Ministry of Defence

GENERATOR SET, DIESEL ENGINE DRIVEN, 2 kW, 230 V/110 V AC/28 V DC (Drumgrange Ltd)

6115-G-710-211 AIDE MEMOIRE

Issue No. 002

Amendment No. 003

June 2018

Sponsored for use in the
United Kingdom Ministry of Defence
and Armed Forces by DES LE OSP - OI

KN080

Publications Authority: DES LE OSP - OI
Operational Infrastructure
Mail Point #1309
Spruce 3a
MOD Abbey Wood
BS34 8JH

Users should forward any comments on this publication using the form attached inside

PAGE INTENTIONALLY LEFT BLANK

AMENDMENT RECORD

Amdt No.	Incorporated by (Signature)	Date
1	INCORPORATED	Feb 15
2	INCORPORATED	Mar 17
3	INCORPORATED	Jun 18
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		

Amdt No.	Incorporated by (Signature)	Date
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		

PAGE INTENTIONALLY LEFT BLANK

CONTENTS

PRELIMINARY MATERIAL Page

AIDE MEMOIRE

Chapter

PREFACE

Sponsor: Operational Infrastructure (OI)
Project No.:
File Ref: DG Log (Land) ESS/13/8/18

Publication Authority: OI

INTRODUCTION

1 Service users should forward any comments on this publication using the procedures and templates provided on the Joint Asset Management and Engineering Solutions (JAMES) or Technical Documents On-Line (TDOL) portals. A Form 10 is also provided at the end of this publication; it may be copied and used for forwarding comments if JAMES or TDOL is not available.

2 AESPs are issued under UK MoD authority and where AESPs specify action is to be taken, the AESP will of itself be sufficient authority for such action and also for the demanding of the necessary stores, subject to the provisions of Para 3 below.

3 The subject matter of this publication may be affected by Defence Instructions and Notices (DIN), Standard Operating Procedures (SOP) or by local regulations. When any such Instruction, Order or Regulation contradicts any portion of this publication it is to be taken as the overriding authority.

RELATED AND ASSOCIATED PUBLICATIONS

Related publications

4 The Octad for the subject equipment consists of the publications shown below. All references are prefixed with the first eight digits of this publication. The availability of the publications can be checked on TDOL.

Category/Sub-category			Information Level			
			1 User/ Operator	2 Unit Maintenance	3 Field Maintenance	4 Base Maintenance
1	0	Purpose and Planning Information	101	*	*	*
	1	Equipment Support Policy Directive	111	*	*	*
2	0	Operating Information	201	*	*	*
	1	Aide-Mémoire	211	*	*	*
	2	Training Aids	*	*	*	*
3		Technical Description	201	302	*	*
4	1	Installation Instructions	*	*	*	*
	2	Preparation for Special Environments	*	*	*	*
5	1	Failure Diagnosis	201	522	*	*
	2	Maintenance Instructions	201	522	523	*
	3	Inspection Standards	*	522	*	*
	4	Calibration Procedures	*	*	*	*
6		Maintenance Schedule	601	*	*	*
7	1	Illustrated Parts Catalogue	711	*	*	*
	2	Commercial Parts List	*	*	*	*
	3	Complete Equipment Schedule, Production	*	*	*	*
	4	Complete Equipment Schedule, Service Edition (Simple Equipment)	741	*	*	*
	5	Complete Equipment Schedule, Service Edition (Complex Equipment)	*	*	*	*
8	1	Modification Instructions	*	812	*	*
	2	General Instructions, Special Technical Instructions and Servicing Instructions	*	*	*	*
	3	Service Engineered Modification Instructions (RAF only)	*	*	*	*

* Category/sub-category not published

Associated publications

5 The following associated publications should be read in conjunction with this category:

Reference	Title
AESP 6150-A-100-201	Earthing and Earthing Protection
JSP 515	Hazardous Stores Information System
SEI 14411	Safety Precautions for Electrical Equipment

ADDITIONAL INFORMATION

Applicability details

6 This Aide Memoire relates to the following equipment:

EIN/SNS	Asset Code	Contract
6115-99-908-6784	JR 8817 3500	BFI/CI/59

HAZARDOUS SUBSTANCES

7 Before using any hazardous substance or material, the user must be conversant with the safety precautions and first aid instructions:

7.1 On the label of the container it was supplied in.

7.2 On the Material Safety Data Sheet.

7.3 In local Safety Orders and Regulations.

WARNINGS AND CAUTIONS

WARNINGS

8 The following WARNINGS are applicable to this category:

(1) EARTHING. THE EARTH CABLE PROVIDED IS NOT TO BE LENGTHENED OR SHORTENED UNDER ANY CIRCUMSTANCES WITHOUT APPROVAL FROM THE DESIGN AUTHORITY.

