

Rpt. 13.

No. 82473

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 31 MAR 1928

Date of writing Report

19

When handed in at Local Office

30/3/1028 Port of

NEWCASTLE-ON-TYNE

No. in Survey held at *Newcastle*
Reg. Book. Supt.Date, First Survey *26 Oct. 1927* Last Survey *23 Feb 1928*(Number of Visits *12*)40019 on the *M.V. Belpamela*Tons { Gross
NetBuilt at *Newcastle*By whom built *Armstrong Whitworth & Co. Ltd.* Yard No. *1028* When built *1928*Owners *A/S. Roderic Belmont*Port belonging to *Oslo*Electric Light Installation fitted by *Armstrong Whitworth & Co. Ltd.*Contract No. *1028* When fitted *1928*System of Distribution *Double wire*Pressure of supply for Lighting *110* volts, Heating *110* volts, Power *110* volts.Direct or Alternating Current, Lighting *Direct* Power *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 generatorWhere more than one generator is fitted are they arranged to run in parallel *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 or shielded that they cannot be accidentally earthed, short circuited, or touched *Yes*Are the lubricating arrangements of the generators as per Rule *Yes*Position of Generators *On dynamo flat at after end of engine room*, are they clear of all inflammable material *Yes*is the ventilation in way of the generators satisfactory *Yes*, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generatorsand *Yes*, are the generators protected from mechanical injury and damage from water, steam or oil *Yes*are their axes of rotation fore and aft *Yes*Earthing, are the bedplates and frames of the generating plant efficiently earthed *Yes*, are the prime movers and their respective generators in metallic contact *Yes*Main Switch Boards, where placed *On dynamo flat at after end of engine room*

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard

Switchboards, are they placed in accessible positions; free from inflammable gases and acid fumes *Yes*are they protected from mechanical injury and damage from water, steam or oil *Yes*, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboardsare they constructed wholly of durable, non-ignitable non-absorbent materials *Yes*, is all insulation of high dielectric strength and of permanently high insulation resistance *Yes*if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework *Yes*and is the frame effectively earthed *Yes*, Are the fittings as per Rule regarding:— spacing or shielding of live parts*Yes*, accessibility of all parts *Yes*, absence of fuses on back of board *Yes*, proportion of omnibus bars *Yes*individual fuses to voltmeter, pilot or earth lamp *Yes*, connections of switches *Yes*Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches *Double pole overload & reverse current circuit breaker with equalising switch for each generator. Double pole switch of fuses for each outgoing circuit*Instruments on main switchboard *two* ammeters *two* voltmeters — synchronising device for paralleling purposes.Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system *Earth leakage detector*Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules *Yes*Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule *Yes*

Cables: Single, twin, concentric, or multicore single are the cables insulated and protected as per Tables IV or V of the Rules yes

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 4.0 volts

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets yes

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound —

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage yes

Support and Protection of Cables, state how the cables are supported and protected Lead covered & armoured cables clipped up with galvanised iron clips in machinery spaces. Lead covered cables in cabins

If cables are run in wood casings, are the casings and caps secured by screws —, are the caps secured of brass —, are the cables run in separate grooves —. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII yes

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements yes

Joints in Cables, state if any, and how made, insulated, and protected none made

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands yes

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed yes state the material of which the bushes are made lead

Earthing Connections, state what earthing connections are fitted and their respective sectional areas —

are their connections made as per Rule —

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule yes

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven none fitted

Navigation Lamps, are these separately wired yes, controlled by separate switch and separate fuses yes, are the fuses double pole yes

are the switches and fuses grouped in a position accessible only to the officers on watch yes

has each navigation lamp an automatic indicator as per Rule yes

Secondary Batteries, are they constructed and fitted as per Rule —

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight yes

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected none fitted

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected —

how are the cables led —

where are the controlling switches situated —

Searchlight Lamps, No. of —, whether fixed or portable —, are their fittings as per Rule —

Are Lamps, other than searchlight lamps, No. of —, are their live parts insulated from the frame or case —, are their fittings as per Rule —

Motors, are their working parts readily accessible yes, are the coils self-contained and readily removable for replacement yes

are the brushes, brush holders, terminals and lubricating arrangements as per Rule yes, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material yes

are they protected from mechanical injury and damage from water, steam or oil yes are their axes of rotation fore and aft yes

if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type —, if not of this type, state distance of the combustible material horizontally or vertically above the motors — and —

