

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 84

Received at London Office

12 NOV 1951

of writing Report 2nd Nov. 1951 When handed in at Local Office 19 Port of Augsburg

Survey held at Augsburg Date, First Survey 23rd July, 51. Last Survey 19th Oct. 1951  
Book. M.V. "GRONLAND" Number of Visits 23

Single on the Twin Triple Quadruple Screw vessel Tons Gross Net

Hamburg By whom built Deutsche Werft A.G. Yard No. 635 When built 1951

Det Dansk - Franske Dampskib selskab Port belonging to Copenhagen

Engines made at Augsburg By whom made Maschinenfabrik Augsburg-Nürnberg A.G. of Augsburg Eng. No. 430 725/ Contract No. 26/27 When made 1951

Generators made at By whom made Contract No. When made

of Sets 3 Engine Brake Horse Power 3 x 195 M.N. as per Rule Total Capacity of Generators Kilowatts.

Set intended for essential services

3 x M.A.N. Standard Type L ENGINES, &c. Type of Engines G 5 V 33 A. 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 51/52 atm. Diameter of cylinders 220 mm Length of stroke 330 mm No. of cylinders 5 No. of cranks 5

Indicated pressure 7.22 kg/cm<sup>2</sup> Firing order in cylinders 1-3-5-4-2 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 260 mm

There a bearing between each crank yes Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 790 kg/m<sup>2</sup> Revolutions per minute 500

Flywheel dia. 1200 mm Weight 778 Kgs. Means of ignition dir. inj. Kind of fuel used gas oil

Crank Shaft, dia. of journals 130 mm Crank pin dia. 130 mm Crank Webs Mid. length breadth 61 mm Thickness parallel to axis

Flywheel Shaft, diameter as fitted Intermediate Shafts, diameter as fitted General armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>)

Means provided to prevent racing of the engine when declutched yes Means of lubrication forced Kind of damper if fitted

Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material water cooled

Boiling Water Pumps, No. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Lubricating Oil Pumps, No. and size 1 x 3.34 m<sup>3</sup>/h each

Compressors, No. No. of stages Diameters Stroke Driven by

Exhausting Air Pumps, No. Diameter Stroke Driven by

RECEIVERS: Have they been made under Survey State No. of Report or Certificate

Each receiver, which can be isolated, fitted with a safety valve as per Rule

Are the internal surfaces of the receivers be examined What means are provided for cleaning their inner surfaces

Is there a drain arrangement fitted at the lowest part of each receiver

High Pressure Air Receivers, No. Cubic capacity of each Internal diameter thickness

Unless, 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

Unless, 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

Is an alternating current system, state the periodicity Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown

and off Generators, are they compounded as per Rule is an adjustable regulating resistance fitted in series with each shunt field

Are all terminals accessible, clearly marked, and furnished with sockets Are they so spaced

Are the generators shielded that they cannot be accidentally earthed, short circuited, or touched Are the lubricating arrangements of the generators as per Rule

Do the generators are under 100 kw. full load rating, have the makers supplied certificates of test and do the results comply with the requirements

Do the generators are 100 kw. or over have they been built and tested under survey

Are there any parts of driven machinery other than generator

CRANKSHAFTS: Are approved plans forwarded herewith for Shafter 28.9.1948 Receivers Separate Tanks

Have Torsional Vibration characteristics if applicable been approved First calculation on 12.3.51 Armature shaft Drawing No.

2nd calc. on 4.8.51 sent to Deutsche Werft Hamburg

PREPARE GEAR 4 cylinder covers, 4 cylinder liners, 3 pistons, 3 connecting rods, 11 fuel oil pressure

pipes, 8 safety valves, 2 Bosch pumps, 17 fuel oil valves, 1 set of wheels for driving

crankshaft, 10 bolts of different sizes.

The foregoing is a correct description.  
Maschinenfabrik Augsburg-Nürnberg A.G.  
Manufacturer.



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July: 23. Aug.: 2. 6. 7. 9. 13. 23. 29. 30.  
Sept. 3. 7. 10. 12. 14. 20. 26. 27. Oct. 4. 15. 16. 17. 18. 19.

Dates of Survey while building  
During progress of work in shops - -  
During erection on board vessel - -  
Total No. of visits 23

Dates of Examination of principal parts—Cylinders 13.8.51. Covers 12./14.9.51. Pistons 23.8.51. Piston rods - -  
Connecting rods 23.8.51. Crank and Flywheel shafts 23.8./ and 7.9.51. Intermediate shafts (2115) Top 56.9 Bottom 56.1 kgs/mm  
(2116) 56.8 55.1 " "  
(2117) 57.5 56.8 " "  
Crank shaft Material S.M.Steel Tensile strength 430 725:2115/7859 A, HKS7.9.51.  
Elongation on 50mm: Top: 30.2 % Bottom: 30.6 % Identification Marks 430 726:2116/7861 A, HKS7.9.51.  
30.2 % 29.0 % 28.2 % 430 727:2117/7863A, HKS23.8.51.  
30.4 %  
Flywheel shaft, Material - - Identification Marks - -  
Identification marks on Air Receivers - -

Is this machinery duplicate of a previous case - - If so, state name of vessel M.A.N. Standard Type of auxiliary engine

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These heavy oil auxiliary engines have been constructed under special survey in accordance with the approved plans and instructions thereto. The material used in the construction is good and the workmanship to be satisfactory.

On Makers test bed, these heavy oil auxiliary engines have been tested running under full-, over- and partial loads with satisfactory results.

In my opinion, the vessel for which these heavy oil auxiliary engines are intended will be eligible for the notation of  $\star$  L • M • C (with date) when the whole machinery has been saitsfactorily fitted aboard and tried under full working conditions.

Test + imp 3 x aux. Eng. DM 852.-  
3 x test cranksh. DM 140.-  
3 x test bed trial DM 180.-  
1 set of spare parts DM 230.-  
Expenses DM 58.-  
Total DM 1460.-

The amount of Fee ... £ : : When applied for 19  
Travelling Expenses (if any) £ : : When received 19

FRI. 16 MAY 1952

Committee's Minute

Assigned

See F.E. mch. rpt.

Surveyor to Lloyd's Register of Shipping.



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