

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 10,523

Received at London Office 28 MAY 1941

Date of writing Report 10 MAY 1941 When handed in at Local Office 26 MAY 1941 Port of MANCHESTER. Date, First Survey 5 APRIL 1941. Last Survey 3 MAY 1941. Number of Visits 2

No. in Survey held at Reg. Book. on the <sup>Single</sup> ~~Triple~~ <sup>Motor</sup> ~~Triple~~ Screw Vessel "EMPIRE LAD" Tons { Gross 298 Net - Built at <sup>Quadruple</sup> ~~Triple~~ <sup>601</sup> ~~12007~~ When built 1941. By whom built ~~ROTHEDGE IRONWORKS LTD.~~ Yard No. ~~12007~~ Port belonging to ~~MANCHESTER~~

Owners ~~Ministry of War Transport~~ Oil Engines made at ~~MANCHESTER~~ By whom made ~~L. GARDNER & SONS LTD~~ ENGINE No. ~~52574~~ Contract No. ~~52575~~ When made 1941. Generators made at ~~MANCHESTER~~ By whom made ~~L. GARDNER & SONS LTD~~ Contract No. ~~-~~ When made ~~-~~ No. of Sets ~~TWO~~ Engine Brake Horse Power ~~38~~ <sup>Total for 2 enigs.</sup> Nom. Horse Power as per Rule ~~11~~ <sup>Total</sup> Total Capacity of Generators ~~-~~ Kilowatts.

OIL ENGINES, &c. Type of Engines ~~VERTICAL SOLID INJECTION~~ 2 or 4 stroke cycle ~~4~~ Single or double acting ~~SINGLE~~. Maximum pressure in cylinders ~~650 LBS.~~ Diameter of cylinders ~~4.25"~~ Length of stroke ~~6"~~ No. of cylinders ~~TWO EACH ENGINE~~ No. of cranks ~~TWO EACH ENGINE~~. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge ~~5.76" 5 7/8"~~ Is there a bearing between each crank ~~YES~~.

Revolutions per minute ~~1000~~ Flywheel dia. ~~22"~~ Weight ~~304 LBS.~~ Means of ignition ~~COMPRESSION~~ Kind of fuel used ~~HEAVY OIL~~. Crank Shaft, dia. of journals ~~2 5/8"~~ as per Rule ~~APPROVED~~ Crank pin dia. ~~2 5/8"~~ Crank Webs ~~4"~~ Mid. length breadth ~~4"~~ Thickness parallel to axis ~~SOLID~~. as fitted ~~2 5/8"~~ Crank pin dia. ~~2 5/8"~~ Mid. length thickness ~~1 3/8"~~ Thickness around eye hole ~~1.096"~~

Flywheel Shaft, diameter ~~as per Rule~~ Intermediate Shafts, diameter ~~as per Rule~~ Thickness of cylinder liners ~~1.096"~~ as fitted ~~as fitted~~ Is a governor or other arrangement fitted to prevent racing of the engine when declutched ~~YES~~ Means of lubrication ~~FORCED~~. Are the cylinders fitted with safety valves ~~NO~~ Are the exhaust pipes and silencers water cooled or lagged with non-conducting material ~~-~~

Cooling Water Pumps, No. ~~ONE~~ Is the sea suction provided with an efficient strainer which can be cleared within the vessel ~~-~~. Lubricating Oil Pumps, No. and size ~~ONE (EACH ENGINE) GEAR WHEEL TYPE. APPROX 720 S.P.H.~~ Air Compressors, No. ~~-~~ No. of stages ~~-~~ Diameters ~~-~~ Stroke ~~-~~ Driven by ~~-~~ Scavenging Air Pumps, No. ~~-~~ Diameter ~~-~~ Stroke ~~-~~ Driven by ~~-~~

