

YACHT. REPORT ON MACHINERY.

NO. *805*
463022

Port of *Leith*

No. in Survey held at *Leith*
Reg. Book

Received at London Office *THUR. APR 9 1896*
Date, first Survey *15th July 1895* Last Survey *20th Mar 1896*
(Number of Visits *41*)

on the *S. Y. "Solaise"*

Master *W. C. Wolfe* Built at *Leith* By whom built *Ramage & Ferguson* When built *1896*
Engines made at *Leith* By whom made *Ramage & Ferguson* when made *1896*
Boilers made at *do* By whom made *do* when made *1896*
Registered Horse Power *140* Owners *Sir Donald Currie* Port belonging to *London*
Nom. Horse Power as per Section 28 *143.*

Gross *538.55*
Net *227.09*

ENGINES, &c.— Description of Engines *Triple expansion on three cranks* No. of Cylinders *3*
Diameter of Cylinders *18"-29 1/2" x 48"* Length of Stroke *33"* Revolutions per minute *100* Diameter of Screw shaft *8.8"*
Diameter of Tunnel shaft *as per rule 8.36"* Diameter of Crank shaft journals *9 1/4"* Diameter of Crank pin *9 1/2"* Size of Crank webs *9 3/4" x 6 3/4"*
Diameter of screw *11' 3"* Pitch of screw *14' 0"* No. of blades *4* State whether moveable *no* Total surface *32 sq*
No. of Feed pumps *2* Diameter of ditto *2 1/2"* Stroke *15 1/2"* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *2* Diameter of ditto *3 1/2"* Stroke *15 1/2"* Can one be overhauled while the other is at work *yes*
No. of Donkey Engines *2* Sizes of Pumps *7 x 4 1/2 x 7" + 3 1/2 x 2 1/2 x 4"* No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room *one 2 1/2" dia* In Holds, &c. *one to fore hold, one to main hold + one to after hold, all 2 1/2" dia*
No. of bilge injections *1* sizes *4"* Connected to condenser, or to circulating pump *yes* Is a separate donkey suction fitted in Engine room & size *yes 2 1/2"*
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 *Below*
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 *Suctions to fore hold* How are they protected *wood casings*
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 *bulkhead* watertight *yes*
Is it fitted with a watertight door *yes* worked from *top platform.*

BOILERS, &c.— (Letter for record *DA*) Total Heating Surface of Boilers *2295 sq*
No. and Description of Boilers *one cylindrical single ended* Working Pressure *170 lbs* Tested by hydraulic pressure to *340 lbs*
Date of test *1-11-95* Can each boiler be worked separately *yes* Area of fire grate in each boiler *76.6 sq* No. and Description of safety valves to each boiler *Two, spring* Area of each valve *8.295 sq* Pressure to which they are adjusted *170 lbs* Are they fitted with easing gear *yes* Smallest distance between boilers or uptakes and bunkers *or woodwork 7"* Mean diameter of boilers *15' 6"*
Length *10' 5"* Material of shell plates *Steel* Thickness *1 5/8"* Description of riveting: circum. seams *Lap S. Rivd* long. seams *S.B.S. Y. Rivd*
Diameter of rivet holes in long. seams *1 5/8"* Pitch of rivets *9 1/2"* Lap of plates or width of butt straps *19 3/4"*
Per centages of strength of longitudinal joint rivets *84* Working pressure of shell by rules *171 lbs* Size of manhole in shell *16" x 12"*
Size of compensating ring *McNeil's* No. and Description of Furnaces in each boiler *4 - Pulver* Material *Steel* Outside diameter *41 1/8"*
Length of plain part *top 17"* Thickness of plates *bottom 32"* Description of longitudinal joint *welded* No. of strengthening rings *yes*
Working pressure of furnace by the rules *193 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *19/32"* Back *5/8"* Top *19/32"* Bottom *3/4"*
Pitch of stays to ditto: Sides *8 1/2"* Back *8 1/2"* Top *8"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *179 lbs*
Material of stays *Iron* Diameter at smallest part *2.03"* Area supported by each stay *70.1 sq* Working pressure by rules *217 lbs* End plates in steam space: Material *Steel* Thickness *1 1/2"* Pitch of stays *16"* How are stays secured *nuts* Working pressure by rules *170 lbs* Material of stays *Iron*
Diameter at smallest part *6.49"* Area supported by each stay *240 sq* Working pressure by rules *202 lbs* Material of Front plates at bottom *Steel*
Thickness *3/4"* Material of Lower back plate *Steel* Thickness *3/4"* Greatest pitch of stays *14"* Working pressure of plate by rules *198 lbs*
Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *Steel* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *9 7/8"*
Pitch across wide water spaces *14"* Working pressures by rules *231 lbs* Girders to Chamber tops: Material *Iron* Depth and thickness of girder at centre *7 1/2" x 1 1/2"* Length as per rule *26 1/2"* Distance apart *8"* Number and pitch of Stays in each *2 - 7 3/4"*
Working pressure by rules *190 lbs* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked separately *yes* Diameter *yes* Length *yes* Thickness of shell plates *yes* Material *yes* Description of longitudinal joint *yes* Diam. of rivet holes *yes* Pitch of rivets *yes* Working pressure of shell by rules *yes* Diameter of flue *yes* Material of flue plates *yes* Thickness *yes*
If stiffened with rings *yes* Distance between rings *yes* Working pressure by rules *yes* End plates: Thickness *yes* How stayed *yes*
Working pressure of end plates *yes* Area of safety valves to superheater *yes* Are they fitted with easing gear *yes*