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule yes

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule —

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings —

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office —

PARTICULARS OF GENERATING PLANT.								
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	50	110	455	350	Four cylinders oil engines		
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current, Amperes.	Approximate Length, (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	.7435	91	.103	455	50	Y.I.R.	Lead covered
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	Hot plate in pantry	2	.00299	3	.036	7.2	10	bo	Lead covered
	ENGINE ROOM {Sec Box	2	.02214	7	.064	35.2	30	bo	Lead covered
	BOILER ROOM {Dis Box	2	.00455	7	.029	9.2	5	bo	bo
	Navigation Accommodation Dis Box	2	.02214	7	.064	8.5	315	bo	bo
	Midship Road Sec Box	2	.1168	37	.064	113.18	280	bo	bo
	bo Dis Box	2	.02214	7	.064	11.1	280	bo	bo
	Aft Acc. Section Box	2	.01046	7	.044	12.6	90	bo	bo
	Eng. Acc. Dis Box	2	.00299	3	.036	6.6	80	bo	Lead covered
	Officers bo	2	.00299	3	.036	7.0	5	bo	bo
	Officers Eng. Road Sec Box	2	.06	19	.064	79.5	90	bo	Lead covered
	Crews Road Sec Box	2	.06	19	.064	81.8	50	bo	bo
	Eng. Room Acc. bo	2	.0396	19	.052	56	100	bo	bo
	100 gall water heater	2	.01462	7	.052	36.8	70	bo	bo
	30 bo bo	2	.00299	3	.036	8.8	30	bo	Lead covered
	WIRELESS	2	.02214	7	.064	15	315	bo	Lead covered
	Searchlight {30 ft	2	.00299	3	.036	.9	280	bo	bo
	MASTHEAD LIGHT {Aft.	2	.00194	3	.029	.9	120	bo	Lead covered
	SIDE LIGHTS	2	.00194	3	.029	.9	100	bo	bo
	COMPASS LIGHTS	2	.00194	3	.029	.25	30	bo	bo
	Star Lights	2	.00299	3	.036	.9	350	bo	Lead covered
	CARGO LIGHTS	2	.00299	3	.036	2.18	250	bo	bo
	2 KW Radiators	2	.00701	7	.036	18.1	30	bo	Lead covered
	HEATERS 1 KW bo	2	.00299	3	.036	9.1	50	bo	bo
	.75 KW bo	2	.00299	3	.036	6.8	30	bo	bo

MOTOR CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current, Amperes.	Approximate Length, (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP								
	MAIN BILGE LINE PUMPS	1	.1009	19	.083	105	80	Y.I.R.	Lead covered
	GENERAL SERVICE PUMP	1	.01462	7	.052	26	90	bo	bo
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	1	.0396	19	.052	43	100	bo	bo
	OIL FUEL TRANSFER PUMP	1	.01462	7	.052	26	105	bo	bo
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT	2	.4064	61	.093	274	110	bo	bo
	STEERING GEAR—								
	(a) MOTOR GENERATOR	4	.02214	7	.064	51	110	bo	bo
	(b) MAIN MOTOR								
	WORKSHOP MOTOR	1	.01462	7	.052	30	60	bo	bo
	VENTILATING FANS								
	Forced draught fans	2	.01046	7	.044	18	30	bo	bo
	Cooling water pump	1	.00701	7	.036	17.1	60	bo	bo
	Oil purifiers	3	.00455	7	.029	8.6	80	bo	bo
	Oil fuel heater	2	.00455	7	.029	10.6	30	bo	bo
	Oil fuel heater	2	.1009	19	.083	109	80	bo	bo

All Conductors are of annealed copper conforming to British Standard Specification No. 7.

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

Armstrong Whitworth & Co. Electrical Engineers.

Date 28/3/28

COMPASSES.

Distance between electric generators or motors and standard compass 215 feet

Distance between electric generators or motors and steering compass 220 feet.

The nearest cables to the compasses are as follows:—

A cable carrying .25 Ampères on the ~~main~~ standard compass 10 feet from steering compass.

A cable carrying .25 Ampères 10 feet from standard compass on the ~~main~~ steering compass.

A cable carrying 8.5 Ampères 11 feet from standard compass 7 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 all courses in the case of the standard compass, and nil degrees on all courses in the case of the steering compass.

For
SIR W. G. ARMSTRONG, WHITWORTH & CO. LTD.

Butler's Signature.

Date 28 MAR 1928

Is this installation a duplicate of a previous case Yes. If so, state name of vessel M.V. Belmoira

General Remarks (State quality of workmanship, opinions as to class, &c.)

The above installation is in accordance with the Society's Rules. The vessel is eligible in my opinion for notation as light wireless

It is submitted that
this vessel is eligible for
THE RECORD

Elec. Light

W.T.

16/7/28

Total Capacity of Generators 100 Kilowatts.

The amount of Fee ... £31 : 10 : 0

When applied for,
8.8.19.28

Travelling Expenses (if any) £

When received,
20.8.19.28

W.T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Elec. Light