

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 17 MAR 1942

Date of writing Report *0.8* 19 *42* When handed in at Local Office *28/2/1942* Port of *Newcastle on Tyne*
 No. in Survey held at *Newcastle* Date, First Survey *16 May 1941* Last Survey *25/2/42* 19
 Reg. Book. on the *S/S NORFJELL* ex *S/S EMPIRE SAXON.* (Number of Visits *100.*) Tons { Gross *8129* Net *4631*
 Built at *Newcastle* By whom built *Swan, Hunter & Wigham Richardson Ltd* Yard No. *1706* When built *1942-*
 Engines made at *ditto* By whom made *ditto* Engine No. *1706* When made *1942-*
 Boilers made at *ditto* By whom made *ditto* Boiler No. *1706* When made *1942-*
 Registered Horse Power Owners Port belonging to
 Nom. Horse Power as per Rule *629.* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*
 Trade for which Vessel is intended *Ocean going, Carrying Petroleum in bulk.*

ENGINES, &c.—Description of Engines *3 Cyl. Triple Exp. Recip.* Revs. per minute *84.*
 Dia. of Cylinders *26 1/2 + 44 + 73* Length of Stroke *48* No. of Cylinders *3* No. of Cranks *3*
 Crank shaft, dia. of journals as per Rule *14.66* Crank pin dia. *15 1/2* Crank webs Mid. length breadth Thickness parallel to axis *9.5625*
 as fitted *15 1/2* Mid. length thickness shrunk Thickness around eye-holes *7/8 at journals*
 Intermediate Shafts, diameter as per Rule *13.96* Thrust shaft, diameter at collars as per Rule *14.66* *6 3/8 at cr. pins.*
 as fitted *14.* as fitted *14 3/4*
 Tube Shafts, diameter as per Rule *None* Screw Shaft, diameter as per Rule *15.42* Is the *tube* shaft fitted with a continuous liner
 as fitted *None* as fitted *15 1/2* Is the *screw* shaft fitted with a continuous liner
 Bronze Liners, thickness in way of bushes as per Rule *24 7/32* Thickness between bushes as per Rule *18 5/32* Is the after end of the liner made watertight in the
 as fitted *29 3/32* as fitted *23 3/32* 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 *In one piece*
 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 *Tight fit.*
 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 *62 1/2*
 Propeller, dia. *17-6* Pitch *14-6* No. of Blades *4* Material *M. Bronze* whether Moveable *No* Total Developed Surface *104* 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. *2* Diameter *6* Stroke *26* Can one be overhauled while the other is at work *Yes*
 Feed Pumps { No. and size *Two 10 1/2 x 8 x 21* Pumps connected to the { No. and size *One Ballast. 10 x 11 x 10 dup. Two Single acting 6 x 26*
 { How driven *Steam* Main Bilge Line { How driven *Indep. Steam 200 tons/hr. By Main Eng. 98 tons/hr.*
 Ballast Pumps, No. and size *10 x 11 x 10 duplx* 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 of 3 1/2" dia. and 2 of 2 1/2" to only bilge walls.*
 In Pump Room *2 of 4" in each pump room* In Holds, &c. *2 of 2 1/2" in Forward Hold, 1 of 2" in Pump Room in Forward Hold
 + 2 of 2" in Peak Tank Top.*

Main Water Circulating Pump Direct Bilge Suctions, No. and size *One 9" dia on Port side* Independent Power Pump Direct Suctions to the Engine Room Bilges,
 No. and size *One 5" dia on Star side* 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
 Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks *both*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Overboard Discharges above or below the deep water line *Below*
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate
 What Pipes pass through the bunkers *None* How are they protected
 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
 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 Is the Shaft Tunnel watertight *None (machinery aft)* Is it fitted with a watertight door worked from

MAIN BOILERS, &c.—(Letter for record *S.*) Total Heating Surface of Boilers *9555* sq ft
 Which Boilers are fitted with Forced Draft *all Three Bls* Which Boilers are fitted with Superheaters *all Three Bls*
 No. and Description of Boilers *3 Single Ended* Working Pressure *220 lbs.*
 IS A REPORT ON MAIN BOILERS NOW FORWARDED?
 IS A DONKEY BOILER FITTED? *No* If so, is a report now forwarded?
 Can the donkey boiler be used for domestic purposes only
 PLANS. Are approved plans forwarded herewith for Shafting *17/4/41* Main Boilers *3/1/41* Auxiliary Boilers Donkey Boilers
 (If not state date of approval) Superheaters General Pumping Arrangements *24/4/41* Oil fuel Burning Piping Arrangements *25/7/41*
 SPARE GEAR.

