

REPORT ON MACHINERY.

No. 2712

(Received in London Office 18/10/80)

No. in Survey held at Belfast
Reg. Book.

Date, first Survey 28 April 1880 Last Survey 12 Oct 1880

on the S.S. "Ethel"

265.4
Tons 245.9

Master J. Thompson

Built at Belfast

When built 1880

Engines made at Belfast

By whom made J. Rowan & Son Limited when made 1880

Boilers made at Belfast

By whom made do when made 1880

Registered Horse Power 60

Owners Gault & MacMullen

Port belonging to Belfast

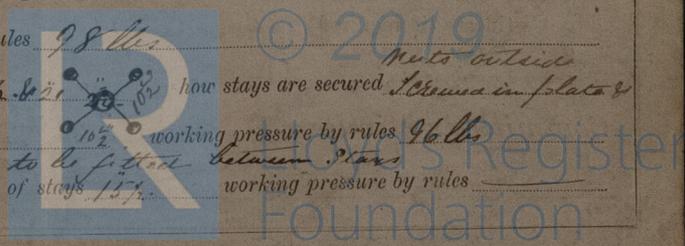
ENGINES, &c.—

Description of Engines Compound Inverted Direct Acting
 Diameter of Cylinders 19 & 38 Length of Stroke 30 No. of Rev. per minute 90 Point of Cut off, High Pressure 15 Low Pressure 17
 Diameter of Screw shaft 7 Diameter of Tunnel shaft 6 1/2 Diameter of Crank shaft journals 7 Diameter of Crank pins 7 1/2 size of Crank webs 8 1/2 x 5
 Diameter of screw 9 1/2 Pitch of screw 14 1/2 No. of blades four state whether moveable No total surface 30 feet
 No. of Feed pumps two diameter of ditto 2 Stroke 30 Can one be overhauled while the other is at work No
 No. of Bilge pumps two diameter of ditto 3 Stroke 30 Can one be overhauled while the other is at work yes
 Where do they pump from Engine Room, Fore & Main Holds
 No. of Donkey Engines one Size of Pumps 4 x 6 Where do they pump from Sea & Bilges

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 as far as possible sluices on both side
 No. of bilge injections one and sizes 3 1/2 inches Are they connected to condenser, or to circulating pump Circulating pump
 How are the pumps worked by crosshead
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves & Cocks
 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 except 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 on Slip before Ship was launched
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from top platform

BOILERS, &c.—

Number of Boilers one Description Siemens Steel except tubes & large stays
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs per inch Date of test 1st September 1880
 Description of superheating apparatus or steam chest None
 Can each boiler be worked separately — Can the superheater be shut off and the boiler worked separately —
 No. of square feet of fire grate surface in each boiler 35 Description of safety valves Direct Spring
 No. to each boiler two area of each valve 8.9 inches 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 4
 Diameter of boiler 11.3 Length of boiler 9.4 description of riveting of shell long seams double butt strap circum. seams single
 Thickness of shell plates 5/8 diameter of rivet holes 3/4 & 7/8 whether punched or drilled punched pitch of rivets 2 1/8 & 2 3/8
 Lap of plating 12 Straps per centage of strength of longitudinal joint 71 working pressure of shell by rules 82 lbs
 Size of manholes in shell 13 1/2 x 12 size of compensating rings 5 x 7 1/2
 No. of Furnaces in each boiler two outside diameter 39 7/8 length, top 6.6 bottom 8.6
 Thickness of plates 13/32 description of joint welded at ends if rings are fitted yes greatest length between rings 3.6 & 3.3
 Working pressure of furnace by the rules 106 lbs
 Combustion chamber plating, thickness, sides 7/16 back 7/16 top 7/16
 Pitch of stays to ditto sides 8 x 8 back 8 x 8 top 7 1/2 x 8
 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 91 lbs
 Diameter of stays at smallest part 1 steel working pressure of ditto by rules 98 lbs
 End plates in steam space, thickness 1/2 pitch of stays to ditto 10 1/2 x 10 1/2 how stays are secured Nuts at ends
 Working pressure by rules 81 lbs diameter of stays at smallest part 1 1/2 & 2 3/4 working pressure by rules 96 lbs
 Front plates at bottom, thickness 1/2 Back plates, thickness 1/2 greatest pitch of stays 15 1/2 working pressure by rules —



2833 2 Iron

Diameter of tubes $3\frac{1}{2}$ pitch of tubes $4\frac{1}{2}$ thickness of tube plates, front $\frac{5}{8}$ back $\frac{3}{8}$
 How stayed by tubes pitch of stays $9\frac{1}{2} \times 14\frac{1}{2}$ width of water spaces 6
 Diameter of Superheater or Steam chest — length —
 Thickness of plates — description of longitudinal joint — diameter 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 —

DONKEY BOILER— Description Round Vertical
 Made at Belfast By whom made J. Rowan & Sons when made 1880
 Where fixed in Attobold working pressure 80 lbs Tested by hydraulic pressure to 160 lbs No. of Certificate 26
 Fire grate area 8 sq feet Description of safety valves Direct Spring No. of safety valves one area of each 7 sq in.
 If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler Yes, if stop valve is
 Diameter of donkey boiler 3.9 height 8.6 description of riveting single
 thickness of shell plates $\frac{3}{8}$ diameter of rivet holes $\frac{13}{16}$ whether punched or drilled punched
 pitch of rivets $2\frac{1}{8}$ lap of plating $2\frac{1}{2}$ per centage of strength of joint 6 to 8
 thickness of crown plates $\frac{1}{16}$ Steel stayed by Uptake Crown Hemispherical
 Diameter of furnace, top 2.9 bottom 3.3 length of furnace 4.0
 thickness of plates $\frac{3}{8}$ Steel description of joint Lap single riveted
 thickness of furnace crown plates $\frac{3}{8}$ Steel stayed by Uptake
 Working pressure of shell by rules 79 lbs working pressure of furnace by rules —
 diameter of uptake $1\frac{1}{2}$ thickness of plates $\frac{5}{16}$ L M thickness of water tubes $\frac{5}{16}$ Two Gallonay Tubes

The foregoing is a correct description,
 Manufacturer. **FOR JOHN ROWAN & SONS (LIMITED)**
J. A. Adamson Manager

General Remarks (State quality of workmanship, opinions as to class, &c.) The Machinery & Boilers
have been carefully inspected & examined by us. The workman
is of good quality and the Machinery and Boilers are now in
good order and safe working condition and are in our opinion
eligible to be noted in the Register Book **LLOYD'S M.C. 10.8**
on back being stiffened between Combustion Chamber. Referred to in letter attached and
reported upon by one of the Society's Surveyors

It is submitted that this vessel should not have the record for Lloyd's M.C. recorded in the Register Book while the back of boiler is stiffened as suggested by the Surveyor and that the owners be informed accordingly.
 AW
 17/10/80

The amount of Entry Fee £ 2 : — : — received by me,
 Special £ 9 : — : — 15th Oct 1880
 Existing £ 2 : — : —
 Certificate (if required) £ : : : 18 80
 To be sent as per margin.
 (Travelling Expenses, if any, £ 7.7.0—)

Committee's Minute Tuesday, October, 19th 1880
Nov 23 - 1880
Lloyd's M.C.

Andrew C. Hean James Morrison
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

