

REPORT ON MACHINERY.

No. 26106

THU. MAY. 14. 1914

Received at London Office

TUE. JUN. 2 - 1914

Date of writing Report 12-5-1914 When handed in at Local Office 13-5-1914 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 27 Aug. 1913 Last Survey 6 May 1914
Reg. Book. on the New Steel S. S. Melania (Number of Visits 54)

Master Built at Stockton By whom built Craig Taylor & Co. Ltd. Tons Gross 161 No. 1914

Engines made at Sunderland By whom made North Eastern Marine Eng Co. Ltd. when made 1914

Boilers made at Sunderland By whom made North Eastern Marine Eng Co. Ltd. when made 2142

Registered Horse Power 515 Owners Port belonging to Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 27" x 45" x 74" Length of Stroke 48" Revs. per minute 69 Dia. of Screw shaft as per rule 14.8" Material of screw shaft as fitted 15" Steel

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 5'-4 1/2"

Dia. of Tunnel shaft as per rule 13.4" Dia. of Crank shaft journals as per rule 14.04" Dia. of Crank pin 11 1/8" Size of Crank webs 20 1/2" x 8 1/2" Dia. of thrust shaft under collars 1 1/4" Dia. of screw 1 1/4" Pitch of Screw 16'-9" No. of Blades 4 State whether moveable no Total surface 100 sq ft

No. of Feed pumps Two Diameter of ditto 4" Stroke 26" Can one be overhauled while the other is at work yes

No. of Bilge pumps Two Diameter of ditto 4 1/2" Stroke 26" Can one be overhauled while the other is at work yes

No. of Donkey Engines in Eng. Room No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 1 @ 3 1/2" well 1 @ 3" dia. h. space. + 2 @ 3" in. h. In Holds, &c. See oil pumping arrangement.

No. of Bilge Injections One size 3 1/2" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2"

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

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 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 4.3.14 of Stern Tube 16.4.14. Screw shaft and Propeller 29.4.14

Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel J. Spencer & Sons Ltd. Newburn

Total Heating Surface of Boilers 4503 sq ft Is Forced Draft fitted yes No. and Description of Boilers Three single ended.

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 23-12-13 No. of Certificate 3181

Can each boiler be worked separately yes Area of fire grate in each boiler 54.45 sq ft No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 9.62 sq in 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 18" external Mean dia. of boilers 15'-9" Length 11'-1/2" Material of shell plates Steel

Thickness 1 1/8" Range of tensile strength 28 3/4 to 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R. long. seams T.R.D.P. 2 Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 9 1/16" Lap of plates or width of butt straps 19 3/4

Per centages of strength of longitudinal joint rivets 87.5 plate 86.24 Working pressure of shell by rules 180 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring 9 1/2" x 1 1/8" No. and Description of Furnaces in each boiler Three daylight Material Steel Outside diameter 3'-11 1/4"

Length of plain part top 1 3/8" bottom 1 1/4" Thickness of plates crown 1 3/8" bottom 1 1/4" Description of longitudinal joint weld. No. of strengthening rings

Working pressure of furnace by the rules 180 lbs. Combustion chamber plates: Material Steel Thickness: Sides 3/8" Back 3/8" Top 3/8" Bottom 3/8"

Pitch of stays to ditto: Sides 11 3/8" x 10 1/4" Back 11 1/4" x 10 3/8" Top 11 3/8" x 10 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180 lbs

Material of stays Steel Diameter at smallest part 2 1/8" Area supported by each stay 116.6 sq in Working pressure by rules 184 lbs End plates in steam space:

Material Steel Thickness 1 3/8" Pitch of stays 22 1/2" x 21" How are stays secured D.N. Wash. Working pressure by rules 180.5 lbs Material of stays Steel

Diameter at smallest part 8.20" Area supported by each stay 47.25 sq in Working pressure by rules 182.4 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 3/8" x 10 3/8" Working pressure of plate by rules 186 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 3/4" x 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10.44"

Pitch across wide water spaces 11 1/2" Working pressures by rules 185 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 2 @ 13 1/2" x 9" Length as per rule 34" Distance apart 11 3/8" Number and pitch of stays in each 2 @ 10 1/4"

