

REPORT ON MACHINERY.

Port of Leith

THUR. APR 30 1896

Received at London Office

No. in Survey held at Kinghorn + Burntisland Date, first Survey 25th Nov 1895 Last Survey 7th April 1896
Reg. Book.

on the S.S. "Giang Sen" (Number of Visits 10)

Master J. J. Fallett Built at Kinghorn By whom built John Scott & Co Tons { Gross 1182.83
Net 722.46

Engines made at Kinghorn By whom made John Scott & Co when made 1896

Boilers made at do By whom made do when made 1896

Registered Horse Power 200 Owners Paterson & Simons Port belonging to London

Nom. Horse Power as per Section 28 182

ENGINES, &c.— Description of Engines Triple expansion on three cranks No. of Cylinders 3

Diameter of Cylinders 19 1/2", 31" & 51" Length of Stroke 36" Revolutions per minute 90 Diameter of Screw shaft 9 3/8" as per rule 9 3/8"

Diameter of Tunnel shaft 9 3/4" as fitted Diameter of Crank shaft journals 10 1/4" Diameter of Crank pin 10 1/4" Size of Crank webs 14 1/2" x 6 3/4"

Diameter of screw 12' 6" Pitch of screw 14' 0" No. of blades 4 State whether moveable no Total surface 50 sq

No. of Feed pumps 2 Diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 6" x 4" x 6" & 5 1/4" x 3 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room one 3" dia + two 2 1/2" dia. In Holds, &c. one in fore hold of 3" dia + two of 2" dia, in after hold one 3" dia + two 2" dia, one to tunnel well 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 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 on the line

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/tunnel watertight yes

Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 3132 sq

No. and Description of Boilers Two multitubular single ended Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 5-3-96 Can each boiler be worked separately yes Area of fire grate in each boiler 99 sq No. and Description of safety valves to each boiler Two, spring

Area of each valve 7.07 sq Pressure to which they are adjusted 160 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers on woodwork 12" Mean diameter of boilers 13' 0"

Length 10' 6" Material of shell plates steel Thickness 1 3/8" Description of riveting: circum. seams Lap & Rivd long. seams T.B.S. & Rivd

Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint rivets 88 plate 85.7 Working pressure of shell by rules 186 lbs Size of manhole in shell 16 x 12"

Size of compensating ring 24 x 23 No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 37 1/4"

Length of plain part top 3' 6" bottom 3' 6" Thickness of plates crown 5/8" bottom 5/8" Description of longitudinal joint welded No. of strengthening rings one

Working pressure of furnace by the rules 175 lbs Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 3/4"

Pitch of stays to ditto: Sides 7 3/4" Back 7 3/4" Top 7 3/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182 lbs

Material of stays steel Diameter at smallest part 1 1/8" Area supported by each stay 58.1 sq Working pressure by rules 160 lbs End plates in steam spaces

Material steel Thickness 1" Pitch of stays 16" How are stays secured S.N. & W. Working pressure by rules 185 lbs Material of stays steel

Diameter at smallest part 1 1/8" Area supported by each stay 256 sq Working pressure by rules 167 lbs Material of Front plates at bottom steel

Thickness 3/4" Material of Lower back plate steel Thickness 1 1/8" Greatest pitch of stays 11 1/2" Working pressure of plate by rules 173 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 5/8" Material of tube plates steel Thickness: Front 4/16" Back 13/16" Mean pitch of stays 9 3/8"

Pitch across wide water spaces 14" Working pressures by rules 193 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8" x 1 1/2" Length as per rule 28 5/8" Distance apart 7 3/4" Number and pitch of Stays in each 2-8 1/2"

Working pressure by rules 206 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, Cochrane patent.*
 Made at *Kinghorn* By whom made *John Scott & Co* When made *5-3-96* Where fixed *Stokehold*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *380* Fire grate area *24 sq* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *3.98 sq* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *6' 6"* Length *13' 0"* Material of shell/plates *steel* Thickness *1/2"*
 Description of riveting lang. seams *Lap & Rivd.* Diameter of rivet holes *13/16"* Whether punched or drilled *drilled* Pitch of rivets *3" 2 15/16"*
 Lap of plating *3 15/16"* Per centage of strength of joint Rivets *58.9* Thickness of shell crown plates *1/2"* Radius of do. *39"* No. of Stays to do. *✓*
 Dia. of stays. *✓* Radius Diameter of furnace Top *2' 11"* Bottom *✓* Length of furnace *✓* Thickness of furnace plates *19/32* Description of joint *Lap & Rivd.* Thickness of furnace crown plates *3/4"* Stayed by *stay tubes 1 1/4" pitch* Working pressure of shell by rules *83 lbs*
 Working pressure of furnace by rules *80 lbs* Diameter of uptake *19"* Thickness of uptake plates *19/32* Thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *As per Rule 2 in addition, 1/3rd of crank shaft, a screw shaft, solid propeller, 1 pair connecting rod & 1 pair crosshead bushes, a set of safety & escape valve springs, a slide valve spindle, air pump rod eccentric rod & strap.*

The foregoing is a correct description,
John Scott & Co 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 to be 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 + LMC 4, 96. The approved boiler tracings are forwarded herewith.*

It is submitted that this vessel is eligible for
THE RECORD + L. M. C. 4. 96

J.S.
 30.4.96

Certificate (if required) to be sent to

| | | |
|--------------------------------|------------|-------------------|
| The amount of Entry Fee. . . | £ 2 : - + | When applied for, |
| Special | £ 27 : 6 - | 20th Apr 1896 |
| Donkey Boiler Fee | £ 2 : 2 - | When received, |
| Travelling Expenses (if any) £ | 3 : 6 - | 2nd May 1896 |

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

Committee's Minute **FRI. MAY 1 1896**

Assigned

+ LMC 4. 96



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