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SUNDERLAND RPT. NO. 35506



REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 14272.

Date of writing Report 11/8 1950. When handed in at Local Office 31st August, 1950. Port of Manchester. Received at London Office.

No. in Survey held at Hazel Grove, Stockport. Date, First Survey 23.1.50. Last Survey 9/8/ 1950.

1/16" g. Book. "BRITISH NAVIGATOR" Number of Visits 12.

on the ~~Twin~~ ^{Single} Screw vessel. Classed Vessel. (Yard No. 782.) Tons Gross 6135 Net.

at Pallion, Sunderland. By whom built Messrs. William Doxford & Sons Ltd. Yard No. 782 When built 1951.

ners. Messrs. British Tanker Co. Ltd., Port belonging to London.

Engines made at Hazel Grove. By whom made Mirrlees, Bickerton & Day Ltd. Engine No. 3231/5-6 Contract No. 3231 When made 1950.

generators made at Sunderland. By whom made Sunderland Forge & Eng. Co. Gen. No. 41492 Contract No. 41492 When made 1950.

Notes and of Sets Two. Engine Brake Horse Power 135 x 2 M.N. as per Rule 34 x 2 Total Capacity of Generators 75 x 2 Kilowatts.

Set intended for essential services. Yes. Total = 270 Total = 68. Total = 150 KW.

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

Maximum pressure in cylinders 800 lbs/sq. inch. Diameter of cylinders 8 1/2" Length of stroke 13 3/4" No. of cylinders 3 No. of cranks 3

an indicated pressure 115 lbs/sq. inch. Firing order in cylinders 1-3-2. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 8 1/2"

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

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

As approved Crank pin dia. 5.9/16" Crank Webs Mid. length breadth 9 1/2" Thickness parallel to axis

as fitted 5 3/8" Crank Webs Mid. length thickness 2.15/32" Thickness round eyehole

Wheel Shaft, diameter Fitted to the end as per Rule. General armature, moment of inertia 249 lbs.ins.sec² (16 m² or Kg.-cm.²)

of the Crankshaft. as fitted.

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

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

Manufacturing Water Pumps, No. One per Engine Type Safran Centrifugal Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Ref: No. 3186/49; 3179/49. One per Engine. Gear Type Engine Driven Capacity 666 G.P.H.

Lubricating Oil Pumps, No. and size

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

enging Air Pumps, No. Diameter Stroke Driven by

R RECEIVERS:—Have they been made under Survey Yes. State No. of Report or Certificate C.12630.

each receiver, which can be isolated, fitted with a safety valve as per Rule Yes.

the internal surfaces of the receivers be examined Yes. What means are provided for cleaning their inner surfaces Cleaning Doors.

here a drain arrangement fitted at the lowest part of each receiver Yes.

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

less, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules

rting Air Receivers, No. One per 2 Engs. Total cubic capacity 5 cubic feet. Internal diameter 17 1/2" thickness 3/8"

Circumferentially Welded. Material Conforms to Class 2 Requirements. Working pressure by Rules 350 lbs/sq. inch.

less, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules 350 lbs/sq. inch.

ELECTRIC GENERATORS:—Type Open Type, Ventilated, Drip Proof, Compound Wound, sq. inch.

ssure of supply 110 volts. Full Load Current 682 Amperes. Direct or Alternating Current Direct.

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

nd off Yes. Generators, are they compounded as per Rule Yes. is an adjustable regulating resistance fitted in series with each shunt field Yes.

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

ielded that they cannot be accidentally earthed, short circuited, or touched Yes. Are the lubricating arrangements of the generators as per Rule Yes.

he generators are under 100 kw. full load rating, have the makers supplied certificates of test Built and tested under Survey. and do the results comply with the requirements.

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

ERATOR IDENTIFICATION MARKS: Lloyd's Test S.D.B. 2/7/50.

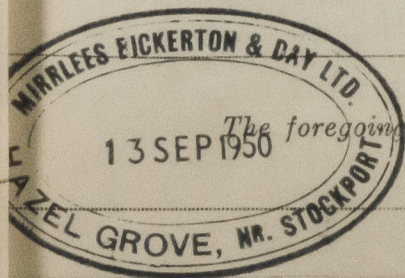
4NS.—Are approved plans forwarded herewith for Shafting 29/6/48. Approved Standard Type Receivers. Drg. No. DL31258 Separate Tanks.

(If not, state date of approval)

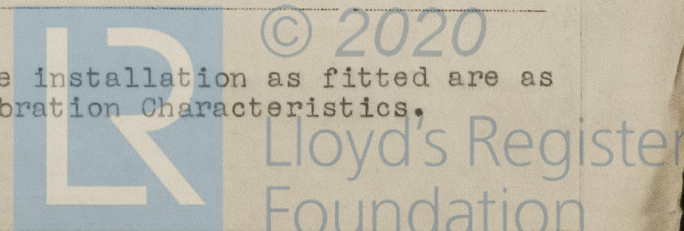
e Torsional Vibration characteristics if applicable been approved 29/6/48. Armature shaft Drawing No. 43938.

(state date of approval) Noted: 29/6/48.

IRE GEAR AS PER RULE REQUIREMENTS.



CHIEF ENGINEER MANUFACTURER.



005107-005117-0144

Dates of Survey while building
During progress of work in shops - 1950. Jan: 23, Feb: 14, April: 20, May: 3-24-30-31, June: 1-20-21, August: 9-9.
During erection on board vessel -
Total No. of visits -

Dates of Examination of principal parts - Cylinder 20/4/50. Jan. 23; Feb. 14; 24/5/50. Covers May 3-30. Pistons 9/8/50. Piston rods
Liners. April. 20.

Connecting rods. 23/2/50. 1/6/50 Crank and Flywheel shafts. Intermediate shafts.

Crank shaft Material S.M. Steel. Tensile strength 66.5 Kg/mm²; 67 Kg/mm²
Elongation % on 50/56 mm. 29.0/27.0 & 28.6/27.0. Identification Marks L.R. 88737 L.R. 88738
Lloyd's Lloyd's

Flywheel shaft, Material Identification Marks H.K.S. 3012/106 H.K.S. 3012/107
H.K.S. 6/4/50. H.K.S. 21/4/50.

Identification marks on Air Receivers.

J. & H. McLaren No. 8555: Lloyd's Test T.P. 700 lbs. W.P. 350 lbs. 16/5/50. R. McL.

Is this machinery duplicate of a previous case Yes. If so, state name of vessel Yard No. 779, 781.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Diesel Generator sets have been constructed under Special Survey of tested materials and in accordance with the Secretary's letters, approved plans and Rule Requirements. The material as could be seen appears sound and free from defects. The workmanship is good. Each engine direct coupled to its respective Electric Generator was tested at the Engine Builder's works and found satisfactory under the following conditions of loading, 6 Hours 100% Generator Load: 1 Hour 125% Generator Load. The shafting installation of this auxiliary machinery has been examined in conjunction with the Engine Builder's submitted calculations and approved for a service speed of 500 R.P.M. In the opinion of the undersigned these Diesel Generator sets are suitable for installation, for the purpose intended, in a vessel classed with the Society.

Attached hereto copies of Augsburg Forging Rpts. 97 & 103, also Air Receiver Cert. C.12630. Generator certificate will be forwarded later.

The amount of Fee ... £ 13 : 12 : 0. When applied for 31/5/50 19

Travelling Expenses (if any) £ 3 : 0 : 0. When received 19

Committee's Minute

Assigned

Surveyor to Lloyd's Register of Shipping.



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