Has the spare gear required by the Rules been supplied
 State the principal additional spare gear supplied *12 gauge glasses, 50 ferrules & 100 packings for Condenser,
 6 piston bolts, 4 cam rollers & spindles for HP Valve gear, 1 Valve spindle for HP Valve gear,
 12 plain tubes for Boilers; 20% jointing washers, 10% Studs & nuts, 10% header plugs and 2% clamps
 for Superheaters.*

FOR The foregoing is a correct description.
 SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

G. J. Sweeney
 DIRECTOR

Manufacturer.



006175-006188-0166

1941
 May 16. June 4. 9. 16. 18. 27. July 4. 17. 18. 22. 24. 28. 29. Aug. 1. 5. 8. 13. 18. 19. 22. 26. 27. 28. 29
 During progress of work in shops - -
 Aug. 1. 5. 8. 13. 18. 19. 22. 26. 27. 28. Sep. 1. 2. 8. 10. 16. 17. 24. 25. 28. 30. Oct. 6. 7. 13. 16. 20. 21. 22. 23.
 27. 28. 29. 30. 31. Nov. 3. 4. 5. 6. 7. 10. 12. 14. 17. 18. 21. 24. 25. 26. 27. Dec. 2. 5. 9. 12. 18. 19. 22. 23. 24
 During erection on board vessel - - -
 1942
 31. Jan. 2. 8. 12. 15. 16. 21. 22. 23. 27. 29. 30. Feb. 6. 10. 12. 17. 25.
 Total No. of visits 100.

Dates of Examination of principal parts—Cylinders 16/10/41 Slides 12/10/41 Covers 16/10/41
 Pistons 12/10/41 Piston Rods 12/10/41 Connecting rods 12/10/41
 Crank shaft 17/9/41 Thrust shaft 5/11/41 Intermediate shafts 5/11/41
 Tube shaft none Screw shaft 21/10/41 Propeller 28/10/41 + 10/11/41.
 Stern tube 30/10/41 + 3/11/41 Engine and boiler seatings 6/11/41 + 12/1/42 Engines holding down bolts 2/1/42
 Completion of fitting sea connections 31/10/41
 Completion of pumping arrangements 17/2/42 Boilers fixed 12/1/42 Engines tried under steam 10/2/42 + 20/2/42
 Main boiler safety valves adjusted 10/2/42 Thickness of adjusting washers For/Bly 3/8 3/8 1/32
 Crank shaft material 7 Steel Identification Mark 10598HA1. Thrust shaft material 7 Steel Identification Mark 10598HA1
 Intermediate shafts, material 7 Stl. Identification Marks 10598HA1 186 Tube shaft, material none Identification Mark 187
 Screw shaft, material 7 Stl. Identification Mark 10598HA1 185. Steam Pipes, material S.D. Stl Test pressure 660 lbs Date of Test 2/12/41
 Is an installation fitted for burning oil fuel Yes 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 Not required
 Is this machinery duplicate of a previous case Yes If so, state name of vessel S/s Ennerdale 99657
 General Remarks (State quality of workmanship, opinions as to class, &c.)
 The Machinery of this Vessel has been constructed under Special Survey in accordance with the approved plans and the Society's Rules, and the materials and workmanship are good.
 The machinery has been efficiently installed on board, tried under working conditions with satisfactory results, and is eligible in my opinion for record + LMC 2. 42, and the notations 3. 5B. Sp. F. 220 lbs. CL.

Certificate to be sent to NEWCASTLE ON TYNE

The amount of Entry Fee ... £ 6 : - :
 Special + Supervision 133 : 1 :
 Donkey Boiler Fee ... £ ✓ : :
 Travelling Expenses (if any) £ : :
 When applied for, 176 MAR 1942
 When received, 19

A Watt
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRL 20 MAR 1942
 Assigned Fitt for oil fuel or 7D, CL