

Rpt. 13.

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

No. 24353

17 NOV 1950

Date of writing Report 20.10.1950. When handed in at Local Office 15 NOV 1950

Received at London Office

Port of HULL.

No. in Survey held at GRIMSBY.

Date, First Survey 13.12.49. Last Survey 21. 9. 1950.

Reg. Book.

(No. of Visits 19.

1966

on the Twin. Sc. 4 Mast. 1/1 "AFRICAN QUEEN" ex "BADGER".

Tons 1252

Built at Rødby Haven

By whom built A/S Rødby Jernskib

Yard No. When built 1920.

Owners Colonial Development Corporation, Ltd. Port belonging to BRITISH. Gibraltar.

Installation fitted by Sunderland Forge

When fitted 1950.

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

Plans, have they been submitted and approved Yes. System of Distribution Four wire Voltage of Lighting 110.

Heating 440 Power 440 D.C. or A.C., Lighting A.C. Power A.C. If A.C. state frequency 50 cycle.

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes. Are turbine emergency governors fitted with a trip switch - Generators, are they compound wound - and level compounded under working conditions -

if not compound wound state distance between generators - and from switchboard - Are the generators arranged to run in parallel Yes. are shunt field regulators provided Yes. Is the compound winding connected to the negative or positive pole -

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.

Position of Generators Engine Room. port and starboard.

is the ventilation in way of generators satisfactory Yes. are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil Yes. Switchboards, where are main switchboards placed Engine Room aft on platform.

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil Yes. what insulation is used for the panels Dead front. 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 - Is the construction as per Rule, including locking of screws and nuts Yes. Description of Main Switchgear

for each generator and arrangement of equaliser switches Three pole, free handle circuit breakers, 3 I trips, time lap, Auxiliary switch to act as equaliser.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Triple pole quick break knife switches and triple pole fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes. Instruments on main switchboard 6.

ammeters 3. voltmeters 3. watt meters. For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection Yes. Earth Testing, state means provided Lamps

coupled to earth via switches and fuses.

Switches, Circuit Breakers and Fuses, are they as per Rule Yes. are the fuses an Approved Type Yes. make of fuses. are all fuses labelled Yes. If circuit breakers are provided for the generators, at what overload do they operate 50% and at what current do the reversed current protective devices operate

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule Yes.

Cables, are they insulated and protected as per Rule 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 - are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets Yes. Are all paper insulated and varnished cambric insulated cables sealed at the ends 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 any 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 - or of the "HR" type - State how the cables are supported or protected In machinery spaces through holds, exposed positions etc. L.C. & A. clipped to steel tray plate or direct to steelwork. In accommodation etc. L.C. clipped to wood battens or direct to woodwork.

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

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position



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Lloyd's Register Foundation

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Navigation Lamps, are they separately wired. **Yes.**...controlled by separate double pole switches 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.**... Is an alternative supply provided.

Secondary Batteries, are they constructed and fitted as per Rule. **-**... are they adequately ventilated. **-** state 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 any 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. **-**

Searchlight Lamps, No. of **-**... whether fixed or portable. **-**... are they of the carbon arc or of the filament type. **-**

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 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil. **Yes.**

Are **motors** coupled to oil fuel transfer and 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 sea 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.**

Steel Masts. 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 an Approved Cartridge Type. **-**... make of fuse. **-** 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. **-**

E.S.D., if fitted state maker. **Hughes**... location of transmitter. **Cofferdam.**... and receiver. **Cofferdam.**

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and 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	MAKER.	RATED AT				PRIME MOVER.		
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.	
MAIN ...	1	30728	62.5 KVA	440	82	1000	Diesel	Ruston	96136
	1	" " 30729	62.5 "	440	82	1000	"	"	96137
	1	" " 30730	62.5 "	440	82	1000	"	"	96138
EMERGENCY ... ROTARY TRANSFORMER									

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	62.5	1	19/.064	82	134	36	VC	L.C. & A.
" " EQUALISER ...	62.5	1	19/.064	82	134	129	"	" "
	62.5	1	19/.064	82	134	144	"	" "
Transformer Input (20 KVA)		1	7/.064	28.8	75	78	VC	L.C. & A.
EMERGENCY GENERATOR Output		1	19/.064	104.9	134	78	"	" "
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.	Lighting Section Boards.						
M.1 Engine room Port Lighting	1	19/.044	18.5	87	54	VC	L.C. & A.
M.2 " " Starboard	1	19/.044	36	87	54	"	" "
K.1 Quick Freeze	1	7/.064	35.3	75	207	"	" "
J.1 " "	1	7/.064	35.2	75	195	"	" "
E.1 Canning Plant	1	7/.064	39.3	75	183	"	" "
F.1 Fish Meal "	1	19/.044	66.2	87	300	"	" "
G.1 Liver Oil "	1	19/.044	52.8	87	492	"	" "
D.2 No.2 Hold	1	19/.044	57.45	87	498	"	" "
C.1 Boiler Room & Workshop	1	7/.064	30.1	75	150	"	" "
D.1 Fridge Pans etc.	1	19/.064	67.2	87	252	"	" "
LA E.R.Nav.Cargo & Aft Lighting	1	19/.044	78	87	120	"	" "
LC Factory & Native " panel	1	19/.044	84	87	360	"	" "
LB Accommodation " "	1	19/.044	85.5	87	360	"	" "

