

# REPORT ON MACHINERY

WED. 18 Nov. 1922 No. 16033

Received at London Office

Date of writing Report 17/10/22 When handed in at Local Office 17 Oct 22 Port of WEST HARTLEPOOL  
 No. in Survey held at West Hartlepool Date, First Survey 24 Nov 1920 Last Survey 19 Oct 1922  
 Reg. Book. 78479 on the S.S. "CITY OF EVANSVILLE" (No 919) (Number of Visits 139)  
 Master J Built at West Hartlepool By whom built Wm Gray & Co Ltd Tons Gross 6553.31  
Not 4152.78 When built 1922  
 Engines made at West Hartlepool By whom made Central Marine Engine Works when made 1922  
 Boilers made at ditto By whom made ditto when made 1922  
 Registered Horse Power 617 Owners Ellerman (Hall) Lines, Ltd Port belonging to Liverpool  
 Nom. Horse Power as per Section 28 617 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 24 1/2 - 42 1/2 - 74 Length of Stroke 51 Revs. per minute 75 Dia. of Screw shaft as per rule 15.204 Material of Ingot. Stl  
as fitted 16 1/2 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 yes 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 yes Length of stern bush 5'-6"  
 Dia. of Tunnel shaft as per rule 14.0" Dia. of Crank shaft journals as per rule 14.7" Dia. of Crank pin 15 1/4" Size of Crank webs 9x22 1/2" Dia. of thrust shaft under  
 collars 15 1/4" Dia. of screw 17-9" Pitch of Screw 16-9" No. of Blades 4 State whether moveable yes Total surface 114 Sq ft  
 No. of Feed pumps 2 Weirs independent Diameter of ditto Stroke Can one be overhauled while the other is at work yes 2 Weirs main feed pumps  
12" x 9" x 22 1/2"  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 28" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 5 Sizes of Pumps Ballast 9x10 1/2 x 10 duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 5 of 3 1/2" Gen. Sew. 10x6x10 Harbour Sd 7 1/2 x 5 1/2 x 15 2 of 3 1/2" in each hold  
2 Oil transfer 10 1/2 x 12 1/2 x 18 1 of 3" in tunnel  
 No. of Bilge Injections 1 sizes 11" Connected to condenser, or to circulating pump C.P. a separate Donkey Suction fitted in Engine room & size 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 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 yes  
 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, see ship reports it fitted with a watertight door yes worked from Cylinder grating

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel J. Spencer & Sons  
 Total Heating Surface of Boilers 8946 ft<sup>2</sup> Forced Draft fitted yes No. and Description of Boilers 3 single ended  
 Working Pressure 225 lbs Tested by hydraulic pressure to 388 lbs Date of test 15.3.22 No. of Certificate 3611  
 Can each boiler be worked separately yes Area of fire grate in each boiler 76.8 ft<sup>2</sup> No. and Description of Safety Valves to  
 each boiler 2 direct spring Area of each valve 11.04" Pressure to which they are adjusted 230 lbs Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean dia. of boilers 16'-4 1/2" Length 12'-6" Material of shell plates Steel  
 Thickness 1 5/8" Range of tensile strength 28/30 Are the shell plates welded or flanged yes Descrip. of riveting: cir. seams J.P. Lap  
 long. seams J.P. D.B.S Diameter of rivet holes in long. seams 1 5/8" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 23 1/4"  
 Per centages of strength of longitudinal joint 90 Working pressure of shell by rules 227 lbs Size of manhole in shell 16" x 20"  
 Size of compensating ring 2'-9" x 3'-1" x 1 5/8" No. and Description of Furnaces in each boiler 4 Deightons Material Steel Outside diameter 3'-9 1/2"  
 Length of plain part top 21" Thickness of plates bottom 32" Description of longitudinal joint welded No. of strengthening rings yes  
 Working pressure of furnace by the rules 235 Combustion chamber plates: Material Steel Thickness: Sides 32" Back 32" Top 32" Bottom 1"  
 Pitch of stays to ditto: Sides 9' x 8 5/8" Back 9 5/8' x 7 3/4" Top 9' x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 226  
 Material of stays Steel Area at smallest part 2.096" Area supported by each stay 7 3/4' x 12 9/16" Working pressure by rules 225 End plates in steam space:  
 Material Steel Thickness 1 1/4" Pitch of stays 19' x 16" How are stays secured D nuts Working pressure by rules 226 Material of stays Steel  
 Area at smallest part 6.65" Area supported by each stay 19' x 16" Working pressure by rules 227 Material of Front plates at bottom Steel  
 Thickness 1 3/32" Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 15 1/4' x 7 3/4" Working pressure of plate by rules 236  
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4' x 3 3/4" Material of tube plates Steel Thickness: Front 1 3/32" Back 13/16" Mean pitch of stays 11 1/4' x 7 1/2"  
 Pitch across wide water spaces 14" Working pressures by rules 234 & 269 Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 10 1/4' x 1 3/4" Length as per rule 36 1/2" Distance apart 8 1/2" Number and pitch of stays in each Three 9"  
 Working pressure by rules 230 Steam dome: description of joint to shell none % of strength of joint -  
 Diameter yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet holes yes  
 Pitch of rivets yes Working pressure of shell by rules yes Crown plates yes Thickness yes How stayed yes

