

CEMS  
6 JUL 1949  
Rpt. 4c.  
N.D.S.

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 5221

JUN 1949

Received at London Office

Date of writing Report 19... When handed in at Local Office 19... Port of NOTTINGHAM.

No. in Survey held at Lincoln Date, First Survey... Last Survey... 19...  
Reg. Book. Number of Visits

on the Single Screw vessel S/T. PRINCESS ELIZABETH Tons } Gross...  
Triple }  
Quadruple }  
Built at Hull By whom built Broady & Sons Ltd. Yard No. 824 When built...  
Cook Walter & Gemmell

Owners... Port belonging to...  
53129/17/480408. When made 1949.

Oil Engines made at Lincoln By whom made Ruston & Hornsby Ltd. Contract No...  
Generators made at Chelmsford. By whom made Grompton Parkinson. Contract No...  
When made...  
No. of Sets 1 Engine Brake Horse Power 30 M.N. as per Rule 7.5 Total Capacity of Generators 15 Kilowatts.

Is Set intended for essential services...  
2 or 4 stroke cycle 4 Single or double acting SA

OIL ENGINES, &c.—Type of Engines 3VRHZ. Eng. No. 266496.  
Maximum pressure in cylinders 800 lbs. Diameter of cylinders 4 1/2" Length of stroke 5 1/2" No. of cylinders 3 No. of cranks 3

Mean indicated pressure 112.5 Firing order in cylinders 1.3.2. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 6.15/16"  
Is there a bearing between each crank Yes Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 1164 lbs. ft. Revolutions per minute 1000

Flywheel dia. 26" Weight 420 lbs. Means of ignition Compression Kind of fuel used Diesel Oil.  
Crank Shaft, dia. of journals 3" Crank pin dia. 3" Crank Webs Mid. length breadth 3 1/2" Thickness parallel to axis...  
as fitted 3" Mid. length thickness 1.11/16 shrunk Thickness round eyehole...

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

Are means provided to prevent racing of the engine when declutched Yes Means of lubrication Forced Kind of damper if fitted...  
Are the cylinders fitted with safety valves No Are the exhaust pipes and silencers water cooled or lagged with non-conducting material...

Cooling Water Pumps, No. one, engine driven Is the sea suction provided with an efficient strainer which can be cleared within the vessel...  
Lubricating Oil Pumps, No. and size one, 150 gals./ Engine driven.

Air Compressors, No. No. of stages... Diameters... Stroke... Driven by...  
Scavenging Air Pumps, No. Diameter... Stroke... Driven by...

AIR RECEIVERS:—Have they been made under Survey... State No. of Report or Certificate...  
Is each receiver, which can be isolated, fitted with a safety valve as per Rule...

Can the internal surfaces of the receivers be examined... 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. 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. Total cubic capacity... Internal diameter... thickness...  
Seamless, lap welded or riveted longitudinal joint... Material... Range of tensile strength... Working pressure by Rules...

ELECTRIC GENERATORS:—Type Drip proof, CW.C.R. Machine No. F102.A.5809.  
Pressure of supply 110 volts. Full Load Current 136.5 Amperes. Direct or Alternating Current...

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 Yes  
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... Applied for Yes  
and do the results comply with the requirements... Yes

If the generators are 100 kw. or over have they been built and tested under survey...  
Details of driven machinery other than generator...

PLANS.—Are approved plans forwarded herewith for Shafting 13.4.43. Receivers... Separate Tanks...  
(If not, state date of approval)

Have Torsional Vibration characteristics if applicable been approved Not applicable. Armature shaft Drawing No...  
(state date of approval)

SPARE GEAR To rule requirements.

The foregoing is a correct description,  
**Ruston & Hornsby Limited.** Manufacturer.  
*Sheeves*  
Engineering Divn.



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Lloyd's Register  
Foundation  
002320-002329-0073

Dates of Survey while building  
 During progress of work in shops - - 21.2.49. 30.5.49.  
 During erection on board vessel - - -  
 Total No. of visits 2

Dates of Examination of principal parts—Cylinders 21.2.49. Covers 21.2.49. Pistons 21.2.49. Piston rods

Connecting rods 21.2.49. Crank and Flywheel shafts 21.2.49. Intermediate shafts -

Crank shaft  
 Material Tensile strength 40/45 Tons/sq.inch.  
 Elongation Identification Marks LL.K181. TDS. BW.3647.

Flywheel shaft, Material Identification Marks

Identification marks on Air Receivers

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

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

This engine has been built under Special Survey, in accordance with the approved plans and the rules of the Society, materials and workmanship being good.

On completion, the generating set was tested under working conditions in the shop and the governing tested with satisfactory results.

The set has been forwarded to Hull for installation on board the vessel.

*This diesel engine generating set satisfactorily installed in the S.T. PRINCESS ELIZABETH.*

*M. Chambers  
 Hull  
 20-9-50.*

200,847.-11. (MADE AND PRINTED IN ENGLAND)  
 (The Surveyors are requested not to write on or below the space for Committee Minute.)

The amount of Fee ... £ 4 : 0 : 0 { When applied for 19  
 Travelling Expenses (if any) £ : : { When received 19

Committee's Minute  
 Assigned *Sa F.E. Welch. 1st.*

FRI. 27 OCT 1950