AIR RECEIVERS: Have they been made under Survey ~~-~~ State No. of Report or Certificate ~~-~~ Is each receiver, which can be isolated, fitted with a safety valve as per Rule ~~-~~ Can the internal surfaces of the receivers be examined ~~-~~ What means are provided for cleaning their inner surfaces ~~-~~

High Pressure Air Receivers, No. ~~-~~ Cubic capacity of each ~~-~~ Internal diameter ~~-~~ thickness ~~-~~ Seamless, lap welded or riveted longitudinal joint ~~-~~ Material ~~-~~ Range of tensile strength ~~-~~ Working pressure by Rules ~~-~~

Starting Air Receivers, No. ~~-~~ Total cubic capacity ~~-~~ Internal diameter ~~-~~ thickness ~~-~~ Seamless, lap welded or riveted longitudinal joint ~~-~~ Material ~~-~~ Range of tensile strength ~~-~~ Working pressure by Rules ~~-~~

ELECTRIC GENERATORS: Type ~~-~~ Pressure of supply ~~-~~ volts. Full Load Current ~~-~~ Amperes. Direct or Alternating Current ~~-~~ If alternating current system, state the periodicity ~~-~~ Has the Automatic Governor been tested and found as per rule when full load is suddenly thrown on and off ~~-~~ Generators, are they compounded as per rule ~~-~~ is an adjustable regulating resistance fitted in series with each ~~-~~

Are all terminals accessible, clearly marked, and furnished with sockets ~~-~~ Are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched ~~-~~ Are the lubricating arrangements of the generators as per Rule ~~-~~ If the generators are under 100 kw. full load rating, have the Makers supplied certificates of test ~~-~~ and do the results comply with the requirements ~~-~~ If the generators are 100 kw. or over have they been built and tested under survey ~~-~~

PLANS. Are approved plans forwarded herewith for Shafting ~~YES~~ Receivers ~~-~~ Separate Tanks ~~-~~ (If not, state date of approval)

SPARE GEAR As Per Rule Requirements.

The foregoing is a correct description,  
L. GARDNER & SONS LTD  
William Gardner Manufacturer.  
Director.

Dates of Survey while building  
 During progress of work in shops - - 1941 APRIL 5. MAY 3.  
 During erection on board vessel - - - 2  
 Total No. of visits 2

Dates of Examination of principal parts—Cylinders 5-4-41. Covers 5-4-41. Pistons 5-4-41. Piston rods -  
 Connecting rods 5-4-41. Crank and Flywheel shafts 5-4-41. Intermediate shafts -  
 Crank and Flywheel shafts, Material O.H. Ingot Steel. Identification Marks LLOYDS 20FF. 5472. JAL 18.3.41  
 Intermediate shafts, Material / Identification Marks -  
 Identification marks on Air Receivers

Is this machinery duplicate of a previous case - If so, state name of vessel -

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

THESE ENGINES HAVE BEEN CONSTRUCTED UNDER SPECIAL SURVEY OF TESTED MATERIALS AND ARE IN ACCORDANCE WITH THE SECRETARY'S LETTERS, APPROVED PLANS AND RULE REQUIREMENTS. THE MATERIALS AND WORKMANSHIP ARE OF A GOOD QUALITY AND THE ENGINES WHEN TESTED IN SHOP UNDER FULL LOAD CONDITIONS SHewed SATISFACTORY RESULTS. IN MY OPINION THESE ENGINES ARE SUITABLE TO BE PLACED ON BOARD A VESSEL, CLASSED WITH THIS SOCIETY, FOR THE PURPOSE INTENDED.

CLW

122,439.—TRANSFER. (MADE AND PRINTED IN ENGLAND)  
 (The Surveyors are requested not to write on or below the space for Committee Minute.)

The amount of Fee ... £ 6 : 6 : 0 } When applied for, 265. 19. 41 JAL  
 Travelling Expenses (if any) £ : 6 : 0 } When received, 19.....

*J. Meinte.*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 9 JAN 1942  
 Assigned See Sp. for machy rpt. 110020

