BY ORDER OF THE COMMANDER
AIR COMBAT COMMAND

AF INSTRUCTION 21-103
AIR COMBAT COMMAND SUPPLEMENT
ADDENDUM K

22 JULY 2009

Maintenance

EQUIPMENT INVENTORY, STATUS AND UTILIZATION REPORTING SYSTEM/TC-135S/W MINIMUM ESSENTIAL SUBSYSTEM LIST (MESL)

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This MESL compliments AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting.* It applies to all TC-135S/W ACC units. This Addendum does not apply to Air National Guard (ANG) or Air Force Reserve Command (AFRC) units and members. Maintain official records created as a result of prescribed processes in accordance with (IAW) AFMAN 33-363, *Management of Records*, and dispose of records IAW the AF Records Disposition Schedule (RDS) located at the AF Records Information Management System link on the AF Portal. Contact supporting records managers as required. Send recommended changes or comments on AF Form 847, *Recommendation for Change of Publication***,** to HQ ACC/A4Y, 219 Dodd Blvd, Langley AFB VA 23665-2791, and send information copies to the applicable Office of Collateral Responsibility.

SUMMARY OF CHANGES

This publication is substantially revised and must be completely reviewed. Mission columns have been changed. Numerous systems Work Unit Codes (WUCs) and notes have been added or deleted to better clarify mission capability requirements.

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. MESLs are not comprehensive WUC lists and are not intended to mirror Minimum Equipment Lists. Mission Ready Available (MRA) is used in readiness Status of Resources and Training System (SORTS) reporting only and denotes Mission Capable

(MC) aircraft capable of being configured for a contingency mission IAW COMACC OMNIBUS Plan.

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

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 (NMC) 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 (MAJCOM) 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 WUC against the FSL and all applicable Basic System Lists (BSLs) across the page. For any WUC not listed, the higher assembly WUC will be used. 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 TNG columns, and units with CB (test) coded aircraft would determine and report status using only the FSL and 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. TC-135S/W MESL.

			BSL
WUC	**SYSTEM/SUBSYSTEM**	**FSL**	**TNG**
11000	Airframe	**X**	**X**
12A00	Seat Assembly	**X**	**X**
12BA0	Furnishings Interior	**X**	
13000	Landing Gear	**X**	**X**
13CC0	Anti Skid System	**X**	**X1**
13EB0	Anti-Skid Brake Electrical	**X**	**X1**
13KAC	Rudder Pedal Steering (Linear Actuator)	**X**	**X2**
14000	Flight Controls	**X**	**X**
14DAA	Stabilizer Trim Control Switch	**X**	**X3**
27000	Turbofan Power plant (F108)	**X**	**X**
27CA0	Ignition System	**X**	**X4**

27CBF	Jet Fuel Starter (JFS)	**X**	
27DAN	Fuel Flow	**X**	**X5**
27HA0	Fuel and Variable Vane System	**X**	**X6**
41000	Air-conditioning, Pressurization and Surface Ice Control	**X**	**X**
41120	Cabin Pressure Controller	**X**	**X7**
4121A	Cabin Air Conditioning Temp Control	**X**	**X8**
41140	Windshield Wipers	**X**	**X9**
41350	NESA Window	**X**	**X10**
41430	Electronic Cabinet Cooling Overheat Light	**X**	**X11**
42000	Electrical Power Supply	**X**	**X**
42148	Battery Charging TR (Main/JFS)	**X**	**X3**
44140/50/60	Warning Light Assemblies	**X**	**X**
44152	Fuel Low Pressure Warning Light	**X**	
44170	Lighting Systems (Components)	**X**	
44176	Cabin Pressure Warning Light	**X**	
44211	Nose Landing Light	**X**	**X12**
44212	Taxi Lights	**X**	**X13**
44228	ARR Receptacle Lighting	**X**	**X14**
44233	Navigation Lights	**X**	**X15**
44250	Anti-Collision (Strobe) Lights	**X**	**X16**
44263	Landing Lights	**X**	**X12**
44266	Terrain Light (Retractable)	**X**	
45000	Hydraulic and Pneumatic Power Supply System	**X**	**X**
45165	Auxiliary Hydraulic Pump (LH)	**X**	**X**
46000	Fuel System	**X**	**X**
46117	Transfer Valve #10 (No. 1 Reserve)	**X**	
46283	Transfer Valve #17 (No. 4 Reserve)	**X**	
46316	Fuel override pumps	**X**	**X17**
466	Tank to Engine Manifold Valves	**X**	**X18**
469A0	Air Refueling Receiver Electrical System	**X**	**X19**
47000	Oxygen System	**X**	**X**

