

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

15 JUL 1931

Date of writing Report 13th July 1931 When handed in at Local Office 13th July 1931 Port of *Belfast*
 No. in Survey held at *Belfast*. Date, First Survey *Sept. 10th 1930* Last Survey *8th July 1931*
 Reg. Book. *91202* on the *Steel Twin Sc. "KOSMOS II."* (Number of Visits *90*)
 Built at *Belfast*. By whom built *Workman, Clark (1928) Ltd.* Yard No. *522*. When built *1931*.
 Engines made at *Belfast*. By whom made *Workman, Clark (1928) Ltd.* Engine No. *522*. When made *1931*.
 Boilers made at *Belfast*. By whom made *Workman, Clark (1928) Ltd.* Boiler No. *522*. When made *1931*.
 Registered Horse Power Owners *Hvalfangerselsk "Kosmos II" A/S*. Port belonging to *Sandefjord*.
 Nom. Horse Power as per Rule *938*. Is Refrigerating Machinery fitted for cargo purposes *No*. Is Electric Light fitted *Yes*.
 Trade for which Vessel is intended *Ocean going*.

ENGINES, &c.—Description of Engines *Quadruple expansion steam reciprocating*. Revs. per minute
 Dia. of Cylinders *20", 29", 41½", 60"*. Length of Stroke *45"*. No. of Cylinders *4*. No. of Cranks *4*.
 Crank shaft, dia. of journals as per Rule *12.86"*. Crank pin dia. *13¼"*. Crank webs Mid. length breadth *19½"*. Thickness parallel to axis *8½"*.
 as fitted *13¼"*. Mid. length thickness *8½"*. Thickness around eye-hole *5½"*.
 Intermediate Shafts, diameter as per Rule *11.96"*. Thrust shaft, diameter at collars as per Rule *12.56"*.
 as fitted *12½"*. as fitted *13¼"*.
 Tube Shafts, diameter as per Rule *7.02"*. Screw Shaft, diameter as per Rule *13½"*. Is the *screw* shaft fitted with a continuous liner *Yes*.
 as fitted *7.02"*. as fitted *13½"*.
 Bronze Liners, thickness in way of bushes as per Rule *2.3"*. Thickness between bushes as per Rule *9.0"*. Is the after end of the liner made watertight in the propeller boss *Yes*.
 as fitted *2.3"*. as fitted *9.0"*. 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 shaft *No*. If so, state type *Yes*. Length of Bearing in Stern Bush next to and supporting propeller *5'6"*.
 Propeller, dia. *15'0"*. Pitch *13'9"*. No. of Blades *4*. Material *Nickel Steel*. Whether Movable *Solid*. Total Developed Surface *80* sq. feet.
 Feed Pumps worked from the Main Engines, No. *None*. Diameter *✓*. Stroke *✓*. Can one be overhauled while the other is at work *✓*.
 Bilge Pumps worked from the Main Engines, No. *"*. Diameter *✓*. Stroke *✓*. Can one be overhauled while the other is at work *✓*.
 Feed Pumps { No. and size *3 @ 11x15½x24" / 107½x5½x15"*. Pumps connected to the { No. and size *1 @ 13½x16½x26" / 1 @ 10x12x18"*.
 How driven *Steam*. Main Bilge Line { How driven *Steam*.
 Ballast Pumps, No. and size *13½x16½x26"*. Lubricating Oil Pumps, including Spare Pump, No. and size *None*.
 Are two independent means arranged for circulating water through the Oil Cooler *✓*. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room *3 @ 4" bore / 1 @ 6" bore / 1 @ 9" bore*. *2 @ 2½" Boiler Room*.
 In Pump Room *✓*. In Holds, &c. *✓*.

Main Water Circulating Pump Direct Bilge Suctions, No. and size *2 @ 8"*. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1 @ 6" / 1 @ 9"*.
 Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes *✓*.
 Are the Bilge Suctions in the Machinery Space 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 stokehold 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 *2-3" Cofferdam suction*. How are they protected *not protected (oil fuel)*.
 What pipes pass through the deep tanks *None*. Have they been tested as per Rule *✓*.
 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 *✓*. Is it fitted with a watertight door *✓*. worked from *✓*.

MAIN BOILERS, &c.—(Letter for record *S*) Total Heating Surface of Boilers *14380 sq. ft.*
 Is Forced Draft fitted *Yes*. No. and Description of Boilers *5 S.E. Multi*. Working Pressure *250 lbs. sq. in.*
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? *Yes*.
 IS A DONKEY BOILER FITTED? *No*. If so, is a report now forwarded? *✓*.
 Is the donkey boiler intended to be used for domestic purposes only *✓*.

PLANS. Are approved plans forwarded herewith for Shafting *No*. Main Boilers *Yes*. Auxiliary Boilers *✓*. Donkey Boilers *✓*.
 (If not state date of approval)
 Superheaters *Yes*. General Pumping Arrangements *Yes*. Oil fuel Burning Piping Arrangements *No*.

