

Date of writing Report 28<sup>th</sup> March 1917 When handed in at Local Office 31/3/17 Port of West Hartlepool 22<sup>nd</sup> March 1917No. in. Survey held at West Hartlepool Date, First Survey 20<sup>th</sup> Sept 16 Last Survey 22<sup>nd</sup> March 1917Reg. Book. on the steel screw steamer LLANOVER (Number of Visits 5) Gross 4274Master Ellis Built at Sunderland By whom built W. Pickersgil & Son. Ld. (1913) When built 1917Engines made at Hartlepool By whom made Richardsons, Westwick & Co. Ld. when made 1917Boilers made at Hartlepool By whom made Richardsons, Westwick & Co. Ld. when made 1917Registered Horse Power 475 Owners Westman, Thomas, & Co. Ld. Port belonging to CornwallNom. Horse Power as per Section 28 475 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted YesENGINES, &c.—Description of Engines Triple Expansion (inverted) No. of Cylinders Three No. of Cranks ThreeDia. of Cylinders 27, 45, 74 Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft 14.83 Material of ironIs 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 tightin 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 partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes If twoliners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 80 1/2Dia. of Tunnel shaft 13 1/4 Dia. of Crank shaft journals 14 1/2 Dia. of Crank pin 14 3/4 Size of Crank webs 22 1/2 x 9 Dia. of thrust shaft undercollars 14 1/2 Dia. of screw 14-9 Pitch of Screw 14-6 No. of Blades four State whether moveable no Total surface 99.76No. of Feed pumps Two Diameter of ditto 9 1/2 Stroke 21 Can one be overhauled while the other is at work yesNo. of Bilge pumps Two Diameter of ditto 4 Stroke 27 Can one be overhauled while the other is at work yesNo. of Donkey Engines Two Sizes of Pumps General Service 4 1/2 x 10 & 3 1/2 x 10 No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room Two 3 1/2 inch one 2 1/2 inch Main Suction, one 3 1/2 inch In Holds, &c. Two in Fore Hold 3 1/2 inchNo. of Bilge Injections Two sizes 7 Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size Two 3 1/2Are 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 yesAre all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks bothAre 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 aboveAre 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 yesWhat 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 yesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yesDates of examination of completion of fitting of Sea Connections 23-1-17 of Stern Tube 20/2/17 Screw shaft and Propeller 23/2/17Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from upper platformBOILERS, &c.—(Letter for record 5) Manufacturers of Steel Spencer & Son Ltd. & Laid & Sons & Co. Ld.Total Heating Surface of Boilers 8196 1/2 Is Forced Draft fitted no No. and Description of Boilers Three Simple LocomotiveWorking Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 14/1/17 17/2/17 No. of Certificate 3449 3450Can each boiler be worked separately yes Area of fire grate in each boiler 59.7 1/2 No. and Description of Safety Valves toeach boiler Two direct spring Area of each valve 4.04 1/2 Pressure to which they are adjusted 185 lb Are they fitted with easing gear yesSmallest distance between boilers or uptakes and bunkers or woodwork 30 Mean dia. of boilers 15-9 1/2 Length 11-9 1/4 Material of shell plates steelThickness 1 1/2 Range of tensile strength 28 1/2 to 32 1/2 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 1/2 x 1 1/2long. seams 5/8 x 1 1/2 Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 1/2 Lap of plates or width of butt straps 18Per centages of strength of longitudinal joint 85.9 Working pressure of shell by rules 181.5 Size of manhole in shell 13 x 16 1/2Size of compensating ring 8 x 1 1/2 No. and Description of Furnaces in each boiler Three, Simple Material steel Outside diameter 49 3/4Length of plain part top 19 bottom 32 Thickness of plates top 19 bottom 32 Description of longitudinal joint weld No. of strengthening rings —Working pressure of furnace by the rules 190 lb Combustion chamber plates: Material steel Thickness: Sides 19 Back 19 Top 19 Bottom 27Pitch of stays to ditto: Sides 8 1/2 x 7 1/2 Back 8 1/2 x 8 Top 8 1/2 x 7 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 184 1/2Material of stays steel Diameter at smallest part 1 1/4 Area supported by each stay 8 1/2 x 8 Working pressure by rules 180 lb End plates in steam space:Material steel Thickness 1 1/2 Pitch of stays 8 1/2 x 7 1/2 How are stays secured by nuts Working pressure by rules 181 lb Material of stays steelDiameter at smallest part 1 1/4 Area supported by each stay 8 1/2 x 8 Working pressure by rules 180 lb Material of Front plates at bottom steelThickness 1 1/2 Material of Lower back plate steel Thickness 1 1/2 Greatest pitch of stays 13 1/4 Working pressure of plate by rules 181 lbDiameter of tubes 3 1/2 Pitch of tubes 4 3/4 x 4 7/8 Material of tube plates steel Thickness: Front 1 1/2 Back 1 1/2 Mean pitch of stays 10 1/4Pitch across wide water spaces 14 1/2 Working pressures by rules 183 lb Girders to Chamber tops: Material steel Depth andthickness of girder at centre 9 x 1 1/2 Length as per rule 55 1/2 Distance apart 8 1/4 Number and pitch of stays in each Three 7 1/2Working pressure by rules 184 lb Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler workedseparately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivetholes — 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 —