(2) EARTHING. THE EQUIPMENT MUST BE PROPERLY EARTHED BEFORE ATTEMPTING TO OPERATE THE GENERATOR SET. WHEN USED WITH ANCILLARY EQUIPMENT, IT IS ESSENTIAL THAT THE EARTHING INSTRUCTIONS FOR THAT EQUIPMENT BE FOLLOWED. THE LFG EARTH SHOULD NOT BE REMOVED UNLESS SPECIFICALLY REQUIRED IN THE EARTHING INSTRUCTIONS FOR THE ANCILLARY EQUIPMENT.

(3) F54 DIESO AND F34 AVTUR. DIESEL AND AVTUR FUELS ARE HIGHLY FLAMMABLE. WHEN REFUELLING:

(3.1) DO NOT RUN THE LFG.

(3.2) DO NOT SMOKE.

(3.3) AVOID ALL NAKED FLAMES.

(3.4) AVOID OVERFILLING THE FUEL TANK/JERRYCAN.

(3.5) WIPE UP ANY SPILT FUEL PRIOR TO STARTING THE LFG.

(4) GUARDS AND COVERS. DO NOT OPERATE THE GENERATOR WITH LOOSE OR MISSING COVERS OR GUARDS. DO NOT REMOVE ANY COVERS OR GUARDS UNTIL AT LEAST 10 MINUTES AFTER THE GENERATOR HAS STOPPED.

(5) JERRYCAN ADAPTOR. DO NOT OPERATE THE GENERATOR UNLESS A JERRYCAN IS CONNECTED VIA THE JERRYCAN ADAPTOR AND PIPES SUPPLIED WITH THE GENERATOR. FAILURE TO COMPLY MAY CAUSE THE LFG FUEL TANK TO COLLAPSE.

(6) NOISE HAZARD. IF PERSONNEL ARE EXPOSED FOR PROLONGED PERIODS TO NOISE LEVELS IN EXCESS OF 80 DB(A), HEARING PROTECTION SHOULD BE PROVIDED AND WORN. THE LFG EMITS A MEASURED NOISE LEVEL OF BETWEEN 90 - 100 DB(A) THEREFORE HEARING PROTECTION MUST BE PROVIDED AND WORN WHEN WORKING WITHIN 1 METRE OF AN OPERATING LFG.

(7) PERSONAL INJURY. THE GENERATOR WEIGHS 76 KG NET AND 88 KG GROSS (INCLUDING FUEL AND CES). MANUAL HANDLING OF THE GENERATOR MUST BE IN ACCORDANCE WITH LOCAL MANUAL HANDLING ASSESSMENTS CARRIED OUT IN ACCORDANCE WITH JSP375. LOCAL MANUAL HANDLING ASSESSMENTS ARE ALSO TO BE CONDUCTED FOR THE ENGINE (38 KG) AND CONTROL BOX ASSEMBLY (32 KG).

(8) PERSONAL INJURY. THE LFG ALTERNATOR IS A PERMANENT MAGNET GENERATOR, CARE MUST BE TAKEN WHEN WORKING ON THE GENERATOR DUE TO THE HIGH STRENGTH OF THE MAGNETS WHICH COULD CAUSE PERSONAL INJURY.

(9) SHOCK HAZARD. DO NOT ATTEMPT TO SERVICE THE GENERATOR OR CARRY OUT ANY MAINTENANCE OR REPAIRS WHILST IT IS RUNNING.

(10) SHOCK HAZARD. LETHAL VOLTAGES ARE PRESENT IN THE GENERATOR EQUIPMENT. ENSURE THAT THE CIRCUIT BREAKERS ARE OPEN WHEN CONNECTING OR DISCONNECTING LOADS. CHECK THE RESIDUAL CURRENT DEVICE (RCD) OPERATION FOR EACH VOLTAGE SETTING. DO NOT CONNECT OR DISCONNECT LOADS WHILST THE GENERATOR IS RUNNING.

(11) SKIN BURNS. EXERCISE EXTREME CARE WHEN CARRYING OUT TASKS ADJACENT TO THE ENGINE AND ITS EXHAUST PIPE AS BOTH ITEMS CAN RETAIN HEAT FOR SEVERAL MINUTES AFTER SHUT DOWN. ALLOW SUFFICIENT TIME FOR THE EQUIPMENT TO COOL DOWN BEFORE CARRYING OUT ANY MAINTENANCE TASKS.