4713X	Oxygen Regulators	**X**	**X20**
47200	Oxygen Quantity Panel Assembly	**X**	**X21**
49000	Miscellaneous Utilities	**X**	**X22**
49700	PLZT/Flash Projection System	**X**	
51000	Instruments, General	**X**	**X23**
51A00	Flight Director System/RGA	**X**	**X24**
51BD0	Angle of Attack Indicator	**X**	**X25**
51BE0	Angle of Attack Transmitter	**X**	**X25**
51K00	Digital Air Data Computer System	**X**	**X26**
51L00	Flight Data Recorder	**X**	**X27**
51P00	Electronic Flight Instrument System (EFIS)	**X**	**X28**
51R00	Electronic Standby Indicating System (ESIS)	**X**	**X26**
51S00	Wind Shear/SCAT System	**X**	**X**
51SAA	Aircraft Performance Computer	**X**	**X3**
51W00	Fuel Quantity Indicating System	**X**	**X29**
51WAA	Signal Conditioning Unit (SCU)	**X**	**X30**
51Y00	Angle-Of-Attack Speed Indexer Lights	**X**	
51113	Accelerometer (G Meter)	**X**	
5118A	Altimeter (NAV's)(Reduced Vertical Separation)	**X**	
5118D	Altitude Alerter	**X**	**X31**
51310	Engine Instruments	**X**	**X32**
51421	LH Flap Position Indicator	**X**	**X33**
51431	RH Flap Position Indicator	**X**	**X33**
51840	Free Air Temperature/OAT Gauge	**X**	**X34**
51851	Cabin Altitude Indicator	**X**	**X35**
51854	Cabin Altitude Gauge (Nav Station)	**X**	**X36**
52A00	AN/ASW-48 Digital Autopilot	**X**	**X37**
52AK0	Vertical Gyro	**X**	**X38**

52200	Flight Control Augmentation System/EFAS	**X**	**X**
5241	Compass N-1	**X**	**X**
61D00	HF Communications Set (ARC-190)	**X**	**X39**
62400	AN/ARC-210 VHF/UHF Radio	**X**	**X40**
63500	UHF Command Radio System AN/ARC-171	**X**	
64160	Intercom Interphone AN/AIC-18	**X**	**X41**
65000	IFF	**X**	**X**
66A00	Emergency Avionics System (EAS)	**X**	
68000	AFSATCOM	**X**	**X42**
69900	Wideband Secure Voice KY-58 System	**X**	**X3**
71000	Radio Navigation System	**X**	**X**
71AK0	Navigation Direction Finder	**X**	**X3**
71B00	VOR/LOC	**X**	**X3**
71Z00	AN/ARN-118 TACAN	**X**	**X3**
72000	Radar Navigation System	**X**	**X**
72BA0	AN/APN-242 Radar	**X**	**X43**
72CA0	AN/APN-69 Radar Beacon	**X**	
72K	AN/APN-222 Radar Altimeter	**X**	
72V	AL-101 Radar Low Range Altimeter	**X**	**X44**
72Z00	AN/APN-59	**X**	**X43**
72700	Flight Management System (FMS)	**X**	**X45**
727AA	Control Display Unit (CDU)	**X**	**X46**
727AB	Navigation Computer Unit (NCU)	**X**	**X47**
727AD	Data Transfer Unit	**X**	
727B0	Embedded GPS/Inertial Navigation (LN-100)(Rivet Glass)	**X**	**X**
73000	Enhanced TCAS/VSI	**X**	**X48**
QUALIFYING NOTES			
1	Pilot's or copilot's position must be operational.		

