

# REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

14 JUN 1947

Date of writing Report.....19..... When handed in at Local Office.....19..... Port of Hamburg

No. in Survey held at Hamburg Date, First Survey 28 - 1 - 46 Last Survey 6 - 3 - 19 47  
 Reg. Book. (Number of Vicks 15)

86505 on the single screw motor vessel "Empire Alde" (ex Pelikan) Tons { Gross -  
 Net -

Built at Bremen-Vegesack By whom built Bremer Vulkan Yard No. 712 When built 1935

Owners Elders and Fyffes, Ltd. Port belonging to London Licence No. 1935 part re-  
 Electrical Installation fitted by Allgemeine Elektrizitaets-Gesellschaft Contract No. 1124 When fitted fitted and  
additional 1946

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

Have plans been submitted and approved as fitted enclosed System of Distribution single wire with hull return Voltage of supply for Lighting 220

Heating 220 Power 220 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 Yes, 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 - and the results found as per rule - Are the lubricating arrangements and the construction

of the generators as per rule yes Position of Generators Main motor room, bottom platform, port side.

-, 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 Main motor room, port side, approx. six (6) feet about

bottom platform.

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 Italian marble, if of synthetic insulating material is it an Approved Type -, if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule No 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 single pole circuit

breaker with overload and reversed current trips with an interlocked single pole equaliser switch.

and for each outgoing circuit a single pole fuse and switch on the insulated pole.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 8

ammeters 8 voltmeters - synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection Yes Earth Testing, state means provided not provided

Switches, Circuit Breakers and Fuses, are they as per Rule Yes G.L. 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 600/350, are the reversed current

protection devices connected on the pole opposite to the equaliser connection Yes, 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 G.L.

Cables, are they insulated and protected as per the appropriate Tables of the Rules No, if otherwise than as per Rule are they of an approved type No

state maximum fall of pressure between bus bars and any point under maximum load 10 V light 12 V power the ends of all cables having a sectional area of 0.04

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. No, if so, are they adequately protected. - Are cables in machinery spaces, galleys, laundries, etc., lead-covered. Yes run in conduit. Yes State how the cables are supported and protected. -

Are all lead sheaths, armoring and conduits effectually bonded and earthed. Yes Refrigerated chambers, are the cables and fittings as per Rule. Yes

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. wood Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. 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. Yes, are they adequately ventilated. Yes what is the battery capacity in ampere hours. 30 amp. hr. telephones.

Fittings, are all fittings on weather decks, in stokeholds 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. No, if so, how are they protected. -

are all fittings suitably ventilated. -

are all fittings and accessories constructed and installed as per Rule. Yes G.L. Searchlight Lamps, No. of one, whether fixed or portable. portable

are their fittings as per Rule. Yes 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. Yes Motors, are all motors constructed and installed as per Rule. Yes G.L. 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. Yes

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. No Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule. No Control Gear and Resistances, are they constructed and fitted as per Rule. Yes G.L. Lightning Conductors, where required are they fitted as per Rule. - 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. - are they suitably stored in dry situations. - 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.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	No 1	130	230	566	475	Diesel motor	Diesel oil	above 150° F.
	No 2	130	230	566	475	" "		
	No 3	130	230	566	475	" "		
EMERGENCY	No 4	65	230	283	500	" "		
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	130	2	185	578	700	49	rubber	lead covered and armoured.
" " EQUALISER		1	185	289	350	49	"	" "
	65	1	185	289	350	49	"	" "
		1	70		192	49	"	" "
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR	4.65	1	16	54.6	60	33	"	" "
" " GENERATOR		1	25		102	83	"	" "

Please see amended list of cable ratings attached. JHJ

#### MAIN DISTRIBUTION CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		Sectional Area or No. and Dia. of Strands. sq. mm.	In the Circuit.	Rule.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS (power)	II	1	35	200	200	116	rubber	lead covered and
	V	1	35	200	200	165	"	armoured
	VI	1	25	60	102	49	"	"
	VIII	1	150	200	305	99	"	"
	X & XIII	1	70	300	300	360	"	"
	XI	1	70 & 25	200	230	280	"	"
	XV	1	150	300	305	66	"	"
	XVI	1	120	260	267	83	"	"
	XVII	1	120	260	267	116	"	"

#### LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	16	25	77	198	rubber	lead covered and
	1	2.5	10	25		"	armoured
NAVIGATION LIGHTS	1	70	200	192	280	"	"
LIGHTING AND HEATING Sect. board I, III & IX	1	25	100	102	280	"	"
	IV & V	1	35	80	125	165	"
	IV	1	25	60	102	165	"
	VII	1	25	80	102	116	"
	VII	1	10	35	58	116	"
	X & XII	1	25	80	102	360	"
	XIV	1	2.5	20	25	33	"

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	sq mm	amp.	Rule	feet	rubber	lead covered and
Cooling water pump (seawater)	2	25	1	25	100	102	60	" armoured
" " " (freshwater)	2	16	1	16	60	77	43	" "
" " " port service	1	7.5	1	10	35	58	60	" "
Bilge pump	1	10	1	10	50	58	23	" "
Fire pump	1	12	1	16	50	77	17	" "
Ballast pump	1	16	1	25	80	102	27	" "
Freshwater pump	1	3	1	2.5	15	25	30	" "
Sanitary pump	1	3						" "
Aux. Lub. oil pump	1	10	1	10	50	58	46	" "
Daily service fuel oil pump	1	10	1	10	50	58	27	" "
Lub. oil separator	1	2.5	1	2.5	15	25	27	" "
C. O. 2. condenser	2	75/100	1	185	350	350	116	" "
Refrig. cooling water pump	1	8.5	1	10	35	58	83	" "
Brine pumps	3	8.5		10	35	58	23	" "
Cargo Hold Fan	1	19	1	25	60	102	17	" "
" " "	1	19	1	25	60	102	50	" "
" " "	2	26	1	35	80	125	26	" "
Domestic Refrig.	1	7	1	10	35	58	33	" "
Turning gear	1	10	1	10	50	80	50	" "
Workshop motor	1	4	1	4	25	33	50	" "
Windlass	1	45	1	50	250	262	27	" "
Cargo winches	8	25	1	16	100	104	26	" "
Steering gear	1	5	1	10	25	58	198	" "



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

Electrical Engineers. Date

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass approx. 25 feet.  
Minimum distance between electric generators or motors and steering compass " 20 "  
The nearest cables to the compasses are as follows:—  
A cable carrying 10 Ampères 10. feet from standard compass 8 feet from steering compass.  
A cable carrying 0.5 Ampères 6. feet from standard compass 1 feet from steering compass.  
A cable carrying 0.2 Ampères .5 feet from standard compass .5 feet from steering compass. (compass light)  
Have the compasses been adjusted with and without the electric installation at work at full power With  
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 — degrees on — course in the case of the  
standard compass, and — degrees on — course in the case of the steering compass.

Builder's Signature. Date

Is this installation a duplicate of a previous case No If so, state name of vessel —  
Plans. Are approved plans forwarded herewith As fitted If not, state date of approval —

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

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)  
The original electrical installation of this vessel has been examined throughout, the insulation megger tested and found or now placed at not less than 100.000 ohms. All essential motors have been removed ashore, opened up, cleaned, tested and refitted. All motors have been examined under working conditions and found to be efficient.

The new wiring to the crews' accommodation in the newly erected poop space has been fitted under survey and the fitting has been carried out in accordance with Rule Requirements, and the workmanship maintained at a high standard throughout. The wiring from the section boxes to the various points in the crews' accommodation is not in accordance with Rule Requirements and it is recommended that this wiring be further examined and dealt with on vessel's arrival in the U.K. It is considered that when the new electric wiring in the crews' quarters has been brought up to Rule Requirements this vessel will be eligible for the record of LMC with date when the survey is completed.

The following plans are being forwarded under separate cover: —

1. Wiring diagram of lighting plant.
2. " " " " (lower decks)
3. Wiring diagram of power plant
4. " " " " (lower deck)
5. Main switchboard.
6. General wiring diagram.

Total Capacity of Generators 455 Kilowatts.

The amount of Fee ... £ 71 : 17 : 6

When applied for,

.....19.....

Travelling Expenses (if any) £ : :

When received,

No returned from  
London 1/6 6-7

Committee's Minute

Assigned

See minute on  
Ref-S

Surveyor to Lloyd's Register of Shipping.



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