(12) TOXIC FUMES. EXHAUST GASES ARE TOXIC AND CAN QUICKLY REACH HARMFUL CONCENTRATIONS IF PRECAUTIONS ARE NOT FOLLOWED. THE EXHAUST GASES MUST ALWAYS BE VENTED TO FREE AIR. THIS CAN BE ACHIEVED EITHER BY POSITIONING THE LFG OUTDOORS OR BY USE OF THE EXHAUST EXTENSION WHICH SHOULD BE ROUTED SO AS TO TERMINATE IN FREE AIR. THE EXHAUST MUST NOT BE MUFFLED OR RESTRICTED IN ANY WAY AS THE RESULTING BACK PRESSURE COULD CAUSE ADDITIONAL LEAKS TO OCCUR OR DAMAGE THE ENGINE. EXTREME CARE MUST BE TAKEN TO ENSURE THAT EXHAUST GASES ARE VENTED SAFELY AWAY FROM ANY PERSONNEL WORKING IN THE VICINITY, WITH DUE CONSIDERATION GIVEN TO THE TOPOGRAPHY AND PREVAILING WIND CONDITIONS. HARMFUL CONCENTRATIONS CAN BE ODOURLESS AND NOT VISUALLY PERCEPTIBLE.

(13) HEALTH HAZARD. PERSONNEL MUST BE AWARE OF THE HAZARDS INVOLVED WITH PRODUCTS THAT CAN, IF NOT PROPERLY HANDLED, BE HAZARDOUS TO HEALTH. PERSONNEL MUST ADHERE TO THE INFORMATION DETAILED IN JSP 515 AND THE CURRENT SAFETY DATA SHEET. PERSONNEL MUST WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT WHEN REQUIRED.

CAUTIONS

9 The following CAUTIONS are applicable to this category:

(1) EQUIPMENT AIRFLOW. The generator should be operated in an open space with free air flow on all sides and at least 1 metre from other equipment and buildings. The surrounding area should be free of combustible material.

(2) EQUIPMENT DAMAGE. Damage to the engine will occur if the generator is operated at very low loads for a prolonged period. A minimum running load of 500 W should always be applied. A 500 W load is displayed as approximately 25% when viewed on the % Load meter on the AC Control Panel. Additionally, if the generator is operated on a low load for a prolonged period, then a significantly higher load (approximately 70%) should be applied for a period of about 30 minutes before switching Off or for up to 1 hour until moisture condensate no longer emerges from the exhaust.

(3) EQUIPMENT DAMAGE. During operation the engine and exhaust pipes can get very hot. Allow sufficient time for the equipment to cool down before carrying out tasks such as wrapping the LFG in plastic sheet during the preparation for transport.

(4) EQUIPMENT DAMAGE. Operation of the AC Output Voltage Selector Switch (SW 1) when the generator is running underload will cause the inverter to trip out. Shut down must be carried out by the LFG operator to reset the inverter safety circuit.

(5) EQUIPMENT DAMAGE. The engine must not be operated with the oil level below the specified minimum level.

(6) EQUIPMENT DAMAGE. The fuel flow and return hoses provided are not to be lengthened or shortened under any circumstances without approval from the Design Authority.

(7) EQUIPMENT DAMAGE. The Low Oil Pressure Switch does not automatically shut down the engine. It only provides a warning via the illumination of the LED and, secondarily, the loss of output to any connected loads. Shut down must be carried out manually by the LFG operator.

(8) ENVIRONMENTAL HAZARD. It is illegal to pollute drains, sewers or the ground. Clean up all spilt fluids and/or lubricants. Used fluids and/or lubricants, filters and contaminated materials must be disposed of in accordance with local regulations. Use only authorized waste disposal sites.

(9) ENVIRONMENTAL HAZARD. There is NO requirement to place the LFG on a drip tray prior to operation; the design is such that it is capable of operating without such addition. Any contaminants found on the floor after use should be cleaned up as per local regulations and also investigated as this may indicate an issue with the LFGs operation.

