of rivets *5 1/2"*

Lap of plating *10 1/2"* per centage of strength of longitudinal joint *Plate 80 riv. 70* working pressure of shell by rules *70 lbs*

Size of manholes in shell *16" x 12"* size of compensating rings *6" x 7/8"*

No. of Furnaces in each boiler *3* outside diameter *3'-5"* length, top *4'-3"* bottom *9'-9"*

Thickness of plates *1/2"* description of joint *Double Butte Strap* rings are fitted on bottom *yes* greatest length between rings *—*

Working pressure of furnace by the rules *77 lbs*

Combustion chamber plating, thickness, sides *7/16" full* back *7/16" full* top *1/2"*

Pitch of stays to ditto sides *8" x 8"* back *8" x 8"* top *8" x 9"*

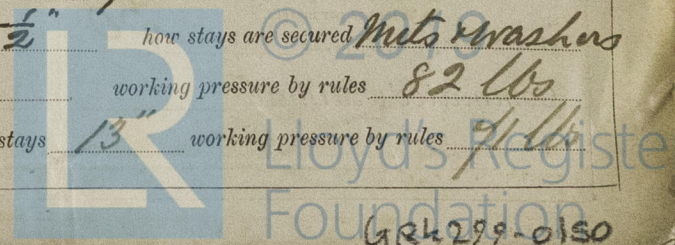
If stays are fitted with nuts or riveted heads *riveted heads* working pressure of plating by rules *70 lbs.*

Diameter of stays at smallest part *1 1/8"* working pressure of ditto by rules *92 lbs*

End plates in steam space, thickness *3/4"* pitch of stays to ditto *15 1/2" x 15 1/2"* how stays are secured *Nuts & washers*

Working pressure by rules *87 lbs* diameter of stays at smallest part *2"* working pressure by rules *82 lbs*

Front plates at bottom, thickness *7/16"* Back plates, thickness *7/16"* greatest pitch of stays *13"* working pressure by rules *91 lbs*



GR4299-0150

Diameter of tubes $3\frac{3}{4}$ " pitch of tubes $4\frac{1}{8} \times 4\frac{1}{8}$ " thickness of tube plates, front $\frac{5}{8}$ " back $\frac{5}{8}$ "
 How stayed *Stay Tubes* pitch of stays $9\frac{3}{4} \times 14\frac{5}{8}$ " width of water spaces $6\frac{1}{2}$ "
 Diameter of Superheater or Steam chest $3'-9"$ length $8'-0"$
 Thickness of plates $\frac{7}{16}$ description of longitudinal joint *Lap. dr.* diameter of rivet holes $\frac{13}{16}$ pitch of rivets $3\frac{1}{4}$ "
 Working pressure of shell by rules $111\frac{1}{2}$ lbs 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 $\frac{5}{8}$ " How stayed *Dished to 3'-0" radius*
 Superheater or steam chest; how connected to boiler *By a neck 14" dia. Flanged and riveted to both*
DONKEY BOILER— Description *Vertical with two cross-tubes.*
 Made at *Glasgow* By whom made *J. Neilson & Son* when made *7.12.82.*
 Where fixed *in the hole.* working pressure 70 lbs Tested by hydraulic pressure to 140 lbs No. of Certificate *936*
 Fire grate area $11\frac{1}{2}$ sq ft Description of safety valves *Direct spring* No. of safety valves *one* area of each $7\frac{1}{2}$ "
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *yes if stop valve is open*
 Diameter of donkey boiler $4'6"$ length $9'6"$ description of riveting *double & single*
 thickness of shell plates $\frac{3}{8}$ " diameter of rivet holes $\frac{3}{4}$ " whether punched or drilled *punched*
 pitch of rivets $2\frac{1}{4}$ " lap of plating $4"$ per centage of strength of joint 66
 thickness of crown plates $\frac{1}{2}$ stayed by *fine rod stays* $1\frac{1}{4}$ " Effective
 Diameter of furnace, top $3'-4"$ bottom $3'-10"$ length of furnace $4'-6"$
 thickness of plates $\frac{7}{16}$ description of joint *Lap single riveted*
 thickness of furnace crown plates $\frac{7}{16}$ stayed by *fine rod stays* $1\frac{1}{4}$ " Effective
 Working pressure of shell by rules 70 lbs working pressure of furnace by rules 73 lbs
 diameter of uptake $11\frac{1}{2} \times 13$ thickness of plates $\frac{7}{16}$ thickness of water tubes $\frac{3}{8}$ "

J. M. Negro

The foregoing is a correct description,

James Neilson & Son Manufacturers of Boilers
Railway 160 St. John's Church Lane
Manufacturers of Machinery

Thos. Brownie
Clyde District

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

The Engines & Boilers have been specially surveyed during construction: quality of workmanship good. The Machinery & Boilers are now in good order and safe working condition, and are in my opinion eligible to be noted in the Register Book. **LLOYD'S M.C. 2.83.**

It is submitted that this vessel is eligible to have the notation of M.C. 2.83. recorded.
 12/2/83
 16.11.83
 12/2/83

The amount of Entry Fee .. £ 2 : : : received by me,

Special

Donkey Boiler

Certificate (if required) .. £ : : : 10/2/83

To be sent as per margin.

Travelling Expenses, if any, £ ()

Committee's Minute

Tuesday, 13th February 1883.

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

Greenock District.