

# REPORT ON MACHINERY.

 Port of Leith

 Received at London Office TUES. 4 OCT 1898

 No. in Survey held at Kinghorn & Buntisland Date, first Survey 4<sup>th</sup> 7 6 Last Survey 1<sup>st</sup> October 1898  
 Reg. Book. (Number of Visits 19)

 on the S.S. "May"

 Tons { Gross 1414.83  
 Net 814.29

 Master John Grant Built at Kinghorn By whom built John Scott & Co When built 1898

 Engines made at Kinghorn By whom made John Scott & Co when made 1898

 Boilers made at do By whom made do when made 1898

 Registered Horse Power 250 Owners Bailey & Leatham Ltd. Port belonging to Hull

 Nom. Horse Power as per Section 28 214

**ENGINES, &c.**— Description of Engines Triple expansion No. of Cylinders 3

Diameter of Cylinders 20" - 32" + 54" Length of Stroke 36" Revolutions per minute 90 Diameter of Screw shaft as per rule 10 3/8"  
 as fitted 10 3/8"

Diameter of Tunnel shaft as per rule 9 3/4" Diameter of Crank shaft journals 10" Diameter of Crank pin 10" Size of Crank webs 19" x 6 3/4"  
 as fitted 9 3/4"

Diameter of screw 13' 0" Pitch of screw 13' 6" No. of blades 4 State whether moveable no Total surface 56 sq ft

No. of Feed pumps 2 Diameter of ditto 8 3/4" x 5 7/8" Stroke 18" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3" Stroke 19" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 6" x 6" x 6" & 6" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room one 3" & two 2 1/2" dr. In Holds, &c. one to fore hold 2 1/2", one to  
main hold 3", one to after hold well 3" & one to tunnel well 2 1/2" dr

No. of bilge injections 1 sizes 5" Connected to condenser, &c. to circulating pump yes Is a separate donkey suction fitted in Engine room & size yes 3"

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 yes

Is it fitted with a watertight door yes worked from Lop platform.

**BOILERS, &c.**— (Letter for record S.) Total Heating Surface of Boilers 3630 sq ft

No. and Description of Boilers Two multitubular single ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 5-7-98 Can each boiler be worked separately yes Area of fire grate in each boiler 58.5 sq ft No. and Description of safety valves to  
 each boiler Two, spring Area of each valve 5.94 sq in Pressure to which they are adjusted 185 lbs Are they fitted  
 with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 8" Mean diameter of boilers 14' 0"

Length 11' 0" Material of shell plates Steel Thickness 1 1/4" Description of riveting: circum. seams Lap 1" & Riv. Long. seams 2 B.S. 1 Riv.

Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 1/8" Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint rivets 88 Working pressure of shell by rules 185 lbs Size of manhole in shell 16" x 12"  
 plate 86.7

Size of compensating ring 30" x 30" x 1 1/2" No. and Description of Furnaces in each boiler 3 brightons Material Steel Outside diameter 45 1/4"

Length of plain part top 19 1/32" Thickness of plates bottom 19 1/32" Description of longitudinal joint welded No. of strengthening rings ✓

Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material Steel Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 7/8"

Pitch of stays to ditto: Sides 8 1/2" x 8" Back 8" x 8" Top 8 1/2" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 186 lbs

Material of stays Steel Diameter at smallest part 1 1/4" Area supported by each stay 65 sq in Working pressure by rules 180 lbs End plates in steam space:  
 Material Steel Thickness 1 1/8" Pitch of stays 16" x 15" How are stays secured on 10 Working pressure by rules 249 lbs Material of stays Steel

Diameter at smallest part 5.05" Area supported by each stay 240 sq in Working pressure by rules 188 lbs Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 12" Working pressure of plate by rules 300 lbs

Diameter of tubes 3" Pitch of tubes 4 1/2" x 4 1/4" Material of tube plates Steel Thickness: Front 13/16" Back 7/8" Mean pitch of stays 11"

Pitch across wide water spaces 13 1/2" Working pressures by rules 227 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 9 1/2" x 2" Length as per rule 40 1/2" Distance apart 8" Number and pitch of Stays in each 4 - 8 1/2"

Working pressure by rules 189 lbs 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 ✓



DONKEY BOILER— Description *none*

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 easing 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 \_\_\_\_\_ 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 & in addition, a solid propeller,  
a slide valve spindle, an eccentric rod, an air pump rod, a set of air  
& circulating pump valves, a pair of bottom end bushes & a safety valve  
spring, 12 boiler tubes & 20 condenser tubes.

The foregoing is a correct description,  
*John Scott & Co* Manufacturer.

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

Dates of Survey while building  
During progress of work in shops— 1898. Feb. 4. 24. Mar. 11. 28. Apr. 8. 26. May 9. 26. June 22. 28. July 5. 22  
Aug. 2. 11  
During erection on board vessel— August 25. Sept. 8. 20. 26. October 1.  
Total No. of visits 14.

The engines & boilers of this vessel have been constructed under  
special survey & the materials & workmanship are found & good.  
The engines have been tried under steam & the safety valves  
of boilers adjusted 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, 10, 98.**  
The approved boiler tracing is forwarded herewith.

It is submitted that  
this vessel is eligible for  
THE RECORD.

*+ L M C, 10, 98*

*TH*  
*2/10/98*

Certificate (if required) to be sent to

The amount of Entry Fee... £ 2 : - +  
Special ... £ 30 : 14 +  
Donkey Boiler Fee ... £ - : - +  
Travelling Expenses (if any) £ 3 : 12 6

When applied for,

3<sup>rd</sup> Oct. 1898.

When received,

5/10/98

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

Committee's Minute

FRI. 7 OCT 1898

MACHINERY CERTIFICATE  
WRITTEN,

Assigned

*+ L M C, 10, 98*



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Foundation