ABBREVIATIONS AND SYMBOLS

ABBREVIATIONS

10 The following abbreviations are used in this category:

A	Ampere
AC	Alternating Current
AESP	Army Equipment Support Publication
Amdt	Amendment
BFPO	British Forces Post Office
Cat	Category
CES	Complete Equipment Schedule
Chap	Chapter
dB(A)	decibel (A scale)
DC	Direct Current
DE&S	Defence Equipment & Support
DIN	Defence Instructions and Notices
EMER	Electrical and Mechanical Engineering Regulations
FRACAS	Failure Reporting Analysis and Corrective Action System
JAMES	Joint Asset Management and Engineering Solutions
JSP	Joint Service Publication
kg	kilogramme
kW	kiloWatt
LE	Land Equipment
LFG	Lightweight Field Generator
MCB	Miniature Circuit Breaker

MoD	Ministry of Defence
No.	Number
OI	Operational Infrastructure
OSP	Operational Support Programme
Para	Paragraph
PT	Project Team
Qty	Quantity
RAF	Royal Air Force
Ref	Reference
SME	Subject Matter Expert
SEI	Service Engineering Instruction
SOP	Standard Operating Procedures
TDOL	Technical Documents On-Line
UK	United Kingdom
V	Volt
W	Watt

SYMBOLS

11 The following symbols are used in this category:

°	degree
-	minus
%	percent

CHAPTER 1

GENERAL DESCRIPTION

CONTENTS

INTRODUCTION

1 The Lightweight Field Generator (LFG) provides a portable source of 230/110 V AC and 28 V DC power with a 2 kW continuous output. The LFG is powered by a small diesel engine and is capable of running on AVTUR (F34) or Dieso (F54).

2 The engine can be started by a conventional recoil (rope) type starter or by an electric starter motor. The electric starter motor is powered from an external 24 V DC power source via an interconnecting cable.

OUTPUT CONTROL PANELS

AC output

3 The AC Output Control Panel is on the right hand side of the LFG (as viewed from the recoil starter end), Figure 1. The Controls and Connector locations are shown in Figure 1 and their functions are described in Table 1.

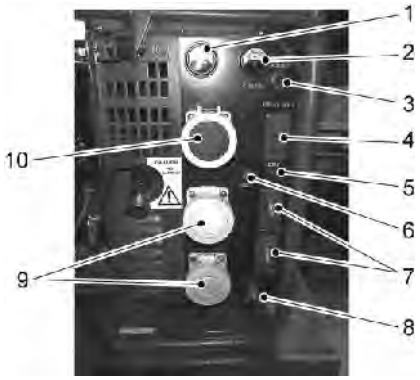

Fig 1 AC Control panel - controls and connectors

TABLE 1 AC CONTROL PANEL - CONTROLS AND CONNECTOR FUNCTIONS

Serial (1)	Control/Connector (2)	Figure Item Ref (3)	Function (4)
1	PERCENTAGE(%) LOAD	1	Displays total percentage (%) load on the generator
2	AC VOLTAGE METER	2	Displays AC output voltage
3	RCD TEST	3	Pushbutton, used to test the operation of the Residual Current Detector
4	230 V AC MCB 1	4	Resettable 11 A circuit breaker providing 230 V output overload protection
5	SW1 230 V / 110 V	6	AC Output Voltage Selector switch
6	MCB 3	5	Resettable 2 A circuit breaker providing overload protection for the AC control circuits
7	MCBs 2 & 7	7	Resettable 16 A circuit breakers providing individual output overload protection for the 110 V outputs
8	EARTH STUD	8	Stud for external earth
9	110 V Output Sockets (Qty 2)	9	Individual 110 V output sockets
10	230 V Output Socket (Qty 1)	10	Single 230 V output socket

DC output

4 The DC Output Control Panel is on the left hand side of the LFG (as viewed from the recoil starter end), Figure 2. The controls and connector locations are shown in Figure 2 and their functions are described in Table 2.

