

Rpt. 4c.

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 8934

Date of writing Report 30/12 1952 When handed in at Local Office 19 Port of Stockholm Received at London Office 2 JAN 1953

No. in Survey held at Hedemora Date, First Survey 16.5.52 Last Survey 10.10. 1952.  
Reg. Book. Number of Visits 4

on the Single Screw vessel m/t "PETRA DAN" Tons Gross 10560  
Triple  
Quadruple Net. -

Built at Gothenburg By whom built A/B Lindholmens Varv Yard No. 1028 When built 1952.

Owners J. Lauritsen Port belonging to Copenhagen

Oil Engines made at Hedemora By whom made A/B Hedemora Verkstäder Eng. 63, 64, 65  
Contract No. 3007073 When made 1952.

Generators made at Odense By whom made Thomas B. Thrige Contract No. 3007074 When made 1952.  
3007075

No. of Sets 3 Engine Brake Horse Power 3 x 210 M.N. as per Rule 3 x 53 Total Capacity of Generators 420 Kilowatts.

Set intended for essential services -

OIL ENGINES, &c.—Type of Engines Götaverken, D.M. 240/360 H.M. 2 or 4 stroke cycle 4 Single or double acting S.A.

Maximum pressure in cylinders 45 kg/cm<sup>2</sup> Diameter of cylinders 240 mm. Length of stroke 360 mm. No. of cylinders 5 No. of cranks 5

Mean indicated pressure 6.8 kg/cm<sup>2</sup> Firing order in cylinders 1, 3, 5, 4, 2 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 301 mm.

Is there a bearing between each crank Yes Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 4280 Revolutions per minute 450

Flywheel dia. 1250 mm. Weight 1910 kg. Means of ignition Compression Kind of fuel used Heavy oil.

Crank Shaft, dia. of journals as per Rule... appr. & 160 mm. ✓ Crank pin dia. 160 mm. ✓ Crank Webs Mid. length breadth 215 mm. Thickness parallel to axis -  
as fitted... 160 mm. ✓ Mid. length thickness 80 mm. shrunk Thickness round eyehole -

Flywheel Shaft, diameter as per Rule - Intermediate Shafts, diameter as per Rule - Generator Kg. cm. sec.<sup>2</sup> 637  
as fitted - as fitted - General armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>)

Are means provided to prevent racing of the engine when declutched Yes Means of lubrication Forced Kind of damper if fitted None

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

Boiling Water Pumps, No. None Is the sea suction provided with an efficient strainer which can be cleared within the vessel -

Lubricating Oil Pumps, No. and size One on each engine 4.10 T/H.

Air Compressors, No. None No. of stages - Diameters - Stroke - Driven by -

Sucking Air Pumps, No. None Diameter - Stroke - Driven by -

AIR RECEIVERS:—Have they been made under Survey Yes ✓ State No. of Report or Certificate Skm.cert. 9508

Is each receiver, which can be isolated, fitted with a safety valve as per Rule -

Are the internal surfaces of the receivers be examined Yes ✓ What means are provided for cleaning their inner surfaces -

Is there a drain arrangement fitted at the lowest part of each receiver -

High Pressure Air Receivers, No. None ✓ Cubic capacity of each - Internal diameter - thickness -

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

Sucking Air Receivers, No. One ✓ Total cubic capacity 200 litres Internal diameter 400 mm. thickness 13 mm.

Unless, lap welded or riveted longitudinal joint welded Material Steel Range of tensile strength 44.9-45.3 kg/mm<sup>2</sup> Working pressure by Rules 40 kg/cm<sup>2</sup>

ELECTRIC GENERATORS:—Type Drip proof, compound.

Pressure of supply 230 volts. Full Load Current 3 x 610 Amperes. Direct or Alternating Current Direct.

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

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

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

Do the generators are under 100 kw. full load rating, have the makers supplied certificates of test - and do the results comply with the requirements.

