

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS

YOKOHAMA
1686

No. 3023

14 OCT 1955

Received at London Office

Port of YOKOHAMA Kobe

Date of writing Report 16th JUN 1955 When handed in at Local Office SEP. 27. 1955

No. in Survey held at Shimizu Nagoya

Date, First Survey 14th JAN. 1955

Last Survey 22nd APR 1955

Number of Visits 11 (YOKOHAMA) 5 (NAGOYA) TOTAL 16

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Single
on the Twin
Triple
Quadruple

Screw vessel

m.v. "TEN-EI MARU"

Tons { Gross 7628.61
Net 4408.30

Built at Nagoya

By whom built Nagoya Shipbuilding Co., Ltd.

Yard No. 120

When built 1955-7mo

Owners Kyoei Tanker Co., Ltd.

Port belonging to Kobe

Oil Engines made at Shimizu, Japan

By whom made Ito Engineering Co., Ltd.

Engine No. 4319

When made 4-1955

Generators made at Himeji, Japan

By whom made Nishishi Electric Co., Ltd.

Generator No. 5411676

When made 3-1955

No. of Sets 2

B.H.P. of each Set 125

M.N. of each Set as per Rule 25 x 2

Capacity of each Generator 100 KVA Kilowatts

Is Set intended for essential services yes

OIL ENGINES, &c.

Type of Engines 4 SCSA Solid Injection Trunk Piston 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 55 kg/cm² Diameter of cylinders 185 mm Length of stroke 260 mm No. of cylinders 5 No. of cranks 5

Mean indicated pressure 6.5 kg/cm² Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 236 mm

Is there a bearing between each crank yes { Moment of inertia of flywheel (16 m² or Kg.-cm.²) eng. side 5.005 x 10⁶ Total 6.789 x 10⁶ gen. side 1.784 x 10⁶ Revolutions per minute 600

Flywheel dia. 870 mm Weight 1079 kg Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, { Solid forged
Semi-built
All-built

dia. of journals as per Rule 108 mm

Crank pin dia 110 mm Crank Webs

Mid. length breadth 160 mm

Thickness parallel to axis

Mid. length thickness 60 mm

Thickness round eyehole

Flywheel Shaft, diameter

as per Rule
as fitted

Generator armature, moment of inertia (16 m² or Kg.-cm.²) 1.64 x 10⁶

Are means provided to prevent racing of the engine yes

Means of lubrication forced

Kind of damper if fitted Rubber damper

Are the cylinders fitted with safety valves yes

Are the exhaust pipes and silencers water cooled or lagged with non-conducting material water cooled

Cooling Water Pumps, No. and how driven 1

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

P.C.D. 48 mm Module 4 Breadth 44 mm R.P.M. 600 125 l/HP/hr

Air Compressors, No. 2

No. of stages 2

Diameters L.P. 9"

Stroke 5"

Driven by diesel generator 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-24330

State full details of safety devices 1 x 6 mm dia ordinary spring loaded type

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 yes

High Pressure Air Receivers, No. 2

Cubic capacity of each 10.5 M³

Internal diameter 1768 mm thickness 30 mm

Seamless, lap welded or riveted longitudinal joint welded

Material boiler plate

Range of tensile strength 44.1~49.5 kg/mm² Working pressure 25 kg/cm²

Starting Air Receivers, No. 1

Total cubic capacity 0.2 M³

Internal diameter 460 mm

thickness 12 mm

Seamless, lap welded or riveted longitudinal joint welded

Material boiler plate

Range of tensile strength 46.8~47.1 kg/mm² Working pressure 25 kg/cm²

ELECTRIC GENERATORS:—Type Drip Proof Self Ventilated Synchronous Generator

Pressure of supply 450 volts Full Load Current 128 Amperes Direct or Alternating Current AC

If alternating current system, state the periodicity 60 gale 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 AVR

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 Two air compressors by means of magnet clutch

PLANS:—Are approved plans forwarded herewith for Shafting 8-3-55 (Kobe letter) Receivers App. date 29-3-55 Separate Tanks —

Have Torsional Vibration characteristics if applicable been approved 8-3-55 (Kobe) Armature shaft Drawing No. 2-93157

Has the spare gear required by the Rules been supplied yes

The foregoing is a correct description,

Manufacturer.

Ito

Ito Engineering Co., Ltd

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Foundation

5120-90819-848210

Dates of Survey while building { During progress of work in shops -- } 1955: JAN. 14 FEB. 7 MAR. 5. 18. 25. 30 APR. 7. 14. 20. 21. 22
{ During erection on board vessel --- } 1955 May 27. July 14. 23. 25
Total No. of visits 11 (YOKOHAMA) 4 (NAGOYA) total 15

Dates of Examination of principal parts—Cylinders 25-3-55 Covers 14-4-55 20-4-55 22-4-55 Pistons 22-4-55 Piston rods -

Connecting rods 7-2-55, 22-4-55 Crank and Flywheel shafts 18-3-55, 25-3-55 Intermediate shafts -

Crank shaft { Material Electric furnace steel Tensile strength 55.6 $\frac{\text{kg}}{\text{mm}^2}$, 55.4 $\frac{\text{kg}}{\text{mm}^2}$
Elongation 32%, 33% Identification Marks No. 01-CK 211 R.T. 18-3-55
No. 01-CK 245 K.M. 25-3-55

Flywheel shaft, Material - Identification Marks -
AR 613-614 AR 615 AR 620
LLOYD'S TEST KOB LLOYD'S TEST KOB LLOYD'S TEST KOB
W.T.P. 41.1% W.T.P. 50.1% W.T.P. 33.51%
K.T.R. 25-3-55 M.S.R. 24-3-55 Y.K.R. 19-5-55

Is this machinery duplicate of a previous case Yes If so, state name of vessel S.S. "KOHO MARU" of Tokyo

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The Electric Generator sets have been constructed under Special Survey in accordance with the Rules and approved plans.

The materials and workmanship were found to be satisfactory.

The Electric Generator sets have been examined under full power working condition in the shop and found satisfactory.

It is submitted that the Electric generator sets are eligible to be classed with this Society with notation of +LMC when satisfactorily installed in the vessel.

Crank case explosion device fitted as per plan in accordance with cir. NO. 2045.

The Electric generator sets have been satisfactorily installed on board the ship.

The amount of Fee Yka ¥ 46,000.-

When applied for 28th April 1955

Travelling Expenses (if any) ¥

When received 19

FRIDAY 16 DEC 1955

Committee's Minute

Assigned

Su Rpt. 4 b

Surveyor to Lloyd's Register of Shipping.

J. B. Johnson

Lloyd's Register Foundation