

REPORT ON MACHINERY.

Received at London Office

Date of writing Report 9. 12. 1912 When handed in at Local Office 10. 12. 1912 Port of Aberdeen. FRI. DEC. 13. 1912

No. in Survey held at Aberdeen. Date, First Survey 31. 7. 12. Last Survey 5. 12. 1912
Reg. Book. (Number of Visits 30.)

on the S.S. "NORAH ELSMIE" Gross 424.26 Tons Net 168.

Master Alex Pirie. Built at Aberdeen By whom built Hall Russell & Co. No. 519. When built 1912.

Engines made at Aberdeen By whom made Hall Russell & Co. No. 519. when made 1912.

Boilers made at do. By whom made do do do do. when made 1912.

Registered Horse Power 45. Owners G. Elsmie & Son. Port belonging to Aberdeen

Nom. Horse Power as per Section 28 45. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted No.

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

Dia. of Cylinders 12 1/2", 21 1/2", 34" Length of Stroke 24" Revs. per minute 105. Dia. of Screw shaft as per rule 4 1/4" Material of screw shaft Scrap iron

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 length 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 2' 6"

Dia. of Tunnel shaft as per rule 6.384 Dia. of Crank shaft journals as per rule 6.406 Dia. of Crank pin 6 3/4" Size of Crank webs 10" x 4 3/4" Dia. of thrust shaft under

collars 6 3/4" Dia. of screw 9' 6" Pitch of Screw 11' 6" No. of Blades 4 State whether moveable No. Total surface 32 #

No. of Feed pumps 2. Diameter of ditto 2 3/8" Stroke 12" Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2. Diameter of ditto 2 3/8" Stroke 12" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines One. Sizes of Pumps 6" x 4 1/4" x 6" duplex. No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room One of 2'. Stokehold one of 2'. In Hold, &c. Three (1 centre & 2 wing) each of 2'.

No. of Bilge Injections 1. sizes 3' Connected to condenser, or to circulating pump C. T. Is a separate Donkey Suction fitted in Engine room & size Yes. 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 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 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 1. 11. 12. of Stern Tube 1. 11. 12. Screw shaft and Propeller 6. 11. 12.

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

BOILERS, &c.—(Letter for record (7)) Manufacturers of Steel Stewarts & Lloyds Ltd. Lanarkshire S. by Ld.

Total Heating Surface of Boilers 1340 # Is Forced Draft fitted No. No. and Description of Boilers One, cyl., mult., single ended.

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 1. 11. 12. No. of Certificate 426.

Can each boiler be worked separately. Area of fire grate in each boiler 39.45 # No. and Description of Safety Valves to

each boiler 2: direct spring Area of each valve 4.9 # 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 Outside Mean dia. of boilers 12' 6" Length 10' 0" Material of shell plates S.

Thickness 1 1/2" Range of tensile strength 28-32 Are the shell plates welded or flanged no. Descrip. of riveting: cir. seams d.r. lap.

long. seams d.r. straps Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 4 3/4" 3 7/8" Lap of plates or width of butt straps 16" x OUT 32

Per centages of strength of longitudinal joint rivets 86.6 Working pressure of shell by rules 184 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring McNeil. No. and Description of Furnaces in each boiler 2: plain Material S. Outside diameter 45"

Length of plain part top 46" Thickness of plates crown 12" Description of longitudinal joint weld. No. of strengthening rings 3 1/2 x 3 x 2 1/4

Working pressure of furnace by the rules 186. Combustion chamber plates: Material S. Thickness: Sides 3/2" Back 3/2" Top 3/2" Bottom 1 1/2"

Pitch of stays to ditto: Sides 9 3/8" x 8" Back 8 3/8" x 8 3/8" Top 9 1/2" x 7 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 184.

Material of stays Iron Diameter at smallest part 1 7/8" Area supported by each stay 49. # Working pressure by rules 185. End plates in steam space:

Material S. Thickness 1 1/8" Pitch of stays 18" x 18" How are stays secured d. nut Working pressure by rules 185. Material of stays S.

Diameter at smallest part 2 1/16" Area supported by each stay 32.4 # Working pressure by rules 199. Material of Front plates at bottom S.

