

33 NOV 1948

No. 34993

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report..... 27.10.48..... 19..... When handed in at Local Office..... 2nd November 1948..... Port of..... SUNDERLAND

No. in Survey held at..... SUNDERLAND..... Date, First Survey..... 12-5-48..... Last Survey..... 23.10.1948..... Reg. Book..... (Number of Vials.....)

on the..... m.v. "ATHELKNIGHT"..... Tons { Gross..... 9087..... Net..... 5216.....

Built at..... Sunderland..... By whom built..... Sir James Laing & Sons Ltd..... Ward No..... 779..... When built..... 1948.....

Owners..... Athel Line Ltd..... Port belonging to..... Liverpool.....

Electrical Installation fitted by..... Sunderland Forge & Engineering Co. Ltd..... Contract No..... 779..... When fitted..... 1948.....

Is vessel fitted for carrying Petroleum in bulk..... yes..... Is vessel equipped with D.F..... yes..... E.S.D..... yes..... Gy.C..... yes..... Sub.Sig.no..... RADAR..... yes.....

Have plans been submitted and approved..... yes..... System of Distribution..... two-wire insulated..... Voltage of supply for Lighting..... 110.....

Heating..... 110..... Power..... 110..... Direct or Alternating Current, Lighting..... yes..... Power..... yes..... 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..... Engine room floor level on raised stools.....

....., 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..... on raised platform over 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..... 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..... a triple pole (one pole

for equaliser) air-break circuit breaker fitted with O/L and R/V current tripping devices.....

.....

and for each outgoing circuit..... for steering gear :- a double pole circuit breaker with O/L trips : For

other circuits:- a 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..... 5.....

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..... E lamps coupled to earth through sws 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..... 5%....., are the reversed current

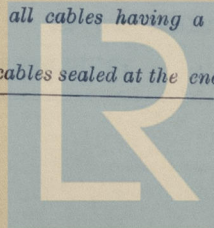
protection devices connected on the pole opposite to the equaliser connection..... yes....., have they been tested under working conditions, and at what current

did they operate..... 10%..... 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..... yes.....

state maximum fall of pressure between bus bars and any point under maximum load..... less than 6.v....., 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.....

Lloyd's Register
Foundation

004263-004274-0155 1/2

with insulating compound yes or waterproof insulating tape. 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 No, if so, are they adequately protected yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered yes or run in conduit -. State how the cables are supported and protected. Main feeders V.C.L.C.A.B clipped in steel channel with cover plate along fore and aft gangways : In accommodation, lead covered cables clipped to the surface and protected where desirable with metal or wooden guards.

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 - and method of control -. 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 -. "Victor" flameproof lighting fittings as approved installed in centrecastle deck and where are the controlling switches fitted in officers quarters, 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 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 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 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 -. 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	50	110	454	500	vertical steam engines		
EMERGENCY	2 steam							
ROTARY TRANSFORMER	1 altern.							

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet 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	No. 1.	2	37/.072	454	492	60	V.C.	L.C.
"	EQUALISER	1	"		246	30	"	"
"	No. 2.	2	"	454	492	50	"	"
"	equaliser	1	"		246	25	"	"
"	No. 3.	2	"	454	492	60	"	"
"	equaliser	1	"		246	30	"	"
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
"	GENERATOR							

