

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 15283

Received at London Office. 12 NOV 1951

Date of writing Report 19... When handed in at Local Office 5. 11. 1951 Port of BELFAST

No. in Survey held at BELFAST Date, First Survey... Last Survey... 19... Number of Visits...

on the Twin Screw vessel T.S. S.S. "RHODESIA CASTLE" Tons Gross 17040.76 Net 9434.56

Built at BELFAST By whom built HARLAND & WOLFF LTD. Yard No. 1431. When built 10/51.

Owners UNION CASTLE MAIL S.S. CO. LTD. Port belonging to LONDON.

Oil Engines made at BELFAST By whom made HARLAND & WOLFF LTD. Contract No. 1431. When made 10/51.

Generators made at BELFAST By whom made HARLAND & WOLFF LTD. Contract No. 1431. When made 10/51 (450 EACH)

No. of Sets 3 Engine Brake Horse Power 660 M.N. as per Rule 165. Total Capacity of Generators 1350 Kilowatts.

Is Set intended for essential services. YES

OIL ENGINES, &c.—Type of Engines HEAVY OIL WITH EXHAUST PISTONS. 2 or 4 stroke cycle 2. Single or double acting SINGLE

Maximum pressure in cylinders 850 lbs/sq. Diameter of cylinders 260 m.m. Length of stroke 370+150. No. of cylinders 6. No. of cranks 6.

Mean indicated pressure 100 lbs/sq. Firing order in cylinders 1-6-2-4-3-5. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 524 m.m.

Is there a bearing between each crank YES. Moment of inertia of flywheel (16 m² or Kg.-cm.²) 780,000. Revolutions per minute 370.

Flywheel dia 1506 m.m. Weight 2130 Kg. Means of ignition COMPRESSION. Kind of fuel used DIESEL OIL.

Crank Shaft, dia. of journals as per Rule 180 m.m. as fitted 180 m.m. Crank pin dia. 180 m.m. Crank Webs Mid. length breadth 290 m.m. Thickness parallel to axis 100 m.m. shrunk Mid. length thickness 100 m.m. Thickness round eyehole 90 m.m.

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule General armature, moment of inertia (16 m² or Kg.-cm.²)

Are means provided to prevent racing of the engine when disengaged YES. Means of lubrication FORCED. Kind of damper if fitted

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 SW-2 FW. Is the sea suction provided with an efficient strainer which can be cleared within the vessel YES.

Lubricating Oil Pumps, No. and size ONE DIRECT DRIVE FROM SHAFT.

Air Compressors, No. 1. No. of stages 1. Diameters 1. Stroke 1. Driven by 1.

Scavenging Air Pumps, No. ROTARY BLOWERS. Diameter 1. Stroke 1. Driven by ME (CHAIN)

AIR RECEIVERS:—Have they been made under Survey YES. State No. of Report or Certificate X 373.

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

Can the internal surfaces of the receivers be examined YES. What means are provided for cleaning their inner surfaces MANHOLE: 16" x 12"

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

High Pressure Air Receivers, No. 1. Cubic capacity of each 1. Internal diameter 1. thickness 1.

Seamless, lap welded or riveted longitudinal joint 1. Material 1. Range of tensile strength 1. Working pressure by Rules 1.

Starting Air Receivers, No. 2. Total cubic capacity 25 cub/ft EACH. Internal diameter 29". thickness 1/2".

Seamless, lap welded or riveted longitudinal joint WELDED. Material STEEL. Range of tensile strength 29/38. Working pressure by Rules 356 lbs/sq.

ELECTRIC GENERATORS:—Type DRIP PROOF.

Pressure of supply 225 volts. Full Load Current 2000 Amperes. Direct or Alternating Current D.C.

Is an alternating current system, state the periodicity YES. 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

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

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

Are the generators 100 kw. or over have they been built and tested under survey YES.

Details of driven machinery other than generator NIL.

PLANS.—Are approved plans forwarded herewith for Shafting 2. 6. 50. Receivers 3. 7. 50. Separate Tanks 7. 6. 51.

Have Torsional Vibration characteristics if applicable been approved YES. SEC^Y LETTER 2. 6. 50. Armature shaft Drawing No.

SHAFTING GEAR SEE ATTACHED LIST.

The foregoing is a correct description, FOR HARLAND AND WOLFF, LIMITED

Secretary. Manufacturer.



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Lloyd's Register Foundation

003353-005357-0075

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 28.12.50-18.4.51 Covers ✓ Pistons 28.8.50-25.10.50 Piston rods ✓

Connecting rods 26.7.50 Crank and Flywheel shafts 11.2.51-5.2.51-2.3.51 Intermediate shafts ✓

Crank shaft Material JOURNALS: F.S. CRANKPINS & WEBS: C.S. Tensile strength F.S.: 32 TONS/SQ. IN. C.S.: 29.5-38 TONS/SQ. IN.
 Elongation F.S.: 32.5% - 34% C.S.: 24% - 36% Identification Marks No. 1 ENG.: 1263 RD. 11.2.50. No. 3 ENG.: 1266 No. 2 " 1265 RD. 5.2.51. " RD. 2.3.51.

Flywheel shaft, Material ✓ Identification Marks ✓

Identification marks on Air Receivers No. 508 " R.O.B. 13.3.51.

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 three Auxiliary Generating Units were constructed and installed under Special Survey in accordance with Rules, approved plans, and Secretary's Letters. The material used in manufacture was made at Works Approved by the Committee, under the supervision of the Society's Surveyors, and the workmanship is satisfactory. Each unit, on completion, was examined under full working conditions with satisfactory results.

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

See F.E. MACH:-
 The amount of Fee ... £ : : When applied for ... 19
 Travelling Expenses (if any) £ : : When received ... 19

TUES. 4 DEC 1951

Committee's Minute
 Assigned See F.E. MACH. sp.

A. Fairbridge & J.D. Smail
 Surveyor to Lloyd's Register of Shipping.

