

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



AIR FORCE INSTRUCTION 21-103

**AIR COMBAT COMMAND
Supplement**

Addendum B

27 MAY 2015

Maintenance

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

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RELEASABILITY: There are no releasability restrictions on this publication.

OPR: HQ ACC/A4V1

Certified by: HQ ACC/A4V
(Thomas J. McCarthy)

Supersedes: AFI21-
103_ACCSUP_ADD_B, 5
October 2009

Pages: 8

This MESL compliments AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*. This Addendum applies to all ACC, Air National Guard (ANG) and Air Force Reserve Command (AFRC) units and members operating or maintaining USAF B-1B bomber aircraft. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). Contact supporting records managers as required. Send recommended changes or comments on AF Form 847, *Recommendation for Change of Publication*, to Headquarters (HQ) ACC/A4F1, 130 Douglas St., Suite 210, Langley AFB VA 23665-2791, and send information copies to the applicable Office of Collateral Responsibility (OCR).

SUMMARY OF CHANGES

This publication has been substantially revised and must be completely reviewed. Modifications have been accomplished to increase capability and overcome obsolescence issues

such as, TCTO 1B-1B-1364, *Installation of Digital Communication Improvement*, and TCTO 1B-1B-1378, *Installation of Laptop Controlled Targeting Pod*. Also line items were added to further clarify aircraft lighting requirements, explosive devices/components and electronic countermeasures (ECM) systems.

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 availability. They list the minimum essential systems and subsystems that must work on an aircraft for it to perform specifically assigned unit wartime, training, test or other missions. Mission Ready Available (MRA) is used in Status of Resources and Training 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 exceptions 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, recognizing status actually achieved may be less than FMC. A Not Mission Capable aircraft may be deployed provided it is safe for flight and can be configured and generated to MRA status at an employment site.

1.3. All ACC units will generate, or deploy and regenerate, using ACC MESLs. Major Command 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 Full System List (FSL) and all applicable Basic System Lists (BSLs) across the page. Each unit's Design Operational Capability (DOC) statement determines applicability of BSL columns. The aircraft MESLs incorporate all ACC assigned aircraft; 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 (wartime) 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 Training (TNG) columns, and units with CB (test) coded aircraft would determine and report status using only the FSL and Test (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. B-1B MESL.

No.	WUC	SYSTEM/SUBSYSTEM	FSL	BSL		
				ASC	TNG*	TST**
1.	11	Airframe	X	X	X	X
2.	12F	Survival Equipment	X	X	X	X
3.	13	Landing Gear	X	X	X	X
4.	14	Flight Controls	X	X	X	X
5.	16	Ejection System	X	X	X	X
6.	19	Engine Starting 1, 2, 3, 4	X	X	X	X
7.	23	Power Plant	X	X	X	X
8.	24	APU	X	X1	X1	X1
9.	27	Accessory Drive Gearboxes	X	X	X	X
10.	39C	Pitot and Static	X	X	X	X
11.	39D	Window and Windshield Anti-Ice Defog	X2	X2	X2	X2
12.	39F	Alternate Anti-Ice/Defog	X	X	X	X
13.	41	Air Conditioning and Pressurization	X	X	X	X
14.	42	Electric Power Supply	X	X	X	X
15.	43	EMUX	X	X	X	X
16.	44AB	Panel and Instrument Lighting	X	X	X	X
17.	44AC	Annunciator Lighting	X	X	X	X
18.	44BC	Aft Station Annunciator Lighting	X	X4	X4	X4
19.	44CC	NVIS	X	X5	X5	X5
20.	44DA	Landing Lights	X	X3	X3	X3
21.	44DB	Taxi Lights	X	X3	X3	X3
22.	44DC	Anti-Collision Lights	X	X	X	X
23.	44DD	Position Lights	X10	X10	X10	X10
24.	44DE	Aerial Refuel/Wing Inspection Lights	X	X5	X5	X5
25.	44EA	Emergency Lighting	X	X	X	X
26.	45	Hydraulic	X	X	X	X

27.	46	Fuel System	X	X	X	X
28.	47	Oxygen System	X	X	X	X
29.	48CA	IDARS	X	X	X	X
30.	48CD	DDR	X	X5	X5	X5
31.	48E	Central Warning System	X	X	X	X
32.	49	Fire Protection	X	X7	X7	X7
33.	51	Electronic Multipurpose Components	X	X	X	X
34.	52A	AFCS	X	X	X	X
35.	52BA	Structural Mode Control System	X	X5	X5	X5
36.	55	CITS	X	X	X	X
37.	59AA	HF	X	X8	X8	X8
38.	59B	VHF and UHF Communications	X	X8, 9	X8, 9	X8, 9
39.	59BC	DCI (unless IBS modified)	X	X5	X5	X5
40.	59EA	Interphone	X	X	X	X
41.	73A	Navigation, Flight Environment	X	X	X	X
42.	73B	Navigation, Attitude and Direction	X	X	X	X
43.	73C	Navigation, Landing and Taxi Aids	X	X	X	X
44.	73DA	Nav, Independent and Position Determining	X	X	X	X
45.	73DB	Navigation, Doppler Radar	X	X	X	X
46.	73DC	Navigation, Offensive Radar (ORS)	X	X11	X11	X11
47.	73E	Nav, Dependent Position Determining	X	X12	X12	X12
48.	73ED	DCI, Terminal Data Link	X	X5	X5	X5
49.	73FE	Avionics Control Unit Complex	X	X13	X13	X13
50.	73FH	Navigation, Multi-Function Displays	X	X	X	X
51.	74	Pod, Sniper (if installed)	X5	X5	X5	X5
52.	75CE	LCTP Pylon (if installed)	X5	X5	X5	X5
53.	75JA	Weapons Bays	X5, 6	X5, 6	X5, 6	X5, 6
54.	76AAJ	Electronic Warfare, ECM (Band 5	X	X	X5	X5

