

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS

No. FE-3026

14 OCT 1955

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Date of writing Report 19 When handed in at Local Office SEP. 26 1955 19 Port of Kobe

No. in Survey held at Osaka & Kobe, Japan Date, First Survey 29-3-55 Last Survey 18-7-1955 xix

Reg. Book. Single on the Twin Triple Quadruple Screw vessel M.V. "HIKAWA MARU" Number of Visits 8092,32

Built at Kobe Japan By whom built Kawasaki Dockyard Co., Ltd., Kobe Yard No. 940 When built 1955 July

Owners Nippo Kaiun K.K. & Kawasaki Kisen K.K. Port belonging to Kobe.

Oil Engines made at Osaka, Japan By whom made Daihatsu Kyogo K.K. Engine No. 426021 When made May, 1955.

Generators made at Kobe, Japan By whom made Kawasaki Dockyard Co., Ltd. Generator No. 68790 When made Apr. 1955.

No. of Sets 2 B.H.P. of each Set 245 x 2 M.N. of each Set as per Rule 122.5 Capacity of each Generator 200x 2 KVA

Is Set intended for essential services Yes

OIL ENGINES, &c.—Type of Engines Vertical, 4 cycle, Single acting Solid injection 3 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 55 Kg/cm² Diameter of cylinders 260 mm Length of stroke 320 mm No. of cylinders 4 No. of cranks 4

Mean indicated pressure 5.4 Kg/cm² MEP Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 315mm

Is there a bearing between each crank Yes Moment of inertia of flywheel (18,200 Kg.-cm.²) 1124.1 Revolutions per minute 600

Flywheel dia. 1100 mm Weight 1380 Kg Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, Solid forged as per Rule as approved 180 mm Crank pin dia. 170 mm Crank Webs Mid. length breadth 240 mm Thickness parallel to axis 84mm shrunk

Flywheel Shaft, diameter as per Rule as fitted Generator armature, moment of inertia ($\frac{1}{8} m^2$ of Hg. of Hg.) 260 kgs.-cm²

Are 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 and silencers water cooled or lagged with non-conducting material Yes

Cooling Water Pumps, No. and how driven 1, Gear type Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Lubricating Oil Pumps, No. and size 1, Gear pump; Particular of gear:- No. of teeth 15, model 4, 2 pm. 600

Air Compressors, No. 2 No. of stages 2 Diameters HP 6", LP 7" Stroke 5" Driven by Main dynamo engine

Scavenging Air Pumps or Blowers, No. --- How driven ---

AIR RECEIVERS:—Have they been made under Survey Yes State No. of Report or Certificate AR 22712

(other than main engines) Yes

State full details of safety devices Yes

Can the internal surfaces of the receivers be examined and cleaned Yes

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 ---

Seamless, lap welded or riveted longitudinal joint --- Material --- Range of tensile strength --- Working pressure ---

Starting Air Receivers, No. 1 Total cubic capacity 200 litre Internal diameter 466 mm thickness 12 mm

Seamless, lap welded or riveted longitudinal joint Welded Material O.H. Steel Range of tensile strength 44.2 Kg/cm² Working pressure 25 Kg/cm²

ELECTRIC GENERATORS:—Type Drip proof, Semi enclosed, self ventilated type

Pressure of supply 450 volts. Full Load Current 200.58 Amperes. Direct or Alternating Current A.C

If alternating current system, state the periodicity 60 Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown on and off Yes 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 Yes Are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes Are the lubricating arrangements of the generators as per Rule Yes

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 Yes

Details of driven machinery other than generator One Vertical 2 Stage Air Compressor

PLANS.—Are approved plans forwarded herewith for Shafting 9-3-55 Receivers 14-1-55 Separate Tanks 4-5-55

(If not, state date of approval) 20th June, 1955 Armature shaft Drawing No. MA - 31535

Have Torsional Vibration characteristics if applicable been approved --- (State date of approval and name of previous duplicate case, if any)

Has the spare gear required by the Rules been supplied Yes

SPARE GEAR 1 cylinder cover, 1 cylinder liner, 5 main bearings complete, 2 sets main bearing bolts, 1 piston complete, 4 sets piston rings, 1 set gudgeon pin bearings, 1 set crank pin bearings, 1 set suction valve, 4 fuel valves complete, 1 starting valve, 1 safety valve, 1 fuel pump complete, 1 indicator valve, 2 exhaust valves complete.

The foregoing is a correct description,

Daihatsu Kogyo K.K., Manufacturer.
Osaka.

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Dates of Survey while building { During progress of work in shops - - 1955-MAR. 29, 31 APRIL 5, MAY 2, 4
During erection on board vessel - - 1955-JUNE 30 JULY 15, 18
Total No. of visits 8

Dates of Examination of principal parts—Cylinders 31-3-55 Covers 31-3-55 Pistons 5-4-55 Piston rods ---

Connecting rods 5-4-55 Crank and Flywheel shafts 29-3-55 Intermediate shafts ---

Crank shaft { Material O. H Steel Tensile strength ENG. NO. 426021 56.8 Kg/mm²
Elongation " 426022 32% 426022 56
Identification Marks LLOYD'S KOB NO. K-CK445 HI B 28-2
LLOYD'S KOB NO. K-CK451 HI B 14-3

Flywheel shaft, Material --- Identification Marks ---

Identification marks on Air Receivers No. AR 616 LLOYD'S TEST WTP 48.5 KG WP 30 KG MM B 14-4-55

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.)

The Generator sets of this vessel have been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters.

The materials and workmanship are sound and good.

The Generator sets have been examined under full working condition during shop and comprehensive trials and found satisfactory.

The amount of Fee ... £ 76,000.00 When applied for 12-5-55 charged to Daihatsu
Travelling Expenses (if any) £ 1,520.00 When received 19

Committee's Minute TUESDAY 10 JAN 1956
Assigned See Rpt. 46

Surveyor to Lloyd's Register of Shipping.
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