

# REPORT ON MACHINERY

No. 31478  
JULY 2 - 1919

Received at London Office

Date of writing Report 19 When handed in at Local Office 28/11/19 Port of Hull  
 Date, First Survey 30/12/18 Last Survey 7/11/1919  
 No. in Survey held at Hull (Number of Visits 31)  
 Reg. Book. on the S. T. GENERAL BIRDWOOD (EX JAMES McLAUGHLIN) A89 Tons { Gross 324  
 Net 148.  
 Master Built at Selby By whom built Belmane Bros Ltd When built 1919  
 Engines made at Hull By whom made Messrs J. Holmes & Co Ltd when made 1919  
 Boilers made at Hull By whom made do when made 1919  
 Registered Horse Power Owners Hellyer Bros Ltd Port belonging to Hull.  
 Nom. Horse Power as per Section 28 87 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 13"-23"-37" Length of Stroke 36 Revs. per minute 115 Dia. of Screw shaft as per rule 8.29 Material of screw shaft Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No Is the after end of the liner made water tight  
 Is the propeller boss 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 No liners lapped Length of stern bush 36"  
 Dia. of Tunnel shaft as per rule 7.04 Dia. of Crank shaft journals as per rule 7.39 Dia. of Crank pin 7 1/2 Size of Crank webs 4 1/2 x 11 Dia. of thrust shaft under  
 rollers 7 1/2 Dia. of screw 9 7/8 Pitch of Screw 11-0 No. of Blades 4 State whether moveable No Total surface 33 sq ft  
 No. of Feed pumps one Diameter of ditto 2 5/8 Stroke 14 3/4 Can one be overhauled while the other is at work  
 No. of Bilge pumps one Diameter of ditto 2 5/8 Stroke 14 3/4 Can one be overhauled while the other is at work  
 No. of Donkey Engines one Sizes of Pumps 6 x 4 1/4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room two 2" dia In Holds, &c. one 2" dia in each compartment  
 all motions also connected to ejectors  
 No. of Bilge Injections one sizes 3 1/2 Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size 3 ejectors  
 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 Yes  
 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 Sol. motions which flow How are they protected Flange casing  
 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  
 Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

**BOILERS, &c.—(Letter for record 3)** Manufacturers of Steel Port Talbot & J. Spencer & Co  
 Total Heating Surface of Boilers 14400 Is Forced Draft fitted No No. and Description of Boilers one triple ended multi  
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 29/10/19 No. of Certificate 3386  
 Can each boiler be worked separately Area of fire grate in each boiler 48 sq ft No. and Description of Safety Valves to  
 each boiler two spring loaded Area of each valve 4.9 sq ft Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 8" dia. of boilers 165" Length 10-8 Material of shell plates Steel  
 Thickness 1 1/4" Range of tensile strength 28 to 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams double  
 Long. seams TRUSS Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 5/8" Lap of plates or width of butt straps 18"  
 Percentages of strength of longitudinal joint rivets 85.9% Working pressure of shell by rules 202 lbs Size of manhole in shell 16 x 12  
 plate 85.5%  
 Size of compensating ring 7 x 1 1/4 No. and Description of Furnaces in each boiler three plain Material Steel Outside diameter 40"  
 Length of plain part top 7 1/2" bottom 7 1/2" Thickness of plates crown 3 1/8" Description of longitudinal joint welded No. of strengthening rings  
 Working pressure of furnace by the rules 205 Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4"  
 Pitch of stays to ditto: Sides 10 x 8 Back 9 1/2 x 8 1/2 Top 11 x 8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 208 lbs  
 Material of stays Steel Area at smallest part 2.07" Area supported by each stay 88" Working pressure by rules 211 End plates in steam space:  
 Material Steel Thickness 1 1/2" Pitch of stays 19 x 17 1/2 How are stays secured T.N.W. Working pressure by rules 210 Material of stays Steel  
 Area at smallest part 7.5" Area supported by each stay 335" Working pressure by rules 233 Material of Front plates at bottom Steel  
 Thickness 1/8" Material of Lower back plate Steel Thickness 1/8" Greatest pitch of stays 13 1/2 x 9 1/2 Working pressure of plate by rules 216  
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/8" Material of tube plates Steel Thickness: Front 1/8" Back 1/8" Mean pitch of stays 10"  
 Pitch across wide water spaces 14" Working pressures by rules 275 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 11 x 1 1/2 Length as per rule 36.218 Distance apart 11" Number and pitch of stays in each 328"  
 Working pressure by rules 201 lbs Steam dome: description of joint to shell % of strength of joint  
 Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes  
 Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

**SUPERHEATER.** Type Date of Approval of Plan Tested by Hydraulic Pressure to  
 Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler  
 Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

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 & 2 main bearing bolts & nuts, one set coupling bolts & nuts, one set air feed & bilge pump valves, 6 finking ring studs & nuts, one set air feed & bilge pump valves, 6 finking ring studs & nuts, one main & one donkey check valve, two valves for donkey pump, one safety valve spring, three condenser tubes, one set finking, a quantity of bolts & nuts, & iron of various sizes.*

The foregoing is a correct description,  
for **CHARLES D. HOLMES & CO. LTD.**

*J. Cooper*

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1918. Dec 30-31. Jan 1. Apr. 23-24. 29 Jun. 3. 12. 20 July 8. 15. 17. 24 Aug. 1-15.  
{ During erection on board vessel --- } 19-21-29. 30 Sep 2. 5-10-11-14. Oct 10-23-28. Nov 2-4.  
Total No. of visits *31.*

Is the approved plan of main boiler forwarded herewith *sent previously*  
" " " donkey " " " " " " " " " " " "

Dates of Examination of principal parts—Cylinders *26/6/19* Slides *10/9/19* Covers *4/7/19* Pistons *10/9/19* Rods *25/8/19*  
Connecting rods *10/9/19* Crank shaft *2/9/19* Thrust shaft *2/9/19* Tunnel shafts *✓* Screw shaft *23/4/19* Propeller *24/4/19*  
Stern tube *24/4/19* Steam pipes tested *28/10/19* Engine and boiler seatings *23/10/19* Engines holding down bolts *23/10/19*  
Completion of pumping arrangements *7/11/19* Boilers fixed *4/11/19* Engines tried under steam *7/11/19*  
Completion of fitting sea connections *29/4/19* Stern tube *29/4/19* Screw shaft and propeller *29/4/19*  
Main boiler safety valves adjusted *4/11/19* Thickness of adjusting washers *5/8" 9/8"*  
Material of Crank shaft *Steel* Identification Mark on Do. *2374* Material of Thrust shaft *Steel* Identification Mark on Do. *2375*  
Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shafts *Steel* Identification Marks on Do. *2320*  
Material of Steam Pipes *Copper* Test pressure *400 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 *Messagerette*

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines & boiler of this vessel have been built under special survey, & the materials & workmanship are good. On completion they were examined while running full power trials in the Harbour & found satisfactory. The machinery throughout is now in good & efficient condition & eligible in our opinion to have the record LMC-11-19 marked in Red in the Surveyor's Register Book.*

It is submitted that this vessel is eligible for **THE RECORD. + LMC 11-19.**

*J.W.D. 2/19*  
*4/12/19*  
*J.M.*

The amount of Entry Fee ... £ *2-0-0* When applied for, *2/12/19*  
Special ... £ *26-2-0*  
Donkey Boiler Fee ... £ : : When received, *30/12/19*  
Travelling Expenses (if any) £ : : *31*

*Shuttle & C. H. Fowling*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
Assigned *+ LMC 11-19*

**ASSIGNED CERTIFICATE**