

Rpt. 13.

No. 76252

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 6<sup>th</sup> NOVEMBER 1950 When handed in at Local Office 14-11-1950 Received at London Office 15 DEC 1950No. in Survey held at GLASGOW & PORT GLASGOW Date, First Survey 23<sup>rd</sup> JUNE Last Survey 26<sup>th</sup> OCTOBER 1950

Reg. Book. (No. of Visits 15)

95054 on the M.V. 'POWELL' Tons { Gross... Net...

Built at PORT GLASGOW By whom built LITHGOWS LTD Yard No. 1046 When built 1950

Owners HECTOR TANKERS LTD Port belonging to LONDON.

Installation fitted by MESSRS W. MUIR GOODFELLOW &amp; CO LTD When fitted 1950

Is vessel equipped for carrying Petroleum in bulk. YES Is vessel equipped with D.F. YES E.S.D. YES Gy.C. YES Sub.Sig. YES Radar YES.

Plans, have they been submitted and approved. YES System of Distribution TWO WIRE Voltage of Lighting 110

Heating 110 Power 110 D.C. or A.C., Lighting D.C. Power D.C. If A.C. state frequency.

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. YES Generators, are they compound wound YES, and level compounded under working conditions YES,

if not compound wound state distance between generators. YES and from switchboard. YES 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

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.

Position of Generators PORT SIDE OF ENGINE ROOM.

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 ON FLAT OVER GENERATORS.

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 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. YES 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 TRIPLE POLE CIRCUIT BREAKER FITTED WITH REVERSE -

CURRENT AND OVERLOAD TRIPS.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit 300 AMP. D.P. CIRCUIT-BREAKER FITTED WITH

OVERLOAD TRIPS. OR D.P. KNIFE PATTERN SWITCHES WITH FUSES.

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

ammeters Two voltmeters. YES synchronising devices. 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.

EARTH LAMPS

Switches, Circuit Breakers and Fuses, are they as per Rule. YES, are the fuses an Approved Type. YES

make of fuses SIEMENS 'Z' TYPE, are all fuses labelled. YES If circuit breakers are provided for the generators, at what

overload do they operate 150% FULL LOAD, and at what current do the reversed current protective devices operate 10% - 15% F.L.

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. YES

state maximum fall of pressure between bus bars and any point under maximum load 6.6 VOLTS, 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. YES, if so, are they

adequately protected. YES Are cables in machinery spaces, galleys, laundries, etc., lead covered. YES or run in conduit. YES

or of the "HR" type. YES State how the cables are supported or protected MAINS L.C.B. CABLES CLIPPED TO

STEELWORK. MACHINERY SPACE L.C.A.B. OR 'PYROTEX' CABLES CLIPPED TO TRAY OR

STEELWORK. ACCOMMODATION L.C. CABLE CLIPPED 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

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

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 YES

Secondary Batteries, are they constructed and fitted as per Rule ✓, are they adequately ventilated ✓ state 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 any 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 FLAMEPROOF FITTINGS INSTALLED IN CENTRECASTLE SPACE, PUMPROOM FITTINGS COMPLY WITH RULE REQUIREMENTS and where are the controlling switches fitted IN ACCOMMODATION SPACE Are all fittings suitably ventilated YES

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 ✓ 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 an Approved Cartridge Type YES, make of fuse SIEMENS 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

E.S.D., if fitted state maker MARCONI location of transmitter FRAME SPACE 47 and receiver FRAME SPACE 47

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.

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DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN ... ..	2	ELECTRIC CONSTRUCTION COMPANY.	35	110	318	500	STEAM.	READER.
	1	LAURENCE SCOTT & ELECTROMOTORS.	60	110	546	600	DIESEL	PUSTON & HORNSBY.
EMERGENCY ... ROTARY TRANSFORMER								

## GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load plus return feed).	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 ... ..	60	2	37/.083	546 ✓	628	195	V.C.	LCAB.
" " EQUALISER ... ..		1	37/.083	-	314	98	V.C.	LCAB.
MAIN GENERATOR.	35	1	37/.103	318 ✓	408	50	V.C.	LCAB.
" " EQUALISER		1	37/.083	-	314	25	V.C.	LCAB.
EMERGENCY GENERATOR ... ..								
ROTARY TRANSFORMER: MOTOE								
" " GENERATOR.								

