

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

4 DEC 1948

Received at London Office.....

Date of writing Report... 18. 11. 48 When handed in at Local Office... 23. 11. 48 Port of... West Hartlepool.

No. in Survey held at... West Hartlepool. Date, First Survey... 24-8-48. Last Survey... 11. 11. 1948
Reg. Book. (Number of Visits... 14)

90033 on the... S.S. "AVONDENE" Tons { Gross... 4850
Net.....

Built at... West Hartlepool By whom built... Wm Gray & Co. Ltd. Yard No. 1220 When built... 1948

Owners... Dene Shipping Co. Ltd. Port belonging to... London.

Electrical Installation fitted by... Wm Gray & Co. Ltd. Contract No. 1220 When fitted... 1948.

Is vessel fitted for carrying Petroleum in bulk... no. Is vessel equipped with D.F. Yes. E.S.D. Yes. Gy.C. - Sub.Sig. -
Radar - Yes

Have plans been submitted and approved... Yes. System of Distribution... Two wire insulated Voltage of supply for Lighting... 110

Heating... Power... 110 Direct or Alternating Current, Lighting... D.C. Power... D.C. If Alternating Current state periodicity... Prime Movers,

has the governing been tested and found as per Rule when full load is suddenly thrown on and off... Yes. Are turbine emergency governors fitted with a
trip switch as per Rule... - Generators, are they compound wound... Yes, are they level compounded under working conditions... Yes,

if not compound wound state distance between generators... - and from switchboard... - Where more than one generator is fitted are they
arranged to run in parallel... no, are shunt field regulators provided... Yes. Is the compound winding connected to the negative or positive pole

Negative. Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing... - Have certificates of
test for machines under 100 kw. been supplied... Yes and the results found as per rule... Yes. Are the lubricating arrangements and the construction

of the generators as per rule... Yes. Position of Generators... Inboard & Outboard, starboard side forward on
starting platform level, is the ventilation in way of generators satisfactory... Yes, are they clear of inflammable material... Yes, if situated

near unprotected combustible material state distance from same horizontally... - and vertically... - are the generators protected from mechanical
injury and damage from water, steam and oil... Yes, are the bedplates and frames earthed... Yes and the prime movers and generators in metallic

contact... Yes. Switchboards, where are main switchboards placed... on platform above generators, adjacent to
forward bulkhead facing aft on starboard side.

are they in accessible positions, free from inflammable gases and acid fumes... Yes, are they protected from mechanical injury and damage from water, steam
and oil... Yes, if situated near unprotected combustible material state distance from same horizontally... - and vertically... - what insulation

material is used for the panels... Sindanyo (Ebony finish), if of synthetic insulating material is it an Approved Type... Yes, if of
semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule... - Is the frame effectually earthed... Yes

Is the construction as per Rule... Yes, including accessibility of parts... Yes, absence of fuses on the back of the board... Yes, individual fuses
to pilot and earth lamps, voltmeters, etc... Yes, locking of screws and nuts... Yes, labelling of apparatus and fuses... Yes, fuses on the "dead"

side of switches... Yes. Description of Main Switchgear for each generator and arrangement of equaliser switches... Double Pole
Single Throw Quick Break Knife Switch and Double Pole Fuses.

and for each outgoing circuit... Double Pole Double Throw Quick Break Knife Switches
and Double Pole Fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... Yes. Instruments on main switchboard... 3
ammeters... 3 voltmeters... - synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection... - Earth Testing, state means provided... Earth lamps connected to 'E' thro switches & fuses.

Switches, Circuit Breakers and Fuses, are they as per Rule... Yes, are the fuses an approved type... Yes, are all fuses labelled as
per Rule... Yes. If circuit breakers are provided for the generators, at what overload current did they open when tested... - are the reversed current

protection devices connected on the pole opposite to the equaliser connection... - have they been tested under working conditions, and at what current
did they operate... - Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule... Yes.

Cables, are they insulated and protected as per the appropriate Tables of the Rules... Yes, if otherwise than as per Rule are they of an approved type... -
state maximum fall of pressure between bus bars and any point under maximum load... < 6.6v, are the ends of all cables having a sectional area of 0.01

square inch and above provided with soldering sockets... Yes. Are paper insulated and varnished cambric insulated cables sealed at the ends... -

with insulating compound... or waterproof insulating tape... Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage... *Yes*... are cables laid under machines or floorplates... if so, are they adequately protected... Are cables in machinery spaces, galleys, laundries, etc., lead covered... *Yes* or run in conduit... *Yes*... State how the cables are supported and protected... *V.I.R. cables in Engine Room, Boiler Room, fore and aft mains in living decks and in mast houses are run in conduit. Lead covered cables in accommodation are plated to wood grounds.*