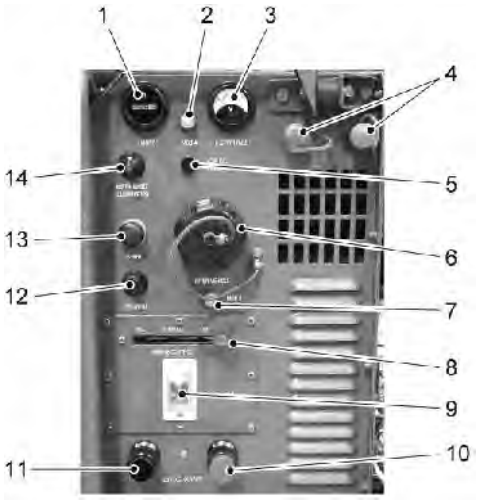

Fig 2 DC control panel - controls and connectors

TABLE 2 DC CONTROL PANEL - CONTROLS AND CONNECTOR FUNCTIONS

Serial (1)	Control/Connector (2)	Figure Item Ref (3)	Function (4)
1	HOURS RUN METER	1	Displays total hours run
2	MCB 4	2	Resettable 2A circuit breaker providing overload protection for the DC control circuits
3	DC VOLTAGE METER	3	Displays DC output voltage
4	JERRYCAN QUICK RELEASE CONNECTIONS	4	Provide for the connection of the jerrycan adaptor pipes
5	LOW OIL PRESSURE WARNING	5	Low oil pressure warning LED
6	INTERVEHICLE CONNECTOR SOCKET	6	Connects external DC source of power for electric starting of the LFG
7	MCB 5	7	Resettable 15A circuit breaker providing protection for the electric starter and pre-heater circuits
8	ENGINE SPEED CONTROL LEVER	8	Controls the speed of the engine
9	MCB 6	9	Resettable 80A circuit breaker providing overload protection for the DC output circuits
10	28V DC OUTPUT +ve (Red)	10	Positive DC output terminal
11	28V DC OUTPUT -ve (Black)	11	Negative DC output terminal
12	PRE HEAT	12	Engine glow plug pre-heater push button
13	START	13	Engine electric start push button
14	INSTRUMENT ILLUMINATION	14	Instrument panel lights ON/OFF switch

COMPETENT PERSONS

5 Competent persons are detailed in Table 3 - Power Equipment Competency Chart.

NOTE

The LFG 2 kW generator set is not included in this chart as it is considered to be part of the 'All Arms' equipment covered by the All Arms Training.

TABLE 3 POWER EQUIPMENT COMPETENCY CHART

	FEPS		VTEG		FEPDS		PMDS		LAPDS	
Level of Training	**Installation (Lay-down)**	**Complete a Power Plan, Inspect, Test Commission, Energise**	**Installation (Lay-down)**	**Complete a Power Plan, Inspect, Test Commission, Energise**	**Installation (Lay-down)**	**Complete a Power Plan, Inspect, Test Commission, Energise**	**Installation (Lay-down)**	**Complete a Power Plan, Inspect, Test Commission, Energise**	**Installation (Lay-down)**	**Complete a Power Plan, Inspect, Test Commission, Energise**
Royal Engineer Electrician Class 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Royal Engineer Electrician Class 2	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Royal Signals Electrician Class 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Royal Signals Electrician Class 2	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
REME Electrician Class 1	Yes	No	Yes	No	Yes	No	Yes	No	No	No
REME Electrician Class 2	Yes	No	Yes	No	Yes	No	Yes	No	No	No
RAF Gen Tech E	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Royal Marine TECH	Yes	No	Yes	No	Yes	No	Yes	No	No	No

Installation: Prepare the generator, lay out and connect the distribution equipment in accordance with the power plan.

Inspect: Check to ensure that all connections are secure and appropriate earth connections made.

Test: Test that power flows from the source to the final distribution points. Test breakers and RCD switches.

Commission: Certification that the power equipment has been installed, tested and commissioned in line with regulations.

Energise: Apply power across the distribution network.

PAGE INTENTIONALLY LEFT BLANK

CHAPTER 2

OPERATING PROCEDURES

CONTENTS

INTRODUCTION

1 This part of the Aide Memoire is intended to provide quick reference guidance on the Lightweight Field Generator (LFG) operating procedures.

2 More detailed operating information can be found in the AESP Cat 201.

3 This Chapter of the Aide Memoire provides the information necessary to enable personnel to prepare the LFG for use and to operate it efficiently.

4 The operator must be fully conversant with the equipment and the contents of Chapter 1 before attempting to operate the LFG.

PRE START ACTIVITIES

WARNING

MULTIPLE. REFER TO PRELIMS BEFORE USING GENERATOR.

CAUTION

MULTIPLE. Refer to Prelims before using generator.

5 Every time prior to using the LFG, the activities detailed in Table 1 must be carried out.

6 Remove the Acoustic Cover before carrying out these activities and re-fit prior to starting the LFG.

7 If any anomalies are identified when completing the Pre-Start and Starting activities then these should be reported through the equipment repair chain via the local chain of command.