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes*.
 State the principal additional spare gear supplied *1- propeller shaft. 2- least steel propeller. 1 set ahead thrust pads. 2 brookhead bushes with nuts & bolts. 1 crankpin bush with bolts & nuts. 2 main bearing bolts & nuts. 1- piston rod with nuts. 1- piston rod guide shoe. 1 valve spindle. 1- ahead eccentric strap. 2- cylinder escape valves. 25 condenser tubes. 100 condenser ferrules. 50 plain boiler tubes. 4 feed check valves. 2 springs for safety valves. 2 cylinder escape springs. 6 studs for cylinder covers. 6 studs for valve covers. 6- flange ring pins & washers. For Feed Pumps:—1 shuttle valve chest complete. 2- sets valves complete. For main circulating pump:—1- propeller & spindle. 1- set piston rings. 1 piston valve. 2 bottom halves main bearing brasses with bolts & nuts. & crankpin bush with bolts & nuts. 1- crosshead bush with bolts & nuts. 1- valve spindle with nuts. 1- piston rod with nut & piston with rings. For Superheater 12 handhole covers. 1 gross handhole cover joints. 1 set emergency tube stopper.*

The foregoing is a correct description,
 pro WORKMAN CLARK (1928) LIMITED,

J. Cunningham
fratt

Secretary.

Manufacturer.

Rp
 Framing
 Frames i
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 Deck
 1930 - Sept. 10. Oct. 10. 10. 15. 19. 27. 31. Nov. 10. 12. 14. 17. 19. 26. 27. Dec. 1. 5. 6. 8. 9. 11. 12. 13. 15. 16. 18. 22. 27. 29.
 During progress of work in shops - -
 1931. Feb. 2. 3. 4. 5. 7. 10. 13. 16. 18. 19. 23. 24. 26. Mar. 2. 3. 4. 5. 9. 10. 11. 13. 17. 18. 19. 25. 26. 27. 30. Apr. 1. 2. 5. 10. 13. 14. 15. 16. 17. 19. 22. 23. 27. 29. 30.
 May. 4. 7. 11. 14.
 During erection on board vessel - - -
 1931. May 20 June 2. 3. 4. 5. 8. 9. 10. 13. 15. 19.
 July 2. 3. 8
 Total No. of visits 90

Dates of Examination of principal parts—Cylinders 11/12/30. Slides 11/12/30. Covers 11/12/30.
 Pistons 27/10/30. Piston Rods 27/10/30. Connecting rods 23/4/31.
 Crank shaft S. 27/11/31. P 4/2/31. Thrust shaft 9/2/31. Intermediate shafts 2/3/31.
 Tube shaft ✓ Screw shaft 2/2/31. 4/2/31. 26/2/31. Propellers 10/2/31. 19/2/31.
 Stern tube 19/2/31. Engine and boiler seatings 8/6/31. Engines holding down bolts 8/6/31.
 Completion of fitting sea connections 16/5/31.
 Completion of pumping arrangements 2/7/31. Boilers fixed 8/6/31. Engines tried under steam 8/7/31.
 Main boiler safety valves adjusted 19/6/31. Thickness of adjusting washers PF. P 3/8" S 3/8" SUP 5/16" SF. P 1/2" S 3/8" SUP 5/16" S. LLOYD'S No 87. J.K.W. 27/11/31.
 Crank shaft material Steel. Identification Mark P. LLOYD'S No 88. J.K.W. 4/2/31. Thrust shaft material Steel. Identification Mark CENTRE R. P 3/8" S 3/8" S. LLOYD'S No 88. J.K.W. 27/11/31.
 Intermediate shafts, material Steel. Identification Marks P. LLOYD'S No 33. J.K.W. 26/2/31. LLOYD'S No 33. J.K.W. 2/3/31. Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material Steel. Identification Mark S. LLOYD'S No 84. J.K.W. 2/3/31. Steam Pipes, material S.D. Steel. Test pressure 75 lb sq. in. Date of Test 12/12/30. 75.
 Is an installation fitted for burning oil fuel Yes. SP. LLOYD'S No 4264. J.K.W. 2/3/31. Is the flash point of the oil to be used over 150°F. Yes.
 Have the requirements of the Rules for the use of oil as fuel 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 Yes.
 Is this machinery duplicate of a previous case No. If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel was constructed under special survey. The materials & workmanship are sound and good. The main & auxiliary machinery has been tried out at a motored & sea trial with satisfactory results. In my opinion the vessel is eligible for notation in the Register Book + LMC 7, 31. CL. Boiler pressure 250 lbs sq. in. Fitted for oil fuel FP above 150°F.

Committee's Minute
 Assigned + L.M.C. 7.31
 Fitted for oil fuel 7.31 F.P. above 150°F.
 F.D. C.L.
 CERTIFICATE WRITTEN:

The amount of Entry Fee ... £ 6 : 0 :
 Special ... £ 121 : 18 :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 20.7.19.
 When received, 5.8.31.
 John K. Williams.
 Engineer Surveyor to Lloyd's Register of Shipping.
 WED. 5 AUG 1931
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