

REPORT ON MACHINERY.

Received at London Office **MON NOV. 23. 1914**

Date of writing Report 19 (When handed in at Local Office **20 NOV 1914**) Port of **Sunderland**

No. in Survey held at **Sunderland** Date, First Survey **21st April** Last Survey **19th Nov 1914**
 Reg. Book. on the **New Steel S.S. "Acetna" Eggesford** (Number of Visits **35**)

Master **J. Johnstone** Built at **Sunderland** By whom built **R Thompson & Sons Ltd** Tons } Gross **4914**
 Net **2787**
 When built **1911**

Engines made at **Sunderland** By whom made **North Eastern Marine Eng Co Ltd** when made **1911**
 Boilers made at **do** By whom made **do do do** when made **1911**

Registered Horse Power Owners **Tatem Steam Nav. Co Ltd** Port belonging to **Cardiff**
 (W. J. Tatem Ltd.)

Nom. Horse Power as per Section 28 **3148** Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **no**

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

Dia. of Cylinders **24" x 41" x 68"** Length of Stroke **45"** Revs. per minute **64** Dia. of Screw shaft as per rule **11 1/2"** Material of screw shaft **Steel**
 as fitted **11 3/8"**

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'-10 1/2"**

Dia. of Tunnel shaft as per rule **12 1/4"** Dia. of Crank shaft journals as per rule **13-07"** Dia. of Crank pin **13 3/8"** Size of Crank webs **8 3/16" x 19 3/8"** Dia. of thrust shaft under collars **13 3/8"** Dia. of screw **1 1/2"** Pitch of Screw **1 1/2"** No. of Blades **4** State whether moveable **no** Total surface **93 sq ft**

No. of Feed pumps **Two** Diameter of ditto **3 1/2"** Stroke **24"** Can one be overhauled while the other is at work **yes**
 No. of Bilge pumps **Two** Diameter of ditto **4"** Stroke **24"** Can one be overhauled while the other is at work **yes**
 No. of Donkey Engines **Two** Sizes of Pumps **1 1/2" x 9" x 10 1/2"**, **6" x 4" x 6"** No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room **Three @ 3 1/2" diameter** In Holds, &c. **Two @ 3 1/2" in each hold**
 One @ 3 1/2" dia in tunnel well.

No. of Bilge Injections **1** sizes **1 1/2"** Connected to condenser, or to circulating pump **✓** 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 **Bilge suction** How are they protected **wood casings**
 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 **13-11-14** of Stern Tube **8-11-14** Screw shaft and Propeller **9-11-14**
 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**) Manufacturers of Steel **J Spence & Sons Ltd Newburn Steel Works**

Total Heating Surface of Boilers **5512 sq ft** Is Forced Draft fitted **no** No. and Description of Boilers **Two single ended**
 Working Pressure **180 lbs** Tested by hydraulic pressure to **360 lbs** Date of test **11-11-14** No. of Certificate **3231**

Can each boiler be worked separately **yes** Area of fire grate in each boiler **65 sq ft** No. and Description of Safety Valves to each boiler **Two spring loaded** Area of each valve **4.0 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 **20"** Mean dia. of boilers **16'-6"** Length **11'-6"** Material of shell plates **Steel**
 Thickness **1 1/4"** Range of tensile strength **28 1/2 to 43 1/2 tons** Are the shell plates welded or flanged **no** Descrip. of riveting: cir. seams **D.R**
 long. seams **T.R.D.P.S** Diameter of rivet holes in long. seams **1 1/2"** Pitch of rivets **9 3/4"** Lap of plates or width of butt straps **20 1/2"**
 Per centages of strength of longitudinal joint rivets **86.5** Working pressure of shell by rules **180 lbs** Size of manhole in shell end **16" x 12"**
 plate **86.2**

