

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 1770

18 DEC 1953

Received at London Office

Writing Report 19 When handed in at Local Office 9. DEC. 1953 Port of KOBE

Survey held at Kobe Date, First Survey 3rd March, 1953 Last Survey 16th Oct., 1953. Number of Visits 27

on the ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Single Screw vessel M.V. "HIYEHARU MARU" Tons Gross 7937.58 Net 4378.74

at Kobe, Japan By whom built Mitsubishi Heavy Industries Reorganized Ltd., Kobe Shipyard & Eng., Works Yard No. 855 When built

rs Shin Nihon Kisen K.K. Port belonging to Nishinomiya, Japan

and engines made at Kobe, Japan By whom made Mitsubishi, Kobe Engine No. 1034 When made Oct., 1953

ators made at Kobe, Japan By whom made " " Generator No. 15231 When made Oct., 1953

et holes Sets 2 B.H.P. of each Set 390 ✓ M.N. of each Set as per Rule 78 x 2 Capacity of each Generator 260 Kilowatts

intended for essential services

ENGINES, &c.—Type of Engines 6G 27.5/42 (MRB6) 2 or 4 stroke cycle 4 ✓ Single or double acting Single ✓

num pressure in cylinders 47 kgs/cm² ✓ Diameter of cylinders 275mm ✓ Length of stroke 420mm ✓ No. of cylinders 6 ✓ No. of cranks 6

indicated pressure 6.85kgs/cm² ✓ Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 350mm ✓

re a bearing between each crank Yes Moment of inertia of flywheel (16 m² or Kg.-cm.²) 4.75 x 10⁷ GD² Revolutions per minute 400 ✓

heel dia. 1600mm Weight 3,200kgs Means of ignition compression Kind of fuel used diesel oil

Shaft, Solid forged dia. of journals as per Rule 162mm as fitted 170mm ✓ Crank pin dia. 170mm ✓ Crank Webs Mid. length breadth 240mm Thickness parallel to axis — Mid. length thickness 93mm ✓ Thickness round eyehole —

heel Shaft, diameter as per Rule — Generator armature, moment of inertia (16 m² or Kg.-cm.²) 9.8 x 10⁶ GD²

Means provided to prevent racing of the engine Yes ✓ Means of lubrication forced ✓ Kind of damper if fitted None fitted

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

ing Water Pumps, No. and how driven by dynamo Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

ating Oil Pumps, No. and size 1-Single acting horizontal piston type, driven by D.E. 75mm dia., 40mm stroke

ompressors, No. 2 each No. of stages 2 Diameters H.P. mm L.P. mm 305 x 340 Stroke 180mm Driven by Dynamo Engine

aging Air Pumps or Blowers, No. — How driven — AR496, AR497, AR526

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

other than main engines) Spring loaded safety valves dia. 15mm x lift 2mm, dia. 30mm x lift 2mm

full details of safety devices Yes

he internal surfaces of the receivers be examined and cleaned Yes

ere a drain arrangement fitted at the lowest part of each receiver Yes ✓

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

ss, lap welded or riveted longitudinal joint — Material — Range of tensile strength — Working pressure —

ng Air Receivers, No. 1 Total cubic capacity 500 l Internal diameter 680 mm ✓ Shell 16 mm thickness End 22 mm

ss, lap welded or riveted longitudinal joint welded Material Boiler plate Range of tensile strength 46-48 Working pressure 30 ✓ kgs/cm²

ELECTRIC GENERATORS:—Type Semi enclosed, drip proof, 3 phase synchronous

re of supply 230 volts. Full Load Current 815 Amperes. Direct or Alternating Current A.C.

rnating current system, state the periodicity 60 cycle Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown off Yes Generators, are they compounded as per Rule — is an adjustable regulating resistance fitted in series with each shunt field Yes

l terminals accessible, clearly marked, and furnished with sockets. Are they so spaced Yes

lded 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 rating, have the makers supplied certificates of test Yes and do the results comply with the requirements. Yes

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

of driven machinery other than generator One main starting air compressor coupled with magnetic clutch each.

IS.—Are approved plans forwarded herewith for Shafting app. D. 18-3-53 Receivers 4-6-53 Separate Tanks —

(If not, state date of approval)

orsional Vibration characteristics if applicable been approved 7-8-53 - 13-8-53 ✓ Armature shaft Drawing No. A-238837

(State date of approval and name of previous duplicate case, if any)

pare gear required by the Rules been supplied 1 cylinder, 1 piston and connecting rod complete, 2 crank bearing complete, 1 gudgeon pin brass, 1 connecting rod bottom end bearing complete, 1 cyl. cover with valves complete, 6 exhaust valves complete, 5 air inlet valves complete, 2 starting air valves complete, 1 relief valves complete, 4 piston rings for one cyl., 5 fuel valves complete, 2 fuel pump main complete, fuel pipes, 1 set of comp. piston rings for one piston, 1 set of com. suc. & del. as complete.

Generator:— 2 sets of carbon brushes, 2 brush holders.

The foregoing is a correct description,

H. Ashima
for S. Murakami
Director & General Manager

Manufacturer.



Dates of Survey while building: During progress of work in shops - - 1953: Mar. 3, 24 Apr., 2, 7, 9, 10, 11, 16, 18, 21 May, 23, June, 18, 20, 23, 25, 27, 30, July, 2, 4, 7, 9, 10, 18
 During erection on board vessel - - Oct. 10, 14, 16
 Total No. of visits 27

Dates of Examination of principal parts: Cylinders 27.6.53 Covers 9.7.53 Pistons 4.7.53 Piston rods -
 Connecting rods 4.7.53 Crank and Flywheel shafts 9.7.53 Intermediate shafts -
 4.7.53 20.6.53

Crank shaft: Material forged steel Tensile strength T. 33.7 T/sq.in. T. 33.4 T/s
 B. 33.7 B. 33.4
 Elongation T. 32.0 % B. 34.0 % in 2" Identification Marks KW-CK134-2, MK-F520-9
 B. 32.0 % B. 33.0 %

Flywheel shaft, Material Identification Marks
 Identification marks on Air Receivers AR526 LLOYD'S TEST KOB W.P. 30kgs/cm² W.T.P. 48.5 kgs/cm² YK LR 8-8-53

Is this machinery duplicate of a previous case Yes If so, state name of vessel M.V. "ASOHARU MARU"

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The Electric Generators 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 Electric Generators have been examined under full working condition on ~~the~~ shop trials and comprehensive sea trials and found satisfactory.

The amount of Fee ... £ 112,000.00 When applied for DEC 10 1953 19
 Travelling Expenses (if any) £ See Rpt. 1. When received 19

Committee's Minute TUESDAY 12 JAN 1954
 Assigned See Rpt. 4 b.

Abunir G. Lajina
 Surveyor to Lloyd's Register of Shipping.
 Lloyd's Register Foundation

4m.5.52.-T. (MADE AND PRINTED IN ENGLAND)
 (The Surveyors are requested not to write on or below the space for Committee Minutes.)