DONKEY BOILER— Description *vertical with two cross tubes*
 Made at *Yateshead* By whom made *Clarke Chapman & Co* When made *27-9-95* Where fixed *Stokehold*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *4674* Fire grate area *9 1/4 sq* Description of safety valves *Spring*
 No. of safety valves *one* Area of each *4.9 sq* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *yes* If steam from main boilers
 enter the donkey boiler *no* Diameter of donkey boiler *4 ft* Length *9' 3"* Material of shell plates *steel* Thickness *3/8"*
 Description of riveting long. seams *Lap. S. Rivd* Diameter of rivet holes *3/4"* Whether punched or drilled *drilled* Pitch of rivets *2 3/4"*
 Lap of plating *3 5/8"* Per centage of strength of joint Rivets *72.5* Thickness of shell crown plates *1/2"* Radius of do. *5 ft* No. of Stays to do. *3*
 Dia. of stays. *1 1/2"* Diameter of furnace Top *2' - 11 3/8"* Bottom *3' 5"* Length of furnace *4 ft* Thickness of furnace plates *1/2"* Description of
 joint *Lap. S. Rivd* Thickness of furnace crown plates *1/2"* Stayed by *as above* Working pressure of shell by rules *111 lbs*
 Working pressure of furnace by rules *104 lbs* Diameter of uptake *12"* Thickness of uptake plates *1/2"* Thickness of water tubes *7/16"*

SPARE GEAR. State the articles supplied:— *As per Rule & in addition a set of safety
 + escape valve springs, a pair of crank pin bushes, & 12 condenser tubes*

The foregoing is a correct description,
John. J. Ramage Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines & boilers of this vessel
 have been constructed under special survey & the materials & workmanship
 are found & good. The engines have been tried & the safety valves of
 main & donkey boilers adjusted under steam at the working pressures.
 The machinery is now in good & safe working condition & eligible in
 my opinion to have the notation of + L.M.C. 3,96
 The boiler tracings are forwarded herewith.*

W. J. Field

*It is submitted that
 this vessel is eligible for
 THE RECORD. + L.M.C. 3,96.*

J.S. *Pms.*
9.4.96 *9.4.96*

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

Certificate (if required) to be sent to

The amount of Entry Fee..	£	:	:	When applied for,
Special	£	21	9	6.4.18.96
Donkey Boiler Fee .. .	£	:	:	When received,
Travelling Expenses (if any) £	:	:	:	8.4.18.96

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

Committee's Minute **TUES. APR 14 1896**
 Assigned *+ L.M.C. 3,96*

