

## REPORT ON MACHINERY.

No. 27186

Received at London Office

Date of writing Report

When handed in at Local Office 15 MAR 1918

Port of Sunderland

No. in Survey held at Sunderland

Date, First Survey 12 June 17

Last Survey 16 April 1918

Reg. Book.

on the new steel s.s. "MAINDY DENE"

(Number of Visits 45)

Gross 3166.57

Net 1900.00

Master Culliford Built at Stockton

By whom built Craig Taylor &amp; Co. (S.S. No. 191) When built 1918

Engines made at Sunderland

By whom made North Eastern Marine Eng. Co. Ltd. (No. 2276) when made 1918

Boilers made at Sunderland

By whom made North Eastern Marine Eng. Co. Ltd. (No. 2276) when made 1918

Registered Horse Power

Owners Maindy Shipping Co. Ltd.

Port belonging to Cardiff

Nom. Horse Power as per Section 28

324

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted yes

## ENGINES, &amp;c.—Description of Engines

Triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 24-29-64 Length of Stroke 42 Revs. per minute 68 Dia. of Screw shaft as per rule 13.35 Material of screw shaft as fitted 13.35

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 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 Length of stern bush 4-6

Dia. of Tunnel shaft as per rule 11.76 Dia. of Crank shaft journals as per rule 12.35 Dia. of Crank pin 12.35 Size of Crank webs 19x7.75 Dia. of thrust shaft under

collars 12.35 Dia. of screw 16-6 Pitch of Screw 16-6 No. of Blades 4 State whether moveable no Total surface 83

No. of Feed pumps 2 Diameter of ditto 3.5 Stroke 24 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps 7.89x9-20 8.85x12 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three @ 3.5 In Holds, &amp;c. No. 1 hold-2 @ 3.5, No. 2 hold-2 @ 3.5

No. of Bilge Injections 1 sizes 4.5 Connected to condenser, or to circulating pump P. Is a separate Donkey Suction fitted in Engine room &amp; size yes 3.5

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 main below, others 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 Forward hold suction How are they protected Wood ceiling

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

Dates of examination of completion of fitting of Sea Connections 23.1.18 of Stern Tube 18.2.18 Screw shaft and Propeller 18.2.18

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform

BOILERS, &amp;c.—(Letter for record 8) Manufacturers of Steel John Spencer &amp; Sons Ltd.

Total Heating Surface of Boilers 46000 Is Forced Draft fitted no No. and Description of Boilers two single ended marine

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 3.12.17 No. of Certificate 3450

Can each boiler be worked separately yes Area of fire grate in each boiler 55.5 No. and Description of Safety Valves to

each boiler two direct spring Area of each valve 8.290 Pressure to which they are adjusted 185 Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 22 Mean dia. of boilers 15-9 Length 10-6 Material of shell plates steel

Thickness 1.12 Range of tensile strength 28.5-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.

long. seams DBS. TR Diameter of rivet holes in long. seams 1.12 Pitch of rivets 10 Lap of plates or width of butt straps 20.75

Per centages of strength of longitudinal joint rivets 87.6 Working pressure of shell by rules 181 Size of manhole in shell 16x12

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Brighton Material steel Outside diameter 47.5

Length of plain part top Thickness of plates crown 2.5 Description of longitudinal joint welded No. of strengthening rings

bottom Thickness of plates bottom 6.25 Working pressure of furnace by the rules 180 Combustion chamber plates: Material steel Thickness: Sides 3 Back 1.5 Top 3 Bottom 1.5

Pitch of stays to ditto: Sides 1.5x8.5 Back 1.5x10.5 Top 1.5x8.5 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181

Material of stays steel Diameter at smallest part 2.790 Area supported by each stay 139 Working pressure by rules 180 End plates in steam space

Material steel Thickness 1.5 Pitch of stays 20x22.5 How are stays secured D.N.W. Working pressure by rules 180 Material of stays steel

Diameter at smallest part 1.975 Area supported by each stay 450 Working pressure by rules 184 Material of Front plates at bottom steel

Thickness 3 Material of Lower back plate steel Thickness 1.5 Greatest pitch of stays 1.5x10.5 Working pressure of plate by rules 180

Diameter of tubes 3.5 Pitch of tubes 4.5x4.5 Material of tube plates steel Thickness: Front 3 Back 3 Mean pitch of stays 11.5

Pitch across wide water spaces 14.5 Working pressures by rules 192 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 8x2.5 Length as per rule 31.5 Distance apart 11.5 Number and pitch of stays in each 2 @ 8.5

Working pressure by rules 182 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

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Lloyd's Register  
WR 86-0172



IS A DONKEY <sup>auxiliary</sup> BOILER FITTED? *yes*

If so, is a report now forwarded? *yes; Indt No 9978.*

SPARE GEAR. State the articles supplied:— *Two connecting rods top and bottom end bolts and nuts two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves iron and bolts of various sizes, one propeller.*

The foregoing is a correct description.

