

**BY ORDER OF THE COMMANDER
AIR COMBAT COMMAND**



AIR FORCE INSTRUCTION 21-103

**AIR COMBAT COMMAND
Supplement**

ADDENDUM_X

16 OCTOBER 2013

Maintenance

**EQUIPMENT INVENTORY, STATUS, AND
UTILIZATION REPORTING SYSTEM/MQ-1
MINIMUM ESSENTIAL SUBSYSTEM LIST
(MESL)**

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This MESL compliments AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*. It applies to all MQ-1 Air Combat Command (ACC) units. This addendum does not apply to Air National Guard (ANG) or Air Force Reserve Command (AFRC) units and members. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF Form 847, *Recommendation for Change of Publication*, route to HQ ACC/A4CQ, 402 Helms St, Bldg 801, Langley AFB, VA 23665-2791, and send information copies to the applicable OCR. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). This publication may not be supplemented or further implemented/extended.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. This revision updates MQ-1L to MQ-1B, notes pages of all the tables, MQ-1B changed WUC in line 5 to 31000 to accommodate the VPP and the VPP servo, MQ-1B combined lines 17 and 18 and changed WUC to 68000 and MD-1D added note number 2 to item 12.

1. General. The MESL is the basis of status reporting IAW AFI 21-103. MESLs lay the ground work for reporting the status of aircraft, ground control station and SATCOM Suite availability. They list the minimum essential systems and subsystems that must work on an aircraft, ground control station and SATCOM Suite for it to perform specifically assigned unit wartime, training, test or other missions. Mission Ready Available (MRA) is used in readiness Status of Resources and Training Systems (SORTS) reporting only and denotes Mission Capable (MC) aircraft capable of being configured for a contingency mission in accordance with COMACC OMNIBUS Plan.

1.1. Qualifying notes are used to define aircraft, ground control stations and SATCOM Suite expectations and help explain complex degraded mission systems such as suspension equipment.

1.2. Aircraft status for generation and deployment: The goal is to generate or deploy Fully Mission Capable (FMC) aircraft, ground control stations and SATCOM suites recognizing status actually achieved may be less than FMC. A Not Mission Capable (NMC) aircraft may be deployed provided it is safe for flight and can be configured and generated to Mission Ready Available (MRA) status at an employment site.

1.3. All ACC units will generate, or deploy and regenerate, using ACC MESLs. Major Command (MAJCOM) differences in MESLs are acknowledged. Upon actual deployment to another MAJCOM theater, the gaining MAJCOM has the responsibility to resource and specify the unit's requirements and resource the differences in support/mission equipment.

1.4. **Reading the MESL.** A MESL is read by comparing the systems stated by work unit code (WUC) against the Fully Mission Capable (FSL) and all applicable Basic Systems Lists (BSLs) across the page (see **Table 1** below). Each unit's Design Operational Capability (DOC) statement determines applicability of BSL columns. The aircraft MESLs incorporate all ACC assigned aircraft; and therefore, it is important to compare only those columns listed in the MESL which are applicable to the unit's assigned aircraft. For example, units with CC (combat) coded aircraft would determine and report status using only the FSL and BSL columns related to their DOC statement. Units with TF (training) coded aircraft would determine and report status using only the FSL and TNG columns, and units with CB (test) coded aircraft would determine and report status using only the FSL and TST columns. Units with multiple coded aircraft will ensure status is reported using the MESL columns appropriate to the individual aircraft assignment code.

Table 1. MQ-1B Predator UAV.

NO.	WUC	SYSTEM/SUBSYSTEM	FSL	BSL					
				RT	HK	KS	ISR	TST	TNG
1.	11000	Airframe	X	X	X	X	X	X	X
2.	13000	Landing Gear	X	X	X	X	X	X	X
3.	14000	Flight Controls	X	X	X	X	X	X	X
4.	21000	Reciprocating Power Plant	X	X	X	X	X	X	X
5.	31000	Propeller Assy, Variable Pitch	X	X	X	X	X	X	X
6.	41000	Ice Removal/Detection System	X	X	X	X	X	X	X
7.	42000	Electrical Power Supply	X	X	X	X	X	X	X
8.	44000	Lighting Systems	X2						
9.	46000	Fuel System	X	X	X	X	X	X	X
10.	51000	Flight Instrumentation	X	X	X	X	X	X	X
11.	54000	Telemetry/Data Link	X	X	X	X	X	X	X
12.	54B00	Remote Video System (C band antennae)	X1	X1	X1	X1		X1	X1
13.	57000	Integrated Guidance And Flight Control	X	X	X	X	X	X	X
14.	62000	VHF Communications System	X2	X1,2	X1,2	X1,2	X1,2	X1,2	X1,2
15.	63000	UHF Communication System	X2	X1,2	X1,2	X1,2	X1,2	X1,2	X1,2
16.	65000	IFF System	X	X	X	X	X	X	X
17.	68000	C band antennae, KU band and Satellite Antenna Unit	X1,2						
18.	74000	Fire Control	X1,3	X1,3	X3	X3	X1,3	X1,3	X1,3
19.	75000	Weapons Delivery	X1	X1	X	X	X1	X1	X1
20.	77A00	MQ-1 Sensor Payload, Electro Optical/Infra-red	X	X	X	X	X	X	X2
21.	77B00	Video Data System	X	X	X	X	X	X	X
22.	80A00	System Misc Mission Equipment	X1						
QUALIFYING NOTES:									
<ol style="list-style-type: none"> 1. Specific system mission equipment must be operational and readily available as mission dictates (Air Handler, GMESH, etc). 2. As required by AFI 11-202V3, <i>General Flight Rules</i>. 3. The MQ-1 will have either the SAR electronic assembly or AGM-114 Electronics Unit installed depending on mission. 									
Note: In situations where an MQ-1 is in PJ--Enroute or PR--Flyable storage status, it will be considered MC solely for the purpose of determining status.									

