BY ORDER OF THE COMMANDER
AIR FOR MATERIEL COMMAND

AIR FORCE INSTRUCTION 21-103

AIR FORCE MATERIEL COMMAND
Supplement
ADDENDUM_N

19 OCTOBER 2011
Certified Current On 8 September 2015

Maintenance

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

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms/IMTs are available for downloading or ordering on the e-publishing website at **www.e-Publishing.af.mil.**

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: HQ AFCM/A4MM

Certified by: HQ AFMC/A4M
(Col Rosemary L. Thorne)
Pages: 4

This instruction implements AFPD 21-1, ***Air and Space Maintenance***, AFI 21-101, ***Aircraft and Equipment Maintenance Management***, and AFI 21-103, ***Equipment Inventory, Status and Utilization Reporting***. It establishes policy and assigns responsibility to provide AFMC Test Fleet aircraft status changes/updates in accordance with (IAW) current maintenance conditions and the developed MDS specific mission essential subsystem list (MESL). This instruction applies to all AFMC organizations that manage or perform maintenance on AFMC owned/possessed aircraft regardless of Air Force Specialty Code. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW AFMAN 33-363, ***Management of Records***, and disposed of IAW the Air Force Records Disposition Schedule (RDS) located at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**. Send comments and suggested improvements to this instruction on AF Form 847, ***Recommendation for Change of Publication,*** to HQ AFMC/A4MM, 462 Chidlaw Road, Wright-Patterson AFB OH 45433-5006.

These MESLs complement AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting.* They apply to maintenance activities supporting AFMC test missions across AFMC.

1. General. The MESL is the basis of status reporting IAW 21-103. MESLs lay the ground work for reporting the status of assigned/possessed AFMC test fleet aircraft and equipment

supporting AFMC test missions. They list the minimum essential systems and subsystems that must work on test fleet aircraft to perform specifically assigned unit test, training or other missions.

1.1. Qualifying notes are used to define system exceptions and help explain complex degraded mission systems.

1.2. It is understood that any aircraft or support equipment system or subsystem may be subjected to test or tested under a test scenario and/or are test dependent as directed by the test mission director. If identified by test mission director, those systems or subsystems if not already identified by qualifying notes must be operational to be considered FMC or PMC for that mission.

2. Reading the MESL. A MESL is read by comparing the systems stated by WUC or UNS column (column 2) against the Full Systems List (FSL) and all applicable Basic Systems List (BSLs) across the page (DTE - Developmental Test and Evaluation, DTS - Developmental Test Support, TNG - Training). Each unit's Design Operational Capability (DOC) statement determines applicability of BSL columns. The aircraft or equipment MESLs incorporate all AFMC assigned/possessed aircraft/equipment and therefore it is important to compare only the columns listed in the MESL which are applicable to the units assigned/possessed aircraft. For example, units with training (TF) coded aircraft would determine report status using only the FSL and TNG columns. Units with multiple coded aircraft will ensure status is reported using the MESL columns appropriate to the individual aircraft/equipment assignment code or type mission being flown.

B-1B MINIMUM ESSENTIAL SUBSYSTEM LISTING (MESL)

				BSL		
NO.	**WUC**	**SYSTEM/SUBSYSTEM**	**FSL**	**DTE**	**DTS**	**TNG**
1.	11000	Airframe	X	X	X	X
2.	12000	Flash Blindness Protection	X	X11	X11	X11
3.	13000	Landing Gear System	X	X	X	X
4.	14000	Flight Control System	X	X	X	X
5.	14HA0	Wing Sweep System	X	X	X	X
6.	16000	Ejection System	X	X	X	X
7.	19000	Engine Starting 1, 2, 3, 4	X	X	X	X
8.	23000	Power Plant	X	X	X	X
9.	24000	APU	X	X1	X1	X1
10.	27000	Accessory Drive Gearboxes (ADGs)	X	X	X	X
11.	39C00	Pitot Static	X	X	X	X
12.	39D00	Window and Windshield Anti-ice Defog	X	X	X	X
13.	39F00	Windshield Rain Repel and Alt Anti-ice Defog	X2	X2	X2	X2
14.	41000	Air Conditioning and Pressurization	X	X	X	X
15.	42000	Electric Power Supply	X	X	X	X
16.	43A00	EMUX Primary/Secondary Data Link	X	X	X	X
17.	43B00	Terminals	X	X	X	X

