

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

3 SEP 1943

Received at London Office.....

Date of writing Report... 20.8.43 When handed in at Local Office... 31.8.43 Port of... BARROW.

No. in Survey held at... BARROW. Date, First Survey... 28-5-43 Last Survey... 16-8-1943
Reg. Book. (Number of Visits... 20.....)

on the... S.S. "EMPIRE VICEROY" Tons { Gross... 7803
Net... 4475

Built at... BARROW. By whom built... VICKERS-ARMSTRONGS LTD. Yard No... 858 When built... 1943

Owners... The Ministry of War Transport Port belonging to... Barrow.

Electrical Installation fitted by... VICKERS-ARMSTRONGS LTD. Contract No... 858 When fitted... 1943

Is vessel fitted for carrying Petroleum in bulk... No. Is vessel equipped with D.F... YES E.S.D... YES Gy.C... YES Sub.Sig... No
ASDIC... FITTED

Have plans been submitted and approved... Yes System of Distribution... Two line Voltage of supply for Lighting... 220

Heating... Power... 220 Direct or Alternating Current, Lighting... Direct Power... Direct 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... Yes 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... On generator flat aft end of Engine Room.

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... In Engine Room adjacent to generators.

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... Sindamys, 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... 1000 amp. Triple pole

Circuit breakers (one pole equalisers) fitted with overload and reverse current trips,

and for each outgoing circuit... Either Double pole circuit breakers or Double pole switch and

Double-pole fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... Yes Instruments on main switchboard... 12

ammeters... 5 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... Earth lamps.

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... 1000 amp, 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... 80 amp. P.C. 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... Yes

state maximum fall of pressure between bus bars and any point under maximum load... 1/16 are 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... Yes

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with insulating compound — or waterproof insulating tape Yes. 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 or run in conduit —. State how the cables are supported and protected All cables are either V.C. or Rubber insulated and lead covered. Main feeders run through cargo spaces protected by sheet steel covers, cables in machinery spaces clipped to steel bays protected as necessary. Accommodation etc clipped to bays or direct to bulkheads and decks.

Are all lead sheaths, armouring 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 effectually 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 ampère hours —.

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 —, if so, how are they protected —.

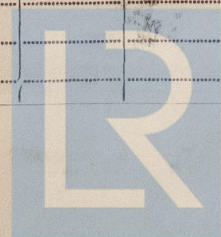
and where are the controlling switches fitted —, are all fittings suitably ventilated Yes, are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of —, whether fixed or portable —, are their fittings as per Rule —. Heating and Cooking, is the general construction as per Rule Yes, are the frames effectually earthed Yes, are heaters in the accommodation of the convection type ONE ONLY NO OTHER. 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 Yes. 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 Yes. Control Gear and Resistances, are they constructed and fitted as per Rule Yes. 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 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	3	180	220	819	550	Oil Engines	Heavy Oil	Above 150°F
AUXILIARY	1	10	220	45.5	1000	"	"	"
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	180	2	6/1.093	819	928	36	V.C.	Lead Covered
" " EQUALISER	—	1	6/1.093	—	464	18	"	"
AUXILIARY GENERATOR	10	1	7/1.064	45.5	46	56	Rubber	"
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								