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:-

Propeller & shaft, two each top end, bottom end  
main bearing bolts & nuts, one set of coupling bolts, one set of feed & one set  
of bilge pump valves, two safety valve springs, 6 boiler tubes & two half eccentric  
strap & mounted bolts nut & wash.

The foregoing is a correct description,

For RICHARDSONS, WESTGARTH & Co., LIMITED

*C. H. Higate*

ASSISTANT GENERAL MANAGER

Manufacturer.

Dates of Survey while building { During progress of work in shops - 1916 Sep 20. 25. 28. Oct 2. 5. 6. 10. 13. 16. 17. 20. 27. 30. Nov 1. 6. 11. 23. 28. 29. 30. Dec 1. 11. 13. 14. 15. 18. 19. 20  
During erection on board vessel - 21. 27. 28. 30. 1917 Jan 3. 4. 5. 6. 10. 11. 12. 13. 16. 18. 19. 22. 23. 26. 29. 31. Feb 2. 5. 7. 8. 14. 15. 20. 23. Mar 6. 22.  
Total No. of visits 58 62

Is the approved plan of main boiler forwarded herewith

yes

Dates of Examination of principal parts - Cylinders 13/11/17 Slides 14/11/17 Covers 14/11/17 Pistons 27/11/17 Rods 28/11/17  
Connecting rods 27/11/17 Crank shaft 20/11/17 Thrust shaft 23/11/17 Tunnel shafts 19/11/17 Screw shaft 14/11/17 Propeller 21/11/17  
Stern tube 2/12/17 Steam pipes tested 22/11/17 Engine and boiler seatings 23/11/17 Engines holding down bolts 4/12/17  
Completion of pumping arrangements 22/11/17 Boilers fixed 22/11/17 Engines tried under steam 22/11/17  
Main boiler safety valves adjusted 22/11/17 Thickness of adjusting washers 1/2 7/8 3/4 1/2 5/8 3/8  
Material of Crank shaft steel Identification Mark on Do. 5869 Material of Thrust shaft steel Identification Mark on Do. 5869  
Material of Tunnel shafts iron Identification Marks on Do. 5869 Material of Screw shafts iron Identification Marks on Do. 5869  
Material of Steam Pipes not iron lap welded Test pressure 540 lbs

Is an installation fitted for burning oil fuel

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 no

If so, state name of vessel

Export Policy total 50th

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

Expenditure 400th 14th. 1870

The Machinery of this Vessel has been constructed under special survey the material & workmanship sound & good. The Boiler & steam pipes have been tested by Hydraulic Pressure in accordance with the Rules the machinery worked satisfactorily at the pressures & the safety valves have been adjusted under steam to their working pressure & every gear fitted, rendering this Vessel eligible in my opinion to have the notation \* LMC 3.17 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 5.17.

The amount of Entry Fee ... £ 3 : 0 :  
Special ... £ 43 : 15 :  
Donkey Boiler Fee ... £ ...  
Travelling Expenses (if any) £ ...

When applied for,

24/11/17

When received,

14/12/17

*W. D. Davis*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

FRI 11 MAY 1917

+ LMC 5.17

MACHINERY CERTIFICATE WRITTEN



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