

Received at London Office

Date of writing Report 6.11.17 When handed in at Local Office 6.11.17 Port of SUNDERLAND  
 No. in Survey held at SUNDERLAND Date, First Survey 18 Jan'y 1916 Last Survey 30<sup>th</sup> October 1917  
 Reg. Book. 913 on the new steel S/S "MENDOCINO" (Number of Visits) Gross 7020 Tons Net 4420  
 Master Built at Sunderland By whom built Sir J. Laing & Sons Ltd (S/S No. 161) When built 1917  
 Engines made at Sunderland By whom made George Clark Ltd (No. 1042) when made 1917  
 Boilers made at do. By whom made George Clark Ltd (No. 1042) when made 1917  
 Registered Horse Power 559 Owners E. M. Cohen Port belonging to London  
 Nom. Horse Power as per Section 28 559 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

**ENGINES, &c.**—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 27"-45"-74" Length of Stroke 54" Revs. per minute 74 Dia. of Screw shaft as per rule 15.55 Material of J. Steel  
 as fitted 15 5/8" screw 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 5'-2 1/2"  
 Dia. of Tunnel shaft as per rule 13.95 Dia. of Crank shaft journals as per rule 14.63 Dia. of Crank pin 14 3/4" Size of Crank webs 10 23/32" Dia. of thrust shaft under  
 collars 14 13/16" Dia. of screw 18'-9" Pitch of Screw 17'-0" No. of Blades 4 State whether moveable no Total surface 108 sq ft  
 No. of Feed pumps 2 Diameter of ditto 8" Stroke 21" Can one be overhauled while the other is at work yes Woodson's (Steam cyl 10 1/2")  
 No. of Bilge pumps 2 Diameter of ditto 5" Stroke 30" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps 9x10x10 9x5 1/4 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 3 @ 3 1/2" In Holds, &c. longhold (rod) 2 @ 2 1/2" connected to  
ballast pumps in the hold  
 No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump to C.P. Is a separate Donkey Suction fitted in Engine room & size yes, 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 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 all above except oil fuel pump discharge  
 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 22-1-17 of Stern Tube 22-8-17 Screw shaft and Propeller 22-8-17  
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door made up of worked from —

**BOILERS, &c.**—(Letter for record 5) Manufacturers of Steel John Spencer & Sons Ltd  
 Total Heating Surface of Boilers 8248 sq ft Is Forced Draft fitted yes No. and Description of Boilers 4 single ended marine  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 5-6-17 No. of Certificate 3408  
 Can each boiler be worked separately yes Area of fire grate in each boiler 49 sq ft No. and Description of Safety Valves to  
 each boiler two direct spring Area of each valve 8.950" Pressure to which they are adjusted 185 Are they fitted with easing gear yes  
 Smallest distance between boilers compartments and bunkers compartments 1'-6" Mean dia. of boilers 13'-9" Length 11'-9" Material of shell plates steel  
 Thickness 1 5/16" Range of tensile strength 29-32 1/2 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams DR  
 long. seams DRS TR Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7 3/4" Lap of plates or width of butt straps 17 1/8"  
 Per centages of strength of longitudinal joint rivets 88 Working pressure of shell by rules 185 Size of manhole in shell 16x12"  
 plate 85.5  
 Size of compensating ring 8 x 1 1/2" No. and Description of Furnaces in each boiler 3 horizontal Material steel Outside diameter 3'-5 1/2"  
 Length of plain part top 1' Thickness of plates bottom 3/2" Description of longitudinal joint welded No. of strengthening rings none  
 Working pressure of furnace by the rules 182 Combustion chamber plates: Material steel Thickness: Sides 13/16" Back 3/4" Top 25/32" Bottom 13/16"  
 Pitch of stays to ditto: Sides 10 3/4 x 10 1/4 Back 10 1/2 x 10 Top 10 1/2 x 11 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181  
 Material of stays steel Diameter at smallest part 2.360" Area supported by each stay 110 sq in Working pressure by rules 192 End plates in steam space:  
 Material steel Thickness 1 1/2" Pitch of stays 18" + 19 1/8" How are stays secured D.N. Working pressure by rules 185 Material of stays steel  
 Diameter at smallest part 5.940" Area supported by each stay 339 sq in Working pressure by rules 182 Material of Front plates at bottom steel  
 Thickness 15/16" Material of Lower back plate steel Thickness 15/16" Greatest pitch of stays 14 3/4 x 10 1/2 Working pressure of plate by rules 186  
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" + 3 5/8" Material of tube plates steel Thickness: Front 15/16" Back 3/4" Mean pitch of stays 9 1/4"  
 Pitch across wide water spaces 13 1/2" Working pressures by rules 185 Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 2 @ 9 5/8" x 7/8" Length as per rule 3'-0" Distance apart 11" Number and pitch of stays in each 2 @ 10 1/2"  
 Working pressure by rules 181 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 —

