

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 109223

Copy *M.S. Empire Gas*

Date of writing Report *22: 11: 1940* When handed in at Local Office *26: 11: 1940* Port of *London*
 No. in Survey held at *Bedford* Date, First Survey *26: July 1940* Last Survey *11: Nov. 1940*
 Reg. Book. *One of these engines fitted into M.V. "Empire Gas" 2 of 1088 Tons Gross*
 on the *Single* Screw vessel *The other into Empire Gas duplicate set 358 & 359* Net
 will at *Bowling* By whom built *Scott & Sons* Yard No. *359* When built
 owners *J. A. Gardner & Co. Ltd* Port belonging to
 Oil Engines made at *Bedford* By whom made *W. H. Allen Sons & Co. Ltd* Contract No. *K/89717* When made *1940*
 Generators made at *"* By whom made *"* Contract No. *"* When made *"*
 No. of Sets *Two* Engine Brake Horse Power *74* Nom. Horse Power as per Rule *"* Total Capacity of Generators *50* Kilowatts.

L ENGINES, &c.—Type of Engines *Heavy Oil* 2 or 4 stroke cycle *4* Single or double acting *single*
 Maximum pressure in cylinders *700 lb* Diameter of cylinders *230 mm* Length of stroke *300 mm* No. of cylinders *2* No. of cranks *2*
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *282 mm* Is there a bearing between each crank *Yes*
 Revolutions per minute *500* Flywheel dia. *1200 mm* Weight *3400 lb.* Means of ignition *Compression* Kind of fuel used *Diesel oil*
 Crank Shaft, dia. of journals *as per Rule 138 mm* Crank pin dia. *150 mm* Crank Webs *Mid. length breadth 204 mm* Thickness parallel to axis *✓*
as fitted 140 mm Mid. length thickness *70 mm* Thickness around eye hole *✓*
 Flywheel Shaft, diameter *as per Rule* Intermediate Shafts, diameter *as per Rule* Thickness of cylinder liners *17 mm*
as fitted Crank shaft *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 *✓*
 Cooling Water Pumps, No. *1* *Plunger type* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *✓*
 Lubricating Oil Pumps, No. and size *1* *Gear type*
 Air Compressors, No. *One* No. of stages *Two* Diameters *3 1/8" x 7 1/4"* Stroke *4 1/2"* Driven by *Extension of crank shaft*
 scavenging Air Pumps, No. *✓* Diameter *✓* Stroke *✓* Driven by *✓*

RECEIVERS:—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 *Open type*
 Pressure of supply *220* volts. Load *227* Amperes. Direct or Alternating Current *Direct*
 Is an 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 *?*
 Are they over compounded 5 per cent. *✓* 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 *Yes*

ANS. Are approved plans forwarded herewith for Shafting *✓* Receivers *✓* Separate Tanks *✓*
 (If not, state date of approval)
ARE GEAR One complete set of valves for one cylinder; 4 nozzles, 1 set of piston rings for one piston, 1 set of studs and nuts for 1 cylinder cover, 2 bolts and nuts for bottom end bearing, 2 bolts and nuts for main bearing; one fuel pump; one gudgeon pin and bush; one bottom end bearing; 2 pistons complete; crank shaft chain links, circulating pump chain links; 1 lubricating oil pump, 1 set of springs and joints, bolts and nuts &c; 1 set of brush holders with brushes.

The foregoing is a correct description,

(Sgd) *W. H. Allen, Sons & Co. Ltd* Manufacturer.
H. H. Clarke
 18: 11: 40



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Dates of Survey while building { During progress of work in shops - - July 1940. 26 Aug 6. 16. 19. 23 Oct: 15. 17 Nov: 4
 { During erection on board vessel - - - }
 Total No. of visits 8

Dates of Examination of principal parts—Cylinders 26: 7: 40 Covers 19: 8: 40 23: 8: 40 Pistons 23: 8: 40 Piston rods ✓

Connecting rods 19: 8: 40 Crank and Flywheel shaft 6. 8. 40 : 16: 8: 40 Intermediate shaft ✓

Crank and Flywheel shaft, Material steel Identification Mark ^{LLOYDS 3201 AS 18. 3. 40} HAG 6. 8. 40 ^{LLOYDS 82 ELK A 2647 8: 3: 40 RWC 16. 8. 40} Intermediate shafts, Material ✓ Identification Marks ✓

Is this machinery duplicate of a previous case ✓ If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.) The Generating sets were constructed under special survey in accordance with the requirements of the Rules and Appro plans, the steel was made at Works approved by the Committee, the workmanship is good and on completion the sets were tested upon the bench under full & over load conditions with satisfactory results.

The Generating sets have been dispatched to Bowling for fitting on board the vessels.

One of these engines replaced engine No. K1/90284.

The amount of Fee ... £ 12 : 12 : 0 When applied for, 28/11/1940
 Travelling Expenses (if any) £ 2 : 11 : 0 When received, 19

(Sgd) H. A. Garnett.
 Surveyor to Lloyd's Register of Shipping.

FRI. 31 OCT 1941

Committee's Minute

Assigned

See Jls. J.C. 63686



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