

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.

E-8 MINIMUM ESSENTIAL SUBSYSTEM LISTING (MESL)

NO.	WUC	SYSTEM/SUBSYSTEM	FSL	BSL		
				DTE	DTS	TNG
1.	11000	Airframe	X	X	X	X
2.	12000	Cockpit and Fuselage Compartments	X	X	X	X
3.	13000	Landing Gear	X	X	X	X
4.	14000	Flight Controls	X	X	X	X
5.	14M00	Emergency System	X	X	X	X
6.	23000	Turbofan Propulsion System JT3D	X	X	X	X
7.	23LB0	Anti-Ice System	X	X	X	X
8.	23MAC	N1 Tach Indicator	X	X1	X1	X1
9.	23MAD	N2 Tach Indicator	X	X	X	X
10.	23MCB	EPR Indicator	X	X2	X2	X2
11.	24000	Auxiliary Power Plant	X	X	X	X
12.	41000	Air Conditioning, Pressurization, and Surface Ice Control	X	X	X	X
13.	41B00	Air Source Control System	X	X	X	X
14.	41E00	Pressurization Waveguide	X	X	X	X
15.	41F00	Cabin Pressure	X	X	X	X
16.	41FK0	Indicator, Differential Pressure Dual Altimeter	X	X	X	X
17.	41P00	Air Cycle Machine and Control	X	X3	X3	X3

18.	41Q00	Vapor Cycle & Control	X	X	X	X
19.	41S00	Antenna Moisture Control	X	X	X	X
20.	41T00	Liquid Cooling System	X	X	X	X
21.	42000	Electrical Power Supply	X	X	X	X
22.	422A0	Integrated Drive Gearbox	X	X	X	X
23.	42300	DC Power	X	X	X	X
24.	423G0	Transformer-Rectifier, 75 Amp	X	X4	X4	X4
25.	44100	Light, Exterior	X	X5	X5	X5
26.	44200	Light, Interior	X	X5	X5	X5
27.	442EQ	Visual Display Warning Unit	X	X	X	X
28.	442H0	Warning Lights	X	X6	X6	X6
29.	45000	Hydraulic & Pneumatic Power Supply	X	X	X	X
30.	45A00	Utility Hydraulic	X	X7	X7	X7
31.	43B00	Auxiliary Hydraulic	X	X	X	X
32.	46000	Fuel System	X	X	X	X
33.	462F0	Boost Pump	X	X	X	X
34.	462H0	Override Pumps	X	X	X	X
35.	462S0	In-flight Refueling	X	X8	X8	X8
36.	47000	Oxygen System	X	X	X	X
37.	49100	Fire Detection & Control	X	X	X	X
38.	49400	Personnel Warning System	X	X	X	X
39.	51000	Instruments	X	X	X	X
40.	51A00	Stall Warning System	X	X	X	X
41.	51B00	Digital Flight Recorder	X	X9	X9	X9
42.	51C00	Central (MACH) Warning System	X	X	X	X
43.	51D00	Pitot Static System	X	X	X	X
44.	51E00	Total Air Temp System	X	X	X	X
45.	51F00	Air Data System	X	X	X	X
46.	51G00	Attitude and Direction	X	X	X	X
47.	51H00	Attitude and Heading Reference System (AHRS)	X	X	X	X
48.	51J00	Flight Director System	X	X	X	X
49.	51K00	Ground Proximity Warning System	X	X	X	X
50.	52000	Autopilot	X	X	X	X
51.	52DD0	Indicator, 3 Axis Trim	X	X10	X10	X10
52.	52E00	Yaw Control and Yaw Damper System	X	X	X	X
53.	52H00	Mach Trim System	X	X	X	X
54.	57A00	Inertial Navigation System	X	X	X	X
55.	57C00	Data System	X	X	X	X
56.	57E00	Bus System Interface System	X	X11	X11	X11
57.	61B00	HF Communications	X	X	X	X
58.	62B00	VHF Communications	X	X12	X12	X12
59.	63B00	UHF Communications	X	X13	X13	X13
60.	64C00	Intercom Group	X	X	X	X
61.	64CA0	Intercommunication Station (Crew Terminal)	X	X14	X14	X14

