

REPORT ON MACHINERY.

14105

No. 14105

Received at London Office THURS NOV 11

No. in Survey held at Sunderland

Date, first Survey 22 June

Last Survey 10th Nov 1886

Reg. Book. on the SS "Federation"

(Number of Visits 28)

Tons 724.46
436.2

Master C Sheerwood Built at Sunderland By whom built

When built 1886

Engines made at Sunderland By whom made North Eastern Marine & Coy when made 1886

Boilers made at Sunderland By whom made North Eastern Marine & Coy when made 1886

Registered Horse Power 130 Owners Cooperative Wholesale Society Port belonging to Gosle

ENGINES, &c.—

Description of Engines C.I.D.A.S.C. Tricomound with three cranks

Diameter of Cylinders 19" 31" 45 1" Length of Stroke 33" No. of Rev. per minute 30 Point of Cut off, High Pressure 1/2 stroke Low Pressure 1/2 stroke

Diameter of Screw shaft 10" Diam. of Tunnel shaft 9 3/4" Diam. of Crank shaft journals 9 3/4" Diam. of Crank pin 9 3/4" size of Crank webs 11 1/2" x 6 3/4"

Diameter of screw 11-3" Pitch of screw 16-3" No. of blades 4 state whether moveable not total surface 54 sq

No. of Feed pumps 2 diameter of ditto 2 3/4" Stroke 33" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 diameter of ditto 3 1/2" Stroke 33" Can one be overhauled while the other is at work yes

Where do they pump from From main engine room and after tanks, engine room & after wells

No. of Donkey Engines 2 Size of Pumps 3" x 6" & 6" x 9" Where do they pump from From main engine room

and after tanks, wells & sea

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 to circulating pump

How are the pumps worked Direct from crossheads

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 New vessel

Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from top platform of engine room

BOILERS, &c.—

Number of Boilers Two Description Ordinary type Whether Steel or Iron Steel excepting tubes

Working Pressure 150 lbs Tested by hydraulic pressure to 300 lbs Date of test 16-9-86 (Stays & girders)

Description of superheating apparatus or steam chest none

Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately no superheater

No. of square feet of fire grate surface in each boiler 276 Description of safety valves Direct spring No. to each boiler two

Area of each valve 4.070 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 18" Diameter of boilers 10-4"

Length of boilers 11-1 1/2" description of riveting of shell long. seams Double butt straps circum. seams Double riv'd Thickness of shell plates 1"

Diameter of rivet holes 1 3/32" whether punched or drilled drilled pitch of rivets 4 3/4" Lap of plating 14" straps

Per centage of strength of longitudinal joint 78.3% working pressure of shell by rules 163 size of manholes in shell 16" x 12"

Size of compensating rings 8" x 3/8" No. of Furnaces in each boiler 2

Outside diameter 3-0" length, top 4-0" bottom 4-0" thickness of plates 1 1/32" description of joint welded & comug if rings are fitted 12 on bottom

Greatest length between rings — working pressure of furnace by the rules 180 combustion chamber plating, thickness, sides 9/16" back 9/16" top 9/16"

Pitch of stays to ditto, sides 4 5/8" x 4 3/4" back 4 5/8" x 4 3/4" top 4 5/8" x 8" If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 162

Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 180 end plates in steam space, thickness 15"

Pitch of stays to ditto 13 1/2" x 13" how stays are secured dbl nuts working pressure by rules 194 lbs diameter of stays at smallest part 2"

Greatest pitch of stays 11 1/2" working pressure by rules 150 Diameter of tubes 3 3/4" pitch of tubes 4 1/2" x 4 1/2" thickness of tube plates, front 13/16" back 3/4"

how stayed stay tubes pitch of stays 9" x 9" width of water spaces 14", 4 1/2", 10"

Diameter of Superheater or Steam chest none 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 —

Form No. 106-27/84-Transfer Ink.

SL0953-0073

Lloyd's Register Foundation

DONKEY BOILER— Description *Vertical four cross tubes*
 Made at *Galeshead* by whom made *Clarke Chapman & Co* when made *12.10.86* where fixed *Stokehold*
 Working pressure *70 lbs* tested by hydraulic pressure to *140 lbs* No. of Certificate *2163* fire grate area *28 sq* description of safety
 valves *Direct spring* No. of safety valves *2* area of each *7.04* if fitted with easing gear *Yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *6-6"* length *12-0"* description of riveting *dbl riv lap*
 Thickness of shell plates *13/32"* diameter of rivet holes *13/16"* whether punched or drilled *h.* pitch of rivets *3"* lap of plating *4"*
 per centage of strength of joint *70%* thickness of crown plates *9/16"* stayed by *7 stays 1 1/2"* effective diamr
 Diameter of furnace, top *5-2"* bottom *5-6 3/4"* length of furnace *6-2"* thickness of plates *9/16"* description of joint *single riv lap*
 Thickness of furnace crown plates *1/2"* stayed by *7 stays and uptake* working pressure of shell by rules *7/2*
 Working pressure of furnace by rules *68 lbs* diameter of uptake *15"* thickness of plates *7/16"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Top and bottom end connecting rod bolts & nuts. two*
main bearing bolts & nuts. one set of coupling bolts. feed and bilge
pump valves. piston springs. air pump bucket. Hoses & valves. Bolts
nuts & iron assorted

The foregoing is a correct description,

North Eastern Marine Engineering Co. Ltd. Manufacturers

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

The machinery of this vessel has been constructed under special survey. the material and workmanship are good and efficient and the engines when tried under steam worked satisfactorily. In my opinion the machinery of this vessel is in good order and safe working condition and eligible for the notification in the Register Book of L.M.C. 11.86.

The amount of Entry Fee .. £ *2 : 0 : 0* received by me,
 Special .. £ *19 : 10 : -*
 Donkey Boiler Fee .. £ .. : .. :
 Certificate (if required) .. £ .. : .. : *11/17/86*
 To be sent as per margin.
 (Travelling Expenses, if any, £)

Submitted that the vessel is eligible to leave L.M.C. 11.86
11.86
11.11.86
12/17/86

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

Committee's Minute **FRIDAY NOV 12 1886**

L.M.C.