		Aft)				
55.	76AB	Electronic Warfare, ECM (Band 6)	X	X	X5	X5
56.	76ABD	Electronic Warfare, ECM (Band 6 RFS)	X	X	X5	X5
57.	76AC	Electronic Warfare, ECM (Band 7)	X	X	X5	X5
58.	76ACE	Electronic Warfare, ECM (Band 7)	X	X	X5	X5
59.	76ADE	Electronic Warfare, ECM (Band 8 RFS)	X	X	X5	X5
60.	76AE	Towed Decoy Subsystem	X	X	X5, 14	X5
61.	76AJ	Electronic Warfare, ECM (Common Active Equipment)	X	X	X5	X5
62.	76C	Electronic Warfare, Passive	X	X	X5	X5
63.	76D	Electronic Warfare, Detection	X	X	X5	X5
64.	76G	Electronic Warfare, Defensive Mgt	X	X	X5	X5
65.	76H	Electronic Warfare, Warning (TWF)	X	X	X5	X5
66.	82	IBS Integrated Avionics Architecture FIDL / MIDS R/T (if modified)	X	X	X	X
67.	97	Explosive Devices and Components (Egress)	X	X	X	X
* TF Coded Aircraft						
** CB Coded Aircraft						
QUALIFYING NOTES:						
1. Minimum One APU required for PMC						
2. Must have Left and Right Side Window Defog						
3. Must have one operation Landing Light IAW AFI 11-202V3_ACCSUP_1 paragraph 5.20.5						
4. AFI 11-2B-1V3 and Local Sup Requirements for Flight (Annunciator Panels at all Stations, Aft Flood or Spot for Night or IMC TF Ops)						
5. PMC unless required for a specific mission.						
6. Three operational weapons bays for FMC, two operational weapons bays for PMC. Operational bays must have RLDS, spoiler, and doors operational in primary OR alternate, one operational door sensor per position per door						
7. Fire Detection Loop A or B required in each Engine, Overwing Fairing and ADS Bay for PMC						

8. For PMC, SATCOM, either AN/ASC-19 or ARC-210 Voice SATCOM, required for Long Range Communications when HF is inoperative (HF required for overseas ops)
9. ARC-210 Radio (UHF, VHF, and Voice SATCOM functionality) with KY-100 and the ARC-164 Radio with KY-58 required for FMC. In all cases if only one radio with Secure Voice Capability is available, then the HF must be operational for PMC. At least one radio must have Secure Voice (Either KY-100 or KY-58) capability for PMC.
10. Glove lights and wing tip lights must be operational between sunset and sunrise IAW AFI 11-202V3_ACCSUP, paragraph 5.20.3
11. One Channel operational required
12. Must have GPS, IFF and Air-to-Air TACAN
13. One of two CACUs, one of two TFACUs, and one of two RDTs operational required
14. Only the CDU must be operational with training mode functional for FMC

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Commander

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

AFI 11-2B-1V2, *B-1 Aircrew Evaluation Criteria*, 13 June 2008

AFI 11-202V2, *Aircrew Standardization/Evaluation Program*, 13 September 2010

AFI 11-202V3_ACCSUP_1, *General Flight Rules*, 28 November 2012

AFI 11-2B-1V3, *B-1 Operations Procedures*, 7 January 2011

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

TCTO 1B-1B-1364, *Installation of Digital Communications Improvement (DCI) Kit, PN L0501015, B-1 Aircraft*

TCTO 1B-1B-1378, *Installation of Laptop Controlled Targeting Pod (LCTP) Kit, PN L0501020-010, B-1 Aircraft*

Abbreviations and Acronyms

ACC—Air Combat Command

AFCS—Automatic Flight Control System

APU—Auxiliary Power Unit

ASC—Air to Surface Conventional

BSL—Basic Systems Lists

CITS—Central Integrated Test System

CDU—Countermeasures Dispensing Unit

DCI—Digital Communications Improvement

DOC—Design Operational Capability

ECM—Electronic Countermeasures

EMUX—Electrical Multiplexing

FMC—Fully Mission Capable

FSL—Full System List

HF—High Frequency

HQ—Headquarters

IDARS—Integrated Data Acquisition and Recording System

IBS—Integrated Battle Stations

IAW—In Accordance With

LCTP—Laptop Controlled Targeting Pod

MAJCOM—Major Command

MC—Mission Capable

MESL—Mission Essential Subsystem List

MRA—Mission Ready Available

NVIS—Night Vision Instrument System

OCR—Office of Coordinating Responsibility

TNG—Training

TST—Test

WUC—Work Unit Code