18.	43C00	CITS Interface	X	X	X	X
19.	44AB0	Panel and Instrument Lighting	X3	X3	X3	X3
20.	44AC0	Annunciator Lighting	X	X	X	X
21.	44BC0	Aft Station Annunciatior Lighting	X	X	X	X
22.	44D00	Exterior Lighting	X3	X3	X3	X3
23.	45000	Hydraulic System	X	X	X	X
24.	46000	Fuel System	X12	X12	X12	X12
25.	47000	Oxygen System	X	X	X	X
26.	48C00	Recorder System (not instrumentation)	X			X8
27.	48E00	Central Warning System	X	X	X	X
28.	49000	Fire Protection System	X	X13	X13	X13
29.	51000	Electrical/Electronic Panels & Multipurpose Components	X	X	X	X
30.	52A00	Automatic Flight Control System (AFCS)	X	X11	X11	X11
31.	52BA0	Structural Mode Control System (SMCS)	X	X4	X4	X4
32.	55000	Central Integrated Test System (CITS)	X	X4	X4	X4
33.	59AA0	HF Radio	X	X11	X11	X11
34.	59B00	VHF and UHF Communications	X	X5	X5	X5
35.	59EA0	Interphone System	X	X	X	X
36.	73A00	Navigation, Flight Environment	X	X14	X14	X14
37.	73B00	Navigation, Attitude and Direction	X	X	X	X
38.	73C00	Navigation, Landing and Taxi Aids	X	X	X	X
39.	73DA0	Nav, Independent Position Determination	X	X11	X11	X11
40.	73DB0	Navigation, Doppler Radar	X	X11	X11	X11
41.	73DC0	Navigation, Offensive Radar (ORS)	X	X11	X11	X11
42.	73E00	Nav, Dependent Position Determination	X	X6	X6	X6
43.	73FE0	Avionics Control Unit Complex	X	X7	X7	X7
44.	73FH0	Navigation, Multi-function Displays	X	X15	X15	X15
45.	73W00	Global Positioning System	X	X11	X11	X11
46.	75000	Weapons System	X	X8,11	X8,11	X8,11
47.	76000	ECM Systems (76AAJ,AB,AC, AD,AE,AJ,C,D,G,H)	X	X9,11	X9,11	X9,11
48.	97000	Explosive Devices and Components	X	X	X	X
49.		Special Instrumentation (SI)		X11		

QUALIFYING NOTES:

1. One fully operational APU required.
2. Must have left and right windshield defog capability.
3. As required by AFI 11-202V3.
4. Required for test/training missions with low level flight (Terrain following or Visual contour).
5. Need one operable UHF or VHF radio, may require both for test mission.
6. Must have IFF.

7. Block D and prior: Must have 3 of 4 ACUs (CDACU, GNACU, WDACU), one of two FTACUs, and one of two RDTs operational. Block E: Must have both CACUs operational, one of two FTACUs, and one of two RDTs operational.

8. Mission dependent is determined by Test Director and or Aircraft Commander, based on mission objectives

9. Alternate/Secondary source is acceptable if primary displays are inop

10. Loop A and or Loop B must be operational on all systems.

11. Flyable with one operable Radar Altimeter channel.

12. In accordance with AFI 11-2B-1 Vol 3 more than one source/indicator for fuel storage, distribution, transfer, refuel, engine fuel, and discrete fuel flow sensing.

13. Only one loop required to give Fire Protection.

14. Identifies requirements and limitations.

15. At least one multi-function display (MFD) at the OSO position and the DSO MFD must be operable.

KATHLEEN D. CLOSE, Maj Gen, USAF
Director of Logistics and Sustainment