Table 2. MD-1A Mobile/Fixed Ground Control Station (GCS); MD-1B Launch and Recovery Ground Control Station (LRGCS).

NO.	WUC	SYSTEM/SUBSYSTEM	FSL	BSL					
				RT	HK	KS	ISR	TST	TNG
1.	10000	Ground Control Station	X	X	X	X	X	X	X
2.	10B00	Ground Data Terminal (GDT) (4 ft)	X1	X1	X1	X1	X1	X1	X1
3.	10C00	Control Bay Assembly	X	X	X	X	X	X	X
4.	10F00	Environmental Conditioning Units (ECU).	X5	X5	X5	X5	X5	X5	X5
5.	10G00	Electrical Systems	X	X	X	X	X	X	X
6.	10H00	Comm System/Uninterruptible Power Supply	X	X	X	X	X	X	X
7.	10K00	Trailer Chassis and Equipment	X6						
8.	10L00	KU Link Interface Group	X4	X4	X4	X4	X4	X4	X4
9.	10N00	ESD Meta Data	X	X	X	X	X	X	X
10.	10S00	Specific mission Equipment (e.g. LynxSAR, AirHandler)	X3	X3	X3	X3	X3	X3	X3
11.	10R00	Multi-Function Workstation	X2	X2	X2	X2	X2	X2	X2
12.	tbd	LRE Back-up generator	X7	X7	X7	X7	X7	X7	X7
QUALIFYING NOTES:									
<p>1. Required for LRE and LOS operations only</p> <p>2. Minimum of one serviceable MFW is required for FMC.</p> <p>3. Specific system mission equipment must be operational and readily available as mission dictates (Air Handler, GMESH, etc). Report PMC if installed equipment is not functioning.</p> <p>4. Required for RSO and BLOS operations only.</p> <p>5. Not required if in an environmentally controlled facility or environmental conditions are within Technical Order limit. For FGCS, note applies to FSL columns. For MGCS, note applies to BSL columns</p> <p>6. Applies to MGCS only</p> <p>7. GCSs that have built-in backup power (example, shore power) are exempt from having their own dedicated generator</p>									
<p>Note: In situations where a GCS is in PJ--Enroute or PR--Flyable storage status, it will be considered MC solely for the purpose of determining status.</p>									

Table 3. MD-1C Containerized Dual Control Station (CDCS).

NO.	WUC	SYSTEM/SUBSYSTEM	FSL	BSL					
				RT	HK	KS	ISR	TST	TNG
1.	10000	Control Station For RQ-1 & MQ-1 AV	X	X	X	X	X	X	X
2.	10A00	Portable GDT	X	X	X	X	X	X	X
3.	10B00	GDT/Antenna Assy (4 ft)	X	X	X	X	X	X	X
4.	10C00	Portable GCS Assy, PGCS	X	X	X	X	X	X	X
5.	10D00	Center Equipment Bay, PGCS	X	X	X	X	X	X	X
6.	10F00	Environmental Conditioning Units (ECU)	X	X	X	X	X	X	X
7.	10G00	Main I/O Box Assy, PGCS	X	X	X	X	X	X	X
Note: In situations where a CDCS is in PJ--Enroute or PR--Flyable storage status, it will be considered MC solely for the purpose of determining status.									

GILMARY M. HOSTAGE, General, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 11-202V3, *General Flight Rules*, 22 October 2010

AFI 21-103, *Equipment Inventory, Status and Utilization Reporting*, 26 January 2012

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

ACC—Air Combat Command

ANG—Air National Guard

AFRC—Air Force Reserve Command

BSL—Basic Systems List

BLOS—Beyond Line of Sight

CDCS—Containerized Dual Control Station

CMA—Control Monitor and Alarm

DOC—Design Operational Capability

ECU—Environmental Control Unit

FMC—Fully Mission Capable

FSL—Full Systems List

GCS—Ground Control Station

GDL—Ground Data Link

GDT—Ground Data Terminal

HPA—High Power Amplifier

HK—Hunter Killer

HQ—Headquarters

IAW—In Accordance With

ISR—Intelligence, Surveillance, and Reconnaissance

KS—Killer Scout

LOS—Line of Sight

LNA—Low Noise Amplifier

LRE—Launch and Recovery Element

LRGCS—Launch and Recover Ground Control Station

MAC—Multiple Aircraft Control

MAJCOM—Major Command

MC—Mission Capable

MESL—Minimum Essential Subsystem List

MRA—Mission Ready Available

NGB—National Guard Bureau

NMC—Not Mission Capable

PGCS—Portable Ground Control Station

PPSL—Predator Primary SATCOM Link

RSO—Remote Split Operations

RT—Reconnaissance, Tactical

SAR—Synthetic Aperture Radar

SORT—Status of Resources and Training System

SPMA—Signal Processor Modem Assembly

TNG—Training

TST—Time Sensitive Targeting

WUC—Work Unit Code