

Rpt. 13.

No. 17940

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 3<sup>rd</sup> May, 1939 When handed in at Local Office 12<sup>th</sup> May, 1939 Port of West HartlepoolNo. in Survey held at West Hartlepool Date, First Survey 2<sup>nd</sup> June, 1938 Last Survey 3<sup>rd</sup> May, 1939  
Reg. Book. Suppt. (Number of Visits 4)90202 on the S.S. "TINTERN ABBEY"Tons { Gross 2470.77  
Net 1482.49Built at West Hartlepool By whom built W. Bray & Co. Ltd. Yard No. 1090 When built 1938Owners ~~James & Co.~~ Abbey Lines Ltd. Port belonging to CardiffElectric Light Installation fitted by Clarke Chapman & Co. Ltd. Contract No. 1090 When fitted 1938Is the Vessel fitted for carrying Petroleum in bulk noSystem of Distribution Double wirePressure of supply for Lighting 110 volts, Heating — volts, Power — volts,Direct or Alternating Current, Lighting Direct Power —

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 yesGenerators, do they comply with the requirements regarding temperature rise yes, are they compound wound yes  
are they over compounded 5 per cent. yes, if not compound wound state distance between each generator —Where more than one generator is fitted are they arranged to run in parallel Only one fitted, is an adjustable regulating resistance fitted in series with each shunt field yes Have certificates of test results for machines under 100 kw. been submitted and approved yes, Cert. NewwithHave machines over 100 kw. been inspected by the Surveyors during manufacture and testing none fitted  
Have certificates for generators under 100 kw. been supplied and approved Manufacturers' test cert. only suppliedAre 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 yesPosition of Generators Engine room starboard side aft., is the ventilationin way of the generators satisfactory yes are they clear of all inflammable material yes if situated near unprotected  
woodwork or other combustible material, state distance of same horizontally from or vertically above the generators — and —are the generators protected from mechanical injury and damage from water, steam or oil yes, are their axes of rotation fore and aft yesEarthing, are the bedplates and frames of the generating plant efficiently earthed yes are the prime movers and their respective generatorsin metallic contact yes Main Switch Boards, where placed Engine room starboard side on

after bulkhead 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 switchboards — and —, are they constructed wholly of durable, non-ignitable non-absorbent

materials yes, is all insulation of high dielectric strength and of permanently high insulation resistance yesis it of an approved type 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 —, is the non-hygroscopic insulating material of an approved

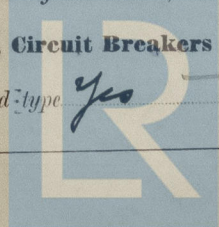
type —, and is the frame effectively earthed yes Are the fittings as per Rule regarding: — spacing or shielding of live partsyes, accessibility of all parts yes, absence of fuses on back of board yes, temperature rise ofomnibus bars yes, individual fuses to voltmeter, pilot or earth lamp yes, are moving parts of switches alive in the"off" position no are all screws and nuts securing connections effectively locked yes are any fuses fitted on the live side ofswitches no Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switchesD.P. sw. & D.P. fuses on generator mains; S.P. sw. & D.P. fuses on outgoing circuits

Are turbine driven generators fitted with emergency trip switch as per rule — Are cupboards or compartments containing switchboards composed of

fire-resisting material or lined with approved material — Instruments on main switchboard One ammeters One

voltage — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

E lamps coupled to E through switches & fuses Switches, Circuit Breakers and Fusible Cut-outs,do these comply with the requirements of the Rules yes are the fusible cutouts of an approved type yes have the reversed

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current protection devices been tested under working conditions —

are all fuses labelled as per rule *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, V, X, XI, XII or XIII of the Rules *Yes*

If the cables are insulated otherwise than as per Rule, are they of an approved type —

**Fall of Pressure,** state maximum between bus bars and

any point of the installation under maximum load *Less than 5.3 volts*

**Cable Sockets,** are the ends of all cables having a sectional

area of 0.04 square inch and above provided with soldering sockets *Yes*

**Paper Insulated and Varnished Cambric Insulated Cables.**

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound —, or waterproof insulating tape —

**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* are cables laid under machines or floorplates *No* if so, are they adequately protected —

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit *Yes*

**Support and Protection of Cables,** state how the cables are supported and protected { *L.C. & A. cables clipped up in two decks;*  
*V.I.R. cables in galv. pipe in machy. space;*  
*L.C. cables clipped up in accommodation*

If cables are run in wood casings, are the casings and caps secured by screws —, are the cap screws 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,** are the cables and fittings in accordance with the special requirements —

**Joints in Cables,** state if any, and how made, insulated, and protected *Home 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 *Yes*

