

REPORT ON ELECTRICAL EQUIPMENT. 27 OCT 1948

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 20.10.48 When handed in at Local Office 26th October 48 Port of SUNDERLANDNo. in Survey held at SUNDERLAND Date, First Survey 28-9-48 Last Survey 19.10.48 19.....
Reg. Book. (Number of Vols.....)on the s.s. "OTTO BANCK" Tons {Gross 2325
Net 1168
1948Built at SUNDERLAND By whom built Short Bros. Ltd Yard No. 501 When built.....Owners Otto Bancks Rederi A/B Port belonging to HelsingborgElectrical Installation fitted by Campbell & Isherwood Ltd Contract No. 501 When fitted 1948Is 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
Radar YesHave plans been submitted and approved yes System of Distribution two-wire insulated Voltage of supply for Lighting 110Heating 110 Power 110 Direct on Alternating Current, Lighting yes Power yes If Alternating Current state periodicity..... Prime Movers, yeshas 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..... yesGenerators, are they compound wound....., are they level compounded under working conditions....., 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 negativeHave machines over 100 kw. been inspected by the Surveyors during manufacture and testing..... 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 Engine Room starboard on raised stoolsis the ventilation in way of generators satisfactory yes are they clear of inflammable material....., 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 on angle iron frame near generatorsare 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 Ebony "Sindanyo", 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 yesIs 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 a triple pole (one pole for equaliser) air-break circuit-breaker with O/L and R/V current tripping devices.and for each outgoing circuit a double pole, quick-break knife switch and double pole fuse.Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 3 ammeters 3 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 E lamps coupled to earth through switches & fusesSwitches, 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 5%, 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 10% Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule yesCables, 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....., state maximum fall of pressure between bus bars and any point under maximum load less than 6.V. are the ends of all cables having a sectional area of 0.01 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. **main feeders in iron pipe through tween decks fore and aft: In accommodation L.C.B. cables on the surface and protected where desirable by wood or metal guards.**

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 effectively 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 **Storage battery in self-contained compartment at engine top** and method of control **contactor operated on failure of ship's supply**. 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 **160 A.H.**

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. 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. 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. 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. 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	2	30	110	272	600	vertical steam engine		
	1	15	110	136	1000	Diesal Engine	Diesel Oil above 150. d.	
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	No. 1	30	I 37/.083	272	296	120	V.C.	L.C.B.
"	EQUALISER		I 19/.083		191	60	"	"
"	No. 2.	30	I 37/.083	272	296	180	"	"
"	equaliser		I 19/.083		191	90	"	"
"	No. 3.	15	I 19/.083	136	191	150	"	"
"	equaliser		I 19/.064		135	75	"	"
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
"	GENERATOR							

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	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.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
Boat Deck S. Panel "A"	I	7/.064	27	46	225	V.I.R.	L.C.B.
Boat Deck Pantry S.P. "B"	I	7/.064	19	46	225	"	"
Engine Rm Entrance S.P. "C"	I	19/.044	48	53	150	"	"
Star. Midship Upper Dk. S.P. "D"	I	19/.044	45	53	180	"	"
Engine Room S.P. "E"	I	7/.064	20	46	30	"	"
do. "F"	I	19/.064	66	135	60	"	"
Boat Deck S.P. "G"	I	19/.044	46	53	225	"	"
Foremast S.P. "H"	I	19/.044	48	53	450	"	"
Mainmast S.P. "J"	I	7/.064	24	46	300	"	"

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	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.			
WIRELESS	I	7/.064	25	46	270	V.I.R.	L.C.B.
NAVIGATION LIGHTS	I	7/.036	5	28	270	V.C.	"
LIGHTING AND HEATING	(Alternative supply from Wheelhouse D.B. through C.O.S.)						
Wheelhouse D.B. "A-I" off S.B. "A"	I	7/.044	5	42	90	V.C.	L.C.B.
Boat Deck D.B. "A"	I	7/.044	22	42	15	"	"
Upper Dk. Port Midship "C-1" off "C"	I	7/.044	13	42	60	"	"
" " "C-2" "	I	7/.044	17	42	30	"	"
" " "C-3" "	I	7/.044	18	42	450	"	"
Foremast D.B. "D-1", off "D"	I	7/.064	30	46	450	V.I.R.	"
Mainmast D.B. "D-2", off "D"	I	7/.044	15	31	300	"	"
Engine Room D.B. "E-1", off "E"	I	7/.044	10	31	150	"	"
" " "E-2", "	I	7/.044	12	31	160	"	"
Gyro Supply	I	7/.044	25	31	255	"	"
Radar Supply	I	7/.064	40	46	300	"	"
Battery Charging supply	I	19/064	95	135	150	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	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.			
Workshop Motor	1	3	I	7/.044	26	31	180	V.I.R.	L.C.B.
Mono Pump	2	I	I	7/.044	10	31	2/150	"	"
E.R. Vent Fans	2	I	I	7/.044	10	31	2/140	"	"
Bridge Dk. Vent Fans	2	2	I	7/.044	18	31	2/60	"	"
Aft Vent Fans	1	I	I	7/.044	10	31	450	"	"
Hold Vent Fans Fwd.	8	.75	I	7/.036	6	24	Av/90	"	"
" " Aft	4	.75	I	7/036	6	24	Av/90	"	"
Refrigerating Motor	1	4	I	7/.064	35	46	180	"	"

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.

CAMPBELL & JONERWOOD, LTD.

Thomas Head

Electrical Engineers.

Date *21st Oct 1948*

COMPASSES.

Minimum distance between electric generators or motors and standard compass 48'

Minimum distance between electric generators or motors and steering compass 58'

The nearest cables to the compasses are as follows:—

A cable carrying .15 Ampères 10 feet from standard compass on the 10 feet from steering compass.

A cable carrying .15 Ampères on the 10 feet from standard compass 10 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 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 SHORT BROTHERS, LIMITED.

H. L. ...

Builder's Signature.

Date *Oct 25/1948.*

SECRETARY.

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 4.10.48

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.)

The Electrical equipment of this vessel has been installed under special survey in accordance with the approved plans and the "Rules For Electrical Equipment": The materials and workmanship are good. Upon completion the generators were operated on load and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a vessel bearing The Society's class.

Notes was 18/11/48

(2x30, 1x15)

Total Capacity of Generators 75. Kilowatts.

The amount of Fee ...	£	51	:	5	:	0	When applied for,
SUNDAY ATTENDANCE		5	:	5	:	0	<u>007 26 1948</u>
LATE		3	:	3	:	0	When received.
Travelling Expenses (if any) £			:		:	19.....

S. D. ...

Surveyor to Lloyd's Register of Shipping.

FRI. 19 NOV 1948

Committee's Minute

Assigned *See minute on fe. rpt.*

5th Ed., 1939.—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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