Are all lead sheaths, armouring and conduits effectually bonded and earthed... *Yes*... Refrigerated chambers, are the cables and fittings as per Rule... Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands... *Yes*... where unarmoured cables pass through beams, etc., are the holes effectively bushed... *Yes* and with what material... *Lead*... Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule... *Yes*... Emergency Supply, state position... and method of control... Navigation Lamps, are they separately wired... *Yes* controlled by separate double pole switches... *Yes* and fuses... *Yes*... Are the switches and fuses in a position accessible only to the officers on watch... *Yes*... is an automatic indicator fitted... *Yes*... Secondary Batteries, are they constructed and fitted as per Rule... are they adequately ventilated... what is the battery capacity in ampere hours... Fittings, are all fittings on weather decks, in stowholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof... *Yes*... Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present... if so, how are they protected... and where are the controlling switches fitted... are all fittings suitably ventilated... *Yes*... are all fittings and accessories constructed and installed as per Rule... *Yes*... Searchlight Lamps, No. of... whether fixed or portable... are their fittings as per Rule... Heating and Cooking, is the general construction as per Rule... *Yes*... are the frames effectually earthed... *Yes*... are heaters in the accommodation of the convection type... Motors, are all motors constructed and installed as per Rule... *Yes*... and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil... *Yes*... if situated near unprotected combustible material state minimum distance from same horizontally... and vertically... Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment... Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing... Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule... Control Gear and Resistances, are they constructed and fitted as per Rule... *Yes*... Lightning Conductors, where required are they fitted as per Rule... *Yes*... Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with... are all fuses of the cartridge type... are they of an approved type... Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships... Are the cables lead covered as per Rule... Spare Gear, if the vessel is for open sea service have spares been provided as per Rule... *Yes*... are they suitably stored in dry situations... *Yes*... Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory... *Yes*...

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	15	110	136	600	Steam Engine	-	
	1	10	110	91	1000	Diesel Engine	Kerosene Oil Above 150°F	
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	15	1	37/072	136	152	50/46	V.I.R.	Conduit.
" " EQUALISER	10	1	19/083	91	118	80	V.I.R.	Conduit.
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
Main switchboard to Saloon Pas. SB1	1	19/064	58.2	83	300	V.I.R.	Conduit.
Main switchboard to Crews Okhs SB2	1	19/064	60.7	83	105	V.I.R.	Conduit.
Main switchboard to Crews Okhs SB3	1	7/064	39.7	46	105	V.I.R.	Conduit.

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.	
WIRELESS	1	19/044	53	411	V.I.R.	141 ft lead bonded 270 ft Conduit.	
NAVIGATION LIGHTS and Whulhouse DB1	1	19/052	30	411	V.I.R.	141 ft lead bonded 270 ft Conduit.	
LIGHTING AND HEATING	Alternative source of supply from Saloon House Lp. DB2.						
Dist Box 1 to Saloon House Lp. DB2	1	7/036	16.6	24	105	V.I.R.	Lead covered.
Dist Box 1 to Saloon Okhs Pas. DB3	1	7/036	10.7	24	81	V.I.R.	Lead covered.
Dist Box 1 to Saloon Okhs Pas. DB4	1	7/036	12.9	24	9	V.I.R.	Lead covered.
Main switchboard to Saloon Pas. DB5	1	19/052	61.2	64	270	V.I.R.	Conduit.
Dist Box 2 to P.O. Deckhouse DB6	1	7/029	10.4	15	45	V.I.R.	Lead covered.
Dist Box 2 to Crews Deckhouse DB7	1	7/052	27	37	9	V.I.R.	Lead covered.
Dist Box 2 to Main Deck DB8	1	7/036	5.3	24	450	V.I.R.	Conduit.
Dist Box 3 to Foremast House DB9	1	7/044	13.5	31	420	V.I.R.	Conduit.
Dist Box 3 to Mainmast House DB10	1	7/052	19.8	37	339	V.I.R.	Conduit.
Main switchboard to Engine Rm DB11	1	7/064	33.2	46	30	V.I.R.	Conduit.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	DESCRIPTION.	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
Thermolank No 1.	1	2	1	7/036	18	24	120	V.I.R.	Lead covered.
Thermolank No 2.	1	2	1	7/036	18	24	60	V.I.R.	Lead covered.
Refrigeration	1	-	1	7/064	31.46	46	300	V.I.R.	Conduit.
Radar.	1	-	1	19/044	23	53	300	V.I.R.	Conduit.

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description for William Gray & Co. Limited.

J.W. Scott
CHIEF DRAUGHTSMAN

Electrical Engineers.

Date 19 November 1948

COMPASSES.

Minimum distance between electric generators or motors and standard compass 25 feet.

Minimum distance between electric generators or motors and steering compass 27 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 0.14 Ampères 10 feet from standard compass ~~10~~ inside steering compass.

A cable carrying 0.14 Ampères ~~10~~ inside standard compass 10 feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power Yes.

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted Yes.

The maximum deviation due to electric currents was found to be nil degrees on every course in the case of the standard compass, and nil degrees on for William Gray & Co. in the case of the steering compass.

J.W. Scott
CHIEF DRAUGHTSMAN

Builder's Signature.

Date 19 November 1948

Is this installation a duplicate of a previous case No. If so, state name of vessel —

Plans. Are approved plans forwarded herewith No. If not, state date of approval 26.7.48 and 8.9.48.

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith Generators.

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.) The electrical

equipment of this vessel has been installed under special survey and the arrangements are in accordance with or equivalent to those shown on the approved plans and the Rules for Electrical Equipment.

The materials used are of good quality and the workmanship is good.

On completion the equipment was operated under working conditions, and the insulation resistance of all circuits measured and found good.

This installation is in my opinion suitable for a classed vessel.

Notes sent 22/12/48

Total Capacity of Generators 40 Kilowatts.

The amount of Fee ... £ 42 : 10 : When applied for, 3-12-1948

Travelling Expenses (if any) £ : : When received,

J.M. Hills

Surveyor to Lloyd's Register of Shipping.

THURS 23 DEC 1948

Committee's Minute

Assigned See F.E. Welch rpt

5m.4.30.—Transfer. (MADE AND PRINTED IN ENGLAND.)
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

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