

Rpt. 4c.

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

BO DEC 1952

Date of writing Report 19 When handed in at Local Office 18 DEC 1952 Received at London Office
 Port of Yokohama + KOBE
 No. in Survey held at Niigata + Nagasaki Date, First Survey 21st February 1951 Last Survey 15th May 1952
 Reg. Book. Number of Visits 23

Single on the Twin Triple Quadruple motor Screwwessel "TOMISHIMA-MARU"
 Tons { Gross 7,613.89 Net 4,334.44
 Built at Nagasaki Japan By whom built Nagasaki Works, Mitsubishi Zosen K.K. Yard No. 1426 When built 1952, 5 mo.
 Owners Iino Raiun K.K. Port belonging to Tokyo

Oil Engines made at Niigata, Japan By whom made Niigata Engineering Co., Ltd. ENGINE Contract No. 8147 8148 When made Jan. 1952
 Generators made at Nagasaki, Japan By whom made Mitsubishi Electric mfg. Co. MACHINE Contract No. 318821 318822 318823 When made Nov. 1951
 No. of Sets 3 Engine Brake Horse Power 350 B.H.P. M.N. as per Rule 70 Total Capacity of Generators 690 Kilowatts.
 Is Set intended for essential services Yes

OIL ENGINES, &c.—Type of Engines Solid Injection Diesel Engine (MODEL 55H) or 4 stroke cycle 4 Single or double acting Single
 Maximum pressure in cylinders 50 Kg/cm² Diameter of cylinders 310 mm Length of stroke 420 mm No. of cylinders 5 No. of cranks 5
 Mean indicated pressure 6.38 Kg/cm² Firing order in cylinders 1-3-5-4-2 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 366.5 mm

Is there a bearing between each crank Yes Moment of inertia of flywheel (16 m² or Kg.-cm.²) 5670 Kg.-m² Revolutions per minute 380 R.P.M.
 Flywheel dia 1,600 mm Weight 3,280 Kg Means of ignition Compression Kind of fuel used Diesel oil
 Crank Shaft, dia. of journals as per Rule 173.61 mm as fitted 210 mm Crank pin dia 190 mm Crank Webs Mid. length breadth 286 mm Thickness parallel to axis
 Mid. length thickness 94 mm Thickness round eyehole

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted General armature, moment of inertia (16 m² or Kg.-cm.²)
 Are means provided to prevent racing of the engine when declutched Yes Means of lubrication Forced Lub. Kind of damper if fitted
 Are the cylinders fitted with safety valves Yes for each cyl. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Water cooled

Cooling Water Pumps, No. One centrifugal pump Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes
 Lubricating Oil Pumps, No. and size One gear pump. 7,000 LT/HR capacity 43.6 mm Del. pipe dia.
 Air Compressors, No. Two No. of stages Three Diameters 105, 360/305, 360/195 mm Stroke 220 mm Driven by dynamo engine
 Scavenging Air Pumps, No. Diameter Stroke Driven by

AIR RECEIVERS:—Have they been made under Survey Yes State No. of Report or Certificate AR-331
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes
 Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces Manhole
 Is there a drain arrangement fitted at the lowest part of each receiver Yes

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 by Rules
 Starting Air Receivers, No. one Total cubic capacity 500 litres Internal diameter 696 mm thickness End, 25, 22 mm. Shell 16 mm.
 Seamless, lap welded or riveted longitudinal joint Riveted Material Boiler quality Range of tensile strength End 26-30 7/16 Working pressure by Rules 30 Kg/cm²

ELECTRIC GENERATORS:—Type Open Drip Proof
 Pressure of supply 230 volts Full Load Current 1,000 Amperes Direct or Alternating Current D.C.
 If alternating current system, state the periodicity 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 Yes is an adjustable regulating resistance fitted in series with each shunt field Yes

