

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

No 27182

Date of writing Report 11 Mar 1927 When handed in at Local Office 11 Mar 1927 Port of New York  
 No. in Survey held at New York Date, First Survey 29 Oct. Last Survey 1st Dec. 1926  
 Reg. Book. 68486 on the M/V E. T. BEDFORD Tons { Gross 9563  
 Net 5978  
 Built at Keany N. J. By whom built Federal S. B. Co. Yard No.          When built 1921  
 Owners Standard Oil Co. (N. J.) Port belonging to New York Contract No.          When fitted RETTED 1927  
 Electric Light Installation fitted by Federal S. B. Co.

System of Distribution 2 wire ✓ volts, Power 220 ✓ volts.  
 Pressure of supply for Lighting 110 ✓ volts, Heating          ✓ Power D.C. ✓  
 Direct or Alternating Current, Lighting D.C. ✓  
 If alternating current system, state frequency of periods per second           
 Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off yes ✓  
 Generators, do they comply with the requirements regarding rating yes ✓, are they compound wound yes ✓  
 are they over compounded 5 per cent. yes ✓, if not compound wound state distance between each generator           
 Where more than one generator is fitted are they arranged to run in parallel yes ✓, is an adjustable regulating resistance fitted in  
 series with each shunt field yes ✓, are they so spaced or shielded that they cannot be accidentally earthed,  
 Are all terminals accessible, clearly marked, and furnished with sockets yes ✓, are the lubricating arrangements of the generators as per Rule yes ✓  
 short circuited, or touched yes ✓  
 Position of Generators Engine Room floor ✓, are they clear of all inflammable material yes ✓  
 is the ventilation in way of the generators satisfactory yes ✓, are they clear of same horizontally from or vertically above the generators  
 if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators yes ✓  
 and         , are the generators protected from mechanical injury and damage from water, steam or oil yes ✓  
 are their axes of rotation fore and aft yes ✓, are the prime movers and  
 Earthing, are the bedplates and frames of the generating plant efficiently earthed yes ✓  
 their respective generators in metallic contact yes ✓  
 Main Switch Boards, where placed Flat at Fore end of Eng. Room.  
 If the generators and main switchboard are not, placed in the same compartment, is each generator provided with  
 a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard yes ✓  
 Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes yes ✓, if situated near unprotected  
 are they protected from mechanical injury and damage from water, steam or oil yes ✓, are they clear of same horizontally from or vertically above the switchboards yes ✓  
 woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards yes ✓  
 are they constructed wholly of durable, non-ignitable non-absorbent materials yes ✓, is all insulation of high dielectric strength and of  
 permanently high insulation resistance yes ✓, if semi-insulating material is used, are all conducting parts insulated from the sub  
 with mica or micaite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework yes ✓  
 and is the frame effectively earthed yes ✓, Are the fittings as per Rule regarding: — spacing or shielding of live parts  
yes ✓, accessibility of all parts yes ✓, absence of fuses on back of board yes ✓, proportion of omnibus  
 bars yes ✓, individual fuses to voltmeter, pilot or earth lamp yes ✓, connections of switches yes ✓  
 Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches  
1-3 blade switch for each generator which includes equalizer switch, one two pole switch  
for each outgoing circuit  
 Instruments on main switchboard 3 ammeters 1 voltmeters          synchronising device for paralleling purposes.  
 Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system  
Ground voltmeter, + earth lamps  
 Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes ✓  
 Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule yes ✓



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Lloyd's Register  
Foundation

009170-009181-0052 1/2



Cables: Single, twin, concentric, or multicore. single + twin are the cables insulated and protected as per Tables IV or V of the Rules. yes  
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 10v for Power 5v for Lights  
Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets yes

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound yes

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage yes

Support and Protection of Cables, state how the cables are supported and protected Steel conduits

If cables are run in wood casings, are the casings and caps secured by screws yes, are the cap screws of brass yes, are the cables run in separate grooves yes. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII yes

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements yes

Joints in Cables, state if any, and how made, insulated, and protected Made in metal junction boxes

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands yes

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed yes, state the material of which the bushes are made Steel

Earthing Connections, state what earthing connections are fitted and their respective sectional areas yes

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule yes, are their connections made as per Rule yes

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven in forecastle, driven by oil engine

Navigation Lamps, are these separately wired yes, controlled by separate switch and separate fuses yes, are the fuses double pole yes, are the switches and fuses grouped in a position accessible only to the officers on watch yes, has each navigation lamp an automatic indicator as per Rule yes

Secondary Batteries, are they constructed and fitted as per Rule yes

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight yes, are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected yes

