

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

77 JAN 1948

Date of writing Report 12th Dec. 1947 When handed in at Local Office 5th JANUARY 1948 Port of SOUTHAMPTON

No. in Survey held at Southampton (Woodston) Date, First Survey 10th JUNE Last Survey 10th DECEMBER 1947  
Reg. Book. Suppt.

36411 on the T/S Passenger & Cargo Vessel "EL MALEK FOAD" Tons {Gross 3745  
Net 2009

Built at Southampton By whom built J. I. Thornycroft & Co., Ltd. Yard No. 4108 When built 1947

Owners The Khedivial Mail Line Ltd. Port belonging to Alexandria

Electrical Installation fitted by John I. Thornycroft & Co., Ltd. Contract No.        When fitted 1947

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

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

Heating 220 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 Yes 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, excepting the 2 25kw sets 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, except \* 160kw set Have certificates of

test for machines under 100 kw. been supplied Yes, except for \* 160kw set 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 and Emergency Generator Comp.

on Boat Deck, 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 Switchboard - Engine Room. Emergency

Switchboard - Emergency Generator Compartment on Boat Deck

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 Black Enamelled "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 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 160kw. Gen: 3 pole C.B.

with o/c trip on 2 poles, R/C, N/V, and o/s trips, third pole used for equaliser. 125kw. Gens: Similar

but without o/s trip. 25kw. Gens: 2 pole C.B. with o/c trip on each pole and N/V trip.

and for each outgoing circuit Circuits over 200 amps. 2 pole C.B. with o/c trip on each pole. Circuits

under 200 amps. Double pole 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 4

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 E lamps coupled to E through switches and fuses

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 10%, 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 Yes < 15% 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 7.9 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

Note \* See attached test report



with insulating compound No 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. Yes, if so, are they adequately protected. Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered. Yes or run in conduit. Necessary. State how the cables are supported and protected. Cables in holds and in machinery spaces: L.C. clipped to tray and protected by sheet metal covers where exposed to risk of mechanical damage. Cables in accom. spaces L.C. on tray or clipped to bulkheads or run in conduit according to situation.

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. Gen. & Swbd. on Boat Deck supplying D.B.s throughout ship. 12-volt lighting installation in Engine & Boiler Rooms and method of control 220V. supply by switches on emerg. swbd.

12 V. supply automatic on failure of main 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. 2 fitted each 120 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. Gas-tight fittings used in paint store etc.

and where are the controlling switches fitted. Outside compartments concerned, are all fittings suitably ventilated. Yes, where appropriate

are all fittings and accessories constructed and installed as per Rule. Yes. Searchlight Lamps, No. of 1, whether fixed or portable. Fixed, 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. Modified 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. None and vertically. None. 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. Fitted. 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. Yes. 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. Yes, are all fuses of the cartridge type. Yes are they of an approved type. Yes. 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	1	160	220/280	727	1250	Steam Turbine		
	2	125	220/230	550	500	Diesel Engines	Pool Diesel	
	1	25	220/230	114	1100	Diesel Engine	Oil Gas	196°F
EMERGENCY ...	1	25	220/230	114	1100	Diesel Engine	Oil	
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 (Turbine) ...	160	2	127/103	727	1190	160	V.I.R.	L.C.
" " EQUALISER ...		1	127/103	595	80	80	V.I.R.	L.C.
MAIN GENERATORS (DIESEL)	125	2	91/103	550	922	156/26	V.I.R.	L.C.
EQUALISERS		1	91/103	461	78/63	78/63	V.I.R.	L.C.
AUXILIARY GENERATOR	25	1	37/083	114	184	120	V.I.R.	L.C.
EMERGENCY GENERATOR ...	25	1	37/083	114	184	60	V.I.R.	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 ...							
Small Power Bridge S.B. (A)	1	19/064	31.3	135	180	V.C.	L.C.
Searchlight etc. S.B. (E)	1	7/064	27.6	46	135	V.I.R.	L.C.
Lighting E+B. etc. S.B. (K)	1	19/083	96.5	118	60	V.I.R.	L.C.
Lighting E+B. etc. S.B. (L)	1	19/083	108.5	118	90	V.I.R.	L.C.
Boiler Rm. Small Power S.B. (M)	1	7/064	16	46	90	V.I.R.	L.C.
Air Conditioning Plant S.B. (P)	1	37/072	99.5	246	210	V.C.	L.C.
Main Vent. Fans S.B. (Q)	1	37/103	175	240	100	V.I.R.	L.C.
Calleys Equipment S.B. (R)	1	61/103	268	332	100	V.I.R.	L.C.
Heating S.B. (S)	1	19/083	86	118	100	V.I.R.	L.C.
Boat Winches S.B. (T)	1	19/052	64	64	120	V.I.R.	L.C.
Heating S.B. (W)	1	19/064	64	135	100	V.C.	L.C.
Fwd. Cranes & Windlass Cct. (U)	1	61/103	332	332	390	V.I.R.	L.C.
Aft Cranes & Warpg. Winch Cct. (V)	1	37/103	170	240	270	V.I.R.	L.C.

