

RECEIVED

21 MAY 1951

IN D.O.

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS

Bel 15283

No. 11082

Received at London Office 17 MAY 1951

Date of writing Report 20 May 1951 When handed in at Local Office 14 5 1951 Port of Glasgow

No. in Reg. Book Survey held at Glasgow Date, First Survey 2. 2. 51 Last Survey 23 4 1951 Number of Visits 7

on the Single Screw vessel SS "RHODESIA CASTLE" Tons Gross 7040.76 Net 9434.56

Built at Belfast By whom built Harland & Wolff Ltd. Yard No. 1431 When built 1951

Owners The Union-Castle Line S.S. Co. Ltd. Port belonging to Southampton

Oil Engines made at Glasgow By whom made Harland & Wolff Ltd. Contract No. 501481.1 When made 1951

Generators made at Belfast By whom made Harland & Wolff Ltd. Contract No. 9704 When made 1951

No. of Sets 1 Engine Brake Horse Power 110 M.N. as per Rule 27.5 Total Capacity of Generators 75 Kilowatts

Is Set intended for essential services Emergency Generator

OIL ENGINES, &c.—Type of Engines Heavy oil Engine Airless injection 2 or 4 stroke cycle Single or double acting Single

Maximum pressure in cylinders 300 lbs/sq. in. Diameter of cylinders 250% Length of stroke 300% No. of cylinders 8 No. of cranks 3

Mean indicated pressure 100 lbs/sq. in. Firing order in cylinders 1. 2. 3 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 300%

Is there a bearing between each crank? No Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 367.5 x 10<sup>4</sup> Revolutions per minute 500

Flywheel dia. 170% Weight 1702 Kgs. Means of ignition Comp. Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule as approved 180% Crank pin dia. 160% Crank Webs Mid. length breadth 230% Thickness parallel to axis

Flywheel Shaft, diameter as per Rule as approved 180% Intermediate Shafts, diameter as per Rule as fitted General armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 37.1 x 10<sup>4</sup>

Are means provided to prevent racing of the engine when declutched? No Means of lubrication Forced Kind of damper if fitted None

Are the cylinders fitted with safety valves? No Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Lagged

Cooling Water Pumps, No. 1 of Cent. 6 cm. dia. Is the sea suction provided with an efficient strainer which can be cleared within the vessel?

Lubricating Oil Pumps, No. and size 1 of Centrifugal type 2.6 cm. dia. / 10 cm.

Air Compressors, No. 1 of No. of stages 2 Diameters "Hamworthy" Comp. No. 79435 Stroke Driven by Belt drive

Scavenging Air Pumps, No. Diameter Stroke Driven by

AIR RECEIVERS:—Have they been made under Survey? Supplied by H. W. Ltd. Belfast 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 Dup. Pres. Compound wound, Continuous Rating

Pressure of supply 230 volts Full Load Current Amperes Direct or Alternating Current Direct

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? No Generators, are they compounded as per Rule? No is an adjustable regulating resistance fitted in series with each shunt field? No

Are all terminals accessible, clearly marked, and furnished with sockets? No Are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched? No Are the lubricating arrangements of the generators as per Rule? No

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

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 28. 7. 1948 Receivers Separate Tanks

Have Torsional Vibration characteristics if applicable been approved? No 16. 8. 1948 Armature shaft Drawing No.

SPARE GEAR: As per Lub. requirements.

The foregoing is a correct description,

For HARLAND AND WOLFF, LIMITED

Wm. J. Wright Manufacturer.

Finishing Secretary



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Lloyd's Register Foundation

005353-005357-0076

Dates of Survey while building  
 During progress of work in shops - - 5. 2. 51. 14. 2. 51. 19. 2. 51. 5. 3. 51. 10. 3. 51. 23. 4. 51. 1. 5.  
 During erection on board vessel - -  
 Total No. of visits 7 in shop.

Dates of Examination of principal parts—Cylinders 5. 3. 51. Covers 12. 1. 51. Pistons 5. 3. 51. Piston rods  
 Connecting rods 14. 2. 51. Crank and Flywheel shafts 2. 2. 51. Intermediate shafts

Crank shaft Material 5. 4. 51 Tensile strength 30.7 tons/10"  
 Elongation 30% on 3" Identification Marks TEST 153 N° 21496 O.B. 5. 2  
 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 *"British Linnets"*

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

The Auxiliary Engine has been constructed under special survey in accordance with the Rules and approved Plans.  
 The materials used and workmanship are good, and on completion the engine was coupled to the Generator supplied by Harland & Wolff Ltd. Belfast. Tested on the shop load - found satisfactory.  
 The torsional vibration characteristics have been approved for a service speed of 500 R.P.M. (Secretary's letter 28. 7. 48.)  
 The Generating Set has now been dispatched to Messrs Harland & Wolff, Belfast, to be installed on board a vessel building at Belfast.

Generating Unit installed on board and examined under working conditions with satisfactory results.

*J.D. Smith*

The amount of Fee ... *Glasgow* £ 5 : 10 : 0 When applied for 16 MAY 1951  
 Travelling Expenses (if any) £ : : When received 19

*St. L...*

Committee's Minute GLASGOW 16 MAY 1951

Assigned *Refered for completion*

501.4.38.-T. (MADE AND PRINTED IN ENGLAND)  
 (The Surveys are required not to write on or below the space for Committee Minute.)