

**BY ORDER OF THE COMMANDER  
AIR FOR MATERIEL COMMAND**



**AIR FORCE INSTRUCTION 21-103**

**AIR FORCE MATERIEL COMMAND  
Supplement  
ADDENDUM\_D**

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**Maintenance**

**EQUIPMENT INVENTORY, STATUS AND  
UTILIZATION REPORTING SYSTEM/F-  
16A/B/C/D MINIMUM ESSENTIAL  
SUBSYSTEM LIST (MESL)**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFD 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/afirms/afirms/afirms/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.

**F-16A/B/C/D MINIMUM ESSENTIAL SUBSYSTEM LIST (MESL)**

NO.	WUC	SYSTEM/ SUBSYSTEM	FSL	BSL		
				DTE	DTS	TNG
1.	11000	Airframe	X	X	X	X
2.	12000	Crew Station System	X	X	X	X
3.	13000	Landing Gear System	X	X	X	X
4.	14000	Flight Control System	X	X1	X1	X1
5.	23000	Turbofan Power Plant (PW Engine)	X	X	X	X
6.	24000	Aux Power Plant/JFS	X	X	X	X
7.	27000	Turbofan Power Plant (GE Engine)	X	X	X	X
8.	41000	Environmental Control System	X2	X2	X2	X2
9.	42000	Electrical Power Supply	X	X3	X3	X3
10.	44A00	Exterior Lighting	X4,14	X5,14,15	X4,14	X4,14
11.	44B00/C	Interior Lighting	X	X	X	X
12.	45000	Hydraulic & Pneumatic System	X	X	X	X
13.	46000	Fuel System	X	X	X	X
14.	47000	Oxygen System	X	X6	X6	X6
15.	49A00	Fire Detection System	X	X	X	X
16.	49B00	Overheat Detection System	X	X	X	X
17.	51000	Flight Instruments	X	X7	X7	X
18.	61000	HF Communications	X	X16	X16	X16
19.	62000	VHF Communications	X8	X16	X16	X16
20.	63000	UHF Communications	X8	X15,16	X15,16	X15,16
21.	64000	Interphone System	X	X9	X	X
22.	65000	IFF	X	X	X	X
23.	69AD0	Improved Data Modem (IDM) /Situation Awareness Data Link	X11	X16	X11	X

		(SADL)/LINK 16				
24.	71000	Radio Navigation	X	X	X	X
25.	71D00	Global Positioning System (GPS)	X11	X11,16	X11,16	X11
26.	74000	Fire Control System	X	X16	X	X
27.	74G00	Airborne Video System	X11	X16	X11	X11
28.	74H00	Data Transfer Unit	X	X17	X17	X17
29.	74L00	Radar Altimeter System	X	X10	X10	X10
30.	74N00	Targeting Pod (GTP) System	X12,18	X12,16,18	X12,18	X12,18
31.	74P00	Navigation Pod (VP) System	X12,19	X12,16,19	X12,19	X12,19
32.	74R00	HARM Targeting System (HTS)	X17	X16	X17	X17
33.	75000	Weapons Delivery System	X	X13,16	X13	X13
34.	75A00	Gun System	X	X16,11	X11	X11
35.	76000	Electronic Counter Measures	X	X16	X	X
36.	76B00/C	Radar Warning Receiver	X	X16	X	X
37.	76Y00	Chaff/Flare Disp. System	X	X16,11	X11	X11
38.	91000	Emergency Equipment	X	X	X	X
39.	97000	Explosive Devices and Components	X	X	X	X
40.	99000	Special Instrumentation/T2 Mods	X11,15	X	X	X

1. Excludes Indicator Override, Leading Edge Flap Indicator and Speed Brake Indicator.
2. Manual mode only required.
3. Excludes External Power System.
4. As required by AFI 11-218.
5. Minimum Navigation/Formation light requirements for PMC include one Anti-Collision, one Anti-Collision and one Position Light per wing, Both Inlet Light and Tail Navigation Light Landing and Taxi Lights required as a minimum for PMC from sunset to sunrise. Position lights are not required are not required from sunrise to sunset to be Mission Capable per Note 6/AFI 11-218 para. 1.4.2. The F-16 anti-collision light (excluding Thunderbird slot aircraft), taxi light, and landing light are still required to be operational for ALL day and night time missions. Additionally, NVIS covert lighting is still required to be operational for acft to be FMC.
6. Excludes Quantity Check Switch.
7. Excludes Secondary Instruments and RCP Accelerometer.
8. Have Quick/Secure Voice required if aircraft is equipped.
9. Applies to B/D models only.
10. Required for aircraft performing the LANTIRN mission only.
11. If equipped.
12. Aircraft systems must be capable of LANTIRN operation to be FMC, regardless of Pod operation.
13. For Air-to-Air all four outboard Stations (1, 2, 8, And 9) are required for FMC. Three of four outboard Stations (1, 2, 8, And 9) of which at least two are LAU-129 capable are required for PMC. For Air-to-Surface, all four Inboard Stations (3, 4, 6, and 7) are required for FMC/PMC.
14. For NVIS modified aircraft, External Lighting covert function must be operational for night missions only.
15. As required by AFI 11-218 and AFI 11-202, Vol-3.
16. Test dependent. As determined by test director based on mission objectives.
17. HTS/IAMS only.
18. N/A for Block 10/15/50/52.
19. Block 40/42 only.

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