

# REPORT ON MACHINERY.

No. 64942  
SAT. OCT. 11. 1913

Received at London Office

Date of writing Report 2<sup>nd</sup> Oct 1913 When handed in at Local Office 6<sup>th</sup> Oct 1913 Port of Newcastle on Tyne  
 No. in Survey held at Newcastle Date, First Survey 25<sup>th</sup> Nov 1912 Last Survey 1<sup>st</sup> Oct 1913  
 Reg. Book. 37 on the Machinery of the S.S. San Tirso (Number of Visits 43) Tons { Gross 6236  
 Master Swan Hunter & Co Built at Newcastle By whom built Swan Hunter & Co When built 1913  
 Engines made at Newcastle By whom made Wallace's Shipway & Eng. Co when made 1913  
 Boilers made at " By whom made " when made 1913  
 Registered Horse Power " Owners Eagle Oil Transport Co. Ltd Port belonging to London  
 Nom. Horse Power as per Section 28 554 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes

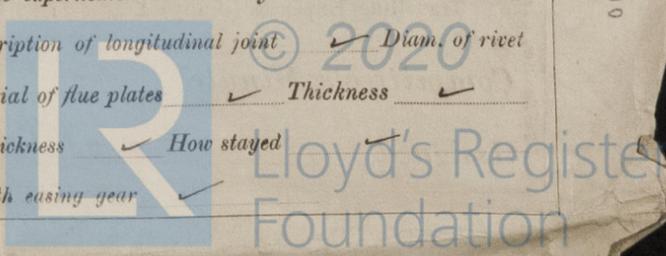
**ENGINES, &c.**—Description of Engines Quadruple No. of Cylinders 4 No. of Cranks 4  
 Dia. of Cylinders 24", 35", 50 1/2", 73" Length of Stroke 51" Revs. per minute 71 Dia. of Screw shaft as per rule 15.07" Material of screw shaft Steel  
 Is the screw shaft fitted with a continuous liner the whole 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'-7"  
 Dia. of Tunnel shaft as per rule 13.46" Dia. of Crank shaft journals as per rule 14.13" Dia. of Crank pin 14 1/2" Size of Crank webs 9 3/4" X 24" Dia. of thrust shaft under collars 14 1/2" Dia. of screw 18'-6" Pitch of Screw 16'-3" No. of Blades 4 State whether moveable Yes Total surface 110 9'  
 No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 26" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 26" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 5 Sizes of Pumps 2 Weirs 8" X 10 1/2" X 2", (2) 8" X 6" X 8" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 3 of 3 1/2" & 2 of 2 1/2" In Holds, &c. Oil cargo pumps

No. of Bilge Injections 1 sizes 12" Connected to condenser, or to circulating pump pumps Is a separate Donkey Suction fitted in Engine room & size Yes 9"  
 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 20/8/13 of Stern Tube 20/8/13 Screw shaft and Propeller 20/8/13  
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door ✓ worked from ✓

**BOILERS, &c.**—(Letter for record 18) Manufacturers of Steel J. Spencer & Sons  
 Total Heating Surface of Boilers 7740 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single-ended  
 Working Pressure 220 lbs Tested by hydraulic pressure to 440 lbs Date of test 9/5/13 No. of Certificate 8492  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 62.5 9' No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 9.62 Pressure to which they are adjusted 225 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 2'-3" Mean dia. of boilers 15'-2 3/4" Length 11'-9" Material of shell plates Steel  
 Thickness 1 5/8" Range of tensile strength 29 3/4-33 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. r. lap  
 long. seams Z. r. d. butt Diameter of rivet holes in long. seams 1 5/8" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 2 3/2"  
 Per centages of strength of longitudinal joint rivets 90.5 plate 84.5-2 Working pressure of shell by rules 259 lbs Size of manhole in shell 16" X 12"  
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 49 1/8"  
 Length of plain part top ✓ bottom ✓ Thickness of plates crown 1/16" bottom 1/16" Description of longitudinal joint welded No. of strengthening rings ✓  
 Working pressure of furnace by the rules 249 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1/4"  
 Pitch of stays to ditto: Sides 7 5/8" X 8 1/8" Back 8 3/4" X 7 1/4" Top 8 1/8" X 7 3/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 258 lbs  
 Material of stays Steel Diameter at smallest part 2.03 Area supported by each stay 62.7 Working pressure by rules 242 lbs End plates in steam space: Material Steel Thickness 1 3/8" Pitch of stays 20" X 15 1/4" How are stays secured d. nuts Working pressure by rules 268 lbs Material of stays Steel  
 Diameter at smallest part 8.48 Area supported by each stay 314 Working pressure by rules 282 lbs Material of Front plates at bottom Steel  
 Thickness 1 Material of Lower back plate Steel Thickness 3 1/2" Greatest pitch of stays 14 1/4" X 8 1/4" Working pressure of plate by rules 239 lbs  
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" X 3 1/4" Material of tube plates Steel Thickness: Front 1" Back 1 3/16" Mean pitch of stays 7 1/4"  
 Pitch across wide water spaces 13 1/4" Working pressures by rules 233 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10" X 1 1/2" Length as per rule 34 2 1/2" Distance apart 7 3/4" Number and pitch of stays in each 3 of 8 1/8"  
 Working pressure by rules 226 lbs 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 ✓

