

REPORT ON OIL ENGINE MACHINERY.

No. 10.427

Received at London Office 28 JUL 1930

Date of writing Report 19 When handed in at Local Office 25-7-30 Port of Belfast
No. in Survey held at BELFAST Date, First Survey 4th Nov. 1929 Last Survey 23rd July 1930
Reg. Book. Number of Visits 103

24465 on the ^{Single} Twin ^{Triple} Screw vessel SILVER WALNUT Tons ^{Gross} _{Net}

Built at BELFAST By whom built HARLAND AND WOLFF LO. Yard No. 883 When built 1930
Engines made at BELFAST By whom made HARLAND AND WOLFF LO. Engine No. 883 When made 1930
Donkey Boilers made at ANNAN AND LINCOLN By whom made COCHRAN & CO. ANNAN LO. BABCOCK & WILCOX LO. Boiler No. 73/4606 When made 1930
Brake Horse Power 6600 Owners SILVER LINE LO. (STANLEY & JOHN THOMPSON LO. MANAGERS.) 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.

II ENGINES, &c.—Type of Engines HARLAND & WOLFF - B & W WITH PRESSURE INDUCTION 2 or 4 stroke cycle 4 Single or double acting Single
Maximum pressure in cylinders 650 lb/sq. in. 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. 2.489 metres Weight 2,400 Kgs. Means of ignition Compression Kind of fuel used Diesel oil
Crank Shaft, dia. of journals as per Rule approved Crank pin dia. 575 bored 230 mm Crank Webs Mid. length breadth 860 mm Thickness parallel to axis 320 mm
as fitted 515 bored 115 mm M.d. length thickness 320 mm shrunk Thickness around eye-hole 227 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
as fitted Tube Shaft, diameter as per Rule approved Screw Shaft, diameter as fitted 15 3/4" Is the ^{tube} screw shaft fitted with a continuous liner YES
as fitted Bronze Liners, thickness in way of bushes as per Rule 24.625" as per rule 18.468" Is the after end of the liner made watertight in the
as fitted 18" 32" Thickness between bushes as fitted 21" 32" 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 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 Is an approved Oil Gland or other appliance fitted at the after end of the tube
haft NO If so, state type YES Length of Bearing in Stern Bush next to and supporting propeller 70"
Propeller, dia. 16'-0" Pitch 15'-3" No. of blades three Material Man. 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 1/2 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 YES
Pumps connected to the Main Bilge Line { No. and Size ONE BILGE 4 1/2" 100 TONS/HR. ONE BALLAST 8" 150 TONS/HR.
How driven ELECTRIC MOTORS
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 Holds, &c. No. 1 Hold Two of 3 1/2" No. 2 Hold Two of 3 1/2" FORWARD DEEP TANKS Four of 3 1/2" Refrig. Cargo Spaces Two of 3 1/2" No. 5 Hold 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
fitted 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 YES

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
as fitted 140 mm.

III 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 YES What means are provided for cleaning their inner surfaces open ends
Is there a drain arrangement fitted at the lowest part of each receiver YES
High Pressure Air Receivers, No. FIVE Cubic capacity of each 4,230 LITRES Internal diameter 4-4 1/2 mm thickness 1-17.5 mm
Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 26-30 T Working pressure by Rules 1305-1103 lb/sq. in.
Starting Air Receivers, No. THREE Total cubic capacity 2175 cu ft Internal diameter 6'-11 5/16" thickness 1 5/32"
Seamless, lap welded or riveted longitudinal joint d.b.s. Material Steel Range of tensile strength 28-32 T Working pressure by Rules 358 lb/sq. in.



IS A DONKEY BOILER FITTED? TWO - ONE COCHLEAN ONE WASTE-HEAT If so, is a report now forwarded? Yes

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. 2. 30 Oil Fuel Burning Arrangements 3. 3. 30

SPARE GEAR In accordance with the rules - see attached sheets.

The foregoing is a correct description,
 For HARLAND AND WOLFF, LIMITED.
A. J. Marshall Manufacturer.

Assistant Secretary
 1929
 Dates of Survey while building
 During progress of work in shops - Nov. 4, 13, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Dec. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Jan. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Feb. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Mar. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Apr. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, June 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, July 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Aug. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Sept. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Oct. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Dec. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
 During erection on board vessel - May 1, 9, 10, 17, 19, 21, 22, 23, 24, June 13, 14, 20, 23, 24, 25, 26, 27, 30, July 1, 2, 3, 4, 5, 8, 9, 10, 11, 14, 16, 21, 23.
 Total No. of visits 189

Dates of Examination of principal parts - Cylinders 7. 2. 30 Covers 7. 2. 30 Pistons 21. 3. 30 Rods 21. 3. 30 Connecting rods 21. 3. 30
 Crank shaft 7. 4. 30 Flywheel shaft 7. 4. 30 Thrust shaft 2. 4. 30 Intermediate shafts 25. 3. 30 Tube shaft 7. 4. 30
 Screw shaft 13. 3. 30 Propeller 20. 3. 30 Stern tube 20. 1. 30 Engine seatings 14. 4. 30 Engines holding down bolts 23. 6. 30
 Completion of fitting sea connections 14. 4. 30 Completion of pumping arrangements 17. 7. 30 Engines tried under working conditions 23. 7. 30
 Crank shafts Material S. M. Steel Identification Mark 117 B 122 R.L.A. Flywheel shaft, Material S. M. Steel Identification Mark 3089 3069 3102 3035 3072 3147
 Thrust shafts Material S. M. Steel Identification Mark 2981 R.L.A. Intermediate shafts, Material S. M. Steel Identification Marks 2994 3082 3187
 Tube shaft, Material S. M. Steel Identification Mark 2789 2841 2931
 Screw shafts Material S. M. Steel Identification Mark 2789 2841 2931

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
 Is this machinery duplicate of a previous case Yes If so, state name of vessel "SILVERCYPRESS."

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. 7.30. C.L. D.B. pressure 150 lbs. Waste Heat Boiler pressure 100 lbs. fitted for oil fuel 7.30. F.P. not to exceed 150° F. Electric light.

As submitted that this vessel is eligible for THE RECORD + L.M.C. 7.30 C-L
Oil Engines A.S.C.S.A. 120hp 29 1/8 - 59 1/16
N.H.P. 979 DB (Upper) 100 lbs DB 150 lbs
30/7/30

The amount of Entry Fee ... £ 6 : - : When applied for, 25. 1. 19. 30
 Special ... £ 123 : 19 :
 Donkey Boiler Fee ... £ 12 : 12 :
 Travelling Expenses (if any) £ : : : 30. 7. 19. 30
 Committee's Minute WED. 6 AUG 1930
 Assigned + L.M.C. 7.30 C.L. oil Eng. DB (Upper) 100 lbs DB 150 lbs
 R. Lee Anners, Engineer Surveyor to Lloyd's Register of Shipping.
 Lloyd's Register of Shipping Foundation

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

CERTIFICATE WRITTEN