**SUPERHEATER.** Type Schmidts Date of Approval of Plan 30-3-21 Tested by Hydraulic Pressure to 450 lbs  
 Date of Test 11/3/20-4-22 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes  
 Diameter of Safety Valve 2" Pressure to which each is adjusted 235 lbs Is Easing Gear fitted yes

Is a Report also sent on the Hull of the Ship? yes If not, state whether, and when, one will be sent? 10-22

IS A DONKEY BOILER FITTED? *no* If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 bolts & nuts for connec. rods top ends, 2 ditto for bottom ends, 2 ditto for main bearings, 1 set coupling bolts & nuts, 1 set valves for feed, bilge and all donkey pumps, 1 hood & rings for HP piston, 1 valve spindle, 1 pair crank pin bearings, 1 air pump rod, 1 pair eccentric straps, 2 blades for propeller & 1 set studs & nuts for same, 3 safety valve springs, Various spare parts for Cent. circulating pump & fan engines, Assorted bolts, nuts, and iron.

The foregoing is a correct description, WORKS,  
(W. Gray & Co. Ltd.)

*J. W. Seames* Manufacturer.  
DIRECTOR.

Dates of Survey while building: During progress of work in shops - - - 1920. Nov 24, 25, 29. Dec 6, 7, 8, 20, 21. 1921. Jan 14, 21, 31. Feb 4, 15, 17, 21, 22, 23, 25, 28. Mar 2, 4, 8, 15, 21, 22, 24, 28, 30. Apr 15, 20, 25. May 2, 3, 5, 6, 10, 27, 30. July 27, Aug 9, 11, 15, 19. Nov 28. Dec 2, 6, 7, 8, 12, 14, 16, 19, 20, 22. 1922. Jan 4, 6, 9, 16, 17, 19, 24, 25, 26, 30. Feb 1, 2, 3, 6, 7, 8, 10, 13, 15, 17, 22, 28. Mar 7, 13, 15, 16, 20, 23, 24, 28. Apr 3, 7, 11, 12, 19, 20, 21. May 15, 16, 17, 22, 25, 29. Jun 7, 23, 26. July 3, 4, 6, 7, 24, 27, 28. Aug 15, 18, 21, 21, 22, 22, 23, 24, 25, 28, 29, 30, 30. Sept 1, 4, 5, 6, 8, 11, 13, 14, 15, 19, 20, 21, 28. Oct 3, 6, 9, 10, 11, 12. Total No. of visits 139.

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

Dates of Examination of principal parts—Cylinders 16-1-22 Slides 27-4-22 Covers 26-1-22 Pistons 9-1-21 Rods 19-1-22 Connecting rods 8-12-21 Crank shaft 25-1-22 Thrust shaft 23-3-22 Tunnel shafts 7-4-22 Screw shaft 23-3-22 Propeller 28-2-22 Stern tube 29-5-22 Steam pipes tested 21-8-22 & 13-9-22 Engine and boiler seatings 21-8-22 Engines holding down bolts 1-9-22 Completion of pumping arrangements 6-10-22 Boilers fixed 25-8-22 Engines tried under steam 21-9-22 Completion of fitting sea connections 26-6-22 Stern tube 27-7-22 Screw shaft and propeller 27-7-22 Main boiler safety valves adjusted 21-9-22 Thickness of adjusting washers P 23" 3" S 6 CP 25" 9" SP 23" 27" S 64 S 64 C 24 S 32

Material of Crank shaft *Ingot S.* Identification Mark on Do. 5642N Material of Thrust shaft *Ingot S.* Identification Mark on Do. 3090D  
Material of Tunnel shafts *Ingot S.* Identification Marks on Do. 7, 3049 D, 1, 6135 N. Material of Screw shafts *Ingot S.* Identification Marks on Do. 3049 D  
Material of Steam Pipes *Lap welded steel* Test pressure 675 lbs

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 *no* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. *A Wallsend Howden oil burning installation fitted. A 35 ton evaporator fitted, the shell of which was tested to 50 lbs, and the coils to 400 lbs. This vessel's machinery has been constructed and installed under Special Survey. The materials and workmanship are good. On completion it was tried under full steam and found satisfactory, and is now in good and safe working condition and eligible to have the notation*  
**LMC 10.22.**

It is submitted that this vessel is eligible for THE RECORD. + LMC 10.22. FD. CL  
Fitted for oil fuel 10.22. FP above 150°F.

*J.W.D.*  
23/10/22

The amount of Entry Fee ... £ 6 : 0  
Special ... £ 105 : 17  
Donkey Boiler Fee ... £ ✓  
Travelling Expenses (if any) £ ✓

*T. D. Shilston*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute. Assigned. TUE: 24 OCT. 1922  
*+ LMC 10.22*  
*F. D. C. L.*  
*Fitted for oil fuel 10.22*  
*F.P. above 150°F.*