Plan of fuel pipes returned 13/10/13

1700-250500-170500



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

*Two top & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed & bilge pump valves, a quantity of assorted bolts nuts & iron, propeller shaft, 2 propeller blades, valve spindle, bottom end brasses, eccentric sheave & strap, air pump rod &c.*

The foregoing is a correct description,

FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED.

Manufacturer.

*A. Hains*

DIRECTOR

Dates of Survey while building	During progress of work in shops - - -	1912	1913															
		Nov. 25	Jan. 30	Feb. 18, 21	Mar. 3, 4, 10, 14, 17, 18, 19	Apr. 3, 8, 9, 16, 17, 21, 23, 28, 30	May 1, 6, 9											
		15, 17, 23, 26	Jan. 10, 13, 16	Feb. 1, 11, 15, 19, 21, 25	Aug. 13, 18, 20	Sep. 9, 17, 24, 30	Oct. 1											

Total No. of visits *43* Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *23/4/13* Slides *18/3/13* Covers *23/4/13* Pistons *19/7/13* Rods *3/3/13*  
 Connecting rods *3/3/13* Crank shaft *18/2/13* Thrust shaft *18/2/13* Tunnel shafts *19/8/13* Screw shaft *10/6/13* Propeller *16/6/13*  
 Stern tube *19/7/13* Steam pipes tested *21/3/13* Engine and boiler seatings *21/8/13* Engines holding down bolts *9/9/13*  
 Completion of pumping arrangements *24/9/13* Boilers fixed *9/9/13* Engines tried under steam *24/9/13*  
 Main boiler safety valves adjusted *24/9/13* Thickness of adjusting washers *P.P. 1 3/32, S. 7/16, S. P. 7/16, S. 1 1/32, Ford F. 7/16, A. 1 1/32*

Material of Crank shaft *Steel* Identification Mark on Do. *18/2/13 lb* Material of Thrust shaft *Steel* Identification Mark on Do. *18/2/13 lb*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *19/8/13 lb* Material of Screw shafts *Steel* Identification Marks on Do. *25/7/13 lb*  
 Material of Steam Pipes *Lap welded iron* Test pressure *660 lbs*  
 Is an installation fitted for burning oil fuel *Yes* Is the flash point of the oil to be used over 150°F. *no*  
 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. "San Silvestre"*

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

*The machinery of this vessel has been built under special survey, the materials used are good, and the workmanship is satisfactory, it has been properly fitted on board and secured, and the engines have been tried under full power. An oil fuel burning installation on the Wallsend System has been fitted in accordance with the requirements for low flash oil. In my opinion this vessel is eligible for the records of L.M.C 10, 13 fitted for low flash oil.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10, 13. F.D. Fitted for low flash oil fuel. 10, 13.

*JWD 11/10/13*

*Charles Cooper*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee ...	£ 3 :	When applied for,
Special ...	£ 47 : 14 :	OCT 10 1913
Donkey Boiler Fee ...	£ :	When received,
Travelling Expenses (if any) £	:	16/10/13

TUE. OCT. 14. 1913

Committee's Minute

Assigned

*+ L.M.C. 10, 13*  
*Fitted for low flash oil fuel 10, 13*

MACHINERY CERTIFICATE WRITTEN



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NEWCASTLE-ON-TYNE.

Certificate (if required) to be sent to the Surveyor requested not to write on or below the space for Committee's Minute.