**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 —

**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 —

are they ventilated 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 —

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 —

are all fittings suitably ventilated *Yes*, are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials *Yes*

**Heating and Cooking Appliances,** are they constructed and fitted as per Rule —, are air heaters constructed and fitted as per Rule —

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

**Motors,** are their working parts readily accessible *Home fitted*, are the coils self-contained and readily removable for replacement —

are the brushes, brush holders, terminals and lubricating arrangements as per Rule —, are the motors placed in well-ventilated compartments in which

inflammable gases cannot accumulate and clear of all inflammable material —, are they protected from mechanical injury and damage from

water, steam or oil — are their axes of rotation fore and aft —, 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 —

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing — have certificates for all motors for

essential services been supplied and approved —

**Control Gear and Resistances,** are the generator field and motor speed

regulators, starters and controllers constructed and fitted as per Rule —

**Lightning Conductors,** where lightning conductors

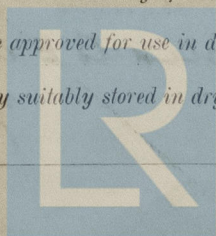
are required, are these fitted as per Rule —

**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 — are all fuses of the fitted cartridge type — are they of an approved type —

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces —

**Spare Gear,** if the vessel is for open sea service have spares been supplied as per Rule *Yes* are they suitably stored in dry situations *Yes*



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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 ...	1	7.5	110	68	450	Single cylinder steam engine		
AUXILIARY ...								
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR ...	1	.06	19	.064	68	83	12	V.I.R.	In galv. pipe
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR...									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER	1	.007	7	.036	17.6	24	16	V.I.R.	In galv. pipe
MOTOR GENERATOR...									
ENGINE ROOM...									
BOILER ROOM...									
AUXILIARY SWITCHBOARDS									
Cargo Ltg. feed:-	1	.007	7	.036	10.8	24	200	V.I.R.	L.C. & A.
supply:- Fwd. Ltg.	1	.009	3	.036	5.4	12	290	V.I.R.	L.C. & A.
aft Ltg	1	.003	3	.036	5.4	12	256	V.I.R.	L.C. & A.
ACCOMMODATION									
Offrs', Nav. & Fwd.	1	.01	7	.044	11	31	200	V.I.R.	L.C. & A. & L.C.
Engins' & aft	1	.007	7	.036	13.8	24	80 + 250	V.I.R.	L.C. & A.
WIRELESS	1	.007	7	.036	13.6	24	145	V.I.R.	L.C. & A. & L.C.
SEARCHLIGHT									
MASTHEAD LIGHT	1	.002	3	.029	.36	7.8	350	V.I.R.	L.C. & L.C. & A.
SIDE LIGHTS	1	.002	3	.029	.36	7.8	60	V.I.R.	L.C.
COMPASS LIGHTS	1	.002	3	.029	.14	7.8	40	V.I.R.	L.C.
STERN POOP LIGHTS	1	.002	3	.029	.36	7.8	400	V.I.R.	L.C. & L.C. & A.
CARGO LIGHTS									
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
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										
OIL FUEL TRANSFER PUMP...										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR...										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										

no motors fitted



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The Electrical Equipment is installed in accordance with the approved plans.

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

The foregoing is a correct description.

For Clarke, Chapman & Co., Ltd.

*W. L. Taylor* Director

Electrical Engineers.

Date 8<sup>th</sup> May 1939

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass 60 feet

Minimum distance between electric generators or motors and steering compass 52 feet

The nearest cables to the compasses are as follows:—

A cable carrying 14 Ampères on the ~~foot from~~ standard compass 8 feet from steering compass.

A cable carrying 14 Ampères 8 feet from standard compass on the ~~foot 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 Every course in the case of the steering compass.

FOR WILLIAM GRAY & CO. LIMITED.

*Thos. S. Simpson* Builder's Signature.

Date 9<sup>th</sup> May 1939.

GENERAL MANAGER.

Is this installation a duplicate of a previous case Yes If so, state name of vessel S.S. "Margam Abbey"

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

vessel has been fitted under special survey. The materials used are of good quality and the workmanship is good. On completion the equipment was examined under working conditions, the governor gear of the dynamo engine was tested and the insulation resistance of all circuits was measured. This equipment is, in my opinion, suitable for a classed vessel.

*W. L. Taylor*  
16/5/39

Total Capacity of Generators 7.5 Kilowatts.

The amount of Fee *See at.* £ 8 : - : When applied for, 10/5/1939

Travelling Expenses (if any) £ : : When received, 12/6/1939 13/6

*S. J. Santon*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 19 MAY 1939

Assigned

*See Hpl. J.E. 17940*



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