

REPORT ON OIL ENGINE MACHINERY.

No. 10,468

Received at London Office 27 SEP 1930

Date of writing Report 19 When handed in at Local Office 20 Sept 1930. Port of BELFAST

No. in Survey held at BELFAST Date, First Survey 4 Nov 1929 Last Survey 19 Sept 1930 Number of Visits 92

86460 on the ^{Single} Twin ^{Triple} Screw vessel SILVER SANDAL Tons ^{Gross} ^{Net}

Built at BELFAST By whom built HARLAND & WOLFF LD. Yard No. 885 When built 1930

Engines made at BELFAST By whom made HARLAND & WOLFF LD. Engine No. 11550 When made 1930

Donkey Boilers made at ANNAN & LINCOLN By whom made COCHRAN & CO. ANNAN LD. BABCOCK & WILCOX LD. Boiler No. 73/4608 When made 1930

Brake Horse Power 6600 Owners SILVER LINE LD (STANLEY & JOHN THOMPSON LD. MANAG.) Port belonging to LONDON

Nom. Horse Power as per Rule 979 Is Refrigerating Machinery fitted for cargo purposes YES. Is Electric Light fitted YES.

Trade for which vessel is intended OCEAN-GOING. 298-5716

OIL ENGINES, &c. Type of Engines HARLAND & WOLFF By W. with PRESSURE INDUCANCE 2 or 4 stroke cycle 4 Single or double acting SINGLE

Maximum pressure in cylinders 650 LBS. Diameter of cylinders 740 MM. Length of stroke 1500 MM. No. of cylinders 12 No. of cranks 12

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1004 MM. Is there a bearing between each crank YES

Revolutions per minute 110 Flywheel dia. 2.48 METRES. Weight 2400 KGS. Means of ignition COMPRESSION Kind of fuel used DIESEL OIL

Crank Shaft, dia. of journals as per Rule APPROVED Crank pin dia. 515 BORED 230 MM. Crank Webs Mid. length breadth 860 MM. Thickness parallel to axis 320 MM.

Flywheel Shaft, diameter as per Rule APPROVED Intermediate Shafts, diameter as fitted 13 3/4" Thrust Shaft, diameter at collars as per Rule APPROVED

Tube Shaft, diameter as per Rule APPROVED Screw Shaft, diameter as fitted 15 3/8" Is the screw shaft fitted with a continuous liner YES.

Bronze Liners, thickness in way of bushes as per Rule 24.625" Thickness between bushes as per rule 32 21" Is the after end of the liner made watertight in the

propeller boss YES. If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

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 Is an approved Oil Gland or other appliance fitted at the after end of the tube

shaft No. If so, state type Length of Bearing in Stern Bush next to and supporting propeller 70"

Propeller, dia. 16'-0" Pitch 15'-3" No. of blades THREE Material MANG. BR. whether Moveable YES Total Developed Surface EACH 56 sq. feet

Method of reversing Engines DIRECT ENGINE Is a governor or other arrangement fitted to prevent racing of the engine when detached YES. Means of lubrication

FORCED Thickness of cylinder liners 53 MM. Are the cylinders fitted with safety valves YES. Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material YES. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine TO FUNNEL

Cooling Water Pumps, No. TWO. VERT. CENT. 8" BORE Is the sea suction provided with an efficient strainer which can be cleared within the vessel YES.

Bilge Pumps worked from the Main Engines, No. Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and Size TWO. ONE BILGE 4 1/2" 100 TONS/HR. ONE BALLAST 8" 150 TONS/HR.

Ballast Pumps, No. and size ONE VERT. CENT. 8" Lubricating Oil Pumps, including Spare Pump, No. and size TWO - 100 TONS/HR

Are two independent means arranged for circulating water through the Oil Cooler YES. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces TWO OF 3 1/2" FOUR OF 2 1/2" TUNNEL ONE OF 3 1/2" ONE OF 2 1/2" (SHOWER) ONE OF 2 1/2" (REFRIG. SPACE) In Pump Room

In Holds, &c. No. 1 Hold TWO OF 3 1/2" No. 2 Hold TWO OF 3 1/2" FORWARD DEEPTANK FOUR OF 3 1/2" REFRIG. CARGO SPACES TWO OF 3 1/2" No. SHOLD TWO OF 3 1/2" DRY TANK ONE OF 2 1/2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size THREE 5 1/2"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes YES. Are the Bilge Suctions in the Machinery Spaces

led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges YES

Are all Sea Connections fitted direct on the skin of the ship YES. Are they fitted with Valves or Cocks YES

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates YES. Are the Overboard Discharges 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 pass through the bunkers How are they protected

What pipes pass through the deep tanks Nos 1 & 2 Hold Suctions Have they been tested as per Rule YES

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YES

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one

compartment to another YES. Is the Shaft Tunnel watertight YES. Is it fitted with a watertight door YES. worked from UPPER DECK

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Main Air Compressors, No. TWO No. of stages THREE Diameters 750-675-150 MM. Stroke 500 MM. Driven by MAIN ENGINES

Auxiliary Air Compressors, No. ONE No. of stages THREE Diameters 460-405-92 MM. Stroke 260 MM. Driven by ELECTRIC MOTOR

Small Auxiliary Air Compressors, No. ONE No. of stages TWO Diameters 106-34 MM. Stroke 80 MM. Driven by PETROL MOTOR

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule 132 MM. Position - WINGS OF MAIN MOTOR ROOM.

as fitted 140 MM. YES AND/OR FUSIBLE PLUG.

