

REPORT ON OIL ENGINE MACHINERY.

No. 21590

Received at London Office

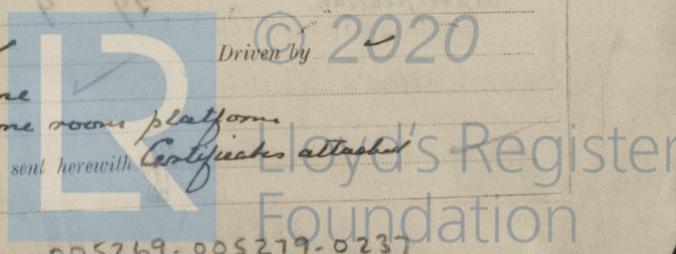
16 OCT 1941

Date of writing Report 6th OCTOBER 1941 When handed in at Local Office 10th OCTOBER 1941 Port of GREENOCK

No. in Survey held at Reg. Book. 23307 on the *Greenock* Date, First Survey 8th OCTOBER 1940 Last Survey 8th Oct 1941 Number of Visits 66

Built at *Port Glasgow* By whom built *Lithgows Lt^s* Yard No. *945* When built *1941*
Engines made at *Greenock* By whom made *John G. Kincaid & Co Lt^s* Engine No. *1142* When made *1941*
Donkey Boilers made at *Greenock* By whom made *John G. Kincaid & Co Lt^s* Boiler No. *1142* When made *1941*
Brake Horse Power *3300* Owners *Ministry of War Transport* Port belonging to *Greenock*
Nom. Horse Power as per Rule *490* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

Trade for which vessel is intended *Ocean Going*
Type of Engines *Diesel Airless injection Super-Buck² or 4 stroke cycle 4* Single or double acting *Single*
Maximum pressure in cylinders *650 lbs/sq in* Diameter of cylinders *7 1/4* Length of stroke *15 1/2* No. of cylinders *6* No. of cranks *6*
Mean Indicated Pressure *8.725 Kg/cm²* Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *1022* Is there a bearing between each crank *Yes*
Revolutions per minute *110* Flywheel dia. *2489* Weight *2.5 tons* Means of ignition *Compression* Kind of fuel used *Diesel Oil*
Crank Shaft, *Solid forged* dia. of journals *as per Rule as app^d* Crank pin dia. *505* Crank Webs *Mid. length breadth 840* Thickness parallel to axis *310*
Semi built *as fitted 505* *Mid. length thickness 310* *shrunk* *Thickness around eyehole 222.5*
All built
Flywheel Shaft, diameter *as per Rule* Intermediate Shafts, diameter *as per Rule 13.287* Thrust Shaft, diameter at collars *as per Rule 13.95*
as fitted *as fitted 13.375* *as fitted 14.0*
Tube Shaft, diameter *as per Rule* Screw Shaft, diameter *as per Rule 14.620* Is the *tube* shaft fitted with a continuous liner *Yes*
as fitted *as fitted 14.875* *as fitted 9/16* *screw*
Bronze Liners, thickness in way of bushes *as per Rule .746* Thickness between bushes *as per Rule .559* Is the after end of the liner made watertight in the propeller boss *Yes*
as fitted .75 *as fitted 9/16*
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 *Yes*
shaft *No* If so, state type *12" oil dip* Length of Bearing in Stern Bush next to and supporting propeller *4'-11 1/2"*
Pitch 10'-3 3/4 root No. of blades *4* Material *Brongze* whether Moveable *No* Total Developed Surface *94* sq. feet
Method of reversing Engines *Compressed Air* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *Yes* Means of lubrication *Forced*
Thickness of cylinder liners *53* Are the cylinders fitted with safety valves *Yes* Are the exhaust pipes and silencers water cooled or lagged with non-conducting material *lagged* If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine *Yes*
Cooling Water Pumps, No. *Two* *One main one steam* 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. *None* Diameter *Stroke* Can one be overhauled while the other is at work *Yes*
Pumps connected to the Main Bilge Line *No. and Size One 100 tons/hr & One 170 tons/hr* How driven *Steam*
Is the cooling water led to the bilges *No* If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements *Yes*
Ballast Pumps, No. and size *One 170 tons/hr* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *Two* *One Main eng 10x10 One Steam 10x10x10*
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 @ 3" Three @ 2 1/2" Tunnel well one @ 2 1/2"* In Pump Room *Yes*
In Holds, &c. *Forepeak 1 @ 3" N1-2 @ 3" N2-2 @ 3 1/2" Dup tank 2 @ 2 1/2" N3-2 @ 3" N4-2 @ 3"* Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *Two @ 5"*
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 *Both*
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 *Below*
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 *None* How are they protected *Yes*
What pipes pass through the deep tanks *Bilge pipes to fore holds* 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 *No* *WT. Bus^s worked from*
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. *One* No. of stages *Two* Diameters *11 1/4 & 4 3/4* Stroke *8"* Driven by *Steam*
Auxiliary Air Compressors, No. *—* No. of stages *—* Diameters *—* Stroke *—* Driven by *—*
Small Auxiliary Air Compressors, No. *—* No. of stages *—* Diameters *—* Stroke *—* Driven by *—*
What provision is made for first Charging the Air Receivers *Steam air compressor* Driven by *—*
Scavenging Air Pumps, No. *—* Diameter *—* Stroke *—* Driven by *—*
Auxiliary Engines crank shafts, diameter *as per Rule EN4 N^o 19146 SHEPARD CEP^o N^o C 6999* No. *One* Position *Engine room platform*
as fitted A19 COMP N^o 6577 IFS. CEP^o N^o D 4258 Is a report sent herewith *Certificates attached*
Have the Auxiliary Engines been constructed under special survey *Yes*