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

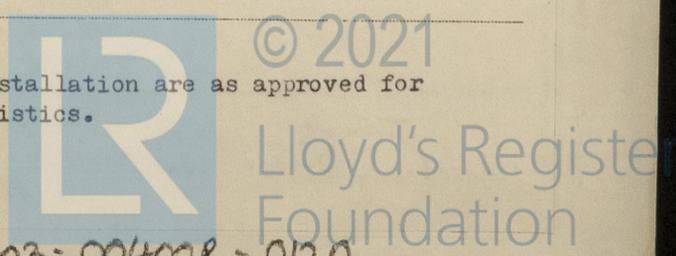
Are the shafts of driven machinery other than generator None

APPROVED PLANS.—Are approved plans forwarded herewith for Shafting No. 25.2.52. Receivers 21.4.52. Separate Tanks -  
(If not, state date of approval)

Are the torsional vibration characteristics if applicable been approved 25.2.52. Armature shaft Drawing No. 162998  
(state date of approval)

ARE GEAR Supplied by the Makers, should be checked onboard.

The foregoing is a correct description, and the particulars of the installation are as approved for torsional vibration characteristics.  
AKTIEBOLAGET  
HEDEMORA VERKSTÄDER  
Manufacturer.  
*Rune Persson*



004003-004008-0120

Dates of Survey while building { During progress of work in shops - - 16/5 - 10/10 1952.  
 { During erection on board vessel - - -  
 Total No. of visits 4 in shop.

Dates of Examination of principal parts—Cylinders 16/5-10/9-52. Covers 16/5-10/9-52. Pistons 10/9-52. Piston rods -  
 Connecting rods 10/9-52. Crank and Flywheel shafts 3 & 9/6-1952 Intermediate shafts -

Crank shaft { Material S.M. Steel Tensile strength 53,9, 53,9, 56,5  
 { Elongation 32,0, 29,0, 28,0 % on 50 mm. Identification Marks See below.

Flywheel shaft, Material Flywheel fitted on crankshaft Identification Marks -

Identification marks on Air Receivers LLOYD'S No. 595 H.P. 65 KG. W.P. 40 KG. WL 3.6.52.

Is this machinery duplicate of a previous case Yes If so, state name of vessel Please, see Skm. Rpt. 8422.

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)

The above auxiliary engines have been made under Special Survey and in accordance with the Rules, approved plans and the Secretary's letters.

The workmanship is good and the materials fulfil the requirements of the Rules. Test sheets for the shafts are attached.

The torsional vibration characteristics were approved in the Secretary's letter of the 25th February, 1952 for a service speed of 400-450 R.P.M.

The engines have been tested under working conditions on the test bed and found to work satisfactorily.

Identification Marks:-

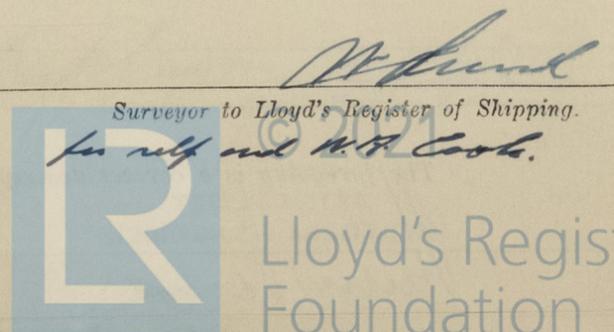
	<u>Crankshafts:-</u>	<u>Generator shafts:-</u>
Engine No. 63	LLOYD'S No. 1109 S.B. 3.6.52.	LLOYD'S No. 1034 WL 10.9.52.
" " 64	" " 7883 G.A. 9.6.52.	" " 1035 - " -
" " 65	" " 7884 G.A. 9.6.52.	" " 1036 - " -

The amount of Fee ... **Kf. 610:--** :  
 Travelling Expenses (if any) **Kf. 300:--** :

When applied for <sup>30/12</sup> 19 <sup>52</sup>  
 When received 19

Committee's Minute **FRI 23 JAN 1953**

Assigned **See F.E. nichy rpt.**



200,491-T. (MADE AND PRINTED IN ENGLAND)  
 (The Surveyors are requested not to write on or below the space for Committee Minutes.)