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD

*Geo. D. Freer.*

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1917 Jan 12, 13, Jul 25, 30, Aug 25, Sep 7, 25, Oct 5, 10, 12, 19, 25, 26, 27, 31, Nov 25, 9, 14, 21, Dec 3, 7, 17  
During erection on board vessel -- 18, 20, 27, Jan 4, 16, Feb 1, 2, 4, 5, 18, 26, Mar 4, 6, 11, at Mdd. 1918 Jan 23, Mar 24, 29, 31, 11, 15, 16  
Total No. of visits *45*

Is the approved plan of main boiler forwarded herewith *yes*

" " " *auxiliary* " " " *yes*

Dates of Examination of principal parts—Cylinders 13-12-17 Slides 4-2-18 Covers 16-1-18 Pistons 18-12-17 Rods 2-2-18

Connecting rods 4-2-18 Crank shaft 27-12-17 Thrust shaft 4-2-18 Tunnel shafts 4-2-18 Screw shaft 1-2-18 Propeller 4-1-18

Stern tube 1-2-18 Steam pipes tested 10-1-17 & 26-2-18 Engine and boiler seatings 23-1-18 Engines holding down bolts 4-3-18

Completion of pumping arrangements 11-4-18. Boilers fixed 4-3-18 Engines tried under steam 6-3-18

Main boiler safety valves adjusted 6-3-18 Thickness of adjusting washers *Port 1 1/2" A 1/2", Star 1 1/2" A 1/2"*

Material of Crank shaft *Steel* Identification Mark on Do. *2688N.WC* Material of Thrust shaft *Steel* Identification Mark on Do. *2688N.WC*

Material of Tunnel shafts *Steel* Identification Marks on Do. *2688N.WC* Material of Screw shafts *Steel* Identification Marks on Do. *2688N.WC*

Material of Steam Pipes *Lapwelded wrought iron* Test pressure *540 pounds per sq. in.*

Is an installation fitted for burning oil fuel *no*

Is the flash point of the oil to be used over 150°F. *yes*

Have the requirements of Section 49 of the Rules been complied with *yes*

Is this machinery duplicate of a previous case *no* If so, state name of vessel —

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

*The material and workmanship is good.*

*The machinery has been constructed under special survey and is eligible in our opinion for classification and to have the notation of \*LMC-4-18 in the Register Book.*

*To complete the survey, 18-1 hold sections require to be fitted. Bilge pipes in starboard packed bunkers to be protected. The tunnel to be made watertight & gear fitted to work it's door. Donkey boiler to be fitted. Electric lighting installation to be fitted. Vessel left for Stockholm to complete. Middlesex surveyors advised.*

*The above items have now been satisfactorily completed.*

*Vessel is fitted with Electric Light and "Wireless"*

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 4.18.

The amount of Entry Fee ... £ 2 : - :  
Special ... £ 34 : 14 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, 15 MAR 1918  
When received, 3/4/18

Committee's Minute FRI. 10 MAY. 1918

Assigned + LMC 4.18

MAINTAINED CERTIFICATE  
WRITTEN

*Ed. Davis & Wm. Morrison*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Date of writing Report  
No. in Survey he  
Reg. Book.  
on the  
Master  
Engines made at  
Boilers made at  
Registered Horse Po  
MULTITUBULAR  
(Letter for record  
Boilers One  
No. of Certificate  
safety valves to each  
Are they fitted with  
Smallest distance be  
Material of shell p  
Descrip. of riveting  
Lap of plates or w  
rules 183  
boiler 2 plates  
Description of longi  
plates: Material  
Top 10" x 8" 1/2  
smallest part 2-0  
Pitch of stays 19  
Area supported by  
Lower back plate  
Pitch of tubes 4 3/8  
water spaces  
girder at centre  
Working pressure  
separately  
holes Pitch  
If stiffened with rin  
Working pressure  
SURVEY  
No. 1349  
Dates of Survey while building { During work in shops --  
During erection on board vessel --  
GENERAL  
Special Survey  
pressure was  
been satisf  
Survey Fee  
Travelling Ex  
Committee's  
Assigned