

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 28.11.1948

Date of writing Report 2 July 48 When handed in at Local Office 10.7.48 Port of Basra
 No. in Survey held at Basra Date, First Survey (1947) Nov. 15 Last Survey 28 June 1948
 Reg. Book. 38603 on the M.V. DARA Tons { Gross 5029.73
 Net 2765.86
 Built at Basra By whom built Barclay Curle & Co. Ltd. Yard No. 711 When built 1948
 Owners British India Steam Navigation Co. Ltd. Port belonging to London
 Electrical Installation fitted by H. M. Speirs & Co. Ltd. Contract No. 711 When fitted 1948
 Is vessel fitted for carrying Petroleum in bulk - Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. - Sub. Sig. Radar

Have plans been submitted and approved Yes System of Distribution two wire Voltage of supply for Lighting 220
 Heating - 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 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 In engine room
Yes, 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 Near 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 Indanols, 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
Triple pole circuit breakers (this pole acting as equaliser) fitted with O/L & R/C
tips
 and for each outgoing circuit D.P. Switch and fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule - 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 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 full load 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 100% full load 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 -,
 state maximum fall of pressure between bus bars and any point under maximum load 6 volts, 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

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 - if so, are they adequately protected - Are cables in machinery spaces, galleys, laundries, etc., lead covered *Yes* or run in conduit *Yes*. State how the cables are supported and protected *Main through twin deck L.C. clipped to solid or perforated tray. protects will steel over plate where necessary. Engine room L.C. clipped to perforated tray or r.r. in conduit. Accommodation L.C. clipped to steel and wood work or r.r. in conduit.*

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 *36kV drive driven.* generator *specie compartment front deck* and method of control *D.P. Switch and fuse for generator.* and *D.P. Switch and fuse for circuits*. 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 ampere 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 *Yes*, if so, how are they protected *Admiralty pattern. magazine fittings wiring. L.C. cable in gas tight conduit* and where are the controlling switches fitted *outside compartment*, 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 - are the frames effectually earthed - 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 *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 *Yes*. Are the cables lead covered as per Rule *Yes*. 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	60	220.	278	500.	Steam engine		
EMERGENCY	1	26	220.	118	1200.	oil engine	oil	above 160°F.
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	60	1	37.083	273	296		vc.	L.C.
" " EQUALISER		1	19.083		191		vc.	L.C.
EMERGENCY GENERATOR	26	1	19.064	118	185		vc.	L.C.
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							
ENGINE ROOM. AUX. DB. 'D'	1	7.064	41	46	140.	vir.	L.C.
" " " DB. 'F'	1	19.052	93	104	140	vc.	"
REFRIG. AUX. DB. 'E'	1	19.044	75	87	160	vc.	"
MECH. VENTILATION. FAN. DB. 'J'	1	19.083	117	191	340	vc.	"
" " " DB. 'K'	1	19.064	97	135	180	vc.	"
BOAT WINCHES. DB. 'L'	1	7.064	57	75	120	vc.	"
" " " DB. 'M'	1	7.064	57	75	120	vc.	"
EMERGENCY SWITCHBOARD - SUPPLY FROM MAIN SW. 'A'	1	19.064	125	135	250.	vc.	"
EMERGENCY LIGHTING. SB. 'XO'	1	7.064	33	46	160	vir.	"
WIRELESS.	1	7.044	7	31	120.	vir.	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS & RADAR	1	19.052	32	104	420	vc.	L.C.
NAVIGATION LIGHTS	1	7.052	10	37	480	vir.	L.C.
LIGHTING AND HEATING							
ENG. ROOM. LTR. SB. 'G'	1	7.064	25	46	100	vir.	L.C.
BOAT. DECK. LTR. SB. 'O'	1	19.044	40	53	220	vc.	L.C.
MIDSHIP. LTR. SB. 'P'	1	19.062	75	104	180	vc.	L.C.
UPPER DECK. LTR. SB. 'R'	1	7.064	45	75	160.	vc.	L.C.
LIGHTING. FAN. SB. 'E'	1	7.064	36	46	180	vir.	L.C.
CARGO. LTR. SB. 'T'	1	7.064	30	46	180	vir.	L.C.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
PRIMING PUMP.	1	2	1	7.036	8.6	24.	60.	vir.
FUEL VALVE COOLING.	2	1	1	7.036	4.6	24.	90.	"
S.O.S. PUMP.	1	117	1	19.064	46/69	53	340	"
ENGINE ROOM. VENT. FANS.	4	24	1	7.029	9.8	16.	160	"
BOILER ROOM. VENT. FANS.	2	12	1	7.029	6.6	15	200	"
REFRIG. AUX. - CIRCULATING PUMPS	2	2	1	7.029	8.9	15	50	"
BRINE. PUMPS.	2	3	1	7.036	13.5	24	50	"
AIR CIRCUL. FANS.	2	54	1	7.029	3	15.	60	"
" " " " " "	3	38	1	7.029	1.9	15	60	"

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.

James Peig & Co.

James Peig & Co.

Electrical Engineers.

Date *5th July 1948.*

COMPASSES.

Minimum distance between electric ~~generators~~ or motors and standard compass

22 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 *.1.* Ampères *Ad mts* feet from standard compass *led into* feet from steering compass.

A cable carrying *10* Ampères *9* feet from standard compass *6* 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 *any* course in the case of the

standard compass, and *nil* degrees on *any* course in the case of the steering compass.

For BARCLAY, CURLE & Co., Ltd.

Howard Lindsay

Secretary

Builder's Signature.

Date *5/7/48.*

Is this installation a duplicate of a previous case

Yes

If so, state name of vessel

M.V. DUNRA'

Plans. Are approved plans forwarded herewith

No

If not, state date of approval

24th August. 46

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 fitted on board under special survey, tested under working conditions and found satisfactory.
The materials and workmanship are good*

Noted. See 14/12/48

Total Capacity of Generators

206

Kilowatts.

The amount of Fee

70 : 18 :

When applied for,
27.7.1948

Travelling Expenses (if any) £

When received,
19

S. G. Lindsay

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 27 JUL 1948

Assigned



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Lloyd's Register
Foundation