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Navigation	1	7/.064	15	46	220'	VIR	L.C.
Cargo lights	1	7/.064	26	46	220'	"	"
Boiler room	1	7/.064	14	46	160'	"	"
Machinery space	1	7/.064	6	46	120'	"	"
Net making room	1	7/.064	2	46	70'	"	"
Refrig. & Engineers	1	7/.064	14	46	86'	"	"
Galley & Hospital	1	7/.064	14.5	46	94'	"	"
Saloon	1	7/.064	14	46	176'	"	"
Lounge	1	7/.064	13.5	46	204'	"	"
Refrig. machinery lighting	1	7/.064	6	46	144'	"	"
Canning " "	1	7/.064	8	46	20'	"	"
Oil plant " "	1	7/.064	11	46	140'	"	"
Cold rooms " "	1	7/.064	7.5	46	160'	"	"
Native accommodation " "	1	7/.064	8.5	46	240'	"	"
" " " "	1	7/.064	9	46	260'	"	"
" " " "	1	7/.064	11	46	320'	"	"
Heater 1000 W.	1	3/.036	4.4	10	"	"	"
" 1250 W. canning plant.	1	3/.036	5.4	10	"	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Lub.Oil Stand-by Pump	1	1.5	1	3/.036	3.75	10	60	VIR	L.C. & A.
Fresh Water Pump	1	3	1	3/.036	4.3	10	115	"	"
Exhauster " "	1	.8	1	3/.036	1.4	10	120	"	"
" for fire & bilge pump	1	.8	1	3/.036	1.4	10	140	"	"
Condenser Circulating Pump	1	3	1	3/.036	4.3	10	80	"	"
Air Compressor	1	7	1	7/.029	11	15	60	"	"
Oil Purifier	1	3	1	7/.029	5.5	15	60	"	"
Bilge & Ballast	1	3	1	3/.036	4.3	10	150	"	"
Fuel Oil Transfer	1	1.5	1	3/.036	5.75	10	90	"	"
Fresh Water	1	3	1	7/.029	5.5	15	90	"	"
Forward Bilge & Ballast	1	3	1	3/.036	4.3	10	90	"	"
Hacking Machine Pump	1	10	1	7/.064	16	75	80	VC	"
Refrig.Compressors forwd.	3	4	1	3/.036	6.5	10	60	VIR	"
" Sabroe Compressor	1	30	1	19/.044	40	87	330	VC	"
Refrig.Compressors midship	2	7.5	1	7/.029	11.5	15	60	VIR	"
" " " "	5	4	1	3/.036	6.5	10	60	"	"
Lift	1	5	1	7/.029	9	15	60	"	"
General Service & Fire pump	1	7.5	1	7/.029	9.6	15	120	"	"

Cables, are they insulated and protected as per Rule. **-**... 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. **-**... are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets. **-** Are all paper insulated and varnished cambric insulated cables sealed at the ends. **-** 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. **-** are any cables laid under machines or floorplates. **-** if so, are they adequately protected. **-** Are cables in machinery spaces, galleys, laundries, etc., lead covered. **-** or run in conduit. **-** or of the "HR" type. **-** State how the cables are supported or protected. **-**

Are all lead sheaths, armouring and conduits effectually bonded and earthed. **-** Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands. **-** where unarmoured cables pass through beams, etc., are the holes effectively bushed. **-** Refrigerated chambers, are the cables and fittings as per Rule. **-** Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. **-**

Navigation Lamps, are they separately wired. **Yes.**...controlled by separate double pole switches 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.**... Is an alternative supply provided.

Secondary Batteries, are they constructed and fitted as per Rule. **-**... are they adequately ventilated. **-** state 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 any 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. **-**

Searchlight Lamps, No. of **-**... whether fixed or portable. **-**... are they of the carbon arc or of the filament type. **-**

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 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil. **Yes.** Are **motors** coupled to oil fuel transfer and 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 sea 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.** **Steel** 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 an Approved Cartridge Type. **-**... make of fuse. **-** 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. **-**

E.S.D., if fitted state maker. **Hughes** location of transmitter. **Cofferdam.** and receiver. **Cofferdam.**

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and 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	MAKER.	RATED AT				PRIME MOVER.		
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.	
MAIN ...	1	30728							
	1	Meerland Eng. 62.5 KVA	62.5	440	82	1000	Diesel	Ruston	96136
	1	" " 30729	62.5	440	82	1000	"	"	96137
EMERGENCY ...	1	" " 30730	62.5	440	82	1000	"	"	96138
ROTARY TRANSFORMER									

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
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" " EQUALISER ...	62.5	1	19/.064	82	134	129	"	" "
	62.5	1	19/.064	82	134	144	"	" "
Transformer Input (20 KVA)		1	7/.064	28.8	75	78	VC	L.C. & A.
EMERGENCY GENERATOR Output		1	19/.064	104.9	134	78	"	" "
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