TABLE 1 PRE START ACTIVITIES

Serial (1)	Activity (2)	Procedure (3)
1	Visual Inspection	Inspect all cables, connectors, hoses, hose couplings, linkages, anti vibration mounts, switches, sockets, covers, exhaust extension, attaching parts and earth point etc for signs of damage, distortion or loose fitting
		Visually inspect engine and hoses for leaks. Inspect all cables, connectors, hoses and hose couplings to be connected during the LFG operation for signs of damage. Damaged items are not to be connected to the LFG
2	Earthing	The LFG must be earthed, using the earth cable and spike provided
		Wetting the ground into which the earth spike is driven will improve electrical contact
3	Exhaust Extension	Connect exhaust extension then route it so as to discharge the exhaust outside of any confined spaces
4	Lubricating Oil Level	Check oil level. Replenish, if necessary. Refer to Cat 601.
5	Recoil Starter Cord	Inspect the starter cord for signs of wear or damage
		Inspect exit hole on the recoil starter assembly for signs of damage
6	Fuel Contamination	Check Fuel Tank Drain Pipe for fuel contamination (water presence), drain off water if present

STARTING THE LFG

WARNING

MULTIPLE. REFER TO PRELIMS BEFORE USING GENERATOR.

CAUTION

MULTIPLE. Refer to Prelims before using generator.

NOTE

If the AC Output Voltage Selector Switch (SW1) is inadvertently operated during running the inverter may trip off line. If this occurs, shut down and re-start the LFG to clear the trip condition.

8 To start the LFG, complete the procedure detailed within Table 2.

TABLE 2 STARTING PROCEDURES

Serial (1)	Activity (2)	Procedure (3)
1	Connect the Fuel Supply	Inspect jerrycan hoses and fuel filter for signs of damage
		Fill the jerrycan with either F54 Diesel or F34 AVTUR. Connect to the LFG fuel quick disconnect points
		Ensure integral fuel tank filler cap is securely closed and locked
2	Select Voltage Required	Ensure no output connectors or cables attached to the LFG, check main output CBs are open and select switch SW 1 to either 110VAC or 230VAC output voltage as required
3	Manual Start	Set the Engine Speed Control lever to "Max"
		Pull the starter handle gently until resistance is felt, release the cord back into the recoil starter, then pull smartly to start the LFG
		If engine fails to start after three attempts, carry out the Fault Finding procedures detailed in Cat 201
		Once started and running evenly, set Engine Speed Control to the "Normal" position. Allow engine to warm up for 1 minute
4	Electric Start	Connect 24V DC supply via the Inter-Vehicle Connector
		Set the throttle lever to "Max". In cold weather conditions hold Pre-Heat switch to Pre-Heat for 20 seconds then release
		Press Start button and hold until the engine fires, then release
		If the engine turns over but fails to start, release the Start button and try again
		If the engine fails to start after three attempts, carry out Fault Finding procedures detailed in Cat 201
		Once started and running evenly, set throttle to the "Normal" position. Allow engine to warm up for 1 minute
	Earth Leakage Unit Test	With the LFG running and no loads connected, close AC CBs. Press RCD push button and AC CBs should open. If they do not, carry out Fault Finding procedures detailed in Cat 201

CONNECTING LOADS

WARNING

MULTIPLE. REFER TO PRELIMS BEFORE USING GENERATOR.

CAUTION

MULTIPLE. Refer to Prelims before using generator.

9 To connect a load, refer to Prelims **WARNING (10)** then complete procedure detailed in Table 3.

TABLE 3 CONNECTING LOADS

Serial (1)	Activity (2)	Procedure (3)
1	AC Loads	The LFG has two speed settings "Max" and "Normal"; Select Engine Speed Control to "Max" when starting, then "Normal" once started
2		Prior to connecting a load, select either "Normal" for continuous loads of up to 2kW. or "Max" for loads demanding a 2.2 kW (Overload output condition)
3		Connect desired AC load to the correct output socket
4		Close the relevant AC CB(s)
5	DC Loads	NOTE Prior to connecting any DC loads, ensure that the LFG DC terminals are fitted correctly. As you look at the LFG DC Control Panel the Positive (+ ve) Red Terminal should be on the right and the Negative (- ve) Black Terminal should be on the left. If the DC terminals are not fitted according to this note, return the LFG unit to the manufacturer for repair. Connect DC load to DC output terminals ensuring correct polarity of connection
6		Close the DC CB

SHUT DOWN PROCEDURE

WARNING

MULTIPLE. REFER TO PRELIMS BEFORE USING GENERATOR.

CAUTION

MULTIPLE. Refer to Prelims before using generator.

10 To shut down LFG, refer to Prelims **WARNING (10)** then complete procedure detailed in Table 4.

TABLE 4 SHUT DOWN PROCEDURE

Serial (1)	Activity (2)	Procedure (3)
1	Shut Down	Switch off any connected equipment/load Trip the relevant load CBs Disconnect the load from the connector/terminals With the Engine Speed Control set to "Normal", allow the LFG to run off-load for 2 minutes to cool down Move the Engine Speed Control to "Off" to shut down the engine If the LFG is to be moved or not used again soon after shut down, disconnect the fuel hoses, earth lead and remove the earth spike from the ground

PAGE INTENTIONALLY LEFT BLANK

CHAPTER 3

OPERATOR MAINTENANCE

CONTENTS

INTRODUCTION

1 This part of the Aide Memoire is intended to provide quick reference guidance on the Lightweight Field Generator (LFG) Operator maintenance procedures.

