

## REPORT ON MACHINERY.

No. 42532

Received at London Office WED. 14 MAR. 1923

Date of writing Report 19 When handed in at Local Office 10. 3. 1923 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 10. 2. 1920 Last Survey 28. 2. 1923  
 Reg. Book. on the S.S. "DAVISIAN" (Number of Visits 89) Tons Gross 6433 Net 4065  
 Master Built at Glasgow By whom built S. H. Henderson & Co. Ltd. 1911 When built  
 Engines made at Glasgow By whom made S. H. Henderson & Co. 1923 when made 1923  
 Boilers made at Glasgow By whom made S. H. Henderson & Co. 1923 when made 1923  
 Registered Horse Power Owners Leyland Line Port belonging to Liverpool.  
 Nom. Horse Power as per Section 28 625 626 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Quadruple Expansion No. of Cylinders 4 No. of Cranks 4  
 Dia. of Cylinders 23" x 34" x 49" x 70" Length of Stroke 51" Revs. per minute 76 Dia. of Screw shaft 14.5" 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 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 60"  
 Dia. of Tunnel shaft 13.75" as per rule 13.75" Dia. of Crank shaft journals 14.25" as per rule 14.25" Dia. of Crank pin 14.375" Size of Crank webs 29 x 9 1/2" Dia. of thrust shaft under collars 14.25" Dia. of screw 17-6" Pitch of Screw 17-6" No. of Blades 4 State whether moveable Yes Total surface 86 sq ft  
 No. of Feed pumps 2 Diameter of ditto 8" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 9" Stroke 18" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 5 Sizes of Pumps 2 Bilge " 9" x 8" x 18" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2-3 1/2" Auxiliary " 8" x 10 1/2" x 24" In Holds, &c. 2 in each No. 1 & 2 Holds, deep tank for cross bunkers.  
 Stokehold, (wing bunkers), Deep tank aft, No. 4 hold, No. 5 hold. all 3 1/2" and 1 in tunnel well and deep tank cofferdam aft. 3"  
 No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 2-3 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  
 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 Both  
 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 Bilge How are they protected Wood ceiling  
 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 Yes Is it fitted with a watertight door Yes worked from Eng. room at upper deck  
 D. Colville & Son.

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel D. Colville & Son.  
 Total Heating Surface of Boilers 9791 Is Forced Draft fitted Yes No. and Description of Boilers 4 Single ended multitubular  
 Working Pressure 215 lbs Tested by hydraulic pressure to 373 lbs Date of test 6-9-21, 3-10-21 No. of Certificate 15894-15915  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 54.9 sq ft No. and Description of Safety Valves to each boiler 200 spring loaded Area of each valve 8.295 sq in Pressure to which they are adjusted 220 Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 21" Man. dia. of boilers 15'-0" Length 11'-3 1/2" Material of shell plates S  
 Thickness 1 1/16" Range of tensile strength 28/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L. D. R.  
 long. seams T. R. S. Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 9 3/4" Lap of plates or width of butt straps 21 1/16"  
 Per centages of strength of longitudinal joint rivets 86.0 plate 85.25 Working pressure of shell by rules 219 Size of manhole in shell 20" x 16"  
 Size of compensating ring 35 x 31 x 1 1/16" No. and Description of Furnaces in each boiler 3 Corrugated Material S Outside diameter 48 1/16"  
 Length of plain part top 21" bottom 21" Thickness of plates crown 21" Description of longitudinal joint Weld No. of strengthening rings 1  
 Working pressure of furnace by the rules 222 Combustion chamber plates: Material S Thickness: Sides 3/32 Back 23/32 Top 2 1/32 Bottom 7/8"  
 Pitch of stays to ditto: Sides 8 1/2" x 7 3/4" Back 10 x 7 1/4" Top 8 1/4" x 7 3/4" If stays are fitted with nuts or riveted heads huts Working pressure by rules 224  
 Material of stays S Area at smallest part 1.76 sq in Area supported by each stay 18.8 sq in Working pressure by rules 240 End plates in steam space:  
 Material S Thickness 1 1/8" Pitch of stays 17 1/2" x 14 3/4" How are stays secured D. huts Working pressure by rules 217 Material of stays S  
 Area at smallest part 5.41 sq in Area supported by each stay 258 sq in Working pressure by rules 218 Material of Front plates at bottom S  
 Thickness 1 1/16" Material of Lower back plate S Thickness 7/8" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 225  
 Diameter of tubes 3 1/2" Pitch of tubes 3 3/4" x 3 3/4" Material of tube plates S Thickness: Front 1 1/16" Back 7/8" Mean pitch of stays 9 1/4"  
 Pitch across wide water spaces 13 1/2" Working pressures by rules 242 Girders to Chamber tops: Material S Depth and thickness of girder at centre 8 x 1 7/8" Length as per rule 29 29/32 Distance apart 8 1/4" Number and pitch of stays in each 3 @ 7 3/4"  
 Working pressure by rules 233 Steam dome: description of joint to shell Yes % of strength of joint Yes  
 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 Yes Date of Approval of Plan Yes Tested by Hydraulic Pressure to Yes  
 Date of Test Yes Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes  
 Diameter of Safety Valve Yes Pressure to which each is adjusted Yes Is Easing Gear fitted Yes

