

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

12 MAR 1952

No. 548

(Please See Rpt 4c-2 attached hereto)

Received at London Office 12 MAR 1952

Report 10-9 19 51 When handed in at Local Office 10-9 19 51 Port of Yokohama + KOBE

Survey held at Niigata and Aioi, Japan Date, First Survey 22-1-51 Last Survey 10th October 19 51 Number of Visits (22)

Single
on the Twin
Triple
Quadruple

Screw vessel

"TONAN MARU"

Tons { Gross 19320.38
Net 13211.40

Tonan Maru

OSAKA JAPAN

By whom built OSAKA IRON WORKS, LTD. OSAKA

Yard No.

When built 1938.10

Nihon suisan K.K.

Port belonging to Tokyo

8121

51 6 Mo.

8122

51 6 Mo.

made at Niigata, Japan

By whom made Niigata Engineering Co., Ltd.

Contract No. 8123

When made

51 6 Mo.

made at Nagasaki, Japan

By whom made Mitsubishi Electric Mfg. Co.

Contract No.

When made

51 4 Mo.

3 sets

Engine Brake Horse Power 600 B.H.P. x 3 M.N. as per Rule

150 x 3 = 450

Total Capacity of Generators 400kw x 3 Kilowatts.

for essential services yes

ENGINES, &c.—Type of Engines Vertical Trunk piston type 2 or 4 stroke cycle 4 Single or double acting Single

Pressure in cylinders 50 kg/cm² Diameter of cylinders 310 mm. Length of stroke 420 mm No. of cylinders 8 No. of cranks 8

Firing order in cylinders 1-3-2-5-8-6-7-4 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 350 mm

Distance between each crank Yes. Moment of inertia of flywheel (16 m² or Kg.-cm.²) 4300 kg-m² Revolutions per minute 400 R.P.H.

1600 mm.

Weight

2530 kg.

Means of ignition Compression

Kind of fuel used

Diesel Gas oil

Shaft, dia. of journals

as per Rule 177.1 mm.

as fitted 210 mm.

Crank pin dia

190 mm.

Crank Webs

Mid. length breadth 290 mm

Mid. length thickness 94 mm

Thickness parallel to axis

Thickness round eyehole

Shaft, diameter

as per Rule

Intermediate Shafts, diameter

as per Rule

General armature, moment of inertia (16 m² or Kg.-cm.²) 1340 kg-m²

provided to prevent racing of the engine when declutched Yes

Means of lubrication

Kind of damper if fitted

Exhaust pipes fitted with safety valves

Yes

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

Water Pumps, No.

I centrifugal pump for each eng.

Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Oil Pumps, No. and size 1 set of gear pump for each engine, and pump capacity is 7000 litres per hour, Del. bore 50 mm.

Compressors, No.

1

No. of stages

2

Diameters

H.P. 114 mm.

L.P. 125 mm.

Stroke

80 mm

Driven by Electric motor

Air Pumps, No.

—

Diameter

—

Stroke

—

Driven by

—

RECEIVERS:—Have they been made under Survey

yes

State No. of Report or Certificate M2743

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

yes

Internal surfaces of the receivers be examined

yes

What means are provided for cleaning their inner surfaces 305 mm x 405 mm man hole

Drain arrangement fitted at the lowest part of each receiver

yes

Pressure Air Receivers, No.

—

Cubic capacity of each

—

Internal diameter

—

thickness

—

Welded or riveted longitudinal joint

—

Material

—

Range of tensile strength

—

Working pressure by Rules

—

Pressure Air Receivers, No.

2

Total cubic capacity 480 Litre x 2

Internal diameter

680 mm

thickness

16 mm

Welded or riveted longitudinal joint

Riveted

Material D.H. Steel

Range of tensile strength 33.8-34.8 T/10

Working pressure by Rules

462 LB/10"

ELECTRIC GENERATORS:—Type

Open type Drip Proof

Voltage of supply 230 volts.

Full Load Current

1740 x 3

Amperes.