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

WIRELESS ...	1	7/064	-	46	360/55	V.I.R.	L.C.
NAVIGATION LIGHTS D.B. ...	1	3/036	1.36	10	360/160	V.I.R.	L.C.
LIGHTING AND HEATING ...							
Emergency Ltg. S.B. (A)	1	19/064	60	135	440/185	V.C.	L.C.
Fwd. Ltg. S.B. (E)	1	19/052	16.4	64	390	V.I.R.	L.C.
Main, Upper & Bridge Ck. Ltg. S.B. (H)	1	19/083	102	118	190	V.I.R.	L.C.
Aft Ltg. S.B. (J)	1	19/083	82	118	110	V.I.R.	L.C.
Aft Ltg. S.B. (L)	1	19/083	36.2	118	200	V.I.R.	L.C.
D.F. Heater - Off (L)	8kw.	7/052	37.4	37	60	V.I.R.	L.C.
Lighting D.B. mains:	7/036	7/044	and 7/064			V.I.R.	L.C. cable
Lighting Sub. Cct. wiring:	1/044	V.I.R.	L.C. cable				
Heating D.B. mains:	7/064	V.I.R.	L.C. cable				
Heating Sub. Cct. wiring	3/036	and 7/029	V.I.R.	L.C. cable			
Misc. Small Power wiring	1/044	3/029	3/036	and 7/029	V.I.R.	L.C. cable	

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Compressor	1	15	1	19/052	61	64	50	V.I.R. L.C.
S.W. Pump	1	2	1	3/036	9	10	50	V.I.R. L.C.
F.W. Pump	1	2	1	3/036	10	10	50	V.I.R. L.C.
Converter	1	-	1	1/044	1.5	5	50	V.I.R. L.C.
Fan	1	3	1	7/029	13	15	45	V.I.R. L.C.
Fan	1	2	1	7/029	9	15	45	V.I.R. L.C.
Fan	1	1.5	1	7/036	6.25	24	300	V.I.R. L.C.
3-Ten Cranes	2	7+28+10	1	37/072	124	246	95/180	V.C. L.C.
5-Ten Cranes	2	7+42+10	1	37/083	180	184	165/180	V.I.R. L.C.
Windlass	1	45	1	37/072	171	246	200	V.C. L.C.
3-Ten Cranes	2	7+28+10	1	37/072	124	246	100/100	V.C. L.C.
Warping Winch	1	30	1	37/083	123	184	170	V.I.R. L.C.
Refrig. Compressor	1	3	1	7/029	13.3	15	20	V.I.R. L.C.
Refrig. Pump	1	1	1	3/036	5.1	10	72	V.I.R. L.C.
Lathe	1	0.75	1	3/036	3.9	10	120	V.I.R. L.C.
Drilling M/c	1	0.95	1	3/036	4.8	10	120	V.I.R. L.C.



# MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load 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 ...							
Small Power Bridge S.B. (A.A)	1	19/064	31.3	135	180	V.C.	L.C.
Searchlight etc. S.B. (E)	1	7/064	27.6	46	135	V.I.R.	L.C.
Lighting E+B. etc. S.B. (K)	1	19/083	96.5	118	60	V.I.R.	L.C.
Lighting E+B. etc. S.B. (L)	1	19/083	108.5	118	90	V.I.R.	L.C.
Boiler Rm. Small Power S.B. (M)	1	7/064	16	46	90	V.I.R.	L.C.
Air Conditioning Plant S.B. (P)	1	37/072	99.5	246	210	V.C.	L.C.
Main Vent. Fans S.B. (Q)	1	37/103	175	240	100	V.I.R.	L.C.
Galley Equipment S.B. (R)	1	61/103	268	332	100	V.I.R.	L.C.
Heating S.B. (S)	1	19/083	86	118	100	V.I.R.	L.C.
Boat Winches S.B. (T)	1	19/052	64	64	120	V.I.R.	L.C.
Heating S.B. (W)	1	19/064	64	135	100	V.C.	L.C.
Fwd. Cranes & Windlass Cct. (U)	1	61/103	332	332	390	V.I.R.	L.C.
Aft Cranes & Warp. Winch Cct. (V)	1	37/103	170	240	270	V.I.R.	L.C.

## LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	1	7/064	-	46	M. E. 360/55	V.I.R.	L.C.
NAVIGATION LIGHTS D.B. ...	1	3/036	1.36	10	360/160	V.I.R.	L.C.
LIGHTING AND HEATING ...							
Emergency Ltg. S.B. (A)	1	19/064	60	135	440/185	V.C.	L.C.
Fwd. Ltg. S.B. (F)	1	19/052	16.4	64	390	V.I.R.	L.C.
Main, Upper & Bridge OK. Ltg. S.B. (H)	1	19/083	102	118	190	V.I.R.	L.C.
Amidships Ltg. S.B. (G)	1	19/083	82	118	110	V.I.R.	L.C.
Aft Ltg. S.B. (J)	1	19/083	36.2	118	200	V.I.R.	L.C.
O.F. Heater - Off (L) 8kw.	1	7/052	37.4	37	60	V.I.R.	L.C.
Lighting D.B. mains:	7/036, 7/044	and 7/064			V.I.R.	L.C.	cable
Lighting Sub-cct. wiring:	1/044	V.I.R.	L.C.				
Heating D.B. mains:	7/064	V.I.R.	L.C.				
Heating Sub-cct. wiring	3/036 and 7/029	V.I.R.	L.C.				
Misc. Small Power wiring	1/044, 3/029, 3/036	and 7/029	V.I.R.	L.C.			

## MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
Submersible Bilge Pump (C)	1	9/12	1	19/052	46	64	M. E. 60/360	V.I.R.	L.C.
Steering Gear (N)	1	10	1	19/052	40	64	300	V.I.R.	L.C.
Fire & Bilge Pump (O)	1	13/15	1	19/052	60	64	150	V.I.R.	L.C.
Sewage Pump (X)	1	11	1	19/052	45	64	110	V.I.R.	L.C.
Lub. Oil Purifier	1	2	1	7/029	8.6	15	70	V.I.R.	L.C.
E.R. Supply Fans } OFF (K)	2	1	1	3/036	4.8	10	100	V.I.R.	L.C.
E.R. Exhaust Fan }	1	1.7	1	7/029	7.2	15	160	V.I.R.	L.C.
O.F. Transf. Pump }	1	4.5	1	7/036	19.2	24	120	V.I.R.	L.C.
Fwd. Pump }	1	2/3.5	1	7/029	14.2	15	90	V.I.R.	L.C.
Sanitary Pump }	1	2/3.5	1	7/029	14.2	15	100	V.I.R.	L.C.
Feed Pump }	1	0.25	1	3/036	1.4	10	16	V.I.R.	L.C.
Booster Pumps }	2	0.75	1	3/036	4.15	10	90	V.I.R.	L.C.
Lighting-Up Pump }	1	0.5	1	3/036	2.7	10	60	V.I.R.	L.C.
Lighting-Up Fan }	1	-	1	3/036	0.3	10	60	V.I.R.	L.C.
B.R. Supply Fan }	1	1	1	3/036	4.8	10	140	V.I.R.	L.C.
Supply Fan No. 1 }	1	3	1	7/029	13	15	60	V.I.R.	L.C.
Supply Fan No. 2 }	1	1.5	1	3/036	6.25	10	40	V.I.R.	L.C.
Thermo. Fan No. 1 }	1	4	1	7/036	17.3	24	20	V.I.R.	L.C.
Thermo. Fans Nos. 2+3 }	2	2	1	7/029	8.9	15	75/70	V.I.R.	L.C.
Thermo. Fans Nos. 4, 5, 6+8 }	4	3	1	7/029	13	15	180/60	V.I.R.	L.C.
Thermo. Fan No. 7 }	1	1.5	1	3/036	6.25	10	100	V.I.R.	L.C.
Exhaust Fan No. 3 }	1	4	1	7/036	17.3	24	130	V.I.R.	L.C.
Exhaust Fan No. 6 }	1	3	1	7/029	13	15	110	V.I.R.	L.C.
Exhaust Fans Nos. 1+7 }	2	1.5	1	3/036	6.25	10	20/90	V.I.R.	L.C.
Exhaust Fan No. 2 }	1	1.5	1	7/029	6.25	15	55	V.I.R.	L.C.
Exhaust Fans Nos. 8+9 }	2	0.4	1	3/036	1.9	10	40/75	V.I.R.	L.C.
Exhaust Fans Nos. 4+5 }	2	0.2	1	3/036	0.89	10	120/120	V.I.R.	L.C.
Boat Winches - Off (T)	4	10	1	7/064	40	46	80/80	V.I.R.	L.C.
S.W. Circ. Pump	1	4	1	7/036	17.5	24	100	V.I.R.	L.C.

See also attached sheet



Lloyd's Register Foundation



*The foregoing is a correct description.*



*Electrical Engineers.*

Date \_\_\_\_\_

## COMPASSES.

The nearest cables to the compasses are as follows:—

A cable carrying 136 Amperes 7 feet from standard compass 7 feet from steering compass.

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.

JOHN I. THORNYCROFT & Co., LIMITED.

...Builder's Signature.

*Dat*

J. Donabolsen

Joint Managing Director.

**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 or in a manner equivalent to the arrangements shown on the approved plans and on completion was tried under working conditions and found satisfactory. This installation can in my opinion be considered suitable for a classed vessel.

Notes ent 12/14/88

Total Capacity of Generators.....460.....Kilowatts.

The amount of Fee ... .. £ 71 : 10 :

When applied for,

.....19.....

Travelling Expenses (if any) £ 7 : 2/8 :

When received.

.....19.....

## Committee's Minute

*Assigned*

*Sin. P. E. nuchy. sp.*

Sanison

*Surveyor to Lloyd's Register of Shipping.*