Pt. 4c.

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS

No. 8643

Received at London Office 4 OCT 1935

Date of writing Report 24th Sept 1935 When handed in at Local Office 28th Sept 1935 Port of BILBAO

No. in Reg. Book. Survey held at BILBAO Date, First Survey 16th May 1933 Last Survey 19th Sept 1935 Number of Visits 50.

4900 on the ~~Single~~ Twin ~~Triple~~ ~~Quadruple~~ Screw vessel FERNANDO POO. Tons Gross 6914 Net 3866

Built at Bilbao By whom built Cia. Euskalduna Yard No. 97 When built 1935

Owners Cia. Trasmediterranea Port belonging to Valencia

Oil Engines made at Bilbao By whom made Soc. Esp. de Const. Naval Contract No. ✓ When made 1935

Generators made at Manchester By whom made Metropolitan Vickers Electrical Co. Ltd. Contract No. ✓ When made 1935

No. of Sets 3 Engine Brake Horse Power 3×220 Nom. Horse Power as per Rule 190 Total Capacity of Generators 420 Kilowatts.

OIL ENGINES, &c.—Type of Engines Constructora Naval Sulzer 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 700 lbs. Diameter of cylinders 250 m/m Length of stroke 330 m/m No. of cylinders 6 ea. No. of cranks 6 ea.

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 262 m/m Is there a bearing between each crank Yes.

Revolutions per minute 375 Flywheel dia. 1200 m/m Weight 990 Kgs. Means of ignition Air Compr. Kind of fuel used Crude oil.

Crank Shaft, dia. of journals as per Rule ..... as fitted 135 m/m Crank pin dia. 135 m/m Crank Webs Mid. length breadth 205 m/m Mid. length thickness 70 m/m shrunk Thickness parallel to axis ✓ Thickness around eyehole .....

Flywheel Shaft, diameter as per Rule ..... as fitted 145 m/m **Intermediate Shafts**, diameter as per Rule ..... as fitted ✓ Thickness of cylinder liners 19 m/m

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. 1 ea. eng. 65×100 m/m Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Lubricating Oil Pumps, No. and size 1 each engine of gear type

Air Compressors, No. 2 No. of stages 3 Diameters 80 - 330 m/m - 380 Stroke 180 m/m Driven by Nos 1+3 Aux. Eng.

Scavenging Air Pumps, No. 1 ea. cylr. & 1 aux. ea. eng Diameter 250 m/m Aux. 300 Stroke 330 m/m Aux. 100 Driven by aux. engines

AIR RECEIVERS:—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 removable top

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

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. 1 Total cubic capacity 400 litres Internal diameter 500 m/m thickness 13 m/m

Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 44/49 kgs/mm² Working pressure by Rules

ELECTRIC GENERATORS:—Type compound wound, marine type, D.C. generators

Pressure of supply 230 volts. **Load** 610 Amperes. **Direct or Alternating Current** Direct

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 Yes.

PLANS. Are approved plans forwarded herewith for Shafting No. 16.5.33 Receivers No 15.11.33 Separate Tanks ✓
(If not, state date of approval)

SPARE GEAR 1 cylr. cover complete with valves, 1 scavenge suct. valve grid & blades, 1 piston complete, 3 sets of piston rings, 1 set cylinder cover studs with nuts, 1 set bottom end bolts & nuts, 6 fuel pump plungers & guides, 4 sets fuel pump valves, 1 set of aux. scav. pump suct. & delivery valves, 1 ball race for governor, 2 sets piston rod packing rings, 1 set circulating pump suct. & disch. valves, 1 set of special tools & joints, 1 spring of each size fitted, 1 fuel pipe, 1 length of air piping, 1 bottom end bearing, 10% oil cooler tubes.
Aux. Compressors: 1 set of piston rings of each size, 1 set of suct. & delivery valves of each size, 1 set of springs for suct. & delivery valves of each size, 1 spring of each size fitted, 10% air cooler tubes.

SOCIEDAD ESPAÑOLA DE CONSTRUCCION NAVAL
Astilleros y Talleres de Sestao y Navidad

The foregoing is a correct description.

Andrés Dancalo
Jefe del Departamento de Maquinaria.

Manufacturer.

W1132-0137

Dates of Survey while building — During progress of work in shops: 1933 May 16th Sept. 29 Oct 2, 4, 5, 7, 10, 11, 18, 25, 27 Nov. 2, 9, 11, 21. Dec. 11, 15 1934 Jan 2, 11, 15, 16, 17, 22, 30, 31 Feb. 2, 5 Mar. 8, 28 April 5. 19. May 7. 14 June 12, 13, 21 July 2. 6. 12 1935 Jan 5 Jun 19, 25.

During erection on board vessel: 1935 June 27 July 1. 9. 13. 17 Aug 7. 12 Sept. 19.

Total No. of visits 50

Dates of Examination of principal parts — Cylinders 31.1.34. 28.3.34 5.4.34. Covers Various Pistons Various Piston rods 16.5.33, 21.11.33

Connecting rods 16.5.33, 21.11.33 Crank and Flywheel shaft 9.8.33, 8.9.33, 10.10.33. Intermediate shaft ✓

LLOYD'S Nº	310	337	382
	9.8.33	8.9.33	10.10.33
	G.D.	J.C.K.	G.D.

Crank and Flywheel shafts, Material Forged open hearth steel Identification Mark

AIR COMPR. ~~Intermediate~~ shafts, Material do. Identification Marks LLOYD'S Nº 444 19.4.34 G.D.

Is this machinery duplicate of a previous case Yes. If so, state name of vessel Tw. Sc. M.V. "DOMINE."

General Remarks (State quality of workmanship, opinions as to class, &c. This auxiliary machinery has been built under special survey, satisfactorily fitted on board the vessel and tested under working conditions in accordance with the Society's Rules & Regulations & approved plans. The material & workmanship were found to be good.

This auxiliary machinery is eligible in my opinion to be classed.

The amount of Fee £: 11.10.0 When applied for, 2/4/1935

Travelling Expenses (if any) £: 26. When received, 5/4/1935

G. Dixon.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 22 NOV 1935

Assigned See Blo. J.E. 8673

(The Surveyors are requested not to write on or below the space for Committee Minute.)

1m.6.31—Transfer.