

Rpt. 13.

No. 95474

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

OCT -1 1937

Received at London Office

Date of writing Report

10

When handed in at Local Office

30/9/1937

Port of NEWCASTLE-ON-TYNE

No. in Survey held at

hewcastle.

Date, First Survey

20 Aug.

Last Survey

20 Sept

1937

Reg. Book.

(Number of Visits...)

20517 on the M.V. "Arndale"

Tons

Gross 8296

Net 4936

Built at

hewcastle.

By whom built

Swan Hunter & W. R. & Co. Ltd

Yard No.

1516

When built

1937

Owners

The Admiralty.

Port belonging to

London

Electric Light Installation fitted by

Swan Hunter & W. R. & Co. Ltd.

Contract No. 1516 When fitted 1937.

Is the Vessel fitted for carrying Petroleum in bulk

Yes.

System of Distribution

Double wire

Pressure of supply for Lighting

110

volts, Heating

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 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

Yes

, 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 (2 enclosed herewith for H.M. Coastguard & Surveyors)

by the Surveyors during manufacture and testing

Have certificates for generators under 100 kw. been supplied and approved

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

Engine room starboard side.

in 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

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

Engine room starboard side.

If the generators and main switchboards

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

is 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

Yes

, is the non-hygroscopic insulating material of an approved

type

Yes

Are the fittings as per Rule regarding: — spacing or shielding of live parts

, accessibility of all parts

Yes

, absence of fuses on back of board

Yes

, temperature rise of

omnibus 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 of

switches

No

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

Triple pole C.B. on main generators. 100 S & 100 P fuses on each outgoing circuit

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

8

ammeters

3

voltage

synchronising device for paralleling purposes.

For compound machines is the ammeter connected on the opposite pole to equaliser connection

voltage

Yes

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

Yes

Have the reversed

do these comply with the requirements of the Rules

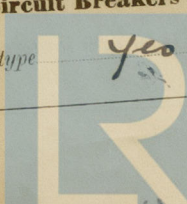
Yes

are the fusible cutouts of an approved type

Yes

2 Generators Test Certificate

ENCLOSURE



Lloyd's Register Foundation

002754-002761-0133

0133 1471

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 *4.5 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, lavatories, bathrooms and lavatories lead covered or run in conduit *Yes* *2 C.A.B. in engine room clipped up + L.C.A.B. in galv iron pipe along fore cast gangway. 2 C.A.B. in acc.*

Support and Protection of Cables, state how the cables are supported and protected in galv iron pipe along fore cast gangway. *2 C.A.B. in acc.*

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 *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 —

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 *no*

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

Special anti-light fit. in galv iron pipe run outside pump room where are the controlling switches situated *midship alleyway*

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 *one* whether fixed or portable *portable*, are their fittings as per Rule *Yes*

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 —

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 *Yes*

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 *Yes* are all fuses of the filled cartridge type *Yes* are they of an approved type *Yes*

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*

PARTICULARS OF GENERATING PLANT.									
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.		
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN	2	30	110	273	550	1 steam, 1 Diesel			
AUXILIARY	1	8	110	73	750	Steam engine			
EMERGENCY									
ROTARY TRANSFORMER									

GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	No. per Pole.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.				
MAIN GENERATOR	1	.4	61	.093	273	288	70	Y.I.R.	L.C.A.B.	
EQUALISER CONNECTIONS	1	.15	37	.072	—	162	35	50	50	
AUXILIARY GENERATOR	1	.06	19	.064	73	83	40	50	50	
EMERGENCY GENERATOR										
ROTARY TRANSFORMER										
MOTOR GENERATOR										
ENGINE ROOM	1	.04	19	.052	53	64	40	50	50	
BOILER ROOM										
AUXILIARY SWITCHBOARDS										
Navigation	1	.01	7	.044	10	31	480	50	50	
Accommodation	1	.06	19	.064	45	83	440	50	50	
Midship stowage	1	.0225	7	.064	31	46	200	50	50	
Wireless	1	.0225	7	.064	15	46	480	50	50	
SEARCHLIGHT	1	.04	19	.052	60	64	880	50	50	
MASTHEAD LIGHT	1	.002	3	.029	.36	7.8	420	50	50	
SIDE LIGHTS	1	.002	3	.029	.36	7.8	80	50	L.C.A.B.	
COMPASS LIGHTS	1	.002	3	.029	.1	7.8	40	50	50	
Star Deck LIGHTS	1	.002	3	.029	.36	7.8	440	50	50	
CARGO LIGHTS	1	.007	7	.036	3.4	24	420	50	in galvan iron pipes	
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										
Oil Purifiers	2	1	.0045	7	.029	16	18.2	80	Y.I.R.	L.C.A.B.
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR	1	1	.01	7	.044	24	31	100	50	50
VENTILATING FANS	3	1	.0045	7	.029	10	18.2	100	50	50
" "	1	1	.01	7	.044	10	31	400	50	50
Refrig	1	1	.04	19	.052	64	64	100	50	50
2. D. Fan	1	1	.0145	7	.052	36	37	80	50	50
Crane	1	1	.01	7	.044	24	31	80	50	50
Vapour 800 Fan	1	1	.0045	7	.029	16	18.2	100	50	50
Trimming pump	1	1	.0045	7	.029	12	18.2	100	50	50
Seller pump	1	1	.002	3	.029	4	7.8	100	50	50

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

For

Electrical Engineers.

Date 28 Sept 37.

Minimum distance between electric generators or motors and standard compass

210 feet

Minimum distance between electric generators or motors and steering compass

205 feet.

A cable carrying 1 Ampères on the ~~cat~~ standard compass 10 feet from steering compass.

A cable carrying • 1 Ampères 10 feet from standard compass on the ~~foot from~~ steering compass.

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

Have the compasses been adjusted with and without the electric installation at work at full power..... 40

To be filled in after
adjustment of Compasses.

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

The maximum deviation due to electric currents was found to be nil degrees on each course in the case of the standard compass, and nil degrees on each course in the case of the steering compass.

SWAN HUNTER, & WIGHAM RICHARDSON LTD

SWAN HUNTER, & WIGHAM RICHARDSON LTD
Thos. Wigham

Builder's Signature.

Date 29 September
1937.

Is this installation a duplicate of a previous case Yes. If so, state name of vessel L.V. "Abbeydale."

General Remarks (State quality of workmanship, opinions as to class, &c. The above instⁿ has been fitted out under special survey. The materials used & workmanship are good. The insulation resistance is good. The dynamos, governors, main board, fuses, cables & fittings were examined & tested under working conditions & found satisfactory. This vessel is eligible in my opinion for notation D.F. E.S.D.

Howd

24. 6/10/37

Total Capacity of Generators.....68.....Kilowatts.

The amount of Fee £ 29 : 6 :

When applied for,

19.....
received.

Travelling Expenses (if any) £

Committee's Minute

Assigned

See Nwc Hb 95474

W. T. Badger
Clerk to Lloyd's Register of Shipping.