Power Distribution Fuse Boards.								
DESCRIPTION.								
B.1 Heaters	1	7/.064	5.4	75	90	VC	L.C. & A.	
C.1 Ventilating & Engineers work-shop.	1	7/.064	30	75	150	"	" "	
D.1 Domestic & Fwd. Refrig.	1	19/.044	17.2	87	252	"	" "	
D.2 Refrig. & fans forward.	1	19/.044	37.45	87	498	"	" "	
E.1 Canning plant	1	7/.064	39.3	75	183	"	" "	
F.1 Fish meal plant.	1	19/.044	66.2	87	300	"	" "	
G.1 Liver Oil Plant.	1	19/.044	52.8	87	492	"	" "	
M.2 Engine Room starboard	1	19/.064	36.1	87	60	"	" "	
M.1 " " port	1	19/.044	54.15	87	70	"	" "	

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

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Cargo lights	1	7/.064	26	46	220'	"	"
Boiler room	1	7/.064	14	46	160'	"	"
Machinery space	1	7/.064	6	46	120'	"	"
Net making room	1	7/.064	2	46	70'	"	"
Refrig. & Engineers	1	7/.064	14	46	86'	"	"
Galley & Hospital	1	7/.064	14.5	46	94'	"	"
Saloon	1	7/.064	14	46	176'	"	"
Lounge	1	7/.064	13.5	46	204'	"	"
Refrig. machinery lighting	1	7/.064	6	46	144'	"	"
Canning " "	1	7/.064	8	46	20'	"	"
Oil plant " "	1	7/.064	11	46	140'	"	"
Cold rooms " "	1	7/.064	7.5	46	160'	"	"
Native accommodation " "	1	7/.064	8.5	46	240'	"	"
" " " "	1	7/.064	9	46	260'	"	"
" " " "	1	7/.064	11	46	320'	"	"
Heater 1000 W.	1	3/.036	4.4	10	"	"	"
" 1250 W. canning plant.	1	3/.036	5.4	10	"	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.								
Lub.Oil Stand-by Pump	1	1.5	1	3/.036	3.75	10	60	VIR	L.C. & A.		
Fresh Water Pump	1	3	1	3/.036	4.3	10	115	"	"		
Exhauster " "	1	.8	1	3/.036	1.4	10	120	"	"		
" for fire & bilge pump	1	.8	1	3/.036	1.4	10	140	"	"		
Condenser Circulating Pump	1	3	1	3/.036	4.3	10	80	"	"		
Air Compressor	1	7	1	7/.029	11	15	60	"	"		
Oil Purifier	1	3	1	7/.029	5.5	15	60	"	"		
Bilge & Ballast	1	3	1	3/.036	4.3	10	150	"	"		
Fuel Oil Transfer	1	1.5	1	3/.036	5.75	10	90	"	"		
Fresh Water	1	3	1	7/.029	5.5	15	90	"	"		
Forward Bilge & Ballast	1	3	1	3/.036	4.3	10	90	"	"		
Hacking Machine Pump	1	10	1	7/.064	16	75	80	VC	"		
Refrig.Compressors forwd.	3	4	1	3/.036	6.5	10	60	VIR	"		
" Sabrue Compressor	1	30	1	19/.044	40	87	330	VC	"		
Refrig.Compressors midship	2	7.5	1	7/.029	11.5	15	60	VIR	"		
" " "	5	4	1	3/.036	6.5	10	60	"	"		
Lift	1	5	1	7/.029	9	15	60	"	"		
General Service & Fire pump	1	7.5	1	7/.029	9.6	15	120	"	"		
Fans in Boiler Room	2	2	1	7/.029	4	15	150	"	"		
" " " "	1	1.5	1	7/.029	3.5	15	120	"	"		
Portable Whipping winch	1	4.5	1	7/.029	8	15	100	"	"		

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.

Professors Barber
Professors The Sunderland Forge & Eng. Co Ltd Electrical Contractors.
Hull

Date *September 25 1950*

COMPASSES.

Have the compasses been adjusted under working conditions

compasses have been adjusted under
Working conditions. *Wallace & Coig.* Builder's Signature.

Date *Sept 27 1950.*

Have the foregoing descriptions and schedules been verified and found correct. Yes. ☒

Is this installation a duplicate of a previous case. No. ☐ If so, state name of vessel. -

Plans. Are approved plans forwarded herewith. Yes. ☒ If not, state date of approval. 15/3/50.

Certificates. Are certificates of test for motors engaged on essential sea 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 was installed in accordance with the approved plans and with the Rules.

The material used is of good quality and the workmanship is good.

On completion the equipment was operated under working conditions with satisfactory results and the insulation resistance of all circuits and apparatus was measured and found good.

This equipment is in my opinion suitable for a classed vessel.

Total Capacity of Generators. 187.5 Kilowatts.

The amount of Fee ... £ 67 : 16

When applied for,
15 NOV 1950

When received,

Travelling Expenses (if any) £ - : -

19

W. G. Connell
Surveyor to Lloyd's Register of Shipping.

TUES. 12 JUN 1951

Committee's Minute

Assigned