

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

Date of writing Report 29th May 1952 When handed in at Local Office 29th May 1952 Received at London Office 4-JUL 1952 Port of K I E L

No. in Survey held at Kiel Date, First Survey 31st May 1951 Last Survey 17th May 1952

Reg. Book. 2328 on the Single Screw vessel. m.v. "JALNA" Number of Visits 9 Tons Gross 6099 Net 3592

built at Newcastle By whom built Armstrong Whitworth & Co. (Shipbuilders) Ltd Yard No.            When built 1930-9

owners Bulls Tankrederi A/S Port belonging to Sandefjord

Engines made at Kiel-Friedrichsort By whom made MAK Maschinenbau Kiel A.G. Engine No.s. 14414 When made 1951

Generators made at Hamburg By whom made Hans Still Motorenfabrik Generator No.s. 511651 When made 1951

No. of Sets 2 B.H.P. of each Set 160 each M.N. as per Rule            Capacity of each Generator 100 Kilowatts.

Set intended for essential services yes

**OIL ENGINES, &c.**—Type of Engines Heavy oil, Type MV 36 2 or 4 stroke cycle 4 Single or double acting S.A.

Maximum pressure in cylinders 46 kg/cm<sup>2</sup> Diameter of cylinders 215 mm Length of stroke 360 mm No. of cylinders 4 No. of cranks 4

Mean indicated pressure 6.5 kg/cm<sup>2</sup> Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 246 mm

Is there a bearing between each crank yes Moment of inertia of flywheel 15000 Kg.-m.<sup>2</sup>  $GD^2 = 750$  Revolutions per minute 500

Wheel dia. 1150 mm Weight 950 kg Means of ignition compression Kind of fuel used Diesel oil

Crank Shaft, Solid forged dia. of journals 135 mm Crank pin dia. 135 mm Crank Webs            Mid. length breadth 200 mm Thickness parallel to axis           

Wheel Shaft, diameter            Generator armature, moment of inertia 10000 Kg.-m.<sup>2</sup>  $GD^2 = 76 kg/m^2$  Mid. length thickness 62.5 mm Thickness round eye-hole           

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

Are the cylinders fitted with safety valves yes Are the exhaust pipes manifolds water cooled yes

Driving Water Pumps, No. and how driven one per engine Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Lubricating Oil Pumps, No. and size one - 2.9 m<sup>3</sup>/hr. (each engine)

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

Engining Air Pumps or Blowers, No.            How driven           

RECEIVERS:—Have they been made under Survey Germanischer Lloyd Survey State No. of Report or Certificate 75073 D

Are full details of safety devices yes 75077 D

Are the internal surfaces of the receivers be examined and cleaned yes

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

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

Is the joint, lap welded or riveted longitudinal joint            Material            Range of tensile strength            Working pressure           

Gas Air Receivers, No. two Total cubic capacity 200 ltr. Internal diameter 304 mm thickness 8.5 mm

Is the joint, lap welded or riveted longitudinal joint seamless Material S.M. Steel Range of tensile strength            Working pressure 568 lbs/□"

**ELECTRIC GENERATORS:**—Type Ventilated, spray water proff

Voltage of supply 115 volts. Full Load Current 870 Amperes. Direct or Alternating Current Direct Current

Regulating current system, state the periodicity            Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown off yes

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

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

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

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

Are generators 100 kw. or over have they been built and tested under survey yes (Rpt. 7 b herewith (2))

Are there driven machinery other than generator           

Are approved plans forwarded herewith for Shafting            Receivers            Separate Tanks           

Are additional Vibration characteristics if applicable been approved yes - subject to T.V. records being found satisfactory Armature shaft Drawing No.           

Are gear required by the Rules been supplied           

The foregoing is a correct description,  
MAK  
Maschinenbau Kiel  
Aktiengesellschaft Manufacturer.  
Hagen



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Dates of Survey while building  
 During progress of work in shops - - ) 31/5/51  
 During erection on board vessel - - ) 31/3, 30/4, 7/4, 7/5, 8/5, 13/5, 15/5, 17/5/52  
 Total No. of visits nine

Dates of Examination of principal parts—Cylinders 31/5/51 Covers 31/5/51 Pistons 31/5/51 Piston rods -

Connecting rods 31/5/51 Crank ~~and Flywheel~~ shafts 31/5/51 Intermediate shafts -

Crank shaft	Material	Engine No. 14414 S.M. Steel	Engine No. 14415 S.M. Steel	Tensile strength	56.6 kg/mm <sup>2</sup>	57.7 kg/mm <sup>2</sup>
	Elongation	31% on 2"	30.5 % on 2"	Identification Marks	LLOYD'S JL 14705 18.7.49	LLOYD'S HK 131 30.4.51

Flywheel shaft, Material - Identification Marks -

Identification marks on Air Receivers Nos. 75073 & 7  
 7 51

Cylinder Blocks:	Engine No. 14414	Engine No. 14415
	LLOYD'S TEST No. 254 5 LR 51 JB.	LLOYD'S TEST No. 255 5 LR 51 JB.

Generators: LLOYD'S TEST No. 565 24.10.51 WOD. LLOYD'S TEST No. 566 24.10.51 WOD.

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.) These auxiliary engines and generators have been built under Special Survey in accordance with the Rules, the Secretary's letters and approved plans, and the workmanship and materials are good. The machines have been satisfactorily installed in the above vessel, and tried under full load working conditions, and are eligible, in our opinion, to be classed LMC, subject to Torsional vibration records being submitted and found satisfactory.

F.E. Construction 2/3  
 The amount of Fee ... £ DM : 324.00 { When applied for 19  
 Travelling Expenses (if any) £ : 5.00 { When received 19

J. Bowman + G. Schamber  
 Surveyor to Lloyd's Register of Shipping.



3m, 5L, T. (MADE AND PRINTED IN ENGLAND)  
 (The Surveyors are requested not to write on or below the space for Committee Minutes.)

Committee's Minute  
 Assigned