AIR RECEIVERS:—Have they been made under survey *Yes* State No. of Report or Certificate *✓*
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes*
 Can the internal surfaces of the receivers be examined and cleaned *Yes* Is a drain fitted at the lowest part of each receiver *Yes*
Injection Air Receivers, No. *None* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*
 Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure *✓*
Starting Air Receivers, No. *One* Total cubic capacity *750 cuft.* Internal diameter *6.4"* thickness *1/32"*
 Seamless, lap welded or riveted longitudinal joint *T.R. D.B.S.* Material *S.M. Steel* Range of tensile strength *29/33* Working pressure *by Rules 365 lb. Actual 356 lb.*

IS A DONKEY BOILER FITTED? *Yes two* 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 *18-1-40* Receivers *30-1-40* Separate Fuel Tanks *12-3-41*
 Donkey Boilers *23-1-40* General Pumping Arrangements *12-2-40* Pumping Arrangements in Machinery Space *18-3-40*
 Oil Fuel Burning Arrangements *28-5-40*

SPARE GEAR.

Has the spare gear required by the Rules been supplied
 State the principal additional spare gear supplied
See Separate List.

The foregoing is a correct description,
 For JOHN G. KINCAID & CO. LIMITED.
Director. Manufacturer.

Dates of Survey while building
 During progress of work in shops - - (1940) OCT 8-22-25 NOV. 1-4-15-21-28 DEC. 5-9-30 (1941) JAN. 10-13-22-28 FEB. 12-21-24 MAR. 6-19-21-31 APR. 1-2-9-15-25 MAY 5-13-16
 During erection on board vessel - - - 19-26-24-29 JUNE 4-12-19-28 JULY 1-18-22-23-30-31 AUG. 1-6-21-25-24 SEPT. 1-2-4-9-11-12-15-16-19-20-22-26-24-30 OCT. 2-4-8
 Total No. of visits *66*

Dates of Examination of principal parts—Cylinders *22-7-41* Covers *22-7-41* Pistons *18-7-41* Rods *2-9-41* Connecting rods *2-9-41*
 Crank shaft *2-9-41* Flywheel shaft *✓* Thrust shaft *25-4-41* Intermediate shafts *25-4-41* Tube shaft *✓*
 Screw shaft *19-5-41* Propeller *19-5-41* Stern tube *15-4-41* Engine seatings *4-9-41* Engines holding down bolts *20-9-41*
 Completion of fitting sea connections *27-5-41* Completion of pumping arrangements *7-10-41* Engines tried under working conditions *7-10-41*
 Crank shaft, Material *S* Identification Mark *9588 CNH.* Flywheel shaft, Material *✓* Identification Mark *✓*
 Thrust shaft, Material *S* Identification Mark *9647 CNH* Intermediate shafts, Material *S* Identification Marks *9647 CNH.*
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S* Identification Mark *9647 CNH.*

Identification Marks on Air Receivers
N. 1695
L10405 TEST
575 lbs/1"
WP 356 lbs/1"
CNH. 19-3-41

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 *No* If so, have the requirements of the Rules been complied with *✓*
 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 *Empire Spring grk of 21458.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *These engines have been built under Special Survey in accordance with the Rules and approved plans. The materials and workmanship are sound & good. The machinery has been efficiently installed on board and tested under full working conditions on a short sea trial with satisfactory results. This machinery is eligible in my opinion to be Classed in the Society's Register Book with record + LMC 10-41 and Notation Screw shaft C.L. 208150lbs/1"*
The Plans & Specification have been supervised & a copy of the report issued is enclosed herewith.

The amount of Entry Fee	£ 5 : 0	When applied for,
Special	£ 98 : 10	10th OCTOBER 1941
Donkey Boiler Fee	£ 15 : 0	When received,
Specification	£ 29 : 9	19
Travelling Expenses (if any)		

Charles J. Hunter
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 14 OCT 1941**
 Assigned *1- Dec 10-41 Oil Eng 208 150 lb.*



certificate (if required) to be sent to
 The Surveyors are requested not to write on or below the space for Committee's Minute.
 For S.S.O.F. See Entry Report No. 21322
 GLASGOW