

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



**AIR FORCE INSTRUCTION 21-103
AIR FORCE MATERIEL COMMAND
Supplement
ADDENDUM-A
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Maintenance

**EQUIPMENT INVENTORY, STATUS AND
UTILIZATION REPORTING SYSTEM/A-10C
MINIMUM ESSENTIAL SUBSYSTEM LIST
(MESL)**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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(Col Rosemary L. Thorne)

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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.

A-10C MINIMUM ESSENTIAL SUBSYSTEM LIST (MESL)

NO.	WUC	SYSTEM/SUBSYSTEM	FSL	BSL		
				DTE	DTS	TNG
1.	11000	Airframe	X	X	X	X
2.	12000	Cockpit	X	X	X	X
3.	13000	Landing Gear	X	X	X	X
4.	14000	Flight Controls	X	X	X	X
5.	23000	Power Plant	X	X	X	X
6.	24000	Auxiliary Power Plant	X	X	X	X
7.	41000	Air Conditioning/Press/ Anti-Ice	X	X1	X1	X1
8.	41D/G	Rain Removal/ Windshield Wash	X10	X10	X10	X10
9.	42000	Electrical System	X	X	X	X
10.	44000	Exterior Lighting	X2	X2	X2	X2
11.	44000	Interior Lighting	X10	X10	X10	X10
12.	45000	Hydraulic & Pneumatic System	X	X	X	X
13.	46000	Fuel System	X	X	X	X
14.	47000	Oxygen System	X	X	X	X
15.	49000	Miscellaneous Utilities	X	X	X	X
16.	51000	Instruments	X	X	X	X
17.	51K00	Inertial Navigation System	X	X	X	X

18.	52000	Autopilot	X	X10	X10	
19.	55D00	Turbine Engine Monitoring System	X	X	X	X
20.	62000	VHF AM or FM Communications or ARC-210	X10	X8,10	X8,10	X8,10
21.	63000	UHF Communications	X10	X3,8,10	X3,8,10	X
21a.	63000	HF SATCOM	X3	X3,10,11	X3,10,11	X
22.	63AD	Direction Finder ADF/ARD	X10	X10	X10	X10
23.	64000	Intercom	X10	X10	X10	X10
24.	65000	IFF/SIF	X	X	X	X
25.	69000	Miscellaneous Comm	X10	X10	X10	X10
26.	69ADO	Improved Data Modern (IDM)/Situational Awareness Data Link	X10	X10	X10	X10
27.	71000	Radio Navigation	X10	X10	X10	X10
28.	71D00	GPS	X	X10	X10	X10
29.	72000	Radar Navigation Altimeter System	X	X9	X9	X9
30.	74B00	INS-HUD	X10	X10	X10	X10
31.	74C00	Target Ident-Pave Penny	X10	X10	X10	X10
32.	74D00	Gun Camera System	X10	X10	X10	X10
33.	74E/F	Multi-Function Color Display (MFC D)	X	X4,7,10	X4,7,10	X4,7,10
34.	74G00	Color Cockpit Television Video Sensor/Digital Video Airborne Data Recorder (CCTVS/DVADR)	X10	X10	X10	X10
35.	74H00	LASTE/INS-HUD	X10	X10	X10	X10
36.	74H00	Data Transfer Unit	X10	X10	X10	X10
37.	74N00	Targeting Pod	X10	X10	X10	X10
38.	75000	Weapons Delivery	X	X5,10	X10	X5
39.	75A00	Gun System	X10	X10	X10	X10
40.	76D00	Advanced Countermeasures Dispensing System (ACMDS)	X	X6,10	X6,10	X10
41.	76E00	ALR-69 System	X	X10	X10	X10
42.		AAR-47, Missile Warning System	X10,12	X10,12	X10,12	X10,12
43.	91000	Emergency Equipment	X	X	X	X
44.	97000	Explosive Devices	X10	X10	X10	X10
45.		Instrumentation System {ATIS/(Mini-)AATIS}/m-CAIS	X11,12	X11, 12	X11,12	X11,12
46.		Analog Data Recorder/High Speed Radar Solid State Recorders	X11, 12	X11,12	X11,12	X11,12
47.		Telemetry System	X11, 12	X11,12	X11,12	X11,12
48.		IRIG Time Set	X11, 12	X11,12	X11,12	X11,12
49.		Flight Test Video Recorder	X11, 12	X11,12	X11,12	X11,12
50.		TSPI (ARDS, GAINR)	X11, 12	X11,12	X11,12	X11,12

QUALIFYING NOTES:

1. Manual Mode Only Required.
2. As required by AFI 11-218. Landing Lights and Strip Lights or Formation Light Required as a Minimum for PMC.
3. Have Quick/Secure voice Capable if Equipped.
4. Required on TGM Equipped Aircraft.
5. Stations 1 or 11 Must be ECM Pod Capable and AIM-9 Capable if Equipped.
Stations 3,4,6,8 and 9 Must be Capable.
6. Three of the Four 76D Subsystems Must be Operational.
7. Required on TGM Equipped Aircraft for Night Search Capability.
8. UHF or VHF Required; Have Quick/Secure Voice Not Required.
9. Required for Low Level NAV/Weapons Delivery Below 5000 feet.
10. Mission Dependent.
11. Test Dependent—covers systems that may be subject to testing as part of a DTE test for that system.
12. If Installed.

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