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

[illegible]

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

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT. IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULA- TION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
WIRELESS.	1	7/064	10 ✓	80	120	V.C.	L.C.
NAVIGATION.	1	7/044	14 ✓	31	120	RUBBER	L.C.
LOWER BRIDGE DECK LIGHTING D.B.	1	7/036	21 ✓	24	60	RUBBER	L.C.
AFT LIGHTING UPPER DECK PORT	1	7/044	23 ✓	31	85	RUBBER	L.C.
AFT LIGHTING POOP DECK STBD.	1	7/052	36 ✓	37	15	RUBBER	L.C.
FORECASTLE LIGHTING D.B.	1	7/036	7 ✓	24	460	RUBBER	L.C.A.B.
ENGINE ROOM LIGHTING D.B. PORT	1	7/044	28 ✓	31	150	RUBBER	L.C.A.B.
ENGINE ROOM LIGHTING D.B. STBD	1	7/044	28 ✓	31	15	RUBBER	L.C.A.B.
SEARCHLIGHT (WIRING ONLY)	1	19/044	28 ✓	92	530	V.C.	L.C.A.B.
KADAR	1	7/052	30 ✓	37	120	RUBBER	L.C.
GYRO COMPASS	1	7/036	8 ✓	24	60	RUBBER	L.C.
GALLEY POWER	1	7/044	17 ✓	31	130	RUBBER	L.C.A.B.
OIL PURIFIER D.B.	1	19/044	90 ✓	92	100	V.C.	L.C.A.B.
HYDROFORE PUMP D.B.	1	19/064	126 ✓	143	200	V.C.	L.C.A.B.
REFRIG. MACHINERY PANEL	1	19/052	81 ✓	110	140	V.C.	L.C.A.B.
LAUNDRY	1	7/064	64 ✓	80	480	V.C.	L.C.A.B.

## MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
STEERING GEAR	2	35	1	37/083	270✓	314	310	V.C.	L.C.A.B.
AFT VENT FANS	3	3.3	1	7/044	275✓	31	108	RUBBER	L.C.
MIDSHIP VENT FANS	2	2.5	1	7/044	21✓	31	120	RUBBER	L.C.
TURNING GEAR	4	22	1	19/083	170✓	202	190	VC	LCAB
DOMESTIC REFRIG.	1	8	1	7/064	64✓	80	40	VC	LCAB.
HYDROFORE PUMPS.	4	5.5	1	7/052	44✓	60	40	VC	LCAB.
WORKSHOP	1	5	1	7/052	41.5✓	60	60	VC	LCAB.
PURIFIERS	3	3.5	1	7/044	287✓	31	30	RUBBER	LCAB.
PRIMING PUMP	1	1.5	1	7/036	133✓	24	96	RUBBER	LCAB.
ENGINE ROOM VENT FANS	2	2.6	1	7/044	22✓	31	80	RUBBER	LCAB.



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.

For W. MUIR GOODFELLOW & COY LTD

*W. M. Goodfellow*

Electrical Contractors.

Date *10/11/50*

#### COMPASSES.

Have the compasses been adjusted under working conditions

*YES*

LITHGOWS LIMITED.

*L. H. Cunningham* Secretary

Builder's Signature.

Date *13/11/50*

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

*No*

If not, state date of approval

*19TH JULY 1950*

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 installation of this vessel has been fitted on board under Special Survey, tested under working conditions and found satisfactory. The quality of materials and workmanship is good.*

*? Hydrofor pump - Bulb etc.*

Total Capacity of Generators *130* Kilowatts.

The amount of Fee ...

... £ *59 : 10*

When applied for,

*As per 10*

When received,

*19*

Travelling Expenses (if any) £ - : *17*

*J. M. Gardiner*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute.

*GLASGOW 29 NOV 1950*

Assigned

SEE ACCOMPANYING MACHINERY REPORT