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected yes Sea light fittings with heavy glass globes & guards, how are the cables led in steel conduits

where are the controlling switches situated Outside of spaces

Searchlight Lamps, No. of 1, whether fixed or portable fixed, are their fittings as per Rule yes

Arc Lamps, other than searchlight lamps, No. of yes, are their live parts insulated from the frame or case yes, are their fittings as per Rule yes

Motors, are their working parts readily accessible yes, are the coils self-contained and readily removable for replacement yes, are the brushes, brush holders, terminals and lubricating arrangements as per Rule yes, are the motors, placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material yes

are they protected from mechanical injury and damage from water, steam or oil yes, are their axes of rotation fore and aft yes, if situated near unprotected woodwork or other combustible material, are the motors totally enclosed, pipe ventilated, forced draught, drip or flame proof type yes, if not of this type, state distance of the combustible material horizontally or vertically above the motors yes

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule yes

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule yes

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings yes

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office yes

## PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	1-100 2-50	220	450	260	Auxiliary Diesel Engine	Diesel Oil	
AUXILIARY	1	30 KW	110	191		Steam Engine		
EMERGENCY	1	12 KW	110	100		Kerosene Engine		
ROTARY TRANSFORMER	1	15 KW	110	140				

## LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
50 KW 100 v	MAIN GENERATOR...	2	235	91	0.064	450	120	Rubber	Braided in Conduit
	EQUALISER CONNECTIONS	1	131	61	0.051	180	50		
	AUXILIARY GENERATOR	As original							
	EMERGENCY GENERATOR	1	105	61	0.045	139			
	ROTARY TRANSFORMER...	1	458	127	0.072	100			
	AUXILIARY SWITCHBOARDS	1	105	61	0.045	50			
	ENGINE ROOM	1	105	61	0.045	50			
	BOILER ROOM	1	105	61	0.045	50			
	ACCOMMODATION	1	235	91	0.064	100			
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHT								
	SIDE LIGHTS								
	COMPASS LIGHTS								
	POOP LIGHTS								
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS								

## MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	105	61	0.045	160	100	Rubber	Braided in Conduit
	MAIN BILGE LINE PUMPS	1	0.23	7	0.044	30			
	GENERAL SERVICE PUMP	1	0.23	7	0.044	30			
	EMERGENCY BILGE PUMP	1	0.23	7	0.044	30			
	SANITARY PUMP	1	0.23	7	0.044	30			
	CIRC. SEA WATER PUMPS	2	0.35	7	0.078	60			
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP	2	0.23	7	0.064	40	100		
	ENGINE TURNING GEAR	1	0.23	7	0.064	30	100		
	ENGINE REVERSING GEAR	1	0.23	7	0.064	30	100		
	LUBRICATING OIL PUMPS	1	0.23	7	0.064	30	100		
	OIL FUEL TRANSFER PUMP	1	0.23	7	0.064	30	100		
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	(a) MOTOR GENERATOR	1	0.83	19	0.075	120	100		
	(b) MAIN MOTOR	1	0.23	7	0.064	25	100		
	WORKSHOP MOTOR								
	VENTILATING FANS								



All Conductors are of annealed copper conforming to British Standard Specification No. 7.

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

FEDERAL S. B. Co.

per J. H. O'Brien

Electrical Engineers.

Date Mar 15, 1927

#### COMPASSES.

Distance between electric generators or motors and standard compass alt 250

Distance between electric generators or motors and steering compass alt 250

The nearest cables to the compasses are as follows:—

A cable carrying <sup>Bussell</sup>  $\frac{1}{2}$  Ampères ~~elect~~ feet from standard compass ~~elect~~ feet from steering compass.

A cable carrying Ampères feet from standard compass 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 degrees on course in the case of the standard compass, and degrees on course in the case of the steering compass.

Builder's Signature.

Date

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

General Remarks (State quality of workmanship, opinions as to class, &c.)

This Electrical Installation has been refitted & enlarged during vessels' conversion to Diesel Engines. It has been carried out under Special Survey in accordance with the Rules & the workmanship & material are good. It has been satisfactorily tried under full load & it is now in good & safe working condition & eligible, in my opinion, to retain the notation 'ELEC. LIGHTS' in the Register Book

It is submitted that this vessel is eligible to remain as CLASSED.

Note ELEC light: already posted.

Total Capacity of Generators 200 Kilowatts.

The amount of Fee ... £

Travelling Expenses (if any) £

When applied for,

19

When received,

19

Committee's Minute

Assigned

J. H. O'Brien  
1/4/27

For A. McWATT.

John S. Heck.

Surveyor to Lloyd's Register of Shipping.