

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 15226.

Report made on 13th August 1952 When handed in at Local Office 31st October, 1952. Port of MANCHESTER. Received at London Office 3-NOV-1952

Survey held at HAZEL GROVE. Date, First Survey 1st February, 1952. Last Survey 1st August, 1952.

Single on the Twin Triple Quadruple Screw vessel S.S. CALTEX LIVERPOOL Number of Visits 9. Tons (Gross 11814 Net 6886)

By whom built Hawthorn Leslie & Co. Ltd. Engine No. 4090. When built 1952. Overseas Tankship Corporation. Port belonging to

Made at Hazel Grove. By whom made Mirrlees, Bickerton & Day Ltd. Engine No. 34391. When made 1952.

Made at Rugby. By whom made British Thomson Houston Co. Generator No. B.471254/1/01. When made 1952.

One. Engine Brake Horse Power 135 (12 hr). M.N. as per Rule. Total Capacity of Generators 75. Kilowatts.

Required for essential services Yes.

Engines, &c.—Type of Engines T.L.3. Heavy Oil. 2 or 4 stroke cycle 4. Single or double acting Single.

Pressure in cylinders 800 lbs/sq.inch. Diameter of cylinders 8 1/2". Length of stroke 13 5/8". No. of cylinders 3. No. of cranks 3.

Firing order in cylinders 1.3.2. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 8 5/8".

bearing between each crank Yes. Moment of inertia of flywheel (16 m² or Kg.-cm.²) 3500 lb in sec². Revolutions per minute 500.

dia. 4'-6". Weight 2800 lbs. Means of ignition Compression. Kind of fuel used Diesel.

as per Rule. Approved. Crank pin dia. 5.9/16". Crank Webs Mid. length breadth 9 1/2". Thickness parallel to axis.

as fitted 5 3/4". Shaft, diameter with crankshaft Intermediate Shafts, diameter 137.7 lb in

as fitted. General armature, moment of inertia (16 m² or Kg.-cm.²) sec²

as provided to prevent racing of the engine when declutched Yes. Means of lubrication Forced. Kind of damper if fitted.

Cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Yes.

Water Pumps, No. 1 Safran Type. Is the sea suction provided with an efficient strainer which can be cleared within the vessel.

Eng Oil Pumps, No. and size 1 Engine Geared Type - 666 G.P.H.

Compressors, No. No. of stages Diameters Stroke Driven by

Eng Air Pumps, No. Diameter Stroke Driven by

RECEIVERS:—Have they been made under survey Yes. Receiver, which can be isolated, fitted with a safety valve as per Rule.

Internal surfaces of the receivers be examined. What means are provided for cleaning their inner surfaces.

Drain arrangement fitted at the lowest part of each receiver.

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

Lap welded or riveted longitudinal joint. Material Range of tensile strength Working pressure by Rules

Air Receivers, No. One. Total cubic capacity 5 cu. ft. Internal diameter 17 1/4". thickness 3/8".

Circumferential. Conforms to Class 2B Rule Requirements 350 lbs/sq.in.

Lap welded or riveted longitudinal joint. Material Range of tensile strength for WPV. Working pressure by Rules.

ALTERNATING CURRENT GENERATORS:—Type B.T.H. Compound Continuous 75 K.W. drip proof.

Voltage of supply 220. volts. Full Load Current Amperes. Direct or Alternating Current D.C.

Regulating current system, state the periodicity. Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown

Yes. 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

so 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 and do the results comply with the requirements.

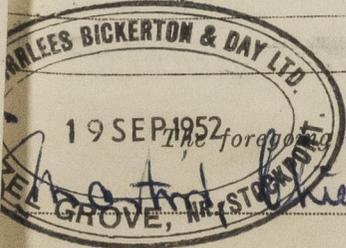
Generators are 100 kw. or over have they been built and tested under survey.

of driven machinery other than generator.

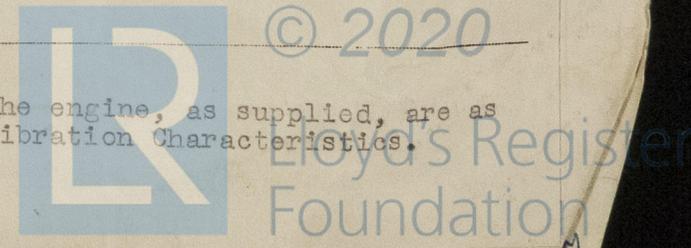
Are approved plans forwarded herewith for Shafting 28.6.49. Receivers Separate Tanks

Torsional Vibration characteristics if applicable been approved 28.3.51. Armature shaft Drawing No. B.3066219.

GEAR AS PER RULE REQUIREMENTS.



The foregoing is a correct description, and the particulars of the engine, as supplied, are as approved for Torsional Vibration Characteristics. Manufacturer.



Dates of Survey while building { During progress of work in shops - - 1952. Feb. 1, 5, 8, 11, 13. March 31. July 28, 29. August 1.
 { During erection on board vessel - - -
 Total No. of visits

Dates of Examination of principal parts—Cylinders 1.2.52. Covers 13.2.52. Pistons 28.7.52. Piston rods

Connecting rods 31.3.52. Crank and Flywheel shafts 13.2.52. Intermediate shafts

Crank shaft { Material O.H. Steel. Tensile strength 44.3 Tons/sq.inch.
 { Elongation 26% on 50 m/m. Identification Marks 3083/371 H.K.S. 3.12.

Flywheel shaft, Material Identification Marks

Identification marks on Air Receivers 5/319. LLOYD'S TEST 700 lbs. W.P. 350 lbs. T.P.G. 19.2.52. ✓

Is this machinery duplicate of a previous case If so, state name of vessel

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This Heavy Oil Generator Set has been constructed under special survey of tested materials and in accordance with the Secretary's approved plans and Rule requirements. The material, as far as could be seen, appears sound from defects. The workmanship is good.

The engine, direct coupled to a 75 K.W. B.T.H. Generator, was tested at the Engine Builders Works and found satisfactory under the following conditions of loading:-

6 hours at 100% Generator rating.

1 hour at 125% Generator rating.

Torsional vibration characteristics of the shafting installation of this machinery have been examined in conjunction with the Engine Builders' calculations and have been approved for a speed of 500 R.P.M.

In the opinion of the undersigned, this generator set is suitable for installation in a vessel to be classed with the Society.

Attached hereto:- Air Receiver Cert. C.17802.

Forging Report No. 421 covering crankshaft.

Certificate No. C.1180 covering the generator.

SURVEY OF MACHINERY, NEWCASTLE-ON-TYNE.
 This generator engine has been satisfactorily installed in S.S. "CALTEX LIVERPOOL" tested under full working conditions and found to operate efficiently.

T. Shaw

SURVEYOR TO LLOYD'S REGISTER, NEWCASTLE-ON-TYNE.

Handwritten initials

The amount of Fee ... £ 13 : 0 : 0.

When applied for 3/10/52 1952

Travelling Expenses (if any) £ 2 : 10 : 0.

When received 19

FRI. 9 JAN 1953

Committee's Minute

Assigned

Sue F. E. Welch, rpt. No. 109987

L. V. Hauser

Surveyor to Lloyd's Register of Shipping



Lloyd's Register Foundation

The Surveyors are requested not to write on or below the space for Committee Minute.