62.	64CC0	Intercommunication Station (FSU)	X	X15	X15	X15
63.	64CP0	Comm Bus System Interface Unit (CBSIU)	X	X11	X11	X11
64.	65A00	IFF System	X	X16	X16	X16
65.	66A00	Voice Recorder System	X	X17	X17	X17
66.	69A00	Air Data Terminal Group (SCDL)	X	X	X	X
67.	69B00	JTIDS Radio Set	X	X18	X18	X18
68.	71000	Radio Navigation (VOR/TACAN)	X	X19	X19	X19
69.	71B00	Marker Beacon	X	X		
70.	71C00	ADF System	X	X	X	X
71.	72A00	Low Range Radio Altimeter	X	X	X	X
72.	72B00	Weather Radar System	X	X20	X20	X20
73.	72C00	Global Positioning System	X	X	X	X
74.	72D00	Radio Transponder System	X	X	X	X
75.	81A00	Antenna Assembly	X	X	X	X
76.	81AA0	Shifter, Phase	X	X21	X21	X21
77.	81AB0	Channel Assy, Receiver	X	X	X	X
78.	81AE0	CCA, Post Regulator	X	X	X	X
79.	81AF0	CCA, Phase Shifter Interface	X	X	X	X
80.	81AQ0	Inertial Measurement Unit	X	X	X	X
81.	81CA0	Amplifier, Radio Frequency (HPC)	X	X22	X22	X22
82.	81CC0	Amplifier, Radio Frequency (XMTR)	X	X22	X22	X22
83.	81CE0	Amplifier-Oscillator (Exciter)	X	X	X	X
84.	81CF0	Amplifier-Modulator (ASE)	X	X	X	X
85.	81CH0	Converter, Analog to Digital (Receiver)	X	X23	X23	X23
86.	81CK0	Converter, Signal Data (PCU)	X	X	X	X
87.	81CL0	Converter, Signal Data (SPP)	X	X	X	X
88.	81CM0	Control, Radar Set (RCU)	X	X	X	X
89.	81CP0	Converter, Signal Processor (PSP)	X	X24	X24	X24
90.	81CQ0	Converter, Data Processor (IMG)	X	X	X	X
91.	81CR0	Radar Bus Couplers & Digital Data Couplers	X	X	X	X
92.	81CS0	Waveguides, Radar	X	X	X	X
93.	82AB0	Computer, Digital (GPC)	X	X25	X25	X25
94.	82AC0	Computer, Digital (SM&C)	X	X11	X11	X11
95.	82AE0	Converter, Signal Data (GPC Expansion)	X	X25	X25	X25
96.	82AF0	Converter, Signal Data (SM&C Expansion)	X	X11	X11	X11
97.	82AH0	Recorder-Reproducer Set, Militarized Disk	X	X24	X24	X24
98.	82AHN	Removable, Transportable Memory Module	X	X26	X26	X26
99.	82AK0	Junction Box, System Test (STP Box)	X	X	X	X
100.	82AL0	Junction Box, Power Interlock (PIC Box)	X	X	X	X
101.	82AN0	Control Panel, Prime Mission Equipment	X	X	X	X
102.	82AT0	Box Assy, SM&C Junction	X	X	X	X
103.	82AW0	Junction Box, Serial Data (SDUSU)	X	X	X	X
104.	82AZ0	Couplers , Data processing and Digital Data	X	X	X	X
105.	82C00	Data Display Subsystem (O&C)	X	X27	X27	X27

106.	82CA0	Data Display Unit	X	X27	X27	X27
107.	82CD0	Operator Workstation Imbedded Disk	X	X27	X27	X27
108.	82CF0	Processor, Digital Display (ADDP)	X	X27	X27	X27
109.	82CH0	Keyboard, Data Entry	X	X27	X27	X27
110.	82CJ0	Removable, Transportable Memory Module	X	X27	X27	X27
111.	91000	Emergency Equipment	X	X	X	X
112.	96000	Personnel and Miscellaneous Equipment	X	X	X	X

QUALIFYING NOTES:

1. PMC when inoperative if associated engine EPR indicator is operable.
2. PMC when inoperative if associated engine N1 indicator is operable.
3. PMC if manual control is operational.
4. PMC if No 2 TR and Essential buses are operational.
5. As directed by AFI 11-202 Vol 3.
6. PMC if PA system and flight deck and mission interphone systems are operable.
7. PMC if corresponding pressure gauge(s) operable.
8. PMC if 1 set of ready, contact, and disconnect lights is operable.
9. PMC if CVR (Cockpit Voice Recorder) is operational.
10. PMC if the rudder axis is operational.
11. PMC if one operational.
12. PMC if Flight Deck VHF is operable.
13. PMC if eight UHF mission radios and one Flight Deck radio are operational.
14. PMC if three CMTs are inoperative.
15. PMC if one FSU is operational.
16. PMC if one system is operable.
17. PMC if FDR (Flight Data Recorder) is operational.
18. PMC if one system is operable.
19. PMC if one TACAN or VOR/ILS is operable at each pilot's station.
20. PMC if Navigator's is operable.
21. PMC if two inoperative.
22. PMC if failure allows transmitter configuration to 2.
23. PMC if one operable (must be in #1 position).
24. PMC if three operable.

25. PMC if two operable.
26. PMC if two RTMMs operational (System disk and SDB disk).
27. Must have a minimum of 14 O&C workstations. The NOWS station must be operational.
28. Test Mission Dependent.

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