Working pressure by rules 182 lbs Superheater or Steam chest; how connected to boiler Independent Can the superheater be shut off and the boiler worked separately yes Diameter Subular Length Thickness of tubes 22 mm. Material Solid Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell by rules tested by hydraulic pressure to 400 lbs. when fitted in place Diameter of flue Material of two plates Cast steel 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 1.44 sq ft Are they fitted with easing gear yes

Lloyd's Register 25 Foundation 1850-0123

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two each bolts & nuts for top and bottom ends and main bearings. One set coupling bolts. One full set piston rings & springs. One slide valve spindle. One paw crank pin & top end bearings. One piston rod. One eccentric strap & sheaves. One air pump rod. One circulating pump rod. One feed pump plunger. One lidge pump plunger & crank shaft. One tail end shaft. One cast iron propeller. One set each valves for all pumps. Assorted bolts nuts & iron etc.

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING CO LTD

J. T. Harrison Esq

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1913 Aug 27 Oct 24 9¹⁷ 23 24 30 31 Nov 6 7 12 14 18 21 25 28 Dec 3 4 5 9 12 15 18 23
{ During erection on board vessel -- } Jan 5 7 14 19 21 28 Feb 5 10 12 19 25 27 Mar 10 13 17 24 31 Apr 8 9 17 20 22 24 27 29 30
Total No. of visits (54)

Is the approved plan of main boiler forwarded herewith

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Dates of Examination of principal parts—Cylinders 28-11-13 Slides 5-2-14 Covers 14-1-14 Pistons 10-2-14 Rods 29-11-13

Connecting rods 28-11-13 Crank shaft 17-12-13 Thrust shaft 17-12-13 Tunnel shafts none Screw shaft 19-1-14 Propeller 14-1-14

Stern tube 5-9-14 Steam pipes tested 24 20 27 29 30 April 1914 Engine and boiler seatings 4-3-14 Engines holding down bolts 24-4-14

Completion of pumping arrangements 6-5-14 Boilers fixed 29-4-14 Engines tried under steam 6-5-14

Main boiler safety valves adjusted 6-5-14 Thickness of adjusting washers 9 Bl. 9 1/2 11 1/2 12 1/2 14 1/2 16 1/2 18 1/2 20 1/2 22 1/2 24 1/2 26 1/2 28 1/2 30 1/2 32 1/2 34 1/2 36 1/2 38 1/2 40 1/2 42 1/2 44 1/2 46 1/2 48 1/2 50 1/2 52 1/2 54 1/2 56 1/2 58 1/2 60 1/2

Material of Crank shaft Steel Identification Mark on Do. 34-10-M.B. Material of Thrust shaft Steel Identification Mark on Do. 4813 T.M.

Material of Tunnel shafts none Identification Marks on Do. Material of Screw shafts Steel Identification Marks on Do. 3465 M.B. (wrote) 4813 T.M. (sp)

Material of Steam Pipes Mild drawn steel 5 1/2" bore & 1/2" thick Test pressure 540 lbs

Is an installation fitted for burning oil fuel Is the flash point of the oil to be used over 150°F.

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

Is this machinery duplicate of a previous case If so, state name of vessel

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

The machinery of this vessel has been built under special survey, the materials and workmanship are of good quality and the hydraulic tests of the boilers & superheaters proved satisfactory. The whole of the machinery has been securely fixed in place & tried under steam & is in good & safe working condition & eligible in our opinion to be classed & have record **L.M.C. 5.14.** on completion of the survey.

To complete the survey The three forward lidge pump suction and the two forward fuel tank suction have to be connected up, the two forward suction in bunkers have to be examined and the electric light installation fitted. This will be done at Middlesbrough. Middlesbrough surveyors notified.

The survey has now been satisfactorily completed and a report on the Electric Light installation will be forwarded in due course

It is submitted that this vessel is eligible for THE RECORD. + LMC 5.14. F.D. J.W.D. 2/6/14

William Butler & W. Morrison Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Table with columns for fees: The amount of Entry Fee (£ 3 : 0 : 0), Special (£ 45 : 15 : 0), Donkey Boiler Fee (£ : :), Travelling Expenses (if any) (£ : :). Includes 'When applied for' and 'When received' dates.

Committee's Minute WED. JUN. 3-1914

Assigned + LMC 5.14. F.D.

MACHINERY CERTIFICATE WRITTEN.



Standard

Certificate (if required) to be sent to The Surveyors are requested not to write on or below the space for Committee's Minute.