



Ministry of Defence

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

6115-G-710-101 PURPOSE AND PLANNING INFORMATION

Issue No. 002

Amendment No. 003

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Operational Infrastructure

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1	INCORPORATED	Feb 15
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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:

<u>Reference</u>	<u>Title</u>
AESP 6150-A-100-201 SEI 14411	Earthing and Earthing Protection Safety Precautions for Electrical Equipment

WARNINGS AND CAUTIONS

WARNINGS

6 There are no WARNINGS applicable to this category.

CAUTIONS

7 There are no CAUTIONS applicable to this category.

ABBREVIATIONS AND SYMBOLS

ABBREVIATIONS

8 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
CES	Complete Equipment Schedule
dB(A)	decibel (A scale)
DC	Direct Current
DE&S	Defence Equipment and Support
DIN	Defence Instructions and Notices
e.g.	for example
EMER	Electrical and Mechanical Engineering Regulations
Eqpt	Equipment
FRACAS	Failure Reporting Analysis and Corrective Action System
Hz	Hertz
JAMES	Joint Asset Management and Engineering Solutions
kg	kilogramme
kW	kilowatt
LE	Land Equipment
LFG	Lightweight Field Generator
m	metre
mA	milliampere
max	maximum
MCB	Miniature Circuit Breaker
mm	millimetre
MoD	Ministry of Defence
No.	Number
OI	Operational Infrastructure
OSP	Operational Support Programme
Para	Paragraph
PT	Project Team
RAF	Royal Air Force
Ref	Reference

SEI	Service Engineering Instruction
SME	Subject Matter Expert
SOP	Standard Operating Procedures
TDOL	Technical Documents On-Line
Tel	Telephone
UK	United Kingdom
V	Volt

SYMBOLS

9 The following symbols are used in this category:

-	minus
±	plus or minus
%	percent
+	plus



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PURPOSE AND PLANNING INFORMATION

EQUIPMENT IDENTITY

1 The equipment identity data is as follows:

1.1	Equipment designation:	Generator Set, Diesel Engine Driven, 2kW, 230V/110V AC/28VDC (Drumgrange Ltd)
1.2	Asset Code:	JR 8817 3500
1.3	Equipment Identification Number/NSN:	6115-99-908-6784
1.4	Original Manufacturer:	Drumgrange Ltd
1.5	Contract Number:	BFI C1/59

ROLE

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

BRIEF DESCRIPTION

3 The LFG is housed in a tubular steel frame, with a sound attenuating cover covering the engine, and a sheet aluminium box housing the inverters, rectifiers and control system. Instrumentation is provided for AC Voltage, DC Voltage, Total Percentage Load and Hours Run. Warnings are provided for low oil and earth fault. Starting is by either a recoil (rope) starter or by an integral electric starter motor powered from an external source. The output is produced from a permanent magnet generator, with an inverter and regulator to give 230 VAC, 110 VAC and 28 VDC outputs, all outputs feature MCB over-current protection, and the ac outputs feature 30 mA earth leakage protection.

PHYSICAL DATA

4 The main physical parameters of the assembled equipment are as follows:

4.1	Overall dimensions:	600 mm x 500 mm x 540 mm
4.2	Weight:	76 kg (without fuel)
4.3	Internal Fuel Tank Capacity:	3.0 Litres
4.4	Oil Capacity:	0.9 Litres

PERFORMANCE

5 The LFG performance data is given in Table 1.

**TABLE 1 PERFORMANCE DATA**

Serial (1)	Item (2)	Performance Data (3)
1	Noise Level (Max)	95dB(A) at 1m
2	Electrical Power Output (Continuous)	2 kW
3	Electrical Power Output (Maximum)	2.2 kW

FUEL REQUIREMENTS

6 The fuel requirement for the LFG is either F54 Dieso or F34 AVTUR.

NOTE

A full 20 litre jerry can will allow for approximately 24 hours running at 2 kW. It is not recommended to run the LFG off load for any period of time.

ENVIRONMENTAL DATA

7 The environmental data for the LFG is as follows:

7.1 The LFG is designed for continuous operation in weather conditions ranging from arctic to tropical.

7.2 The engine is capable of starting and running in environments within the range A1 - C2.

7.3 The operational altitude of the LFG is from sea level to 2500 m.

7.4 Storage of the LFG would normally be within a general closed stores environment with the temperature kept above zero degrees Centigrade. However, providing it is correctly protected, it is possible to store the engine outside but under cover for a maximum of one year. Long term storage procedures are detailed in Cat 522.

TRANSPORTATION DATA**CAUTION**

MAGNETIC HAZARD. The LFG contains a permanent magnet generator, care must be taken not to position it in the vicinity of equipment which may be susceptible to a strong magnetic field.

8 The LFG is suitable for transportation by land, sea or air. However, it contains a powerful permanent magnet generator and care must be taken not to position it in the vicinity of equipment which may be susceptible to a strong magnetic field.

9 The LFG is suitable for normal parachute air drop. JATEU 135/403/AD refers.

MANNING REQUIREMENTS

10 The manning requirements for the LFG are as follows:

10.1 One person can start and operate the LFG.

10.2 The generator weighs 76 kg net and 88 kg gross (including Fuel and CES) which is far in excess of a single man lift. 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). Based on the results of these assessments and the local availability of suitable Handling Equipment, the number of persons required to handle the LFG will be determined.

ELECTRICAL DATA

11 The LFG electrical data is given in Table 2.

TABLE 2 ELECTRICAL DATA

Serial (1)	Item (2)	Data (3)
1	AC Output (at 50 Hz)	1 x 230 VAC \pm +1-5% 2 x 110 VAC \pm +/-5%
2	DC Output	1 x 28 VDC
3	Power	2.0 kW Continuous 2.2 kW Overload (for a maximum duration of 1 hour in every 10 hours operation)
4	Circuit Breakers	230 VAC, 11 A 2 x 110 VAC, 23A16 A 28 VDC, 80 A AC Control circuits, 2 A DC Control circuits, 2 A Starter & Heater circuit 24 VDC, 15 A



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**ARMY EQUIPMENT AND SUPPORT PUBLICATION (AESP) AND ELECTRICAL AND
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Form 10 Guidance

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