Size of compensating ring **dished** No. and Description of Furnaces in each boiler **Three daylight** Material **Steel** Outside diameter **4'-9 1/2"**
 Length of plain part top **3 1/4"** Thickness of plates crown **3 1/4"** Description of longitudinal joint **weld** No. of strengthening rings **✓**
 bottom **6 1/4"** Working pressure of furnace by the rules **180 lbs** Combustion chamber plates: Material **Steel** Thickness: Sides **3 1/4"** Back **3 1/4"** Top **3 1/4"** Bottom **3 1/4"**
 Pitch of stays to ditto: Sides **11 3/4" x 8 3/4"** Back **10 3/4" x 10 3/4"** Top **11 3/4" x 8 3/4"** 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 in** Area supported by each stay **102.8 sq in** Working pressure by rules **183 lbs** End plates in steam space:
 Material **Steel** Thickness **1 1/4"** Pitch of stays **23 3/4" x 23 3/4"** How are stays secured **DN Wash** Working pressure by rules **180 lbs** Material of stays **Steel**
 Diameter at smallest part **9.67 in** Area supported by each stay **543 sq in** Working pressure by rules **184 lbs** Material of Front plates at bottom **Steel**
 Thickness **3 1/4"** Material of Lower back plate **Steel** Thickness **1 1/4"** Greatest pitch of stays **14 3/4" x 10 3/4"** Working pressure of plate by rules **180 lbs**
 Diameter of tubes **3 1/4"** Pitch of tubes **4 3/4" x 4 3/4"** Material of tube plates **Steel** Thickness: Front **3 1/4"** Back **3 1/4"** Mean pitch of stays **10.45"**
 Pitch across wide water spaces **14 1/2"** Working pressures by rules **164 lbs** Girders to Chamber tops: Material **Steel** Depth and thickness of girder at centre **20 1/4" x 8 3/8"** Length as per rule **2'-9"** Distance apart **11 3/4"** Number and pitch of stays in each **2 @ 8 3/4"**
 Working pressure by rules **181 lbs** Superheater or Steam chest; how connected to boiler **how** 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 **✓**

IS A DONKEY BOILER FITTED?

yes ✓

If so, is a report now forwarded?

yes ✓

SPARE GEAR. State the articles supplied:-

Two each bolts & nuts for top & bottom ends of main bearings. One set coupling bolts. One set each valves for all pumps. One Propeller mounted bolts nuts & iron etc.

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING CO. LTD

S. T. Harrison, Secy

Manufacturer.

Dates of Survey while building: During progress of work in shops - 1914 Apr. 21 May 5-14 20-21 27-28 Jun 4-9 12-17 19-22 Jul 1-3 6-7 9-13 16-17 21-23 27-28. During erection on board vessel - 28-29 31 Aug 5-10 11-14 24 Sep 4-15 Nov 19. Total No. of visits 35. Is the approved plan of main boiler forwarded herewith yes ✓

Dates of Examination of principal parts - Cylinders 4-6-14 Slides 17-14 Covers 6-14 Pistons 6-14 Rods 19-6-14 Connecting rods 19-6-14 Crank shaft 17-14 Thrust shaft 4-6-14 Tunnel shafts 9-3-14 Screw shaft 21-14 Propeller 17-14 Stern tube 9-3-14 Steam pipes tested 11-8-14, 10-8-14 Engine and boiler seatings 12-14 Engines holding down bolts 10-8-14. Completion of pumping arrangements 15-9-14. Boilers fixed 10-8-14. Engines tried under steam 11-8-14.

Main boiler safety valves adjusted 11-8-14. Thickness of adjusting washers 3/16" F 3/8" A 1/2" B 1/2" F d A 3/8". Material of Crank shaft Steel Identification Mark on Do. 9462 KH Material of Thrust shaft Steel Identification Mark on Do. 9461 KH. Material of Tunnel shafts Steel Identification Marks on Do. 5304-56 Material of Screw shafts Steel Identification Marks on Do. 5304 H.K. 3992 M.P.

Material of Steam Pipes Lapwelded Steel 5" bore x 1/4" thick ✓ Test pressure 540 lbs. ✓ Is an installation fitted for burning oil fuel No ✓ 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 No ✓ 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 workmanship are of good quality & the hydraulic tests of the boilers proved satisfactory. The whole of the machinery has been securely fitted & has been tried under steam & is in good & safe working condition & eligible in my opinion to be classed & have record L.M.C. 11-14 in the Register Books.

It is submitted that this vessel is eligible for THE RECORD. + LMC 11. 14.

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

The amount of Entry Fee ... £ 3 : 0 : 0. When applied for, 2-0-NOV-1914. Special ... £ 34 : 8 : 0. Donkey Boiler Fee ... £ : : Travelling Expenses (if any) £ ✓ : : When received, 9/12/14

Committee's Minute TUE. NOV. 24. 1914 Assigned + L.M.C. 11. 14.

MACHINERY CERTIFICATE

FRI. DEC. -4. 1914



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Rpt. 5a.

Date of writing Re.

No. in Survey Reg. Book.

on the

Master J. J.

Engines made at Donkey Boilers made at

Registered Horse

MULTITUB

(Letter for recon

Boilers One

No. of Certificat

safety valves to

Are they fitted u

Smallest distanc

Material of shel

Descrip. of rivet

Lap of plates m

rules 104

boiler 2 pla

Description of lon

plates: Material

Top 9/4 x 11 If

smallest part 1.4

Pitch of stays 15

Area supported b

Lower back plate

Pitch of tubes 4

water spaces 13

girder at centre 2

Working pressure

separately

holes Pitch

If stiffened with r

Working pressure

Dates of Survey while building: During work in shops - During erection on board

GENERAL

The mater The boiler place a

Survey Fee Travelling Exp

Committee's

Assigned