

REPORT ON MACHINERY.

No. 67250

Udd. Rpt No 888H.

Received at London Office

WED. MAR. 10. 1915

Date of writing Report 6th Nov 1915 When handed in at Local Office 8th Nov 1915 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle Date, First Survey Aug. 7. 1914 Last Survey Mar 2 1915
Reg. Book. 42 upon the Machinery of the S.S. "Halberdier" (Number of Vistas 37)

Master Built at Stockton By whom built Ropner & Sons Ltd When built 1915

Engines made at Newcastle By whom made North Eastern Marine Eng. Co when made 1915

Boilers made at " By whom made " when made 1915

Registered Horse Power Owners Port belonging to Manchester

Nom. Horse Power as per Section 28 170 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 18" 30" 49" Length of Stroke 33" Revs. per minute 91 Dia. of Screw shaft 10 1/8" Material of Iron
as per rule 10 1/8" as fitted 10 7/8" screws 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 ✓ 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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 3'-9"

Dia. of Tunnel shaft 9.01" Dia. of Crank shaft journals 9.46" Dia. of Crank pin 9.98" Size of Crank webs 5 1/2" x 6" Dia. of thrust shaft under collars 9.98" Dia. of screw 12'-6" Pitch of Screw 13'-6" No. of Blades 4 State whether moceable no Total surface 48 sq ft

No. of Feed pumps 2 Diameter of ditto 3" Stroke 16 1/2" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3" Stroke 16 1/2" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps 6" x 8 1/2" x 8", 6" x 6" x 6", 5 1/2" x 3 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3 of 2" x 2" in dry tank in Holds, &c. 2 of 2" in each hold & 1 of 2 1/2" in tunnel well.

No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size Yes 2 1/4"

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 no

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 below

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 30-12-14 of Stern Tube 30-12-14 Screw shaft and Propeller 11/2/15

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

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

Total Heating Surface of Boilers 2918 Is Forced Draft fitted no No. and Description of Boilers 2 single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 12/11/14 No. of Certificate 8722

Can each boiler be worked separately Yes Area of fire grate in each boiler 40 sq ft No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 4.9 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 21" Mean dia. of boilers 12'-9 1/2" Length 10'-6" Material of shell plates Steel

Thickness 1 1/32" Range of tensile strength 28 3/4-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. r. lap long. seams d. r. d. butt Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 7 3/8" Lap of plates or width of butt straps 15 5/8"

Per centages of strength of longitudinal joint 86.6 rivets 85.5 plate Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 12"

Size of compensating ring flange No. and Description of Furnaces in each boiler 2 Deighton's Material Steel Outside diameter 47 1/2"

Length of plain part top 9 1/16" Thickness of plates bottom 9 1/16" Description of longitudinal joint welded No. of strengthening rings ✓

Working pressure of furnace by the rules 185 lbs Combustion chamber plates: Material Steel Thickness: Sides 2 3/32" Back 2 3/32" Top 2 3/32" Bottom 1"

Pitch of stays to ditto: Sides 10 1/2" x 9 3/8" Back 10 1/2" x 9 3/8" Top 10 1/2" x 9 3/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180.5 lbs

Material of stays Steel Diameter at smallest part 2.03" Area supported by each stay 98.4 Working pressure by rules 185 lbs End plates in steam space: Material Steel Thickness 1 1/32" Pitch of stays 27" x 20" How are stays secured d. n. w. Working pressure by rules 181.5 lbs Material of stays Steel

Diameter at smallest part 9.62" Area supported by each stay 540 Working pressure by rules 185 lbs Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 15 1/16" Greatest pitch of stays 14 1/2" x 10 1/2" Working pressure of plate by rules 189 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 1" Back 3/4" Mean pitch of stays 9"

Pitch across wide water spaces 14 1/2" Working pressures by rules Steel Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9" x 1 3/4" Length as per rule 33" Distance apart 10 1/2" Number and pitch of stays in each 2 of 9 3/8"

Working pressure by rules 183 lbs 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 ✓

2m.114 T.

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

Two top end & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed & bilge pump valves, a quantity of assorted bolts nuts & iron, spare propeller & minor details.

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING Co., LTD.

J. J. Harrison Manufacturer.

Secretary.

Dates of Survey while building	During progress of work in shops --	Aug 24. 21. 25. Sep 8. 11. 16. 24 Oct 2. 7. 8. 16. 30. Nov 6. 9. 11. 12. 19. 26. Dec 3. 17. 18. 22. 30. <i>Mar.</i>	
		During erection on board vessel --	Jan 5. 6. 7. 8. 14. 27. Feb 8. 11. 15. 25. 26. Mar 1. 2. Jan 30. <i>Mar.</i>
		Total No. of visits	37 + 2. 39

Is the approved plan of main boiler forwarded herewith. *In Lm.*

" " " donkey " " "

Dates of Examination of principal parts—Cylinders *8/1/15* Slides *17/12/14* Covers *22/12/14* Pistons *5/2/15* Rods *5/2/15*
 Connecting rods *5/2/15* Crank shaft *2/10/14* Thrust shaft *16/9/14* Tunnel shafts *8/9/14* Screw shaft *25/9/14* Propeller *7/1/15*
 Stern tube *22/12/14* Steam pipes tested *15/2/15* Engine and boiler seatings *7/1/15* Engines holding down bolts *25/2/15*
 Completion of pumping arrangements *2/3/15* Boilers fixed *25/2/15* Engines tried under steam *2/3/15*
 Main boiler safety valves adjusted *2/3/15* Thickness of adjusting washers *P. P 9 1/2" 3 5/8" S P 9 1/2" 3 5/8"*
 Material of Crank shaft *Steel* Identification Mark on Do. *17/12/14* Material of Thrust shaft *Steel* Identification Mark on Do. *16/9/14*
 Material of Tunnel shafts *Iron* Identification Marks on Do. *11/9/14* Material of Screw shafts *Iron* Identification Marks on Do. *7/10/14*
 Material of Steam Pipes *Soft welded iron* 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 *Yes* If so, state name of vessel *S.S. "Cuirassier"*

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

The machinery of this vessel has been built under special survey, the materials used are good, and the workmanship is satisfactory, it has been properly fitted on board and secured, and the engines have been tried under full power. In my opinion this vessel is eligible for the record of L.M.C. 3.15

It is submitted that this vessel is eligible for THE RECORD + LMC 3.15.

J.W.D.
25/3/15

The amount of Entry Fee ... £	2	When applied for, MAR 9 1915 When received, <i>20 Mar 1915</i>
Special ...	£ 25:10	
Donkey Boiler Fee ...	£	
Travelling Expenses (if any) £	:	

Charles Cooper
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. MAR 26 1915**

Assigned *+ Lm 3.15*

NEWCASTLE-ON-TYNE

The Surveyors are requested not to write on or below the space for Committee's Minute.