Thickness 1". Material of Lower back plate S. Thickness 3/8" Greatest pitch of stays 14 1/2" x 8 3/8" Working pressure of plate by rules 183.1

Diameter of tubes 3 1/2" x 4 1/4" Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates S. Thickness: Front 1" Back 3/2" Mean pitch of stays 10 3/8"

Pitch across wide water spaces 14 1/2" Working pressures by rules B. 191.6 Girders to Chamber tops: Material S. Depth and

thickness of girder at centre 8 1/2" x 1 1/8" Length as per rule 30 1/2" Distance apart 9 1/2" Number and pitch of stays in each three: 4 1/2"

Working pressure by rules 186. 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

VERTICAL DONKEY BOILER—

Manufacturers of Steel

| | | | | |
|--------------------------------------|--|------------------------------|-------------------------------------|----------------------------------|
| No. | Description | | When made | Where fixed |
| Made at | By whom made | | | |
| Working pressure | tested by hydraulic pressure to | Date of test | No. of Certificates | Fire grate area |
| Valves | No. of Safety Valves | Area of each | Pressure to which they are adjusted | Date of adjustment |
| 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 mechanical strength | Descrip. of riveting long. seams | Rivets |
| Dia. of rivet holes | Whether punched or drilled | Pitch of rivets | Lap of plating | Per centage of strength of joint |
| Working pressure of shell by rules | 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 |
| Working pressure of furnace by rules | Thickness of furnace crown plates | Radius of do. | Stayed by | |
| Diameter of uptake | Thickness of uptake plates | Thickness of water tubes | Dates of survey | |

SPARE GEAR. State the articles supplied:— Two top & 2 bottom end bolts & nuts; 2 main bearing & 1 set coupling bolts & nuts; 1 set each, Air, Circulating, Feed & Bilge pumps valves; 1 donkey check valve; 1 safety valve spring; bolts & nuts assorted & iron of various sizes.
1 propeller -

The foregoing is a correct description,

HALL, RUSSELL & CO., LTD.

Manufacturers of Main Engines & Boilers.

James J. Hunter
 1912 July 31 - August 4, 13, 19, 21, 30 - September 3, 9, 13, 16, 18, 26 - October 1, 10, 12, 14, 18, 21, 22, 25, 30
 November 1, 6, 13, 16, 18, 20, 23, 26 - December 5
 Total No. of visits 30.

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

Dates of Examination of principal parts—Cylinders $\frac{30}{8} \frac{26}{9} \frac{10}{10} \frac{21}{10} \frac{25}{10}$ Slides $\frac{1}{10} \frac{25}{10}$ Covers $\frac{18}{9} \frac{21}{10}$ Pistons $\frac{18}{9} \frac{10}{10} \frac{21}{10}$ Rods $\frac{4}{8} \frac{18}{9} \frac{10}{10} \frac{25}{10}$

Connecting rods $\frac{4}{8} \frac{18}{9} \frac{10}{10} \frac{20}{10}$ Crank shaft 25.10.12 Thrust shaft $\frac{31}{7} \frac{13}{8} \frac{18}{10}$ Tunnel shafts ✓ Screw shaft $\frac{13}{8} \frac{21}{10} \frac{20}{10} \frac{1}{11}$ Propeller $\frac{30}{10} \frac{1}{11}$

Stern tube $\frac{21}{10} \frac{25}{10}$ Steam pipes tested 20.11.12 Engine and boiler seatings 30.10.12 Engines holding down bolts $\frac{16}{11} \frac{18}{11}$

Completion of pumping arrangements 20.11.12 Boilers fixed 26.11.12 Engines tried under steam 26.11.12

Main boiler safety valves adjusted 26.11.12 Thickness of adjusting washers Port $\frac{1}{32}$ Starboard $\frac{1}{32}$ full.

Material of Crank shaft S. Identification Mark on Do. 312. (DUN) Material of Thrust shaft S. Identification Mark on Do. 414 A

Material of Tunnel shafts None Identification Marks on Do. ✓ Material of Screw shafts J. Identification Marks on Do. 414 A

Material of Steam Pipes Copper, solid drawn, $\frac{3}{2}$ bore, No. 4. T.B.W.G. Test pressure 360 lbs per square inch ✓

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

These Engines, and the boiler, have been constructed under Special Survey. The materials, and workmanship are good; they together with the Donkey boiler (Gls report No. 31604) have now been properly fitted on board, and tried under steam, with satisfactory results, and are now, in good and safe working condition, and in my opinion entitled to the Record + L.M.C. 12.12. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 12.12.

J.W.D.
16/12/12

Ridley Towell
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

| | | |
|--------------------------------|----------|-------------------|
| The amount of Entry Fee .. £ | 1 : | When applied for, |
| Special £ | 11 : 5 : | 12.12.1912 |
| Donkey Boiler Fee £ | : | When received, |
| Travelling Expenses (if any) £ | : | 12.12.1912 |

Committee's Minute TUE. DEC. 17 1912
Assigned + L.M.C. 12.12

Certificate (if required) to be sent to Aberdeen Office.

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