2 This Chapter provides guidance for Operator personnel on the maintenance actions required to maintain the Lightweight Field Generator (LFG) in an operational condition.

3 All maintenance tasks that are outside those detailed at Tables 2 and 3 must be carried out by suitably qualified personnel in accordance with the relevant maintenance schedule/repair procedure.

WARNINGS

4 Refer to prelims before using or commencing maintenance actions on the generator.

CAUTIONS

5 Refer to Prelims before using or commencing maintenance actions on the generator

FAULT FINDING

6 Fault Finding procedures are detailed in Cat 201.

MAINTENANCE

Operator level routine maintenance schedule

7 Routine Operator maintenance tasks are restricted to those listed in Table 1 and must be carried out at the intervals specified or at any time that a fault is suspected.

8 Detailed procedure information is contained in Cat 201.

TABLE 1 OPERATOR ROUTINE MAINTENANCE SCHEDULE

Serial (1)	Maintenance Task (2)	Periodicity (3)
1	Carry out physical inspection	Prior to use
2	Check fuel tank drain pipe for fuel contamination (water presence), drain off water if present	Prior to use
3	Oil level - check and top-up	Prior to use and every 12 hours
4	Engine oil - replace	Every 250 hours or 12 months (whichever occurs first)
5	Oil filter strainer - clean/replace only if damaged	Every 1000 hours or 24 months (whichever occurs first)
6	Check air inlet and outlet vents are not blocked	Prior to use and every 12 hours
7	Fuel filter - replace	Every 500 hours or 12 months (whichever occurs first)

Operator level unscheduled maintenance

9 Unscheduled Operator maintenance tasks are restricted to those listed in Table 3 and must be carried out whenever a fault is identified or suspected or if an item is physically damaged or lost. For detailed procedures refer to Cat 201.

10 If, for any reason, it is necessary to revise this task list, then the revision and authorisation must be carried out by appropriately qualified personnel.

TABLE 2 OPERATOR UNSCHEDULED MAINTENANCE TASKS

Serial (1)	Maintenance Task (2)	Periodicity (3)
1	Check engine oil level	)
2	Check fuel level	)
3	Replace air filter	)
4	Replace jerrycan adaptor and hoses	)
5	Replace earth spike	) As required
6	Replace earth lead 2m	)

(continued)

TABLE 3 OPERATOR UNSCHEDULED MAINTENANCE TASKS (continued)

Serial (1)	Maintenance Task (2)	Periodicity (3)
7	Replace exhaust extension	)
8	Replace acoustic cover	) As required
9	Replace accessories bag	)

LEVEL 2 MAINTENANCE

11 In addition to the maintenance tasks identified in Tables 1 and 2, the Operator must be aware that there are a series of Level 2 maintenance tasks to be completed every 250 running hours.

12 Details of the tasks and the responsibility for their completion are provided within the AESP Cat 601.

PAGE INTENTIONALLY LEFT BLANK

CHAPTER 4

LFG TRANSPORTATION

CONTENTS

INTRODUCTION

1 This Chapter provides guidance for Operator personnel on preparation for and recovery from transportation.

WARNINGS

2 Refer to Prelims before using or handling the generator.

CAUTIONS

3 Refer to Prelims before using or handling the generator.

TRANSPORTATION - PREPARATION AND RECOVERY

4 The tasks required to prepare the LFG for transportation and to recover it to operating condition post transportation are detailed in Table 1.

TABLE 1 LFG TRANSPORTATION - PREPARATION AND RECOVERY

Serial (1)	Maintenance Task (2)	Periodicity (3)
	PREPARATION	
	Normal Operating Conditions	
1	Disconnect jerrycan and drain engine fuel tank	
2	Fit and secure fuel tank filler cap and fuel line blanking caps	
3	Secure all covers	Whenever LFG is to be transported from one location to another
4	Wrap and seal in plastic sheet, if required (dependent on conditions)	
	Battlefield Conditions	
5	Disconnect jerrycan	Whenever LFG is to be moved on the Battlefield
6	Fit and secure fuel tank filler cap and fuel line blanking caps	
	Air Transport	
7	Prepare for air transport in accordance with JSP 335, Part II, Section 9, Leaflet 6	Prior to transportation by air
	RECOVERY POST TRANSPORTATION	
	Normal Operating Conditions	
8	Remove plastic sheeting (if used)	
9	Remove fuel line blanking caps and connect jerrycan. Fill the onboard fuel tank to approximately 2/3 full	After transportation from one location to another
	Battlefield Conditions	
10	Remove fuel line blanking caps and connect jerrycan. Fill the onboard fuel tank to approximately 2/3 full	After movement on the Battlefield
	Air Transport	
11	Prepare in accordance with Cat 201	After air transport