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule YES AND/OR FUSIBLE PLUG.

Can the internal surfaces of the receivers be examined and cleaned YES. Is a drain fitted at the lowest part of each receiver YES.

High Pressure Air Receivers, No. FIVE Cubic capacity of each 4 OF 230 LITRES 1 OF 150 " Internal diameter 4-416 MM. thickness 4-17.5 MM.

Seamless, lap welded or riveted longitudinal joint SEAMLESS Material STEEL Range of tensile strength 28-32 Working pressure Actual 1000 LBS. Q.

Starting Air Receivers, No. THREE Total cubic capacity 2175 Internal diameter 6-11 5/16 thickness 1 5/32

Seamless, lap welded or riveted longitudinal joint Y.B.S. Material STEEL Range of tensile strength 28-32 Working pressure by Rules 358 LBS. Q. Actual 356 LBS. Q.

IS A DONKEY BOILER FITTED? Two. ONE COCHLAN ONE WASTEHEAT If so, is a report now forwarded? Yes

Is the donkey boiler intended to be used for domestic purposes only No

PLANS. Are approved plans forwarded herewith for Shafting 11. 10. 29 Receivers 20. 6. 29 Separate Tanks 1. 11. 29
(If not, state date of approval)
 Donkey Boilers 16. 12. 29 General Pumping Arrangements 14. 7. 30 Oil Fuel Burning Arrangements 3. 3. 30

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied SEE ATTACHED LIST.

The foregoing is a correct description,
 For HARLAND AND WOLFF, LIMITED,

De Hebeek

Manufacturer.

Dates of Survey while building
 During progress of work in shops - 1929 Nov. 4 Dec. 11, 5, 9, 11, 12, 24 1930 Feb. 5, 12, 22, 25 March 10, 17 April 11, 14, 15, 17, 23, 30 May 16, 8, 9, 13, 14, 16, 21, 23, 24, 26, 27, 28, 29, 30 June 2, 3, 4, 5, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24, 25, 26, 27, 30 July 1, 2, 4, 7, 8, 11, 16, 24, 29, 30, 31 Aug. 1, 6, 11, 12, 13, 14, 20, 21, 22, 28 Sept. 3, 5, 8, 10, 11, 12, 15, 16, 17, 19
 Total No. of visits 92

Dates of Examination of principal parts—Cylinders 26. 30. 27. 30 Covers 24. 30. 27. 30 Pistons 4. 6. 30 Rods 4. 6. 30 Connecting rods 3. 6. 30 24. 6. 30
 Crank shaft 2. 6. 30 16. 6. 30 Flywheel shaft ✓ Thrust shaft 23. 6. 30 Intermediate shafts 13. 6. 30 24. 6. 30 Tube shaft ✓

Screw shaft 16. 6. 30 18. 6. 30 Propeller 11. 6. 30 Stern tube 23. 5. 30 Engine seatings 25. 6. 30 Engines holding down bolts 3. 9. 30
 Completion of fitting sea connections 25. 6. 30 Completion of pumping arrangements 16. 9. 30 Engines tried under working conditions 19. 9. 30

Crank shaft, Material S.M. STEEL Identification Mark B1 + 134 R.L.A. Flywheel shaft, Material ✓ Identification Mark 16-3304-3393-3441-3494
 Thrust shaft, Material S.M. STEEL Identification Mark 3010 R.L.A. Intermediate shafts, Material S.M. STEEL Identification Marks 18-3325-3441-3441-365
 Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material S.M. STEEL Identification Mark 3393, 3374, 3020 R.L.A.

Is the flash point of the oil to be used over 150° F. Yes

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with Yes.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo Yes If so, have the requirements of the Rules been complied with Yes.

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with ✓

Is this machinery duplicate of a previous case Yes If so, state name of vessel SILVERPRESS "SILVERWALNUT" "SILVERTEAK"

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

The machinery of this vessel has been constructed under special survey. The materials and workmanship are sound and good. The main engines and auxiliaries have been tried at moored and sea trials with satisfactory results. In my opinion the vessel is eligible for notation in the Society's Register Book.

+ L.M.C. 9.30 C.L. D.B. pressure 150 lbs. Waste heat boiler pressure 100 lbs. Fitted for oil fuel 230 F.P. not to exceed 160° F.

It is submitted that this vessel is eligible for THE RECORD.

+ L.M.C. 9.30 C.L.
 Oil Engines A.S.C.S.A. 12cy. 29 1/8" - 59 1/8"
 N.H.P. 979 DB (Upper) 100 lb DB. 150 lb.

R. Lee Amers
 29/9/30

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee .. £ 6 : - : When applied for, 22nd Sept 30
 Special £ 123 : 19 :
 AIR RESERVOIRS Donkey Boiler Fee ... £ 12 : 12 : : When received, 14. 10. 1930
 Travelling Expenses (if any) £ : : :
 FRI. 3 OCT 1930

Committee's Minute

Assigned

+ L.M.C. 9.30 C.L.
 Oil Eng. D.B. (upper) 100 lb. D.B. 150 lb.



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