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MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	Cable	No.	B.H.P.									IN CABLE	TOTAL
WINDLASS	D	1	48.	1	37/103	190	435	1170	V.C.	L. C.		5.8	5.8
STEERING GEAR	H	1	18½	1	19/083	107	191	180	"	"		1.77	1.77
MAIN CIRCULATING PUMP.	ER3	1	35/78	1	37/103	140/300	385	372	"	"		3.41	3.41
EXTRACTION PUMPS.	ER1	2	13½	1	19/052	54.5	104	96	"	"		1.22	3.70
LUB OIL	"	2	10/14	1	19/052	40/55	104	222	"	"		2.86	5.43
BALLAST	"	1	20/34	1	19/083	78/132	191	222	"	"		2.69	5.26
OIL FUEL TRANSFER PUMP	ER1, J1	1	8	1	7/064	32.	46	30	RUBBER	"		0.38	3.14
OIL FUEL PRESSURE PUMPS	"	2	3½/5	1	7/036	21	24	96	"	"		2.54	5.30
WORKSHOP MOTOR.	"	1	3	1	7/036	13	24	42	"	"		0.69	3.45
AUX. BOILER BLOWER MOTOR	ER1, J1, D1	1	2½	1	7/029	11	15	84	"	"		1.81	5.45
FIRE BILGE PUMP.	ER2	1	14/24	1	19/052	57/94	104	72	V.C.	"		1.59	2.76
GENERAL SERVICE "	"	1	7/11	1	7/064	30/47	46	66	RUBBER	"		1.22	2.39
ENGINE TURNING MOTOR.	"	1	8	1	7/064	32.	46	126	"	"		1.60	2.77
FORCED DRAUGHT FANS	"	2	30	1	19/064	116	135	222	V.C.	"		3.97	5.14
GENERATOR COOLING PUMPS	ER1, J1, D1	2	2¾	1	7/029	12	15	66	RUBBER	"		1.55	3.69
REFRIGERATOR.	ER1, J1	1	5	1	7/044	21	31	108	"	"		1.88	3.34
FRESH WATER PUMPS.	"	1	4	1	7/036	16	24	96	"	"		1.94	3.40
OIL PURIFIERS.	ER1, J1, D1	3	1	1	3/036	5	10	66	"	"		0.94	3.11
WARPING WINCH	A	1	48.	1	19/083	190	199	168	V.C.	"		2.94	2.94
WINCHES FORWARD	A	4	48	1	19/083	190	225	150	V.C.	"		2.22	7.22
"	A	2	26	1	19/082	105	113	150	"	"		3.4	8.4
" MIDSHP.	B	6	48	1	19/083	190	225	210	"	"		3.11	9.11
"	B	2	26	1	19/052	105	113	210	"	"		4.76	10.76
" AFT	C	2	48	1	37/072	190	303	288	"	"		2.78	6.46
"	C	4	48	1	19/083	190	225	168	"	"		2.49	6.17
"	C	2	26	1	19/064	105	151	288	"	"		4.17	7.85

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STABIA AFT. WINCH SPACE	D2	J.J1	1	7/044	13	31	120	"	"		1.25	3.75
LOCHRA AFT	T	T	1	12/044	21	104	14	"	"			

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CIRCUIT	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.	V.D.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.				
MAIN SWITCHBOARD CIRCUITS.									
ENGINE ROOM, FORWARD	ER1	2	37/103	452	770	372	V.C.	LEAD COVERED	2.57
ENGINE ROOM AFT.	ER2	2	37/103	491	770	136	"	"	1.17
MAIN CIRCULATING PUMP	ER3	1	37/103	292	385	372	"	"	3.0
WINCH PANEL FORWARD	A	1	61/103	323	540	1020	"	"	5.0
" " MIDSHIPS	B	2	37/103	450	770	870	"	"	6.0
" " AFT	C	1	61/093	450	464	330	"	"	3.68
WINDLASS.	D	1	37/103	190	191	1170	"	"	5.8
WARDING WINCH.	F	1	19/083	190	191	180	"	"	2.94
FORWARD LIGHTING AND POWER PANEL	G	1	61/093	139	464	870	"	"	2.6
STEERING GEAR.	H	1	19/083	107	191	180	"	"	1.77
AFT LIGHTING AND POWER PANEL	J	1	19/064	69	135	222	"	"	2.35
DEGAUSSING	L	1	19/064	57	135	186	"	"	1.68
IMPORTANT ENGINE RM. LIGHTING	M	1	7/036	13	24	144	RUBBER	"	2.36
IMPORTANT LIGHTING FORWARD	N	1	7/064	12	46	840	"	"	3.84
IMPORTANT LIGHTING AFT	P	1	7/064	15	31	204	"	"	2.58

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	CIRCUIT	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.	V.D.	TOTAL
WIRELESS	G	1	19/064	30	135	120	V.C.	LEAD COVERED	3.15
NAVIGATION LIGHTS STEERING AND STERN	G, J1, D1	1	3/036	0.2	10	Max 868	RUBBER	"	0.49
NAVIGATION LIGHTS BOW LIGHTS	"	1	3/029	0.2	5	Max 104	"	"	0.09
BATTERY CHARGING	G, J1	1	7/036	10	24	144	"	L.C.	1.72
Do LIFEBOATS.	J, J1	1	7/044	20	31	96	"	"	1.59
ASDIC GEAR	G, J2	1	7/064	16	46	504	"	"	3.36
ECHOMETER, RECORDER	G, J1, D1	1	3/036	10	10	60	"	"	1.7
Do TRANSMITTER	"	1	3/036	10	10	150	"	"	4.28
GYRO COMPASS.	G, J1	1	7/036	15	24	150	"	"	1.72
BAKING OVEN	J, J2	1	7/044	27	31	204	"	"	4.6

POSITION

SUB. VIA CABLES.

JUNCTION AND DISTRIBUTION BOXES.

