

## REPORT ON MACHINERY.

No. 22683

Port of Sunderland

THUR. 29 MAR 1906

Received at London Office 19

No. in Survey held at SunderlandDate, first Survey 20<sup>th</sup> April 05 Last Survey 26<sup>th</sup> March 1906

Reg. Book.

(Number of Visits 10)

on the

S. S. "Finn"Tons { Gross 3802.72  
Net 2462.35Master Rasmus Olsen Built at Sunderland By whom built Messrs J. L. Thompson & Sons When built 1906Engines made at Sunderland By whom made Messrs J. Dickinson & Sons when made 1906Boilers made at Sunderland By whom made Messrs J. Dickinson & Sons when made 1906Registered Horse Power 350 Owners Jacob Christensen Port belonging to BergenNom. Horse Power as per Section 28 350 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Inverted triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 25" 42" 68" Length of Stroke 48" Revs. per minute 70 Dia. of Screw shaft 14.24" Material of Iron  
 as per rule 14.24" as fitted 14.24" screw shaft  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight  
 in the propeller boss Yes If the liner is in more than one length are the joints burned Yes If the liner does not fit tightly at the part  
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two  
 liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5' 0"  
 Dia. of Tunnel shaft 12.72" as per rule 12.72" Dia. of Crank shaft journals 13.36" as per rule 13.36" Dia. of Crank pin 13.36" Size of Crank webs Patent Dia. of thrust shaft under  
 collars 13.36" as fitted 12.36" as fitted 12.36" Dia. of screw 17.6" Pitch of screw 17.3" No. of blades 4 State whether moveable no Total surface 86.5  
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4.2" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps 7 1/2 x 5 x 6, 8 x 10 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 4 of 3 1/2" In Holds, &c. 2 of 3 1/2" in each + 1 of 3"  
to hold + tunnel well  
 No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump pump Is a separate donkey suction fitted in Engine room & size Yes - 4"  
 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 Yes  
 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 Yes How are they protected Yes  
 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 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 5428 Is forced draft fitted no  
 No. and Description of Boilers 2 single ended, cylindrical Mult-Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs  
 Date of test 30/10/05 Can each boiler be worked separately Yes Area of fire grate in each boiler 7 1/2 No. and Description of safety valves to  
 each boiler 1 spring Area of each valve 9.6 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 14" Mean dia. of boilers 16' 3 3/8" Length 11' 4 3/32" Material of shell plates steel  
 Thickness 1 5/16" Range of tensile strength 20/32 Are they welded or flanged no Descrip. of riveting: cir. seams d. r. lap long. seams d. r. double  
 Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 20"  
 Per centages of strength of longitudinal joint 88.5 Working pressure of shell by rules 181.1 lbs Size of manhole in shell 16 x 12"  
 Size of compensating ring 8 3/4 x 15 7/16" No. and Description of Furnaces in each boiler 4 plain Material steel Outside diameter 40 1/4"  
 Length of plain part top 6' 8 1/2" Thickness of plates crown 49 1/16" Description of longitudinal joint weld No. of strengthening rings Yes  
 bottom 7' 3 3/4" bottom 6 1/4"  
 Working pressure of furnace by the rules 185.7 lbs Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1 1/16"  
 Pitch of stays to ditto: Sides 10 x 9" Back 10 x 9" Top 9 x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181.6 lbs  
 Material of stays steel Diameter at smallest part 2.03 Area supported by each stay 90 Working pressure by rules 203 lbs End plates in steam space:  
 Material steel Thickness 1 3/32" Pitch of stays 18 x 17 1/2" How are stays secured double nut washers Working pressure by rules 183.5 lbs Material of stays steel  
 Diameter at smallest part 5.57 Area supported by each stay 308.27 Working pressure by rules 181.4 lbs Material of Front plates at bottom steel  
 Thickness 7/8" Material of Lower back plate steel Thickness 27/32" Greatest pitch of stays 13 x 10" Working pressure of plate by rules 183.6 lbs  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 x 4 1/2" Material of tube plates steel Thickness: Front 7/8" Back 7/8" Mean pitch of stays 9 x 9"  
 Pitch across wide water spaces 13" Working pressures by rules 244 lbs Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 8 3/8 x 2 1/4" Length as per rule 2' 11 1/32" Distance apart 9" Number and pitch of Stays in each 1-9"  
 Working pressure by rules 184 lbs Superheater or Steam chest; how connected to boiler Yes 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—** No. Description  
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 Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams Dia. 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:— 1 Propeller shaft, Propeller, 2 top end, 2 bottom end, 2 main bearing, 1 set of coupling bolts, 1 set feed and bilge pump Valves, bolts & nuts assorted and iron of sizes

The foregoing is correct description,  
*John Dickinson* Manufacturer.

Dates During progress of work in shops— 1905 April 20, May 16, 17, 24, 29, June 22, July 12, 18, 20, 21, Aug. 15, 22, 24, Sept 11, 19, 22, 25, 27, 30, Oct 1, 3, 5, 10, 11, 12, 14, 17, 19, 23, 24, 27, 30, Nov 1, 3, 7, 9, 10, 14, 16, 18, 21, 23, 25, 28, 29, Dec 1, 4, 6, 8, 15, 19, 21, 22  
of Survey while building During erection on board vessel — 30, Oct 1, 3, 5, 10, 11, 12, 14, 17, 19, 23, 24, 27, 30, Nov 1, 3, 7, 9, 10, 14, 16, 18, 21, 23, 25, 28, 29, Dec 1, 4, 6, 8, 15, 19, 21, 22  
Total No. of visits — 06 Jan 4, 9, 11, 13, 17, 23, 24, 29, 30, Feb 1, 3, 7, 8, 19, 27, Mch. 8, 9, 10, 13, 15, 16, 21, 23, 26  
Is the approved plan of main boiler forwarded herewith Yes  
" " " donkey " " " Yes

**General Remarks** (State quality of workmanship, opinions as to class, &c. The Machinery of this vessel has been constructed under special survey, the workmanship and materials used are both of good quality, the Engines have been tried under steam ahead & astern & worked satisfactorily the main steam pipes have been tested to twice the working pressure and proved satisfactory under test

I beg to recommend that this vessel is eligible in my opinion to have the record *EL M.C. 3.06* in the Register Book

It is submitted that this vessel is eligible for THE RECORD *EL M.C. 3.06*

The amount of Entry Fee, £ 3 : : When applied for, 28.3.06  
Special .. .. £ 37.10 : : 29.3.06  
Donkey Boiler Fee .. .. £ : : When received, 29.3.06  
Traveling Expenses (if any) £ : : 30.3.06  
R. W. Coomber  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

FRI. 30 MAR 1906

*EL M.C. 3.06*