

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 12.276

Received at London Office DEC 28 1938.

Date of writing Report 19 When handed in at Local Office 19 Port of *Belfast*
visits included in 4.2. 1938

No. in Survey held at *Belfast* Date, First Survey Last Survey *15-12-38* 19
 Reg. Book. Number of Visits

73547 on the *Single* Screw vessel *"DURBAN CASTLE"* Tons { Gross
Triple
Quadruple

Built at *Belfast* By whom built *Harland & Wolff Ltd* Yard No. *987* When built *1938*
 Owners *Union Castle Mail Steamship Co* Port belonging to *London*

Oil Engines made at *Belfast* By whom made *Harland & Wolff Ltd* Contract No. *987* When made *1938*
 Generators made at *Belfast* By whom made *Harland & Wolff Ltd* Contract No. *987* When made *1938*

No. of Sets *4* Engine Brake Horse Power *2680* Nom. Horse Power as per Rule Total Capacity of Generators *1800* Kilowatts.

OIL ENGINES, &c.—Type of Engines *Harland & W. Airtex injection* 2 or 4 stroke cycle *2* Single or double acting *Single*

Maximum pressure in cylinders *700 lbs* Diameter of cylinders *280* Length of stroke *500* No. of cylinders *6* No. of cranks *6*

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *358* Is there a bearing between each crank *Yes*

Revolutions per minute *330* Flywheel dia. *1506* Weight *2580 kgs* Means of ignition *Compression* Kind of fuel used *Diesel Oil*

Crank Shaft, dia. of journals *as per Rule 179.1* Crank pin dia. *200* Crank Webs *Mid. length breadth 270* Thickness parallel to axis *shrunk*
as fitted 220 *Mid. length thickness 108* Thickness around eye hole

Flywheel Shaft, diameter *as per Rule* Intermediate Shafts, diameter *as per Rule* Thickness of cylinder liners *22*
as fitted *as fitted*

Is a governor or other arrangement fitted to prevent racing of the engine when declutched *Yes* Means of lubrication *forced*

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

Cooling Water Pumps, No. *2 - 1 working, 1 standby* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *Yes*

Lubricating Oil Pumps, No. and size *1 - 7.5 ton/hr. on each engine*

Air Compressors, No. *See main engine* No. of stages *2* Diameters *72.4* Stroke *✓* Driven by *✓*
Blowers *72.4 cfm/min at 330 rpm.* *✓*

Scavenging Air Pumps, No. *One each engine* Diameter *✓* Stroke *✓* Driven by *Engine*

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *See main report*

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 *See main*

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 *180 litres* Internal diameter *1'-6"* thickness *3/8"*

Seamless, lap welded or riveted longitudinal joint *Riveted* Material *Steel* Range of tensile strength *25/32 ton* Working pressure by Rules *372 lb*

ELECTRIC GENERATORS:—Type *Compound wound multipole open type*

Pressure of supply *220* volts. Load *1800* Amperes. Direct or Alternating Current *DC*

If alternating current system, state frequency of periods per second *✓*

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off *Yes*

Generators, do they comply with the requirements regarding rating *Yes* are they compound wound *Yes*

are they over compounded 5 per cent. *Yes*, if not compound wound state distance between each generator *✓*

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

PLANS. Are approved plans forwarded herewith for Shafting *23-6-37* Receivers *11-8-37* Separate Tanks *See main eng. rpt.*
 (If not, state date of approval)

SPARE GEAR *See attached list* *✓*

The foregoing is a correct description.
 For HARLAND AND WOLFF, LIMITED.

A. G. Marshall
 Secretary.

Manufacturer.



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Lloyd's Register
 Foundation

002630-002638-0026

Dates of Survey while building {

 During progress of work in shops - -

 During erection on board vessel - - -

 Total No. of visits

Dates of Examination of principal parts—Cylinders 10-3-38 16-6-38 Covers 17-11-37 16-5-38 Pistons 1-2-33 1-12-4-38 Piston rods ✓

 Connecting rods 5-3-38 19-5-38 Crank and Flywheel shaft 3-22-2-38 25-5-38 Intermediate shaft ✓

 Crank and Flywheel shafts, Material S Identification Marks A. 10405151. B. 267. C. 267. D. 267.

 Intermediate shafts, Material ✓ Identification Marks ✓

 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 engines have been constructed under special survey. The workmanship & materials are good. They have been efficiently installed in the auxiliary engine room & tested out under working conditions with satisfactory results.

 The main generators were constructed under special survey and the electrical installation tested & tested out with satisfactory results.

The amount of Fee ... £ :

 Travelling Expenses (if any) :

 When applied for, 19

 When received, 19

Charles G. Hunter. R. Lee Arneson.

 Surveyor to Lloyd's Register of Shipping

Committee's Minute

TUE 3 JAN 1939

Assigned

See FE, machy rpt.