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 (2) air compressors each 85 B.H.P. ENG. NO. 8147 8148 COMP. NO. T 36/22-4 T 36/22-3
PLANS.—Are approved plans forwarded herewith for Shafting 6th Nov. 1951 Receivers 27 Apr. 1951 Separate Tanks 2 Apr. 1952
 (If not, state date of approval)
 Have Torsional Vibration characteristics if applicable been approved 6th Nov. 1951 Armature shaft Drawing No. C331241 B
 (state date of approval)

SPARE GEAR Cyl. cover complete - 1. Cyl. cover, bolts & nuts for one cyl. - 2 sets. Main bearing
 brasses of each kind - 2 sets. Connecting rod bearing brasses, small & big end - 5 sets.
 Connecting rod complete - 1. Cyl. liner complete - 1. Piston complete - 1. Piston rings
 with oil scraper rings - 5 sets. Coupling bolts for one coupling - 1 set. Fuel injection
 pump complete for 2 cyl. & 3 cyl. - 2 sets.

The foregoing is a correct description,
 J. Maki-shita Manufacturer.
 NAGASAKI WORKS
 MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.
 Certified Duplicate Original Register
 mislaid at Kobe office
 012306.012314-0192

Dates of Survey while building
 During progress of work in shops - } 1951: - 2-2, 8-3, 16, 26-6, 13, 27-7, 9, 29-8, 21-9, 1-11, 1952: - 16, 17, 19.
 During erection on board vessel - } 1952, Feb. 23, 29, March 6, 12, 27, April 7, 14, 15, 17, May 15.
 Total No. of visits 23

Dates of Examination of principal parts - Cylinders 24-7, 9-8, Covers 9-8, Pistons 21-9, Piston rods

Connecting rods 27-7, Crank and Flywheel shafts 16-6... 2 shafts 21-9... 1 shaft

ENG. NO	8147		8148		8149	
	TOP SIDE	33.5	33.5	33.5	33.8	33.8
Tensile strength	BOT. SIDE	33.8	33.1	32.5	32.5	32.5
Identification Marks	262 1/4-1		2611 3/4-1		2611 3/4-	
	CS-303		CS-301		CS-304	
Elongation	NO. Y 2221		NO. Y 2222		NO. Y 2223	
	KM R		KM R		KM R	
	29-8-51		21-9-51		1-11-	

Crank shaft: Material Open hearth forged steel
 TEST MARK CS-303 CS-301 CS-304
 Elongation TOP SIDE 30 29 28
 BOT. SIDE 30 31 30

Flywheel shaft, Material Identification Marks

Identification marks on Air Receivers NO. AR 331 LLOYD'S TEST 45 KG N.P. 30 KG Y.H. R 12.3.52

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 Generator sets have been constructed under the supervision of the Society's Surveyors in accordance with the Rules and approved plans. The quality of workmanship and material has been found satisfactory.

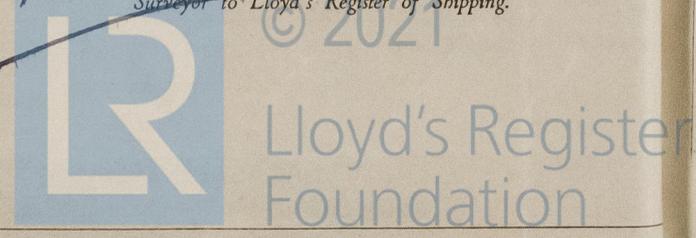
These generator sets have been examined under full working condition in the shop and found satisfactory.

These generator sets have been placed on board the T.M.V. "TOMISHIMA-MARU" and on completion of installation, have been examined under full loading condition comprehensive deck & sea trials and found satisfactory.

The amount of Fee... £ 105,840 When applied for 22 DEC 1952
 Travelling Expenses (if any) £ : : When received 19

H. Currier
W. Machizumi
 Surveyor to Lloyd's Register of Shipping

Committee's Minute FRI 16 JAN 1953
 Assigned See R.F. memo rpt.



CC 5, 51 KOBE
 (The Surveyors are requested not to write on or below the space for Committee Minute.)