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet 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							
Midship Section Panel "S-1"	I	37/.103	122	385	346	V.C.	L.C.A.B.
Aft Power Section P. Port "S-2"	I	37/.072	118	246	126	"	"
" " " " "S-3"	I	"	146	"	120	"	"
" Lighting " "S-4"	I	19/.064	92	135	100	"	"
Engine Rm Power Section P. "S-5"	I	7/.064	50	75	64	"	"
" " " " "S-6"	I	"	34	75	86	"	"
" Lighting " "S-7"	I	"	46	75	74	"	"
" " " " "S-8"	I	"	38	75	32	"	"
Refrigerating Section Panel	I	"	43	75	90	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	I	19/.064	I5	135	360	V.C.	L.C.A.B.
NAVIGATION LIGHTS	I	7/.064	10	75	364	"	"
ENGINE AND HEATING	(alternative supply from "S-1" through C.O.S.)						
Bridge Dk Ltg. D.B.	I	7/.036	17	24	42	V.I.R.	L.C.
Upper Bridge Ltg D.B.	I	"	14	"	56	"	"
Bridge Dk. Ltg D.B., Port	I	"	18	"	60	"	"
" " " " Star.	I	"	18.5	"	72	"	"
Fwd Cargo Ltg D.B.	I	"	11.5	"	66	"	"
Aft Cargo Ltg D.B.	I	7/.029	9	15	34	"	L.C.A.B.
Main Dk. Ltg D.B., Port	I	7/.044	18.6	31	54	"	L.C.
" " " " Star.	I	"	20	"	38	"	"
Upper Dk. Ltg. Port	I	"	25	"	72	"	"
" " " " Star.	I	"	24	"	80	"	"
Engine Rm. Ltg D.B., Port	I	7/.036	19	24	38	"	"
" " " " Star.	I	"	18	"	70	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Steering Motors	2	25	I	19/083	I90	I91	I04	V.C.
Bilge & Fire Pump	I	20	I	"	I53	"	66	"
Turning Gear	I	15	I	19/.064	117	I35	48	"
F.W. Pump	I	4	I	7/.052	35	37	70	VTR
Crane Motor	I	3	I	7/.044	26	31	90	"
Oil Purifier	2	2	I	7/.036	18	24	78	"
Fuel Valve Cooling Pump	2	1.5	I	"	I6	"	110	"
Priming Pump	I	1.5	I	"	I6	"	96	"
Lathe Motor	I	2	I	"	I8	"	35	"
Drilling Motor	I	2	I	"	I8	"	42	"
Grinder Motor	I	1	I	"	I0	"	48	"
Midship Thermotank	I	3	I	7/.044	26	31	62	"
Midship Boat Winch	I	7.5	I	7/.064	61	75	94	V.C.
Aft Boat Winch	I	"	I	"	"	"	104	"
Aft Thermotank, Port	I	3	I	7/.044	26	31	88	V.I.R.
" " " " Star.	I	"	I	"	"	"	92	"
E.R. Vent Fan. Port	I	4	I	7/.052	33	37	88	"
" " " " Spar.	I	"	I	"	"	"	62	"
Pantry Exhaust Fan	I	.2	I	3/.029	3	6	100	"
Galley do.	I	"	I	"	"	"	76	"
Refrig. Fan	I	"	I	"	"	"	48	"
do. Compressor	I	4	I	7/.064	33	75	64	V.C.
do. Water Pump	I	1	I	7/.029	9	15	28	V.I.R.



© 2021

Lloyd's Register Foundation

0155 2/2

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.

Sunderland Forge & Eng Co Ltd.
J. J. Loring

Electrical Engineers.

Date *28-10-1948*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *24'*

Minimum distance between electric generators or motors and steering compass *36'*

The nearest cables to the compasses are as follows:—

A cable carrying *.15* Ampères *9* feet from standard compass *on the* ~~feet from~~ steering compass.

A cable carrying *.15* Ampères *on the* ~~feet from~~ standard compass *9* 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 *every* course in the case of the standard compass, and *nil* degrees on *every* course in the case of the steering compass.

W. J. Loring Builder's Signature. Date *1/11/48*

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 *13-11-47*

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 the approved plans and the "Rules For Electrical Equipment". The materials and workmanship are good. Upon completion, trials of the equipment were witnessed with satisfactory results and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a vessel bearing the Society's Class.

Noted *1/12/48*

Total Capacity of Generators *(3x50) - 150* Kilowatts.

The amount of Fee ... £ *62.10.0* When applied for, *NOV - 2 1948*

Travelling Expenses (if any) £ : : When received, 19

Committee's Minute *11. 3 DEC 1948*

Assigned *Sir F.E. Welch. rpt.*

A. S. Loring
Surveyor to Lloyd's Register of Shipping.