ALL IMPORTANT MOTORS TO BE INDICATED.	No.	D.H.P.								
ENG. ROOM FLOOR STARBOARD FORWARD	J1	ER1	1	19/083	87	191	24	V.C.	L.C.	0.19
STARTING PLATFORM, STARBOARD	J2	ER1	1	19/083	35	191	78	"	"	0.25
Do Do Do	D1	ER1, J2	1	3/036	4	10	72	RUBBER	"	0.82
BOILER ROOM ENTRANCE PORT	D2	ER1, J2	1	7/044	7	31	72	"	"	0.4
ENG. ROOM FLOOR FRAME 23. PORT.	J1	ER2	1	19/083	96	191	30	V.C.	"	0.29
" " " " STARBOARD	D1	ER2, J1	1	3/036	2	10	12	RUBBER	"	0.68
" " " " 33 PORT.	D2	ER2, J1	1	3/036	5	10	48	"	"	0.71
ENG. ROOM ENTRANCE STARBOARD	D3	ER2, J1	1	7/044	7	31	108	"	"	0.66
LOCKER, 1st FLAT.	J1	G	1	19/052	64	104	18	V.C.	"	0.27
WHEELHOUSE	D2	G, J1	1	7/064	31	46	84	RUBBER	"	1.04
Do.	D1	G, J1, D2	1	3/036	1	10	8	"	"	0.023
LOCKER, 1st FLAT.	D3	G, J1	1	7/044	8	31	18	"	"	0.12
ELECTRICAL LOCKER 1st FLAT.	J2	G	1	19/052	45	104	18	V.C.	"	0.19
PORT. MIDSHIP WINCH SPACE	D1	G, J2	1	7/044	6	31	18	RUBBER	"	0.09
FORWARD WINCH SPACE	D2	G, J2	1	7/064	14	46	408	"	"	2.25
LOCKER AFT	J1	J	1	19/052	35	104	18	V.C.	"	0.15
ELECTRICAL LOCKER AFT.	D1	J, J1	1	7/044	2	31	18	RUBBER	"	0.03
STARBOARD AFT. WINCH SPACE	D2	J, J1	1	7/044	13	31	120	"	"	1.25
LOCKER AFT.	J2	J	1	19/052	34	104	18	V.C.	"	0.14
POOP DECK LOBBY AFT	D1	J, J2	1	7/044	4	31	180	RUBBER	"	0.63
UPPER DECK LOBBY STARBOARD	D2	J, J2	1	7/044	3	31	204	"	"	0.48
BOILER ROOM ENTRANCE STARBOARD	D1	M	1	7/036	13	24	144	"	"	2.36
ENGINE ROOM ENTRANCE PORT	D2	M, D1	1	7/036	8	24	180	"	"	1.25
LOBBY STARBOARD BRIDGE DECK	D1	N	1	7/064	12	46	840	"	"	3.84
LOBBY 2nd FLAT.	D2	N, D1	1	7/064	6	46	108	"	"	0.24
ELECTRIC LOCKER AFT.	D1	P	1	7/044	15	31	204	"	"	2.58
LOBBY STARBOARD UPPER DECK	D2	P, D1	1	7/044	9	31	204	"	"	1.45

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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.

I. A. S. Senior
FOR VICKERS-ARMSTRONGS LIMITED

Electrical Engineers.

Date **27 AUG 1943**

COMPASSES.

Minimum distance between electric generators or motors and standard compass 20 feet

Minimum distance between electric generators or motors and steering compass 18 feet

The nearest cables to the compasses are as follows:—

A cable carrying 30 Ampères 11 feet from standard compass 5 feet from steering compass.

A cable carrying 31 Ampères 11 feet from standard compass 5 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 5° W degrees on N. 30 E course in the case of the

standard compass, and 8° W degrees on N. 40 E course in the case of the steering compass.

FOR VICKERS-ARMSTRONGS LIMITED.

DEPUTY GENERAL MANAGER,
Barrow Works.

Builder's Signature.

Date **27 AUG 1943**

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 17.2.43

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

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

This installation has been fitted on board under special survey in accordance with the approved plans, the Rules, and the Specification. The workmanship & material are good & when tried under full working conditions it was found satisfactory in every respect.

Noted

9/10/43

Total Capacity of Generators 550 Kilowatts.

*Brw. 7.7.0
Liw. 7.7.0*

*Brw. 23.10.0
Liw. 23.10.0
Bhm. 11.15.0*

The amount of Fee ... £ 58 : 15 : 2 . 9 . 19 . 43

Specification 14 : 14 : 9 . 14 . 43

Travelling Expenses (if any) £ 10 : 11 : 6 : 19 . 43

D. J. G. Hollister

H. Haffner

Surveyor to Lloyd's Register of Shipping.

TUES. 14 SEP 1943

Committee's Minute

Assigned see minute on
28. 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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