W381-0158



IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 4 Con Rod top & 2 bottom end bolts and nuts 2 Main bearing bolts & nuts  
1 Set of coupling bolts. 1 Set of feed and bilge pump valves. 1 Set of piston rings for each piston.  
1 Air pump bucket and 1 head and foot valve seat with valves. 1 Impeller for circulating Pump.  
1 H.P. Valve spindle. 1 L.P. Valve spindle. 1 Propeller blade. 1 set of propeller blade studs and nuts  
for one blade. 30 Boiler tubes. 50 Condenser tubes. 1 set of safety valve springs for  
each boiler. 1 set of fire bars for one boiler. Assorted bolts and nuts. Iron of  
various sizes.

The foregoing is a correct description,

For DAVID & CO. ENGINEERS & CO., LTD.

J. D. Paton

DIRECTOR

Manufacturer.

Dates of Survey while building { During progress of work in shops = 1920 Feb 10 Mar 9 12 26 30 Apr 23 Jul 7 15 Oct 1 28 Dec 7 1921 Jan 17 25 31 Feb 22 Mar 3 10 11 16 18 24 Apr 1 8 12 19 21 27  
During erection on board vessel = May 10 17 18 21 31 Jun 3 7 20 22 24 28 29 Jul 16 29 Aug 8 10 15 18 19 24 26 30 Sep 1 7 8 13 15 20 23 27 29 Oct 2 6 10 13 14 20 27 31 Nov  
Total No. of visits = 89  
Is the approved plan of main boiler forwarded herewith? Return Yes.

Dates of Examination of principal parts—Cylinders 13-9-21 Slides 27-9-21 Covers 7-9-21 Pistons 7-9-21 Rods 7-9-21  
Connecting rods 7-9-21 Crank shaft 3-6-21 Thrust shaft 3-6-21 Tunnel shafts 21-12-21 Screw shaft 21-12-21 Propeller 21-12-21  
Stern tube 26-22 Steam pipes tested 21/12/22 to 2/2/23 Engine and boiler seatings 24-1-23. Engines holding down bolts 2-2-23.

Completion of pumping arrangements 16-2-23. Boilers fixed 31-1-23. Engines tried under steam 28-2-23.

Completion of fitting sea connections 11-1-23. Stern tube 2-6-22. Screw shaft and propeller 11-1-23.

Main boiler safety valves adjusted 4-3-23. Thickness of adjusting washers No 511. LLOYDS

Material of Crank shaft Identification Mark on Do. 3-6-21 Material of Thrust shaft Identification Mark on Do. L.R. 84. R.F.M.

Material of Tunnel shafts Identification Marks on Do. See below Material of Screw shafts Identification Marks on Do. S. 1249. L.R. 99

Material of Steam Pipes Solid Drawn Steel. Test pressure 645 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 (No 508) SS "DARIEN"

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

S-824 S-801 S-1217 S-1218

LR. 40. R.F.M. LR. 22 LLOYDS 85 LR 86

21-12-21 J.E.S. R.F.M. R.F.M. R.F.M.

21-12-21 J.E.S. 21-12-21 21-12-21 21-12-21

These Engines and Boilers have been built under Special Survey and in accordance with

the Rules and approved plans. The Materials and workmanship are sound & good.

The Machinery has been well fitted on board the vessel, tried under

working conditions and found satisfactory, and in my opinion is

eligible to be classed in the Register book with record of + L.M.C. 2-23.

with notation T.S. 2-23. C.H.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 2.23. F.D. C.L.

The amount of Entry Fee ... £ 6 : 0 : 0 When applied for,

Special ... £ 106 : 5 : 0 9-3-23

Donkey Boiler Fee ... £ : : : When received,

Travelling Expenses (if any) £ : : : 15/3/23

Committee's Minute GLASGOW 13 MAR 1923

Assigned + L.M.C. 2.23

CERTIFICATE WRITTEN 14/3/23

9323

Engineer Surveyor to Lloyd's Register of Shipping.

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