2	Flyable with linear actuator extended. If unable to reset linear actuator electrically, rudder pedal input to nose wheel steering may be reduced.
3	Multi-unit system. PMC if at least one unit operational.
4	PMC if one per engine is operational.
5	PMC if one inoperative provided all other indications for affected engine are operating. (Corresponding engine's fuel flow may be displayed on the CDU/MFD.)
6	Minimum of three Power Management Controllers must be operational for PMC condition.
7	PMC if normal air conditioning or alternate pressurization operable. Automatic or manual mode must be operable
8	Automatic or manual mode must be operational
9	PMC if one wiper is operational
10	Both Pilot and Copilot #1 and #2 windows must operate.
11	PMC if fans are operational.
12	Either the nose landing light or one of the wing landing lights must operate.
13	One taxi light or terrain clearance light must operate for night operations.
14	Required for night A/R only, otherwise PMC.
15	One tail navigation light may be inoperative.
16	Upper anti-collision strobe light must be operable.
17	Not required if center wing fuel is not required for mission accomplishment.
18	PMC if one valve failed in the OPEN position. (Pull circuit breaker.)
19	As required for mission accomplishment.
20	All occupied positions must have operable regulator.
21	Totalizer may be inoperable as long as individual converter quantities are readable. System is PMC. Supply low caution light not required.
22	Required for safety of flight, flight monitoring, and crew.
23	For instruments with both analog or digital indication, either indication for PMC.
24	May be inoperable as long as Aircraft Performance Computer system is operational. Must be sufficient at pilot or copilot positions to monitor aircraft position, performance and maintain control.
25	Pilot's or copilot's position must be operational. Operating AOA must have operational anti-ice on associated transmitter.
26	PMC conditions: ADC1 or ADC2 may be inoperative provided that the standby ADC is fully operational. The FCAS ADC must be operational.
27	Only required when flying with PAX

28	Loss of one Multi Function Display at either pilot or copilot position is PMC provided the navigator's KDU is operational. (Navigator KDU can display either MFD or PFD mode through selection of the MFD/PFD mode switch.)
29	PMC if Reserve Tank indication is inop as long as tank quantity can be verified prior to takeoff.
30	Tank quantities must be manually entered in malfunctioning tank to get accurate gross weight and CG.
31	Must have two operational to be PMC.
32	Must have analog or digital.
33	One flap Indicator may be inoperative provided: (1) flaps operate normally; (2) verification of flap position can be made prior to each take off and landing.
34	PMC if temperature available on Altitude Alerter.
35	Sufficient to maintain cabin altitude below 12,000 feet.
36	Required only if operating via manual cabin pressure control. Gauge is not required if the cabin pressure warning function of the Altitude Alerter is operational.
37	Roll, pitch and altitude hold required.
38	PMC as long as AN/ASN-121 provides attitude reference for autopilot system.
39	Minimum two systems operational for oceanic operations.
40	FD-1 or FD-3 must be operational to be PMC.
41	All crewmembers must be able to transmit and receive on interphone. CALL function must be operable.
42	PMC condition if HF Communications is fully operational. (As mission requirements dictate).
43	Minimum one of R/T required for PMC.
44	Pilot's system must be operational for PMC.
45	FMS includes operable NCU and CDU.
46	Pilot or Copilot CDU and Navigator's CDU must be operational to be PMC.
47	Minimum of one NCU operational to be PMC.
48	Minimum of one system operational for PMC. TCAS information must be available on one VSI provided it's also available on pilot's/copilot's MFD.

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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 21-103, http://www/e-publishing.af.mil/pubfiles/af/21/afi21-103/afi21-103.pdf, *Equipment Inventory, Status, and Utilization Reporting*

Abbreviations and Acronyms

ACC—Air Combat Command

ADC—Air Data Computer

AFB—Air Force Base

AFSATCOM—Air Force Satellite Communications

AOA—Angle of Attack

BSL—Basic System Lists

CDU—Control Display Unit

CG—Center of Gravity

DOC—Design Operational Capability

FD—Flight Deck

EAS—Emergency Avionics System

EFAS—Engine Failure Assist System

EFIS—Electronic Flight Instrument System

ESIS—Electronic Standby Indicating System

FCAS—Flight Control Augmentation System

FMC—Fully Mission Capable

FMS—Flight Management System

FSL—Full System List

HQ—Headquarters

IAW—In Accordance With

IFF—Identification, Friend or Foe

JFS—Jet Fuel Starter

KDU—Keyboard Display Unit

MAJCOM—Major Command

MC—Mission Capable

MDF—Multi-Function Display

MESL—Minimum Essential Systems List

MRA—Mission Ready Available

NCU—Navigation Computer Unit

NMC—Not Mission Capable

OAT—Outside Air Temperature

OCR—Office of Collateral Responsibility

R/T—Receiver-Transmitter

SCAT—Speed Command of Attitude and Thrust

SCU—Signal Conditioning Unit

SORTS—Status of Resources and Training System

TACAN—Tactical Airborne Navigation

TCAS—Traffic Alert and Collision Avoidance System

TNG—Training

VOR/LOC—VHF Omni-directional Radio Range Localizer

VSI—Vertical Speed Indicator

WUC—Work Unit Code