If a Report also sent on the Hull of the Ship



IS A DONKEY BOILER FITTED? no

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied: - Two connecting rod top and bottom end bolts and nuts two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves, one pair of top and bottom end bearings, one valve spindle, one eccentric strap, one propeller and iron and bolts of various sizes

The foregoing is a correct description,  
FOR GEORGE CLARK LIMITED.

W & S MULL Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1916 Jan 18 Feb 11 Mar 17 May 5 Jun 13 Jul 21 Aug 29 Oct 19 Dec 11 (1917) Jan 22 24 25 Feb 1 22 Mar 8 17 16 22 26 27 29  
During erection on board vessel - - - Apr 2 3 12 17 26 30 May 3 4 10 11 30 Jun 5 8 11 21 25 Jul 2 4 5 12 12 13 19 20 23 24 25 30 Aug 1 2 3 4 13 14 15 22 23  
Sep. 5 6 7 12 13 20 21 25 28 Oct 15 19 23 25 26 27 30  
Total No. of visits 74 Is the approved plan of main boiler forwarded herewith yes  
" " " donkey " " " ✓

Dates of Examination of principal parts - Cylinders 8-6-17 Slides 10-7-17 Covers 19-10-16 Pistons 25-6-17 Rods 23-7-17  
Connecting rods 3-5-17 Crank shaft 12-6-17 Thrust shaft 21-6-17 Tunnel shafts none Screw shaft 3-8-17 Propellers 1-8-17  
Stern tube 1-8-17 Steam pipes tested 6, 7 & 12-9-17 Engine and boiler seatings 22-8-17 Engines holding down bolts 5-9-17  
Completion of pumping arrangements 26-10-17 Boilers fixed 13-9-17 Engines tried under steam 25-9-17  
Main boiler safety valves adjusted 25-9-17 Thickness of adjusting washers F.P.  $\frac{5}{16}$  S  $\frac{3}{8}$  F.S. both  $\frac{11}{32}$  A.P.  $\frac{3}{8}$  S  $\frac{13}{32}$  A.S. both  $\frac{3}{8}$   
Material of Crank shaft SM Steel Identification Mark on Do. 196AN.WC Material of Thrust shaft SM Steel Identification Mark on Do. 613RFM  
Material of Tunnel shafts none Identification Marks on Do. - Material of Screw shafts SM Steel Identification Marks on Do. 87 & 88 J.P.  
Material of Steam Pipes Lap welded wrought iron Test pressure 540 lbs per sq. in.  
Is an installation fitted for burning oil fuel yes 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 yes If so, state name of vessel S/S "Hirsh" SLD Rpt No 27054

General Remarks (State quality of workmanship, opinions as to class, &c.)  
The materials and workmanship are good.  
The machinery has been constructed under special survey and is eligible in my opinion for classification and the records + LMC 10, 17. Fitted for oil fuel 10, 17. F.P. above 150° F.

SUNDERLAND.

The Surveyors are requested not to write on or in these spaces for Committee's Minutes.

It is submitted that  
this vessel is eligible for  
**THE RECORD. + LMC 10.17. F.D.**

Fitted for oil fuel 10.17. F.P. above 150° F.

The amount of Entry Fee ...	£ 3	:	:	When applied for,	
Special ...	£ 47	:	19	6.11.1917	
Donkey Boiler Fee ...	£	:	:	When received,	
Travelling Expenses (if any) £		:	:	10.11.1917	

S. J. Davis  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUE NOV 27 1917  
Assigned + LMC 10, 17. F.D.  
Fitted for oil fuel 10, 17.  
F.P. above 150° F.