ARMY EQUIPMENT AND SUPPORT PUBLICATION (AESP) AND ELECTRICAL AND MECHANICAL ENGINEERING REGULATIONS (EMER) - FORM 10

*AESP/EMER NUMBER:		*IS THIS SAFETY RELATED?	Yes ☐	No ☐

Send Form 10 via the Email or Post address. However email is preferred.	Tel	[redacted]
Email: [redacted] (To email this form send as a copy to the email address above)	Post to	Form 10 Cell FRACAS BFPO 794

ORIGINATORS DETAILS			
*Address		*Name	
		Rank / Grade	
		*Phone	
		*Senders Reference	
		*Date Raised	
* E-Mail		Eqpt Asset Code (if applicable)	

AESP/EMER DETAILS							
*Full Title of AESP/EMER (Not the AESP/EMER Number)							
*Edition	*Amendment	*Chapter	*Page	*Paragraph	Figure	Instruction	Other

*Comments: If additional information is to be supplied, please e-mail with the Form 10 as separate attachments.

FORM 10 CELL USE			
*Date Received		*Form 10 Reference	
*Date Sent to PT / SME		Problem Report	

PROJECT TEAM / SME RESPONSE TO COMMENTS:			
Project Team (PT) / SME		*Sponsors Name	
*Phone		Rank / Grade	
*Email		*Date Received	

*The following action is to be carried out:	Mark:		Mark:
Issue a revised/amended AESP/EMER:		Under investigation:	
Incorporate comment(s) in future amendments:		No action required:	

Remarks:

SPONSOR/PT FINAL CLOSURE STEPS	Mark:	Form 10 Cell notified of Date action taken	Date:
Form 10 Originator notified of the action taken:			

* Mandatory Fields for Originator

* Mandatory Fields for Sponsor.

ARMY EQUIPMENT AND SUPPORT PUBLICATION (AESP) AND ELECTRICAL AND MECHANICAL ENGINEERING REGULATIONS (EMER) - FORM 10

Form 10 Guidance

Form 10 can be found within the AESP or, as a template, from the JAMES Portal (Hot Topic – Forms) & TDOL (FORM10).

Originator responsibility is to enter the following details marked *:

- In the **AESP/EMER Number:** cell enter the full document number e.g. AESP 1256-I-400-711.
- Is this **Safety Related**? – select Yes or No as appropriate.
- Originator Details:
  - Full address Inc Post Code or BFPO NO.
  - Originator email address
  - Senders Reference – that must be unique.
- AESP Details shall enter the following details:
  - The Full Title of AESP/EMER should not include the AESP/EMER Number
  - Enter details in all other mandatory fields marked *.
  - Additional information relating to the Comments (AESP copies, additional text details or photographs) should be attached to the Email at the same time.
- Originator makes up the Form 10 & Sends to Form 10 cell via
  - Post to **Form 10 Cell, FRACAS, BFPO 794** address.
  - Email to [redacted]
  - **Any AESP that holds a Security marking higher than 'Restricted' should be securely circulated.**

FORM 10 CELL responsibilities:

The Form 10 Cell enters:

- Date Received
- Form 10 Reference
- Date sent to Sponsor
- Register all Form 10 details in the MOSS Form 10 Tracker.

Sponsor Responsibility

The Sponsor will:

- Enter their name, email address & phone contact details.
- Enter Date Received
- Enter Details in the non-mandatory field as & when required.
- Acknowledge receipt of Form 10, within 5 working days, by email to Form 10 Cell.
- Assess the contents of comments and details received.
- Mark the relevant Action box and fill out the Remarks field.
- Enter date when the Form 10 is returned to Form 10 Cell.
- Email copy of completed Form 10, within 6 weeks, to the Form 10 Cell and Originator.

Form 10 Cell on receipt will:

- Record final stage of the Form 10 into the MOSS Form 10 Tracker.
- Close off the Form 10 and archive.

* Mandatory Fields for Originator

* Mandatory Fields for Sponsor.