Direct or Alternating Current

Direct

Power current system, state the periodicity

—

Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown

Generators, are they compounded as per Rule

yes

is an adjustable regulating resistance fitted in series with each shunt field

yes

Terminals accessible, clearly marked, and furnished with sockets

yes

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

Generators are under 100 kw. full load ratings, have the makers supplied certificates of test

and do the results comply with the requirements

Generators are 100 kw. or over have they been built and tested under survey

yes

Driven machinery other than generator

—

IS.—Are approved plans forwarded herewith for Shafting Date of approval=3-5-51

Receivers

8-3-51

Separate Tanks

yes - now.

(If not, state date of approval)

Optional Vibration characteristics if applicable been approved

Date of approval = 26-4-51

Armature shaft Drawing No.

C 330443B

(state date of approval)

GEAR 2 complete sets of Cylinder Covers. 8 complete sets of Fuel Valves. 21 sets of Fuel Nozzles and

Valves. 8 sets of Piston Rings and Oil Control Rings for one cylinder. 4 sets of Studs and Nuts for cylinder cover.

on Pins with Key. 4 complete sets of Cylinder Liners. 4 sets of Bolts and Nuts for crank pin bearing.

etc sets of Crank Pin Bearings. 4 Piston Pin Metals. 4 sets of Studs and Nuts for one main bearing. 4 sets of Main

Metals. 8 complete sets of Fuel Pumps. 2 complete sets of Connecting Rods. 1 complete set of Cam Shaft Driving Gears.

The foregoing is a correct description,

M. Otsuki

Manufacturer.

SHIPBUILDING AND

ERING COMPANY, LTD.

Lloyd's Register

010652-010661-0214

1951:-
 Dates of Survey while building { During progress of work in shops:- Jan22, Feb21, Mar...8,9,19, Apr.....2,3,13,26,27. June...5,6,15,16,25,26, 1951:-
 { During erection on board vessel:- 1951 Sep 15, 17, 24, 29, Oct. 10, 15, 17, 24, 29 OCT 10
 Total No. of visits 22
 ENo. 8121...3-4-51 3-4-51 6-6-51
 " 8122...2-4-51 2-4-51 26-6-51
 " 8123...26-4-51 26-4-51 26-6-51
 Dates of Examination of principal parts—Cylinders 3-4-51 16-6-51 26-6-51 Pistons
 Connecting rod 3-4-51 13-4-51 27-4-51 Intermediate shafts
 Crank shaft { Material Forged Steel (SF 50According to J.E.S.) Eng. No. 8121 8122
 { Eng. No. 8121 8122 8123 Tensile strength 32.7(Top.) 33.5(Bot) 31.9(Top) 32.3(Bot)
 { Elongation 31.0(Top) 30.0(Bot) 34.0(Top) 33.0(Bot) 31.0(Top) 30.0(Bot) Identification Marks K-CK-188 K-CK-168
 Flywheel shaft, Material — Identification Marks —
 Identification marks on Air Receivers LLOYD'S NO. AR 204 W.P. 30 kg/cm² W.T.P. 45 kg/cm² M.H.B. 16-6-51
 LLOYD'S NO. AR 205 W.P. 30 kg/cm² W.T.P. 45 kg/cm² M.H.B. 16-6-51
 LLOYD'S NO. AR 205 W.P. 30 kg/cm² W.T.P. 45 kg/cm² M.H.B. 16-6-51

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 Engines have been constructed under the supervision of the Society's Surveyors in accordance the Rules and approved plans.

Material were found to be sound and free from defects and the workmanship is good.

These Engines have been examined under full load working condition in the shop and found satisfactory

It is submitted that these machineries are eligible to be classed with this Society with notation of *BS**
~~BS*~~ when satisfactory installed in the vessel.

The machineries have now been satisfactorily installed on board and tested under full power.

The amount of Fee ... £ 237.037.50 : : When applied for 19
 Travelling Expenses (if any) £ : : When received 19

Committee's Minute

Assigned

W. Burne & Co. Surveyors
W. Burne & Co. Surveyors
 Surveyor to Lloyd's Register of Shipping.
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